



Brockman 2 Deposits Detailed Flora and Vegetation Survey: Phase 1 and 2



Prepared for Rio Tinto

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Biota
Environmental
Sciences



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1.0 Executive Summary

Rio Tinto is evaluating the potential development of a number of iron ore deposits within the Brockman 2 and Nammuldi-Silvergrass locality, near Tom Price in the Pilbara region of Western Australia. A component of the study comprises the Brockman 2 deposits, hereafter referred to as the study area. The study area is divided into two areas: Brockman Syncline 2 (BS2), comprising BS2 South West tenure, BS2 South West non-tenure, BS2 West Extension and Maybelline; and Lens G/Diesel, comprising Pit 14, Lens G, Lens G non-tenure, Diesel Sandalford Monkey, BS3, and BS3 Extension.

Botanical surveys had been conducted over parts of the study area, however additional survey work was required to elevate the data to meet current Environmental Protection Authority expectations for Detailed botanical surveys for environmental impact assessment. This report documents two phases of additional Detailed botanical survey work completed in the study area in October 2018 and March 2019.

Vegetation types were described and mapped, using previously completed mapping where possible. A total of 52 quadrats and 16 relevés were assessed in the study area during the current surveys, with 44 of the quadrats and one relevé resampled in 2019. These supplemented the data from 44 quadrats and 44 relevés that had been previously sampled in the study area. Targeted searches for flora of conservation significance and weeds were also completed during the current surveys, to supplement historical search effort.

Ten vegetation types were identified for the BS2 part of the study area in four broad landforms: major drainage lines; moderate and minor drainage lines; clay plains and stony plains; and stony hillslopes, hillcrests and foothills. Most of the vegetation was in Excellent to Very Good condition. None of the vegetation types represented Threatened Ecological Communities or Priority Ecological Communities. Five units (H8 and H12 on hills; and D14, D15 and D18 in minor to moderate-sized drainage lines) were considered to be of elevated conservation significance as they supported large numbers of Priority flora.

A total of 18 vegetation types were identified for the Lens G/Diesel part of the study area in five broad landforms: major drainage lines; moderate and minor drainage lines; clay plains and stony plains; stony hillslopes, hillcrests and foothills; and gullies and gorges. Most of the vegetation was in Excellent to Very Good condition. Again, none of the vegetation types represented Threatened Ecological Communities or Priority Ecological Communities. Two units (D7 and D8) comprised Groundwater Dependent Vegetation, and D7 also had the uncommon species *Ficus geniculata* var. *insignis* as a dominant. Six units (H5, H7, H13, P2, P14 and P24) were considered to be of elevated conservation significance as they supported large numbers of Priority flora. Unit G3, which was mapped in small gorges, gullies and along breakaways, also supported large numbers of Priority flora, and Morton et al. (1995) listed gorges of the Hamersley Range as being of elevated conservation significance as refugia for fire-sensitive species in the Pilbara. In addition, one unit (P23) had an unusual combination of species, with *Capparis umbonata* recorded as a dominant shrub.

Based on all survey work to date, a total of 462 native vascular flora species from 161 genera and 54 families have been recorded from the study area. With regards to the two components of the study area:

- a total of 308 native taxa from 114 genera and 46 families have been recorded from BS2; and
- a total of 405 native vascular flora taxa from 151 genera and 54 families have been recorded from Lens G/Diesel.

A total of 20 Priority flora taxa have been recorded from the study area based on all survey work to date.

Ten Priority flora taxa have been recorded from BS2:

- Priority 1: *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354);
- Priority 2: *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708);
- Priority 3: *Eremophila magnifica* subsp. *velutina*, *Eremophila* sp. Hamersley Range (K. Walker KW 136), *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301), *Sida* sp. Barlee Range (S. van Leeuwen 1642), *Sida* sp. Hamersley Range (K. Newbey 10692) and *Triodia basitricha*; and
- Priority 4: *Acacia bromilowiana* and *Eremophila magnifica* subsp. *magnifica*.

A total of 19 Priority flora taxa have been recorded from Lens G/Diesel:

- Priority 1: *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Tetradlea butcheriana*;
- Priority 2: *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708), *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (treated as Priority 2 for this report) and *Oxalis* sp. Pilbara (M.E. Trudgen 12725);
- Priority 3: *Dampiera anonyma*, *Eremophila magnifica* subsp. *velutina*, *Grevillea saxicola*, *Gymnanthera cunninghamii*, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301), *Rhagodia* sp. Hamersley (M. Trudgen 17794), *Sida* sp. Barlee Range (S. van Leeuwen 1642), *Sida* sp. Hamersley Range (K. Newbey 10692), *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) and *Triodia basitricha*; and
- Priority 4: *Acacia bromilowiana*, *Eremophila magnifica* subsp. *magnifica*, *Goodenia nuda* and *Lepidium catapycnon*.

With the exception of *Tetradlea butcheriana*, *Gymnanthera cunninghamii* and *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708), all of these species are well-documented for the locality.

A total of 13 introduced flora species (weeds) have been recorded from the study area based on all survey work to date.

Eight introduced flora species have been recorded from BS2: **Aerva javanica* (Kapok Bush), **Bidens bipinnata* (Bipinnate Beggartick), **Cenchrus ciliaris* (Buffel Grass), **Flaveria trinervia* (Speedy Weed), **Malvastrum americanum* (Spiked Malvastrum), **Rumex vesicarius* (Ruby Dock), **Solanum nigrum* (Black Berry Nightshade) and **Sonchus oleraceus* (Common Sowthistle).

Ten introduced flora species have been recorded from the Lens G/Diesel part of the study area: **Bidens bipinnata*, **Cenchrus ciliaris*, **C. setiger* (Birdwood Grass), **Chloris virgata* (Feathertop Rhodes Grass), **Flaveria trinervia*, **Malvastrum americanum*, **Rumex vesicarius*, **Setaria verticillata* (Whorled Pigeon Grass), **Sigesbeckia orientalis* (Indian Weed), and **Vachellia farnesiana* (Mimosa Bush).

While none of these species are declared pests under the WA Biosecurity and Agriculture Management Act 2007 or Weeds of National Significance, **Aerva javanica*, **Cenchrus* spp. and **Rumex vesicarius* are generally considered to be serious environmental weeds.

2.0 Introduction

2.1 Project Background

Rio Tinto is evaluating the potential development of a number of iron ore deposits within the Brockman 2 and Nammuldi-Silvergrass (B2NAM) locality, near Tom Price in the Pilbara region of Western Australia. The survey area for the B2NAM Study covers 19,441 ha; it encompasses multiple deposits being considered by the Study, which occur within three separate 'study areas' as summarised in Table 2.1.

Table 2.1: Summary of study areas within the B2NAM Study survey area.

Study Area	Size (ha)	Main Deposits / Tenure
Brockman 2 deposits (this report)	10,928	<u>BS2:</u> BS2 SW BS2 west extension <u>Lens G/Diesel:</u> Lens G and non tenure Diesel, Monkey and Sandalford BS3 BS3 extension (BS2/3 deposits) Maybelline
Caves Creek	3,974	Palm Springs Corridor
Silvergrass West	4,539	Silvergrass West tenure and non-tenure

Botanical surveys had been previously conducted over parts of the B2NAM Study survey area, however some do not meet the requirements of a two-phase Detailed survey (as per EPA 2016a) (e.g. they were single-phase surveys, Native Vegetation Clearing Permit (NVCP) assessments or monitoring surveys). In addition, some of these surveys were no longer considered current (i.e. they were conducted more than 5 years ago). As a result, additional survey work was required, at varying levels, to elevate existing data to meet current Environmental Protection Authority (EPA) expectations for Detailed botanical surveys for environmental impact assessment (EIA).

A separate stand-alone report has been prepared for each component of the B2NAM Study survey area. This report specifically addresses the areas at Brockman Syncline 2 (BS2) and Lens G and Diesel (Lens G/Diesel), which are collectively referred to as the Brockman 2 study area (hereafter 'the study area'; see Figure 2.1).

2.2 Scope and Objectives

Rio Tinto commissioned Biota Environmental Sciences (Biota) to undertake a two-phase Detailed flora and vegetation survey of the study area consistent with EPA (2016a). This report documents the methods, results and key findings of both phases of the vegetation and flora survey conducted in the study area.

The specific objectives of the survey were:

1. Undertake a desktop assessment, including database and literature searches, to consolidate all available existing data relevant to the study area.
2. Undertake a seasonal field survey to:
 - describe, photograph and map the dominant vegetation units;
 - assess vegetation condition;
 - identify any units of conservation significance;

- compile a list of vascular flora species recorded in the study area;
 - record and photograph flora of particular conservation significance, including Threatened and Priority species and any other species of interest; and
 - record any introduced flora species (weeds) occurring in the study area.
3. Complete a contextual clustering analysis using site data from both the study area and the surrounding locality to assist with identification of floristic communities present in the study area, including identification of any rare or restricted communities.
 4. Collate, present and discuss all data from both survey phases, with integration of any historical data as appropriate, with a particular focus on identification of any communities or species of particular conservation significance.
 5. Supply all relevant data to Rio Tinto in the relevant data standards, and submit any required flora specimens to the WA Herbarium and any Threatened and Priority Flora Report Forms to the Department of Biodiversity, Conservation and Attractions (DBCA).

The approach and methodology for the survey were developed with consideration of the following:

- EPA *"Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment"* (EPA 2016a);
- EPA *"Environmental Factor Guideline: Flora and Vegetation"* (EPA 2016b); and
- Rio Tinto Data Standards 2019.

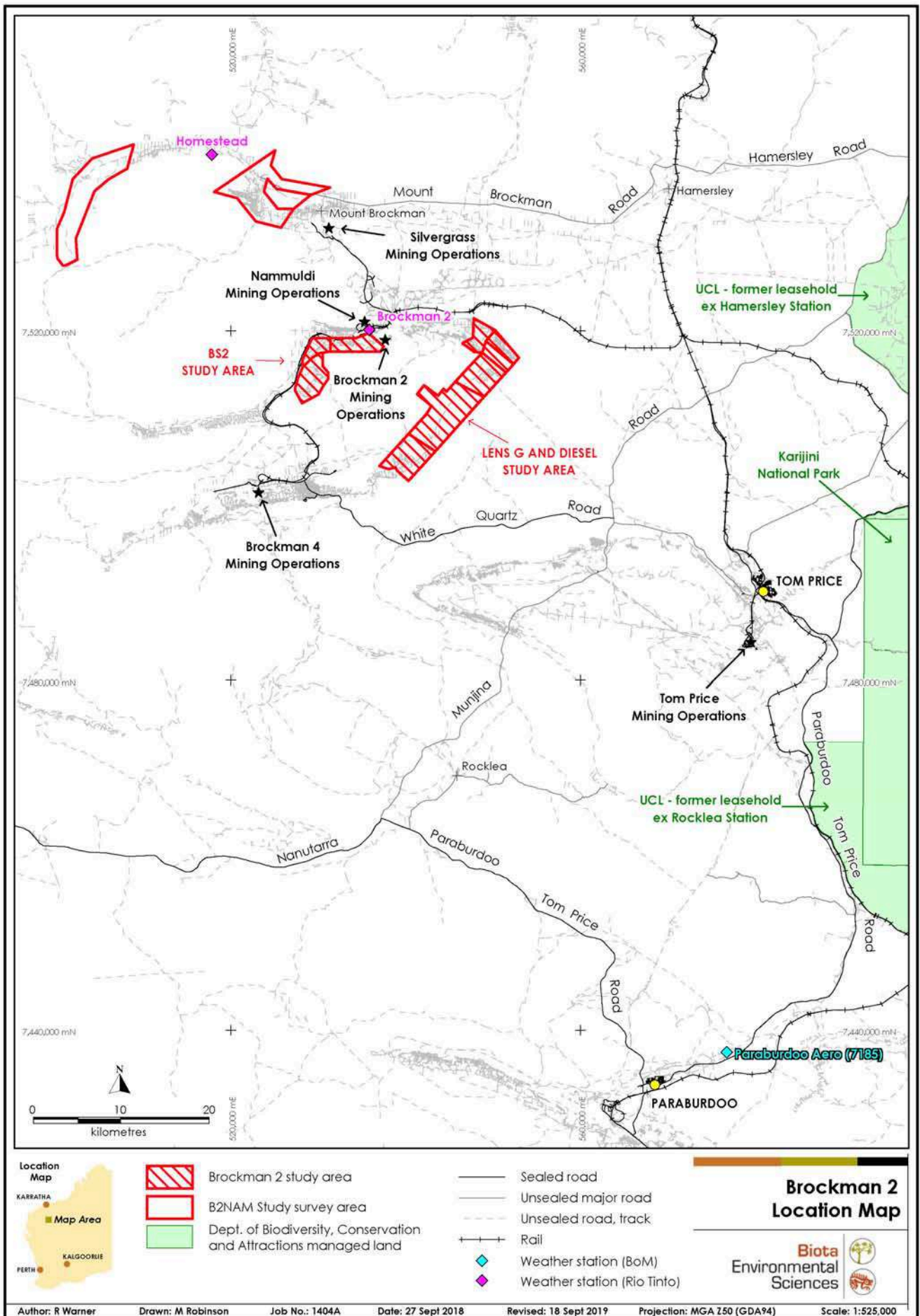


Figure 2.1: Location of the study area within the broader B2NAM Study survey area.

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3.0 Methodology

3.1 Desktop Review

A desktop review was undertaken to identify flora and vegetation of conservation significance that had already been recorded within the study area or that were known from the vicinity (within 20 km). Further information regarding the framework for conservation significance ranking of communities and species in WA is presented in Appendix 1. The desktop review was also used to assess the level of biological survey work that had been completed previously in the study area, which informed the design of the current survey, particularly with respect to the survey effort required (see Section 3.2).

The review considered regional information, previous biological surveys in the locality, and the results of various database searches, as discussed in the following sections.

3.1.1 Database Searches

The following databases were searched to assist in the determination of the potential botanical features of significance in the study area:

1. A specific search of the Department of Biodiversity, Conservation and Attractions (DBCA) Threatened and Priority Flora Database was commissioned to confirm the Threatened and Priority flora species known from the locality.
2. The DBCA's database of Threatened Ecological Communities (TECs), Priority Ecological Communities (PECs) and Environmentally Sensitive Areas (ESAs) was also searched to identify significant communities known to occur in the locality.
3. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool was used to identify Federally-listed conservation significant communities and flora species that may occur in the locality.

The searches of the DBCA databases were conducted using a buffer of 40 km around the B2NAM Study survey area. The EPBC Act Protected Matters search tool used a 40 km buffer around a central coordinate for each study area (-22.44833°S, 117.29861°E for BS2 and -22.50333°S, 117.44389°E for Lens G/Diesel). Results for the publicly available EPBC Act Protected Matters search tool are provided in Appendix 2. The DBCA database search results have been provided directly to Rio Tinto.

In addition, outputs from Rio Tinto's and Biota's internal databases of conservation significant species and weeds from previous studies in the vicinity (within 20 km) were reviewed.

3.1.2 Literature Review

Published and unpublished reports relevant to the study area were reviewed. These included several regional-scale reports and datasets, including a summary of information for the biological subregion (Kendrick 2003), land systems mapping (Payne et al. 1988, van Vreeswyk et al. 2004) and vegetation description and mapping by Beard (1975a, 1975b).

Additionally, a number of botanical surveys previously undertaken in the locality were reviewed (see Section 4.8).

3.1.3 Ranking of Conservation Significant Flora

The results from the literature review and database searches were used to compile a list of conservation significant flora species that had previously been recorded from the locality (see Appendix 3). The likelihood that each species would occur in the study area was then assessed

using the rankings and criteria provided in Table 3.1. Through the remainder of this report, the term "close proximity" has been defined as being within 20 km of the study area, while the broader "locality" comprises the area up to 40 km from the study area.

Table 3.1: Ranking system used to assign the likelihood that a species would occur in the study area.

Rank	Criteria
Recorded	1. The species has been previously recorded in the study area.
Likely to occur	1. There are existing records of the species in close proximity to the study area (within 20 km); and - the species is strongly linked to a specific habitat, which is present in the study area; or - the species has more general habitat preferences, and suitable habitat is present.
May potentially occur	1. There are existing records of the species from the locality (within 40 km), however - the species is strongly linked to a specific habitat, of which only a small amount is present in the study area; or - the species has more general habitat preferences, but only some suitable habitat is present. 2. There is suitable habitat in the study 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 study 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 study area, however the species is very infrequently recorded in the locality.
Would not occur	1. The species is strongly linked to a specific habitat, which is absent from the study area; and/or 2. The species' range is very restricted and would not include the study area.

Two rankings have been provided in Appendix 3:

1. An initial assessment was made during the desktop review. This was based on consideration of the overall distribution of the species, the proximity of the study area to known populations, the reliability and age of any historic records, and, if the species was known to be linked to particular habitats, whether suitable habitat appeared to be present in the study area based on inspection of aerial photography and/or existing information.
2. The likelihood rankings were subsequently revised as necessary based on the findings of the field surveys. Where the initial and final likelihood rankings were different, the reason was provided.

3.2 Field Survey

3.2.1 Survey Team and Timing

The Phase 1 field survey of the overall B2NAM Study survey area was conducted over 11 days (9–19 October 2018) by a team of eight Biota botanists (see Table 3.2). Excluding mobilisation and demobilisation, a total of 72 person days were spent on the field component of the B2NAM Study survey. Of this, approximately nine person days were spent surveying BS2, while 23 person days were spent surveying Lens G/Diesel.

The Phase 2 field survey of BS2 was conducted over three days (parts of 15–17 March 2019), while the Phase 2 survey for Lens G/Diesel was conducted over four days (part of 16 March and 17–19 March). The team comprised six Biota botanists, all of whom were present during Phase 1 (Table 3.2). Approximately 14 person days were spent on the Phase 2 survey of BS2, and approximately 21 person days were spent at Lens G/Diesel.

Table 3.2: Summary of personnel involved in the B2NAM Study flora and vegetation survey.

Name	Position at Biota	Qualification	Years of Experience	Survey Role	Flora Licence No.
Pierre-Louis de Kock (Project Manager)	Senior Botanist/ Specialist Taxonomist	BSc. Hons	11	Project Manager Vegetation mapping Rare flora searches	SL012303, FB62000034
Michi Maier (Phase 1 only)	Director / Principal Botanist	BSc. Hons	27	Project Director Quadrat sampling Rare flora searches	SL012300
Brian Morgan	Senior Botanist	BSc. Hons	18	Quadrat sampling Rare flora searches	SL012339, FB62000075
Rebecca Mason	Botanist	BSc.	7	Quadrat sampling Rare flora searches	SL012205, FB62000035
Simon Colwill	Botanist	BSc.	7	Quadrat sampling Rare flora searches	SL012305, FB62000037
Trent Betts	Graduate Botanist	BSc.	<1	Quadrat sampling	SL012481, FB62000039
Josh Keen (Phase 1 only)	Graduate Biologist	BSc.	1	Field assistance	NA [†]
Calum Irvine	Graduate Botanist	BSc.	<1	Quadrat sampling	SL012449

† Did not collect flora.

3.2.2 Survey Conditions

3.2.2.1 Rainfall

The weather conditions preceding a field survey can directly impact the number and type of flora species that are recorded from an area. Total monthly rainfall data were sourced from Rio Tinto's Brockman 2 and Homestead weather stations¹. These data were then compared with the long-term climate-normal (1988-2018) median rainfall data sourced from the Bureau of Meteorology weather station at Paraburdoo Aero (station number 7185; approximately 90 km southeast of BS2 and 80 km southeast of Lens G/Diesel) (Figure 3.1). Station locations are shown on Figure 2.1.

The Phase 1 survey was timed for the dry season and, as anticipated, the total rainfall received in the three months prior was low: only 0.4 mm was received from July to September 2018, which was slightly less than the long-term median for this period (9.1 mm). This low preceding rainfall is typical for the dry season in this locality, resulting in unfavourable conditions for the collection of many annual and cryptic perennial flora species.

The Phase 2 survey in March 2019 was timed to follow the typical wet season in the Pilbara, as the highest rainfall typically occurs from January to March. Unfortunately, rainfall was low over the summer months, with only 40.0 mm received at Brockman 2 from December 2018 through to February 2019 (just 40% of the long-term median for this period; see Figure 3.1). Most of this rainfall was received in January 2019. This resulted in a second phase of sub-optimal sampling conditions for the study area.

¹ The rainfall data from Brockman 2 were incomplete or missing for the months of February to April 2018. Rainfall data for these months were sourced from Homestead Station.

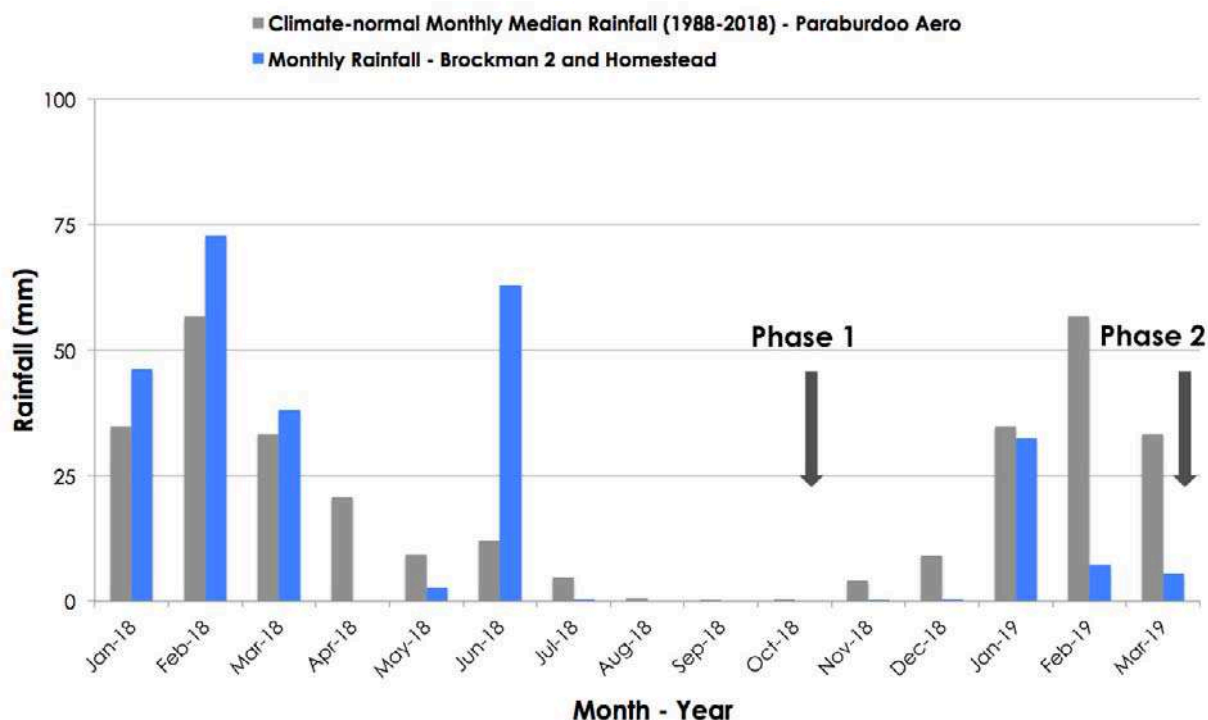


Figure 3.1: Total monthly rainfall for January 2018 to March 2019 from the Rio Tinto Brockman 2 and Homestead weather stations compared to the long-term climate-normal (1988-2018) median rainfall for the same months from Paraburdoo Aero.

Arrows indicate survey timing; Homestead rainfall data used for February – April 2018; March 2019 data from 1-7 March only, prior to commencement of the Phase 2 survey.

3.2.2.2 Fire – October 2018

A large fire ignited in the Brockman 2 locality in the days prior to the Phase 1 field survey, and was still burning in BS2 during the survey. Approximately 1,147 ha (41%) of BS2 was burnt, including the major range of hills to the south of the existing Brockman 2 mine pit, and most of the southern end of BS2. The fire also burnt through the southern section of Lens G/Diesel, affecting approximately 3,100 ha (38%).

The extents of the fire scars are shown in Appendix 5 (data sourced from North Australia and Rangelands Fire Information (NAFI)²). It should be noted that the fire scar for Lens G/Diesel was more extensive than indicated by the NAFI mapping; the southeastern corner of that part of the study area was also observed to be burnt in the field, including the permanent pool area referred to as 'Plunge Pool'. The NAFI fire scar extent for Lens G/Diesel is therefore considered a slight underestimate.

The proposed sampling design for the study area was affected by the fire, and resulting limitations are discussed in Section 3.5.

3.2.3 Floristic Data Collection: Assessment of Quadrats and Relevés

Indicative sampling locations were selected prior to the field survey. The study area boundary was overlain on aerial imagery, and sampling sites were then selected based on the broad habitats and vegetation types apparent. Once in the field, the actual locations of the sampling sites were adjusted as necessary (e.g. to avoid recently burnt areas, or to be placed in an area more representative of the broader vegetation unit). Locations of previously sampled sites situated in the study area (and the vegetation units they related to) were taken into consideration when selecting locations for new sampling sites (see Table 3.3 and Appendix 5).

² <https://www.firenorth.org.au/nafi3/>

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 using optical squares and measuring tapes, and permanently marked using steel fence droppers at each corner; or
2. Relevés: unbounded floristic sampling sites with a similar search area to a quadrat. Relevés are typically used where the vegetation stand was too small or too narrow to effectively establish a quadrat, or where the terrain is too rugged to allow for safe establishment. The relevé sampled during the current survey was thoroughly surveyed for flora, but was not permanently marked.

A summary of the sampling effort across all surveys, including the current study, is provided in Table 3.3. A total of 96 quadrats have been assessed within the study area over all survey work to date, 44 of which were resampled during the current survey work. In addition, 60 relevés have been assessed, with one resampled. In addition to the site sampling, systematic and/or targeted rare flora searches have also been undertaken previously in the study area (see Table 3.3); some of these were only identified through data supplied from Rio Tinto, and are therefore not included in Table 3.3 or Appendix 5.

Table 3.3 Summary of total flora sampling effort conducted within the study area.

Project/Survey (Reference)	No. of Quadrats		No. of Relevés		Rare Flora Searches
	New	Resampled	New	Resampled	
BS2					
Current survey: Phase 1, 2018	15	–	1	–	✓
Phase 2, 2019	–	15	6	–	✓
AR-14-12614 Brockman 2 Pit 2/3 Biological Assessment (Astron 2014a)	17	–	–	–	✓
Brockman 2 AR-14-12192 & Silvergrass AR-13-11938 NVCP Level Biological Assessment (Astron 2014b)	10	–	22	–	✓
Brockman Syncline 2 Sustaining Tonnes Project and Pit 7 Land Bridge Vegetation and Flora Survey (Biota 2010a)	7	–	2	–	✓
A Vegetation and Flora Survey of Brockman Syncline 4 (Biota 2005)	1				
Total	50	15	31	0	
Lens G/Diesel					
Current survey: Phase 1, 2018	31	–	6	–	✓
	6	29	3	1	✓
Flora and Vegetation Survey for Nammuldi Silvergrass Extension (Pits 1E, 11-13) (Eco Logical 2014a)	–	–	20	–	✓
Nammuldi Infill Areas Vegetation and Flora Survey (Biota 2010b)	9	–	–	–	✓
Total	46	29	29	1	

The following parameters were recorded for all quadrats and relevés sampled during the current survey work:

- location using MGA coordinates (WGS84 datum, Zone 50K, ± 5 m) recorded with a handheld Global Positioning System (GPS) unit; coordinates were recorded for all four³ corners of a quadrat, and at least the central point of a relevé;
- a digital photograph of each site (usually taken from the north or northwest corner of a quadrat or the central point of a relevé);

³ Sites LDS34 and LDS45 were unpegged, as these were sampled during a mapping traverse where the associated vegetation unit (P23) was recorded for the first time. Site LDS39 was only pegged on three corners (SE corner unpegged).

- habitat description;
- broad soil type;
- fire history (approximate time since last fire, where applicable);
- vegetation description based on the height and estimated percent foliar cover of dominant species (see Appendix 4);
- vegetation condition ranking according to Trudgen (1988) (see Appendix 4); and
- the estimated percent foliar cover of each flora species present within the quadrat, or in the vicinity of the relevé (within a ~30 m radius of the centre point).

Quadrats established during the current survey work were assigned the prefixes 'B2S' (for BS2) or 'LDS' (for Lens G/Diesel), while the relevés were assigned the corresponding prefixes 'B2S-REL' and 'LDS-REL'; each prefix was then followed by consecutive numbers. Locations of sampling sites are provided in Appendix 5. Raw data from the current quadrats and relevés are summarised in Appendix 6.

Mapping notes (see Section 3.2.4.1) were sampled in cases where quadrats or relevés could not be established due to the recent fire. These notes focused on identifying the dominant species (trees, shrubs and spinifex), where possible, to inform the broad vegetation community that may have been present prior to the fire.

3.2.4 Vegetation Description and Mapping

The current assessment involved mapping of previously unsurveyed areas and rationalisation of all historical mapping. The process for mapping the vegetation of previously unsurveyed areas is described in Section 3.2.4.1.

Vegetation maps were created and consolidated using Geographical Information System (GIS) software (QGIS and MapInfo Professional version 11), and subsequently populated with point locations of sampling sites, mapping notes, conservation significant flora and weeds. All maps in this report were produced by Melissa Robinson (GIS Cartographer, Biota) using MapInfo Professional.

Burnt areas were sampled with mapping notes only, given that no relevés or quadrats could be established. Mapping notes were recorded in very small patches of unburnt vegetation, that sometimes remained within the fire scar. Where there was no unburnt vegetation available to record mapping notes, the dominant tree species were identified where possible (e.g. in cases where a little unburnt foliage remained). At both BS2 and Lens G/Diesel the areas which were burnt coincided with homogenous landforms (either stony plains/foothills or stony hills), enabling vegetation mapping completed in unburnt areas to be extrapolated, and this together with investigation of aerial imagery yielded vegetation mapping with relatively high confidence, despite the areas having been burnt. At BS2, this approach was coupled with investigation of historical site data together with previous vegetation mapping, yielding very high confidence vegetation mapping.

3.2.4.1 Vegetation Description and Mapping of Previously Unsourced Areas

Vegetation descriptions were based on the height and estimated percent foliar cover of dominant species (see Appendix 4). Units were defined at the association level (level V as per the National Vegetation Information System (NVIS⁴)), consistent with the Rio Tinto data standards. Descriptions were collected during the quadrat and relevé sampling, and also through the recording of 43 mapping notes (brief notes recorded during the extensive foot traverses through the study area).

The vegetation descriptions were then compared and grouped by similarity; descriptions that were considered alike shared a suite of perennial species with a similar range of percent foliar

⁴ Level V of the NVIS Information Hierarchy, or association level, comprises the dominant growth form, height, cover and up to three species for the three traditional strata (i.e. upper, mid and ground).
<http://www.environment.gov.au/erin/nvis/publications/avam/section-2-1.html#hierarchy>

cover values. These similar descriptions were then used to generate broader, representative vegetation units for the study area. Although some of the vegetation units were initially defined in the field, the majority of the vegetation mapping was completed in the office following the fieldwork. Field data and aerial imagery were reviewed to determine boundaries of vegetation associations, which were then mapped to an appropriate scale. Each vegetation unit mapped for this assessment was given two unique codes:

1. A detailed alphabetic code represented the dominant flora species from the tallest to lowest stratum. Species names were abbreviated to capital letter(s) for the genus, followed by lower case letter(s) for species, with multiple letters used where necessary (e.g. *Eucalyptus leucophloia* = El; *Themeda triandra* = Tht). Various species within the Mulga (*Acacia* 'aneura' species complex) were recorded; these were collectively designated as 'Aan'. Vegetation codes with taxa listed in parentheses refer to sub-dominant taxa.
2. To aid interpretation, each vegetation unit was also assigned a simple alphanumeric code as a unique precursor to the species-driven code. This was a short string comprising a character representing the broad landform group (i.e. 'D' for moderate and minor drainage lines, 'P' for clay plains and stony plains, and 'H' for stony hillslopes, hillcrests and foothills), followed by a number sequence. This code has been kept uniform across the three study areas within the overall B2NAM survey area.

The codes and a full description of each vegetation unit are presented in Appendix 8.

Once the vegetation associations were defined, they were compared against the published descriptions of TECs and PECs to determine whether any of the vegetation associations in the study area corresponded to listed community types.

Similar to mapping of vegetation units, mapping of vegetation condition was completed in the office. Field data (site data, mapping notes, vegetation boundaries and locations of weeds) and aerial imagery were used to determine the boundaries of areas of differing condition, which were then mapped at an appropriate scale. Vegetation condition was ranked using the scale developed by Trudgen (1988) (see Appendix 4).

3.2.5 Searches for Conservation Significant Flora and Weeds

Targeted, non-systematic searches were conducted on foot in areas considered to be potential habitat for conservation significant flora (i.e. Threatened and Priority listed species). The routes of the foot traverses intersected all major vegetation/habitat units in the study area (see Appendix 5). Survey effort was increased in areas that were recognised as having a high potential to support conservation significant or restricted species (e.g. high rocky hill slopes, gullies/gorges, drainage lines, and areas of clay), but was restricted by the substantial burnt areas. The distance between observers varied depending on the terrain.

Locations of species of conservation significance or unknown taxa were recorded using a handheld GPS unit (WGS84 datum). The number of individuals and extent of the population were also recorded for each location, along 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.

3.3 Specimen Identification, Nomenclature and Data Management

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, or was in very good condition (healthy specimens with flowers and/or fruits are often

useful to submit to the WA Herbarium). 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 flora keys, consulting appropriate publications and checking reference collections. Biota botanists identified most specimens, the majority of which were confirmed by Pierre-Louis de Kock (Senior Botanist/Specialist Taxonomist) and Michi Maier (Principal Botanist/Director). Malcolm Trudgen (an expert on flora of the Pilbara) and Steve Dillon (a specialist taxonomist with the WA Herbarium) were consulted to provide advice and identify various unusual or difficult specimens. Dr Matthew Barrett (Research Scientist with the Biodiversity Conservation Centre, Botanic Gardens and Parks Authority) was also consulted to examine several unusual specimens of *Triodia basitricha*.

All data from the current survey were entered into an Access database structure held at Biota (the Site Species Database, developed by Ted Griffin at the request of Malcolm Trudgen of M.E. Trudgen and Associates). Historical records from past surveys in the study area were also entered, and nomenclature was updated where necessary. As part of this process, some records from previous surveys were reassigned; these included a record from BS2 of *Triodia pungens* (Halpern Glick Maunsell 1998), which was considered more likely to represent *T. epactia*.

A full flora species list based on all surveys to date is provided in Appendix 7. Nomenclature and conservation significance rankings used in this report are generally consistent with the current listing of flora recognised by the WA Herbarium on FloraBase⁵ at the time of preparation of this report.

3.4 Floristic Analysis

To assist with placing the vegetation types from the study area into a broader regional context, hierarchical clustering analyses were conducted in PRIMER v6 (Clarke and Gorley 2006) to investigate the similarity of sampling sites based on their floristic composition. The floristic analysis for the current study utilised a single data set derived from the overall B2NAM Study. This incorporated the following sites from within that overall study area:

- 15 quadrats and seven relevés sampled in BS2 in 2018/2019, together with one historical quadrat (BRO30) sampled in this study area during a survey by Biota (2005), and seven quadrats (BKM06, BKM09, BKM11, BKM12, BKM13, BKM14 and BKM15) and 2 relevés (BKM-R01 and BKM-R02) sampled by Biota (2010a);
- 37 quadrats and eight relevés sampled in Lens G/Diesel in 2018/2019, together with nine historical quadrats (ENIF05, ENIF06, ENIF07, ENIF08, ENIF10, ENIF11, ENIF12, ENIF13 and ENIF15) sampled in this part of the study area during a survey by Biota (2010b);
- 40 quadrats and 17 relevés sampled in the Caves Creek study area in 2018/2019, together with three historical relevés (ELWREL21, ELWREL22 and ELWREL54) sampled in this study area during a survey by Biota (2018); and
- 37 quadrats and 11 relevés (two relevés were located outside the study area in close proximity) sampled in the Silvergrass West study area in 2018/2019, together with 13 historical quadrats (SGW 02, SGW 03, SGW 05, SGW 06, SGW 07, SGW 08, SGW 09, SGW 10, SGW 11, SGW 12, SGW 13, SGW 14 and SGW 15) sampled in this study area during a survey by Biota (2010c), and 3 quadrats (TEC10, TEC52 and TEC53) sampled during a survey by Biota (2012a).

Additional regional contextual sites were selected within 50 km of the B2NAM Study, as follows:

- 14 quadrats (BELJ01-BELJ28) sampled in the Rio Tinto Rail Duplication corridor between Bellbird Siding and Juna Downs (Biota 2008);
- 48 quadrats (BRO01-BRO29, and BRO31-BRO50) sampled at Brockman Syncline 4 (BS4) (Biota 2005);

⁵ <http://florabase.dpaw.wa.gov.au>

- 17 quadrats (MMF01-MMF28) and 37 quadrats (BMF01-BMF37) sampled at BS4 Marra Mambas (Biota 2013a, and 2016 respectively);
- 11 quadrats (BNV01-BNV11) sampled at BS4 Eastern Edge (Biota 2014a);
- 34 quadrats (BRL01-BRL37) sampled at Beasley River (Biota 2009);
- 24 quadrats (ENIF01-ENIF14, and WNIF01-WNIF18) and 13 quadrats (NMM01-NMM16) sampled at Nammuldi (Biota 2010b, and 2010d respectively);
- 13 quadrats (ERC17-ERC34) sampled in the Rio Tinto Rail Duplication corridor between Emu and Rosella Sidings (Biota 2010e);
- 52 quadrats (HAM01-HAM70) sampled for the Hamersley Irrigation Project (Biota 2011a);
- 22 quadrats (KOW01-KOW233) sampled in the Koodaideri Western Rail Corridor (Biota 2013b);
- one quadrat (SGS 04) sampled at Silvergrass (Biota 2010c);
- 46 quadrats (TEC01-TEC09, TEC11-TEC51, and TEC54-TEC57) sampled in the Themeda grasslands TEC (Biota 2012a);
- 30 quadrats (TPPC01-TPPC30) sampled in the Tom Price Powerline Corridor (Biota 2010f);
- 20 quadrats (WQR01-WQR20) sampled along the White Quartz Road (Biota 2007a);
- 185 quadrats (WTC01-WTC24, WTE01-WTE51, WTS01-WTS85, WTV01-WTV04, WTW01-WTW50, and WTX01) sampled at Western Turner (Biota 2011b, 2013c);
- eight quadrats (BKM01-BKM05, BKM07-BKM08 and BKM10) sampled at Brockman 2 (Biota 2010a); and
- 208 sites (ELF, ELW, 04Rail, 1331, 1333, CP, FL, JSYFL, LF, and R prefixes) sampled at Eliwana (Biota 2018).

For sites that had been sampled twice, data from the two phases were merged; where cover values differed between phases, the higher value was included.

A combined species list was generated from all sites in the data set, and reviewed for errors and inconsistencies. Old nomenclature was updated, and taxon names and records were then rationalised as follows:

- All weeds were removed except *Cenchrus ciliaris* and *C. setiger*, which were dominant in the vegetation at some sites; these were combined as "*Cenchrus* spp."
- Parasitic mistletoes (*Amyema*, *Diplatia* and *Lysiana* species) were removed.
- Taxa that could potentially refer to more than one entity across different projects (e.g. "*Euphorbia* sp.") were removed.
- Where taxa were considered likely to refer to the same entity, or where identifications may vary between projects, these were merged (e.g. all records of *Triodia epactia* and *T. pungens* were treated as *Triodia* sp. (*epactia/pungens*), and all Mulga taxa were combined as "*Acacia aneura*").
- Species that were present at only single sites were also removed to reduce 'noise' in the data set.

The final species list included 664 entities; taxa that were omitted or merged are listed in Appendix 11.

Analyses were run on a data set containing both perennial and annual flora species combined, as well as only robust perennial species (i.e. with annual and weakly perennial species removed, to mitigate for the effect of sampling in poor seasonal conditions).

Analyses were run using percent cover data (square-root transformed), as well as presence-absence data. 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. The similarity profile analysis (SIMPROF) routine was used to identify significantly different floristic groups. It was intended to use the similarity percentage test (SIMPER) to identify the species contributing to the

floristic groups, however the analysis did not complete (possibly due to the large number of floristic groups). Instead, the species data for particular floristic groups were interrogated to determine which species were likely to be contributing to the identified site clusters. Note that species described as "uncommon in the dataset" in Section 5.3 comprise those present in less than 10% of the total 995 sites.

Results were investigated through outputs including dendrograms (tree diagrams) of site similarity, and Non-metric Multi-Dimensional Scaling plots (NMDS plots). Selected inputs and outputs from the analyses are provided in Appendix 11. Due to the size of the input data set and output dendrograms, these have not been provided in full in this report, however they have been included in the data supply to Rio Tinto.

3.5 Limitations of the Study

The results of the field surveys provide a good representation of the flora and vegetation of the study area and its conservation values. However, there are limitations to this study that must be considered when reviewing and applying the results detailed in this report. As per the EPA's Technical Guidance for botanical surveys for EIA (EPA 2016a), potential constraints and consequent limitations of this Detailed survey assessment are summarised in Table 3.4.

Table 3.4: Potential constraints and limitations of the study area Detailed surveys.

Potential Constraint	Statement of Limitations
1. Availability of contextual information at a regional and local scale	The Brockman 2 and Nammuldi-Silvergrass locality has been well surveyed, and numerous unpublished reports were considered as part of the desktop review. Publicly available databases of information relating to rare species and communities were also searched, as were private company databases. The current survey added considerable new data specific to the study area. Contextual information is therefore not considered to be a limiting factor for this study.
2. Competency/ experience of the team carrying out the survey, including experience in the bioregion surveyed	The field personnel were suitably qualified to identify flora, with at least one botanist in each team of two having a minimum of seven years experience in the Pilbara bioregion (see Section 3.2.1). External specialist taxonomists were contacted for assistance with specimen identifications as required (see Section 3.3). There were therefore no limitations due to experience of personnel.
3. Proportion of flora recorded and/or collected, any identification issues	All vascular flora encountered in the current study area were recorded, comprising 201 native taxa and three weed species for BS2, and 389 native taxa and 10 weed species for Lens G/Diesel. Almost all of the flora specimens collected during the current field survey (>98%) were of sufficient quality to be fully determined to the lowest relevant taxonomic level. A total of 463 native vascular flora species from 161 genera and 54 families have been recorded from the overall Brockman 2 deposits study area based on all survey work to date. Fungi and non-vascular flora (algae, mosses and liverworts) were not systematically surveyed, which is consistent with the accepted level of effort for a survey of this type and scale. One species of alga (<i>Chara</i> sp.) was opportunistically recorded from the 'Plunge Pool' at Lens G/Diesel. The proportion of flora recorded was not considered to be a limitation.
4. Appropriate area fully surveyed (effort and extent)	A Detailed survey as described by EPA (2016a) was considered appropriate to address the requirements for EIA of the B2NAM Study survey area (19,441 ha), of which BS2 (2,800 ha) and Lens G/Diesel (8,128 ha) form a part. Approximately 70% of the BS2 and 14% of Lens G/Diesel had previously been surveyed to a Detailed level (single phase surveys only). Biota was commissioned to conduct additional works in 2018/2019, mainly baseline surveys in previously unsurveyed areas, and quadrat sampling and rationalisation of existing vegetation mapping in areas requiring additional sampling. Due to a fire burning at the time of the Phase 1 survey, approximately 41% of BS2 and 38% of Lens G/Diesel could not be sampled by quadrats or relevés (see Constraint 7). However, for the unburnt sections of the study area, sufficient time was allocated to

Potential Constraint	Statement of Limitations
	the current field survey component (23 person days for BS2 and 44 person days for Lens G/Diesel). These areas were surveyed to a satisfactory level for a Detailed 'dry season' survey (see Section 2.2). Whilst relevés or quadrats could not be established in burnt areas, these areas were sampled with mapping notes where possible (e.g. in the small unburnt sections that often remained). Where there was no unburnt vegetation to record mapping notes, the dominant tree species were identified wherever possible (e.g. where some unburnt foliage remained). At both BS2 and Lens G/Diesel, the areas that were burnt coincided with relatively homogenous landforms (either stony plains/foothills or stony hills); when considered together with investigation of aerial imagery, this enabled vegetation mapping with relatively high confidence, despite the areas having been burnt. At BS2, this approach was coupled with investigation of historical sampling sites and previous vegetation mapping, which yielded very high confidence vegetation mapping. Vegetation mapping was completed, and a total of 52 quadrats (44 of which were resampled) and 16 relevés (one of which was resampled) were established in the study area. These sites supplemented 44 quadrats and 44 relevés that had been previously sampled in the study area. Nine of the 10 vegetation units described for BS2 and 10 of the 18 vegetation units described for Lens G/Diesel included at least three replicated sampling sites. The remaining vegetation units were either recently burnt and were based on mapping notes only (e.g. D16 and D18), or too small to accommodate additional sites (e.g. D7, D8, G2, P23, P24 and H7). No sites were established in unit H11 as this vegetation was extrapolated based on the adjacent mapping for Brockman Marra Mambas (Biota 2016). However, unit H11 was also recorded at Caves Creek, where it was sampled by two sites (CCS19, CCS-REL18). With the exception of D16 and D18, all of the vegetation units are considered to be adequately described by the sites established.
5. Access restrictions within the study area	BS2 contained a good network of established tracks and access across the rail line, and track access was also available throughout Lens G/Diesel. The majority of tracks were in good condition and located close to most survey sites. Small heritage areas in Lens G/Diesel were easily avoided and did not restrict access. During Phase 1, the fire in the study area affected access to some unburnt sections of vegetation, however these areas were able to be surveyed once the fire had extinguished. Access to the study area was therefore not considered to be a limitation.
6. Survey timing, rainfall, season of survey	Both of the field surveys followed relatively poor rainfall. Although the Phase 2 survey was timed appropriately to follow the typical 'wet season', rainfall received in 2019 was well below average (see Section 3.2.2.1). The survey conditions were therefore not favourable for recording annual and cryptic perennial species. Although the lack of rainfall is considered to be a limitation, given the amount of survey work that has been completed in the locality and was drawn on for the desktop review, it is considered that the current study still provides an adequate representation of the flora values of the study area.
7. Disturbance that may have affected the results of survey such as fire, flood or clearing	A large section of the study area was burnt or burning at the time of the Phase 1 survey: approximately 41% (1,147 ha) of BS2 and 38% (3,100 ha) of Lens G/Diesel was affected. These areas could not be sampled with relevés or quadrats during Phase 1 and had not regenerated sufficiently by Phase 2 to warrant sampling. Some of the intact vegetation was also intersected by large, older fire scars. In BS2, the fire particularly affected the hill slopes, where some species of Priority flora were expected to occur. In Lens G/Diesel, the fire similarly affected much of the taller hill slopes, including gullies and breakaways, along with the 'Plunge Pool' in the southeastern corner. Small areas of clearing (including tracks, drill lines, mining and pastoral infrastructure, and active mine operations) were present throughout the study area; these were not surveyed. The extensive disturbance from a recent fire is a limitation for this study.

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4.0 Desktop Assessment

4.1 IBRA Bioregion and Subregion

The study area lies within the Pilbara bioregion, one of 89 bioregions defined by the Interim Biogeographic Regionalisation for Australia (IBRA) (DSEWPaC 2012). The Pilbara bioregion is divided into four subregions. The study area lies within the Hamersley subregion, which is described by Kendrick (2003) as follows:

- "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 *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges. The climate is semi-desert tropical, average 300 mm rainfall, usually in summer cyclonic or thunderstorm events. Winter rain is not uncommon. Drainage into either the Fortescue River (to the north), the Ashburton River to the south, or the Robe River to the west. Subregional area is 6,215,092 ha."

4.2 Land Systems

A total of 105 land systems have been identified and mapped in the Pilbara bioregion⁶. Land systems mapping covering the study area has been prepared by Payne et al. (1988) and van Vreeswyk et al. (2004) (see Figure 4.1 and Figure 4.2).

BS2 intersects three land systems (Boolgeeda, Newman and Platform), while Lens G/Diesel also intersects these same land systems, in addition to another three (McKay, Rocklea and Wannamunna; see Table 4.1). All of the land systems have a broad area of extent in the Pilbara, however Wannamunna is more restricted in its distribution than the other land systems. The study area contains only a very small proportion of each land system.

Table 4.1: Land systems intersected by the study area.
(Data from Payne et al. 1988, and van Vreeswyk et al. 2004.)

Land System	Description	Total Area of Land System in the Pilbara Bioregion (ha)	Area of Land System in the Study Area (ha)		Percentage of Total Land System that occurs in the Brockman 2 Deposits Study Area (%)
			BS2	Lens G/Diesel	
Boolgeeda (RGEBGD)	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	961,635	1,695.3	1,324.6	0.3
McKay (RGEMCK)	Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands.	426,142	–	243.0	<0.1
Newman (RGENEW)	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	1,993,742	1,034.1	3,919.4	0.2
Platform (RGEPLA)	Dissected slopes and raised plains supporting hard spinifex grasslands.	236,336	70.0	2,062.5	0.9

⁶ This information was obtained by merging the Ashburton land system mapping (Payne et al. 1988) and Pilbara land system mapping (van Vreeswyk et al. 2004) and intersecting this with the Pilbara bioregion (Environment Australia 2000).

Land System	Description	Total Area of Land System in the Pilbara Bioregion (ha)	Area of Land System in the Study Area (ha)		Percentage of Total Land System that occurs in the Brockman 2 Deposits Study Area (%)
			BS2	Lens G/ Diesel	
Rocklea (RGEROC)	Basalt hills, plateaus, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands.	2,881,200	–	6.7	<0.1
Wannamunna (RGEWNM)	Hardpan plains and internal drainage tracts supporting mulga shrublands and woodlands (and occasionally eucalypt woodlands).	63,013	–	571.8	0.9

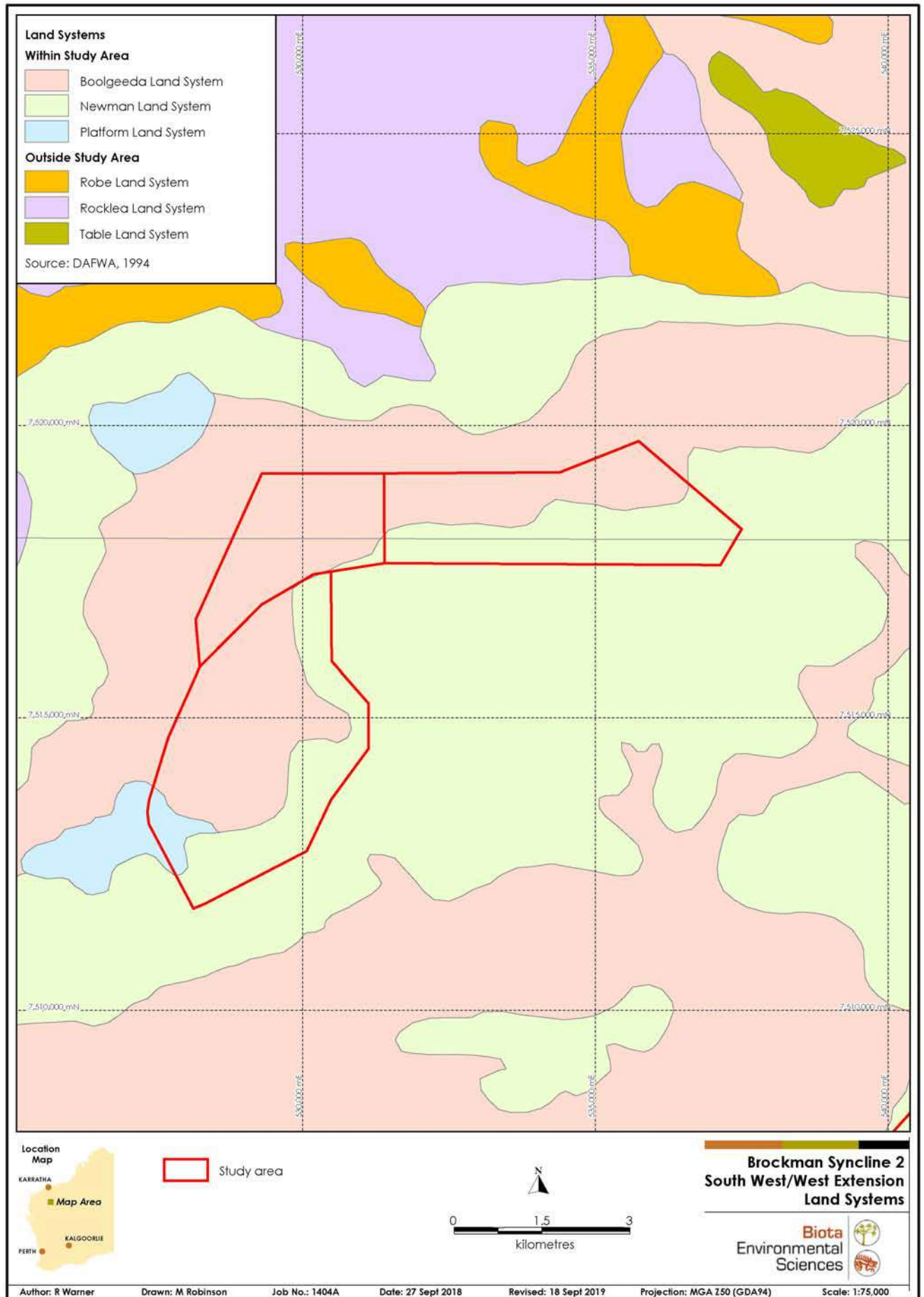


Figure 4.1: Land systems for BS2 and surrounds.

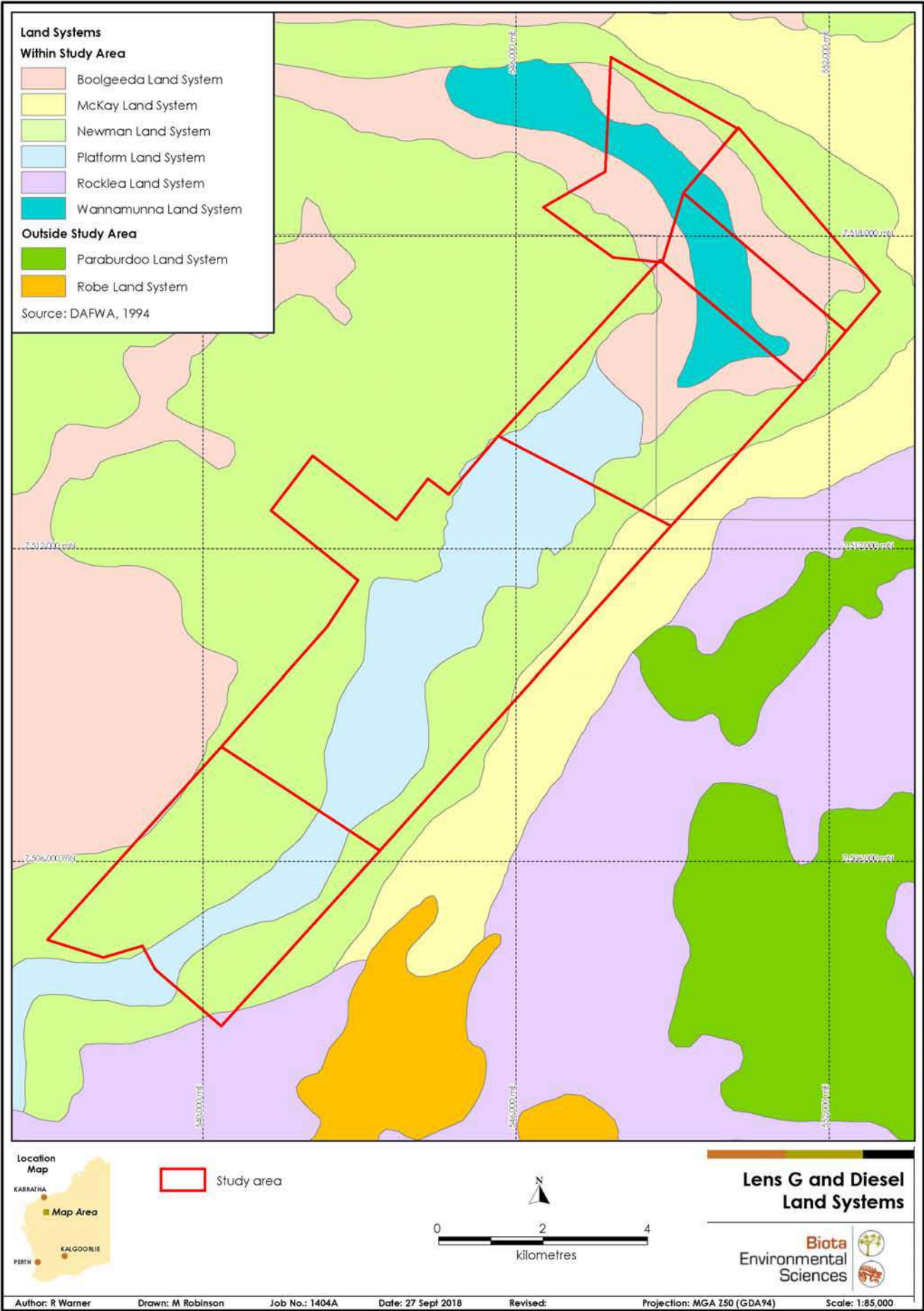


Figure 4.2: Land systems for Lens G/Diesel and surrounds.

4.3 Surface Geology and Soils

Surface geology units in the Brockman 2 locality have been mapped at a scale of 1:250,000 by the Geological Survey of WA (1996). BS2 encompasses seven geological units, while Lens G/Diesel encompasses the same seven units and an additional five units (see Table 4.2, Figure 4.3 and Figure 4.4).

Alluvium (Qa) and Colluvium (Czc and Qc) are the dominant geological units in BS2, occurring on the broad plains, while Brockman Iron Formation (PLHb) dominates the hills along the eastern edge of the study area (see Table 4.2 and Figure 4.3). The dominant geological units in the Lens G/Diesel study area comprise Colluvium (Czc) on the low plains, and Brockman Iron Formation (PLHb) on the hills in the southwestern section (see Table 4.2 and Figure 4.4).

Table 4.2: Geological units occurring in the study area (Geological Survey of Western Australia 1996).

Unit Code	Geological Description	Area (ha)	
		BS2	Lens G/Diesel
AFd	Medium to coarse-grained metadolerite sills intruded into Fortescue Group.	–	278.7
AFj	Jeerinah Formation: pelite, metasandstone, chert, metabasaltic pillow lava and breccia, and metamorphosed felsic volcanic rock.	–	471.3
AHd	Wittenoom Formation: metamorphosed thin to medium-bedded dolomite, dolomitic pelite, chert, and volcanic sandstone.	12.2	5.9
AHm	Marra Mamba Iron Formation: chert, banded iron-formation, and pelite.	–	954.1
AHs	Mount McRae Shale and Mount Sylvia Formation: pelite, chert, and banded iron formation.	230.6	249.1
Czc	Colluvium: partly consolidated quartz and rock fragments in silt and sand matrix; old valley-fill deposits, locally derived.	542.9	2,230.2
Czr	Hematite-goethite deposits on banded iron-formation and adjacent scree deposits.	180.7	419.4
PLHb	Brockman Iron Formation: banded iron-formation, chert, and pelite.	532.8	1,323.3
PLHt	Medium- to coarse-grained metadolerite sills in Hamersley Group.	–	30.6
Qa	Alluvium: unconsolidated silt, sand, and gravel, in drainage channels and adjacent floodplains.	706.4	521.4
Qc	Colluvium - unconsolidated quartz and rock fragments in soil.	593.8	525.4
Qw	Alluvium and colluvium: red-brown sandy and clayey soil on low slope and sheetwash areas.	–	1,118.6

Soil units for the Brockman 2 locality have been mapped at a scale of 1:2,000,000 by Agriculture Western Australia (1967) (see Table 4.3, Figure 4.5 and Figure 4.6).

Two soil units each occupy approximately half of BS2: Oc69 dominates the plains and Fa13 dominates the hills (see Table 4.3 and Figure 4.5). Four soil units have been mapped in Lens G/Diesel, two of which are the same as at BS2; unit Oc69 is similarly dominant on the plains, covering 55% of this study area, however the hills along the eastern edge of Lens G/Diesel are dominated by unit Fa15 (Table 4.3 and Figure 4.6).

Table 4.3: Soil units occurring in the study area (Agriculture Western Australia 1967).

Unit Code	Soil Description	Area (ha)	
		BS2	Lens G/ Diesel
Fa13	Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. This unit is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover: chief soils are shallow stony earthy loams (Um5.51) along with some (Uc5.11) soils on the steeper slopes. Associated are (Dr2.33 and Dr2.32) soils on the limited areas of dissected pediments, while (Um5.52) and (Uf6.71) soils occur on the valley plains.	1,370.9	987.4
Fa15	Ranges of basalt along with shale, chert, jaspilite, and dolomite; some narrow winding valley plains. The soils are frequently shallow and there are extensive areas without soil cover: chief soils are shallow stony loams (Um5.51) along with (Um6.23) soils. (Dr2.33) soils occur on lower slopes extending onto the narrow valley plains where they are associated with (Uf6.71) and (Um5.52) soils.	–	1,941.4
Oc68	Dissected stony pediments with some steep stony hills: chief soils are hard alkaline red soils (Dr2.33) but quite large areas of hard neutral red soils (Dr2.32) also occur. There are also significant areas of (Um5.5) soils.	–	749.4
Oc69	Valley plains with occasional low flat-topped residuals that are often capped by iron ore formations but sometimes by calcrete (kunkar): hard alkaline red soils (Dr2.33) are dominant with some areas of (Dr2.32) soils. Significant areas of (Uf6.71) and (Um5.52) soils also occur. Minor soil occurrences include (Ug5.38) soils in central landscape positions; (Uc1.22) along creek channels; (KS-Gn2.11) on the iron ore formation; and (Um5.11) on the calcrete (kunkar).	1,428.5	4,449.8

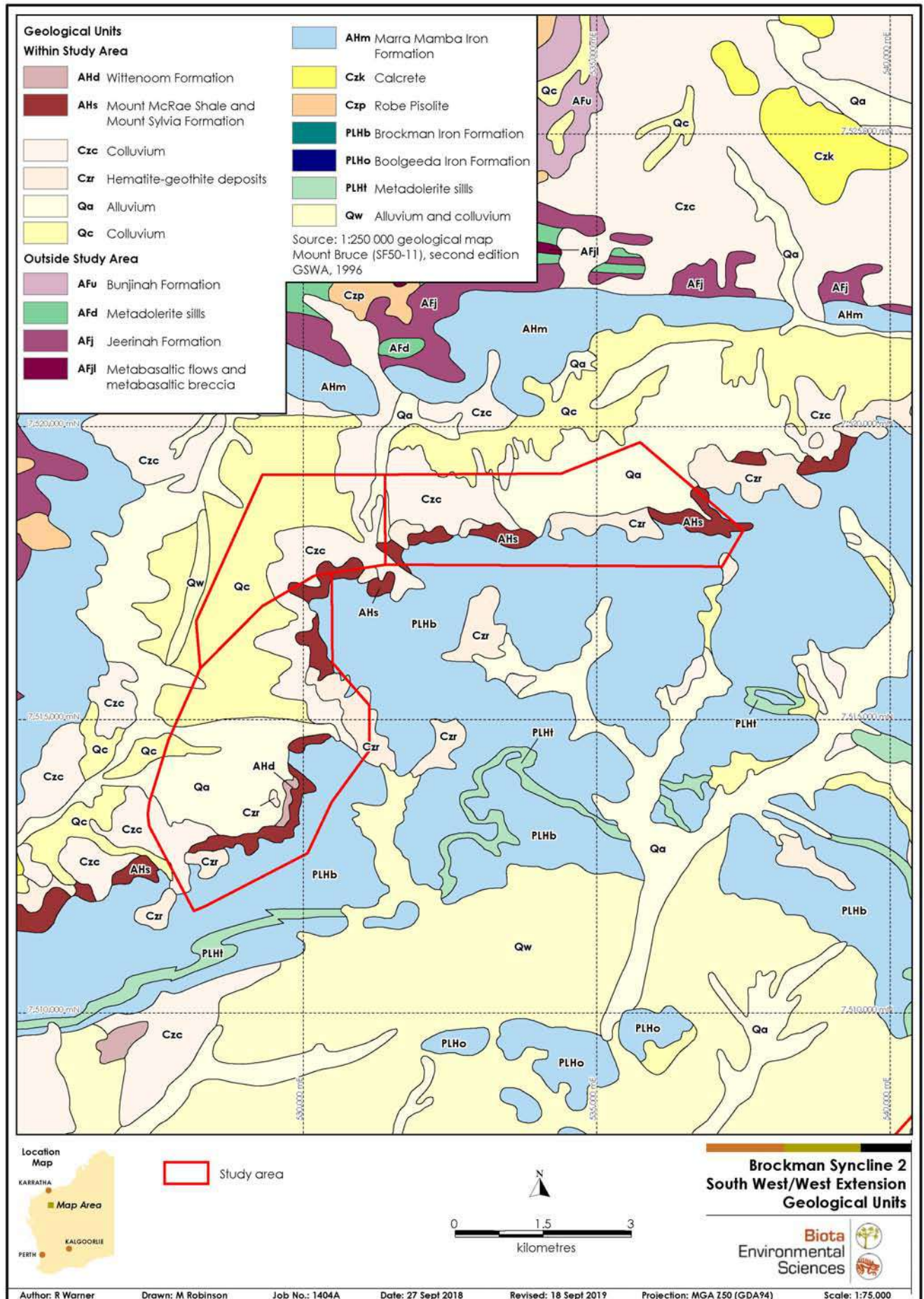


Figure 4.3: Geological units mapped for BS2 and surrounds by the Geological Survey of WA (1996).

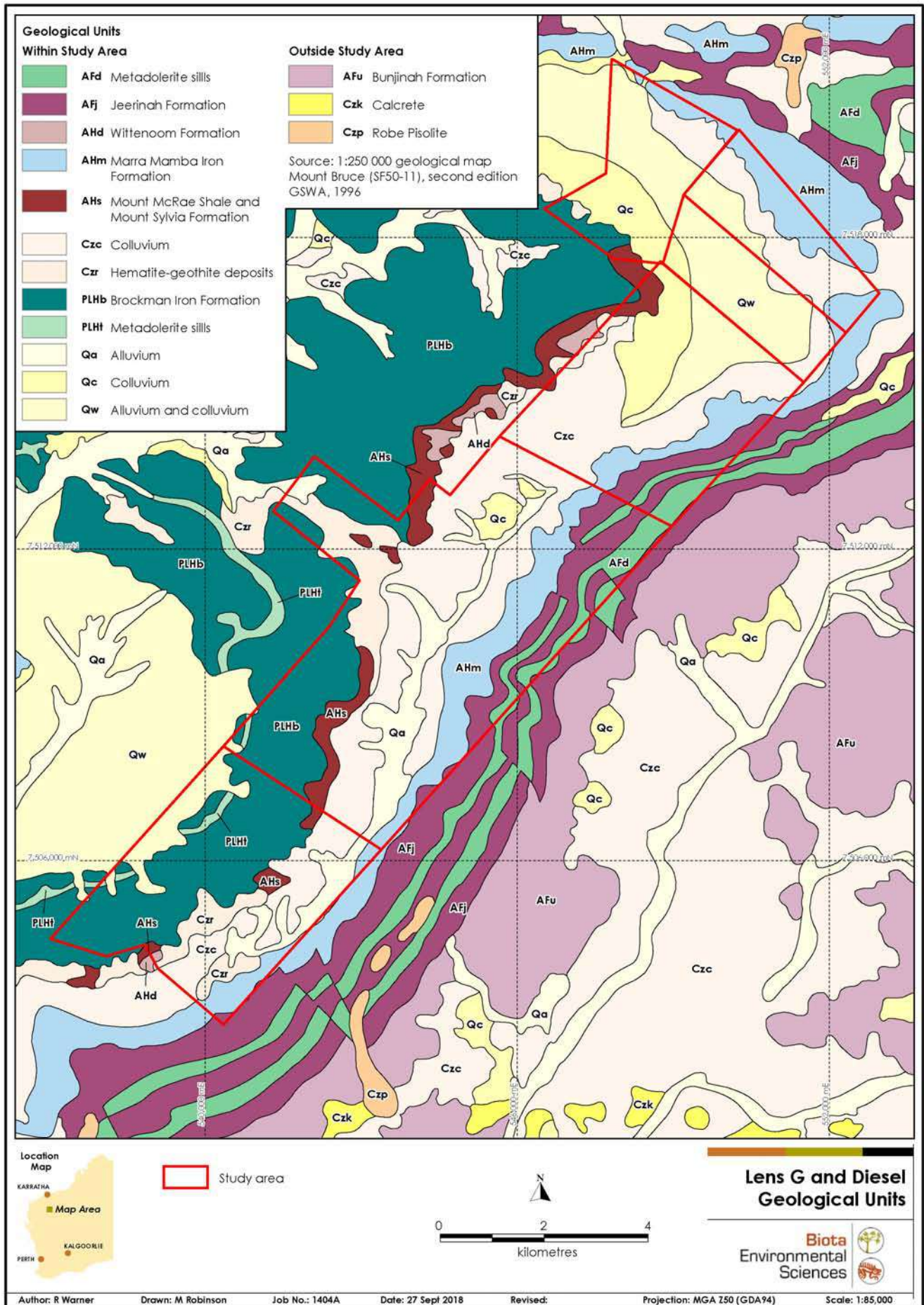


Figure 4.4: Geological units mapped for Lens G/Diesel and surrounds by the Geological Survey of WA (1996).

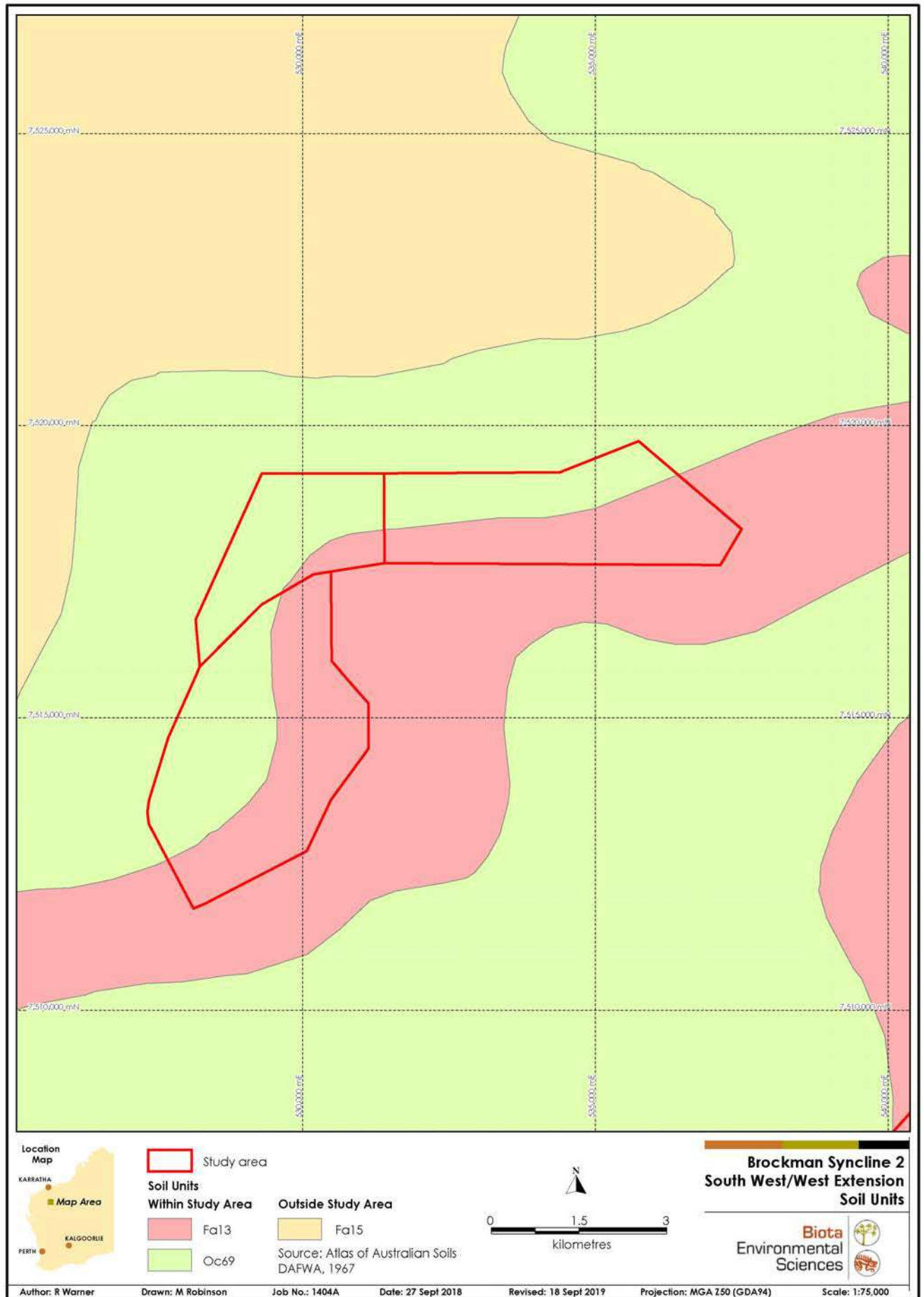


Figure 4.5: Soil units mapped for BS2 and surrounds by Agriculture Western Australia (1967).

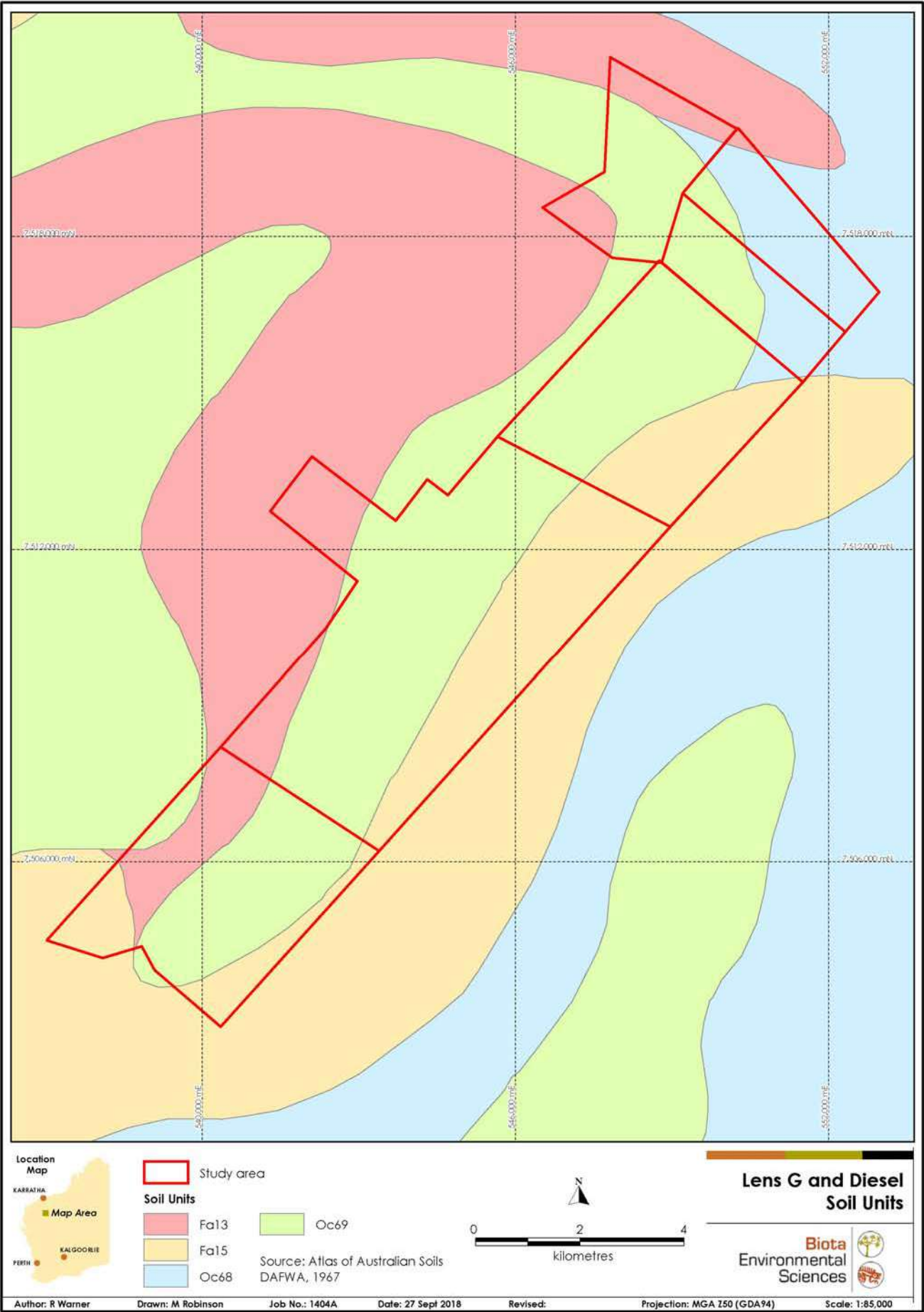


Figure 4.6: Soil units mapped for Lens G/Diesel and surrounds by Agriculture Western Australia (1967).

4.4 Surface Hydrology

BS2 lies to the north and west of a range of large hills, and where this part of the study area intersects these, there are pronounced drainage features, including deep gullies. A moderate creek lies along the western boundary of BS2, with water entering it via westward flow through a network of minor drainage lines.

Lens G/Diesel comprises a narrow polygon aligned northeast to southwest with a moderate-sized creek system running through the centre, draining towards the southwest. There is a large range of hills along the western edge of Lens G/Diesel, with a lower range of hills along the eastern edge. Both ranges direct overland water flow to the centre of Lens G/Diesel via minor and moderate drainage lines, with surface water flow coalescing in a large claypan at the northern end of this part of the study area.

4.5 Beard's Regional Vegetation Mapping

Beard (1975b, 1975a) described and mapped the vegetation of the Pilbara at a scale of 1:1,000,000. The study area is located on the Hamersley Plateau, which lies within the Fortescue Botanical District of the Eremaean Botanical Province as defined by Beard. The vegetation of this province is typically open, and frequently dominated by spinifex, wattles and occasional eucalypts.

BS2 intersects three vegetation units mapped by Beard (see Figure 4.7):

- Hamersley 18: Low woodland, mulga (*Acacia aneura*);
- Hamersley 82: Hummock grassland, low tree steppe; Snappy Gum (*Eucalyptus leucophloia*) over *Triodia wiseana*; and
- Hamersley 175: Short bunch grassland, savanna/grass plain.

Lens G/Diesel intersects three vegetation units mapped by Beard (Figure 4.8), two of which are in common with BS2:

- Hamersley 82: Hummock grassland, low tree steppe; Snappy Gum (*Eucalyptus leucophloia*) over *Triodia wiseana*;
- Hamersley 175: Short bunch grassland, savanna/grass plain; and
- Hamersley 567: Hummock grasslands, shrub steppe; mulga and kanji over soft spinifex and *Triodia basedowii*.

These vegetation units are widespread in the Hamersley subregion and have been subject to only minor clearing (see Table 4.4). However, given the broad scale of Beard's mapping, these units provide only limited information about the vegetation occurring in the study area (see Section 5.0 for a more detailed description of the vegetation).

Table 4.4: Beard's (1975b) vegetation mapping units occurring within the study area and their pre-European and current extent in the subregion (data from the Government of Western Australia 2013).

Beard's Vegetation Mapping Unit	Extent within Hamersley Subregion (ha)		% Remaining	Extent within the Study Area (ha)		Extent within the Study Area (ha) (% of Current Mapped Extent in the Hamersley Subregion)
	Pre-European	Current		BS2	Lens G/Diesel	
Hamersley 18	581,246	580,483	99.9%	3.9	–	3.9 (<0.1%)
Hamersley 82	2,177,574	2,158,235	99.1%	1,579.1	3,437.2	5,016.3 (0.2%)
Hamersley 175	93,040	92,872	99.8%	1,216.3	3,255.3	4,471.6 (4.8%)
Hamersley 567	776,824	776,315	99.9%	–	1,435.5	1,435.5 (0.2%)

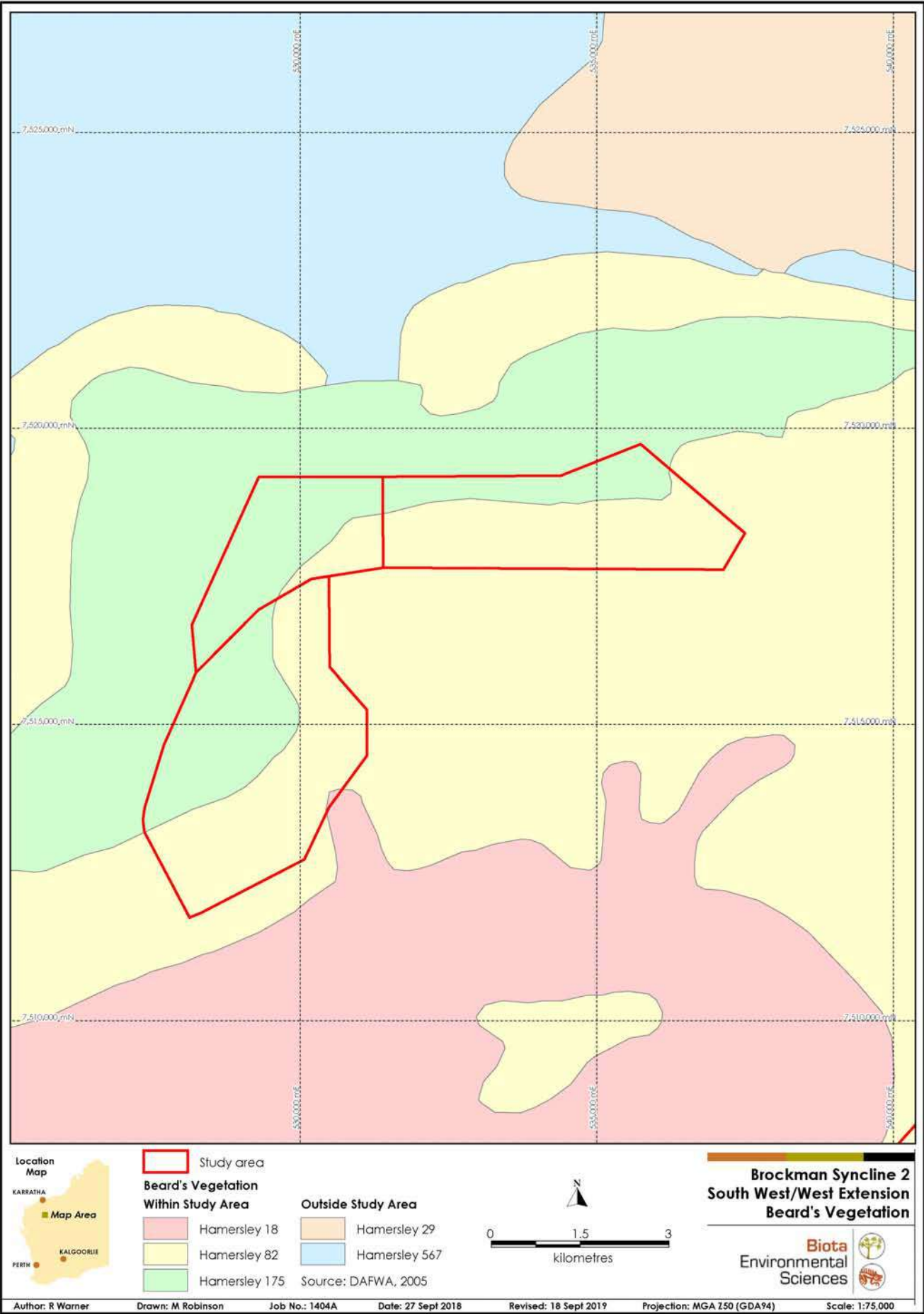


Figure 4.7: Beard's (1975b) vegetation mapping for BS2 and surrounds.

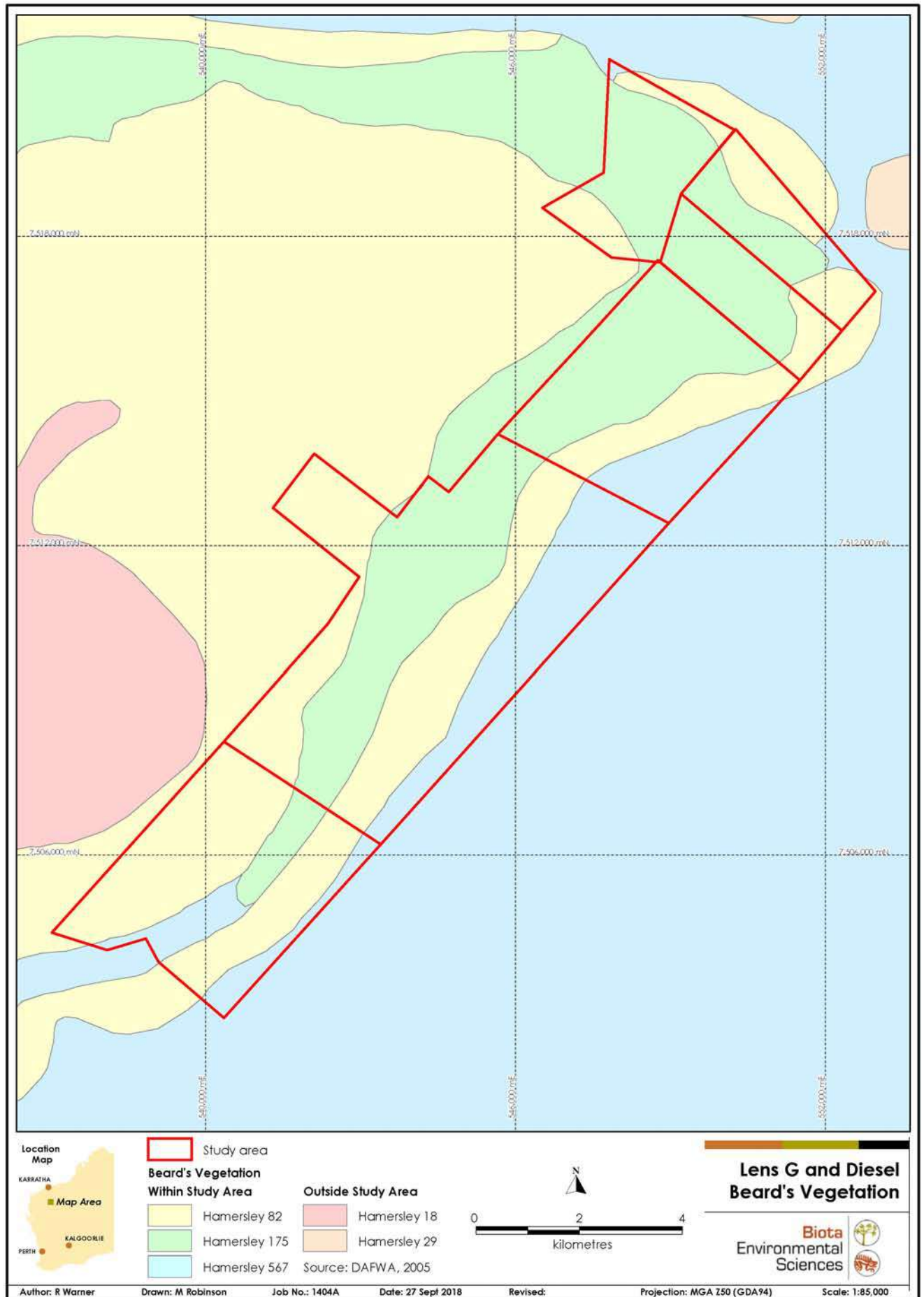


Figure 4.8: Beard's (1975b) vegetation mapping for Lens G/Diesel and surrounds.

4.6 Conservation Reserves in the Locality

The IBRA provides a national system for assessing the condition of native ecosystems and their level of protection in the National Reserve System. During the bioregional audit conducted in 2003 by the then department of Conservation and Land Management (now the DBCA), the Pilbara bioregion was considered to be under-represented by the National Reserve System, with less than 10% of the bioregion protected. However, of the four subregions within the Pilbara bioregion, the Hamersley subregion has the highest percentage of area under some form of protection (Kendrick 2003).

Karijini National Park is the closest conservation reserve to the study areas, situated 58 km east of BS2 and 44 km east of Lens G/Diesel (Figure 4.10).

4.7 Environmentally Sensitive Areas

ESAs are defined in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005* under section 51B of the *WA Environmental Protection Act 1986* (EP Act). These include areas that are: World Heritage sites; included on the Register of the National Estate; defined wetlands; vegetation containing Threatened flora; TECs; and Bush Forever sites.

One ESA occurs in the locality, comprising the 'Themeda Grasslands of Hamersley Station' TEC. The closest areas of this TEC are approximately 15 km north-northwest of BS2 and 20 km northeast of Lens G/Diesel (see Figure 4.10 and Section 4.9.1).

4.8 Previous Botanical Surveys in the Study Area and Locality

The results of a selection of botanical surveys (i.e. major surveys completed within the locality surrounding the B2NAM Study survey area) were reviewed, with a focus on identifying records of TECs, PECs, and flora species of conservation significance known from the locality. The locations of these surveys are displayed in Figure 4.9. The findings from the most relevant surveys (i.e. particularly those that were in close proximity and included similar habitats to those in the current study area) are summarised in Table 4.5.

For all of the surveys, it was recognised that these comprised "snap-shot" assessments of the flora at a particular time, and that further species would be recorded with additional survey work; the species lists should therefore be taken as indicative rather than exhaustive. Any other key limitations mentioned in the reports that are relevant to their current use are listed in Table 4.5.

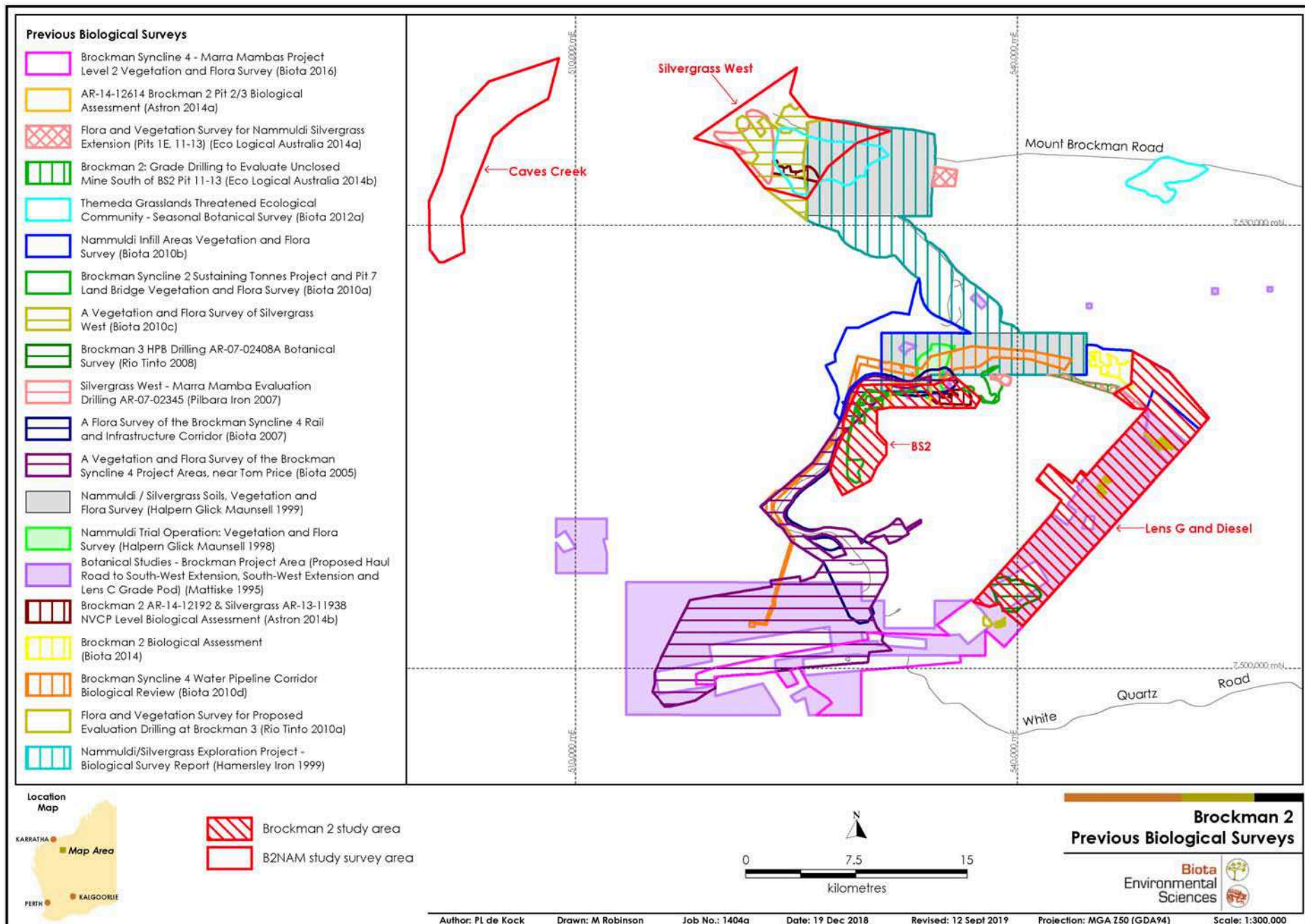


Figure 4.9: Locations of previous botanical surveys in the vicinity of the B2NAM Study survey area that are most relevant to the current study area.

Table 4.5: A summary of the major vegetation and flora surveys completed in the vicinity of the study area.

Project/Survey (Reference)	Survey Type: Date	Size of Area (ha) †	No of Native Taxa	Features of Conservation Significance: Threatened Ecological Communities (TECs)/ Priority Ecological Communities (PECs) Threatened / Priority Flora	Stated Limitations Relevant to the Current Use of this Survey
Brockman Syncline 4 – Marra Mambas Project Level 2 Vegetation and Flora Survey (Biota 2016)	Level 2 survey: 30 July – 9 August 2015.	5,028	410	- No TECs. - No PECs. - No Threatened flora. - Twelve Priority flora species: - Two Priority 1: <i>Goodenia pedicellata</i>, <i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354). - Three Priority 2: <i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708), <i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725), <i>Pentalepis trichodesmoides</i> subsp. <i>hispida</i>. - Five Priority 3: <i>Eremophila magnifica</i> subsp. <i>velutina</i>, <i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479), <i>Ptilotus subspinescens</i>, <i>Sida</i> sp. Hamersley Range (K. Newbey 10692), <i>Triodia basitricha</i>. - Two Priority 4: <i>Acacia bromilowiana</i>, <i>Goodenia nuda</i>.	Some areas of very steep slopes and vertical free faces could not be accessed due to safety issues; some flora taxa may have therefore been overlooked.
AR-14-12614 Brockman 2 Pit 2/3 Biological Assessment (Astron 2014a)	Level 1 survey: September 2014.	379 B	136	- No TECs. - No PECs. - No Threatened flora. - Six Priority flora species: - One Priority 1: <i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354). - Four Priority 3: <i>Eremophila magnifica</i> subsp. <i>velutina</i>, <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642), <i>Sida</i> sp. Hamersley Range (K. Newby 10692). - One Priority 4: <i>Acacia bromilowiana</i>.	None stated.
Flora and Vegetation Survey for Nammuldi Silvergrass Extension (Pits 1E, 11-13) (Eco Logical 2014a)	Level 1 survey: 6–13 June 2013, and 26–29 May 2014.	461 B	215	- No TECs. - No PECs. - No Threatened flora. - Six Priority flora taxa: - One Priority 1: <i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354). - One Priority 2: <i>Abutilon</i> sp. Quobba (H. Demarz 3858). - Four Priority 3: <i>Eremophila magnifica</i> subsp. <i>velutina</i>, <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642), <i>Sida</i> sp. Hamersley Range (K. Newbey 10692).	The <i>Abutilon</i> sp. Quobba (H. Demarz 3858) record was from a previous survey, and additional collections made at the location were not confirmed as this species.

Project/Survey (Reference)	Survey Type: Date	Size of Area (ha) †	No of Native Taxa	Features of Conservation Significance: Threatened Ecological Communities (TECs)/ Priority Ecological Communities (PECs) Threatened / Priority Flora	Stated Limitations Relevant to the Current Use of this Survey
Brockman 2: Grade Drilling to Evaluate Unclosed Mine South of BS2 Pit 11-13 (Eco Logical 2014b)	Level 1 survey: 5–13 June 2013.	136	205	- No TECs. - No PECs. - No Threatened flora. - One Priority 3 species: <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642).	None stated.
Themeda Grasslands Threatened Ecological Community - Seasonal Botanical Survey (Biota 2012a)	Level 2 survey: May 2011 (Phase 1) and August 2011 (Phase 2).	50,802	218	- Themeda grasslands TEC. - Brockman Iron cracking clay communities of the Hamersley Range Priority 1 PEC - No Threatened flora. - Ten Priority flora species: - One Priority 2: <i>Teucrium pilbaranum</i>. - Eight Priority 3: <i>Astrebla lappacea</i>, <i>Glycine falcata</i>, <i>Iotasperma sessilifolium</i>, <i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479), <i>Rostellularia adscendens</i> var. <i>latifolia</i>, <i>Stackhousia clementii</i>, <i>Swainsona thompsoniana</i>, <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431). - One Priority 4: <i>Goodenia nuda</i>.	Some specimen identifications could not be resolved within the timeframe of this study.
Nammuldi Infill Areas Vegetation and Flora Survey (Biota 2010b)	Level 1 survey: 12–19 October 2009.	3,984 Ø	252	- No TECs. - No PECs. - No Threatened flora. - Three Priority 3 flora species: <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794), <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Ptilotus subspinescens</i>.	- Survey conditions were dry, with below average rainfall for the majority of the six months prior to the surveys. Conditions were not optimal for collection of ephemeral flora or cryptic perennial species. - The entire survey areas were not systematically searched for rare flora.
Brockman Syncline 2 Sustaining Tonnes Project and Pit 7 Land Bridge Vegetation and Flora Survey (Biota 2010a)	Level 1 survey: 27 April–6 May 2010.	461 B	182	- No TECs. - No PECs. - No Threatened flora. - Two Priority 3 flora species: <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642).	- The entire study area was not systematically searched for rare flora. - Conditions at the time of the survey were not favourable for collection of ephemeral and cryptic perennial flora species, due to limited rainfall preceding the survey.

Project/Survey (Reference)	Survey Type: Date	Size of Area (ha) †	No of Native Taxa	Features of Conservation Significance: Threatened Ecological Communities (TECs)/ Priority Ecological Communities (PECs) Threatened / Priority Flora	Stated Limitations Relevant to the Current Use of this Survey
A Vegetation and Flora Survey of Silvergrass West (Biota 2010c)	1–7 April 2009.	2,115	306	- Themeda grasslands TEC. - Brockman Iron cracking clay PEC. - No Threatened flora. - Six Priority 3 flora species: <i>Astrebla lappacea</i>, <i>Eremophila magnifica</i> subsp. <i>velutina</i>, <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Rostellularia adscendens</i> var. <i>latifolia</i>, <i>Swainsona thompsoniana</i>, <i>Themeda</i> sp. Hamersley Station (M.E Trudgen 11431).	The entire study area was not systematically searched.
Botanical Survey for Brockman 3 HPB Drilling AR-07-02408 A & B (Rio Tinto 2008)	Level 1 survey: June 2008.	524 Ø	187	- No TECs. - No PECs. - No Threatened flora. - No Priority flora species.	Only one site visit was conducted. While conditions at that time were fairly favourable due to seasonal rains, some species with low abundance (mainly annuals) could have been overlooked.
Botanical Survey Work for Silvergrass West – Marra Mamba Evaluation Drilling – Over ML 272SA AR_07_02345 (Pilbara Iron 2007)	Level 1 survey: August 2008.	930	198	- No TECs. - No PECs. - No Threatened flora. - One Priority 3 flora species: <i>Eremophila magnifica</i> subsp. <i>velutina</i>.	The area was only surveyed once, and some ephemeral flora were probably absent from the survey area due to the dry conditions at the time of the survey.
A Flora Survey of the Brockman Syncline 4 Rail and Infrastructure Corridor (Biota 2007b)	Level 1 survey: May/June 2006, January 2007.	4,278 B	337	- No TECs. - No PECs. - No Threatened flora. - Three Priority flora species: - Two Priority 3: <i>Eremophila magnifica</i> subsp. <i>velutina</i> and <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301). - One Priority 4: <i>Goodenia nuda</i>.	- The survey was done at an appropriate time for detecting most ephemeral flora, however some species would not have been present or identifiable at the time (e.g. annual daisies). - Small sections of the southern end of the survey area had been recently burnt.

Project/Survey (Reference)	Survey Type: Date	Size of Area (ha) †	No of Native Taxa	Features of Conservation Significance: Threatened Ecological Communities (TECs)/ Priority Ecological Communities (PECs) Threatened / Priority Flora	Stated Limitations Relevant to the Current Use of this Survey
A Vegetation and Flora Survey of the Brockman Syncline 4 Project Area, near Tom Price (Biota 2005)	Rare flora searches: 27 February – 7 March, 10–15 April, 26–29 May, and 4–11 June 2003. Level 2 survey: 6–16 October 2004.	11,796 B	367	- No TECs. - No PECs. - No Threatened flora. - Three Priority flora species: - Two Priority 3: <i>Ptilotus subspinescens</i> and <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301). - One Priority 4: <i>Eremophila magnifica</i> subsp. <i>magnifica</i>.	- The field work was done at an appropriate time for detecting most ephemeral flora, however some species would not have been present or identifiable at the time of survey (e.g. annual daisies). - The sites were only sampled once; additional species would probably be recorded if the sites were revisited. - The study sampled only a portion of the BS4 Project area; not all of the variation in vegetation, nor all the flora species, would have been identified.
Nammuldi / Silvergrass Soils, Vegetation and Flora Survey (Halpern Glick Maunsell 1999)	Level 1 survey: August to September 1998.	9,633	358	- No TECs or PECs. - No Threatened flora. - One Priority 3 flora species: <i>Gymnanthera cunninghamii</i>.	None stated,
Nammuldi Trial Operation Vegetation and Flora Survey (Halpern Glick Maunsell 1998)	Level 1 survey: July 1998.	578	157	- No TECs. - No PECs. - No Threatened flora. - No Priority flora species.	None stated.
Botanical Studies - Brockman Project Area (Proposed Haul Road to South-West Extension, South-West Extension and Lens C Grade Pod) (Mattiske 1995)	Level 1 survey: date not supplied.	19,453 B, Ø	316	- No TECs. - No PECs. - No Threatened flora. - No Priority flora species.	None stated.

Project/Survey (Reference)	Survey Type: Date	Size of Area (ha) †	No of Native Taxa	Features of Conservation Significance: Threatened Ecological Communities (TECs)/ Priority Ecological Communities (PECs) Threatened / Priority Flora	Stated Limitations Relevant to the Current Use of this Survey
Brockman 2 AR-14-12192 & Silvergrass AR-13-11938 NVCP Level Biological Assessment (Astron 2014b)	Level 1 survey: 25 June – 4 July 2014.	400 β (between Brockman and Silvergrass)	144	– No TECs. – No PECs. – No Threatened flora. – Five Priority flora species: – One Priority 1: <i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354). – One Priority 2: <i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708). – Two Priority 3: <i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642), <i>Sida</i> sp. Hamersley Range (K. Newby 10692). – One Priority 4: <i>Acacia bromilowiana</i>.	• The northernmost 100 m of intact vegetation was unable to be accessed due to restrictions imposed for health and safety reasons. These areas were not visited to search for Priority flora or map vegetation.
Brockman 2 Biological Assessment (Biota 2014b)	Level 1 survey: 20–22 June 2014.	311 θ	188	– No TECs. – No PECs. – No Threatened flora. – Six Priority flora species: – Two Priority 1: <i>Euphorbia inappendiculata</i> var. <i>queenslandica</i> and <i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684) (listed as <i>Vittadinia pustulata</i>). – Three Priority 3: <i>Aristida jerichoensis</i> var. <i>subspinulifera</i>, <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) and <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431). – One Priority 4: <i>Goodenia nuda</i>.	• The westernmost corner of the study area (0.2 ha) could not be surveyed due to the presence of asbestos in the area. • Some annual flora species may have been absent at the time of the survey.
Brockman Syncline 4 Water Pipeline Corridor Biological Review (Biota 2010g)	Rare flora survey: 9–12 June 2010.	1,711 β	581	– No TECs. – No PECs. – No Threatened flora. – Two Priority flora species: – One Priority 3: <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301). – One Priority 4: <i>Acacia bromilowiana</i>.	• Rainfall was poor in the three months preceding the 2010 rare flora survey.
Flora and Vegetation Survey for Proposed Evaluation Drilling at Brockman 3 (Rio Tinto 2010a)	Level 1 survey: 25–26 April 2010	78	100	• No TECs. • No PECs. • No Threatened flora. • One Priority 3 flora species: <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794).	• The study area was assessed over a single period only. • The survey was conducted at a relatively dry time of the year; many ephemeral species may have been missed.
Nammuldi/Silvergrass Exploration Project - Biological Survey Report (Hamersley Iron 1999)	Level 1 survey: May 1999.	13,289 β	358	• No TECs. • No PECs. • No Threatened flora. • No Priority flora species.	• None stated.

† β: partly overlaps BS2; θ: partly overlaps Lens G/Diesel.

4.9 Communities of Conservation Significance from the Locality

4.9.1 TECs Known from the Locality

TECs are described by DBCA as biological assemblages occurring in a particular habitat, which are under threat of modification or destruction from various processes (as per DEC 2010) (see Appendix 1). TECs are listed by the WA Minister for Environment and are significant at the State level, being protected as being protected under the WA *Biodiversity Conservation Act 2016* (the BC Act), as well as having protection as ESAs under the EP Act.

Two TECs are listed for the Pilbara region: the 'Themeda grasslands on cracking clays (Hamersley Station, Pilbara)' (hereafter referred to as the Themeda grasslands TEC), and the 'Ethel Gorge aquifer stygobiont community' (DBCA 2018). As the latter TEC refers to a fauna community, it is not considered further in this report.

The closest areas of the Themeda grasslands TEC are located 15 km to the north-northwest of BS2 and 20 km northeast of Lens G/Diesel (see Figure 4.10). This TEC is listed as Vulnerable and described as 'grassland plains dominated by the perennial *Themeda* (kangaroo grass) and many annual herbs and grasses' (DBCA 2018). There is no suitable habitat for this TEC in the study area.

4.9.2 PECs Known from the Locality

PECs are biological communities that are recognised 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).

Forty-two PECs are listed for the Pilbara bioregion (DBCA 2019). Four of these PECs occur within 40 km of the B2NAM Study survey area (see Figure 4.10), but only two are located within 40 km of the current study area:

1. Priority 1 'Brockman Iron cracking clay communities of the Hamersley Range'

This PEC occurs in the Hamersley Range on cracking clays, derived in valley or depositional floors. It is described as a "rare tussock grassland dominated by *Astrebla lappacea* (not every site has presence of *Astrebla*) and is known to occur near West Angelas, Newman, Tom Price and boundary of Hamersley and Brockman Stations" (DBCA 2019). This PEC is considered to be at risk from grazing, mining and infrastructure developments, as well as altered hydrology. The closest mapped areas of this community are located 13 km north-northwest of BS2 and 11 km north of Lens G/Diesel (Figure 4.10). There is no suitable habitat for this PEC in the study area.

2. Priority 2 'Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara Region'

This PEC "includes flora with restricted distributions or populations that are highly disjunct or are major range extensions from northern and eastern Australia. These include: *Imperata cylindrica*, *Cladium procerum*, *Schoenus falcatus*, *Fimbristylis sieberiana* (P3), and *Livistona alfredii* (P4). In the Pilbara these taxa are almost exclusively restricted to the riparian zones of permanent wetlands with high soil moisture maintained by groundwater flows. Occurrences are disjunct with sites typically associated with groundwater discharge in gorge and valley wetlands that are often coupled with significant shading" (DBCA 2019). The closest mapped occurrence of this community (as designated by DBCA) is 31 km to the northwest of BS2 at Palm Springs (Figure 4.10). An unmapped occurrence of this community occurs just outside the northern boundary of the northwestern corner of the Silvergrass West study area (19 km northwest of BS2). There is no suitable habitat for this PEC in BS2 however a small, apparently permanent, spring is known to occur in the southeastern section of Lens G/Diesel.

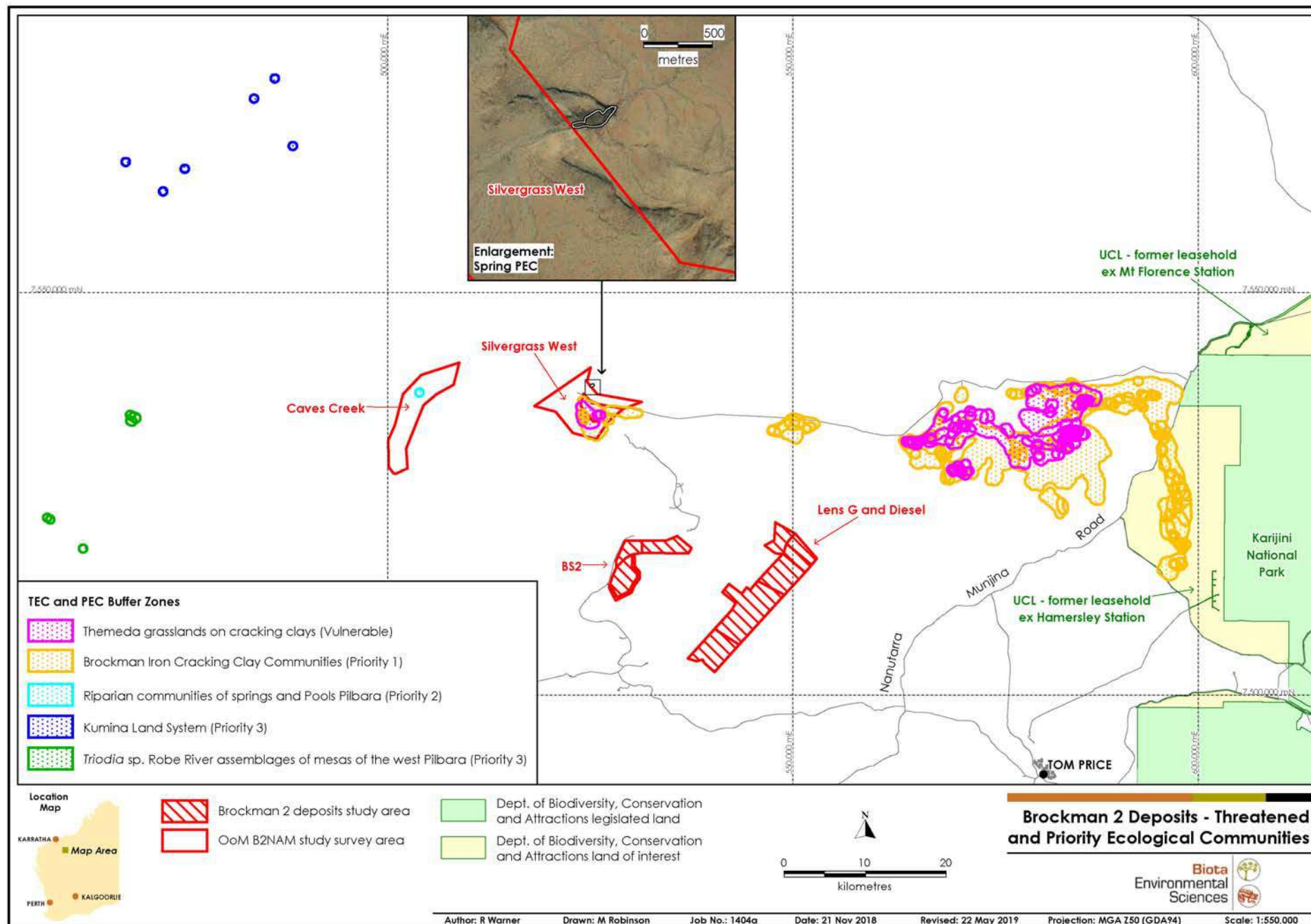


Figure 4.10: Locations of TECs and PECs within 40 km of the B2NAM Study survey area.

4.10 Flora of Conservation Significance from the Locality

4.10.1 Threatened Flora

Three Threatened flora species are currently listed for the Pilbara bioregion under State legislation, some of which are also listed under Federal legislation: *Aluta quadrata*, *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) and *Thryptomene wittweri*. *Aluta quadrata* is currently only listed as a Threatened species under the WA BC Act. *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) and *Thryptomene wittweri* are listed as Threatened species under both the WA BC Act and the Commonwealth EPBC Act.

- ***Aluta quadrata*** is a perennial shrub that is currently only known from south-facing slopes and gullies on a range of hills near Paraburdoo. Given the restricted distribution of this species, it would not occur in the study area.
- ***Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4)** is a shrub growing to approximately 1.5 m tall, which is described as occurring on steep hill slopes with a granite, ironstone or sandstone substrate. This species occurs in the vicinity of Marble Bar, and the current collection locations occur over a range of less than 40 km east-west. Given the restricted distribution of this species, it would not occur in the study area.
- ***Thryptomene wittweri*** (Mountain Thryptomene) is a spreading, perennial shrub occurring in skeletal stony soils on breakaways and in drainage channels, typically high in the landscape (elevations >1,000 m). Locations in the Pilbara are restricted to the vicinity of Mt Meharry. As the study area occurs outside the known range of this species and as there is no suitable habitat (hills >1,000 m in elevation), this species would not occur.

4.10.2 Priority Flora

Based on the database searches and literature reviews conducted for this study, a total of 46 Priority flora taxa had been recorded in the locality of the study area prior to the current surveys (see Appendix 3).

A total of 15 Priority flora taxa have been recorded from the study area during previous surveys (nine taxa from BS2 and 12 taxa from Lens G/Diesel; see Table 4.6). Locations of these taxa are shown on the maps in Appendix 9, together with a table of the records.

Table 4.6: Priority flora species recorded previously within the study area.

Status	Species	Study Area	
		BS2	Lens G/Diesel
Priority 1	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	✓	✓
	<i>Tetralthea butcheriana</i>	–	✓
Priority 2	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	✓	✓
	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	–	✓
Priority 3	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	✓	–
	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	✓	–
	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	✓	–
	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	–	✓
	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	✓	✓
	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	✓	✓
	<i>Triodia basitricha</i>	–	✓
Priority 4	<i>Acacia bromilowiana</i>	✓	✓
	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	✓	✓
	<i>Goodenia nuda</i>	–	✓
	<i>Lepidium catapycnon</i>	–	✓

Based on the known distributions and habitat preferences of the other Priority flora known from the locality, compared with the habitats that appeared to be present in the study area, 26 additional Priority flora taxa were identified through the desktop review as having the potential to occur in the study area; 15 at BS2 and 20 at Lens G/Diesel (Table 4.7). These were those species designated as either "likely to occur" or that "may potentially occur" based on the criteria in Table 3.1.

The 32 taxa listed in Table 4.6 and Table 4.7 were considered the key target taxa for the current field surveys. The habitats present in the study area were not considered prospective for any of the other Priority flora identified as occurring in the locality of the study area (for a discussion of reasoning, see Appendix 3).

Table 4.7: Additional Priority flora species with the potential to occur in the study area, based on the desktop review.

L = Likely to occur; P = May potentially occur; R = Recorded.

Status	Species	BS2	Lens G/Diesel
Priority 1	<i>Bothriochloa decipiens</i> var. <i>cloncurrrens</i>	–	P
	<i>Calotis squamigera</i>	P	P
	<i>Euphorbia inappendiculata</i> var. <i>queenslandica</i>	–	L
	<i>Tetradthea butcheriana</i>	P	R
	<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)	–	P
Priority 2	<i>Euphorbia australis</i> var. <i>glabra</i>	–	P
	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	P	R
	<i>Pentalepis trichodesmoides</i> subsp. <i>hispida</i>	P	L
Priority 3	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	P	P
	<i>Dampiera anonyma</i>	L	P
	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	R	L
	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	R	P
	<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	–	P
	<i>Grevillea saxicola</i>	P	P
	<i>Gymnanthera cunninghamii</i>	P	P
	<i>Indigofera gilesii</i>	L	L
	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	R	L
	<i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	–	P
	<i>Ptilotus subspinescens</i>	–	P
	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	L	R
	<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P	L
	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	–	P
	<i>Triodia basitricha</i>	P	R
Priority 4	<i>Goodenia nuda</i>	L	R
	<i>Lepidium catapycnon</i>	P	R
	<i>Ptilotus mollis</i>	L	L

4.11 Introduced Flora Species from the Locality

A total of eight introduced flora species have previously been recorded from the study area: six from BS2 and three from Lens G/Diesel. These species are summarised in Table 4.8, with locations presented in Appendix 10.

None of the species recorded are listed as declared pests for the Pilbara region pursuant to the WA Biosecurity and Agriculture Management Act 2007 (BAM Act), however **Aerva javanica*, **Cenchrus ciliaris* and **Rumex vesicarius* are generally recognised as serious environmental weeds.

Table 4.8: Introduced species recorded previously within the study area.

Species	Common Name	BS2	Lens G/Diesel
* <i>Aerva javanica</i>	Kapok Bush	✓	
* <i>Bidens bipinnata</i>	Bipinnate Beggartick	–	✓
* <i>Cenchrus ciliaris</i>	Buffel Grass	✓	–
* <i>Flaveria trinervia</i>	Speedy Weed	✓	–
* <i>Rumex vesicarius</i>	Ruby Dock	✓	✓
* <i>Sigesbeckia orientalis</i>	Indian Weed	–	✓
* <i>Solanum nigrum</i>	Blackberry Nightshade	✓	–
* <i>Sonchus oleraceus</i>	Common Sowthistle	✓	–

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5.0 Vegetation of the Study Area

5.1 Overview

A total of 25 vegetation types have been described and mapped for the study area (see Appendix 8).

Ten vegetation types have been described and mapped for BS2, as presented in Appendix 8. Equivalent vegetation to eight of the vegetation units was described during previous surveys of the study area, comprising four units described by Biota (2007b, and 2010a), three units described by Astron (2014b), and one unit described by Rio Tinto (2015a). The remaining vegetation units, P16 (EIAeTw) and G3 (EICfApAanDpERImTe), were newly described during the current study.

A total of 18 vegetation types have been described and mapped for Lens G/Diesel, as presented in Appendix 8. Five of the vegetation units had been described during previous surveys; four were described by Biota (2012b, 2016), and a single unit was described by Eco Logical (2014a). The remaining 13 vegetation units were newly described during the current study.

Each vegetation unit is described in Appendix 8, together with its distribution within the study area. Representative photos of the vegetation units are presented in Plate 5.1 to Plate 5.23. Note that no photo is available for unit D18 from BS2; this unit was burnt during the survey period in 2018 and no past photo was available. The vegetation unit was described from unburnt foliage remaining on the dominant perennial species, in addition to previous mapping described by Rio Tinto (2015a). Similarly, unit D16, from Lens G/Diesel, was burnt during the October 2018 fire and was described from a mapping note only, based on unburnt foliage of the dominant perennial species.

The vegetation types in the study area were associated with five broad landforms. Each landform is briefly discussed below, with a general overview of the associated vegetation:

- **Major drainage lines**

Only two major drainage lines were recorded in the study area; both of these were in Lens G/Diesel, and supported distinct GDV. Unit D7 (EcFgFbTYdPLr) was recorded from a small, apparently permanent pool. The unit supported *Eucalyptus camaldulensis* subsp. *refulgens* (River Gum) in the overstorey, together with two native Fig taxa: *Ficus geniculata* var. *insignis*, and *F. brachypoda*. The middle stratum was dominated by *Typha domingensis* (Bulrush) (occurring in and around the pool), with *Pluchea rubelliflora* dominating the lower stratum. *Plumbago zeylanica* (Native Plumbago) occurred in the lower stratum in isolated pockets, typically on rocky slopes. Unit D8 (EcGOrSsANITeTHtTe) occurred along a number of drainage lines along the eastern boundary of Lens G/Diesel (and also downstream from unit D7). Unit D8 was similarly dominated by *Eucalyptus camaldulensis* subsp. *refulgens*, but also had *Eucalyptus victrix* (Coolibah) in the upper stratum. The middle stratum was dominated by a variety of shrub taxa including *Gossypium robinsonii* (Native Cotton), *Acacia citrinoviridis*, *A. coriacea* subsp. *pendens* (Wirewood) and *Melaleuca glomerata*, with the lower stratum dominated by *Stylobasium spathulatum* (Pebble Bush), *Androcalva luteiflora* (Yellow-flowered Rulingia), *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186) and *Corchorus crozophorifolius*, together with the grasses *Themeda triandra* and *Triodia epactia*.

- **Moderate to minor drainage lines**

Six vegetation units were recorded from minor to moderate drainage lines; the largest and most extensive of these was unit D11 (ExAcANITHtTe), which occurred at Lens G/Diesel. This unit was typically dominated by the tree species *Eucalyptus xerothermica* (Pilbara Box) and *Acacia citrinoviridis* dominating the upper stratum, *Androcalva luteiflora* (Yellow-flowered Rulingia) and *Acacia maitlandii* (Maitland's Wattle) in the middle stratum, and the grasses *Themeda triandra* and *Triodia epactia* in the lower stratum.

Unit D17 (CdEgAatAeTeTw), recorded at BS2, was dominated by *Corymbia deserticola* subsp. *deserticola* together with *Eucalyptus gamophylla* (Twin-leaf Mallee), with shrubs of both *Acacia atkinsiana* and *A. exigua* in the middle stratum. Both *Triodia epactia* and *T. wiseana* dominated the spinifex lower stratum.

The remaining four units (D14, D15 and D18, all from BS2; and D16 from Lens G/Diesel) were dominated by *Corymbia hamersleyana* (Hamersley Bloodwood), although D16 and D18 also supported *Eucalyptus leucophloia* subsp. *leucophloia* (Snappy Gum) in the upper stratum. *Acacia pyrifolia* (Ranji Bush) was a common middle stratum taxon, with various other common shrub species occurring in this stratum (e.g. *Gossypium robinsonii* and *Acacia* spp.). The lower stratum was typically dominated by *Triodia epactia*, in addition to *T. wiseana* (e.g. for units D15 and D18).

- **Gorges and gullies**

Two vegetation units were recorded from minor gorges and gullies. Unit G2 (CfAanAciPROaPToCYaTHtARb) occurred at a small gorge at Lens G/Diesel. This unit was dominated by *Corymbia ferritcola* (Pilbara Ghost Gum), *Acacia 'aneura'* (Mulga) and *A. citrinoviridis* in the upper stratum, with *Eremophila latrobei* subsp. *latrobei* (Warty Fuchsia Bush), *Santalum lanceolatum* (Northern Sandalwood), *Dodonaea pachyneura* and *Gossypium robinsonii* typically dominating the middle stratum. *Prostanthera albiflora*, *Ptilotus obovatus* subsp. *obovatus* and *Corchorus crozophorifolius* typically dominated the lower stratum, with the tussock grasses *Cymbopogon ambiguus*, *Themeda triandra* and bunch grass *Aristida burbridgeae* occurring at ground level.

The second gorge unit, G3 (EICfApAanDpERImTe), was associated with minor gorges and gullies in addition to breakaways and free-faces at both Lens G/ Diesel and BS2. This unit was dominated by various taxa, but most typically had *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia ferritcola*, *Acacia pruinocarpa* (Gidgee) and *Acacia 'aneura'* all variously dominating the upper stratum, with the shrub species *Dodonaea pachyneura* typically dominating the middle stratum, and *Eriachne mucronata* (Mountain Wanderie Grass) and *Triodia epactia* occurring as dominant grasses.

- **Clay plains and stony plains**

A single unit, P2 (AanCHfTe), was recorded from the section of clay plain at the northern end of Lens G/Diesel. This unit was dominated by *Acacia 'aneura'* in the upper stratum, only occasional shrubs in the middle stratum (e.g. *Eremophila lanceolata*, *Grevillea berryana*, *Hakea lorea* subsp. *lorea*), and the tussock grass *Chrysopogon fallax* and hummock grass *Triodia epactia* dominating the lower stratum. Unit P1 (AanApAbAeTe) was recorded on slightly more elevated clay to clay-loam stony plains adjacent to unit P2. This unit was dominated by *Acacia 'aneura'* over an *Acacia*-dominant middle stratum (e.g. *Acacia pruinocarpa*, *A. bivenosa* and *A. exigua*), over the hummock grass *Triodia epactia* in the lower stratum.

Stony plains dominated both BS2 and Lens G/Diesel. The two most common vegetation units on these landforms were P14 (CdEgAeAatTwTe) and P19 (EICdAatAeTw), occurring at Lens G/Diesel and BS2 respectively. Both units were dominated by the tree species *Corymbia deserticola* subsp. *deserticola*, the shrubs *Acacia exigua* and *A. atkinsiana*, and the hummock grasses *Triodia wiseana* and/or *T. epactia*. The upper stratum of unit P19 was co-dominated by *Eucalyptus leucophloia* subsp. *leucophloia*, with occasional *E. gamophylla* mallees. Two other similar units recorded at BS2, P15 (ElAeAsiTw) and P16 (ElAeTw), were also dominated by *Eucalyptus leucophloia* subsp. *leucophloia* in the upper stratum, however the middle stratum only supported *Acacia exigua* at unit P16, whilst unit P15 had both *A. exigua* and *A. sibirica*. In both units, the hummock grass *Triodia wiseana* was dominant in the lower stratum.

- **Stony hillslopes, hillcrests and foothills**

Six vegetation units were recorded from stony hillcrests and hillslopes. Five of these occurred in association with ironstone. One of these, unit H13 (ElTb), dominated steep slopes; there *Eucalyptus leucophloia* subsp. *leucophloia* typically occurred as scattered trees, with *Triodia brizoides* (occasionally with *T. wiseana* and *T. epactia*) dominating the lower stratum. The middle stratum was typically sparse. Unit H12 (ElTwTe), which occurred at both BS2 and Lens G/Diesel, also occurred on hillslopes; in addition to supporting *Eucalyptus leucophloia* subsp. *leucophloia* in the upper stratum, this unit occasionally supported *Corymbia deserticola* subsp.

deserticola. The hummock grass stratum was typically dominated by *Triodia wiseana* and *T. epactia*. Vegetation units H5 (ElAmTwTe) and H7 (ElEgAbTwTb) at Lens G/Diesel, and H8 (ElEgAmTw) at both BS2 and Lens G/Diesel, occurred on gentle hillslopes and hillcrests. These units were variously dominated by *Eucalyptus leucophloia* subsp. *leucophloia*, sometimes with *Corymbia hamersleyana* (e.g. unit H8) and *Eucalyptus gamophylla* (e.g. H7 and H8). Units H5 and H8 were similar in having *Acacia maitlandii* (Maitland's Wattle) in the middle stratum, whilst the middle stratum of unit H7 was dominated by *A. bivenosa*.

One vegetation unit, H14 (ChAiAbTw), occurred on low undulating hills with a basalt geology along the eastern boundary of Lens G/Diesel. This unit was dominated by *Corymbia hamersleyana* in the upper stratum, with *Acacia inaequilatera* and *A. bivenosa* in the middle stratum, and the spinifex *Triodia wiseana* at ground level.



Plate 5.1: D7 – EcFgFbTYdPLr (Lens G/Diesel).



Plate 5.2: D8 – EcGOrSsANITeTHfTe (Lens G/Diesel).



Plate 5.3: D11 – ExAcANITHfTe (Lens G/Diesel).



Plate 5.4: D14 – ChAtuGOrCOcPToTeTHfTe (BS2).



Plate 5.5: D15 – ChAsppTHfTeTw (BS2).



Plate 5.6: D17 – CdEgAatAeTeTw (BS2).



Plate 5.7: G2 – CfAanAciPROaPToCYaTHtARb (Lens G/Diesel).



Plate 5.8: G3 – ElCfApAanDpERImTe.
(Images from Brockman Marra Mambas (Biota 2016)).



Plate 5.9: P1 – AanApAbAeTe (Lens G/Diesel).



Plate 5.10: P2 – AanCHfTe (Lens G/Diesel).



Plate 5.11: P14 – CdEgAeAafTwTe (Lens G/Diesel).



Plate 5.12: P15 – ElAeAsiTw (BS2).



Plate 5.13: P16 – ElAeTw (BS2).



Plate 5.14: P19 – ElCdAafAeTw (BS2).



Plate 5.15: P23 – ElAbCAPuTspp (Lens G/Diesel).



Plate 5.16: P24 – ElGsGOOsTw (Lens G/Diesel).



Plate 5.17: H5 – ElAmTw (Lens G/Diesel).



Plate 5.18: H7 – ElEgAbTwTb (Lens G/Diesel).



Plate 5.19: H8 – ElEgAmTw (BS2).



Plate 5.20: H11 – ElTe.
(Image from Brockman Marra Mambas (Biota 2016)).



Plate 5.21: H12 – ElTwTe (BS2).



Plate 5.22: H13 – ElTb (Lens G/Diesel).



Plate 5.23: H14 – ChAiAbTw (Lens G/Diesel).

5.2 Condition of the Vegetation Units

Vegetation condition assessments were based on the ranking scale developed by Trudgen (1988). The resulting condition of the vegetation in the study area is mapped in Appendix 10, with weed locations shown in overview. The rankings considered the degree of invasion by introduced flora (weeds), impact from humans, feral animal and livestock activities, and the structural integrity of the vegetation (see Appendix 4).

The vegetation of the study area was generally ranked as being in Very Good to Excellent condition. The highest condition ranking (Excellent) was typically associated with vegetation units occurring in association with hills and stony plains; these areas were generally weed-free. Vegetation in Very Good condition was generally associated with drainage lines (particularly vegetation units D14 and D15 at BS2, and D8 at Lens G/Diesel), as well as the Mulga-dominated clay plain (i.e. P2) at Lens G/Diesel. These areas tended to support higher densities of weeds (particularly *Bidens bipinnata* at Lens G/Diesel).

A relatively small proportion of the study area had been cleared for mining exploration activities, including tracks and drill pads, or for mining or pastoral infrastructure; these areas were scored as Completely Degraded⁷.

5.3 Results of the Floristic Analysis

NMDS plots showing all sites in the data set coloured by the individual survey areas from the overall B2NAM Study survey area are provided in Figures 1 to 4 in Appendix 11). Sites from the B2NAM Study survey area were generally thoroughly interspersed with sites from other survey areas in the locality, with the exception of an outlying single site from Caves Creek (CCS34, which had only three species).

Two main analyses were investigated in detail: one based on presence/absence of strongly perennial species only, which should contain the core elements of the floristic data that might be expected to be encountered regardless of sampling season or intensity of effort; and a second based on percent cover of all species (perennial and annual), which should contain the maximum available information.

NMDS plots for these analyses are shown in Figures 5 and 6 in Appendix 11, with sites in the B2NAM Study survey areas attributed with vegetation code. There are clear differences in floristic composition between the sites based on the broad habitat type, which is particularly evident for the grassland and herbland sites on the clay plains (vegetation codes P3 to P13), the Mulga-dominated vegetation types on plains (P1 and P2), the spinifex dominated vegetation types on plains (P14 to P24) and the drainages (D1 to D17). Within the drainage vegetation types, there was a gradation from the most distinct floristic composition in the major drainages and springs vegetation (units D1 to D8), towards the moderate-sized drainages (units D9 to D13), with the minor flowlines (D14 to D17) being somewhat similar to spinifex-dominated vegetation of the plains.

Based on the presence data for perennial species only, the SIMPROF test identified 179 separate floristic groups in the dataset, with 60 of these containing sites from the B2NAM study areas. A subset of 15 of these groups only contained sites from the B2NAM study areas.

With regards to the current study area in particular, the sites from BS2 and Lens G/Diesel occurred in 34 floristic groups (see Table 2 in Appendix 11). Most of these groups contained sites from other

⁷ During the field survey, a network of new drill pads and tracks was observed in the southwestern section of BS2 and in the southern and northern ends of Lens G/Diesel. These areas had not been included in the spatial layer of 'Disturbed' areas provided by Rio Tinto, and no attempt was made to capture these cleared areas during the current digitising process. As a result, the calculation of 'Disturbed' areas for the study area will be an underestimate.

survey areas in the locality, however two floristic groups only contained sites from BS2 or Lens G/Diesel:

- *FGbq* contained three sites from BS2: B2S04, B2S07 and BKM12, comprising all three sites sampled in vegetation unit D14. These sites shared 27 perennial species, four of which were uncommon in the dataset: *Grevillea wickhamii*, *Clerodendrum floribundum* var. *angustifolium*, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) and *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186).
- *FGcb* contained three sites from Lens G/Diesel: LDS10 and LDS-REL04 from vegetation unit D8 and LDS32 from D11. These sites shared 18 perennial species, three of which were uncommon in the dataset: *Olearia fluvialis*, *Androcalva luteiflora* and *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186).

Based on the square-root transformed percent cover values for both perennial and annual species, the SIMPROF test identified 257 separate floristic groups in the dataset, 75 of which contained sites from the B2NAM study areas. A subset of 30 of these groups only contained sites from the B2NAM study areas.

With regards to the current study area in particular, the sites from BS2 and Lens G/Diesel occurred in 35 floristic groups (see Table 3 in Appendix 11). Most of these groups contained sites from other survey areas in the locality, however seven floristic groups only contained sites from BS2 or Lens G/Diesel:

- *FGbk* contained two sites from Lens G/Diesel: LDS10 and LDS-REL04, comprising both sites sampled in vegetation unit D8. These sites had very similar dominant species and shared 34 species in common. Ten of these species were uncommon in the dataset, including *Olearia fluvialis*, which was only recorded at two other sites.
- *FGdl* contained three sites from Lens G/Diesel: LDS02, LDS03 and LDS11, all from vegetation unit P2. These sites shared 17 species, including six that were uncommon in the data set: *Ptilotus gaudichaudii* (which was only recorded from four other sites), *Rhodanthe floribunda*, *Eremophila lanceolata*, *Vigna* sp. Hamersley Clay (A.A. Mitchell PRP 113), *Maireana villosa* and *Cheilanthes sieberi* subsp. *sieberi*.
- *FGfj* contained a single site from Lens G/Diesel: ENIF15 from vegetation unit H5. This site had low cover of spinifex, and contained two species that were very uncommon in the dataset: *Acacia orthocarpa*, recorded from only three other sites; and *Eriachne lanata*, recorded from six other sites.
- *FGft* contained two sites from Lens G/Diesel: LDS22 and LDS23, both from vegetation unit H14. These sites shared 14 species. Four of these were uncommon in the dataset, including the dominant shrub *Indigofera rugosa*, and *Corchorus incanus* subsp. *incanus*, *Stackhousia muricata* subsp. *annual* (W.R. Barker 2172) and *Swainsona maccullochiana*.
- *FGgo* contained a single site from BS2: BKM09 from vegetation unit P16. This site had the equal highest cover of *Paraneurachne muelleri* (at 20%) compared to other sites in the dataset; this site was noted as being a small gully within the broader vegetation unit (see Appendix 8).
- *FGhq* contained three sites from BS2: B2S04, B2S07 and BKM12, comprising all three sites sampled in vegetation unit D14. These sites also clustered in a separate group based on the perennial species present (see above). In addition to the 27 perennial species shared by the three sites, six annual species were shared; none of the latter were uncommon in the dataset.
- *FGio* contained a single site from Lens G/Diesel: ENIF12 from vegetation unit P1. The dominant species at this site were all common in the dataset, however 11 of the total 38 species recorded were uncommon, including *Sida* sp. Supplejack Station (T.S. Henshall 2345), which was only recorded from eight other sites.

5.4 Vegetation of Conservation Significance

5.4.1 Threatened and Priority Ecological Communities

None of the vegetation types identified for the study area represent TECs listed either under the Commonwealth EPBC Act or the *EP Act*, and no PECs were identified in the study area.

5.4.2 Other Vegetation Communities of Conservation Significance

The 14 vegetation types currently considered to be of elevated significance are summarised in Table 5.1 and briefly described below.

Two vegetation units at Lens G/Diesel comprised Groundwater Dependent Vegetation (GDV)⁸ (see Appendix 8):

- D7 (EcFgFbTYdPLr) occurred at the 'Plunge Pool' in the southeastern corner of Lens G/Diesel. The rocky habitat containing this small but apparently permanent pool supported vegetation dominated by the riparian tree species *Eucalyptus camaldulensis* subsp. *refulgens*, as well as *Ficus geniculata* var. *insignis* (an uncommon species), in addition to supporting *Gymnanthera cunninghamii* (Priority 3).
- D8 (EcGOrSsANITeTHtTe) occurred in a major drainage system along the eastern boundary of Lens G/Diesel, and was again dominated by *Eucalyptus camaldulensis* subsp. *refulgens*, but with the tall shrub taxa *Gossypium robinsonii* and *Androcalva luteiflora*.

A total of 11 vegetation units supported large populations of Priority flora, comprising:

- Five units occurring on hillslopes, hillcrests and foothills: H8 (ElEgAmTw) and H12 (ElTwTe) at BS2; and H5 (ElAmTw), H7 (ElEgAbTwTb) and H13 (ElTb) at Lens G/Diesel. These supported a combination of one or more of the following Priority flora: *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Tetradlea butcheriana* (both Priority 1); *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708), *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) and *Oxalis* sp. Pilbara (M.E. Trudgen 12725) (all Priority 2); *Eremophila magnifica* subsp. *velutina*, *Eremophila* sp. Hamersley Range (K. Walker KW 136), *Sida* sp. Barlee Range (S. van Leeuwen 1642), *Sida* sp. Hamersley Range (K. Newbey 10692) and *Triodia basitricha* (all Priority 3); and/or *Acacia bromilowiana*, *Eremophila magnifica* subsp. *magnifica* and *Lepidium catapycnon* (all Priority 4).
- One unit occurring in minor gorges, gullies and along breakaways at Lens G/Diesel and BS2: G3 (ElCfApAanDpERImTe). This unit supported *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Tetradlea butcheriana* (both Priority 1), *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (Priority 2), *Dampiera anonyma*, *Eremophila magnifica* subsp. *velutina* and *Sida* sp. Hamersley Range (K. Newbey 10692) (all Priority 3) and *Acacia bromilowiana* and *Lepidium catapycnon* (Priority 4). In addition, Morton et al. (1995) listed gorges of the Hamersley range as being of elevated conservation significance, as gorge and gully habitats form refugia for fire-sensitive species in the Pilbara.
- One unit occurring on stony plains at Lens G/Diesel: P14 (CdEgAeAatTwTe): this unit supported *Triodia basitricha* (Priority 3).
- Vegetation unit P24 (ElGsGOOsTw) occurring on plains with a shale substrate in Lens G/Diesel. This vegetation type was dominated by the Priority 3 species *Grevillea saxicola*.
- Vegetation unit P2 (AanCHfTe) occurring on clay plains at Lens G/Diesel. This unit supported *Rhagodia* sp. Hamersley (M. Trudgen 17794) and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (both Priority 3), as well as *Goodenia nuda* (Priority 4).

⁸ In the Pilbara bioregion, we consider vegetation units dominated by the obligate phreatophytic species *Eucalyptus camaldulensis* subsp. *refulgens* and/or *Melaleuca argentea* to be GDV, and those dominated by *E. victrix* to be potential GDV.

- Three units occurring within minor to moderate-sized drainage lines in BS2 :
D14 (ChAtuGOrCOcPToTerTHtTe), D15 (ChAsppTHtTeTw) and D18 (ElChApyAiAmTeTw). These supported high numbers of *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) (Priority 3).

One vegetation unit occurring on stony plains at Lens G/Diesel was unusual in having *Capparis umbonata* as a dominant species: P23 (ElAbCAPuTspp).

The remaining vegetation types in the study area are considered to be of lower conservation significance, being representative of the vegetation occurring in similar habitats through the locality.

Table 5.1: Vegetation units of elevated conservation significance within the study area.

Significance	Mapping Unit from the Current Study	Area (ha)	
		BS2	Lens G/ Diesel
Groundwater Dependent Vegetation			
GDV	D7: EcFgFbTYdPLr		0.3
	D8: EcGOrSsANITeRTHtTe		7.6
Vegetation Communities of Local Significance (core habitat for Priority flora)			
Vegetation units in gullies, gorges or breakaways	G3: EICfApAanDpERImTe	39.4	111.9
Vegetation units on hillslopes, hillcrests and foothills	H5: ElAmTw		2,249.7
	H7: ElEgAbTwTb		3.0
	H8: ElEgAmTw	117.8	
	H12: ElTwTe	805.3	
	H13: ElTb		608.0
Vegetation units on clay plains	P2: AanCHfTe		579.2
Vegetation units on stony plains	P14: CdEgAeAatTwTe		3,092.9
Vegetation units on shale plains	P24: ElGsGOOsTw		1.9
Vegetation units in moderate and minor drainage lines	D14: ChAtuGOrCOcPToTeRTHtTe	12.9	
	D15: ChAsppTHtTeTw	13.0	
	D18: ElChApyAiAmTeTw	12.1	
Vegetation with Unusual Species as Dominants			
Vegetation units on stony plains	P23: ElAbCAPuTspp		15.9

6.0 Flora of the Study Area

6.1 Overview

6.1.1 Flora Taxa Recorded From the Study Area

Based on all survey work to date, a total of 462 native vascular flora species from 161 genera and 54 families have been recorded from the study area. With regards to the two components of the study area:

- A total of 201 native vascular flora species from 90 genera and 41 families were recorded from BS2 during the current field surveys in 2018/2019, while a total of 308 native taxa from 114 genera and 46 families have been recorded from BS2 based on all survey work to date (see Appendix 7). Ten Priority flora taxa have been recorded from BS2 based on all surveys to date (see Section 6.3.2).
- A total of 388 native vascular flora species from 149 genera and 54 families were recorded from Lens G/Diesel during the current field surveys in 2018/2019, while a total of 405 native vascular flora taxa from 151 genera and 54 families have been recorded from Lens G/Diesel based on all survey work to date (see Appendix 7). A total of 19 Priority flora taxa have been recorded from Lens G/Diesel based on all surveys to date (see Section 6.3.2).

The alga *Chara* sp. was also recorded from Lens G/Diesel.

The dominant native plant families and genera recorded from the study area are presented in Table 6.1. These families and genera are typically represented in species lists from this region.

Table 6.1: Dominant families and genera recorded from the study area based on all surveys to date.

Family	No. of Native Species			Genus	No. of Native Species		
	BS2	Lens G/ Diesel	Total Study Area		BS2	Lens G/ Diesel	Total Study Area
Fabaceae	63	80	89	<i>Acacia</i>	32	34	40
Poaceae	37	57	62	<i>Senna</i>	18	23	24
Malvaceae	46	48	59	<i>Sida</i>	12	18	18
Asteraceae	11	29	32	<i>Ptilotus</i>	12	12	13
Amaranthaceae	18	20	22	<i>Hibiscus</i>	11	9	13

In addition to the above, 13 introduced flora species (weeds) from 12 genera and seven families have been recorded from the study area based on all surveys to date, including eight weed species from BS2 and 10 weed species from Lens G/Diesel (see Section 6.4).

6.2 Unresolved Taxa and Apparent Variation Recorded from the Study Area

A small number of specimens collected from the study area were sterile or in poor condition, precluding confident determination (see Appendix 7). Other specimens belong to forms of species that have been recognised by various specialists, but that have not yet been formally assigned a phrase-name. Further work (including genetic analysis) would be required to determine the taxonomic status of the entities, however on the basis of their current known distributions, none of these taxa are considered to be of significance (see Section 6.2.1).

6.2.1 Taxonomic Forms Recorded from the Study Area

- ***Acacia ayersiana* (narrow phyllode variant)**

A variant of *Acacia ayersiana* recorded from Lens G Diesel was designated *A. ayersiana* (narrow phyllode variant). As the name suggests, this form of *A. ayersiana* has narrower phyllodes than typical *A. ayersiana*. This variant has been recognised by Bruce Maslin, an expert in *Acacia* at the WA Herbarium (see Maslin and Reid 2012).

- ***Acacia bivenosa***

A form of *Acacia bivenosa* was recorded from Lens G Diesel that is generally restricted to calcareous habitats. The form has a distinctly tall, spindly and weeping habit (c.f. the more typical compact shrub form; this is the only character distinguishing it from the more common form of the species. Both forms are very widespread in the Pilbara.

- ***Eriachne mucronata***

Two forms of *Eriachne mucronata* were present in the study area: the 'typical form' (culms with sparse hairs) and one designated as 'arid form' (which has white woolly hairs on the culms). Both forms are widespread in the Pilbara bioregion.

- ***Senna artemisioides* subsp. *oligophylla* (form with thinly sericeous leaves)**

A form of *Senna artemisioides* subsp. *oligophylla* collected from the study area has been recognised as a separate entity for some time by Malcolm Trudgen. The leaf indumentum of this form consists of closely appressed fine hairs, which give the leaf surface a silvery look, in addition to the leaf shape being usually elliptic. According to McCarthy (1998), *Senna artemisioides* subsp. *oligophylla* is noted for having only a sparse indumentum of appressed hairs and ovate to obovate leaves. Both *S. artemisioides* subsp. *oligophylla* (form with thinly sericeous leaves) and *S. artemisioides* subsp. *oligophylla* are distributed widely throughout the Pilbara bioregion, where they often co-occur.

6.3 Flora of Conservation Significance

6.3.1 Threatened Flora

No species listed as Threatened flora under either State or Commonwealth legislation have been recorded in the study area to date, and none would be expected to occur (see Section 4.10.1 and Appendix 3).

6.3.2 Priority Flora

A total of 20 Priority flora taxa have been recorded from the study area based on all survey work to date. These species are listed and briefly described in Table 6.2. All of the species are well documented for the Brockman 2 and Nammuldi-Silvergrass locality.

A total of seven Priority flora taxa were recorded from BS2 during the current surveys in 2018 and 2019, with three additional taxa recorded during previous surveys (see Appendix 9 for tabulated records, and locations shown on maps). Of the species recorded during the current surveys, only *Triodia basitricha* had not been previously recorded from BS2.

Some individuals of *Eremophila* sp. Hamersley Range (K. Walker KW 136), *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Sida* sp. Hamersley Range (K. Newbey 10692) were also recorded outside the boundary of the BS2 study area during the Phase 1 survey (see Table 6.2). These locations and counts are presented in full in Appendix 9.

A total of 19 Priority flora taxa were recorded from Lens G/Diesel during the current surveys, several of which had been recorded previously. One of the species was designated *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708), as it appeared similar to this Priority 2 taxon but had some unusual

characters⁹. For the purposes of this report, this taxon is considered to have the same conservation status as the Priority taxon, which has been recorded from Lens G/Diesel during previous surveys. Appendix 9 contains tabulated records, and locations shown on maps for all species.

⁹ Circumscriptions of the Priority taxa in the genus *Hibiscus* are currently somewhat uncertain. It was initially believed that both *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) were relatively discrete taxa, however recent collections indicate sufficient variation within both taxa to generate some debate on the current taxonomic framework.

The entity from the current surveys at Lens G/Diesel that was designated *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) is similar in general habit to *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708), however this form has very short stellate hairs and stipules (Steve Dillon, WA Herbarium, pers. comm. 2018). Further work (including genetic analysis) would be required to determine its taxonomic status. For current purposes, it should be treated as having equivalent status to the Priority 2 taxon until such time as the taxonomic uncertainty can be addressed.

Table 6.2. Summary of Priority flora taxa recorded from the study area.

Taxon	Description	Total Counts and Distribution			
		BS2		Lens G/Diesel	
		Historical Surveys β	Current Surveys	Historical Surveys α	Current Surveys
Priority 1					
<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	A spindly shrub to 2.5 m tall, with a relatively dense ferruginous indumentum, large deltoid to ovate leaves, and large mauve flowers with pedicels to 45 mm long (Plate 6.1). Typically prefers rocky slopes, gullies, breakaways and areas below free-faces, usually on moderate to tall hills.	60 individuals from 12 locations	Not found in study area (but 79 individuals from 8 locations recorded outside the study area)	280 individuals from 26 locations	578 individuals from 40 locations
<i>Tetratheca butcheriana</i>	An erect to sprawling sub-shrub to 80 cm tall with leafless stems and pink to purple pendulous flowers, (Plate 6.2). This species grows on ironstone cliff faces and upper ridgelines (Perkins et al. 2016).	–	–	132 individuals from 24 locations	10 individuals from 1 location
Priority 2					
<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Like <i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354), <i>H.</i> sp. Gurinbiddy Range (M.E. Trudgen 15708) was originally included in the <i>H. haynaldii</i> complex. It is similarly a diffuse straggly shrub to 1.5 m tall, with a ferruginous indumentum and large flowers, however the pedicels are at least three times as long as the flowers (Hurter 2012) (Plate 6.3). This species typically prefers rocky slopes, gullies, breakaways and areas below free-faces, usually on moderate to tall hills.	1 individual from 1 location	–	12 individuals from 1 location	57 individuals from 5 locations
<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Description as per taxon above, however this form has very short stellate hairs and stipules (Steve Dillon, WA Herbarium, pers. comm. 2018).	–	–	–	69 individuals from 8 locations
<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	A small green cryptic perennial herb growing to 20 cm tall, often spreading (Plate 6.4). It is typically found in shaded environments, usually at the bases of rocks, breakaways or free-faces.	–	–	50 individuals from 2 locations	1 individual from 1 location
Priority 3					
<i>Dampiera anonyma</i>	Multi-stemmed perennial herb to 1 m tall with a distinctive grey indumentum, and small purple flowers (Plate 6.5). Typically prefers skeletal red-brown gravelly soil over banded ironstone, basalt, shale and jaspilite on the summits and upper slopes of tall hills (above 1,000 m).	–	–	–	60 individuals from 1 location
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	A shrub to 1.5 m tall, with blue to purple flowers (Aug to Sept), and densely packed leaves towards the branch ends (Plate 6.6). Generally found growing on skeletal soils over limestone and rocky screes (WA Herbarium 2019). This subspecies is distinguished from subsp. <i>magnifica</i> by its velutinous leaf surface and branches (Chinnock 2007).	1 individual from 1 location	–	–	195 individuals from 11 locations
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	An upright shrub growing to 2.5 m tall, with grey-green lanceolate leaves, and a characteristically long and often sigmoidally-curved pedicel (Plate 6.7). Typically prefers rocky slopes, gullies, breakaways and areas below free-faces, usually on moderate to tall hills.	50 individuals from 1 location	1 individual from 1 location (and 54 individuals from 4 locations outside the study area)	–	–
<i>Grevillea saxicola</i>	A tall shrub or low tree growing to 7 m tall (Plate 6.8), often occurring with Mulga (<i>Acacia</i> "aneura" species complex) on skeletal red-brown sandy loam on upper scree slopes, steep rocky slopes and hillcrests (Dillon 2014). It has divided leaves with characteristically terete to sub-terete lobes.	–	–	–	112 individuals from 10 locations
<i>Gymnanthera cunninghamii</i>	Erect, suckering (Plate 6.9) shrub to 2 m tall with drooping foliage and cream-yellow-green flowers. Typically prefers sandy soils in major drainage lines (WA Herbarium 2019).	–	–	–	6 individuals from 1 location
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	An erect perennial shrub growing to 2 m tall, which may resemble <i>Indigofera monophylla</i> when young (Plate 6.10). It is typically found in areas of ephemeral water flow, and in rockier habitat such as gullies and small creeks.	266 individuals from 54 locations	127 individuals from 4 locations	–	29 individuals from 3 locations
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	A spindly shrub growing to 2 m tall, with narrow grey leaves (Plate 6.11). Typically prefers red sandy clay-loam plains and floodplains, often growing in association with Mulga (<i>Acacia aneura</i>).	–	–	9 individuals from 9 locations	12 individuals from 8 locations
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	A low spreading shrub growing to 0.5 m tall, with yellow flowers (Plate 6.12). It occurs on skeletal red soil on steep slopes, in gullies and along breakaways (WA Herbarium 2019).	1,094 individuals from 227 locations	1 individual from 1 location	117 individuals from 17 locations	380 individuals from 59 locations
<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	A low shrub growing to around 60 cm tall, with greyish green oblong leaves and small yellow flowers (Plate 6.13). Typically grows along the bases of breakaways and free faces, or other areas of rocky hill slope.	145 individuals from 41 locations	6 individuals from 2 locations (and 145 individuals from 8 locations outside the study area)	29 individuals from 13 locations	223 individuals from 19 locations
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	A perennial tussock grass with glaucous leaves and inflorescences to 1.8 m tall (Plate 6.14). This species typically prefers red clay soils in clay pans and grass plains.	–	–	–	30 individuals from 1 location
<i>Triodia basitricha</i>	A perennial hummock grass to 40 cm tall (Plate 6.15), growing on the slopes and crests of rocky hills (Barrett and Barrett 2015).	–	3,100 individuals from 7 locations	645 individuals from 10 locations	2420 individuals from 11 locations
Priority 4					
<i>Acacia bromilowiana</i>	A tree or shrub to 12 m tall with dark grey fibrous bark (Plate 6.16). It is distinguished from the more common <i>Acacia hamersleyensis</i> by its more robust habit, reddish branchlets, and a characteristically divided peduncle. This species typically occurs on rocky hills, breakaways, scree slopes and in gorges (WA Herbarium 2019).	249 individuals from 13 locations	15 individuals from 1 location	128 individuals from 11 locations	80 individuals from 2 locations

Taxon	Description	Total Counts and Distribution			
		BS2		Lens G/Diesel	
		Historical Surveys ^β	Current Surveys	Historical Surveys ^α	Current Surveys
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	A shrub to 1.5 m tall, with blue to purple flowers (Aug to Nov), and densely packed leaves towards the branch ends (Plate 6.17). Generally found growing on skeletal soils over ironstone and rocky screes (WA Herbarium 2019). It is distinguished from subsp. <i>velutina</i> by its glabrous leaf surface and branches (Chinnock 2007).	6 individuals from 1 location	–	25 individuals from 4 locations	4 individuals from 1 location
<i>Goodenia nuda</i>	An erect to ascending, slender herb growing to 50 cm tall, with narrow, pale green to glaucous leaves (Plate 6.18). This species is widespread throughout the Pilbara, and is found in a variety of different habitat types, most typically growing near creeklines and low-lying areas of clay-loam plains.	–	–	1 individual from 1 location	7 individuals from 2 location
<i>Lepidium catapycnon</i>	An open, woody perennial herb or shrub to 0.3 m tall, with zig-zag stems (Plate 6.19). It typically occurs on skeletal soils on hillslopes.	–	–	126 individuals from 10 locations	129 individuals from 17 locations

^β Includes data from Astron (2014a, 2014b), Biota (2010a), Rio Tinto (2010b, 2010c, 2011, 2015a) and WA Herbarium records.

^α Includes data from Biota (2016), Eco Logical (2014a) and Rio Tinto (2008, 2009, 2010a, 2015b, 2016, 2018); Eco Logical (2014b, 2014c) and Rio Tinto (2014) records were also considered but not included in counts, as these represented records from the same locations from earlier survey dates.



Plate 6.1: *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354): habit (left) and close-up of flower (right).



Plate 6.2: *Tetratheca butcheriana*: habitat (left) and close-up of flower (right).
Image from Perkins et al. (2016).



Plate 6.3: *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708).



Plate 6.4: *Oxalis* sp. Pilbara (M.E. Trudgen 12725).

Plate 6.5: *Dampiera anonyma*.



Plate 6.6: *Eremophila magnifica* subsp. *velutina*.



Plate 6.7: *Eremophila* sp. Hamersley Range (K. Walker KW 136): habit (left) and close-up of calyces (right).



Plate 6.8: *Grevillea saxicola*.



Plate 6.9: *Gymnanthera cunninghamii*.



Plate 6.10: *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301).



Plate 6.11: *Rhagodia* sp. Hamersley (M. Trudgen 17794).



Plate 6.12: *Sida* sp. Barlee Range (S. van Leeuwen 1642): habit (left) and flower (right).



Plate 6.13: *Sida* sp. Hamersley Range (K. Newbey 10692).



Plate 6.14: *Themeda* sp. Hamersley Station (M.E. Trudgen 11431): habit (left), glaucous tussock (centre) and inflorescences (right).



Plate 6.15: *Triodia basitricha*.



Plate 6.16: *Acacia bromilowiana*.



Plate 6.17: *Eremophila magnifica* subsp. *magnifica*: habit (left) and close up of inflorescence (right).

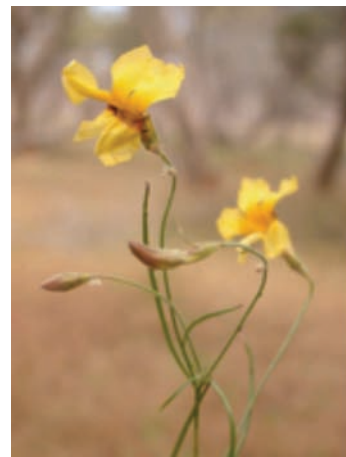


Plate 6.18: *Goodenia nuda*.



Plate 6.19: *Lepidium catapycnon*: habit (left) and close up of inflorescence (right).

6.4 Introduced Flora

A total of 13 introduced species from 12 genera and seven families have been recorded from the study area. With regards to the two components of the study area:

- Three introduced flora taxa were recorded from BS2 during the current surveys and five additional species were recorded during previous surveys (see Table 6.3).
- Ten introduced flora taxa were recorded from Lens G/Diesel during the current surveys, three of which were also recorded during previous surveys (Table 6.3).

All records (current and historical) are shown on the vegetation condition mapping and tabulated in Appendix 10. Note that for the purpose of providing a total number of individuals, any record for which this information was not recorded was assigned a nominal value of "1", or the percent cover values were presented if considered more meaningful.

Introduced species were recorded most commonly from drainage lines, gorges and gullies during the current survey; weeds were largely absent from plains, hillcrests and foothills. None of the species recorded are listed as Weeds of National Significance (WONS) (Thorp and Lynch 2000)¹⁰, or as declared plants for the Pilbara region under the WA BAM Act (see DAFWA 2019).

The then Department of Parks and Wildlife's (2013a) Weed Species Ranking, which was derived from the Department's Weed Prioritisation Process (WPP) (Department of Parks and Wildlife 2013b), 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. Five of the species recorded from the study area have both a 'High' ranking for Ecological Impact and a 'Rapid' ranking for Invasiveness through this process: **Aerva javanica*, **Cenchrus ciliaris*, **C. setiger*, **Malvastrum americanum* and **Rumex vesicarius* (Table 6.3). **Aerva javanica*, **Cenchrus* spp. and **Rumex vesicarius* in particular are all generally considered to be serious environmental weeds.

¹⁰ For the current listing of Weeds of National Significance, go to <http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html>

Table 6.3: Summary of Introduced taxa recorded within the study area, including WPP rankings.

Species	Description	WPP – Weed Species Ranking		Counts and Distribution			
		Ecological Impact	Invasiveness	BS2 Study Area		Lens G/Diesel Study Area	
				Historical β	Current	Historical θ	Current
* <i>Aerva javanica</i> (Kapok Bush)	Erect perennial herb, often occurs on sandy soils. Originally introduced to assist with the revegetation of disturbed bushland; now widespread from Carnarvon to the Kimberley (Hussey et al. 2007).	H	R	6 individuals from 2 locations	–	–	–
* <i>Bidens bipinnata</i> (Bipinnate Beggartick)	Annual daisy growing to 90 cm tall, with yellow flowers between March and September (WA Herbarium 2019). 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	–	302 individuals from 3 locations	1% cover at 1 location	768 individuals from 8 locations
* <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 (WA Herbarium 2019), where it can form dense tussock grasslands. Reproduces by seed and short rhizomes; thought to be dispersed primarily by wind and water, but can also be spread through the movement of mammals, birds and vehicles.	H	R	991 individuals from 42 locations	40 individuals from 2 locations	–	166 individuals from 4 locations
* <i>Cenchrus setiger</i> (Birdwood Grass)	Erect tussocky perennial grass closely related to Buffel Grass; grows in the same habitats, 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	–	–	–	1 individual from 1 location
* <i>Chloris virgata</i> (Feathertop Rhodes Grass)	Annual grass growing to 95 cm tall, flowering between April and September. Commonly observed growing in association with clay, sand and sand dunes (WA Herbarium 2019).	H	R	–	–	–	1 individual from 1 location
* <i>Flaveria trinervia</i> (Speedy Weed)	Annual daisy to 40 cm tall, with an inflorescence consisting of a large dense cluster of yellow flower heads. Widespread through the Pilbara and Kimberley in a variety of habitats, including drainages and disturbed areas (Hussey et al. 2007).	–	–	3 individuals from 3 locations	–	–	20 individuals from 1 location
* <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	–	9 individuals from 2 locations	–	50 individuals from 2 locations
* <i>Rumex vesicarius</i> (Ruby Dock)	Stout, fleshy annual herb with densely clustered red-pink fruit between July and September (WA Herbarium 2019). Common in disturbed areas in the arid zone from the Pilbara to the Nullarbor (Hussey et al. 2007).	H	R	1,775 individuals from 87 locations	–	1-2% cover at 9 locations	68 individuals from 3 locations
* <i>Setaria verticillata</i> (Whorled Pigeon Grass)	Loosely tufted annual grass to 1.3 m tall (WA Herbarium 2019). 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	–	–	–	55 individuals from 2 locations
* <i>Sigesbeckia orientalis</i> (Indian Weed)	Upright, slightly hairy annual herb, with opposite, toothed leaves, and small yellow flower-heads with a densely glandular indumentum. Distributed mainly in the Pilbara bioregion, with other records in the Central Ranges bioregion, at Exmouth and throughout the Southwest (WA Herbarium 2019).	U	R	–	–	480 individuals from 5 locations	2 individuals from 2 locations
* <i>Solanum nigrum</i> (Black Berry Nightshade)	Erect perennial herb or shrub to 1 m tall, with white flowers all year (WA Herbarium 2019). Most common in the Southwest of WA, but also found less abundantly in the Pilbara in sheltered habitats such as Mulga vegetation and drainage lines.	L	R	20 individuals from 1 location	–	–	–
* <i>Sonchus oleraceus</i> (Common Sowthistle)	Short-lived annual herb growing to 1.5 m tall (WA Herbarium 2019). This species is common and widespread in disturbed areas of WA from Wittenoom to the Nullarbor (Hussey et al. 2007).	L	R	20 individuals from 2 locations	–	–	–
* <i>Vachellia farnesiana</i> (Mimosa Bush)	Spreading, thorny shrub to 4 m tall, with dark grey bark, pinnate leaves, and yellow flowers in winter (WA Herbarium 2019). Widespread from the Kimberley to near Perth, typically occurring along drainage systems and in adjacent low-lying areas (Hussey et al. 2007).	H	R	–	–	–	5 individuals from 1 location

WPP = Weed Prioritisation Process (Department of Parks and Wildlife 2013b); only species with rankings in both categories are listed:

Ecological Impact Ranking: H = High, L = Low, U = Unknown. Invasiveness Ranking: M = Moderate, R = Rapid, U = Unknown.

β Includes data from Astron (2014a, 2014b, 2016, 2017), Biota (2010a), HGM (1998) and Rio Tinto (2010c).

θ Includes data from Biota (2016) and Eco Logical (2014a).

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7.0 Discussion and Conclusions

7.1.1 BS2

Ten vegetation types in Excellent or Very Good condition were described from BS2. None of these represent TECs or PECs, but five units are of elevated conservation significance as they contain substantial numbers of Priority flora:

- Units H8 and H12 on the tall hills along the eastern edge of BS2 support *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) (Priority 1); *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) (Priority 2); *Eremophila magnifica* subsp. *velutina*, *Eremophila* sp. Hamersley Range (K. Walker KW 136), *Sida* sp. Barlee Range (S. van Leeuwen 1642) and *Sida* sp. Hamersley Range (K. Newbey 10692) (all Priority 3); and/or *Acacia bromilowiana* and *Eremophila magnifica* subsp. *magnifica* (both Priority 4).
- Units D14, D15 and D18 in moderate-sized and minor drainage lines contain large numbers of the Priority 3 taxon *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301).

A total of 308 native taxa from 114 genera and 46 families have been recorded from BS2 based on all survey work to date. The 2018/2019 surveys recorded 201 native taxa, of which 28% (57 species) were annual or weakly perennial species. Despite the sub-optimal seasonal conditions, this was the same proportion as that derived from all historical sampling, with 28% of the overall total of 308 taxa comprising annuals. This is likely to reflect the limited extent of habitats that typically support large numbers of annual species in favourable conditions (e.g. areas of clay and moderate to large creeklines).

No Threatened flora would occur at BS2, however 10 Priority species have been recorded. These comprised the nine species listed above, together with the Priority 3 species *Triodia basitricha*, which was recorded from plains vegetation unit P2. All of these species are well-documented for the wider Brockman 2 and Nammuldi-Silvergrass locality.

Following the field survey, 11 additional Priority taxa identified during the desktop study are still considered to have the potential to occur in the study area, despite not being recorded. Two taxa, *Dampiera anonyma* (Priority 3) and *Goodenia nuda* (Priority 4), are considered likely to occur. *Dampiera anonyma* has been recorded in close proximity to BS2 (the nearest record is 650 m east), and extensive suitable habitat is present (skeletal soil over banded ironstone, basalt, shale and jaspilite on hill summits and upper slopes). Much of the available habitat was burnt in October 2018. *Goodenia nuda* has similarly been recorded in close proximity (the nearest record is 3 km west), and suitable habitat is present (drainage lines and other low-lying areas). This species may not have been present during the survey due to the poor seasonal conditions.

In regards to the remaining nine taxa, which may potentially occur:

- Four taxa may not have been identifiable at the time of the survey due to poor conditions: *Calotis squamigera* (Priority 1), *Oxalis* sp. Pilbara (M.E. Trudgen 12725) (Priority 2), and *Aristida jerichoensis* var. *subspinulifera* and *Rostellularia adscendens* var. *latifolia* (both Priority 3).
- For the remaining five taxa, large areas of their prospective habitats were burnt during the October 2018 fire: *Grevillea saxicola*, *Indigofera gilesii*, *Rhagodia* sp. Hamersley (M. Trudgen 17794) (all Priority 3), and *Lepidium catapycnon* and *Ptilotus mollis* (both Priority 4). *Lepidium catapycnon* is also only recorded infrequently in the locality (the nearest record is 8.2 km southeast at Lens G/Diesel).

7.1.2 Lens G/Diesel

A total of 18 vegetation types in Excellent or Very Good condition were described from Lens G/Diesel. None of these represent TECs or PECs, but nine units are considered to be of elevated conservation significance. Two units (D7 and D8) represent GDV, while six units contain substantial numbers of Priority flora as follows:

- Units H5, H7 and H13 on the hills along the edges of Lens G/Diesel support *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354) and *Tetralthea butcheriana* (both Priority 1); *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708), *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) and *Oxalis* sp. Pilbara (M.E. Trudgen 12725) (all Priority 2); *Dampiera anonyma*, *Eremophila magnifica* subsp. *velutina*, *Sida* sp. Barlee Range (S. van Leeuwen 1642), *Sida* sp. Hamersley Range (K. Newbey 10692) and *Triodia basitricha* (all Priority 3); and *Acacia bromilowiana*, *Eremophila magnifica* subsp. *magnifica* and *Lepidium catapycnon* (all Priority 4).
- Unit P2 on the clay plain in the northern section of Lens G/Diesel supports *Rhagodia* sp. Hamersley (M. Trudgen 17794) and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (both Priority 3), as well as *Goodenia nuda* (Priority 4).
- At the southern end of Lens G/Diesel, unit P14 on stony plains and footslopes supports large numbers of the Priority 3 species *Triodia basitricha*.
- Unit P24 on stony plains towards the eastern edge of Lens G/Diesel contains the Priority 3 *Grevillea saxicola* as a dominant species.

One additional unit at Lens G/Diesel (P23) is unusual in having *Capparis umbonata* as a dominant species. *Capparis umbonata* has been recorded as a dominant or co-dominant from only nine other sites in Biota's database of over 4,000 sites from the Pilbara. This species was present in just 61 (6%) of the sites in the dataset used for the floristic analysis, including the four other sites in FGdo from the analysis based on perennial species presence; it similarly provided 1-3% cover at two of these other sites.

A total of 405 native taxa from 151 genera and 54 families have been recorded from Lens G/Diesel based on all survey work to date. The 2018/2019 surveys recorded 388 native taxa, of which 32% (124 species) were annual or weakly perennial species. As for BS2, despite the sub-optimal seasonal conditions, this was again the same proportion as that derived from all historical sampling, with 32% of the overall total of 405 taxa comprising annuals. For this study area, only limited historical sampling had been completed, adding only 16 native species to the total number recorded in 2018/2019. It is likely that additional annual species would be recorded with further sampling, particularly in the areas of clay plain in the northern section (vegetation unit P2).

No Threatened flora would occur in this part of the study area, however 19 Priority taxa have been recorded. These comprised the 17 species listed above, together with the Priority 3 species *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301), which was recorded from the drainage line vegetation unit D8; and *Gymnanthera cunninghamii*, which was recorded only from vegetation unit D7 at the 'Plunge Pool'. With the exception of *Tetralthea butcheriana*, *Gymnanthera cunninghamii* and *Hibiscus* aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708), which are infrequently recorded, all of these species are well documented for the wider Brockman 2 and Nammuldi-Silvergrass locality.

Following the field survey, it is still considered that 12 additional Priority taxa identified during the desktop review may potentially occur in the study area, despite not being recorded during the field survey:

- Four taxa may not have been identifiable during the survey, as large areas of their prospective habitats were burnt during the October 2018 fire: *Pentalepis trichodesmoides* subsp. *hispida* (Priority 2), *Eremophila* sp. Hamersley Range (K. Walker KW 136) and *Indigofera gilesii* (both Priority 3), and *Ptilotus mollis* (Priority 4).
- Six taxa may not have been identifiable due to the poor seasonal conditions: *Calotis squamigera*, *Euphorbia inappendiculata* var. *queenslandica* and *Vittadinia* sp. Coondewanna Flats (S. van Leeuwen 4684) (all Priority 1), and *Aristida jerichoensis* var. *subspinulifera*,

Oldenlandia sp. Hamersley Station (A.A. Mitchell PRP 1479) and *Rostellularia adscendens* var. *latifolia* (all Priority 3).

- Two taxa are only recorded infrequently in the locality: *Bothriochloa decipiens* var. *cloncurrensis* (Priority 1) and *Euphorbia australis* var. *glabra* (Priority 2). In addition, *Euphorbia australis* var. *glabra* may not have been identifiable due to the poor seasonal conditions.

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8.0 Glossary and Acronyms

*	Used prior to a species name to denote an introduced (weed) species.
aff.	Abbreviation of <i>affinis</i> (Latin); 'with affinities to'.
Annual (plant)	A plant that lives for only one year.
BAM Act	The WA <i>Biosecurity and Agriculture Management Act 2007</i> .
BC Act	The WA <i>Biodiversity Conservation Act 2016</i> .
Conservation significant	A plant, community or habitat that has a formally assigned conservation ranking, usually because it is recognised to be rare, unusual, new or poorly sampled (see Appendix 1 for more on the conservation framework).
Cryptic	Plants that die back to a perennial root-stock under dry conditions; considered cryptic (meaning hidden) because although they are consistently present, it is difficult to tell unless suitable conditions prevail.
DBCA	The Department of Biodiversity, Conservation and Attractions, formerly Department of Parks and Wildlife, Department of Environment and Conservation (DEC), and Department of Conservation and Land Management (CALM).
Dominant species	The species that occur most abundantly in an area or vegetation stratum.
EPA	Environmental Protection Authority of Western Australia.
EPBC Act	The Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
Ferruginous	Rust-coloured.
Flora keys	Botanical publications containing a series of questions (regarding the plant's characteristics) aiding in the identification of a taxon.
Foot traverse	Consists of walking through an area to confirm or note the vegetation and/or species presence (usually sampling a narrow corridor/cross section of vegetation).
GDV and potential GDV	Groundwater Dependent Vegetation is vegetation dominated by <i>Melaleuca argentea</i> or <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , and potential GDV is vegetation dominated by <i>Eucalyptus victrix</i> .
IBRA	Interim Biogeographical Regionalisation for Australia.
Indumentum	A layer of hairs on the leaves, stems or other parts of a plant.
Opportunistic	A plant species collected from outside a formal sampling site (quadrat or relevé); sometimes abbreviated to "Opp."
PEC	Priority Ecological Community (see Appendix 1 for more on the WA conservation framework).
Pedice	The stalk of a solitary flower.
Peduncle	The stalk holding two or more flowers of an inflorescence.
Perennial	A plant that lives for more than two growing seasons.
Priority flora	Flora listed by the DBCA as requiring additional information to properly evaluate their conservation significance, or requiring ongoing monitoring (see Appendix 1 for more on the WA conservation framework).
Quadrat	A bounded sample area of uniform vegetation in which all species present are recorded; the standard quadrat size for the Pilbara is 50 m by 50 m, or an equivalent area (2,500 m ²).
Relevé	An unbounded flora sampling site, with a similar area to a quadrat, in which most species present are recorded.

sp. (plural: spp.)	Abbreviation of 'species'.
Stratum (plural: strata)	A horizontal level of vegetation defined by growth habit (and sometimes height); e.g. low trees, tall trees, tussock grasses, hummock grasses, etc.
subsp. (plural: subspp.)	Abbreviation of 'subspecies'.
Taxon (plural: taxa)	A taxonomic entity; typically at species level or below.
TEC	Threatened Ecological Community (see Appendix 1 for more on the WA conservation framework).
Threatened flora	Flora protected by legislation, either listed under the Commonwealth EPBC Act or the WA <i>Biodiversity Conservation Act 2016</i> (species known as Declared Rare Flora); see Appendix 1 for more on the WA conservation framework.
var.	Abbreviation of 'variety'.

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Appendix 1

Framework for Conservation Significance Ranking of Communities and Species in WA



A. Definitions, Categories and Criteria for Threatened and Priority Ecological Communities (DEC 2010)

1. General Definitions

Ecological Community

A naturally occurring biological assemblage that occurs in a particular type of habitat.

Note: The scale at which biological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified.

A **threatened ecological community** (TEC) is one which is found to fit into one of the following categories; "presumed totally destroyed", "critically endangered", "endangered" or "vulnerable".

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

An **assemblage** is a defined group of biological entities.

Habitat is defined as the areas in which an organism and/or assemblage of organisms lives. It includes the abiotic factors (e.g. substrate and topography), and the biotic factors.

Occurrence: a discrete example of an ecological community, separated from other examples of the same community by more than 20 metres of a different ecological community, an artificial surface or a totally destroyed community.

By ensuring that every discrete occurrence is recognised and recorded future changes in status can be readily monitored.

Adequately Surveyed is defined as follows:

"An ecological community that has been searched for thoroughly in most likely habitats, by relevant experts."

Community structure is defined as follows:

"The spatial organisation, construction and arrangement of the biological elements comprising a biological assemblage" (e.g. *Eucalyptus salmonophloia* woodland over scattered small shrubs over dense herbs; structure in a faunal assemblage could refer to trophic structure, e.g. dominance by feeders on detritus as distinct from feeders on live plants).

Definitions of **Modification** and **Destruction** of an ecological community:

Modification: "changes to some or all of ecological processes (including abiotic processes such as hydrology), species composition and community structure as a direct or indirect result of human activities. The level of damage involved could be ameliorated naturally or by human intervention."

Destruction: "modification such that reestablishment of ecological processes, species composition and community structure within the range of variability exhibited by the original community is unlikely within the foreseeable future even with positive human intervention."

Note: Modification and destruction are difficult concepts to quantify, and their application will be determined by scientific judgement. Examples of modification and total destruction are cited below:

Modification of ecological processes: The hydrology of Toolibin Lake has been altered by clearing of the catchment such that death of some of the original flora has occurred due to dependence on fresh water. The system may be bought back to a semblance of the original state by redirecting saline runoff and pumping waters of the rising underground watertable away to restore the hydrological balance. Total destruction of downstream lakes has occurred due to hydrology being altered to the point that few of the original flora or fauna species are able to tolerate the level of salinity and/or water logging.

Modification of structure: The understorey of a plant community may be altered by weed invasion due to nutrient enrichment by addition of fertiliser. Should the additional nutrients be removed from the system the balance may be restored, and the original plant species better able to compete. Total destruction may occur if additional nutrients continue to be added to the system causing the understorey to be completely replaced by weed species, and death of overstorey species due to inability to tolerate high nutrient levels.

Modification of species composition: Pollution may cause alteration of the invertebrate species present in a freshwater lake. Removal of pollutants may allow the return of the original inhabitant species. Addition of residual highly toxic substances may cause permanent changes to water quality, and total destruction of the community.

Threatening processes are defined as follows:

“Any process or activity that threatens to destroy or significantly modify the ecological community and/or affect the continuing evolutionary processes within any ecological community.”

Examples of some of the continuing threatening processes in Western Australia include: general pollution; competition, predation and change induced in ecological communities as a result of introduced animals; competition and displacement of native plants by introduced species; hydrological changes; inappropriate fire regimes; diseases resulting from introduced micro-organisms; direct human exploitation and disturbance of ecological communities.

Restoration is defined as returning an ecological community to its pre-disturbance or natural state in terms of abiotic conditions, community structure and species composition.

Rehabilitation is defined as the re-establishment of ecological attributes in a damaged ecological community although the community will remain modified.

2. Definitions and Criteria for Presumed Totally Destroyed, Critically Endangered, Endangered and Vulnerable Ecological Communities

ECOLOGICAL COMMUNITIES

Presumed Totally Destroyed (PD)

An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future.

An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant and either of the following applies (A or B):

- A) Records within the last 50 years have not been confirmed despite thorough searches of known or likely habitats or
- B) All occurrences recorded within the last 50 years have since been destroyed

Critically Endangered (CR)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.

An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting any one or more of the following criteria (A, B or C):

- A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% and either or both of the following apply (i or ii):
 - i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 10 years);
 - ii) modification throughout its range is continuing such that in the immediate future (within approximately 10 years) the community is unlikely to be capable of being substantially rehabilitated.
- B) Current distribution is limited, and one or more of the following apply (i, ii or iii):
 - i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 10 years);
 - ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes;

- iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes.
- C) The ecological community exists only as highly modified occurrences that may be capable of being rehabilitated if such work begins in the immediate future (within approximately 10 years).

Endangered (EN)

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

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

- A) The geographic range, and/or total area occupied, and/or number of discrete occurrences have been reduced by at least 70% since European settlement and either or both of the following apply (i or ii):
 - i) the estimated geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term future (within approximately 20 years);
 - ii) modification throughout its range is continuing such that in the short term future (within approximately 20 years) the community is unlikely to be capable of being substantially restored or rehabilitated.
- B) Current distribution is limited, and one or more of the following apply (i, ii or iii):
 - i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 20 years);
 - ii) there are few occurrences, each of which is small and/or isolated and all or most occurrences are very vulnerable to known threatening processes;
 - iii) there may be many occurrences but total area is small and all or most occurrences are small and/or isolated and very vulnerable to known threatening processes.
- C) The ecological community exists only as very modified occurrences that may be capable of being substantially restored or rehabilitated if such work begins in the short-term future (within approximately 20 years).

Vulnerable (VU)

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

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

- A) The ecological community exists largely as modified occurrences that are likely to be capable of being substantially restored or rehabilitated.
- B) The ecological community may already be modified and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations.
- C) The ecological community may be still widespread but is believed likely to move into a category of higher threat in the medium to long term future because of existing or impending threatening processes.

3. Definitions and Criteria for Priority Ecological Communities

PRIORITY ECOLOGICAL COMMUNITY LIST

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community Lists under Priorities 1, 2 and 3. 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

1. Western Australian Biodiversity Conservation Act 2016, 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 conservation 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 conservation 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 Flora and Fauna

Threatened, Extinct and Specially Protected fauna or flora¹ are species² 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 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 that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

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. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN **Endangered 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. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU **Vulnerable 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. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct species

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

EX Extinct species

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

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

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

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species

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

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

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).

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

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD Species of special conservation interest (conservation dependent fauna)

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

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

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

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P Priority species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

1 Priority 1: Poorly-known species

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

2 Priority 2: Poorly-known species

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

3 Priority 3: Poorly-known species

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

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 Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

¹ The definition of flora includes algae, fungi and lichens

² 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).

2. 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 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 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

EPBC Act Search Results





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.

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Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 27/11/18 12:36:13

[Summary](#)

[Details](#)

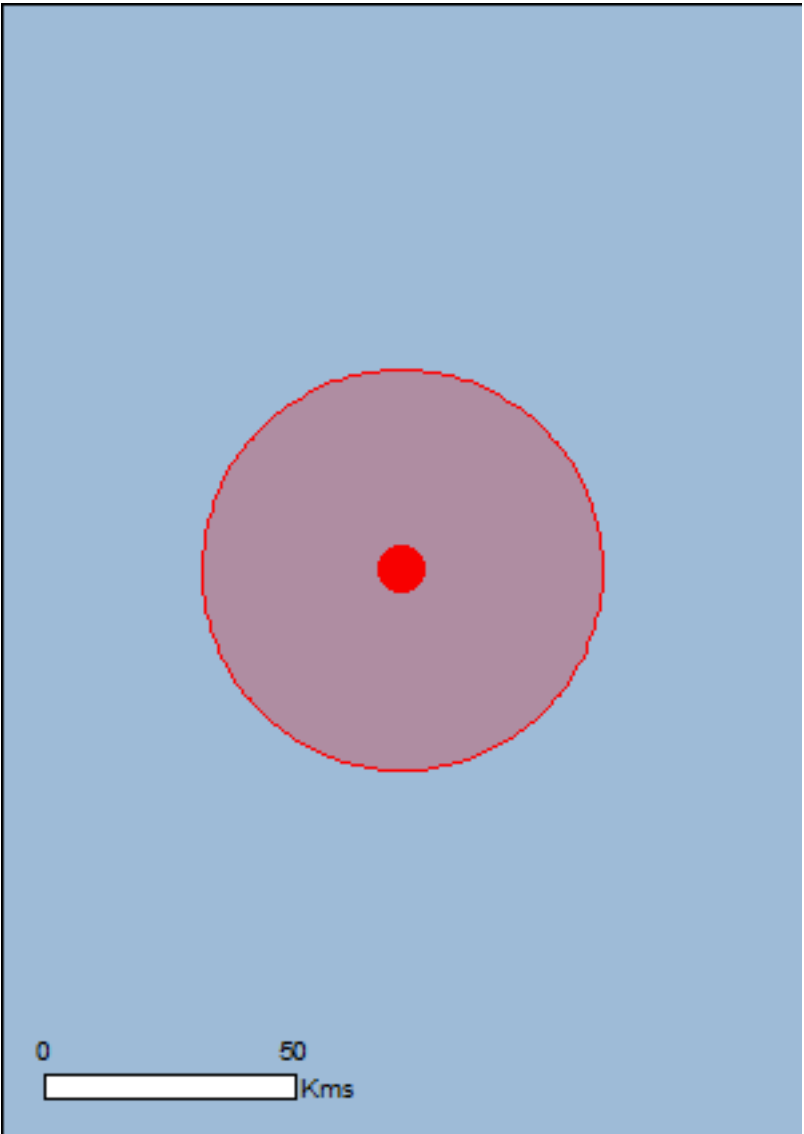
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

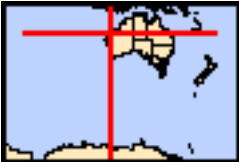
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 40.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	8
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	9
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Breeding known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat may occur within area
Rhinonictes aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Liasis olivaceus barroni Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat likely to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species

Name	Threatened	Type of Presence
Motacilla flava Yellow Wagtail [644]		habitat may occur within area Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

Invasive Species

[[Resource Information](#)]

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

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-22.44833 117.29861



EPBC Act Protected Matters Report

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Report created: 27/11/18 12:32:42

[Summary](#)

[Details](#)

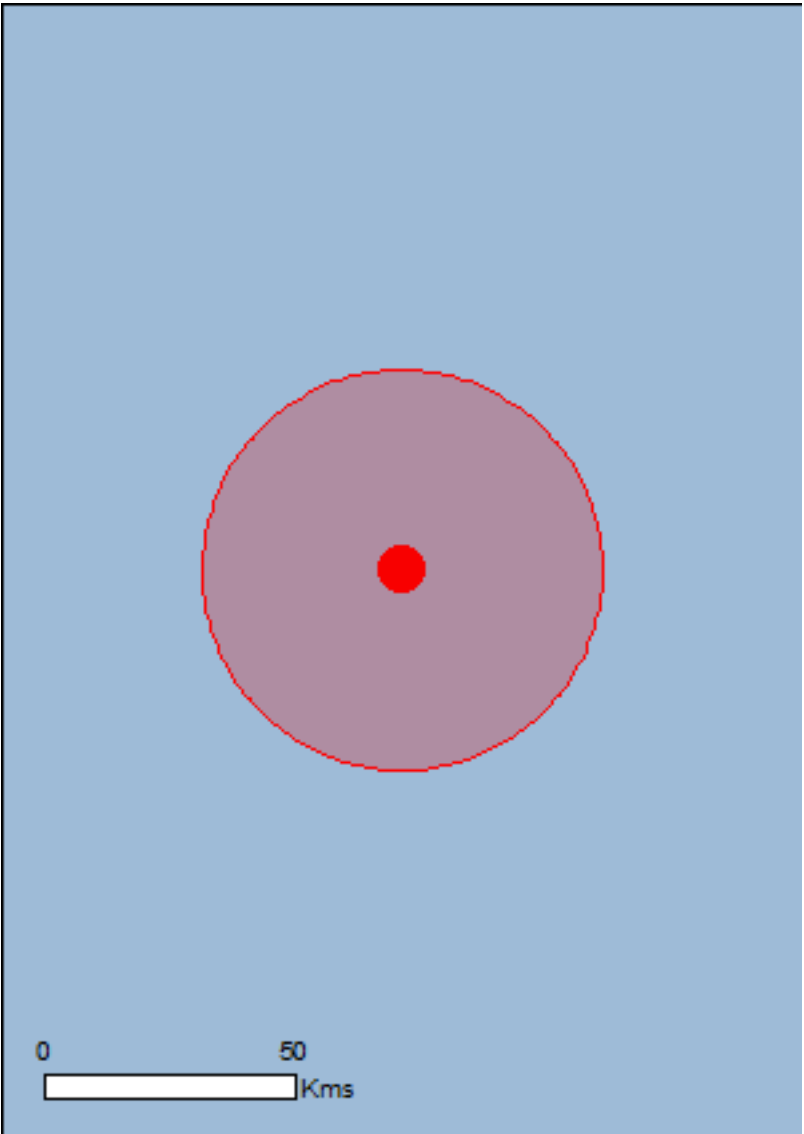
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



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

[Coordinates](#)

Buffer: 40.0Km



Summary

Matters of National Environmental Significance

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World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	8
Listed Migratory Species:	9

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Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	10
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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Name	Status	Type of Presence
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Invasive Species

[[Resource Information](#)]

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Mammals		
Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
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- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-22.50333 117.44389

Appendix 3

Flora of Conservation Significance Known from the Locality and their Likelihood of Occurrence in the Study Area



Taxon	Growth Form	Habitat	Database Searches			Previous Surveys						Likelihood of Occurrence Within the Brockman 2 Deposits Study Area	
			DBCA TPFL	WA Herbarium	Rio Tinto Database	Biota (2010b)	Biota (2012a)	Astron (2014b)	Biota (2014)	Eco Logical (2014b)	Biota (2016)	Initial Ranking Based on Desktop Review (NR=Nearest record, if within 20 km and in suitable habitat)	Final Ranking Including Results of 2018/2019 Field Surveys (study area component specified where necessary)
Priority 1													
<i>Abutilon</i> sp. Pritzelianum (S. van Leeuwen 5095)	Tall spindly shrub or robust herb to 2 m tall.	Sandplains.			✓							Would not occur: no suitable habitat present, and the species is recorded very infrequently in the locality (NR 2 km east of Lens G/Diesel, 7.5 km northwest of BS2).	Would not occur.
<i>Bothriochloa decipiens</i> var. <i>cloncurrensis</i>	Perennial, grass to 1.4 m tall.	Red-brown clay loam on stony plains.			✓							May potentially occur (Lens G/Diesel): some suitable habitat and recorded in close proximity, but recorded infrequently in locality (NR 5.5 km south of Lens G/Diesel, 19.2 km southeast of BS2).	May potentially occur (Lens G/Diesel).
<i>Calotis squamigera</i>	Procumbent herb to 20 cm tall.	Pebbly loam.			✓							May potentially occur: some suitable habitat present, however species recorded very infrequently in locality (NR 1.7 km northeast of BS2, 9 km northeast of Lens G/Diesel).	May potentially occur; not recorded in 2018/2019 but may not have been identifiable at the time of the surveys due to dry conditions.
<i>Euphorbia inappendiculata</i> var. <i>queenslandica</i>	Glabrous annual herb to 15 cm tall.	Heavy clay soils on open plains and gentle slopes.			✓				✓			Likely to occur at Lens G/Diesel: suitable habitat present, and records in close proximity (NR 300 m west of northwestern section of Lens G/Diesel study area).	May potentially occur at Lens G/Diesel: not recorded in 2018/2019, but may not have been identifiable during the survey due to the dry conditions.
												Would not occur at BS2; no suitable habitat.	Would not occur at BS2.
<i>Goodenia pedicellata</i>	Single-stemmed perennial herb to 25 cm tall.	Rocky, clayey soils on slopes and crests of small calcrete hills.		✓	✓						✓	Unlikely to occur: no particularly suitable habitat present and recorded very infrequently in locality (NR 8.5 km southwest of Lens G/Diesel, 14.3 km south of BS2).	Unlikely to occur.
<i>Helichrysum oligochaetum</i>	Erect herb to 25 cm tall.	Floodplains, creek lines, red-brown clays and loams.			✓							Unlikely to occur: some suitable habitat present at Lens G/Diesel, but species recorded very infrequently in locality (NR 15.7 km northeast of Lens G/Diesel).	Unlikely to occur.
<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Shrub to 4 m tall.	Gorges, rocky areas.		✓	✓			✓			✓	Recorded from 12 locations at BS2, totalling 60 individuals.	No additional locations recorded at BS2 in 2018/2019.
												Recorded from 26 locations in Lens G/Diesel, totalling 280 individuals.	Recorded from an additional 40 locations in Lens G/Diesel, totalling 578 individuals.
<i>Tetratheca butcheriana</i>	Small shrub to 30 cm tall with pink flowers.	Cliff faces and breakaways.		✓	✓							Recorded from 24 locations in Lens G/Diesel, totalling 132 individuals.	Recorded from 1 additional location in Lens G/Diesel in 2019, totalling 10 individuals.
												May potentially occur at BS2: some potentially suitable habitat appears to be present, and the species has been recorded in close proximity (NR 13 km southeast in Lens G/Diesel); however species is very restricted in distribution.	Unlikely to occur at BS2; not recorded during the current surveys.
<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684) NB: previous records originally identified as <i>V. pustulata</i> (Priority 3).	Annual herb to 30 cm tall.	Sandy red loam soils.		✓	✓				✓			May potentially occur at Lens G/Diesel: some suitable habitat present, however species is recorded infrequently in locality (NR 6 km northwest of Lens G/Diesel).	May potentially occur in Lens G/Diesel; not recorded in 2018/2019 but may not have been visible during the surveys due to the dry conditions.
												Unlikely to occur at BS2: no particularly suitable habitat present, and species is recorded infrequently in locality (NR 8 km east of BS2).	Unlikely to occur at BS2.

Taxon	Growth Form	Habitat	Database Searches				Previous Surveys						Likelihood of Occurrence Within the Brockman 2 Deposits Study Area	
			DBCA TPFL	WA Herbarium	Rio Tinto Database	Biota (2010b)	Biota (2012a)	Astron (2014b)	Biota (2014)	Eco Logical (2014b)	Biota (2016)	Initial Ranking Based on Desktop Review (NR=Nearest record, if within 20 km and in suitable habitat)	Final Ranking Including Results of 2018/2019 Field Surveys (study area component specified where necessary)	
Priority 2														
<i>Euphorbia australis</i> var. <i>glabra</i>	Low-growing prostrate perennial herb to 20 cm tall.	Banks of semi-permanent pools or creeklines, or clayey alluvial flats.			✓		✓					May potentially occur at Lens G/Diesel: some suitable habitat present, but recorded very infrequently in locality (NR 15.5 km northwest of Lens G/Diesel).	May potentially occur at Lens G/Diesel.	
												Unlikely to occur at BS2; no suitable habitat present.	Unlikely to occur at BS2.	
<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i>	Prostrate annual herb to 10 cm tall.	Heavy clay soils on open plains and gentle slopes.		✓					✓			Would not occur: no suitable habitat present.	Would not occur.	
<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Erect shrub to 3 m tall.	Hilltops, upper hillslopes.			✓		✓				✓	One individual recorded from 1 location at BS2.	No additional locations recorded at BS2 in 2018/2019.	
												Recorded from 1 location in Lens G/Diesel, comprising 12 individuals.	Recorded from an additional 5 locations in Lens G/Diesel in 2019, totalling 57 individuals. A taxon designated <i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708) was recorded from 8 locations in Lens G/Diesel in 2018, totalling 69 individuals.	
<i>Ipomoea racemigera</i>	Creeping annual herb, climber.	Major drainage lines.			✓							Unlikely to occur: no particularly suitable habitat present (NR 5.5 km southeast of Lens G/Diesel, 7.7 km north of BS2).	Unlikely to occur.	
<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	Herb to 15 cm tall.	Red-brown loam on rocky hillslopes, gorges.		✓	✓						✓	Recorded from 2 locations in Lens G/Diesel, totalling 50 individuals.	Recorded from 1 additional individual at 1 location in Lens G/Diesel.	
												May potentially occur at BS2: some suitable habitat present and records in close proximity (NR 11 km southeast).	May potentially occur at BS2: species dies back during dry conditions and may not have been identifiable during the 2018/2019 surveys.	
<i>Pentalepis trichodesmoides</i> subsp. <i>hispida</i>	Multi-stemmed shrub to 0.8 m tall.	Summits and slopes of steep terrain, outcrops; usually high in landscape.			✓						✓	Likely to occur at Lens G/Diesel: suitable habitat present and records in close proximity (NR 1 km southwest of Lens G/Diesel).	May potentially occur at Lens G/Diesel: not recorded in 2018/2019 despite searches in prospective habitat, however considerable prospective habitat was burnt.	
												May potentially occur at BS2: some suitable habitat present and records in close proximity (NR 9 km southwest of BS2).	Unlikely to occur at BS2; not recorded in 2018/2019 despite searches in prospective habitat.	
<i>Teucrium pilbaranum</i>	Shrub to 20 cm tall.	Crab hole floodplains; margins of calcrete tables.		✓				✓				Would not occur: no suitable habitat.	Would not occur.	
Priority 3														
<i>Amaranthus centralis</i>	Herb to 60 cm tall.	Alluvial flats and sandplains.	✓		✓							Unlikely to occur: some potentially suitable habitat present, but recorded very infrequently in locality (NR 12 km north of Lens G/Diesel).	Unlikely to occur.	
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	Compact tufted perennial grass.	Hardpan plains.		✓	✓				✓			May potentially occur: some suitable habitat present and records in close proximity (NR 6 km northwest of Lens G/Diesel, 8.5 km north-northeast of BS2).	May potentially occur; not recorded in 2018/2019 in Lens G/Diesel but may not have been identifiable due to dry conditions; species could occur on broad plains in south of BS2 study area, most of which was burnt in October 2018.	
<i>Astrebla lappacea</i>	Tufted perennial grass to 80 cm tall.	Clay plains.		✓	✓		✓	✓				Would not occur: no suitable habitat present.	Would not occur.	

Taxon	Growth Form	Habitat	Database Searches			Previous Surveys						Likelihood of Occurrence Within the Brockman 2 Deposits Study Area	
			DBCA TPFL	WA Herbarium	Rio Tinto Database	Biota (2010b)	Biota (2012a)	Astron (2014b)	Biota (2014)	Eco Logical (2014b)	Biota (2016)	Initial Ranking Based on Desktop Review (NR=Nearest record, if within 20 km and in suitable habitat)	Final Ranking Including Results of 2018/2019 Field Surveys (study area component specified where necessary)
<i>Dampiera anonyma</i>	Multi-stemmed perennial herb or low shrub to 1 m tall.	Skeletal soil over banded ironstone, basalt, shale and jaspilite on hill summits and upper slopes.		✓	✓							May potentially occur at Lens G/Diesel: extensive suitable habitat present but recorded infrequently in locality (NR 6 km northwest of Lens G/Diesel).	Recorded from 1 location in Lens G/Diesel comprising 60 individuals.
												Likely to occur at BS2: species recorded in close proximity (NR is 650 m east) and extensive suitable habitat is present.	Likely to occur at BS2: not recorded during the surveys, but much of the available habitat was burnt in October 2018.
<i>Eragrostis surreyana</i>	Tufted annual grass to 5 cm tall.	Major drainages and low-lying damp areas.		✓	✓							Unlikely to occur: no particularly suitable habitat present, and species is recorded very infrequently in locality.	Unlikely to occur.
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Shrub to 1.5 m tall.	Skeletal soils over ironstone on summits and breakaways.	✓	✓	✓						✓	1 individual recorded from 1 location at BS2.	No additional locations recorded at BS2 in 2018/2019.
												Likely to occur at Lens G/Diesel: extensive suitable habitat present and a record in close proximity (NR 400 m southwest of Lens G/Diesel).	Recorded from 11 locations in Lens G/Diesel totalling 195 individuals.
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Shrub to 2 m tall.	Skeletal red-brown silty loam on hillcrests, cliff tops, gorges.			✓							Recorded from 1 location at BS2, comprising 50 individuals.	Recorded from 1 additional location at BS2, comprising 1 individual.
												May potentially occur at Lens G/Diesel: extensive suitable habitat present, but recorded infrequently in locality (NR 12.5 km northwest of Lens G/Diesel).	May potentially occur at Lens G/Diesel; considerable prospective habitat was burnt in October 2018.
<i>Glycine falcata</i>	Mat forming perennial herb to 20 cm tall.	Black clayey sand, crabhole plains.	✓		✓		✓					Would not occur: no suitable habitat present.	Would not occur.
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	Annual herb.	Red-brown clay soil, typically on calcrete platforms.			✓							May potentially occur at Lens G/Diesel: only a small amount of potentially suitable habitat present (NR 10.5 km northwest).	Unlikely to occur: not recorded in Lens G/Diesel in 2018/2019 during searches of prospective habitat.
												Unlikely to occur at BS2: no suitable habitat.	
<i>Grevillea saxicola</i>	Erect shrub to 2.5 m tall.	Upper scree slopes and breakaways on BIF; usually with Mulga.		✓	✓							May potentially occur: extensive suitable habitat present, but species recorded infrequently in locality (NR 13.6 km south of Lens G/Diesel, 16.5 km southwest of BS2).	Recorded from 10 locations in Lens G/Diesel, totalling 112 individuals.
													May potentially occur at BS2; not recorded in 2018/2019 but large areas of suitable habitat were burnt in October 2018.
<i>Gymnanthera cunninghamii</i>	Erect shrub to 2 m tall.	Sandy soils along creeklines.			✓							May potentially occur: some suitable habitat present, but species recorded very infrequently in locality (NR 1.7 km north of BS2, 5 km west of Lens G/Diesel).	Recorded from 1 location in Lens G/Diesel in 2019, totalling 6 individuals.
													Unlikely to occur at BS2; not recorded during the 2018/2019 surveys and no particularly suitable habitat.
<i>Indigofera gilesii</i>	Spindly shrub to 1.4 m tall.	Skeletal red-brown loam to clay on rocky slopes, gorges and creeklines.			✓							Likely to occur: suitable habitat present and records in close proximity (NR 3 km northeast of BS2, 8.6 km northwest of Lens G/Diesel).	May potentially occur; not recorded during the 2018/2019 surveys, but large areas of suitable habitat were burnt in October 2018.
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Robust shrub to 2 m tall.	Drainage lines.		✓	✓	✓		✓				Recorded from 54 locations at BS2, totalling 266 individuals.	Recorded from 4 additional locations at BS2, totalling 127 individuals.
												Likely to occur at Lens G/Diesel: suitable habitat present and numerous records in locality (NR 14.5 km south of Lens G/Diesel).	Recorded from 3 locations in Lens G/Diesel comprising 29 individuals.
<i>Iotasperma sessilifolium</i>	Erect herb.	Cracking clay, black loam.		✓	✓		✓					Would not occur: no suitable habitat.	Would not occur.

Taxon	Growth Form	Habitat	Database Searches			Previous Surveys						Likelihood of Occurrence Within the Brockman 2 Deposits Study Area	
			DBCA TPFL	WA Herbarium	Rio Tinto Database	Biota (2010b)	Biota (2012a)	Astron (2014b)	Biota (2014)	Eco Logical (2014b)	Biota (2016)	Initial Ranking Based on Desktop Review (NR=Nearest record, if within 20 km and in suitable habitat)	Final Ranking Including Results of 2018/2019 Field Surveys (study area component specified where necessary)
<i>Nicotiana umbratica</i>	Erect herb to 70 cm tall.	Shallow soils. Rocky outcrops.			✓							Unlikely to occur: some suitable habitat present, but species recorded very infrequently in locality (NR 12 km south-southwest of BS2, 18 km south of Lens G/Diesel).	Unlikely to occur.
<i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	Annual herb to 10 cm tall.	Stony undulating clay plains.	✓	✓	✓		✓				✓	May potentially occur at Lens G/Diesel: some suitable habitat, and a record 650 m south.	May potentially occur at Lens G/Diesel.
												Would not occur at BS2; no suitable habitat.	Would not occur at BS2.
<i>Pleurocarpaea gracilis</i>	Rounded shrub to 0.5 m tall.	Skeletal red gritty soil over massive BIF rock on summits of rounded hills, slopes and gullies.		✓	✓							Unlikely to occur: suitable habitat present, but recorded very infrequently in locality (NR 16 km south of Lens G/Diesel).	Unlikely to occur.
<i>Ptilotus subspinescens</i>	Compact shrub to 80 cm tall.	Gentle stony slopes and screes, particularly on calcareous substrates.	✓	✓	✓	✓					✓	May potentially occur: a small amount of potentially suitable habitat present (NR 5 km northwest of Lens G/Diesel).	Unlikely to occur: species not recorded in Lens G/Diesel in 2018/2019 despite searches in area of prospective habitat.
												Would not occur at BS2: no suitable habitat.	Would not occur at BS2.
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Spindly shrub to 2 m tall.	Mulga (<i>Acacia aneura</i>) and Snakewood (<i>A. xiphophylla</i>) vegetation.		✓	✓	✓			✓			Recorded from 9 locations in Lens G/Diesel, totalling 9 individuals.	Recorded from 8 additional locations in Lens G/Diesel, totalling 12 individuals.
												Likely to occur at BS2: some suitable habitat present and records in close proximity (NR 9 km east).	May potentially occur at BS2; not recorded in 2018/2019 but large area of prospective habitat was burnt in October 2018.
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	Herb to 30 cm tall.	Various; creeks, plains, low hills.			✓							Likely to occur at Lens G/Diesel: suitable habitat present and a record in close proximity (350 m northeast).	May potentially occur; not recorded in 2018/2019 but may not have been visible due to dry conditions.
												May potentially occur at BS2: suitable habitat present, however species recorded infrequently in locality (NR 15.5 km north).	
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Spreading shrub to 50 cm tall.	Steep slopes, rocky gullies, and breakaways.		✓	✓			✓		✓		Recorded from 227 locations at BS2, totalling 1,094 individuals.	Recorded from 1 additional location at BS2, comprising 1 individual.
												Recorded from 17 locations in Lens G/Diesel, totalling 117 individuals.	Recorded from 59 additional locations in Lens G/Diesel, totalling 380 individuals.
<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Semi-prostrate to upright shrub to 30 cm tall.	Base of rocky cliff habitats in red skeletal stony soils or ironstone.	✓	✓	✓			✓			✓	Recorded from 41 locations at BS2, totalling 145 individuals.	Recorded from 2 additional locations totalling 6 individuals.
												Recorded from 13 locations in Lens G/Diesel, totalling 29 individuals.	Recorded from an additional 19 locations in Lens G/Diesel, totalling 223 individuals.
<i>Swainsona thompsoniana</i>	Annual herb.	Clay soils on plains.			✓							Unlikely to occur: no particularly suitable habitat (NR 12 km north of Lens G/Diesel).	Unlikely to occur.
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	Perennial tussock-forming grass.	Clay plains.		✓	✓		✓	✓	✓			May potentially occur in Lens G/Diesel: some potentially suitable habitat present and a record in close proximity (3 km west).	Recorded from 1 location in Lens G/Diesel, comprising 30 individuals.
												Would not occur at BS2: no suitable habitat.	Would not occur at BS2.
<i>Triodia basitricha</i>	Hummock grass to 80 cm tall.	Low stony hills and plains.	✓		✓						✓	Recorded from 10 locations in Lens G/Diesel, totalling 645 individuals.	Recorded from 11 additional locations in Lens G/Diesel, totalling 2,420 individuals.
												May potentially occur at BS2; suitable habitat present and records in close proximity (NR 11.5 km southeast).	Recorded from 7 locations at BS2, totalling 3,100 individuals.

Taxon	Growth Form	Habitat	Database Searches		Previous Surveys						Likelihood of Occurrence Within the Brockman 2 Deposits Study Area		
			DBCA TPFL	WA Herbarium	Rio Tinto Database	Biota (2010b)	Biota (2012a)	Astron (2014b)	Biota (2014)	Eco Logical (2014b)	Biota (2016)	Initial Ranking Based on Desktop Review (NR=Nearest record, if within 20 km and in suitable habitat)	Final Ranking Including Results of 2018/2019 Field Surveys (study area component specified where necessary)
Priority 4													
<i>Acacia bromilowiana</i>	Shrub to 12 m tall.	Skeletal loam soils on rocky hill slopes, breakaways, gorges and rocky creek beds.		✓	✓			✓			✓	Recorded from 13 locations at BS2, totalling 249 individuals.	Recorded from 1 additional location at BS2, comprising 15 individuals.
												Recorded from 11 locations in Lens G/Diesel, totalling 128 individuals.	Recorded from 2 additional locations in Lens G/Diesel, totalling 80 individuals.
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	Shrub to 1.5 m tall.	Rocky hill slopes, breakaways.	✓	✓	✓			✓				Recorded from 4 locations in Lens G/Diesel, totalling 25 individuals.	Recorded from 1 additional location in Lens G/Diesel, totalling 4 individuals.
												Recorded from 1 location at BS2, comprising 6 individuals.	No additional locations recorded in 2018/2019.
<i>Goodenia nuda</i>	Erect to ascending herb to 50 cm tall.	Drainage lines and other low-lying areas.		✓	✓				✓		✓	Recorded from 1 location in Lens G/Diesel, comprising 1 individual.	Recorded from 2 additional location in Lens G/Diesel, comprising 7 individuals.
												Likely to occur at BS2: suitable habitat present and records in close proximity (NR 3 km west).	Likely to occur: not recorded in 2018/2019, however conditions were very dry.
<i>Lepidium catapycnon</i>	Woody perennial shrub to 30 cm tall, with zigzag stems.	Skeletal soils, hillslopes.	✓		✓							Recorded from 10 locations in Lens G/Diesel, totalling 126 individuals.	Recorded from 17 additional locations in Lens G/Diesel, totalling 129 individuals.
												May potentially occur at BS2: suitable habitat present, however species recorded infrequently in locality (NR 11.5 km southeast).	May potentially occur at BS2.
<i>Ptilotus mollis</i>	Perennial shrub to 50 cm tall.	Stony hills and screes.		✓	✓							Likely to occur: suitable habitat present and records in close proximity (NR 3 km northwest of BS2, 13.5 km south of Lens G/Diesel).	May potentially occur; not recorded in 2018/2019 but large areas of suitable habitat were burnt in October 2018.

Appendix 4

Vegetation Structural Classification and Condition Scale



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

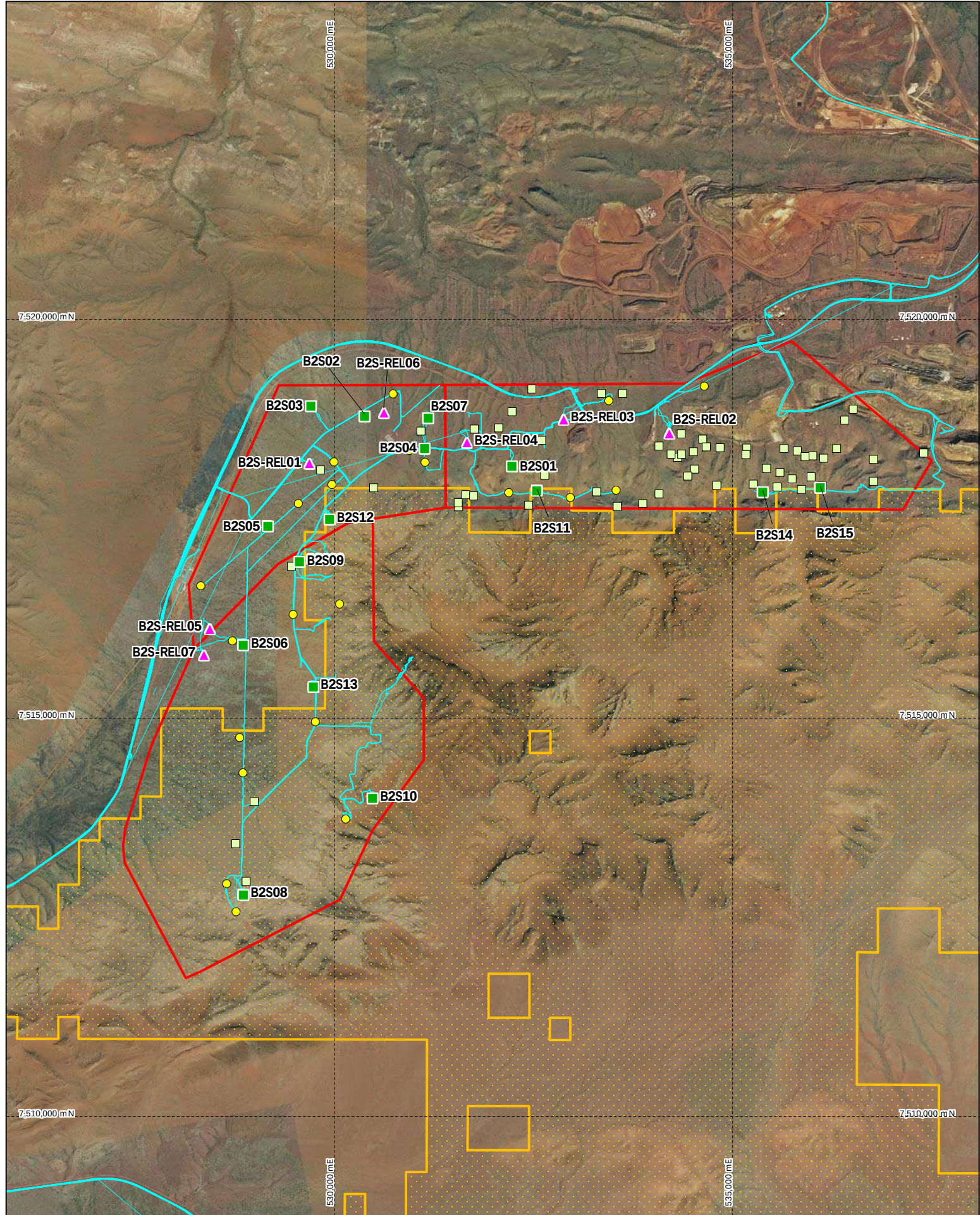
Vegetation condition scale taken from EPA (2016a), based on scales developed by Keighery (1994) and Trudgen (1988).

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

Appendix 5

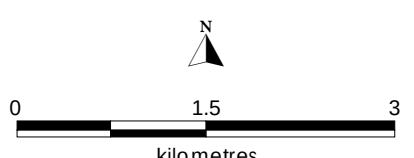
Survey Effort: Locations of Sampling Sites and Foot Traverses



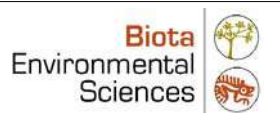


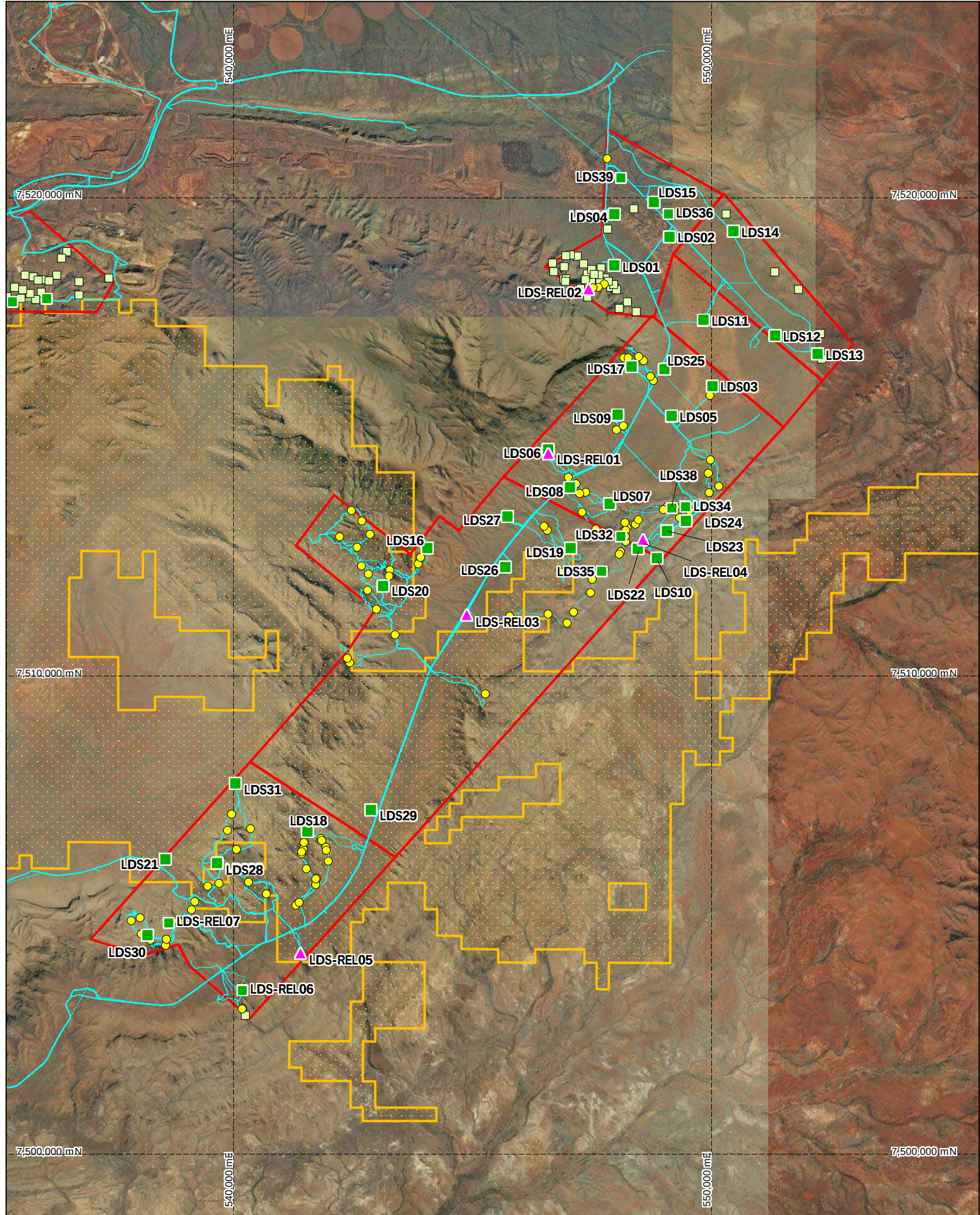
- Flora Sampling Effort**
- Current quadrat location
 - ▲ Current relevé location
 - Mapping note location
 - Previous sampling site location

Fire scar Oct/Nov 2018
Source: NAFI, downloaded 28/11/2018



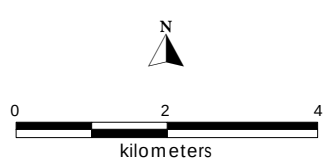
Brockman Syncline 2 South West/West Extension Flora Sampling Effort



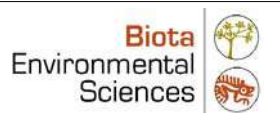


- Study area
- GPS tracklog
- Flora Sampling Effort**
- Current quadrat location
- Current relevé location
- Mapping note location
- Previous sampling site location

Fire scar Oct/Nov 2018
 Source: NAFI, downloaded 28/11/2018



Lens G and Diesel Flora Sampling Effort



Appendix 6

Summarised Raw Data from Quadrats and Relevés Sampled in 2018 and 2019



Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: SCTB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 532235 mE 7518216 mN**Habitat** Hill slope; steep lower slope off high ridge; NW aspect.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone, chert, siltstone; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia ancistrocarpa* scattered tall shrubs over *Triodia wiseana* hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia ancistrocarpa* scattered tall shrubs over *Triodia wiseana* hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Very long unburnt. Phase 2: Very long unburnt.**Site**

B2S01

Date

Phase 1: 16-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	1.5	300		1.5	300	
<i>Acacia bivenosa</i>	0.1	110		0.1	110	
<i>Acacia synchronicia</i>	0.1	60		0.1	60	
<i>Bulbostylis barbata</i>	0.1	10				
<i>Dampiera candidans</i>	0.1	40				
<i>Eriachne aristidea</i>	0.1	30		0.1	30	
<i>Eriachne ciliata</i>	0.1	30	B2S01-02	0.1	30	
<i>Eriachne mucronata</i>	0.1	30				
<i>Eriachne mucronata</i> (typical form)				0.1	30	
<i>Eriachne pulchella</i>	0.1	10				
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1.5	450		1.5	450	
<i>Euphorbia careyi</i>	0.1	25	B2S01-06	0.1	25	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	15		0.1	15	
<i>Goodenia microptera</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	30		0.1	30	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	150	B2S01-05	0.1	150	
<i>Heliotropium inexplcitum</i>	0.1	20	B2S01-04			
<i>Hibiscus coatesii</i>	0.1	30		0.1	30	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	20	B2S01-08			
<i>Indigofera monophylla</i>	0.1	30		0.1	30	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	90		0.1	90	
<i>Lepidium pedicellosum</i>	0.1	30	B2S01-01	0.1	30	
<i>Oldenlandia crouchiana</i>	0.1	10	B2S01-03	0.1	10	
<i>Paraneurachne muelleri</i>				0.1	15	
<i>Paspalidium</i> sp.	0.1	6				
<i>Polycarpaea holtzei</i>	0.1	5		0.1	5	
<i>Ptilotus exaltatus</i>	0.1	50				
<i>Schizachyrium fragile</i>	0.1	15		0.1	5	B2S01R-01
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>				0.1	20	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	90		0.1	90	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	150		0.1	150	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Solanum horridum</i>	0.1	20	B2S01-07			
<i>Solanum lasiophyllum</i>	0.1	50		0.1	50	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	25		0.1	25	
<i>Triodia epactia</i>	0.1	40		0.1	40	
<i>Triodia wiseana</i>	50	30		50	30	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: PL/CI**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 530349 mE 7518827 mN.**Habitat** Plain; broad gently undulating plain.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** **Phase 1:** *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana*, (*A. exigua*) tall shrubland over *Triodia wiseana* hummock grassland.**Phase 2:** *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana*, (*A. exigua*) tall shrubland over *Triodia wiseana* hummock grassland.**Veg Condition** **Phase 1:** Excellent. **Phase 2:** Excellent.**Fire Age** **Phase 1:** Very long unburnt. **Phase 2:** Very long unburnt.**Site**

B2S02

Date**Phase 1:** 16-Oct-18 **Phase 2:** 15-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	25	350		25	350	
<i>Acacia bivenosa</i>	0.1	130		0.1	130	
<i>Acacia exigua</i>	0.5	280		0.5	280	
<i>Amphipogon sericeus</i>	0.1	40		0.1	40	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Codonocarpus cotinifolius</i>	0.1	100				
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	3	400		3	400	
<i>Duperreya commixta</i>	0.1	300		0.1	300	
<i>Eriachne aristidea</i>	0.1	25				
<i>Goodenia microptera</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	30		0.1	30	
<i>Hakea chordophylla</i>	0.1	250		0.1	250	
<i>Haloragis gossei</i> var. <i>gossei</i>	0.1	30	B2S02-01	0.1	30	
<i>Hibiscus brachychlaenus</i>	0.1	60	B2S02-06			
<i>Hibiscus burtonii</i>	0.1	20				
<i>Hibiscus coatesii</i>	0.1	80		0.1	80	
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	80		0.1	80	
<i>Lysiana casuarinae</i>				0.1	40	
<i>Melhania oblongifolia</i>	0.1	20	B2S02-08			
<i>Peripleura virgata</i>	0.1	25	B2S02-02			
<i>Psyrax suaveolens</i>	0.1	120		0.1	120	
<i>Ptilotus calostachyus</i>	0.1	30		0.1	30	
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus fusiformis</i>	0.1	30	B2S02-07	0.1	30	
<i>Schizachyrium fragile</i>	0.1	30				
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	120		0.1	120	B2S02R-01

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	230		0.1	230	
<i>Sida arenicola</i>	0.1	140	B2S02-05	0.1	140	
<i>Solanum elatius</i>	0.1	80	B2S02-04	0.1	80	
<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)	0.1	25	B2S02-03	0.1	25	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	30		0.1	30	
<i>Triodia wiseana</i>	50	30		50	30	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: SCTB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 529674 mE, 7518951 mN.**Habitat** Plain; stony plain at base of major range to E.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%, pebbles 26-50%, gravel 26-50%.**Vegetation** Phase 1: *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Acacia atkinsiana*, (*A. exigua*) tall shrubland over *Triodia wiseana*, (*T. basitricha*) open hummock grassland.Phase 2: *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Acacia atkinsiana*, (*A. exigua*) tall shrubland over *Triodia wiseana*, (*T. basitricha*) open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Very long unburnt. Phase 2: Very long unburnt.**Site**

B2S03

Date

Phase 1: 17-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	20	300		20	300	
<i>Acacia exigua</i>	1	220		1	220	
<i>Amphipogon sericeus</i>	0.1	35		0.1	35	
<i>Aristida inaequiglumis</i>	0.1	80	B2S03-03	0.1	80	
<i>Codonocarpus cotinifolius</i>	0.1	160		0.1	160	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	1.5	500		1.5	500	
<i>Cymbopogon ambiguus</i>	0.1	110		0.1	110	
<i>Eriachne mucronata</i> (typical form)				0.1	20	
<i>Eriachne pulchella</i>	0.1	10		0.1	10	
<i>Fimbristylis simulans</i>	0.1	15	B2S03-02	0.1	15	
<i>Goodenia microptera</i>	0.1	20		0.1	20	
<i>Goodenia stobbsiana</i>	0.1	70		0.1	70	
<i>Haloragis gossei</i> var. <i>gossei</i>	0.1	15	B2S02-01=			
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	160		0.1	160	
<i>Paraneurachne muelleri</i>				0.1	20	
<i>Polycarpaea holtzei</i>	0.1	5				
<i>Psydrax suaveolens</i>	0.1	70		0.1	70	
<i>Ptilotus calostachyus</i>	0.1	80		0.1	80	
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Schizachyrium fragile</i>	0.1	20				
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160		0.1	160	
<i>Solanum elatius</i>	0.1	40	B2S02-04=	0.1	40	
<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)	0.1	25	B2S02-03=			
<i>Triodia basitricha</i>	2	40	B2S03-01	2	40	
<i>Triodia wiseana</i>	27	50		27	50	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: BRM/BM**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 531111 mE, 7518444 mN.**Habitat** Drainage; EW moderate drainage of major range.**Soil** Dark reddish brown clay loam.**Rock Type** Ironstone, river stone; boulders 1-25; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.**Vegetation** **Phase 1:** *Corymbia hamersleyana* low open woodland over *Clerodendrum floribundum* var. *angustifolium*, (*Gossypium robinsonii*, *Eremophila longifolia*, *Acacia pruinocarpa*, *A. maitlandii*) tall open shrubland over *Acacia pyrifolia*, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301), *Senna artemisioides* subsp. *oligophylla* x subsp. *helmsii* scattered shrubs over *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186), (*Corchorus crozophorifolius*, *Ptilotus obovatus* var. *obovatus*) low shrubland over *Triodia epactia* open hummock grassland and **Cenchrus ciliaris* scattered tussock grasses.**Phase 2:** *Corymbia hamersleyana* low open woodland over *Clerodendrum floribundum* var. *angustifolium*, (*Gossypium robinsonii*, *Eremophila longifolia*, *Acacia pruinocarpa*, *A. maitlandii*) tall open shrubland over *Acacia pyrifolia*, *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301), *Senna artemisioides* subsp. *oligophylla* x subsp. *helmsii* scattered shrubs over *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186), (*Corchorus crozophorifolius*, *Ptilotus obovatus* var. *obovatus*) low shrubland over *Triodia epactia* open hummock grassland and **Cenchrus ciliaris* scattered tussock grasses.**Veg Condition** **Phase 1:** Very Good: presence of weeds (**B. bipinnata*, **M. americanum*). **Phase 2:** Very Good: presence of weeds (**B. bipinnata*, **M. americanum*).**Fire Age** **Phase 1:** Very long unburnt. **Phase 2:** Very long unburnt.**Site** B2S04**Date** Phase 1: 17-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	0.1	25	B2S04-13	0.1	25	
<i>Acacia atkinsiana</i>	0.1	30		0.1	30	
<i>Acacia bivenosa</i>	0.1	160		0.1	160	
<i>Acacia exigua</i>	0.1	300		0.1	300	
<i>Acacia maitlandii</i>	0.5	450		0.5	450	
<i>Acacia pruinocarpa</i>	0.5	350		0.5	350	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.5	180		0.5	180	
<i>Amaranthus cuspidifolius</i>	0.1	60	B2S04-02	0.1	60	
<i>Bidens bipinnata</i>	0.1	30		0.1	30	
<i>Boerhavia</i> sp.				0.1	30	
<i>Capparis lasiantha</i>	0.1	300		0.1	300	
<i>Cenchrus ciliaris</i>	0.5	60		0.5	60	
<i>Cleome viscosa</i>	0.1	60		0.1	60	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	2.5	250	B2S04-01	2.5	250	
<i>Corchorus crozophorifolius</i>	4	90		4	90	
<i>Corymbia hamersleyana</i>	4	450		4	450	
<i>Cucumis variabilis</i>	0.1	150		0.1	150	
<i>Cymbopogon ambiguus</i>	0.1	110		0.1	70	
<i>Cynanchum pedunculatum</i>				0.1	30	B2S04R-03
<i>Dicladanthera forrestii</i>	0.1	25	B2S04-12	0.1	25	
<i>Digitaria brownii</i>	0.1	30		0.1	30	
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	0.1	25		0.1	25	
<i>Duperreya commixta</i>	0.1	130		0.1	130	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	30	B2S04-09	0.1	30	
<i>Enneapogon lindleyanus</i>	0.1	60	B2S04-06	0.1	80	B2S04R-01
<i>Enneapogon polyphyllus</i>	0.1	20		0.1	20	
<i>Eremophila longifolia</i>	1	210		1	210	
<i>Eriachne mucronata</i> (typical form)	0.1	30	B2S04-18	0.1	30	
<i>Eriachne pulchella</i>	0.1	15				
<i>Eriachne tenuiculmis</i>	0.1	50	B2S04-17	0.1	50	
<i>Euphorbia australis</i> var. <i>subtomentosa</i>	0.1	30	B2S04-15			
<i>Euphorbia biconvexa</i>	0.1	30	B2S04-08	0.1	30	
<i>Euphorbia boophthona</i>	0.1	50	B2S04-03	0.1	50	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	30		0.1	30	
<i>Gomphrena cunninghamii</i>	0.1	20		0.1	20	
<i>Goodenia microptera</i>	0.1	20		0.1	20	
<i>Gossypium australe</i>				0.1	50	
<i>Gossypium robinsonii</i>	1.5	350		1.5	350	
<i>Grevillea wickhamii</i>				0.1	30	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	150		0.1	150	B2S04R-02
<i>Haloragis gossei</i> var. <i>inflata</i>	0.1	30	B2S04-10			
<i>Hibiscus coatesii</i>	0.1	20	B2S04-16	0.1	20	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	35	B2S01-08=	0.1	35	
<i>Hybanthus aurantiacus</i>	0.1	20		0.1	20	
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	0.5	150		0.5	150	
<i>Isotropis atropurpurea</i>				0.1	30	B2S04R-04
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	120		0.1	120	
<i>Lepidium pedicellsum</i>	0.1	60	B2S01-01=	0.1	60	
<i>Lysiana casuarinae</i>	0.1	40	B2S04-05	0.1	40	
<i>Malvastrum americanum</i>	0.1	25		0.1	25	
<i>Melhania oblongifolia</i>	0.1	40		0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Paspalidium clementii</i>	0.1	20	B2S04-11			
<i>Peripleura virgata</i>	0.1	30	B2S04-04	0.1	30	
<i>Phyllanthus maderaspatensis</i>	0.1	50		0.1	50	
<i>Polycarpaea longiflora</i>	0.1	25		0.1	25	
<i>Pterocaulon</i> sp.	0.1	60	B2S04-07	0.1	60	
<i>Ptilotus clementii</i>	0.1	50		0.1	50	
<i>Ptilotus exaltatus</i>	0.1	60		0.1	60	
<i>Ptilotus fusiformis</i>	0.1	30	B2S02-07=	0.1	30	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	1.5	90		1.5	90	
<i>Salsola australis</i>	0.1	35		0.1	35	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.5	140		0.5	140	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		0.1	150	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	170		0.1	170	
<i>Solanum horridum</i>	0.1	25	B2S04-14	0.1	25	
<i>Stylobasium spathulatum</i>	0.1	180		0.1	180	
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	8	60		8	60	
<i>Themeda triandra</i>	0.1	70		0.1	70	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	70		0.1	70	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	140		0.1	140	
<i>Triodia epactia</i>	25	50		25	50	
<i>Triodia wiseana</i>	0.1	40		0.1	40	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: BRM/RM**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 529163 mE, 7517469 mN.**Habitat** Plain; stony plain to foot slope at base of major range to the E; gentle slope to W.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, (*A. ancistrocarpa*, *A. atkinsiana*) tall open shrubland over *Triodia wiseana* open hummock grassland.Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, (*A. ancistrocarpa*, *A. atkinsiana*) tall open shrubland over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Very long unburnt. Phase 2: Very long unburnt.**Site**

B2S05

Date

17-Oct-18, 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.5	230		0.5	400	
<i>Acacia aptaneura</i>	0.5	400	B2S05-02	0.5	400	
<i>Acacia atkinsiana</i>	0.5	280		0.5	280	
<i>Acacia bivenosa</i>	0.1	90		0.1	90	
<i>Acacia exigua</i>	8	350		8	350	
<i>Amphipogon sericeus</i>	0.1	30		0.1	30	
<i>Aristida contorta</i>	0.1	30		0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		0.1	40	
<i>Aristida</i> sp.	0.1	80		0.1	80	
<i>Cymbopogon</i> sp.				0.1	30	
<i>Digitaria brownii</i>	0.1	60		0.1	60	
<i>Eriachne mucronata</i>	0.1	30		0.1	30	
<i>Eriachne pulchella</i>	0.1	7		0.1	7	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1.5	600		1.5	600	
<i>Eulalia aurea</i>				0.1	30	
<i>Goodenia microptera</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	40		0.1	40	
<i>Hakea chordophylla</i>	0.1	160		0.1	70	
<i>Hakea lorea</i> subsp. <i>lorea</i>				0.1	160	B2S05R-01
<i>Hibiscus coatesii</i>				0.1	20	
<i>Jasminum didymum</i> subsp. <i>lineare</i>				0.1	80	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Psyrax suaveolens</i>	0.1	80		0.1	80	
<i>Ptilotus calostachyus</i>	0.1	150		0.1	150	
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus helipteroides</i>	0.1	20				
<i>Ptilotus rotundifolius</i>	0.1	60		0.1	60	
<i>Sclerolaena densiflora</i>	0.1	25	B2S05-01	0.1	25	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	130	B2S05-03	0.1	130	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	110		0.1	110	
<i>Senna glutinosa</i> subsp. <i>x luerksenii</i>	0.1	160		0.1	160	
<i>Triodia wiseana</i>	15	50		15	50	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: PL/CI**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 528839 mE, 7515998 mN.**Habitat** Plain; stony plain at the foot of a major range to the E, gentle slope to W.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** Phase 1: *Eucalyptus gamophylla* low open mallee woodland over *Acacia ancistrocarpa*, *A. exigua* tall shrubland over *Triodia wiseana* open hummock grassland.Phase 2: *Eucalyptus gamophylla* low open mallee woodland over *Acacia ancistrocarpa*, *A. exigua* tall shrubland over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Very long unburnt. Phase 2: Very long unburnt.**Site**

B2S06

Date

Phase 1: 17-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	7	380		7	280	
<i>Acacia bivenosa</i>	0.1	130		0.1	130	
<i>Acacia exigua</i>	5	220		5	240	
<i>Amphipogon sericeus</i>				0.1	40	
<i>Aristida contorta</i>	0.1	30		0.1	25	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		0.1	40	
<i>Bonamia erecta</i>	0.1	30		0.1	40	
<i>Codonocarpus cotinifolius</i>	0.1	70		0.1	70	
<i>Cymbopogon</i> sp.	0.1	30		0.1	30	
<i>Digitaria brownii</i>	0.1	45		0.1	40	
<i>Duperreya commixta</i>	0.1	150		0.1	150	
<i>Eriachne pulchella</i>	0.1	10		0.1	15	
<i>Eucalyptus gamophylla</i>	3	450		3	400	
<i>Euphorbia boophthona</i>	0.1	40		0.1	40	
<i>Goodenia microptera</i>	0.1	35		0.1	35	
<i>Goodenia stobbsiana</i>	0.1	60		0.1	40	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	170		0.1	170	
<i>Hibiscus burtonii</i>	0.1	60		0.1	60	
<i>Hibiscus coatesii</i>	0.1	15	B2S04-16=	0.1	20	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	150		0.1	160	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Psydrax rigidula</i>	0.1	80	B2S06-01	0.1	110	B2S06R-01
<i>Ptilotus calostachyus</i>	0.1	90		0.1	70	
<i>Ptilotus exaltatus</i>	0.1	40		0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		0.1	150	
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>	0.1	180		0.1	180	
<i>Seringia nephrosperma</i>				0.1	40	
<i>Sida cardiophylla</i>	0.1	35	B2S06-02	0.1	45	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Triodia epactia</i>				0.1	40	
<i>Triodia wiseana</i>	15	50		15	50	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: SC/TB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 531163 mE, 7518839 mN.**Habitat** Drainage; moderate sized drainage with small channels and islands; flowing N.**Soil** Dark reddish brown clay loam.**Rock Type** Ironstone; river stone; outcropping 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** Phase 1: *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* tall open shrubland over *Senna artemisioides* subsp. *oligophylla* x subsp. *helmsii*, *Acacia pyrifolia* var. *pyrifolia*, (*Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301)) open shrubland over *Corchorus crozophorifolius*, *Ptilotus obovatus* var. *obovatus*, *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* very open hummock grassland and *Themeda triandra*, *Enneapogon lindleyanus*, (**Cenchrus ciliaris*) very open tussock grassland.Phase 2: *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* tall open shrubland over *Senna artemisioides* subsp. *oligophylla* x subsp. *helmsii*, *Acacia pyrifolia* var. *pyrifolia*, (*Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301)) open shrubland over *Corchorus crozophorifolius*, *Ptilotus obovatus* var. *obovatus*, *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* very open hummock grassland and *Themeda triandra*, *Enneapogon lindleyanus*, (**Cenchrus ciliaris*) very open tussock grassland.**Veg Condition** Phase 1: Very Good: presence of weeds (**B. bipinnata*). Phase 2: Very Good: presence of weeds (**B. bipinnata*).**Fire Age** Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.**Site**

B2S07

Date

Phase 1: 18-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon fraseri</i> subsp. <i>fraseri</i>	0.1	20	B2S07-03	0.1	20	
<i>Abutilon lepidum</i>	0.1	150	B2S07-06	0.1	150	
<i>Acacia bivenosa</i>				0.1	180	
<i>Acacia maitlandii</i>	0.1	120		0.1	120	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	3	130		3	130	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	3	280	BREL01-02=	3	280	
<i>Alternanthera nana</i>	0.1	30	B2S07-01			
<i>Amaranthus cuspidifolius</i>	0.1	60	B2S04-02=	0.1	60	
<i>Bidens bipinnata</i>	0.1	30		0.1	30	
<i>Boerhavia</i> sp.	0.1	40		0.1	40	
<i>Capparis spinosa</i> subsp. <i>nummularia</i>	0.1	45		0.1	10	B2S07R-05
<i>Cenchrus ciliaris</i>	0.5	40		0.5	40	
<i>Cleome viscosa</i>	0.1	50		0.1	50	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	0.1	250		0.1	250	
<i>Corchorus crozophorifolius</i>	2.5	90		2.5	90	
<i>Corchorus tridens</i>	0.1	20				
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.1	350		0.1	350	
<i>Corymbia hamersleyana</i>	1	400		1	400	
<i>Cucumis variabilis</i>	0.1	150		0.1	150	
<i>Cymbopogon ambiguus</i>	0.1	110				
<i>Cynanchum pedunculatum</i>	0.1	30	B2S07-10			
<i>Dicladanthera forrestii</i>	0.1	40	B2S04-12=	0.1	40	
<i>Digitaria brownii</i>	0.1	50		0.1	50	
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	0.1	35		0.1	35	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	170	B2S07-16			
<i>Duperreya commixta</i>	0.1	150		0.1	150	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	30		0.1	30	
<i>Enneapogon caeruleus</i>	0.1	20				
<i>Enneapogon lindleyanus</i>	3	60		3	60	
<i>Eriachne mucronata</i>	0.1	30				
<i>Eriachne mucronata</i> (typical form)				0.1	30	
<i>Eriachne pulchella</i>	0.1	15		0.1	15	
<i>Eriachne tenuiculmis</i>	0.1	35	B2S07-11			
<i>Euphorbia biconvexa</i>	0.1	30	B2S07-05	0.1	30	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	35				
<i>Gomphrena canescens</i> subsp. <i>canescens</i>	0.1	40	B2S07-09			
<i>Gomphrena cunninghamii</i>	0.1	30		0.1	30	
<i>Gossypium australe</i>	0.1	140	B2S07-02	0.1	140	B2S07R-03
<i>Gossypium robinsonii</i>	0.1	190		0.1	190	
<i>Grevillea wickhamii</i>	0.1	170		0.1	170	
<i>Hakea chordophylla</i>	0.1	300				
<i>Hakea lorea</i> subsp. <i>lorea</i>				0.1	30	
<i>Hibiscus coatesii</i>				0.1	90	B2S07R-01
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	20		0.1	20	
<i>Hybanthus aurantiacus</i>	0.1	40		0.1	40	
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	0.5	190	B2S07-15	0.5	190	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	140		0.1	140	
<i>Lepidium pedicellsum</i>	0.1	60		0.1	60	
<i>Lysiana casuarinae</i>	0.1	60	B2S04-05=	0.1	60	
<i>Malvastrum americanum</i>	0.1	45				
<i>Melhantha oblongifolia</i>	0.1	20		0.1	60	B2S07R-02
<i>Notoleptopus decaisnei</i>	0.1	20	B2S07-07	0.1	20	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Paspalidium clementii</i>	0.1	15	B2S07-04			
<i>Peripleura arida</i>	0.1	20	B2S07-12	0.1	20	
<i>Phyllanthus maderaspatensis</i>	0.1	40		0.1	40	
<i>Polycarpha longiflora</i>	0.1	20		0.1	20	
<i>Pterocaulon sphacelatum</i>	0.1	20	B2S07-18			
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus fusiformis</i>	0.1	40		0.1	40	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	2.5	80		2.5	80	
<i>Rhagodia eremaea</i>	0.1	50		0.1	80	B2S07R-04
<i>Rhynchosia minima</i>	0.1	45		0.1	45	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Salsola australis</i>	0.1	10		0.1	10	
<i>Santalum lanceolatum</i>	0.1	160		0.1	160	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	160	B2S07-08			
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	150		0.1	150	
<i>Solanum horridum</i>	0.1	30	B2S04-14=	0.1	30	
<i>Solanum lasiophyllum</i>				0.1	20	
<i>Stylobasium spathulatum</i>	0.1	110		0.1	110	
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	1.5	70		1.5	70	
<i>Themeda triandra</i>	5	60	B2S07-17	5	60	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	120		0.1	120	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	140		0.1	140	
<i>Triodia epactia</i>	4	50		4	50	
<i>Triodia wiseana</i>	0.1	50		0.1	50	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: BRM/RM**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 528825 mE, 7512848 mN.**Habitat** Hill slope/spur on ridge, N facing.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; outcropping 1-25%; boulders 1-25%; cobbles 26-50%; pebbles 26-50%; gravel 51-75%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Triodia wiseana* hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Triodia wiseana* hummock grassland.**Veg Condition** Phase 1: Excellent.**Fire Age** Phase 1: No sign of recent fire.**Site**

B2S08

Date

Phase 1: 18-Oct-18 Phase 2: 15-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.1	190		0.1	190	
<i>Acacia atkinsiana</i>	0.1	90		0.1	90	
<i>Acacia exigua</i>	0.1	180		0.1	180	
<i>Acacia maitlandii</i>	0.1	180		0.1	180	
<i>Amphipogon sericeus</i>				0.1	30	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.5	450		0.5	450	
<i>Dampiera candidans</i>	0.1	15				
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	20		0.1	20	
<i>Enneapogon caeruleus</i>	0.1	15				
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	0.1	70		0.1	70	
<i>Eriachne mucronata</i>	0.1	30		0.1	30	
<i>Eriachne pulchella</i>	0.1	10				
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.5	450		0.5	450	
<i>Gossypium robinsonii</i>	0.1	20		0.1	20	
<i>Hakea chordophylla</i>	0.1	60		0.1	60	
<i>Oldenlandia crouchiana</i>	0.1	30		0.1	30	
<i>Paspalidium clementii</i>	0.1	15	B2S08-03			
<i>Polycarpaea holtzei</i>	0.1	3		0.1	3	
<i>Polycarpaea longiflora</i>	0.1	20		0.1	20	
<i>Polygala glaucifolia</i>	0.1	3	B2S08-02			
<i>Ptilotus calostachyus</i>	0.1	60		0.1	60	
<i>Ptilotus exaltatus</i>	0.1	15		0.1	15	
<i>Schizachyrium fragile</i>	0.1	20				
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	240		0.1	240	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	180		0.1	180	
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	0.1	15	B2S08-01	0.1	15	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	60		0.1	60	
<i>Tribulus suberosus</i>	0.1	160		0.1	160	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	60		0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Triodia epactia</i>	0.1	30	B2S08-04	0.1	30	
<i>Triodia wiseana</i>	40	30		40	30	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: BRM/RM**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 529548 mE, 7517041 mN.**Habitat** Foot slope; gently sloping stony foot slope, NW aspect.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia exigua*, (*Senna symonii*) open shrubland over *Triodia wiseana* open hummock grassland and *Paraneurachne muelleri*, *Amphipogon sericeus* scattered tussock grasses.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia exigua*, (*Senna symonii*) open shrubland over *Triodia wiseana* open hummock grassland and *Paraneurachne muelleri*, *Amphipogon sericeus* scattered tussock grasses.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.**Site**

B2S09

Date

Phase 1: 18-Oct-18 Phase 2: 15-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia adsurgens</i>	0.1	150		0.1	150	
<i>Acacia atkinsiana</i>	0.1	100		0.1	100	
<i>Acacia exigua</i>	4	170		4	170	
<i>Acacia monticola</i>	0.1	150		0.1	150	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	35		0.1	35	
<i>Amphipogon sericeus</i>	0.5	60		0.5	60	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Codonocarpus cotinifolius</i>	0.1	50		0.1	50	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	30	B2S09-03			
<i>Cymbopogon oblectus</i>	0.1	50		0.1	50	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	20	B2S09-01	0.1	20	
<i>Eriachne mucronata</i> (typical form)	0.1	30		0.1	30	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	4	600		4	600	
<i>Fimbristylis simulans</i>	0.1	20		0.1	20	
<i>Gompholobium oreophilum</i>	0.1	60		0.1	60	
<i>Goodenia microptera</i>	0.1	35				
<i>Goodenia muelleriana</i>	0.1	20				
<i>Goodenia stobbsiana</i>	0.1	60		0.1	60	
<i>Hakea chordophylla</i>	0.1	50		0.1	50	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30		0.1	30	
<i>Hybanthus aurantiacus</i>	0.1	20		0.1	20	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	100		0.1	100	
<i>Paraneurachne muelleri</i>	1	30		1	30	
<i>Polycarpaea holtzei</i>	0.1	50		0.1	50	
<i>Ptilotus astrolasius</i>	0.1	40		0.1	40	
<i>Ptilotus calostachyus</i>	0.1	120		0.1	120	
<i>Ptilotus exaltatus</i>	0.1	30		0.1	30	
<i>Ptilotus helipteroides</i>	0.1	30		0.1	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus rotundifolius</i>	0.1	120		0.1	120	
<i>Schizachyrium fragile</i>	0.1	20		0.1	20	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>				0.1	30	B2S09R-01
<i>Senna glaucifolia</i> x <i>S. ferraria</i>				0.1	120	B2S09R-02
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>				0.1	150	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	170		0.1	170	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	140		0.1	140	
<i>Senna symonii</i>	2	160	B2S09-02	2	160	
<i>Sida arenicola</i>				0.1	30	B2S09R-03
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	5				
<i>Tribulus suberosus</i>	0.1	120		0.1	120	
<i>Triodia wiseana</i>	15	90		15	90	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: PLDKJK Phase 2: SCTB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 530456 mE, 7514077 mN.**Habitat** Hill slope; slope of a major range; W aspect.**Soil** Dark reddish brown silty clay loam.**Rock Type** Ironstone; boulders 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia arida* scattered shrubs over *Triodia wiseana* open hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia arida* scattered shrubs over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Burnt 3-5 years ago. Phase 2: Burnt 3-5 years ago.**Site**

B2S10

Date

Phase 1: 18-Oct-18 Phase 2: 15-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia arida</i>	2	160	B2S10-01	2	160	
<i>Acacia exigua</i>	0.1	40		0.1	40	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	140		0.1	140	
<i>Bonamia erecta</i>	0.1	30	B2S10-03	0.1	30	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	50		0.1	50	
<i>Corymbia hamersleyana</i>	0.1	600		0.1	600	
<i>Cymbopogon</i> sp.				0.1	30	
<i>Dampiera candidans</i>	0.1	40		0.1	40	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	40	B2S10-04	0.1	40	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eriachne pulchella</i>	0.1	10		0.1	10	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	6	700		6	700	
<i>Fimbristylis simulans</i>	0.1	25		0.1	25	
<i>Goodenia cusackiana</i>	0.1	30		0.1	30	
<i>Hakea chordophylla</i>	0.5	400		0.5	400	
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Ptilotus calostachyus</i>	0.1	110		0.1	110	
<i>Schizachyrium fragile</i>	0.1	10		0.1	10	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		0.1	150	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	160	B2S10-02	0.1	160	
<i>Seringia nephrosperma</i>	0.1	50		0.1	50	
<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)				0.1	20	
<i>Tephrosia oxalidea</i>	0.1	8		0.1	8	
<i>Triodia wiseana</i>	16	40		16	40	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: PLDK/JK Phase 2: SC/TB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 532532 mE, 7517902 mN.**Habitat** Hill slope; slope of a major range.**Soil** Dark reddish brown silty clay loam.**Rock Type** Ironstone.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *E. gamophylla* low open mallee woodland over *Triodia wiseana* open hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *E. gamophylla* low open mallee woodland over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent**Fire Age** Phase 1: Burnt 1-2 years ago. Phase 2: Burnt 1-2 years ago.**Site**

B2S11

Date

Phase 1: 18-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.1	110		0.1	110	
<i>Acacia aptaneura</i>	0.1	100	B2S11-04	0.1	100	
<i>Acacia exigua</i>	0.1	80		0.1	80	
<i>Acacia maitlandii</i>	0.1	100		0.1	100	
<i>Acacia pruinocarpa</i>	0.1	60		0.1	60	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	100		0.1	100	
<i>Corymbia hamersleyana</i>	0.1	90		0.1	90	
<i>Cymbopogon ambiguus</i>	0.1	40		0.1	40	
<i>Dampiera candidans</i>	0.1	40		0.1	40	
<i>Dodonaea coriacea</i>	0.1	40		0.1	40	
<i>Eriachne ciliata</i>	0.1	10				
<i>Eriachne mucronata</i>				0.1	20	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	40				
<i>Eriachne mucronata</i> (typical form)				0.1	40	
<i>Eucalyptus gamophylla</i>	2	260		2	260	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	4	700		4	700	
<i>Goodenia stobbsiana</i>	0.1	45		0.1	45	
<i>Hakea chordophylla</i>	0.1	300		0.1	300	
<i>Indigofera monophylla</i>	0.1	35		0.1	35	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Polycarpaea holtzei</i>	0.1	3				
<i>Schizachyrium fragile</i>	0.1	15				
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	35	B2S11-02	0.1	35	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>				0.1	30	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160	B2S11-03	0.1	160	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	60				
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	140		0.1	140	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. artemisioides</i> subsp. <i>oligophylla</i>	0.1	60	B2S11-01	0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Seringia nephrosperma</i>	0.1	40				
<i>Triodia wiseana</i>	14	30		14	30	
<i>Tripogonella loliiformis</i>	0.1	15				



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by****Phase 1:** BRM/RM **Phase 2:** BRM/RM**Type**

Quadrat 50 x 50 m

Central Coordinate

50 K 529938 mE, 7517576 mN.

Habitat

Foot slope; stony foot slope of major range, gentle slope to N.

Soil

Dark reddish brown sandy clay loam.

Rock Type

Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.

Vegetation**Phase 1:** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, (*Senna glutinosa* subsp. *pruinosa*, *Ptilotus rotundifolius*) open shrubland over *Triodia wiseana* hummock grassland.**Phase 2:** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, (*Senna glutinosa* subsp. *pruinosa*, *Ptilotus rotundifolius*) open shrubland over *Triodia wiseana* hummock grassland.**Veg Condition****Phase 1:** Excellent. **Phase 2:** Excellent.**Fire Age****Phase 1:** Very long unburnt. **Phase 2:** Very long unburnt.**Site**

B2S12

Date**Phase 1:** 19-Oct-18 **Phase 2:** 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	140		0.1	140	
<i>Acacia exigua</i>	2.5	180		2.5	180	
<i>Amphipogon sericeus</i>	0.1	60		0.1	60	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	15		0.1	15	
<i>Bonamia pilbarensis</i>				0.1	5	B2S12R-02
<i>Cymbopogon ambiguus</i>	0.1	70		0.1	70	
<i>Eriachne aristidea</i>	0.1	20				
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	50	B2S09-01=	0.1	50	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1.5	600		1.5	600	
<i>Eulalia aurea</i>	0.1	60		0.1	60	
<i>Fimbristylis simulans</i>	0.1	20		0.1	20	
<i>Hakea chordophylla</i>	0.1	400		0.1	400	
<i>Indigofera monophylla</i>				0.1	20	
<i>Maireana georgei</i>				0.1	10	B2S12R-01
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Ptilotus calostachyus</i>	0.1	50		0.1	50	
<i>Ptilotus clementii</i>	0.1	20				
<i>Ptilotus exaltatus</i>	0.1	60		0.1	60	
<i>Ptilotus rotundifolius</i>	0.5	120		0.5	120	
<i>Schizachyrium fragile</i>	0.1	15		0.1	15	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	10		0.1	10	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160		0.1	160	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.5	180		0.5	180	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	140		0.1	140	
<i>Senna notabilis</i>				0.1	1	
<i>Tribulus suberosus</i>				0.1	30	
<i>Triodia wiseana</i>	35	70		35	70	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: BRM/RM Phase 2: SC/TB**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 529702 mE, 7515474 mN.**Habitat** Foot slope; gently sloping foot slope of major range, NW aspect.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.**Vegetation** **Phase 1:** *Eucalyptus leucophloia* subsp. *leucophloia*, (*Acacia aptaneura*) low open woodland over *A. exigua*, (*Senna symonii*) scattered shrubs over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana* open hummock grassland.**Phase 2:** *Eucalyptus leucophloia* subsp. *leucophloia*, (*Acacia aptaneura*) low open woodland over *A. exigua*, (*Senna symonii*) scattered shrubs over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana* open hummock grassland.**Veg Condition** **Phase 1:** Excellent. **Phase 2:** Excellent.**Fire Age** **Phase 1:** No sign of recent fire. **Phase 2:** No sign of recent fire.**Site** B2S13**Date** **Phase 1:** 19-Oct-18 **Phase 2:** 15-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia aptaneura</i>	0.5	400	B2S13-01	0.5	400	
<i>Acacia atkinsiana</i>	0.1	170		0.1	170	
<i>Acacia bivenosa</i>	0.1	120		0.1	120	
<i>Acacia cowleana</i>				0.1	70	B2S13R-02
<i>Acacia exigua</i>	1	160		0.1	160	
<i>Acacia maitlandii</i>				0.1	120	
<i>Acacia tenuissima</i>				1	100	B2S13R-01
<i>Amphipogon sericeus</i>	0.1	40		0.1	40	
<i>Bonamia erecta</i>	0.1	25		0.1	25	
<i>Cymbopogon ambiguus</i>	0.1	70		0.1	70	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	35	B2S09-01=	0.1	35	
<i>Eriachne mucronata</i> (typical form)				0.1	20	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	7	600		7	600	
<i>Eulalia aurea</i>	0.1	60		0.1	60	
<i>Fimbristylis simulans</i>	0.1	15				
<i>Gompholobium oreophilum</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	45				
<i>Hakea chordophylla</i>	0.1	60		0.1	60	
<i>Hakea lorea</i> subsp. <i>lorea</i>				0.1	50	
<i>Hibiscus coatesii</i>	0.1	10		0.1	10	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	140		0.1	140	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Ptilotus astrolasius</i>	0.1	30		0.1	30	
<i>Ptilotus calostachyus</i>	0.1	70		0.1	70	
<i>Ptilotus exaltatus</i>	0.1	60		0.1	60	
<i>Ptilotus rotundifolius</i>	0.5	80		0.5	80	
<i>Sclerolaena densiflora</i>	0.1	10				
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	170		0.1	170	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x				0.1	150	B2S13R-03
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	90		0.1	90	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	160	B2S13-03			
<i>Senna symonii</i>	0.5	140	B2S09-02=	0.5	140	
<i>Seringia nephrosperma</i>	0.1	60	B2S13-02	0.1	60	
<i>Solanum horridum</i>	0.1	20	B2S04-14=			
<i>Trigastrotheca molluginea</i>	0.1	15		0.1	15	
<i>Triodia epactia</i>	0.1	20		0.1	20	
<i>Triodia wiseana</i>	15	50		15	50	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: PLDK/JK Phase 2: PL/CI**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 535355 mE, 7517877 mN.**Habitat** Hill slope; moderate to steep slope of major range, N aspect.**Soil** Dark reddish brown silty clay loam.**Rock Type** Ironstone; outcropping 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 26-50%; gravel 1-25%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* low open woodland over *E. gamophylla* low open mallee woodland over *Acacia maitlandii* open shrubland over *Triodia wiseana* open hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* low open woodland over *E. gamophylla* low open mallee woodland over *Acacia maitlandii* open shrubland over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Burnt 3-5 years ago. Phase 2: Burnt 3-5 years ago.**Site** B2S14**Date** Phase 1: 19-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>				0.1	50	
<i>Acacia maitlandii</i>	4.5	170		4.5	170	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	350		0.1	350	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Corchorus incanus</i> subsp. <i>incanus</i>	0.1	50	B2S14-02	0.1	50	
<i>Corymbia hamersleyana</i>	2	500		2	500	
<i>Cymbopogon ambiguus</i>	0.1	50		0.1	50	
<i>Dampiera candicans</i>	0.1	50		0.1	50	
<i>Dodonaea coriacea</i>				0.1	40	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus gamophylla</i>	3	400		3	400	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	3	500		3	500	
<i>Eulalia aurea</i>	0.1	60		0.1	60	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20				
<i>Goodenia cusackiana</i>				0.1	25	
<i>Goodenia stobbsiana</i>	0.1	40				
<i>Gossypium robinsonii</i>	0.1	80		0.1	80	
<i>Hakea chordophylla</i>	0.1	120		0.1	120	
<i>Hybanthus aurantiacus</i>				0.1	30	
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Polycarpaea longiflora</i>	0.1	25		0.1	25	
<i>Ptilotus rotundifolius</i>				0.1	40	
<i>Schizachyrium fragile</i>	0.1	15				
<i>Senna ferraria</i>	0.1	40		0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	90		0.1	90	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	150	B2S14-01	0.1	150	
<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)	0.1	30		0.1	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)	0.1	40	B2S14-03	0.1	40	
<i>Triodia wiseana</i>	14	40		14	40	
<i>Triumfetta maconochieana</i>	0.1	40		0.1	40	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1 & 2**Described by** Phase 1: PLDK/JK Phase 2: PL/CI**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 536107 mE, 7517943 mN.**Habitat** Crest and slope of a major range.**Soil** Dark reddish brown silty clay loam.**Rock Type** Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 1-25%.**Vegetation** Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* low open mallee woodland over *Acacia maitlandii* open shrubland over *Triodia wiseana* open hummock grassland.Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* low open mallee woodland over *Acacia maitlandii* open shrubland over *Triodia wiseana* open hummock grassland.**Veg Condition** Phase 1: Excellent. Phase 2: Excellent.**Fire Age** Phase 1: Burnt 3-5 years ago. Phase 2: Burnt 3-5 years ago.**Site**

B2S15

Date

Phase 1: 19-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>				0.1	50	
<i>Acacia exigua</i>	0.1	95		0.1	95	
<i>Acacia maitlandii</i>	3	300		3	300	
<i>Acacia pruinocarpa</i>	0.1	110		0.1	110	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	50		0.1	50	
<i>Amphipogon sericeus</i>				0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Corchorus incanus</i> subsp. <i>incanus</i>				0.1	40	
<i>Corymbia hamersleyana</i>	0.1	220		0.1	220	
<i>Cymbopogon ambiguus</i>	0.1	80		0.1	80	
<i>Dampiera candidans</i>	0.1	40		0.1	40	
<i>Dodonaea coriacea</i>	0.1	40		0.1	40	
<i>Dysphania rhadinostachya</i>				0.1	10	
<i>Eriachne aristidea</i>	0.1	35		0.1	35	
<i>Eriachne ciliata</i>	0.1	25		0.1	25	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	40		0.1	40	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eriachne pulchella</i>	0.1	20		0.1	20	
<i>Eucalyptus gamophylla</i>	6	400		6	400	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.5	400		0.5	400	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>				0.1	20	
<i>Fimbristylis dichotoma</i>	0.1	25		0.1	25	
<i>Goodenia microptera</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	40		0.1	40	
<i>Gossypium australe</i>	0.1	100		0.1	100	
<i>Hakea chordophylla</i>	0.1	250		0.1	250	
<i>Hibiscus coatesii</i>	0.1	15		0.1	15	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30		0.1	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Peripleura virgata</i>	0.1	40				
<i>Polycarpaea holtzei</i>	0.1	5				
<i>Ptilotus calostachyus</i>	0.1	80		0.1	80	
<i>Ptilotus exaltatus</i>	0.1	10				
<i>Scaevola</i> sp. Mt Bruce (M.E. Trudgen 1333)	0.1	25	B2S15-01	0.1	25	
<i>Schizachyrium fragile</i>	0.1	10		0.1	10	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	60		0.1	60	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>				0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	110		0.1	110	
<i>Seringia nephrosperma</i>	0.1	40		0.1	40	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	25				
<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)	0.1	30		0.1	30	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	50		0.1	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>				0.1	80	
<i>Triodia wiseana</i>	13	30		13	30	
<i>Tripogonella loliiformis</i>	0.1	20		0.1	20	



Phase 1



Phase 2

Brockman 2 Deposits Phase 1**Described by** BRM/RM**Site** B2S-REL01**Date** 18-Oct-18**Type** Relevé 100 x 20 m**Central Coordinate** 529637 mE 7518221 mN**Habitat** Minor flow line; minor drainage, flowing E to W.**Soil** Dark reddish brown clay loam.**Rock Type** Ironstone, river stone; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.**Vegetation** *Corymbia hamersleyana*, (*Eucalyptus xerothermica*) low open woodland over *E. gamophylla* low open mallee woodland over *Acacia tumida* var. *pilbarensis*, *Gossypium robinsonii*, (*A. monticola*, *A. atkinsiana*, *Grevillea wickhamii*) tall shrubland over *Triodia epactia* very open hummock grassland and *Themeda triandra*, (*Paraneurachne muelleri*) tussock grassland.**Veg Condition** Excellent.**Fire Age** Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	1	400	
<i>Acacia bivenosa</i>	0.1	260	
<i>Acacia monticola</i>	2	500	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	4	350	BREL01-02
<i>Aristida contorta</i>	0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	40	
<i>Corymbia hamersleyana</i>	4	600	
<i>Cymbopogon ambiguus</i>	0.1	80	
<i>Digitaria brownii</i>	0.1	30	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	120	B2S07-16=
<i>Duperreya commixta</i>	0.1	350	
<i>Eriachne mucronata</i>	0.1	30	
<i>Eriachne tenuiculmis</i>	0.1	60	B2S07-11=
<i>Eucalyptus gamophylla</i>	5	350	
<i>Eucalyptus xerothermica</i>	1	600	
<i>Euphorbia biconvexa</i>	0.1	50	B2S07-05=
<i>Euphorbia boophthona</i>	0.1	20	B2S04-03=
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25	
<i>Goodenia microptera</i>	0.1	30	
<i>Gossypium robinsonii</i>	4	450	
<i>Grevillea wickhamii</i>	1	400	
<i>Hibiscus burtonii</i>	0.1	40	
<i>Hibiscus coatesii</i>	0.1	60	
<i>Hybanthus aurantiacus</i>	0.1	40	
<i>Isotropis atropurpurea</i>	0.1	50	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	130	
<i>Melhanian oblongifolia</i>	0.1	40	
<i>Notoleptopus decaisnei</i>	0.1	20	B2S07-07=
<i>Paraneurachne muelleri</i>	5	40	
<i>Phyllanthus maderaspatensis</i>	0.1	50	
<i>Ptilotus auriculifolius</i>	0.1	40	BREL01-01
<i>Ptilotus exaltatus</i>	0.1	50	
<i>Rhynchosia minima</i>	0.1	20	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160	
<i>Senna notabilis</i>	0.1	30	
<i>Solanum diversiflorum</i>	0.1	40	
<i>Solanum horridum</i>	0.1	25	B2S04-14=
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	0.1	60	
<i>Themeda triandra</i>	35	70	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	80	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	80	
<i>Triodia epactia</i>	3	20	
<i>Triodia wiseana</i>	0.1	50	
<i>Vincetoxicum lineare</i>	0.1	180	



Phase 1

Brockman 2 Deposits Phase 2**Described by** PL/CI**Site** B2S-REL02**Date** 15-Mar-19**Type** Relevé 30 x 50 m**Central Coordinate** 534219 mE 7518697 mN**Habitat** Footstone N of major range.**Soil** Dark reddish brown clay loam.**Rock Type** Ironstone; gravel 1-25%, pebble 26-50%.**Vegetation** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia atkinsiana* open shrubland over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana* hummock grassland.**Veg Condition** Very Good: very old tracks and rehabilitation around the site; one track through south end of site.**Fire Age** Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	2	180	
<i>Acacia bivenosa</i>	0.1	170	
<i>Acacia exigua</i>	0.1	190	
<i>Acacia maitlandii</i>	0.1	190	
<i>Capparis spinosa</i> subsp. <i>nummularia</i>	0.1	40	
<i>Eremophila longifolia</i>	0.1	160	
<i>Eriachne aristidea</i>	0.1	25	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	400	
<i>Goodenia stobbsiana</i>	0.1	40	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	60	
<i>Lysiana casuarinae</i>	0.1	50	
<i>Maireana georgei</i>	0.1	25	
<i>Ptilotus exaltatus</i>	0.1	70	
<i>Ptilotus rotundifolius</i>	1	80	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	160	
<i>Senna glutinosa</i> subsp. <i>x luerseanii</i>	0.1	180	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	110	
<i>Triodia wiseana</i>	32	50	



Phase 2

Brockman 2 Deposits Phase 2**Described by** PL/CI**Site** B2S-REL03**Date** 15-Mar-19**Type** Relevé 5 x 100 m**Central Coordinate** 532902 mE 7518899 mN**Habitat** Minor gully; foot slope of major range; N aspect.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; gravel 1-25%, pebble 1-25%, cobble 1-25%, boulder 1-25%.**Vegetation** *Corymbia hamersleyana* scattered low trees over *Acacia monticola*, *A. maitlandii*, (*A. atkinsiana*, *A. pruinocarpa*) low open woodland over *Triodia epactia*, (*T. wiseana*) open hummock grassland and *Themeda triandra* very open tussock grassland.**Veg Condition** Excellent.**Fire Age** Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia adsurgens</i>	0.1	140	
<i>Acacia ancistrocarpa</i>	0.1	160	
<i>Acacia atkinsiana</i>	1	300	
<i>Acacia exigua</i>	0.1	100	
<i>Acacia maitlandii</i>	3	240	
<i>Acacia monticola</i>	4	220	
<i>Acacia pruinocarpa</i>	1	210	
<i>Bonamia erecta</i>	0.1	40	
<i>Corymbia hamersleyana</i>	1	400	
<i>Cymbopogon ambiguus</i>	0.1	100	
<i>Cynanchum pedunculatum</i>	0.1	60	BREL03-02
<i>Duperreya commixta</i>	0.1	90	
<i>Eriachne mucronata</i> (typical form)	0.1	40	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20	
<i>Gossypium robinsonii</i>	0.1	80	
<i>Grevillea wickhamii</i>	0.1	200	
<i>Hibiscus coatesii</i>	0.1	60	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	80	BREL03-01
<i>Hybanthus aurantiacus</i>	0.1	50	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	40	
<i>Lysiana casuarinae</i>	0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40	
<i>Phyllanthus maderaspatensis</i>	0.1	50	
<i>Rhynchosia minima</i>	0.1	60	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160	
<i>Solanum horridum</i>	0.1	30	
<i>Themeda triandra</i>	3	70	
<i>Triodia epactia</i>	8	50	
<i>Triodia wiseana</i>	4	60	



Phase 2

Brockman 2 Deposits Phase 2

Described by PL/CI
Type Relevé 10 x 100 m

Site B2S-REL04
Date 16-Mar-19

Central Coordinate 531586 mE 7518601 mN

Habitat Minor gully in foot slopes of major range to S.

Soil Dark reddish brown sandy clay loam.

Rock Type Ironstone; gravel 1-25%, pebble 1-25%, cobble 1-25%, boulder 1-25%.

Vegetation *Corymbia hamersleyana*, *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia monticola*, (*A. atkinsiana*) tall shrubland over *Triodia wiseana*, (*T. epactia*) very open hummock grassland and *Themeda triandra*, (*Eriachne mucronata* (typical form), *Paraneurachne muelleri*) open tussock grassland.

Veg Condition Excellent.

Fire Age Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	2	400	
<i>Acacia exigua</i>	0.1	260	
<i>Acacia inaequilatera</i>	0.1	180	
<i>Acacia maitlandii</i>	0.1	220	
<i>Acacia monticola</i>	12	320	
<i>Acacia pruinocarpa</i>	0.1	220	
<i>Aristida contorta</i>	0.1	25	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	
<i>Aristida inaequiglumis</i>	0.1	70	BREL04-01
<i>Bonamia erecta</i>	0.1	40	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	0.1	110	
<i>Corymbia hamersleyana</i>	5	800	
<i>Cymbopogon ambiguus</i>	0.1	60	
<i>Dodonea lanceolata</i> var. <i>lanceolata</i>	0.1	190	
<i>Duperreya commixta</i>	0.1	800	
<i>Eriachne mucronata</i> (typical form)	2	40	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	3	700	
<i>Gompholobium oreophilum</i>	0.1	40	
<i>Gossypium robinsonii</i>	0.1	300	
<i>Grevillea wickhamii</i>	0.1	300	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	60	BREL04-02
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	70	
<i>Hybanthus aurantiacus</i>	0.1	25	
<i>Indigofera monophylla</i>	0.1	50	
<i>Isotropis atropurpurea</i>	0.1	50	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	195	
<i>Lysiana casuarinae</i>	0.1	60	
<i>Paraneurachne muelleri</i>	1	40	
<i>Phyllanthus maderaspatensis</i>	0.1	40	
<i>Ptilotus calostachyus</i>	0.1	100	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	80	
<i>Senna ferraria</i>	0.1	70	BREL04-03
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	50	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	40	
<i>Themeda triandra</i>	8	90	
<i>Triodia epactia</i>	1	70	
<i>Triodia wiseana</i>	4	70	



Phase 2

Brockman 2 Deposits Phase 2**Described by** PL/CI**Site** B2S-REL05**Date** 16-Mar-19**Type** Relevé 10 x 100 m**Central Coordinate** 528360 mE 7516251 mN**Habitat** Minor flow; depression in broad area of gently sloping foothills; ranges to the E.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone; gravel 1-25%, pebbles 26-50%.**Vegetation** *Eucalyptus gamophylla* low open mallee woodland over *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Acacia atkinsiana* (*Acacia exigua*) tall shrubland over *Triodia wiseana*, (*T. epactia*) very open hummock grassland and *Themeda triandra* very open tussock grassland.**Veg Condition** Excellent.**Fire Age** Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	12	300	
<i>Acacia bivenosa</i>	0.1	140	
<i>Acacia exigua</i>	1	250	
<i>Acacia monticola</i>	0.1	260	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	
<i>Aristida inaequiglumis</i>	0.1	110	BREL05-01
<i>Bonamia erecta</i>	0.1	30	
<i>Capparis lasiantha</i>	0.1	130	
<i>Cassytha capillaris</i>	0.1	40	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	1	500	
<i>Cymbopogon ambiguus</i>	0.1	80	
<i>Digitaria brownii</i>	0.1	50	
<i>Duperreya commixta</i>	0.1	50	
<i>Eucalyptus gamophylla</i>	9	450	
<i>Eulalia aurea</i>	0.1	50	
<i>Gompholobium oreophilum</i>	0.1	30	
<i>Hibiscus burtonii</i>	0.1	25	
<i>Hibiscus coatesii</i>	0.1	60	
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	60	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	110	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	110	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	150	
<i>Sida arenicola</i>	0.1	30	
<i>Sida cardiophylla</i>	0.1	45	
<i>Solanum elatius</i>	0.1	100	BREL05-02
<i>Themeda triandra</i>	4	90	
<i>Triodia epactia</i>	1	60	
<i>Triodia wiseana</i>	6	60	



Phase 2

Brockman 2 Deposits Phase 2**Described by** BRM/RM**Site** B2S-REL06**Date** 16-Mar-19**Type** Relevé 8 x 120 m**Central Coordinate** 530616 mE 7519006 mN**Habitat** Minor drainage, N to S.**Soil** Dark reddish brown sandy clay loam.**Rock Type** Ironstone, river stone; cobbles 1-25%, pebbles 1-25%, gravel 1-25%.**Vegetation** *Corymbia hamersleyana* low open woodland over *Acacia atkinsiana*, (*A. monticola*) tall open scrub over *Dodonaea lanceolata* scattered shrubs over *Triodia wiseana* hummock grassland and *Themeda triandra* very open tussock grassland.**Veg Condition** Excellent.**Fire Age** No sign of recent fire.

Species	Cover	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	15	
<i>Acacia atkinsiana</i>	40	400	
<i>Acacia exigua</i>	0.1	150	
<i>Acacia monticola</i>	0.5	400	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	0.1	220	
<i>Amphipogon sericeus</i>	0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30	
<i>Aristida latifolia</i>	0.1	60	BREL06-01
<i>Codonocarpus cotinifolius</i>	0.1	80	
<i>Corymbia hamersleyana</i>	5	550	
<i>Cymbopogon ambiguus</i>	0.1	50	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	1	160	
<i>Duperreya commixta</i>	0.1	210	
<i>Eriachne mucronata</i>	0.1	30	
<i>Eulalia aurea</i>	0.1	60	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10	
<i>Gompholobium oreophilum</i>	0.1	30	
<i>Goodenia stobbsiana</i>	0.1	45	
<i>Hibiscus burtonii</i>	0.1	30	
<i>Hibiscus coatesii</i>	0.1	70	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30	BREL06-04
<i>Hybanthus aurantiacus</i>	0.1	15	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	120	
<i>Paraneurachne muelleri</i>	0.1	30	
<i>Psydrax rigidula</i>	0.1	50	BREL06-02
<i>Ptilotus rotundifolius</i>	0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	170	
<i>Themeda triandra</i>	9	50	
<i>Triodia wiseana</i>	35	40	



Phase 2

Brockman 2 Deposits Phase 2**Described by** PL/CI**Site** B2S-REL07**Date** 16-Mar-19**Type** Relevé 10 x 100 m**Central Coordinate** 528359 mE 7515853 mN**Habitat** Minor flow/depression, broad area of foot slopes west of range.**Soil** Dark reddish brown clay loam.**Rock Type** Pebbles 26-50%, gravel 1-25%.**Vegetation** *Eucalyptus gamophylla* low open mallee woodland over *Corymbia deserticola* subsp. *deserticola*, *C. hamersleyana* low open woodland over *Acacia atkinsiana* tall shrubland over *Triodia epactia*, *T. wiseana* open hummock grassland.**Veg Condition** Excellent.**Fire Age** Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	28	400	
<i>Acacia ayersiana</i>	0.1	260	
<i>Acacia bivenosa</i>	0.1	160	
<i>Acacia incurvaneura</i>	0.1	400	BREL07-01
<i>Acacia monticola</i>	0.1	150	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	
<i>Aristida inaequiglumis</i>	0.1	100	BREL05-01=
<i>Bonamia erecta</i>	0.1	40	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	60	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	2	500	
<i>Corymbia hamersleyana</i>	1	500	
<i>Cymbopogon ambiguus</i>	0.1	80	
<i>Digitaria brownii</i>	0.1	50	
<i>Duperreya commixta</i>	0.1	220	
<i>Eucalyptus gamophylla</i>	4	500	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30	
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	40	
<i>Indigofera monophylla</i>	0.1	70	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	200	
<i>Paraneurachne muelleri</i>	0.1	40	
<i>Psyrax suaveolens</i>	0.1	90	
<i>Santalum lanceolatum</i>	0.1	210	
<i>Seringia nephrosperma</i>	0.1	80	
<i>Sida cardiophylla</i>	0.1	60	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	80	
<i>Triodia epactia</i>	10	70	
<i>Triodia wiseana</i>	5	70	



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: MM/TB Phase 2: SCTB

Quadrat 50 x 50 m

50 K 547944 mE 7518588 mN.

Stony foot slope; broad stony foot slope off a tall range; gentle slope to NE.

Dark reddish brown sandy clay loam.

Ironstone; cobbles 1-25%; pebbles 51-75%; gravel 1-25%.

Phase 1: *Eucalyptus gamophylla* scattered low mallees over *Hakea chordophylla*, *Acacia exigua* scattered tall shrubs over *A. bivenosa* scattered shrubs over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana*, (*T. epactia*) open hummock grassland.

Phase 2: *Eucalyptus gamophylla* scattered low mallees over *Hakea chordophylla*, *Acacia exigua* scattered tall shrubs over *A. bivenosa* scattered shrubs over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana*, (*T. epactia*) open hummock grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

Date

LDS01

Phase 1: 15-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	160		0.1	160	
<i>Acacia exigua</i>	0.1	230		0.1	230	
<i>Acacia monticola</i>	0.1	20		0.1	20	
<i>Amphipogon sericeus</i>	0.1	45		0.1	45	
<i>Aristida contorta</i>	0.1	30		0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		0.1	40	
<i>Aristida inaequiglumis</i>	0.1	70	LDS01-05	0.1	70	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	10		0.1	10	
<i>Cucumis variabilis</i>	0.1	50				
<i>Cymbopogon ambiguus</i>	0.1	70		0.1	70	
<i>Digitaria brownii</i>	0.1	70		0.1	70	
<i>Duperreya commixta</i>	0.1	40				
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10		0.1	10	
<i>Enneapogon caeruleus</i>	0.1	35				
<i>Enneapogon lindleyanus</i>				0.1	25	
<i>Enneapogon polyphyllus</i>	0.1	30				
<i>Eragrostis cumingii</i>	0.1	15				
<i>Eriachne aristidea</i>	0.1	20		0.1	20	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus gamophylla</i>	1.5	400		1.5	400	
<i>Euphorbia boophthona</i>	0.1	30		0.1	30	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	40				
<i>Goodenia microptera</i>	0.1	30				
<i>Hakea chordophylla</i>	0.1	220		0.1	220	
<i>Heliotropium inexplicitum</i>	0.1	5		0.1	5	
<i>Hibiscus coatesii</i>	0.1	5				
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	30	LDS01-06	0.1	30	
<i>Indigofera monophylla</i>	0.1	50		0.1	50	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	80		0.1	80	
<i>Maireana planifolia</i>				0.1	30	LDSR01-01

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Oldenlandia crouchiana</i>	0.1	20	LDS01-01			
<i>Paraneurachne muelleri</i>	0.1	50		0.1	50	
<i>Paspalidium clementii</i>	0.1	5				
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	20		0.1	20	
<i>Polycarpaea holtzei</i>	0.1	2		0.1	2	
<i>Polycarpaea longiflora</i>	0.1	40		0.1	40	
<i>Polygala glaucifolia</i>	0.1	2				
<i>Ptilotus calostachyus</i>	0.1	100		0.1	100	
<i>Ptilotus clementii</i>	0.1	50				
<i>Ptilotus exaltatus</i>	0.1	40		0.1	40	
<i>Ptilotus helipteroides</i>	0.1	20				
<i>Ptilotus rotundifolius</i>	0.5	100		0.5	100	
<i>Rhynchosia minima</i>	0.1	10				
<i>Schizachyrium fragile</i>	0.1	15				
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	25	LDS01-02	0.1	115	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160		0.1	160	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	200		0.1	200	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. artemisioides</i> subsp. <i>oligophylla</i>	0.1	70	LDS01-04	0.1	70	
<i>Senna symonii</i>	0.1	130	LDS01-07	0.1	130	
<i>Sida echinocarpa</i>	0.1	30		0.1	30	
<i>Solanum diversiflorum</i>	0.1	35		0.1	35	
<i>Solanum lasiophyllum</i>	0.1	50		0.1	50	
<i>Stylobasium spathulatum</i>	0.1	130		0.1	130	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	40		0.1	40	
<i>Trigastrotheca molluginea</i>	0.1	20		0.1	20	
<i>Triodia epactia</i>	3	50		3	50	
<i>Triodia wiseana</i>	12	65		12	65	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: MM/TB Phase 2: BRM/RM

Quadrat 50 x 50 m

50 K 549099 mE 7519203 mN.

Clay plain; broad, flat drainage plain between two ranges of tall hills.

Reddish brown light clay.

Ironstone; pebbles 1-25%; gravel 1-25% (both ~1%).

Phase 1: *Acacia aptaneura*, (*A. pruinocarpa*) open forest over *Grevillea berryana*, *Hakea lorea* subsp. *lorea* scattered low trees over *Anthobolus leptomerioides* scattered tall shrubs over *Maireana villosa*, *Ptilotus obovatus* var. *obovatus* scattered low shrubs over *Chrysopogon fallax* tussock grassland.

Phase 2: *Acacia aptaneura*, (*A. pruinocarpa*) open forest over *Grevillea berryana*, *Hakea lorea* subsp. *lorea* scattered low trees over *Anthobolus leptomerioides* scattered tall shrubs over *Maireana villosa*, *Ptilotus obovatus* var. *obovatus* scattered low shrubs over *Chrysopogon fallax* tussock grassland.

Phase 1: Very Good: presence of weeds (**B. bipinnata*). **Phase 2:** Very Good: presence of weeds (**B. bipinnata*).

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

Date

LDS02

Phase 1: 15-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon fraseri</i> subsp. <i>fraseri</i>	0.1	20	LDS02-02	0.1	20	
<i>Abutilon lepidum</i>	0.1	30	LDS02-06	0.1	30	
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	30		0.1	30	
<i>Acacia aptaneura</i>	40	1200	LDS02-01	40	1200	
<i>Acacia pruinocarpa</i>	4	1100		4	1100	
<i>Anthobolus leptomerioides</i>	0.5	240		0.5	240	
<i>Aristida contorta</i>	1	30		1	30	
<i>Aristida ingrata</i>	0.1	50	LDS02-05			
<i>Bidens bipinnata</i>	0.1	30		0.1	30	
<i>Bothriochloa ewartiana</i>	0.1	60		0.1	60	
<i>Capparis lasiantha</i>	0.1	70		0.1	70	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	15	LDS02-03	0.1	15	
<i>Chrysopogon fallax</i>	55	100		55	100	
<i>Cleome viscosa</i>	0.1	40		0.1	40	
<i>Cucumis melo</i>	0.1	30				
<i>Cucumis variabilis</i>	0.1	180		0.1	180	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	20		0.1	20	
<i>Digitaria brownii</i>	0.1	60		0.1	60	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	15				
<i>Enneapogon caerulescens</i>	0.1	20				
<i>Enneapogon polyphyllus</i>	1	25		1	25	
<i>Eragrostis cumingii</i>	0.1	10				
<i>Eragrostis pergracilis</i>				0.1	10	LDS02R-04
<i>Eremophila lanceolata</i>	0.1	35		0.1	35	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	35		0.1	35	
<i>Goodenia nuda</i>				0.1	10	LDS02R-06
<i>Grevillea berryana</i>	0.1	600		0.1	600	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	300		0.1	300	
<i>Hibiscus burtonii</i>	0.1	55		0.1	55	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	45	LDS02-08	0.1	45	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Iseilema membranaceum</i>	0.1	10	LDS02-10			
<i>Maireana planifolia</i> x <i>villosa</i>	0.1	50	LDS02-07	0.1	50	
<i>Maireana villosa</i>	0.5	50		0.5	50	
<i>Paraneurachne muelleri</i>				0.1	30	
<i>Perotis rara</i>	0.1	20		0.1	20	
<i>Pterocaulon sphacelatum</i>	0.1	25		0.1	25	
<i>Ptilotus exaltatus</i>	0.1	30		0.1	30	
<i>Ptilotus gaudichaudii</i>	0.1	20				
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	50		0.1	50	
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	200		0.1	200	
<i>Rhodanthe floribunda</i>	0.1	5				
<i>Roebuckiella similis</i>	0.1	10	LDS02-04	0.1	10	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	150		0.1	150	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	160	LDS02-09	0.1	160	
<i>Senna glaucifolia</i>				0.1	170	LDS02R-01
<i>Sida echinocarpa</i>	0.1	50				
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30		0.1	30	
<i>Solanum lasiophyllum</i>				0.1	10	LDS02R03
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	0.1	5				
<i>Triodia epactia</i>	0.1	50		0.1	50	
<i>Vigna lanceolata</i> var. <i>lanceolata</i>				0.1	20	LDS02R-05
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	20				



Phase 1



Phase 2

Lens G/Diesel		Site	LDS03
Described by	Phase 1: MM/TB Phase 2: SCTB	Date	Phase 1: 15-Oct-18 Phase 2: 17-Mar-19
Type	Quadrat 50 x 50 m		
Central Coordinate	50 K 550009 mE 7516097 mN.		
Habitat	Clay plain; S end of broad clay drainage plain between two ranges of tall hills.		
Soil	Reddish brown light clay.		
Rock Type	Ironstone; gravel 1-25%.		
Vegetation	Phase 1: <i>Acacia aptaneura</i> , (<i>Grevillea berryana</i>) open forest over <i>Chrysopogon fallax</i> tussock grassland and <i>Triodia epactia</i> scattered hummock grasses. Phase 2: <i>Acacia aptaneura</i> , (<i>Grevillea berryana</i>) open forest over <i>Chrysopogon fallax</i> tussock grassland and <i>Triodia epactia</i> scattered hummock grasses.		
Veg Condition	Phase 1: Excellent. Phase 2: Excellent.		
Fire Age	Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.		

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia aptaneura</i>	30	1100	LDS03-07	30	1100	
<i>Alternanthera nana</i>				0.1	20	
<i>Aristida contorta</i>	0.1	30		0.1	30	
<i>Aristida obscura</i>	0.1	45				
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	30	LDS02-03=	0.1	30	
<i>Chrysocephalum gilesii</i>	0.1	30	LDS03-05	0.1	30	LDS03R-01
<i>Chrysopogon fallax</i>	35	120		35	120	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	40				
<i>Digitaria brownii</i>	0.1	50		0.1	50	
<i>Enneapogon polyphyllus</i>	0.5	45		0.5	45	
<i>Eremophila lanceolata</i>	0.1	50		0.1	50	LDS11R-01=
<i>Eriachne benthamii</i> /flaccida	0.1	50	LDS03-04	0.1	50	
<i>Eriachne pulchella</i>	0.1	12		0.1	12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	25		0.1	25	
<i>Goodenia microptera</i>	0.1	15				
<i>Goodenia prostrata</i>	0.1	1		0.1	1	
<i>Grevillea berryana</i>	1	1200		1	1200	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	500		0.1	500	
<i>Hibiscus burtonii</i>	0.1	100				
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	40	LDS02-08=	0.1	40	
<i>Maireana villosa</i>	0.1	50		0.1	50	
<i>Paspalidium clementii</i>	0.1	25				
<i>Peripleura arida</i>	0.1	30	LDS03-02	0.1	30	
<i>Polygala glaucifolia</i>	0.1	2	LDS03-06			
<i>Psyrax suaveolens</i>	0.1	100		0.1	100	
<i>Pterocaulon sphacelatum</i>	0.1	20				
<i>Ptilotus aervoides</i>	0.1	10				
<i>Ptilotus calostachyus</i>	0.1	40		0.1	40	
<i>Ptilotus exaltatus</i>	0.1	110		0.1	110	
<i>Ptilotus gaudichaudii</i>	0.1	30				
<i>Ptilotus helipteroides</i>	0.1	20				
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	90		0.1	90	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Rhodanthe floribunda</i>	0.1	5				
<i>Salsola australis</i>	0.1	60		0.1	60	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25		0.1	25	
<i>Spermacoce brachystema</i>	0.1	40	LDS03-01			
<i>Tribulus astrocarpus</i>	0.1	3				
<i>Triodia epactia</i>	1	30		1	30	
<i>Triodia longiceps</i>	0.1	50	LDS03-03	0.1	50	
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	1				



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: MM/TB Phase 2: SCTB

Quadrat 50 x 50 m

50 K 547953 mE 7519650 mN.

Clay plain; broad clay plain between two ranges of hills; surrounds the lower lying clay drainage plain that runs through this valley.

Dark reddish brown light clay.

Ironstone; gravel 1-25%.

Phase 1: *Acacia aptaneura*, (*Hakea lorea* subsp. *lorea*) scattered low trees to tall shrubs over *Triodia epactia* open hummock grassland.

Phase 2: *Acacia aptaneura*, (*Hakea lorea* subsp. *lorea*) scattered low trees to tall shrubs over *Triodia epactia* open hummock grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: Burnt 3-5 years ago. **Phase 2:** Burnt 3-5 years ago.

Site

Date

LDS04

Phase 1: 16-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	20		0.1	20	
<i>Acacia aptaneura</i>	1	400	LDS04-01	1	400	
<i>Alternanthera nana</i>	0.1	35		0.1	35	
<i>Aristida contorta</i>	0.1	35		0.1	35	
<i>Aristida latifolia</i>	0.1	70	LDS04-06	0.1	70	
<i>Calocephalus beardii</i>	0.1	6	LDS04-09			
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	0.1	10				
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	30		0.1	30	
<i>Chrysopogon fallax</i>	0.1	120		0.1	120	
<i>Cucumis variabilis</i>	0.1	140				
<i>Cymbopogon oblectus</i>	0.1	35		0.1	35	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	30				
<i>Digitaria brownii</i>	0.1	50				
<i>Enneapogon polyphyllus</i>	0.1	25				
<i>Eragrostis cumingii</i>	0.1	10				
<i>Eragrostis pergracilis</i>	0.1	8		0.1	8	
<i>Euphorbia ferdinandi</i> var. <i>ferdinandi</i>	0.1	10	LDS04-08	0.1	10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		0.1	10	
<i>Goodenia nuda</i>	0.1	30				
<i>Goodenia prostrata</i>	0.1	5		0.1	5	
<i>Grevillea berryana</i>				0.1	110	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.25	500		0.25	500	
<i>Hibiscus burtonii</i>	0.1	50				
<i>Iseilema membranaceum</i>	0.1	8	LDS04-10			
<i>Lepidium echinatum</i>	0.1	5				
<i>Maireana georgei</i>	0.1	35				
<i>Maireana planifolia</i> x <i>villosa</i>	0.1	35	LDS04-11			
<i>Paspalidium rarum</i>	0.1	25		0.1	25	
<i>Peripleura obovata</i>	0.1	25	LDS04-07			
<i>Peripleura virgata</i>	0.1	20	LDS04-04			
<i>Perotis rara</i>	0.1	10		0.1	10	
<i>Pluchea rubelliflora</i>	0.1	10	LDS04-02	0.1	10	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Psydrax suaveolens</i>	0.1	75		0.1	75	
<i>Pterocaulon sphacelatum</i>	0.1	60		0.1	60	
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus polystachyus</i>	0.1	50				
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	200		0.1	200	
<i>Rhodanthe floribunda</i>	0.1	5				
<i>Salsola australis</i>				0.1	40	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	150		0.1	150	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	90	LDS04-05	0.1	90	
<i>Senna glaucifolia</i>				0.1	40	LDS04R-01
<i>Senna notabilis</i>	0.1	5				
<i>Sida platycalyx</i>	0.1	2		0.1	2	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	25				
<i>Solanum lasiophyllum</i>	0.1	40		0.1	40	
<i>Spermacoce brachystema</i>	0.1	20	LDS03-01=			
<i>Streptoglossa bubakii</i>	0.1	25		0.1	25	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	0.1	5		0.1	5	
<i>Tribulus macrocarpus</i>	0.1	5				
<i>Triodia epactia</i>	28	50		28	50	
<i>Wahlenbergia tumidifructa</i>	0.1	50	LDS04-03			



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: MM/TB Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 549139 mE, 7515459 mN.
Habitat Clay plain; broad clay plain between two ranges of hills; surrounds the lower lying clay drainage plain that runs through this valley.
Soil Dark reddish brown light clay.
Rock Type Ironstone; pebbles 1-25%; gravel 1-25%.
Vegetation **Phase 1:** *Acacia aptaneura*, (*A. ayersiana*, *A. ayersiana* (narrow phyllode variant), *Corymbia deserticola*) low woodland over *Triodia epactia* hummock grassland.
Veg Condition **Phase 2:** *Acacia aptaneura*, (*A. ayersiana*, *A. ayersiana* (narrow phyllode variant), *Corymbia deserticola*) low woodland over *Triodia epactia* hummock grassland.
Fire Age **Phase 1:** Very Good: presence of weeds (**B. bipinnata*). **Phase 2:** Very Good: presence of weeds (**B. bipinnata*).
Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	20		0.1	20	
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	0.1	30				
<i>Acacia ancistrocarpa</i>	0.1	200		0.1	200	
<i>Acacia aptaneura</i>	10	500	LDS05-01	10	500	
<i>Acacia ayersiana</i>	2	500	LDS05-02	2	500	
<i>Acacia ayersiana</i> (narrow phyllode variant)	1	300	LDS05-10	1	300	
<i>Acacia bivenosa</i>	0.1	190		0.1	190	
<i>Aristida contorta</i>	0.1	35		0.1	35	
<i>Aristida inaequiglumis</i>	0.1	100	LDS05-09	0.1	100	
<i>Aristida latifolia</i>	0.1	30	LDS04-06=	0.1	30	
<i>Bidens bipinnata</i>	0.1	20		0.1	20	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	25		0.1	25	
<i>Codonocarpus cotinifolius</i>	0.1	120		0.1	120	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	1	900		1	900	
<i>Cucumis variabilis</i>				0.1	100	
<i>Cullen pogonocarpum</i>	0.1	5	LDS05-06			
<i>Cymbopogon ambiguus</i>	0.1	120		0.1	120	
<i>Digitaria ammophila</i>	0.1	40	LDS05-07	0.1	40	
<i>Digitaria brownii</i>	0.1	50		0.1	50	
<i>Duperreya commixta</i>	0.1	500		0.1	500	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10		0.1	10	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	0.1	140		0.1	140	
<i>Euphorbia boophthona</i>	0.1	40		0.1	40	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		0.1	20	
<i>Goodenia microptera</i>	0.1	20		0.1	20	
<i>Haloragis gossei</i>	0.1	20		0.1	20	
<i>Hibiscus burtonii</i>	0.1	110		0.1	110	
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	50		0.1	50	
<i>Indigofera monophylla</i>	0.1	50		0.1	50	
<i>Maireana villosa</i>	0.1	40		0.1	40	
<i>Panicum effusum</i>	0.1	20	LDS05-04	0.1	20	
<i>Paraneurachne muelleri</i>	0.1	45		0.1	45	
<i>Peripleura arida</i>	0.1	60	LDS05-03	0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Phyllanthus erwinii</i>	0.1	10				
<i>Polygala glaucifolia</i>	0.1	3				
<i>Psyrax suaveolens</i>	0.1	130		0.1	130	
<i>Pterocaulon sphacelatum</i>	0.1	40		0.1	40	
<i>Ptilotus clementii</i>	0.1	40		0.1	40	
<i>Ptilotus exaltatus</i>	0.1	40		0.1	40	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	50		0.1	50	
<i>Ptilotus polystachyus</i>	0.1	40		0.1	40	
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	60		0.1	60	
<i>Senna notabilis</i>	0.1	10		0.1	10	
<i>Sida cardiophylla</i>	0.1	5		0.1	5	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30		0.1	30	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	135		0.1	135	
<i>Solanum ferocissimum</i>	0.1	50	LDS05-05	0.1	50	
<i>Solanum horridum</i>	0.1	5		0.1	5	
<i>Solanum lasiophyllum</i>	0.1	20		0.1	20	
<i>Streptoglossa bubakii</i>	0.1	10		0.1	10	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	60		0.1	60	
<i>Triodia epactia</i>	45	60		45	60	
<i>Triodia wiseana</i>	0.1	70		0.1	70	
<i>Vincetoxicum lineare</i>	0.1	180		0.1	180	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: SC/CI Phase 2: SCTB
Type Quadrat 50 x 50 m
Central Coordinate 50 K 546596 mE, 7514735 mN.
Habitat Foot slope off tall range to NW, with incised minor drainage channels; gentle slope to SE.
Soil Reddish brown clay loam.
Rock Type Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.
Vegetation Phase 1: *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana* tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Phase 2: *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana* tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Veg Condition Phase 1: Excellent. Phase 2: Excellent.
Fire Age Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Site LDS06
Date Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	15	230	LDS06-01	15	230	
<i>Amphipogon sericeus</i>	1	30	LDS06-02	1	30	
<i>Aristida contorta</i>				0.1	20	
<i>Bulbostylis barbata</i>	0.1	5		0.1	5	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	2	300		2	300	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10	LDS06-03			
<i>Eriachne mucronata</i> (arid form) (MET 12 736)				0.1	20	
<i>Eriachne pulchella</i>	0.1	3				
<i>Gompholobium oreophilum</i>	0.1	20		0.1	20	
<i>Goodenia stobbsiana</i>				0.1	20	
<i>Polycarpaea holtzei</i>	0.1	5				
<i>Psydrax suaveolens</i>	0.1	120		0.1	120	
<i>Ptilotus calostachyus</i>	0.1	60		0.1	60	
<i>Schizachyrium fragile</i>	0.1	10				
<i>Triodia wiseana</i>	50	40		50	40	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: SC/CI Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 547879 mE, 7513599 mN.
Habitat Hill crest; top of moderate sized range of hills; elevation 700 m.
Soil Reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; cobbles 1-25%; pebbles 51-75%; gravel 1-25%.
Vegetation Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia exigua*, (*A. atkinsiana*) tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia exigua*, (*A. atkinsiana*) tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Veg Condition Phase 1: Excellent. Phase 2: Excellent.
Fire Age Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia adsurgens</i>	0.1	60	LDS07-04	0.1	60	
<i>Acacia aneura</i>	0.1	20	LDS-SC02=	0.1	20	
<i>Acacia atkinsiana</i>	3	250		3	250	
<i>Acacia exigua</i>	8	200	LDS07-01	8	200	
<i>Acacia pyrifolia</i>	0.1	40		0.1	40	
<i>Amphipogon sericeus</i>	0.5	30	LDS06-02=	0.5	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	20		0.1	20	
<i>Bulbostylis barbata</i>	0.1	5				
<i>Codonocarpus cotinifolius</i>	0.1	50		0.1	50	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	20	LDS07-02			
<i>Cymbopogon ambiguus</i>	0.1	50		0.1	50	
<i>Eriachne mucronata</i> (typical form)	0.1	30		0.1	30	
<i>Eriachne pulchella</i>	0.1	5		0.1	5	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	6	500		6	500	
<i>Gompholobium oreophilum</i>				0.1	30	
<i>Goodenia cusackiana</i>	0.1	10		0.1	10	
<i>Goodenia stobbsiana</i>	0.1	20		0.1	20	
<i>Hakea chordophylla</i>	0.1	300		0.1	300	
<i>Paraneurachne muelleri</i>	0.1	30		0.1	30	
<i>Polycarpaea holtzei</i>	0.1	5		0.1	5	
<i>Ptilotus calostachyus</i>	0.1	60		0.1	60	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	30		0.1	30	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	50		0.1	50	
<i>Sida cardiophylla</i>	0.1	50	LDS07-03			
<i>Triodia wiseana</i>	50	40		50	40	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: SCTB

Quadrat 25 x 100 m

50 K 547033 mE, 7513934 mN.

Creek; moderate sized creekline, draining to SE through stony foot slopes/plains.

Reddish brown sandy loam.

Ironstone; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.

Phase 1: *Acacia citrinoviridis*, (*Eucalyptus xerothermica*) low open forest over *Androcalva luteiflora* tall open shrubland over *Triodia epactia*, (*T. wiseana*) hummock grassland.

Phase 2: *Acacia citrinoviridis*, (*Eucalyptus xerothermica*) low open forest over *Androcalva luteiflora* tall open shrubland over *Triodia epactia*, (*T. wiseana*) hummock grassland.

Phase 1: Excellent. Phase 2: Excellent.

Phase 1: Very long unburnt. Phase 2: Very long unburnt.

Site

Date

LDS08

Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	0.1	50	LREL01-03=	0.1	50	
<i>Acacia aptaneura</i>	0.1	400	LDS08-03	0.1	400	
<i>Acacia bivenosa</i>	0.1	120		0.1	120	
<i>Acacia citrinoviridis</i>	35	500		35	500	
<i>Acacia exigua</i>	0.1	210	LDS07-01=	0.1	210	
<i>Acacia maitlandii</i>				0.1	30	
<i>Acacia monticola</i>	0.1	220		0.1	220	
<i>Acacia pyrifolia</i>	0.1	120		0.1	120	
<i>Amphipogon sericeus</i>	0.1	20		0.1	20	
<i>Androcalva luteiflora</i>	4	220		4	220	
<i>Aristida contorta</i>	0.1	20				
<i>Capparis lasiantha</i>	0.1	50		0.1	50	
<i>Codonocarpus cotinifolius</i>	0.1	180		0.1	180	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	40	LREL01-05=	0.1	40	
<i>Corymbia hamersleyana</i>	0.1	600		0.1	600	
<i>Cymbopogon ambiguus</i>	0.1	60		0.1	60	
<i>Digitaria brownii</i>	0.1	30	LDS08-02	0.1	30	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	220		0.1	220	
<i>Duperreya commixta</i>	0.1	50		0.1	50	
<i>Eriachne mucronata</i>	0.1	30		0.1	30	
<i>Eucalyptus gamophylla</i>	0.1	300		0.1	300	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>				0.1	15	
<i>Eucalyptus xerothermica</i>	2	700		2	700	
<i>Eulalia aurea</i>	0.1	40		0.1	40	
<i>Euphorbia boophthona</i>	0.1	10	LREL01-08=	0.1	10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10				
<i>Goodenia cusackiana</i>	0.1	10		0.1	10	
<i>Goodenia stobbsiana</i>	0.1	70		0.1	70	
<i>Gossypium robinsonii</i>	0.1	180				
<i>Hakea chordophylla</i>	0.1	250		0.1	250	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	300		0.1	300	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	40	LDS08-01			
<i>Indigofera monophylla</i>	0.1	20		0.1	20	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	60		0.1	60	
<i>Paraneurachne muelleri</i>	0.1	30		0.1	30	
<i>Peripleura obovata</i>	0.1	30	LREL01-09=	0.1	30	
<i>Petalostylis labicheoides</i>	1	300		1	300	
<i>Ptilotus exaltatus</i>	0.1	20				
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	50				
<i>Rhynchosia minima</i>	0.1	10				
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	120		0.1	120	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	80				
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	50		0.1	50	
<i>Themeda triandra</i>	0.1	40		0.1	40	
<i>Triodia epactia</i>	50	40		50	40	
<i>Triodia wiseana</i>	10	30		10	30	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: SCTB

Quadrat 50 x 50 m

50 K 548023 mE, 7515420 mN.

Foothills; crest of foothill, intersected with many small drainages.

Reddish brown sandy clay loam.

Ironstone; cobbles 1-25%; pebbles 51-75%; gravel 1-25%.

Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* scattered low mallees over *Acacia exigua*, (*A. atkinsiana*) tall open scrub over *Triodia wiseana* hummock grassland.

Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *E. gamophylla* scattered low mallees over *Acacia exigua*, (*A. atkinsiana*) tall open scrub over *Triodia wiseana* hummock grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

Date

LDS09

Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.1	180		0.1	180	
<i>Acacia atkinsiana</i>	10	250		10	250	
<i>Acacia bivenosa</i>	0.1	150		0.1	150	
<i>Acacia exigua</i>	23	210		23	210	
<i>Acacia monticola</i>	0.1	300		0.1	300	
<i>Amphipogon sericeus</i>	0.1	20		0.1	20	
<i>Aristida contorta</i>	0.1	5				
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30				
<i>Capparis lasiantha</i>	0.1	100		0.1	100	
<i>Codonocarpus cotinifolius</i>	0.1	180		0.1	180	
<i>Cymbopogon ambiguus</i>	0.1	70				
<i>Eriachne mucronata</i> (typical form)	0.1	20		0.1	20	
<i>Eucalyptus gamophylla</i>	1	350		1	350	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	600		1	600	
<i>Gompholobium oreophilum</i>	0.1	50		0.1	50	
<i>Goodenia microptera</i>	0.1	10		0.1	10	
<i>Goodenia stobbsiana</i>	0.1	40		0.1	40	
<i>Hakea chordophylla</i>	0.1	250		0.1	250	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	20		0.1	20	
<i>Hibiscus sturtii</i> var. <i>campyloclamys</i>	0.1	20	LDS08-01=			
<i>Lysiana casuarinae</i>	0.1	150		0.1	150	
<i>Psyrax suaveolens</i>	0.1	120		0.1	120	
<i>Ptilotus astrolasius</i>	0.1	50		0.1	50	
<i>Ptilotus calostachyus</i>	0.1	50		0.1	50	
<i>Ptilotus exaltatus</i>	0.1	60		0.1	60	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	60		0.1	60	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x				0.1	200	LDS09R-01
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	150		0.1	150	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	50				

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Solanum lasiophyllum</i>	0.1	50		0.1	50	
<i>Triodia wiseana</i>	50	50		50	50	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Phase 1: SC/CI Phase 2: SCTB

Quadrat 25 x 100 m

50 K 548851 mE, 7512465 mN.

Moderate sized creek; bed and bank of creek, draining to SE through a range of hills.

Brown sandy loam.

Ironstone, river stone; cobbles 1-25%; pebbles 26-50%; gravel 50-75%.

Phase 1: *Eucalyptus camaldulensis* subsp. *refulgens*, *E. victrix* open woodland over *Gossypium robinsonii*, (*Acacia citrinoviridis*, *A. coriacea* subsp. *pendens*, *Melaleuca glomerata*) tall shrubland over *Androcalva luteiflora* shrubland over *Corchorus crozophorifolius*, *Olearia fluvialis* low open shrubland over *Themeda triandra*, (*Cymbopogon ambiguus*) very open tussock grassland and *Triodia epactia* very open hummock grassland.

Phase 2: *Eucalyptus camaldulensis* subsp. *refulgens*, *E. victrix* open woodland over *Gossypium robinsonii*, (*Acacia citrinoviridis*, *A. coriacea* subsp. *pendens*, *Melaleuca glomerata*) tall shrubland over *Androcalva luteiflora* shrubland over *Corchorus crozophorifolius*, *Olearia fluvialis* low open shrubland over *Themeda triandra*, (*Cymbopogon ambiguus*) very open tussock grassland and *Triodia epactia* very open hummock grassland.

Veg Condition

Phase 1: Very Good: presence of weeds (**F. trinervia*). **Phase 2:** Very Good: presence of weeds (**F. trinervia*).

Fire Age

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

LDS10

Date

Phase 1: 16-Oct-18 Phase 2: 18-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	0.1	10	LREL01-03=	0.1	10	
<i>Acacia bivenosa</i> (wispy/weeping form)	0.1	80		0.1	80	
<i>Acacia citrinoviridis</i>	3	500		3	500	
<i>Acacia coriacea</i> subsp. <i>pendens</i>	2	500		2	500	
<i>Acacia maitlandii</i>	0.1	80		0.1	80	
<i>Acacia monticola</i>				0.1	300	
<i>Acacia pyrifolia</i>	1	300		1	300	
<i>Alternanthera nana</i>	0.1	15		0.1	5	LDS10R-01
<i>Amaranthus cuspidifolius</i>	0.1	50	LDS10-07	0.1	50	
<i>Androcalva luteiflora</i>	18	200		18	200	
<i>Anthobolus leptomerioides</i>	0.1	160	LDS-SC11=	0.1	160	
<i>Aristida contorta</i>	0.1	20				
<i>Bidens bipinnata</i>	0.1	20				
<i>Boerhavia</i> sp.				0.1	5	
<i>Capparis lasiantha</i>	0.1	50		0.1	50	
<i>Capparis spinosa</i> subsp. <i>nummularia</i>	0.1	100		0.1	100	
<i>Cenchrus ciliaris</i>	0.1	50		0.1	50	
<i>Cleome viscosa</i>	0.1	30		0.1	30	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	0.1	120		0.1	120	
<i>Codonocarpus cotinifolius</i>	0.1	120				
<i>Corchorus crozophorifolius</i>	1	40		1	40	
<i>Cucumis variabilis</i>	0.1	50		0.1	50	
<i>Cymbopogon ambiguus</i>	2	80		2	80	
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	0.1	30		0.1	30	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	70		0.1	70	
<i>Duperreya commixta</i>	0.1	50		0.1	50	
<i>Enneapogon caerulescens</i>	0.1	50				
<i>Enneapogon lindleyanus</i>				0.1	50	
<i>Eremophila longifolia</i>	0.1	150		0.1	150	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Eriachne tenuiculmis</i>	0.1	30		0.1	30	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	4	1100		4	1100	
<i>Eucalyptus victrix</i>	3	1000		3	1000	
<i>Eulalia aurea</i>	0.1	50		0.1	50	
<i>Euphorbia</i> sp. (<i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)	0.1	20	LDS10-08	0.1	50	LDS10R-04
<i>Evolvulus alsinoides</i>				0.1	5	
<i>Flaveria trinervia</i>	0.1	30		0.1	30	
<i>Gomphrena cunninghamii</i>	0.1	20				
<i>Gossypium robinsonii</i>	18	400		18	400	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	100		0.1	100	
<i>Hibiscus coatesii</i>	0.1	80	LDS-SC03=			
<i>Hybanthus aurantiacus</i>				0.1	20	
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	0.1	180	LDS10-09	0.1	180	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	80		0.1	80	
<i>Lepidium pedicellsum</i>	0.1	30		0.1	30	
<i>Melaleuca glomerata</i>	1	400		1	400	
<i>Notoleptopus decaisnei</i>	0.1	30		0.1	30	
<i>Olearia fluvialis</i>	1	50	LDS10-06	1	50	
<i>Paraneurachne muelleri</i>	0.1	30		0.1	30	
<i>Paspalidium gracile</i>	0.1	30	LDS10-01			
<i>Peripleura arida</i>	0.1	30	LDS10-04			
<i>Petalostylis labicheoides</i>	0.1	150		0.1	150	
<i>Phyllanthus maderaspatensis</i>	0.1	50		0.1	50	
<i>Polycarpaea longiflora</i>	0.1	15		0.1	15	
<i>Polymeria ambigua</i>	0.1	15	LDS10-05	0.1	15	
<i>Pterocaulon sphacelatum</i>	0.1	40	LDS10-03	0.1	40	
<i>Ptilotus astrolasius</i>	0.1	30				
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	50		0.1	50	
<i>Rhagodia eremaea</i>	0.1	30	LDS10-02	0.1	40	LDS10R-02
<i>Rhynchosia minima</i>	0.1	30		0.1	30	
<i>Salsola australis</i>	0.1	30		0.1	30	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>				0.1	500	
<i>Setaria verticillata</i>	0.1	15				
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)				0.1	100	LDS10R-03
<i>Stemodia grossa</i>	0.1	40		0.1	40	
<i>Stylobasium spathulatum</i>	8	400		8	400	
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	2	50		2	50	
<i>Themeda triandra</i>	5	50		5	50	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>				0.1	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	30		0.1	30	
<i>Triodia epactia</i>	2	30		2	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Triodia wiseana</i>	0.1	30		0.1	30	
<i>Waltheria indica</i>	0.1	20		0.1	20	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: BRM/RM Phase 2: SCTB

Quadrat 50 x 50 m

50 K 549814 mE, 7517477 mN.

Clay plain; broad plain aligned NS and bordered by large range of hills to the W and low hills to the E.

Reddish brown clay loam.

Ironstone; pebbles 1-25%; gravel >75%.

Phase 1: *Acacia aptaneura*, (*Grevillea berryana*) low woodland over *Triodia epactia* very open hummock grassland and *Chrysopogon fallax*, (*Eriachne benthamii/flaccida*, *Themeda* sp. Hamersley Station (M.E. Trudgen 11431)) open tussock grassland and *Enneapogon polyphyllus* very open annual grassland.

Phase 2: *Acacia aptaneura*, (*Grevillea berryana*) low woodland over *Triodia epactia* very open hummock grassland and *Chrysopogon fallax*, (*Eriachne benthamii/flaccida*, *Themeda* sp. Hamersley Station (M.E. Trudgen 11431)) open tussock grassland and *Enneapogon polyphyllus* very open annual grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: Very long unburnt. **Phase 2:** Very long unburnt.

Site

Date

LDS11

Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	25				
<i>Acacia aptaneura</i>	25	550	LDS11-01	25	550	
<i>Alternanthera nana</i>				0.1	5	
<i>Aristida contorta</i>	0.1	40		0.1	40	
<i>Aristida holathera</i> var. <i>holathera</i>				0.1	20	
<i>Boerhavia</i> sp.	0.1	30				
<i>Bulbostylis turbinata</i>	0.1	10	LDS11-16			
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	0.1	30	LDS11-18			
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	30	LDS11-17	0.1	30	
<i>Chrysopogon fallax</i>	15	90		15	90	
<i>Cleome viscosa</i>	0.1	40				
<i>Cucumis variabilis</i>	0.1	40		0.1	40	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	20	LDS11-07			
<i>Dysphania kalpari</i>	0.1	20	LDS11-06	0.1	20	
<i>Enneapogon polyphyllus</i>	3	30	LDS11-05			
<i>Eragrostis cumingii</i>	0.1	15		0.1	15	
<i>Eragrostis pergracilis</i>	0.1	10	LDS11-10			
<i>Eremophila lanceolata</i>	0.1	35				
<i>Eriachne benthamii/flaccida</i>	2	60	LDS11-02	2	60	
<i>Eriachne</i> sp.	0.1	60	LDS11-19			
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10		0.1	10	
<i>Fimbristylis dichotoma</i>	0.1	30	LDS11-13	0.1	30	
<i>Goodenia microptera</i>	0.1	20		0.1	20	
<i>Goodenia prostrata</i>	0.1	20	LDS11-11			
<i>Grevillea berryana</i>	0.5	600	LDS11-25	0.5	600	
<i>Hibiscus burtonii</i>	0.1	50		0.1	50	
<i>Iseilema membranaceum</i>	0.1	20	LDS11-24			
<i>Lepidium phlebopetalum</i>	0.1	20	LDS11-21			
<i>Maireana villosa</i>	0.1	40	LDS11-09			
<i>Psyrdrax suaveolens</i>	0.1	190		0.1	190	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus exaltatus</i>	0.1	70		0.1	70	
<i>Ptilotus gaudichaudii</i>	0.1	25	LDS11-03			
<i>Ptilotus helipteroides</i>	0.1	40	LDS11-23			
<i>Ptilotus obovatus</i> var. <i>obovatus</i>				0.1	40	
<i>Rhodanthe floribunda</i>	0.1	5	LDS11-12			
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	20	LDS11-04	0.1	20	
<i>Spermacoce brachystema</i>	0.1	20	LDS11-20			
<i>Sporobolus australasicus</i>	0.1	20				
<i>Streptoglossa decurrens</i>	0.1	30	LDS11-14			
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	0.5	140		0.5	140	
<i>Triodia epactia</i>	5	40		5	40	
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	30	LDS11-15			



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: BRM/RM Phase 2: BRM/RM

Quadrat 50 x 50 m

50 K 551342 mE, 7517156 mN.

Plain; stony plain with gentle slope to the W.

Dark reddish brown sandy clay loam.

Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 51-75%.

Phase 1: *Acacia pruinocarpa*, *A. exigua*, *A. kempeana* tall open shrubland over *Triodia wiseana*, (*T. epactia*) hummock grassland.

Phase 2: *Acacia pruinocarpa*, *A. exigua*, *A. kempeana* tall open shrubland over *Triodia wiseana*, (*T. epactia*) hummock grassland.

Phase 1: Excellent. Phase 2: Excellent.

Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Site

Date

LDS12

Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	15		0.1	15	
<i>Acacia ancistrocarpa</i>	0.1	240		0.1	240	
<i>Acacia bivenosa</i>	0.1	130		0.1	130	
<i>Acacia exigua</i>	2.5	350		2.5	350	
<i>Acacia kempeana</i>	2	300	LDS12-09	2	300	
<i>Acacia pruinocarpa</i>	3	350		3	350	
<i>Amphipogon sericeus</i>	0.1	40		0.1	40	
<i>Anthobolus leptomerioides</i>	0.1	150		0.1	150	
<i>Aristida contorta</i>	0.1	30		0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		0.1	40	
<i>Aristida inaequiglumis</i>	0.1	80	LDS12-12	0.1	80	
<i>Duperreya commixta</i>	0.1	150		0.1	150	
<i>Dysphania</i> sp.				0.1	20	
<i>Enneapogon caerulescens</i>	0.1	15				
<i>Enneapogon polyphyllus</i>	0.1	30				
<i>Eucalyptus gamophylla</i>	0.1	350		0.1	350	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		0.1	20	
<i>Goodenia microptera</i>	0.1	30		0.1	30	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	50	LDS12-11	0.1	50	
<i>Haloragis gossei</i> var. <i>gossei</i>	0.1	20	LDS12-03	0.1	20	
<i>Hibiscus burtonii</i>	0.1	70		0.1	70	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	30	LDS12-04	0.1	30	
<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	0.1	15	LDS12-06	0.1	15	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	140		0.1	140	
<i>Maireana planifolia</i>	0.1	70	LDS12-01	0.1	70	
<i>Maireana villosa</i>	0.1	30	LDS12-13	0.1	30	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Peripleura obovata</i>	0.1	10	LDS12-05	0.1	10	
<i>Pterocaulon serrulatum</i> var. <i>velutinum</i>	0.1	60	LDS12-08	0.1	60	
<i>Pterocaulon sphaeranthoides</i>	0.1	20	LDS12-07	0.1	20	
<i>Ptilotus astrolasius</i>	0.1	50		0.1	50	
<i>Ptilotus exaltatus</i>	0.1	60		0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus helipteroides</i>	0.1	30	LDS11-23=			
<i>Ptilotus polystachyus</i>	0.1	60	LDS12-02	0.1	60	
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	70		0.1	70	
<i>Salsola australis</i>	0.1	10		0.1	10	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30	LDS11-04=	0.1	30	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	120		0.1	120	
<i>Triodia epactia</i>	5	40		5	40	
<i>Triodia wiseana</i>	30	50		30	50	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: BRM/RM Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 552207 mE, 7516770 mN.
Habitat Hill slope; moderately steep hill slope, N aspect.
Soil Reddish brown sandy clay loam.
Rock Type Ironstone, chert; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.
Vegetation **Phase 1:** *Corymbia deserticola* subsp. *deserticola*, *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia monticola*, *A. maitlandii*, *A. exigua* tall open shrubland over *Triodia wiseana* hummock grassland and *Eriachne mucronata*, *Amphipogon sericeus* very open tussock grassland.
Phase 2: *Corymbia deserticola* subsp. *deserticola*, *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia monticola*, *A. maitlandii*, *A. exigua* tall open shrubland over *Triodia wiseana* hummock grassland and *Eriachne mucronata*, *Amphipogon sericeus* very open tussock grassland.
Veg Condition **Phase 1:** Excellent. **Phase 2:** Excellent.
Fire Age **Phase 1:** Very long unburnt. **Phase 2:** Very long unburnt.

Site LDS13
Date Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	160		0.1	160	
<i>Acacia exigua</i>	2	220		2	220	
<i>Acacia maitlandii</i>	3	280		3	280	
<i>Acacia monticola</i>	3	450		3	450	
<i>Acacia pruinocarpa</i>	0.1	350		0.1	350	
<i>Acacia pyrifolia</i>	0.1	160		0.1	160	
<i>Amphipogon sericeus</i>	0.5	30		0.5	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Aristida inaequiglumis</i>	0.1	60	LDS12-12=	0.1	60	
<i>Calytrix carinata</i>	0.1	70	LDS13-06	0.1	70	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	2	450		2	450	
<i>Cymbopogon ambiguus</i>	0.1	70		0.1	70	
<i>Dampiera candidans</i>	0.1	10	LDS13-07			
<i>Eriachne aristidea</i>	0.1	20		0.1	20	
<i>Eriachne mucronata</i>	1.5	30		1.5	30	
<i>Eriachne pulchella</i>	0.1	10		0.1	10	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	600		1	600	
<i>Euphorbia boophthona</i>	0.1	15	LDS13-03			
<i>Gompholobium oreophilum</i>	0.1	15		0.1	15	
<i>Goodenia microptera</i>				0.1	30	
<i>Goodenia stobbsiana</i>	0.1	35		0.1	35	
<i>Hakea chordophylla</i>	0.1	300		0.1	300	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	170	LDS13-04	0.1	170	
<i>Hibiscus sturtii</i> var. <i>campylocllamys</i>				0.1	5	LDS13R-01
<i>Indigofera monophylla</i>	0.1	30				
<i>Jasminum didymum</i> subsp. <i>lineare</i>				0.1	90	
<i>Paraneurachne muelleri</i>	0.1	45		0.1	45	
<i>Polycarpaea holtzei</i>	0.1	2		0.1	2	
<i>Ptilotus calostachyus</i>	0.1	60		0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus clementii</i>	0.1	20				
<i>Schizachyrium fragile</i>	0.1	5		0.1	5	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		0.1	150	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	180		0.1	180	
<i>Solanum horridum</i>	0.1	40	LDS13-05	0.1	40	
<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)	0.1	20	LDS13-01	0.1	20	
<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)	0.1	60	LDS13-02	0.1	60	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	35		0.1	35	
<i>Triodia epactia</i>				0.1	40	
<i>Triodia wiseana</i>	50	60		50	60	



Phase 1



Phase 2

Lens G/Diesel
Described by BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 550437 mE 7519313 mN
Habitat Hill slope; moderate hill slope of a small hill, sloping W .
Soil Dark reddish brown sandy clay loam.
Rock Type Ironstone, chert; outcropping 1-25%; large boulders 1-25%; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.
Vegetation *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, *A. monticola*, (*A. bivenosa*, *A. maitlandii*, *Hakea chordophylla*) tall shrubland over *Triodia wiseana*, (*T. epactia*) hummock grassland.
Veg Condition Excellent.
Fire Age Very long unburnt.

LDS14

Date 15-Oct-18

Species	Cover	Height (cm)	Specimen
<i>Acacia aptaneura</i>	0.1	250	LDS14-08
<i>Acacia bivenosa</i>	1	210	
<i>Acacia exigua</i>	5	250	
<i>Acacia maitlandii</i>	0.5	300	
<i>Acacia monticola</i>	4	400	
<i>Acacia pruinocarpa</i>	0.1	200	
<i>Acacia pyrifolia</i>	0.1	190	
<i>Aristida contorta</i>	0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40	
<i>Boerhavia</i> sp.	0.1	30	
<i>Capparis lasiantha</i>	0.1	50	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	10	
<i>Cleome viscosa</i>	0.1	60	
<i>Codonocarpus cotinifolius</i>	0.1	70	
<i>Cymbopogon ambiguus</i>	0.1	80	
<i>Dampiera candicans</i>	0.1	50	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	5	
<i>Eriachne aristidea</i>	0.1	30	
<i>Eriachne ciliata</i>	0.1	30	LDS14-01
<i>Eriachne mucronata</i>	0.1	40	
<i>Eriachne pulchella</i>	0.1	30	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	400	
<i>Gompholobium oreophilum</i>	0.1	60	
<i>Gomphrena cunninghamii</i>	0.1	30	LDS14-07
<i>Goodenia microptera</i>	0.1	30	
<i>Goodenia stobbsiana</i>	0.1	30	
<i>Gossypium robinsonii</i>	0.1	350	
<i>Hakea chordophylla</i>	0.5	400	
<i>Hibiscus coatesii</i>	0.1	40	LDS14-10
<i>Hibiscus sturtii</i> var. <i>campyloclamys</i>	0.1	20	LDS14-09
<i>Indigofera monophylla</i>	0.1	40	
<i>Oldenlandia crouchiana</i>	0.1	20	LDS14-03
<i>Paraneurachne muelleri</i>	0.1	30	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	0.1	20	
<i>Polycarpaea holtzei</i>	0.1	5	
<i>Polycarpaea longiflora</i>	0.1	20	LDS14-04
<i>Ptilotus calostachyus</i>	0.1	60	
<i>Ptilotus exaltatus</i>	0.1	30	
<i>Ptilotus fusiformis</i>	0.1	30	LDS14-05
<i>Schizachyrium fragile</i>	2	20	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	140	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	50	LDS14-12
<i>Solanum elaeagnifolium</i>	0.1	40	LDS14-06
<i>Solanum lasiophyllum</i>	0.1	35	LDS14-02
<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)	0.1	20	LDS13-01=
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	60	
<i>Triodia epactia</i>	0.5	50	

Species	Cover	Height (cm)	Specimen
<i>Triodia wiseana</i>	50	50	



Phase 1

Lens G/Diesel		Site	LDS15
Described by	Phase 1: MM/TB Phase 2: BRM/RM	Date	Phase 1: 16-Oct-18 Phase 2: 16-Mar-19
Type	Quadrat 50 x 50 m		
Central Coordinate	50 K 548796 mE, 7519912 mN.		
Habitat	Clay plain; broad clay plain between two ranges of hills, gentle slope to W; surrounds the lower lying clay drainage plain that runs through this valley.		
Soil	Dark reddish brown light clay.		
Rock Type	Ironstone; pebbles 1-25%; gravel 1-25% (both ~1%).		
Vegetation	Phase 1: <i>Acacia aptaneura</i> , (<i>Corymbia hamersleyana</i> , <i>A. pruinocarpa</i>) low open woodland over <i>Triodia epactia</i> hummock grassland. Phase 2: <i>Acacia aptaneura</i> , (<i>Corymbia hamersleyana</i> , <i>A. pruinocarpa</i>) low open woodland over <i>Triodia epactia</i> hummock grassland.		
Veg Condition	Phase 1: Very Good: presence of weeds (* <i>B. bipinnata</i>). Phase 2: Very Good: presence of weeds (* <i>B. bipinnata</i>).		
Fire Age	Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.		

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>				0.1	5	
<i>Acacia ancistrocarpa</i>	0.1	250		0.1	250	
<i>Acacia aptaneura</i>	2	350	LDS05-01=	2	350	
<i>Acacia bivenosa</i>	0.1	230		0.1	230	
<i>Acacia exigua</i>	0.1	230		0.1	230	
<i>Acacia pruinocarpa</i>	0.1	300		0.1	300	
<i>Anthobolus leptomerioides</i>	0.1	120		0.1	120	
<i>Aristida contorta</i>	0.1	30		0.1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	55		0.1	55	
<i>Aristida inaequiglumis</i>	0.1	70	LDS05-09=	0.1	70	
<i>Aristida latifolia</i>	0.1	60	LDS04-06=	0.1	60	
<i>Bidens bipinnata</i>	0.1	30				
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	30		0.1	30	
<i>Chrysopogon fallax</i>	0.1	130		0.1	130	
<i>Corymbia hamersleyana</i>	1	500		1	500	
<i>Cucumis variabilis</i>	0.1	50		0.1	50	
<i>Cullen pogonocarpum</i>	0.1	15	LDS05-06=			
<i>Cymbopogon ambiguus</i>	0.1	110		0.1	110	
<i>Cymbopogon obtectus</i>	0.1	40		0.1	40	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	0.1	35		0.1	35	
<i>Digitaria ammophila</i>	0.1	40	LDS05-07=	0.1	40	
<i>Digitaria brownii</i>	0.1	60		0.1	60	
<i>Enneapogon polyphyllus</i>	0.1	35				
<i>Eriachne ciliata</i>	0.1	20				
<i>Eulalia aurea</i>	0.1	60		0.1	60	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		0.1	20	
<i>Goodenia microptera</i>	0.1	20				
<i>Gossypium australe</i>	0.1	30				
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.2	300		0.2	300	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	30	LDS15-01			
<i>Indigofera monophylla</i>	0.1	10		0.1	10	
<i>Iseilema membranaceum</i>	0.1	10	LDS04-10=			

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Nicotiana</i> sp.	0.1	5				
<i>Notoleptopus decaisnei</i>	0.1	10				
<i>Panicum effusum</i>	0.1	40	LDS05-04=	0.1	40	
<i>Paraneurachne muelleri</i>	0.1	60		0.1	60	
<i>Paspalidium clementii</i>	0.1	20		0.1	20	
<i>Peripleura arida</i>	0.1	35	LDS05-08=	0.1	35	
<i>Phyllanthus erwinii</i>	0.1	10				
<i>Pterocaulon sphacelatum</i>	0.1	10		0.1	10	
<i>Ptilotus exaltatus</i>	0.1	50		0.1	50	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	45		0.1	45	
<i>Ptilotus polystachyus</i>	0.1	40		0.1	40	
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	0.1	40		0.1	40	
<i>Schizachyrium fragile</i>	0.1	35		0.1	35	
<i>Senna notabilis</i>	0.1	5				
<i>Sida platycalyx</i>	0.1	5		0.1	5	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	30		0.1	30	
<i>Solanum elatius</i>	0.1	45	LDS15-02	0.1	45	
<i>Solanum lasiophyllum</i>	0.1	25		0.1	25	
<i>Themeda triandra</i>	0.1	50		0.1	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	50				
<i>Triodia epactia</i>	60	60		60	60	
<i>Triodia wiseana</i>	0.1	30		0.1	30	
<i>Vigna lanceolata</i> var. <i>lanceolata</i>				0.1	5	LDSR15-01
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	0.1	5				
<i>Vincetoxicum lineare</i>	0.1	30		0.1	30	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: PLDK/JK Phase 2: BRM/RM

Quadrat 50 x 50 m

544064 mE, 7512627 mN.

Hill slope; steep lower slope and small saddle on hill; NE aspect.

Dark reddish brown clay loam.

Ironstone, quartz; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.

Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia brizoides*, (*T. wiseana*) hummock grassland.

Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia bivenosa* scattered low shrubs over *Triodia brizoides*, (*T. wiseana*) hummock grassland.

Phase 1: Excellent. Phase 2: Excellent.

Phase 1: Burnt 3-5 years ago. Phase 2: Burnt 3-5 years ago.

Site

Date

LDS16

Phase 1: 15-Oct-18 Phase 2: 18-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)	0.1	50	LDS16-02	0.1	50	
<i>Acacia bivenosa</i>	1	80		1	80	
<i>Acacia bivenosa</i> (wispy/weeping form)	0.1	80		0.1	80	
<i>Acacia incurvaneura</i>	0.1	150	LDS16-03	0.1	150	
<i>Acacia synchronicia</i>	0.1	80		0.1	80	
<i>Amphipogon sericeus</i>	0.1	40		0.1	40	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	0.1	160		0.1	160	
<i>Cymbopogon ambiguus</i>	0.1	120		0.1	120	
<i>Dampiera candidans</i>	0.1	40				
<i>Dodonaea coriacea</i>	0.1	40		0.1	40	
<i>Duperreya commixta</i>				0.1	80	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	4	600		4	600	
<i>Euphorbia</i> ? <i>boophthona/tannensis</i>				0.1	15	
<i>Gompholobium oreophilum</i>	0.1	50		0.1	50	
<i>Hakea chordophylla</i>	0.1	40		0.1	40	
<i>Hibiscus coatesii</i>	0.1	25		0.1	25	
<i>Hibiscus sturtii</i> var. <i>campylocllamys</i>	0.1	30		0.1	30	
<i>Hybanthus aurantiacus</i>				0.1	10	
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	70		0.1	70	
<i>Olearia xerophila</i>	0.1	40		0.1	40	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Paspalidium clementii</i>	0.1	8				
<i>Ptilotus obovatus</i> var. <i>obovatus</i>				0.1	30	
<i>Rhagodia eremaea</i>				0.1	40	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	45		0.1	45	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	170	LDS16-04	0.1	110	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>x luerssenii</i>	0.1	160	LDS16-01	0.1	160	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	90		0.1	90	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	0.1	40		0.1	40	
<i>Solanum lasiophyllum</i>				0.1	30	
<i>Tribulus suberosus</i>	0.1	50		0.1	50	
<i>Triodia brizoides</i>	40	40		40	40	
<i>Triodia epactia</i>	0.5	50		0.5	50	
<i>Triodia wiseana</i>	2	40		2	40	



Phase 1



Phase 2

Lens G/Diesel		Site	LDS17
Described by	Phase 1: BRM/RM Phase 2: BRM/RM	Date	Phase 1: 16-Oct-18 Phase 2: 17-Mar-19
Type	Quadrat 50 x 50 m		
Central Coordinate	50 K 548316 mE, 7516472 mN.		
Habitat	Foot slope of a major range; gentle slope to E.		
Soil	Dark reddish brown sandy clay loam.		
Rock Type	Ironstone, Banded Iron Formation; boulders 1-25%; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.		
Vegetation	Phase 1: <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Acacia pruinocarpa</i> , <i>A. maitlandii</i> , <i>Senna glutinosa</i> subsp. <i>pruinosa</i> tall open shrubland over <i>A. ancistrocarpa</i> scattered shrubs over <i>Triodia brizoides</i> closed hummock grassland. Phase 2: <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Acacia pruinocarpa</i> , <i>A. maitlandii</i> , <i>Senna glutinosa</i> subsp. <i>pruinosa</i> tall open shrubland over <i>A. ancistrocarpa</i> scattered shrubs over <i>Triodia brizoides</i> closed hummock grassland.		
Veg Condition	Phase 1: Excellent. Phase 2: Excellent.		
Fire Age	Phase 1: Very long unburnt. Phase 2: Very long unburnt.		

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	1	160		1	160	
<i>Acacia exigua</i>	0.1	210		0.1	210	
<i>Acacia maitlandii</i>	1	250		1	250	
<i>Acacia pruinocarpa</i>	1.5	250		1.5	250	
<i>Acacia pyrifolia</i>	0.1	180		0.1	180	
<i>Bonamia erecta</i>	0.1	40		0.1	40	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	30	LDS17-14			
<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>	0.1	30				
<i>Cucumis variabilis</i>	0.1	150				
<i>Dodonaea coriacea</i>	0.1	50		0.1	50	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	15				
<i>Enneapogon caerulescens</i>	0.1	20				
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.1	500		0.1	500	
<i>Euphorbia boophthona</i>	0.1	40	LDS13-03=	0.1	40	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	3		0.1	3	
<i>Goodenia microptera</i>	0.1	20				
<i>Hakea chordophylla</i>	0.1	300		0.1	300	
<i>Hibiscus coatesii</i>	0.1	15		0.1	15	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	0.1	5	LDS17-02			
<i>Indigofera monophylla</i>	0.1	50				
<i>Olearia xerophila</i>	0.1	30	LDS17-05			
<i>Paspalidium</i> sp.	0.1	5		0.1	5	
<i>Peripleura virgata</i>	0.1	30	LDS17-03	0.1	30	
<i>Polycarpaea holtzei</i>	0.1	10		0.1	10	
<i>Polygala glaucifolia</i>	0.1	10	LDS17-10			
<i>Psydrax suaveolens</i>	0.1	130	LDS17-13	0.1	130	
<i>Pterocaulon sphacelatum</i>	0.1	70		0.1	70	
<i>Ptilotus clementii</i>	0.1	45	LDS17-06	0.1	45	
<i>Ptilotus fusiformis</i>	0.1	30	LDS17-09	0.1	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus rotundifolius</i>	0.1	50		0.1	50	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40		0.1	40	
<i>Senna glaucifolia</i> x	0.1	80	LDS17-01	0.1	80	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	140		0.1	140	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.5	260		0.5	260	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x	0.5	160	LDS17-15	0.5	160	
<i>Senna notabilis</i>	0.1	30		0.1	30	
<i>Senna symonii</i>	0.1	140	LDS17-04	0.1	140	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	20	LDS17-11	0.1	20	
<i>Solanum lasiophyllum</i>	0.1	50	LDS17-08	0.1	50	
<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)	0.1	30	LDS17-07	0.1	30	
<i>Streptoglossa decurrens</i>	0.1	35	LDS11-14=	0.1	35	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	80		0.1	80	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	170		0.1	170	
<i>Triodia brizoides</i>	75	60		75	60	
<i>Triodia epactia</i>	0.1	40		0.1	40	
<i>Triodia wiseana</i>	0.1	40		0.1	40	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: MM/TB Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 541568 mE, 7506711 mN.
Habitat Upper hill slope and crest; uppermost slope of a tall hill (750 m elevation), moderate slope to E.
Soil Dark reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 51-75%; gravel 1-25%.
Vegetation **Phase 1:** *Eucalyptus leucophloia* subsp. *leucophloia*, (*Hakea chordophylla*) low open woodland over *Acacia maitlandii* tall open scrub over *Triodia wiseana* hummock grassland.
Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia*, (*Hakea chordophylla*) low open woodland over *Acacia maitlandii* tall open scrub over *Triodia wiseana* hummock grassland.
Veg Condition **Phase 1:** Excellent. **Phase 2:** Excellent.
Fire Age **Phase 1:** No sign of recent fire. **Phase 2:** No sign of recent fire.

Site LDS18
Date Phase 1: 17-Oct-18 Phase 2: 18-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia exigua</i>	0.1	180		0.1	180	
<i>Acacia maitlandii</i>	45	220		45	220	
<i>Acacia pruinocarpa</i>	0.1	50		0.1	50	
<i>Acacia pyrifolia</i>	0.1	220		0.1	220	
<i>Amphipogon sericeus</i>	0.1	35		0.1	35	
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	0.1	90	LDS18-02			
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	0.1	40	LDS18-03	0.1	40	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	2	500		2	500	
<i>Goodenia cusackiana</i>	0.1	8		0.1	8	
<i>Goodenia stobbsiana</i>	0.1	10		0.1	10	
<i>Hakea chordophylla</i>	0.5	400		0.5	400	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	170		0.1	170	
<i>Indigofera monophylla</i>	0.1	30		0.1	30	
<i>Paraneurachne muelleri</i>	0.1	50		0.1	50	
<i>Polycarpaea holtzei</i>	0.1	2		0.1	2	
<i>Ptilotus calostachyus</i>				0.1	30	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>				0.1	30	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	40	LDS18-04	0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	140		0.1	140	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	40		0.1	40	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x	0.1	200	LDS18-05	0.1	200	LDS18R-01
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. ? glaucifolia</i>	0.1	120	LDS18-01	0.1	120	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	20		0.1	20	
<i>Triodia wiseana</i>	50	55		50	55	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: SC/CI Phase 2: SCTB
Type Quadrat 50 x 50 m
Central Coordinate 50 K 547080 mE, 7512648 mN.
Habitat Hill crest; crest of moderate ridge; elevation 680m.
Soil Reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; cobbles 1-25%; pebbles 50-75%; gravel 1-25%.
Vegetation Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, *A. maitlandii* tall open scrub over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, *A. maitlandii* tall open scrub over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Veg Condition Phase 1: Excellent. Phase 2: Excellent.
Fire Age Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia exigua</i>	15	250		15	250	
<i>Acacia maitlandii</i>	16	200		16	200	
<i>Acacia pruinocarpa</i>	0.1	220		0.1	220	
<i>Amphipogon sericeus</i>	1	20		1	20	
<i>Codonocarpus cotinifolius</i>	0.1	70		0.1	70	
<i>Dampiera candidans</i>	0.1	40				
<i>Dodonaea coriacea</i>	0.1	20		0.1	20	
<i>Eriachne mucronata</i> (arid form) (MET 12 736)				0.1	20	
<i>Eriachne mucronata</i> (typical form)	0.1	30		0.1	30	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	500		1	500	
<i>Gompholobium oreophilum</i>	0.1	20		0.1	20	
<i>Goodenia cusackiana</i>	0.1	10		0.1	10	
<i>Goodenia stobbsiana</i>	0.1	30		0.1	30	
<i>Hakea chordophylla</i>	0.1	400		0.1	400	
<i>Paraneurachne muelleri</i>				0.1	20	
<i>Polycarpaea holtzei</i>	0.1	2				
<i>Ptilotus astrolasius</i>	0.1	30				
<i>Ptilotus calostachyus</i>	0.1	80		0.1	80	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	220				
<i>Triodia brizoides</i>	0.1	40	LDS19-01			
<i>Triodia epactia</i>				0.1	30	
<i>Triodia wiseana</i>	35	40		35	40	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: PLDK/JK Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 543161 mE, 7511835 mN.
Habitat Hill slope; slope of a moderate hill, part of a tall range; elevation 760 m; aspect N to NE.
Soil Dark reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.
Vegetation Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia maitlandii*, (*A. pruinocarpa*) open shrubland over *A. adoxa* var. *adox*a low open shrubland over *Triodia wiseana*, (*T. epactia*) open hummock grassland.
Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia maitlandii*, (*A. pruinocarpa*) open shrubland over *A. adoxa* var. *adox*a low open shrubland over *Triodia wiseana*, (*T. epactia*) open hummock grassland.
Veg Condition Phase 1: Excellent. Phase 2: Excellent.
Fire Age Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia adoxa</i> var. <i>adox</i> a	5	50		5	50	
<i>Acacia exigua</i>	0.1	160		0.1	160	
<i>Acacia maitlandii</i>	2	170		2	170	
<i>Acacia pruinocarpa</i>	1	110		1	110	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	190		0.1	190	
<i>Amphipogon sericeus</i>	0.1	40		0.1	40	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	50	LDS20-02	0.1	50	
<i>Dampiera candidans</i>	0.1	50		0.1	50	
<i>Dodonaea coriacea</i>	0.1	60		0.1	60	
<i>Eriachne mucronata</i> (typical form)	0.1	45		0.1	45	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	4	700		4	700	
<i>Fimbristylis dichotoma</i>	0.1	25		0.1	25	
<i>Gompholobium oreophilum</i>	0.1	40		0.1	40	
<i>Goodenia cusackiana</i>	0.1	30		0.1	30	
<i>Goodenia stobbsiana</i>	0.1	8		0.1	8	
<i>Hakea chordophylla</i>	0.1	220		0.1	220	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	25		0.1	25	
<i>Hybanthus aurantiacus</i>	0.1	30		0.1	30	
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	80		0.1	80	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Polycarpaea holtzei</i>	0.1	8		0.1	8	
<i>Ptilotus calostachyus</i>	0.1	80		0.1	80	
<i>Ptilotus exaltatus</i>	0.1	40		0.1	40	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	50	LDS20-01	0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	130		0.1	130	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	30		0.1	30	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	160		0.1	160	
<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)				0.1	140	LDS20R-02
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	60		0.1	60	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543) (ferruginous form)				0.1	30	LDS20R-01
<i>Tephrosia oxalidea</i>	0.1	10	LDS20-03	0.1	10	
<i>Triodia epactia</i>	3	40		3	40	
<i>Triodia wiseana</i>	15	30		15	30	



Phase 1



Phase 2

Lens G/Diesel		Site	LDS21
Described by	Phase 1: SC/CI Phase 2: PL/CI	Date	Phase 1: 19-Oct-18 Phase 2: 17-Mar-19
Type	Quadrat 50 x 50 m		
Central Coordinate	50 K 538598 mE, 7506127 mN.		
Habitat	Stony foot slope/plain; very low foot slope, transitioning to a plain; gentle slope to NW.		
Soil	Reddish brown clay loam.		
Rock Type	Ironstone; pebbles 1-25%; gravel 26-50%.		
Vegetation	Phase 1: <i>Acacia aptaneura</i> low open woodland over <i>A. atkinsiana</i> scattered tall shrubs over <i>A. exigua</i> , <i>A. synchronicia</i> , (<i>A. bivenosa</i>) shrubland over <i>Triodia wiseana</i> , (<i>T. epactia</i>) open hummock grassland. Phase 2: <i>Acacia aptaneura</i> low open woodland over <i>A. atkinsiana</i> , <i>A. kempeana</i> scattered tall shrubs over <i>A. exigua</i> , <i>A. synchronicia</i> , (<i>A. bivenosa</i>) shrubland over <i>Triodia wiseana</i> , (<i>T. epactia</i>) hummock grassland.		
Veg Condition	Phase 1: Excellent. Phase 2: Excellent.		
Fire Age	Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.		

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon otocarpum</i>	0.1	45	LDS21-06	0.1	45	
<i>Acacia aptaneura</i>	3	400	LDS21-02	3	400	
<i>Acacia atkinsiana</i>	1	300	LDS21-03	1	300	
<i>Acacia bivenosa</i>	2	150		2	150	
<i>Acacia exigua</i>	5	200		5	200	
<i>Acacia kempeana</i>	0.1	200	LDS21-15	0.5	200	
<i>Acacia maitlandii</i>	0.1	180		0.1	180	
<i>Acacia pruinocarpa</i>	0.1	250		0.1	250	
<i>Acacia pyrifolia</i>	0.1	30		0.1	30	
<i>Acacia synchronicia</i>	5	150	LDS21-13	5	150	
<i>Aristida contorta</i>	0.1	10		0.1	10	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30		0.1	30	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	10	LDS21-12	0.1	10	
<i>Cucumis variabilis</i>	0.1	50		0.1	50	
<i>Cymbopogon ambiguus</i>	0.1	50		0.1	50	
<i>Digitaria brownii</i>	0.1	20	LDS21-05	0.1	20	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10	LDS21-16			
<i>Enneapogon polyphyllus</i>	0.1	10	LDS21-10	0.1	10	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	0.1	120		0.1	120	
<i>Eriachne aristidea</i>				0.1	25	
<i>Evolvulus alsinoides</i>				0.1	25	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	5	LDS21-04	0.1	5	
<i>Goodenia microptera</i>	0.1	20	LDS21-14	0.1	20	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	60		0.1	60	
<i>Hibiscus burtonii</i>	0.1	50	LDS21-11	0.1	50	
<i>Hibiscus coatesii</i>	0.1	20	LDS-SC03=	0.1	20	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>				0.1	25	
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	20	LDS21-09	0.1	20	
<i>Paraneurachne muelleri</i>	0.1	20		0.1	20	
<i>Polycarpaea holtzei</i>	0.1	5				

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Ptilotus astrolasius</i>	0.1	30		0.1	30	
<i>Ptilotus calostachyus</i>	0.1	40		0.1	40	
<i>Ptilotus exaltatus</i>	0.1	10		0.1	10	
<i>Ptilotus helipteroides</i>	0.1	15		0.1	15	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	1	100		1	100	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>				0.1	80	LDS21R-01
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	1	180		1	180	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>	0.1	180	LDS21-17	0.1	140	
<i>Senna stricta</i>	0.1	50	LDS21-01	0.1	50	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	20	LDS21-07	0.1	20	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	30				
<i>Solanum diversiflorum</i>	0.1	30		0.1	30	
<i>Solanum elatius</i>	0.1	20	LDS21-08	0.1	20	
<i>Solanum lasiophyllum</i>	0.1	50		0.1	50	
<i>Tribulus suberosus</i>	0.1	60		0.1	60	
<i>Triodia epactia</i>	10	30		2	30	
<i>Triodia wiseana</i>	25	70		13	70	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: SCTB

Quadrat 50 x 50 m

548484 mE, 7512634 mN.

Low undulating hill; elevation 590 m; E of NS ridge/breakaway; basalt/chert outcropping.

Orange brown sandy loam.

Basalt/chert; outcropping 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 51-75%.

Phase 1: *Acacia inaequilatera* tall open shrubland over *Indigofera rugosa* low shrubland over *Triodia wiseana* hummock grassland.

Phase 2: *Acacia inaequilatera* tall open shrubland over *Indigofera rugosa* low shrubland over *Triodia wiseana* hummock grassland.

Phase 1: Excellent. Phase 2: Excellent.

Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Site

Date

LDS22

Phase 1: 16-Oct-18 Phase 2: 18-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia inaequilatera</i>	2	250		2	250	
<i>Acacia maitlandii</i>	0.1	50		0.1	50	
<i>Acacia pruinocarpa</i>	0.1	100		0.1	100	
<i>Aristida contorta</i>	0.1	5				
<i>Boerhavia</i> sp.	0.1	5				
<i>Cleome viscosa</i>				0.1	10	
<i>Corchorus incanus</i> subsp. <i>incanus</i>	0.1	5	LDS24-01=	0.1	5	
<i>Cymbopogon ambiguus</i>	0.1	30		0.1	30	
<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	0.1	15				
<i>Enneapogon caerulescens</i>	0.1	10	LDS22-02			
<i>Indigofera rugosa</i>	11	50		11	50	
<i>Oldenlandia crouchiana</i>	0.1	10		0.1	10	
<i>Polycarpaea longiflora</i>	0.1	10				
<i>Ptilotus auriculifolius</i>	0.1	10				
<i>Ptilotus rotundifolius</i>	0.1	60		0.1	60	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	50		0.1	50	
<i>Sporobolus australasicus</i>	0.1	5				
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172)	0.1	10	LDS22-03			
<i>Swainsona maccullochiana</i>	0.1	2	LDS22-01			
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>				0.1	20	
<i>Triodia wiseana</i>	40	20		40	20	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Site

Date

LDS23

Phase 1: 16-Oct-18 Phase 2: 18-Mar-19

Phase 1: SC/CI Phase 2: SCTB

Quadrat 50 x 50 m

50 K 549076 mE, 7513067 mN.

Lower slope of low ridge; elevation 600 m; NW aspect.

Orange/grey/brown sandy loam.

Basalt/chert; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 26-50%.

Phase 1: *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* scattered tall shrubs over *A. inaequilatera*, *A. maitlandii* scattered low shrubs over *Triodia wiseana* hummock grassland.

Phase 2: *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* scattered tall shrubs over *A. inaequilatera*, *A. maitlandii* scattered low shrubs over *Triodia wiseana* hummock grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i> (wispy/weeping form)	1	300		1	300	
<i>Acacia exigua</i>	0.1	60		0.1	60	
<i>Acacia inaequilatera</i>	0.1	180		0.1	180	
<i>Acacia maitlandii</i>	0.1	70		0.1	70	
<i>Aristida contorta</i>	0.1	15				
<i>Bulbostylis barbata</i>	0.1	10				
<i>Capparis lasiantha</i>	0.1	50		0.1	50	
<i>Cassytha capillaris</i>	0.1	10		0.1	10	
<i>Corchorus incanus</i> subsp. <i>incanus</i>	0.1	80	LDS24-01=	0.1	80	
<i>Corymbia hamersleyana</i>	0.1	250		0.1	250	
<i>Cullen leucochaetes</i>	0.1	180	LDS23-02	0.1	180	
<i>Cymbopogon ambiguus</i>	0.1	50		0.1	50	
<i>Enneapogon caeruleus</i>	0.1	10	LDS22-02=			
<i>Eremophila longifolia</i>	0.1	120		0.1	120	
<i>Eriachne mucronata</i>	0.1	60		0.1	60	
<i>Euphorbia boophthona</i>	0.1	20	LDS23-03			
<i>Goodenia stobbsiana</i>	0.1	15				
<i>Hibiscus coatesii</i>	0.1	50	LDS-SC03=	0.1	50	
<i>Indigofera rugosa</i>	1	70		1	70	
<i>Jasminum didymum</i> subsp. <i>lineare</i>				0.1	30	
<i>Marsdenia australis</i>	0.1	25	LDS23-04			
<i>Paraneurachne muelleri</i>	0.1	30		0.1	30	
<i>Polycarpaea longiflora</i>	0.1	10				
<i>Polymeria ambigua</i>	0.1	15	LDS23-01	0.1	15	
<i>Ptilotus astrolasius</i>	0.1	40		0.1	40	
<i>Ptilotus auriculifolius</i>	0.1	20				
<i>Salsola australis</i>				0.1	30	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	25		0.1	25	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	80		0.1	80	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	120		0.1	120	
<i>Sida echinocarpa</i>	0.1	50				
<i>Sporobolus australasicus</i>	0.1	10				
<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172)	0.1	10	LDS22-03=			
<i>Swainsona maccullochiana</i>	0.1	10	LDS22-01=			
<i>Themeda triandra</i>	1	60		1	60	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	40				
<i>Triodia epactia</i>	0.1	60		0.1	60	
<i>Triodia wiseana</i>	38	40		38	40	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: SC/CI Phase 2: SCTB
Type Quadrat 50 x 50 m
Central Coordinate 50 K 549478 mE, 7513269 mN.
Habitat Low slope/foot slope of low range of hills; N aspect; elevation 610m.
Soil Orange brown sandy loam.
Rock Type Basalt/chert; outcropping 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 51-75%.
Vegetation **Phase 1:** *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa*, (*A. inaequilatera*) tall open shrubland over *Triodia wiseana* hummock grassland.
Phase 2: *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa*, (*A. inaequilatera*) tall open shrubland over *Triodia wiseana* hummock grassland.
Veg Condition **Phase 1:** Excellent. **Phase 2:** Excellent.
Fire Age **Phase 1:** No sign of recent fire. **Phase 2:** No sign of recent fire.

Site LDS24
Date Phase 1: 16-Oct-18 Phase 2: 18-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.1	40		0.1	40	
<i>Acacia bivenosa</i>	3	300		3	300	
<i>Acacia exigua</i>	0.1	50		0.1	50	
<i>Acacia inaequilatera</i>	0.1	350		0.1	350	
<i>Boerhavia</i> sp.				0.1	10	
<i>Corchorus incanus</i> subsp. <i>incanus</i>	0.1	20	LDS24-01	0.1	20	
<i>Corymbia hamersleyana</i>	0.1	450		0.1	450	
<i>Eriachne mucronata</i> (typical form)				0.1	20	
<i>Gomphrena canescens</i> subsp. <i>canescens</i>	0.1	10	LDS24-02	0.1	10	
<i>Goodenia stobbsiana</i>	0.1	10		0.1	10	
<i>Indigofera rugosa</i>	0.1	50		0.1	50	
<i>Paraneurachne muelleri</i>	0.1	20		0.1	20	
<i>Polycarpaea longiflora</i>	0.1	10		0.1	10	
<i>Ptilotus exaltatus</i>				0.1	20	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40		0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	20				
<i>Solanum</i> sp.				0.1	50	
<i>Sporobolus australasicus</i>	0.1	5				
<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172)	0.1	5	LDS22-03=			
<i>Swainsona maccullochiana</i>	0.1	2	LDS22-01=			
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>				0.1	50	
<i>Triodia wiseana</i>	40	30		40	30	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: PLDK/JK Phase 2: BRM/RM

Quadrat 50 x 50 m

50 K 549003 mE, 7516425 mN.

Foot slope of major range to W; gentle slope to E; elevation 645m.

Dark reddish brown clay loam.

Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 1-25%.

Phase 1: *Eucalyptus gamophylla* low open mallee woodland over *Acacia exigua*, (*A. atkinsiana*, *A. kempeana*) tall open shrubland over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana*, (*T. epactia*) open hummock grassland.

Phase 2: *Eucalyptus gamophylla* low open mallee woodland over *Acacia exigua*, (*A. atkinsiana*, *A. kempeana*) tall open shrubland over *Ptilotus rotundifolius* scattered low shrubs over *Triodia wiseana*, (*T. epactia*) open hummock grassland.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

Date

LDS25

Phase 1: 15-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Abutilon lepidum</i>	0.1	30				
<i>Abutilon otocarpum</i>	0.1	10		0.1	10	
<i>Acacia adsurgens</i>				0.1	350	LDS25R-01
<i>Acacia atkinsiana</i>	2.5	400	LDS15-01	2.5	400	
<i>Acacia bivenosa</i>	0.1	190		0.1	190	
<i>Acacia exigua</i>	5	230		5	230	
<i>Acacia kempeana</i>	1.5	300	LDS15-07	1.5	300	
<i>Amphipogon sericeus</i>	0.1	40	LDS15-03	0.1	40	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	40		0.1	40	
<i>Aristida inaequiglumis</i>	0.1	120	LDS15-04	0.1	120	
<i>Bonamia erecta</i>	0.1	40		0.1	40	
<i>Capparis lasiantha</i>				0.1	70	
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.1	20				
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	40		0.1	40	
<i>Cymbopogon ambiguus</i>	0.1	110		0.1	110	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10				
<i>Enneapogon lindleyanus</i>	0.1	50		0.1	50	
<i>Enneapogon polyphyllus</i>	0.1	25				
<i>Eriachne aristidea</i>	0.1	30		0.1	30	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus gamophylla</i>	2	500		2	500	
<i>Euphorbia boophthona</i>	0.1	30		0.1	30	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20		0.1	20	
<i>Goodenia microptera</i>	0.1	25		0.1	25	
<i>Hibiscus coatesii</i>	0.1	25		0.1	25	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	10		0.1	10	
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	0.1	25				
<i>Indigofera monophylla</i>	0.1	40		0.1	40	
<i>Panicum effusum</i>	0.1	40	LDS15-06			
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Polycarpaea holtzei</i>	0.1	5		0.1	5	
<i>Ptilotus astrolasius</i>	0.1	45		0.1	45	
<i>Ptilotus auriculifolius</i>	0.1	30		0.1	30	
<i>Ptilotus calostachyus</i>	0.1	50		0.1	50	
<i>Ptilotus clementii</i>	0.1	30				
<i>Ptilotus exaltatus</i>	0.1	40		0.1	40	
<i>Ptilotus rotundifolius</i>	1	90		1	90	
<i>Rhynchosia minima</i>	0.1	25				
<i>Schizachyrium fragile</i>	0.1	15		0.1	15	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.5	180		0.5	180	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	170		0.1	170	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	150		0.1	150	
<i>Sida echinocarpa</i>	0.1	110		0.1	110	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	100	LDS15-02	0.1	100	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	140		0.1	140	
<i>Solanum diversiflorum</i>	0.1	30		0.1	30	
<i>Solanum lasiophyllum</i>	0.1	50		0.1	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	90	LDS15-05	0.1	90	
<i>Triodia epactia</i>	2	50		2	50	
<i>Triodia wiseana</i>	10	90		10	90	
<i>Vincetoxicum lineare</i>				0.1	240	LDS25R-02



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: SCTB

Quadrat 25 x 100 m

50 K 545652 mE, 7512234 mN.

Moderate sized creek; bank of creek draining NE through stony plains.

Reddish brown silty loam.

Ironstone/river stone; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.

Phase 1: *Eucalyptus xerothermica*, (*Acacia citrinoviridis*) low open woodland over *A. maitlandii* scattered tall shrubs over *Androcalva luteiflora* scattered shrubs over *Triodia epactia* open hummock grassland over *Themeda triandra* very open tussock grassland.

Phase 2: *Eucalyptus xerothermica*, (*Acacia citrinoviridis*) low open woodland over *A. maitlandii* scattered tall shrubs over *Androcalva luteiflora* scattered shrubs over *Triodia epactia* open hummock grassland over *Themeda triandra* very open tussock grassland.

Phase 1: Very Good: presence of weeds (**B. bipinnata*). **Phase 2:** Very Good: presence of weeds (**B. bipinnata*).

Phase 1: Very long unburnt. **Phase 2:** Very long unburnt.

Site

Date

LDS26

Phase 1: 17-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia aptaneura</i>	0.1	300	LDS-SC01=	0.1	300	
<i>Acacia atkinsiana</i>	0.1	400		0.1	400	
<i>Acacia bivenosa</i>	0.1	250		0.1	250	
<i>Acacia citrinoviridis</i>	3	450		3	450	
<i>Acacia hamersleyensis</i>	0.1	250	LDS26-14	0.1	250	
<i>Acacia maitlandii</i>	1	350		1	350	
<i>Acacia monticola</i>	0.1	50		0.1	50	
<i>Acacia pruinocarpa</i>	0.1	250		0.1	250	
<i>Acacia pyrifolia</i>	0.1	60		0.1	60	
<i>Acacia tetragonophylla</i>	0.1	80		0.1	80	
<i>Alternanthera nana</i>	0.1	20				
<i>Amphipogon sericeus</i>	0.1	30		0.1	30	
<i>Androcalva luteiflora</i>	1	150		1	150	
<i>Aristida inaequiglumis</i>	0.1	70	LDS26-01	0.1	70	
<i>Bidens bipinnata</i>	0.1	40		0.1	40	
<i>Boerhavia</i> sp.	0.1	2	LDS26-10			
<i>Bonamia erecta</i>	0.1	30				
<i>Capparis lasiantha</i>	0.1	50		0.1	50	
<i>Cleome viscosa</i>	0.1	20		0.1	20	
<i>Cucumis variabilis</i>	0.1	50		0.1	50	
<i>Cymbopogon ambiguus</i>	0.1	40		0.1	40	
<i>Dicladanthera forrestii</i>	0.1	10	LDS26-12			
<i>Digitaria brownii</i>	0.1	30	LDS26-03	0.1	30	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>				0.1	80	
<i>Duperreya commixta</i>	0.1	60		0.1	60	
<i>Enneapogon lindleyanus</i>				0.1	60	LDS26R-01
<i>Enneapogon robustissimus</i>	0.1	60	LDS26-05			
<i>Eremophila longifolia</i>	0.1	50		0.1	50	
<i>Eriachne mucronata</i>	0.1	30		0.1	30	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Eriachne tenuiculmis</i>	0.1	30		0.1	30	
<i>Eucalyptus xerothermica</i>	6	600		6	600	
<i>Eulalia aurea</i>	0.1	30				
<i>Euphorbia</i> sp. (<i>biconvexa/coghlanii/trigonosperma</i> ; sterile)	0.1	20				
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	10	LDS26-11			
<i>Goodenia stobbsiana</i>	0.1	5				
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	320		0.1	320	
<i>Heliotropium cunninghamii</i>	0.1	10	LDS26-04			
<i>Hybanthus aurantiacus</i>	0.1	20				
<i>Indigofera monophylla</i>	0.1	30	LDS26-02			
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	50		0.1	50	
<i>Paraneurachne muelleri</i>	0.1	30				
<i>Peripleura arida</i>	0.1	30	LDS10-04=	0.1	30	
<i>Petalostylis labicheoides</i>	0.1	300		0.1	300	
<i>Phyllanthus maderaspatensis</i>	0.1	20				
<i>Polycarpaea longiflora</i>	0.1	10	LDS26-13	0.1	10	
<i>Polymeria ambigua</i>	0.1	5	LDS10-05=	0.1	5	
<i>Pterocaulon sphacelatum</i>	0.1	40		0.1	40	
<i>Ptilotus astrolasius</i>	0.1	40		0.1	40	
<i>Ptilotus exaltatus</i>	0.1	40				
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	40				
<i>Rhagodia eremaea</i>	0.1	110	LDS26-07	0.1	110	
<i>Santalum lanceolatum</i>	0.1	300	LDS26-08	0.1	300	
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	0.1	30	LDS26-06			
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40		0.1	40	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	10				
<i>Stylobasium spathulatum</i>	0.1	60		0.1	60	
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	0.1	30	LDS26-09	0.1	30	
<i>Themeda triandra</i>	7	50		7	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	50		0.1	50	
<i>Triodia epactia</i>	15	50		15	50	
<i>Triodia wiseana</i>	0.1	30		0.1	30	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: SCTB

Quadrat 50 x 50 m

50 K 545761 mE, 7513314 mN.

Foothill; crest of foothills, intersected by sharp gully drainage.

Reddish brown clay loam.

Ironstone; cobbles 1-25%; pebbles 26-50%; gravel 1-25%.

Phase 1: *Eucalyptus gamophylla* low open mallee woodland over *Acacia exigua*, (*A. kempeana*) shrubland to tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.

Phase 2: *Eucalyptus gamophylla* low open mallee woodland over *Acacia exigua*, (*A. kempeana*) shrubland to tall shrubland over *Triodia wiseana* hummock grassland and *Amphipogon sericeus* scattered tussock grasses.

Phase 1: Excellent. **Phase 2:** Excellent.

Phase 1: No sign of recent fire. **Phase 2:** No sign of recent fire.

Site

Date

LDS27

Phase 1: 17-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	160		0.1	160	
<i>Acacia exigua</i>	12	180		12	180	
<i>Acacia kempeana</i>	2	150		2	150	
<i>Acacia pyrifolia</i>	0.1	50		0.1	50	
<i>Amphipogon sericeus</i>	0.5	20		0.5	20	
<i>Digitaria brownii</i>	0.1	40	LDS26-03=	0.1	40	
<i>Eriachne mucronata</i>	0.1	20				
<i>Eriachne mucronata</i> (arid form) (MET 12 736)				0.1	20	
<i>Eucalyptus gamophylla</i>	2	600		2	600	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.1	300		0.1	300	
<i>Goodenia stobbsiana</i>	0.1	15		0.1	15	
<i>Grevillea berryana</i>	0.1	220	LDS-SC17=	0.1	220	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	60		0.1	60	
<i>Ptilotus calostachyus</i>	0.1	50		0.1	50	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	10				
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	50		0.1	50	
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>				0.1	130	
<i>Sida arenicola</i>	0.1	20	LDS27-01	0.1	20	
<i>Solanum lasiophyllum</i>	0.1	20		0.1	20	
<i>Triodia epactia</i>	0.1	10				
<i>Triodia wiseana</i>	35	30		35	30	



Phase 1



Phase 2

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Veg Condition

Fire Age

Phase 1: SC/CI Phase 2: PL/CI

Quadrat 50 x 50 m

50 K 539694 mE, 7506028 mN.

Hill crest/upper slope of large NE to SW ridge; elevation 685m; N aspect.

Reddish brown clay loam.

Ironstone; outcropping 26-50%; cobbles 26-50%; pebbles 26-50%; gravel 1-25%.

Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Goodenia stobbsiana*, *Acacia maitlandii*, (*Gompholobium oreophilum*, *Dampiera candidans*) low shrubland over *Triodia wiseana* open hummock grassland.

Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Goodenia stobbsiana*, *Acacia maitlandii*, (*Gompholobium oreophilum*, *Dampiera candidans*) low shrubland over *Triodia wiseana* open hummock grassland.

Phase 1: Excellent. Phase 2: Excellent.

Phase 1: Burnt 1-2 years ago. Phase 2: Burnt 1-2 years ago.

Site

Date

LDS28

Phase 1: 17-Oct-18 Phase 2: 17-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	20		0.1	20	
<i>Acacia hilliana</i>	0.1	10	LDS28-04	0.1	10	
<i>Acacia maitlandii</i>	7	50		7	50	
<i>Acacia pyrifolia</i>	0.1	100		0.1	100	
<i>Amphipogon sericeus</i>	0.1	30		0.1	30	
<i>Aristida contorta</i>				0.1	10	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	10		0.1	10	
<i>Bulbostylis barbata</i>	0.1	5				
<i>Codonocarpus cotinifolius</i>	0.1	30		0.1	30	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	15	LDS28-02	0.1	15	
<i>Corymbia hamersleyana</i>	0.1	250		0.1	250	
<i>Dampiera candidans</i>	3	40		3	40	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	0.1	10		0.1	10	
<i>Eriachne aristidea</i>	0.1	10				
<i>Eriachne ciliata</i>	0.1	10		0.1	10	
<i>Eriachne mucronata</i>	0.1	20		0.1	20	LDSR28-03
<i>Eriachne pulchella</i>	0.1	5		0.1	5	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	5	600		5	600	
<i>Fimbristylis simulans</i>	0.1	10	LDS28-01			
<i>Gompholobium oreophilum</i>	5	40		5	40	
<i>Goodenia microptera</i>	0.1	20		0.1	20	
<i>Goodenia stobbsiana</i>	10	40		10	40	
<i>Grevillea wickhamii</i>	0.1	70		0.1	70	
<i>Hakea chordophylla</i>	0.1	400		0.1	400	
<i>Hibiscus coatesii</i>				0.1	10	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	10	LDS28-03	0.1	10	
<i>Hybanthus aurantiacus</i>				0.1	25	
<i>Indigofera monophylla</i>	0.1	10		0.1	10	
<i>Oldenlandia crouchiana</i>	0.1	10		0.1	10	
<i>Paraneurachne muelleri</i>	0.1	20		0.1	20	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Polycarpaea holtzei</i>	0.1	2		0.1	2	
<i>Ptilotus calostachyus</i>	0.1	60		0.1	60	
<i>Ptilotus clementii</i>	0.1	15				
<i>Ptilotus exaltatus</i>	0.1	20		0.1	20	
<i>Schizachyrium fragile</i>	0.1	5				
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	50				
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	60		0.1	60	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	100		0.1	100	
<i>Senna</i> sp. Karijini (M.E. Trudgen 10392)				0.1	80	LDS28R-02
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)				0.1	40	
<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)				0.1	10	LDS28R-01
<i>Triodia wiseana</i>	12	20		12	20	
<i>Tripogonella loliiformis</i>				0.1	25	
<i>Triumfetta maconochieana</i>	0.1	10		0.1	410	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: SC/CI Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 542894 mE, 7507147 mN.
Habitat Foot slope of range of hills to the N; S/SE aspect.
Soil Reddish brown clay loam.
Rock Type Ironstone; cobbles 1-25%; pebbles 51-75%; gravel 1-25%.
Vegetation Phase 1: *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana* shrubland over *Triodia wiseana*, (*T. basitricha*) open hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Phase 2: *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana* shrubland over *Triodia wiseana*, (*T. basitricha*) open hummock grassland and *Amphipogon sericeus* scattered tussock grasses.
Veg Condition Phase 1: Excellent: old track through quadrat (no change in vegetation).
Phase 2: Excellent: old track through quadrat (no change in vegetation).
Fire Age Phase 1: No sign of recent fire (mostly). Phase 2: No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	15	160	LDS29-03	15	160	
<i>Acacia exigua</i>	0.1	60		0.1	60	
<i>Amphipogon sericeus</i>	1	30		1	30	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	20		0.1	20	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	20	LDS28-02=	0.1	20	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	2	500		2	500	
<i>Enneapogon polyphyllus</i>	0.1	20	LDS29-02	0.1	20	
<i>Eragrostis</i> sp.				0.1	20	
<i>Eriachne aristidea</i>	0.1	10				
<i>Eriachne mucronata</i>	0.1	10				
<i>Eriachne pulchella</i>	0.1	10		0.1	10	
<i>Fimbristylis simulans</i>	0.1	10	LDS28-01=	0.1	10	
<i>Goodenia microptera</i>	0.1	10				
<i>Goodenia stobbsiana</i>	0.1	20		0.1	20	
<i>Hakea chordophylla</i>	0.1	40		0.1	40	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	50		0.1	50	
<i>Panicum effusum</i>	0.1	40	LDS29-01	0.1	40	
<i>Polycarpaea holtzei</i>	0.1	5		0.1	5	
<i>Ptilotus astrolasius</i>	0.1	20				
<i>Ptilotus calostachyus</i>	0.1	50		0.1	50	
<i>Ptilotus exaltatus</i>	0.1	10		0.1	10	
<i>Schizachyrium fragile</i>	0.1	10		0.1	10	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	50		0.1	50	
<i>Sida arenicola</i>	0.1	80	LDS27-01=	0.1	80	
<i>Triodia basitricha</i>	1	20	LDS-SC22=	1	20	
<i>Triodia wiseana</i>	25	40		25	40	



Phase 1



Phase 2

Lens G/Diesel
Described by Phase 1: PLDK/JK Phase 2: BRM/RM
Type Quadrat 50 x 50 m
Central Coordinate 50 K 538197 mE, 7504503 mN.
Habitat Hill crest; crest of a tall hill on a major range; elevation 870m.
Soil Dark reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; cobbles 1-25%; pebbles 1-25%; gravel 1-25%.
Vegetation Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *E. gamophylla*, (*E. aridimontana*) low open mallee woodland over *Acacia bivenosa* scattered shrubs over *Triodia wiseana*, (*T. brizoides*) open hummock grassland.
Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *E. gamophylla*, (*E. aridimontana*) low open mallee woodland over *Acacia bivenosa* scattered shrubs over *Triodia wiseana*, (*T. brizoides*) open hummock grassland.
Veg Condition Phase 1: Excellent. Phase 2: Excellent.
Fire Age Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia aptaneura</i>	0.1	160	LDS30-02	0.1	160	
<i>Acacia bivenosa</i>	1	110		1	110	
<i>Acacia elachantha</i>	0.1	160	LDS30-04	0.1	160	
<i>Acacia exigua</i>	0.1	250		0.1	250	
<i>Acacia maitlandii</i>	0.1	140		0.1	140	
<i>Acacia pruinocarpa</i>	0.1	170		0.1	170	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	0.1	260		0.1	260	
<i>Acacia synchronicia</i>	0.1	110		0.1	110	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.1	300		0.1	300	
<i>Cymbopogon ambiguus</i>	0.1	150		0.1	150	
<i>Cymbopogon obtectus</i>	0.1	90		0.1	90	
<i>Diplatia grandibractea</i>				0.1	30	LDS30R-01
<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	0.1	160		0.1	160	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus aridimontana</i>	1	260	LDS30-01	1	300	LDS30R-03
<i>Eucalyptus gamophylla</i>	4	400		4	400	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	6	700	LDS30-03	6	700	LDS30R-02
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>				0.1	20	
<i>Goodenia cusackiana</i>	0.1	10				
<i>Hakea chordophylla</i>	0.1	150		0.1	150	
<i>Paraneurachne muelleri</i>	0.1	40		0.1	40	
<i>Peripleura obovata</i>	0.1	25	LDS30-05	0.1	25	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	45		0.1	45	
<i>Ptilotus rotundifolius</i>	0.1	60		0.1	60	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	80		0.1	80	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	70	LDS30-06	0.1	70	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150		0.1	150	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x	0.1	150		0.1	150	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	140		0.1	140	
<i>Triodia brizoides</i>	8	35		8	35	

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Triodia epactia</i>				0.1	30	
<i>Triodia wiseana</i>	20	40		20	40	
<i>Tripogonella loliiformis</i>	0.1	20		0.1	20	LDS30R-04



Phase 1



Phase 2

Lens G/Diesel Phase 1**Described by** PLDK/JK**Site** LDS31**Date** 17-Oct-18**Type** Quadrat 50 x 50 m**Central Coordinate** 50 K 540057 mE 7507691 mN**Habitat** Stony plain, W of tall range of hills; gentle slope to NW.**Soil** Dark reddish brown clay loam.**Rock Type** Ironstone.**Vegetation** *Acacia atkinsiana* tall open shrubland over *A. exigua*, *A. bivenosa* open shrubland over *Triodia wiseana*, (*T. epactia*) open hummock grassland.**Veg Condition** Excellent.**Fire Age** Burnt 3-5 years ago.

Species	Cover	Height (cm)	Specimen
<i>Acacia atkinsiana</i>	5	260	
<i>Acacia bivenosa</i>	2	140	
<i>Acacia exigua</i>	2	150	
<i>Acacia maitlandii</i>	0.1	260	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	10	
<i>Bonamia erecta</i>	0.1	40	
<i>Codonocarpus cotinifolius</i>	0.1	120	
<i>Cymbopogon ambiguus</i>	0.1	120	
<i>Eragrostis eriopoda</i>	0.1	35	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	0.1	120	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	20	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	40	
<i>Indigofera monophylla</i>	0.1	60	
<i>Paraneurachne muelleri</i>	0.1	40	
<i>Ptilotus astrolasius</i>	0.1	40	
<i>Ptilotus calostachyus</i>	0.1	80	
<i>Ptilotus exaltatus</i>	0.1	60	
<i>Ptilotus rotundifolius</i>	0.1	100	
<i>Scaevola spinescens</i> (broad form)	0.1	70	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	110	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	70	LDS31-04
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>	0.1	160	LDS31-02
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	160	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. ? glaucifolia</i>	0.1	60	LDS31-03
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	170	
<i>Sida echinocarpa</i>	0.1	50	
<i>Solanum elaeagnifolium</i>	0.1	70	LDS31-01
<i>Solanum lasiophyllum</i>	0.1	50	
<i>Triodia epactia</i>	1	90	
<i>Triodia wiseana</i>	13	60	



Phase 1

Lens G/Diesel Phase 2**Described by**

SC/TB

Site

LDS32

Date

18-Mar-19

Type

Quadrat 50 x 50 m

Central Coordinate

50 K 548104 mE 7512988 mN

Habitat

Moderate-sized drainage with braided open creek beds; draining through stony undulating plains, out of gully to the NW.

Soil

Reddish brown clay loam.

Rock Type

Ironstone, river stone.

Vegetation

Acacia citrinoviridis low woodland over *Acacia monticola*, *Acacia pyrifolia* var. *pyrifolia* (*Petalostylis labicheoides*, *Gossypium robinsonii*) tall shrubland over *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* scattered hummock grasses and *Cymbopogon ambiguus*, (*Eriachne tenuiculmis*) open tussock grassland.

Veg Condition

Excellent.

Fire Age

No sign of recent fire.

Species	Cover	Height (cm)	Specimen
<i>Abutilon cunninghamii</i>	0.1	80	LDS32-07
<i>Acacia citrinoviridis</i>	12	500	
<i>Acacia maitlandii</i>	0.1	120	
<i>Acacia monticola</i>	5	600	
<i>Acacia pruinocarpa</i>	0.1	350	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	5	400	
<i>Amyema hilliania</i>	0.1	100	LDS32-06
<i>Androcalva luteiflora</i>	0.1	220	
<i>Boerhavia</i> sp.	0.1	10	
<i>Capparis lasiantha</i>	0.1	100	
<i>Cleome viscosa</i>	0.1	20	
<i>Corchorus crozophorifolius</i>	0.1	50	
<i>Corymbia ferriticola</i>	0.1	400	LDS32-08
<i>Cucumis variabilis</i>	0.1	200	
<i>Cymbopogon ambiguus</i>	11	120	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	100	
<i>Duperreya commixta</i>	0.1	100	
<i>Enneapogon robustissimus</i>	0.1	45	LDS32-04
<i>Eriachne mucronata</i> (typical form)	0.1	30	
<i>Eriachne tenuiculmis</i>	2	20	
<i>Euphorbia biconvexa</i>	0.1	5	LDS32-09
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	0.1	10	
<i>Gossypium robinsonii</i>	1	200	
<i>Heliotropium cunninghamii</i>	0.1	10	LDS32-03
<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	0.1	70	
<i>Lysiana casuarinae</i>	0.1	200	LDS32-05
<i>Olearia fluvialis</i>	0.1	50	
<i>Olearia xerophila</i>	0.1	50	LDS32-01
<i>Petalostylis labicheoides</i>	2	300	
<i>Phyllanthus maderaspatensis</i>	0.1	30	
<i>Polycarpaea longiflora</i>	0.1	15	
<i>Pterocaulon</i> ? <i>sphacelatum</i>	0.1	10	
<i>Ptilotus astrolasius</i>	0.1	20	
<i>Ptilotus calostachyus</i>	0.1	70	
<i>Ptilotus exaltatus</i>	0.1	20	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	80	
<i>Rhagodia eremaea</i>	0.1	40	LDS10R-02=
<i>Rhynchosia minima</i>	0.1	5	
<i>Salsola australis</i>	0.1	20	
<i>Solanum horridum</i>	0.1	25	LDS32-02
<i>Stylobasium spathulatum</i>	0.1	30	
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	2	30	
<i>Themeda triandra</i>	0.1	50	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	150	
<i>Triodia angusta</i>	0.1	5	
<i>Triodia epactia</i>	0.5	40	
<i>Waltheria indica</i>	0.1	10	



Phase 2

Lens G/Diesel Phase 2**Described by**

PL/CI

Site

LDS34

Date

18-Mar-19

Type

Quadrat 30 x 80 m

Central Coordinate

50 K 549385 mE 7513583 mN

HabitatSloping plain, lower in landscape, surrounded by *Corymbia hamersleyana*/*Triodia wiseana* basalt low hills.**Soil**

Dark reddish brown clay loam.

Rock Type

Ironstone; pebbles 26-50%, gravel 1-25%.

Vegetation*Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Capparis umbonata* scattered shrubs over *Triodia epactia* open hummock grassland.**Veg Condition**

Excellent.

Fire Age

No sign of recent fire.

Species	Cover	Height	Specimen
<i>Acacia bivenosa</i> (wispy/weeping form)	0.1	170	
<i>Acacia exigua</i>	0.1	40	
<i>Acacia kempeana</i>	0.1	25	
<i>Acacia maitlandii</i>	0.1	40	
<i>Acacia pruinocarpa</i>	0.1	120	
<i>Aristida contorta</i>	0.1	20	
<i>Capparis lasiantha</i>	0.1	60	
<i>Capparis umbonata</i>	1	180	
<i>Cassytha capillaris</i>	0.1	20	
<i>Duperreya commixta</i>	0.1	110	
<i>Enneapogon polyphyllus</i>	0.1	20	
<i>Eriachne mucronata</i> (typical form)	0.1	30	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	6	700	
<i>Euphorbia boophthona</i>	0.1	50	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	0.1	10	
<i>Goodenia stobbsiana</i>	0.1	40	
<i>Indigofera monophylla</i>	0.1	40	
<i>Paraneurachne muelleri</i>	0.1	35	
<i>Paspalidium clementii</i>	0.1	15	LDS34-02
<i>Ptilotus astrolasius</i>	0.1	35	
<i>Ptilotus calostachyus</i>	0.1	80	
<i>Ptilotus exaltatus</i>	0.1	50	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	40	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	40	LDS34-01
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	100	
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>	0.1	100	
<i>Sida echinocarpa</i>	0.1	40	
<i>Solanum horridum</i>	0.1	40	
<i>Solanum lasiophyllum</i>	0.1	70	
<i>Triodia epactia</i>	24	40	
<i>Vincetoxicum lineare</i>	0.1	40	



Phase 2

Lens G/Diesel Phase 2**Described by**

PL/CI

Type

Quadrat 50 x 50 m

Central Coordinate

50 K 547664 mE 7512250 mN

Habitat

Lower plain.

Soil

Dark reddish brown clay loam.

Rock Type

Ironstone, quartz, mudstone.

Vegetation

Eucalyptus leucophloia subsp. *leucophloia* low open woodland over *Acacia bivenosa* (wispy/weeping form) scattered tall shrubs over *Capparis umbonata* scattered shrubs over *Triodia epactia*, *T. wiseana*, (*T. angusta*) open hummock grassland.

Veg Condition

Excellent.

Fire Age

Burnt 3-5 years ago.

Site

LDS35

Date

18-Mar-19

Species	Cover	Height	Specimen
<i>Acacia bivenosa</i> (wispy/weeping form)	1	260	
<i>Acacia synchronicia</i>	0.1	90	
<i>Aristida contorta</i>	0.1	20	
<i>Capparis lasiantha</i>	0.1	40	
<i>Capparis umbonata</i>	1.5	120	
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	50	
<i>Duperreya commixta</i>	0.1	210	
<i>Dysphania rhadinostachya</i>	0.1	20	
<i>Eragrostis eriopoda</i>	0.1	25	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	2	800	
<i>Euphorbia boophthona</i>	0.1	40	
<i>Goodenia stobbsiana</i>	0.1	30	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	0.1	45	
<i>Maireana georgei</i>	0.1	20	
<i>Ptilotus astrolasius</i>	0.1	50	LDS35-01
<i>Ptilotus calostachyus</i>	0.1	80	
<i>Ptilotus exaltatus</i>	0.1	30	
<i>Salsola australis</i>	0.1	30	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	45	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	40	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	80	
<i>Streptoglossa bubakii</i>	0.1	15	
<i>Templetonia egena</i>	0.1	70	
<i>Triodia angusta</i>	1	60	
<i>Triodia epactia</i>	8	40	
<i>Triodia wiseana</i>	4	40	



Phase 2

Lens G/Diesel Phase 2

Described by SC/TB
Type Quadrat 50 x 50 m
Central Coordinate 50 K 549058 mE 7519744 mN
Habitat Stony plain / flood plain.
Soil Reddish brown clay loam.
Rock Type Ironstone; pebbles 1-25%, gravel 25-50%.
Vegetation *Acacia aneura*, (*A. ayersiana*, *A. pruinocarpa*) low open woodland over *Triodia wiseana*, (*T. epactia*) open hummock grassland.
Veg Condition Excellent.
Fire Age No sign of recent fire.

Site LDS36
Date 19-Mar-19

Species	Cover	Height	Specimen
<i>Acacia ancistrocarpa</i>	0.1	300	
<i>Acacia aptaneura</i>	5	400	LDS36-2,6,
<i>Acacia ayersiana</i>	1	450	LDS36-08
<i>Acacia bivenosa</i>	0.1	180	
<i>Acacia pruinocarpa</i>	0.5	300	
<i>Aristida contorta</i>	0.1	5	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	20	
<i>Aristida ingrata</i>	0.1	90	LDS36-09
<i>Cassytha capillaris</i>	0.1	50	
<i>Cleome viscosa</i>	0.1	10	
<i>Codonocarpus cotinifolius</i>	0.1	250	
<i>Cymbopogon ambiguus</i>	0.1	30	
<i>Digitaria brownii</i>	0.1	30	LDS36-05
<i>Enneapogon</i> ? <i>polyphyllus</i>	0.1	5	
<i>Evolvulus alsinoides</i>	0.1	10	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	100	
<i>Hibiscus burtonii</i>	0.1	80	LDS36-03
<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	0.1	40	LDS36-01
<i>Indigofera monophylla</i>	0.1	20	
<i>Maireana villosa</i>	0.1	10	LDS36-07
<i>Paraneurachne muelleri</i>	0.1	20	
<i>Peripleura arida</i>	0.1	20	
<i>Psyrax rigidula</i>	0.1	120	LDS36-11
<i>Ptilotus astrolasius</i>	0.1	20	
<i>Ptilotus exaltatus</i>	0.1	60	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	80	
<i>Sida</i> sp. Supplejack Station (T.S. Henshall 2345)	0.1	20	LDS36-04
<i>Triodia epactia</i>	1	40	
<i>Triodia wiseana</i>	15	50	



Phase 2

Lens G/Diesel Phase 2**Described by**

SC/TB

Site

LDS38

Date

19-Mar-19

Type

Quadrat 50 x 50 m

Central Coordinate

50 K 549176 mE 7513567 mN

Habitat

Mudstone; gentle slope near minor creeks.

Soil

Red/grey clay.

Rock Type

Mudstone.

Vegetation

Eucalyptus leucophloia subsp. *leucophloia* scattered low trees over *Grevillea saxicola* scattered tall shrubs over *Triodia wiseana* very open hummock grassland and *Goodenia stobbsiana* very open herbland.

Veg Condition

Excellent.

Fire Age

No sign of recent fire.

Species	Cover	Height	Specimen
<i>Cassytha capillaris</i>	0.1	20	
<i>Eriachne mucronata</i>	0.1	20	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	400	
<i>Goodenia stobbsiana</i>	3	20	LDS38-02
<i>Grevillea saxicola</i>	1	400	LDS38-01
<i>Petalostylis labicheoides</i>	0.1	200	
<i>Triodia wiseana</i>	3	20	



Phase 2

Lens G/Diesel Phase 2 Site

LDS39

Described by

PL/CI

Date

19-Mar-19

Type

Quadrat 50 x 50 m

Central Coordinate

50 K 548058 mE 7520490 mN

Habitat

Gently sloping (S) plain, N of clay mulga unit.

Soil

Dark reddish brown clay loam.

Rock Type

Ironstone; pebbles 26-50%, gravel 26-50%.

Vegetation

Acacia pruinocarpa (A. *aptaneura*, A. *incurvaneura*, A. *ayersiana*, *Corymbia deserticola* subsp. *deserticola*) low woodland over A. *bivenosa*, *Psyrax suaveolens* scattered shrubs over *Triodia epactia* very open hummock grassland.

Veg Condition

Excellent.

Fire Age

No sign of recent fire.

Species	Cover	Height	Specimen
<i>Abutilon otocarpum</i>	0.1	15	
<i>Acacia aptaneura</i>	2	450	LDS39-01
<i>Acacia ayersiana</i>	0.5	320	
<i>Acacia bivenosa</i>	0.5	160	
<i>Acacia incurvaneura</i>	1	300	LDS39-05
<i>Acacia kempeana</i>	0.1	170	
<i>Acacia pruinocarpa</i>	6	500	
<i>Acacia tetragonophylla</i>	0.1	210	
<i>Amphipogon sericeus</i>	0.1	40	
<i>Anthobolus leptomerioides</i>	0.1	190	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	25	
<i>Aristida</i> sp.	0.1	140	LDS39-03
<i>Chrysopogon fallax</i>	0.1	40	
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.5	210	
<i>Cymbopogon ambiguus</i>	0.1	100	
<i>Digitaria brownii</i>	0.1	80	
<i>Duperreya commixta</i>	0.1	180	
<i>Eremophila latrobei</i> subsp. <i>filiformis</i>	0.1	140	
<i>Hibiscus burtonii</i>	0.1	140	
<i>Panicum effusum</i>	0.1	25	
<i>Psyrax rigidula</i>	0.1	140	LDS39-04
<i>Psyrax suaveolens</i>	0.5	170	
<i>Ptilotus astrolasius</i>	0.1	40	
<i>Ptilotus calostachyus</i>	0.1	90	
<i>Ptilotus exaltatus</i>	0.1	60	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	100	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	190	
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>	0.1	210	
<i>Seringia</i> sp.	0.1	60	
<i>Sida cardiophylla</i>	0.1	30	
<i>Sida</i> sp. L (A.M. Ashby 4202)	0.1	35	
<i>Solanum horridum</i>	0.1	10	
<i>Solanum lasiophyllum</i>	0.1	35	
<i>Triodia epactia</i>	9	60	



Phase 2

Lens G/Diesel
Described by SC/CI
Type Relevé 150 x 15 m
Central Coordinate 50 K 546570 mE 7514623 mN
Habitat Incised drainage; deep (15 m) drainage line, 10-20 m wide, draining to SE through foot slopes of the tall range to NW.
Soil Reddish brown sandy loam.
Rock Type Ironstone; outcropping 1-25%; cobbles 26-50%; pebbles 1-25%; gravel 1-25%.
Vegetation *Acacia citrinoviridis*, (*A. pruinocarpa*) low open forest over *Eremophila latrobei* subsp. *latrobei* scattered tall shrubs over *Triodia epactia*, (*T. wiseana*) very open hummock grassland and *Eriachne mucronata* very open tussock grassland.
Veg Condition Excellent.
Fire Age No sign of recent fire/Very long unburnt.

Site LDS-REL01
Date 15-Oct-18

Species	Cover	Height (cm)	Specimen
<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)	0.1	50	LREL01-03
<i>Acacia aneura</i>	0.1	280	LDS-SC02=
<i>Acacia aptaneura</i>	0.1	300	LREL01-04
<i>Acacia atkinsiana</i>	0.1	130	LDS06-01=
<i>Acacia citrinoviridis</i>	65	600	
<i>Acacia monticola</i>	0.1	180	
<i>Acacia pruinocarpa</i>	5	500	
<i>Acacia sibirica</i>	0.1	300	LREL01-07
<i>Amhipogon sericeus</i>	0.1	20	LDS06-02=
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30	
<i>Aristida latifolia</i>	0.1	30	LREL01-10
<i>Bulbostylis barbata</i>	0.1	5	
<i>Capparis lasiantha</i>	0.1	80	
<i>Capparis mitchellii</i>	0.1	60	LDS-SC06=
<i>Cheilanthes brownii</i>	0.1	10	LDS-SC07=
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	0.1	30	LREL01-05
<i>Corymbia deserticola</i> subsp. <i>deserticola</i>	0.1	400	
<i>Cucumis variabilis</i>	0.1	200	
<i>Cymbopogon ambiguus</i>	0.1	80	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	0.1	80	
<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	0.1	120	
<i>Duperreya commixta</i>	0.1	200	
<i>Enneapogon polyphyllus</i>	0.1	40	LREL01-06
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	1	210	
<i>Eriachne mucronata</i> (typical form)	3	30	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	0.1	400	
<i>Euphorbia boophthona</i>	0.1	10	LREL01-08
<i>Euphorbia trigonosperma</i>	0.1	20	LREL01-01
<i>Gompholobium oreophilum</i>	0.1	20	
<i>Hibiscus coatesii</i>	0.1	60	LDS-SC03=
<i>Hybanthus aurantiacus</i>	0.1	20	
<i>Indigofera monophylla</i>	0.1	50	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	60	
<i>Olearia xerophila</i>	0.1	30	LDS-SC05=
<i>Paspalidium clementii</i>	0.1	20	LREL01-02
<i>Peripleura obovata</i>	0.1	50	LREL01-09
<i>Psyrax suaveolens</i>	0.1	80	
<i>Ptilotus calostachyus</i>	0.1	40	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	40	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	60	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	60	
<i>Sida</i> sp. <i>Pilbara</i> (A.A. Mitchell PRP 1543)	0.1	30	
<i>Solanum horridum</i>	0.1	15	LREL01-11
<i>Solanum lasiophyllum</i>	0.1	20	
<i>Themeda triandra</i>	0.1	30	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	70	
<i>Triodia epactia</i>	2	30	

Species	Cover	Height (cm)	Specimen
<i>Triodia wiseana</i>	0.1	30	



Phase 1

Lens G/Diesel

Described by

Type

Central Coordinate

Habitat

Soil

Rock Type

Vegetation

Phase 1: MM/TB Phase 2: SCTB

Quadrat ~50 m

50 K 547457 mE, 7518024 mN.

Hill slope; steep upper slope of tall hill; NE aspect; areas of low rocky free face and taller free faces to SW further up hill.

Dark reddish brown clay loam.

ironstone; outcropping 1-25%; large boulders 1-25%; boulders 1-25%; cobbles 51-75%; pebbles 26-50%; gravel 1-25%.

Phase 1: *Eucalyptus leucophloia* subsp. *leucophloia*, (*Acacia pruinocarpa*, *Hakea chordophylla*) scattered low trees over *Triodia brizoides*, (*T. epactia*) hummock grassland.

Phase 2: *Eucalyptus leucophloia* subsp. *leucophloia*, (*Acacia pruinocarpa*, *Hakea chordophylla*) scattered low trees over *Triodia brizoides*, (*T. epactia*) hummock grassland.

Veg Condition

Phase 1: Excellent. Phase 2: Excellent.

Fire Age

Phase 1: No sign of recent fire. Phase 2: No sign of recent fire.

Site

LDS-REL02

Date

Phase 1: 15-Oct-18 Phase 2: 16-Mar-19

Species	Phase 1			Phase 2		
	Cover (%)	Height (cm)	Specimen	Cover (%)	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	190		0.1	190	
<i>Acacia pruinocarpa</i>	0.25	220		0.25	220	
<i>Acacia pyrifolia</i>	0.1	300		0.1	300	
<i>Capparis lasiantha</i>	0.1	70		0.1	70	
<i>Corymbia ferriticola</i>	0.1	160		0.1	160	
<i>Cymbopogon ambiguus</i>	0.1	60		0.1	60	
<i>Diplatia grandibractea</i>				0.1	300	
<i>Duperreya commixta</i>				0.1	100	
<i>Eriachne mucronata</i> (typical form)	0.1	40		0.1	40	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1.5	800		1.5	800	
<i>Euphorbia boophthona</i>	0.1	20				
<i>Euphorbia trigonosperma</i>	0.1	5	LREL02-01			
<i>Hakea chordophylla</i>	0.25	300		0.25	300	
<i>Hibiscus coatesii</i>	0.1	10				
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	140		0.1	140	
<i>Ptilotus fusiformis</i>	0.1	20				
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	0.1	60				
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	120		0.1	120	
<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)	0.1	50		0.1	50	
<i>Triodia brizoides</i>	35	40		35	40	
<i>Triodia epactia</i>	5	50		5	50	



Phase 1



Phase 2

Lens G/Diesel Phase 1**Described by**

MM/TB

Site LDS-REL03**Date**

17-Oct-18

Type

Relevé 170 x 10 m

Central Coordinate

50 K 544823 mE 7511171 mN

Habitat

Drainage line; minor tributary draining S into the larger creekline that parallels track (the larger creek is all burnt).

Soil

Dark reddish brown sandy clay loam.

Rock Type

Fluvial (mostly ironstone); cobbles 1-25%; pebbles 51-75%; gravel 1-25%.

Vegetation*Eucalyptus xerothermica* low open woodland over *E. gamophylla* low open mallee woodland over *Androcalva luteiflora*, (*Gossypium robinsonii*, *Acacia monticola*) tall shrubland over *Dodonaea lanceolata* var. *lanceolata* open shrubland over *Themeda triandra* tussock grassland and *Triodia epactia* very open hummock grassland.**Veg Condition**

Excellent.

Fire Age

Burnt 3-5 years ago.

Species	Cover	Height (cm)	Specimen
<i>Abutilon cunninghamii</i>	0.1	60	LREL03-02
<i>Acacia aptaneura</i>	0.1	230	LREL03-06
<i>Acacia bivenosa</i>	0.1	40	
<i>Acacia dictyophleba</i>	0.1	100	
<i>Acacia exigua</i>	0.1	90	
<i>Acacia maitlandii</i>	0.1	240	
<i>Acacia monticola</i>	5	270	
<i>Acacia pruinocarpa</i>	0.1	300	
<i>Acacia pyrifolia</i>	0.1	140	
<i>Alternanthera nana</i>	0.1	35	
<i>Androcalva luteiflora</i>	15	240	
<i>Aristida contorta</i>	0.1	30	
<i>Bonamia erecta</i>	0.1	50	
<i>Capparis lasiantha</i>	0.1	140	
<i>Cleome viscosa</i>	0.1	40	
<i>Corchorus crozophorifolius</i>	0.1	80	
<i>Corymbia hamersleyana</i>	0.1	400	
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	0.1	20	
<i>Cymbopogon ambiguus</i>	0.1	130	
<i>Dampiera candicans</i>	0.1	40	
<i>Digitaria brownii</i>	0.1	70	
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	5	140	
<i>Duperreya commixta</i>	0.5	120	
<i>Enneapogon lindleyanus</i>	0.1	60	
<i>Enneapogon robustissimus</i>	0.1	60	
<i>Eremophila longifolia</i>	0.1	200	
<i>Eriachne mucronata</i>	0.1	40	
<i>Eriachne tenuiculmis</i>	0.1	35	
<i>Eucalyptus gamophylla</i>	3	300	
<i>Eucalyptus xerothermica</i>	3	600	
<i>Eulalia aurea</i>	0.1	50	
<i>Gomphrena canescens</i> subsp. <i>canescens</i>	0.1	35	LREL03-04
<i>Gomphrena cunninghamii</i>	0.1	20	
<i>Goodenia cusackiana</i>	0.1	30	
<i>Goodenia microptera</i>	0.1	30	
<i>Goodenia stobbsiana</i>	0.1	40	
<i>Gossypium robinsonii</i>	5	350	
<i>Grevillea berryana</i>	0.1	350	
<i>Hibiscus coatesii</i>	0.1	80	
<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	0.1	50	
<i>Indigofera monophylla</i>	0.1	70	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	100	
<i>Paraneurachne muelleri</i>	0.1	50	
<i>Peripleura arida</i>	0.1	50	LREL03-05
<i>Phyllanthus maderaspatensis</i>	0.1	35	
<i>Polycarpaea longiflora</i>	0.1	40	
<i>Pterocaulon sphacelatum</i>	0.1	30	

Species	Cover	Height (cm)	Specimen
<i>Ptilotus astrolasius</i>	0.1	50	
<i>Ptilotus calostachyus</i>	0.1	60	
<i>Ptilotus clementii</i>	0.1	45	
<i>Ptilotus exaltatus</i>	0.1	25	
<i>Ptilotus polystachyus</i>	0.1	50	
<i>Rhynchosia minima</i>	0.1	20	
<i>Salsola australis</i>	0.1	30	
<i>Scaevola parvifolia</i>	0.1	10	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	0.1	90	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	0.1	40	LREL03-01
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (thinly sericeous form MET 15,035)	0.1	50	LREL03-03
<i>Senna glutinosa</i> subsp. <i>x luerseii</i>	0.1	140	
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	130	
<i>Solanum lasiophyllum</i>	0.1	40	
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	0.1	60	
<i>Themeda triandra</i>	40	90	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	0.1	40	
<i>Triodia epactia</i>	8	60	



Phase 1

Lens G/Diesel Phase 1**Described by**

SC/CI

Site

LDS-REL04

Date

16-Oct-18

Type

Relevé 50 m circle

Central Coordinate

50 K 548586 mE 7512768 mN

Habitat

Moderate sized creek; draining generally SE, winding between hills and through stony plains.

Soil

Mottled brown sandy loam.

Rock Type

River stone, ironstone, chert; outcropping 1-25%; boulders 1-25%; cobbles 26-50%; pebbles 26-50%; gravel 26-50%.

Vegetation

Eucalyptus camaldulensis subsp. *refulgens*, (*E. victrix*, *Acacia citrinoviridis*, *A. coriacea* subsp. *pendens*) low open woodland over *Gossypium robinsonii*, *Acacia bivenosa* (wispy/weeping form), *Stylobasium spathulatum*, (*Melaleuca glomerata*) tall open scrub over *Androcalva luteiflora*, (*Petalostylis labicheoides*) shrubland over *Tephrosia rosea* var. *Fortescue* creeks (M.I.H. Brooker 2186) low open shrubland over *Triodia epactia* open hummock grassland and *Themeda triandra* very open tussock grassland.

Veg ConditionVery Good: presence of weeds (**S. verticillata*, **M. americanum*).**Fire Age**

No sign of recent fire/Very long unburnt.

Species	Cover	Height (cm)	Specimen
<i>Acacia bivenosa</i> (wispy/weeping form)	10	250	
<i>Acacia citrinoviridis</i>	1	400	
<i>Acacia coriacea</i> subsp. <i>pendens</i>	1	500	
<i>Acacia maitlandii</i>	0.1	50	
<i>Acacia monticola</i>	0.1	180	
<i>Acacia pyrifolia</i>	0.1	300	
<i>Alternanthera nana</i>	0.1	10	
<i>Androcalva luteiflora</i>	10	180	
<i>Aristida holathera</i> var. <i>holathera</i>	0.1	30	
<i>Aristida latifolia</i>	0.1	80	
<i>Capparis lasiantha</i>	0.1	50	
<i>Chloris virgata</i>	0.1	100	LREL04-01
<i>Cleome viscosa</i>	0.1	30	
<i>Corchorus crozophorifolius</i>	0.1	50	
<i>Cucumis variabilis</i>	0.1	50	
<i>Cymbopogon ambiguus</i>	1	80	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	6	900	
<i>Eucalyptus victrix</i>	1	500	
<i>Euphorbia</i> sp. (<i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)	0.1	30	LDS10-08=
<i>Gomphrena cunninghamii</i>	0.1	10	
<i>Goodenia microptera</i>	0.1	20	
<i>Goodenia stobbsiana</i>	0.1	50	
<i>Gossypium robinsonii</i>	10	250	
<i>Malvastrum americanum</i>	0.1	30	
<i>Melaleuca glomerata</i>	3	350	
<i>Olearia fluviatilis</i>	0.1	40	LDS10-06=
<i>Paraneurachne muelleri</i>	0.1	20	
<i>Paspalidium gracile</i>	0.1	30	LDS10-01=
<i>Petalostylis labicheoides</i>	1	180	
<i>Polycarpaea longiflora</i>	0.1	15	
<i>Pterocaulon sphacelatum</i>	0.1	20	LDS10-03=
<i>Ptilotus astrolasius</i>	0.1	40	
<i>Ptilotus exaltatus</i>	0.1	20	
<i>Rhynchosia minima</i>	0.1	30	
<i>Setaria verticillata</i>	0.1	50	
<i>Sida fibulifera</i>	0.1	20	LREL04-02
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	80	
<i>Stylobasium spathulatum</i>	10	220	
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	8	40	
<i>Themeda triandra</i>	5	40	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	0.1	50	
<i>Triodia epactia</i>	15	40	



Phase 1

Lens G/Diesel Phase 1 **Site** LDS-REL05
Described by SC/CI **Date** 18-Oct-18
Type Relevé ~50 x 50 m
Central Coordinate 541425 mE 7504084 mN
Habitat Hill crest/upper slope of moderate sized range of hills; elevation 610m, sharp breakaway on SE face of range.
Soil Reddish brown clay loam.
Rock Type Ironstone; outcropping 1-25%; boulders 1-25%; cobbles 1-25%; pebbles 26-50%; gravel 26-50%.
Vegetation *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia exigua*, *A. maitlandii* shrubland over *Triodia wiseana* hummock grassland.
Veg Condition Excellent.
Fire Age No sign of recent fire.

Species	Cover	Height (cm)	Specimen
<i>Acacia ancistrocarpa</i>	0.1	150	
<i>Acacia aptaneura</i>	0.1	80	LDS-SC01=
<i>Acacia bivenosa</i>	0.1	250	
<i>Acacia exigua</i>	14	200	
<i>Acacia inaequilatera</i>	0.1	300	
<i>Acacia maitlandii</i>	14	180	
<i>Acacia monticola</i>	0.1	250	
<i>Acacia sibirica</i>	1	50	LREL05-01
<i>Amphipogon sericeus</i>	0.1	30	
<i>Codonocarpus cotinifolius</i>	0.1	50	
<i>Eriachne mucronata</i> (typical form)	0.1	20	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	1	500	
<i>Goodenia cusackiana</i>	0.1	10	
<i>Goodenia stobbsiana</i>	0.1	20	
<i>Hakea chordophylla</i>	0.1	280	
<i>Paraneurachne muelleri</i>	0.1	20	
<i>Ptilotus astrolasius</i>	0.1	40	
<i>Ptilotus calostachyus</i>	0.1	50	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	40	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	150	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	180	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	30	LREL05-02
<i>Solanum lasiophyllum</i>	0.1	10	
<i>Tribulus suberosus</i>	0.1	60	
<i>Triodia wiseana</i>	50	40	



Phase 1

Lens G/Diesel Phase 2Site

LDS-REL06

Described by

PL/CI

Date

17-Mar-19

Type

Relevé

30 x 40 m

Central Coordinate

50 K 540189 mE 7503491 mN

Habitat

Permanent pool; below free face and moderate drainage flowing S; rocky slopes/gorge.

Soil

Dark reddish brown clay loam.

Rock Type

Ironstone.

Vegetation

Eucalyptus camaldulensis subsp. *refulgens* open woodland over *Ficus geniculata* var. *insignis*, (*F. brachypoda*) low open woodland over *Typha domingensis* very open sedgeland over *Stemodia grossa*, *Pluchea rubelliflora*, *Centipeda minima* subsp. *macrocephala* very open herbland.

Veg ConditionVery Good: presence of weeds (**Cenchrus* spp.).**Fire Age**

Burnt <1 year ago.

Species	Cover	Height (cm)	Specimen
<i>Acacia pruinocarpa</i>	0.1	50	
<i>Achyranthes aspera</i>	0.1	5	
<i>Alternanthera denticulata</i>	0.1	30	
<i>Alternanthera nana</i>	0.1	15	
<i>Amaranthus undulatus</i>	0.1	30	LREL06-04
<i>Astrotricha hamptonii</i>	0.1	120	
<i>Brachychiton acuminatus</i>	0.1	800	
<i>Capparis lasiantha</i>	0.1	50	
<i>Capparis spinosa</i> subsp. <i>nummularia</i>	0.1	100	
<i>Cenchrus ciliaris</i>	0.1	50	N=3.
<i>Cenchrus setiger</i>	0.1	50	N=1.
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	0.5	10	
<i>Chara</i> sp.	1	15	LREL06-08
<i>Cheilanthes brownii</i>	0.1	15	LREL06-06
<i>Cleome viscosa</i>	0.1	40	
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	0.1	40	
<i>Commelina ensifolia</i>	0.1	20	LREL06-07
<i>Commicarpus australis</i>	0.1	10	LREL06-02
<i>Corymbia ferriticola</i>	0.1	400	
<i>Cyperus vaginatus</i>	0.1	90	
<i>Duperreya commixta</i>	0.1	70	
<i>Eragrostis tenellula</i>	0.1	20	
<i>Eremophila longifolia</i>	0.1	70	
<i>Eriachne mucronata</i> (typical form)	0.1	40	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	6	1400	
<i>Eulalia aurea</i>	0.1	60	
<i>Ficus brachypoda</i>	1	600	
<i>Ficus geniculata</i> var. <i>insignis</i>	3	800	LREL06-05
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	0.1	100	
<i>Gymnanthera cunninghamii</i>	0.1	140	N=6.
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	80	
<i>Phyllanthus maderaspatensis</i>	0.1	35	
<i>Pluchea rubelliflora</i>	0.5	25	
<i>Plumbago zeylanica</i>	0.1	50	
<i>Pseudognaphalium luteoalbum</i>	0.1	30	LREL06-01
<i>Pterocaulon sphacelatum</i>	0.1	50	
<i>Rhagodia eremaea</i>	0.1	20	
<i>Rhodanthe manglesii</i>	0.1	50	
<i>Santalum lanceolatum</i>	0.1	210	
<i>Stemodia grossa</i>	1	50	
<i>Tinospora smilacina</i>	0.1	40	
<i>Typha domingensis</i>	5	240	
<i>Ventilago viminalis</i>	0.1	200	
<i>Vincetoxicum flexuosum</i>	0.1	160	LREL06-03
<i>Wahlenbergia tumidifructa</i>	0.1	40	



Phase 2

Lens G/Diesel Phase 2

Described by BRM/RM
Type Relevé 40 x 50 m

Site LDS-REL07

Date 19-Mar-19

Central Coordinate 50 K 538647 mE 7504906 mN

Habitat Upper slope of spur of major range, N facing, elevation 745 m.

Soil Dark reddish brown clay loam.

Rock Type Ironstone; cobbles 1-25%, pebbles 1-25%, gravel 1-25%.

Vegetation *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Triodia brizoides* hummock grassland.

Veg Condition Excellent.

Fire Age No sign of recent fire.

Notes Not enough area to install a *quadrat* safely. Very dry conditions; not a huge range of species.

Species	Cover	Height (cm)	Specimen
<i>Acacia bivenosa</i>	0.1	80	
<i>Acacia exigua</i>	0.1	170	
<i>Acacia maitlandii</i>	0.1	110	
<i>Acacia pruinocarpa</i>	0.1	35	
<i>Acacia synchronicia</i>	0.1	160	
<i>Cymbopogon ambiguus</i>	0.1	50	
<i>Eremophila cuneifolia</i>	0.1	40	LREL07-02
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	0.1	80	
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	3	500	
<i>Hakea lorea</i> subsp. <i>lorea</i>	0.1	60	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	0.1	90	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	0.1	50	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	90	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	0.1	110	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x	0.1	80	LREL07-01
<i>Solanum lasiophyllum</i>	0.1	50	
<i>Tribulus suberosus</i>	0.1	30	
<i>Triodia brizoides</i>	50	30	
<i>Triodia epactia</i>	0.1	30	
<i>Triodia wiseana</i>	0.1	40	



Phase 2

Lens G/Diesel Phase 2**Described by** BRM/RM**Type** Relevé 20 x 500 m**Central Coordinate** 50 K 547293 mE 7513434 mN**Habitat** Bank and rocky floor of major gorge, not including sandy riverbank.**Soil** Reddish brown sandy loam.**Rock Type** Ironstone, chert, siltstone; Outcropping 1-25%, Large boulder 1-25%, Boulder 1-25%, Cobble 1-25%, Pebbles 26-50%, Gravel 26-50%.**Vegetation** *Corymbia ferritcola*, *Acacia aneura* woodland over *A. citrinoviridis* tall shrubland over *Eremophila latrobei* subsp. *latrobei*, *Santalum acuminatum*, *Dodonaea pachyneura*, (*Gossypium robinsonii*) tall open shrubland over *Prostanthera albiflora*, *Ptilotus obovatus* subsp. *obovatus*, (*Corchorus crozophorifolius*) low shrubland over *Themeda triandra*, *Aristida burbridgeae*, *Cymbopogon ambiguus* open tussock grassland.**Veg Condition** Excellent.**Fire Age** No sign of recent fire.**Site** LDS-REL08**Date** 18-Mar-19

Species	Cover	Height (cm)	Specimen
<i>Acacia aneura</i>	2	1200	
<i>Acacia citrinoviridis</i>	20	1500	
<i>Acacia pruinocarpa</i>	0.1	800	
<i>Aristida burbridgeae</i>	5	30	
<i>Corchorus crozophorifolius</i>	2	80	
<i>Corymbia ferritcola</i>	2	1200	LGR-RM23
<i>Cymbopogon ambiguus</i>	10	60	
<i>Dodonaea pachyneura</i>	2	300	
<i>Duperreya commixta</i>	0.1	600	
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	2	250	
<i>Gossypium robinsonii</i>	0.5	300	
<i>Olearia xerophila</i>	0.1	30	LGR-RM09=
<i>Prostanthera albiflora</i>	7	75	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	7	80	
<i>Santalum acuminatum</i>	2	300	
<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)	0.1	120	
<i>Themeda triandra</i>	5	40	



Phase 2

Lens G/Diesel Phase 1

Described by PLDK
Type Relevé 20 x 500 m
Central Coordinate 50 K 543256 mE 7512088 mN
Habitat Moderate sized gully
Soil Silty clay loam
Rock Type Ironstone, riverstone.
Vegetation *Corymbia ferriticola* low open woodland over *Gossypium robinsonii*, *Acacia monticola* tall shrubland over *Eriachne tenuiculmis*, *Themeda* sp. Mt Barricade (M.E. Trudgen 2471) open tussock grassland.

Site LDS-REL09

Date 18-Mar-19

Veg Condition

Excellent.

Fire Age

No sign of recent fire.

Species	Cover	Height (cm)
<i>Acacia hamersleyensis</i>	0.1	190
<i>Acacia monticola</i>	7	250
<i>Acacia pruinocarpa</i>	0.1	180
<i>Corchorus crozophorifolius</i>	0.1	70
<i>Corymbia ferriticola</i>	8	800
<i>Corymbia hamersleyana</i>	0.1	280
<i>Eriachne tenuiculmis</i>	10	40
<i>Gossypium robinsonii</i>	9	280
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	0.1	160
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	0.1	40
<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)	10	60



Phase 1

Appendix 7

List of Vascular Flora Species Recorded from the Study Area Based on all Sampling to Date



Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Acanthaceae	<i>Dicladanthera forrestii</i>		✓			
Acanthaceae	<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>		✓			
Amaranthaceae	<i>Achyranthes aspera</i>		✓		✓	
Amaranthaceae	* <i>Aerva javanica</i>	Weed			✓	
Amaranthaceae	<i>Alternanthera nana</i>		✓		✓	
Amaranthaceae	<i>Amaranthus cuspidifolius</i>		✓			
Amaranthaceae	<i>Amaranthus undulatus</i>				✓	
Amaranthaceae	<i>Gomphrena canescens</i> subsp. <i>canescens</i>		✓		✓	
Amaranthaceae	<i>Gomphrena cunninghamii</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus aervoides</i>			✓		
Amaranthaceae	<i>Ptilotus astrolasius</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus auriculifolius</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus calostachyus</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus clementii</i>		✓		✓	
Amaranthaceae	<i>Ptilotus exaltatus</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus fusiformis</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus helipteroides</i>		✓	✓		
Amaranthaceae	<i>Ptilotus macrocephalus</i>				✓	
Amaranthaceae	<i>Ptilotus obovatus</i> var. <i>obovatus</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus polystachyus</i>			✓		
Amaranthaceae	<i>Ptilotus rotundifolius</i>		✓	✓	✓	
Apocynaceae	<i>Cynanchum floribundum</i>				✓	
Apocynaceae	<i>Cynanchum pedunculatum</i>		✓			
Apocynaceae	<i>Vincetoxicum flexuosum</i>				✓	
Apocynaceae	<i>Vincetoxicum lineare</i>		✓		✓	
Araliaceae	<i>Astrotricha hamptonii</i>			✓	✓	
Araliaceae	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>		✓	✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Asteraceae	<i>Apowollastonia hamersleyensis</i>			✓		
Asteraceae	* <i>Bidens bipinnata</i>	Weed	✓			
Asteraceae	* <i>Flaveria trinervia</i>	Weed			✓	
Asteraceae	<i>Olearia fluvialis</i>				✓	
Asteraceae	<i>Pentalepis trichodesmoides</i> subsp. <i>trichodesmoides</i>				✓	
Asteraceae	<i>Peripleura arida</i>		✓			
Asteraceae	<i>Peripleura virgata</i>		✓	✓	✓	
Asteraceae	<i>Pluchea dentex</i>				✓	
Asteraceae	<i>Pterocaulon serrulatum</i>				✓	
Asteraceae	<i>Pterocaulon sphacelatum</i>		✓		✓	
Asteraceae	<i>Pterocaulon</i> sp. (inadequate material)		✓	✓		
Asteraceae	<i>Rhodanthe margarethae</i>		✓			
Asteraceae	* <i>Sonchus oleraceus</i>	Weed			✓	
Asteraceae	<i>Streptoglossa bubakii</i>			✓	✓	
Boraginaceae	<i>Heliotropium chrysocarpum</i>				✓	
Boraginaceae	<i>Heliotropium inexplicitum</i>		✓		✓	
Boraginaceae	<i>Heliotropium tenuifolium</i>				✓	
Boraginaceae	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		✓	✓	✓	
Brassicaceae	<i>Lepidium pedicellosum</i>		✓	✓	✓	
Capparaceae	<i>Capparis lasiantha</i>		✓	✓	✓	
Capparaceae	<i>Capparis mitchellii</i>		✓			
Capparaceae	<i>Capparis spinosa</i> subsp. <i>nummularia</i>		✓	✓	✓	
Capparaceae	<i>Capparis umbonata</i>				✓	
Caryophyllaceae	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>			✓		
Caryophyllaceae	<i>Polycarpaea holtzei</i>		✓	✓		
Caryophyllaceae	<i>Polycarpaea longiflora</i>		✓	✓	✓	
Celastraceae	<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)		✓	✓		

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Chenopodiaceae	<i>Dysphania kalpari</i>			✓	✓	
Chenopodiaceae	<i>Dysphania rhadinostachya</i> (subsp. not determined; sterile)		✓		✓	
Chenopodiaceae	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>		✓	✓	✓	
Chenopodiaceae	<i>Maireana georgei</i>		✓		✓	
Chenopodiaceae	<i>Maireana planifolia</i> x <i>villosa</i>				✓	
Chenopodiaceae	<i>Maireana villosa</i>				✓	
Chenopodiaceae	<i>Rhagodia eremaea</i>		✓			
Chenopodiaceae	<i>Salsola australis</i>		✓	✓		
Chenopodiaceae	<i>Sclerolaena densiflora</i>		✓			
Cleomaceae	<i>Cleome viscosa</i>		✓	✓	✓	
Convolvulaceae	<i>Bonamia erecta</i>		✓	✓	✓	
Convolvulaceae	<i>Bonamia media</i>				✓	
Convolvulaceae	<i>Bonamia pilbarensis</i>		✓			
Convolvulaceae	<i>Duperreya commixta</i>		✓	✓	✓	
Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>			✓		
Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		✓		✓	
Cucurbitaceae	<i>Cucumis variabilis</i>		✓	✓	✓	
Cyperaceae	<i>Bulbostylis barbata</i>		✓	✓	✓	
Cyperaceae	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>				✓	
Cyperaceae	<i>Fimbristylis dichotoma</i>		✓			
Cyperaceae	<i>Fimbristylis simulans</i>		✓	✓		
Euphorbiaceae	<i>Euphorbia australis</i> (var. not determined)				✓	
Euphorbiaceae	<i>Euphorbia australis</i> var. <i>australis</i>				✓	
Euphorbiaceae	<i>Euphorbia australis</i> var. <i>subtomentosa</i>		✓			
Euphorbiaceae	<i>Euphorbia biconvexa</i>		✓			
Euphorbiaceae	<i>Euphorbia boophthona</i>		✓			
Euphorbiaceae	<i>Euphorbia careyi</i>		✓			
Euphorbiaceae	<i>Euphorbia coghlanii</i>				✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Euphorbiaceae	<i>Euphorbia schultzei</i>				✓	
Euphorbiaceae	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>		✓			
Euphorbiaceae	<i>Euphorbia trigonosperma</i>				✓	
Fabaceae	<i>Acacia adoxa</i> var. <i>adoxo</i>				✓	
Fabaceae	<i>Acacia adsurgens</i>		✓	✓		
Fabaceae	<i>Acacia ancistrocarpa</i>		✓	✓	✓	
Fabaceae	<i>Acacia aneura</i>		✓		✓	
Fabaceae	<i>Acacia aptaneura</i>		✓		✓	
Fabaceae	<i>Acacia arida</i>		✓			
Fabaceae	<i>Acacia atkinsiana</i>		✓	✓	✓	
Fabaceae	<i>Acacia ayersiana</i>		✓			
Fabaceae	<i>Acacia bivenosa</i>		✓	✓	✓	
Fabaceae	<i>Acacia bromilowiana</i>	Priority 4	✓		✓	
Fabaceae	<i>Acacia citrinoviridis</i>				✓	
Fabaceae	<i>Acacia colei</i> var. <i>colei</i>				✓	
Fabaceae	<i>Acacia cowleana</i>		✓		✓	
Fabaceae	<i>Acacia dictyophleba</i>			✓	✓	
Fabaceae	<i>Acacia elachantha</i>			✓		
Fabaceae	<i>Acacia exigua</i>		✓	✓	✓	
Fabaceae	<i>Acacia hamersleyensis</i>			✓	✓	
Fabaceae	<i>Acacia inaequilatera</i>		✓		✓	
Fabaceae	<i>Acacia incurvaneura</i>		✓			
Fabaceae	<i>Acacia kempeana</i>				✓	
Fabaceae	<i>Acacia maitlandii</i>		✓	✓	✓	
Fabaceae	<i>Acacia marriamamba</i>				✓	
Fabaceae	<i>Acacia monticola</i>		✓	✓	✓	
Fabaceae	<i>Acacia pruinocarpa</i>		✓	✓	✓	
Fabaceae	<i>Acacia pyrifolia</i> (var. not determined)			✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Fabaceae	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		✓		✓	
Fabaceae	<i>Acacia rhodophloia</i> x <i>sibirica</i>				✓	
Fabaceae	<i>Acacia sibirica</i>			✓	✓	
Fabaceae	<i>Acacia synchronicia</i>		✓		✓	
Fabaceae	<i>Acacia tenuissima</i>		✓	✓		
Fabaceae	<i>Acacia trachycarpa</i>		✓			
Fabaceae	<i>Acacia tumida</i> var. <i>pilbarensis</i>		✓	✓	✓	
Fabaceae	<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>				✓	
Fabaceae	<i>Cullen leucochaetes</i>				✓	
Fabaceae	<i>Gompholobium oreophilum</i>		✓	✓	✓	
Fabaceae	<i>Gompholobium polyzygum</i>				✓	
Fabaceae	<i>Indigofera fractiflexa</i> subsp. <i>fractiflexa</i>		✓		✓	
Fabaceae	<i>Indigofera monophylla</i> (sens. lat.)		✓	✓	✓	
Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Priority 3	✓	✓	✓	✓
Fabaceae	<i>Isotropis atropurpurea</i>		✓	✓	✓	
Fabaceae	<i>Rhynchosia minima</i>		✓		✓	
Fabaceae	<i>Senna artemisioides</i> subsp. <i>helmsii</i>		✓	✓	✓	
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		✓	✓	✓	
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (form with thinly sericeous leaves)		✓			
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>		✓	✓	✓	
Fabaceae	<i>Senna ferraria</i>		✓		✓	
Fabaceae	<i>Senna glaucifolia</i>				✓	
Fabaceae	<i>Senna glaucifolia</i> x <i>S. ferraria</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		✓	✓	✓	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		✓	✓	✓	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x		✓			

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. artemisioides</i> subsp. <i>oligophylla</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>		✓	✓	✓	
Fabaceae	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>		✓			
Fabaceae	<i>Senna notabilis</i>		✓	✓	✓	
Fabaceae	<i>Senna symonii</i>		✓			
Fabaceae	<i>Senna venusta</i>				✓	
Fabaceae	<i>Senna</i> sp. (inadequate material)			✓	✓	
Fabaceae	<i>Tephrosia oxalidea</i>		✓			
Fabaceae	<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)		✓	✓	✓	
Fabaceae	<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)		✓			
Fabaceae	<i>Tephrosia supina</i>				✓	
Goodeniaceae	<i>Dampiera candidans</i>		✓		✓	
Goodeniaceae	<i>Goodenia cusackiana</i>		✓	✓	✓	
Goodeniaceae	<i>Goodenia microptera</i>		✓	✓	✓	
Goodeniaceae	<i>Goodenia muelleriana</i>		✓		✓	
Goodeniaceae	<i>Goodenia stobbsiana</i>		✓	✓	✓	
Goodeniaceae	<i>Scaevola acacioides</i>				✓	
Goodeniaceae	<i>Scaevola</i> sp. Mt Bruce (M.E. Trudgen 1333)		✓			
Goodeniaceae	<i>Velleia connata</i>			✓		
Gyrostemonaceae	<i>Codonocarpus cotinifolius</i>		✓	✓	✓	
Haloragaceae	<i>Haloragis gossei</i> (var. not determined)			✓	✓	
Haloragaceae	<i>Haloragis gossei</i> var. <i>gossei</i>		✓			
Haloragaceae	<i>Haloragis gossei</i> var. <i>inflata</i>		✓		✓	
Lamiaceae	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>		✓	✓	✓	
Lamiaceae	<i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>				✓	
Lamiaceae	<i>Prostanthera albiflora</i>				✓	
Lauraceae	<i>Cassytha capillaris</i>		✓			
Loranthaceae	<i>Lysiana casuarinae</i>		✓	✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Malvaceae	<i>Abutilon fraseri</i> subsp. <i>fraseri</i>		✓			
Malvaceae	<i>Abutilon lepidum</i>		✓		✓	
Malvaceae	<i>Abutilon otocarpum</i>		✓			
Malvaceae	<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)		✓	✓		
Malvaceae	<i>Abutilon</i> ? sp. Dioicum (A.A. Mitchell PRP 1618)			✓	✓	
Malvaceae	<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)			✓	✓	
Malvaceae	<i>Brachychiton acuminatus</i>		✓		✓	
Malvaceae	<i>Corchorus crozophorifolius</i>		✓	✓	✓	
Malvaceae	<i>Corchorus incanus</i> subsp. <i>incanus</i>		✓			
Malvaceae	<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>			✓		
Malvaceae	<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>		✓	✓	✓	
Malvaceae	<i>Corchorus lasiocarpus</i> (subsp. not determined)				✓	
Malvaceae	<i>Corchorus</i> ? <i>lasiocarpus</i> subsp. <i>lasiocarpus</i>				✓	
Malvaceae	<i>Corchorus sidoides</i> subsp. <i>sidoides</i>			✓		
Malvaceae	<i>Corchorus tridens</i>		✓			
Malvaceae	<i>Gossypium australe</i>		✓	✓	✓	
Malvaceae	<i>Gossypium robinsonii</i>		✓	✓	✓	
Malvaceae	<i>Hibiscus brachychlaenus</i>		✓	✓	✓	
Malvaceae	<i>Hibiscus burtonii</i>		✓	✓		
Malvaceae	<i>Hibiscus coatesii</i>		✓	✓	✓	
Malvaceae	<i>Hibiscus goldsworthii</i>				✓	
Malvaceae	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		✓	✓	✓	
Malvaceae	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>		✓		✓	
Malvaceae	<i>Hibiscus sturtii</i> (var. not determined)				✓	
Malvaceae	<i>Hibiscus</i> sp. Gardneri (A.L. Payne PRP 1435)				✓	
Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Priority 2			✓	
Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Priority 1	✓	✓	✓	✓
Malvaceae	<i>Hibiscus</i> sp. (inadequate material)				✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Malvaceae	<i>*Malvastrum americanum</i>	Weed	✓			
Malvaceae	<i>Melhania oblongifolia</i>		✓	✓	✓	
Malvaceae	<i>Seringia elliptica</i>			✓	✓	
Malvaceae	<i>Seringia nephrosperma</i>		✓	✓	✓	
Malvaceae	<i>Sida arenicola</i>		✓	✓	✓	
Malvaceae	<i>Sida arsinata</i>				✓	
Malvaceae	<i>Sida cardiophylla</i>		✓	✓	✓	
Malvaceae	<i>Sida echinocarpa</i>				✓	
Malvaceae	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>				✓	
Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Priority 3	✓	✓	✓	
Malvaceae	<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)		✓	✓	✓	
Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Priority 3	✓		✓	
Malvaceae	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		✓	✓	✓	
Malvaceae	<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)		✓	✓	✓	
Malvaceae	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		✓			
Malvaceae	<i>Sida</i> sp.				✓	
Malvaceae	<i>Triumfetta leptacantha</i>			✓	✓	
Malvaceae	<i>Triumfetta maconochieana</i>		✓	✓	✓	
Malvaceae	<i>Waltheria indica</i>				✓	
Menispermaceae	<i>Tinospora smilacina</i>				✓	
Molluginaceae	<i>Trigastrotheca molluginea</i>		✓			
Moraceae	<i>Ficus brachypoda</i>				✓	
Moraceae	<i>Ficus platypoda</i>			✓	✓	
Myrtaceae	<i>Calytrix carinata</i>			✓	✓	
Myrtaceae	<i>Corymbia deserticola</i> subsp. <i>deserticola</i>		✓	✓	✓	
Myrtaceae	<i>Corymbia ferritcola</i>			✓	✓	
Myrtaceae	<i>Corymbia hamersleyana</i>		✓	✓	✓	
Myrtaceae	<i>Eucalyptus gamophylla</i>		✓	✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Myrtaceae	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		✓	✓	✓	
Myrtaceae	<i>Eucalyptus pilbarensis</i>			✓	✓	
Myrtaceae	<i>Eucalyptus xerothermica</i>		✓			
Nyctaginaceae	<i>Boerhavia</i> sp. (inadequate material)		✓		✓	
Oleaceae	<i>Jasminum didymum</i> subsp. <i>lineare</i>		✓	✓	✓	
Phyllanthaceae	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>				✓	
Phyllanthaceae	<i>Notoleptopus decaisnei</i>		✓			
Phyllanthaceae	<i>Phyllanthus erwinii</i>				✓	
Phyllanthaceae	<i>Phyllanthus maderaspatensis</i>		✓		✓	
Plantaginaceae	<i>Stemodia grossa</i>				✓	
Plumbaginaceae	<i>Plumbago zeylanica</i>				✓	
Poaceae	<i>Amphipogon sericeus</i>		✓	✓	✓	
Poaceae	<i>Aristida burbidgeae</i>			✓	✓	
Poaceae	<i>Aristida contorta</i>		✓		✓	
Poaceae	<i>Aristida holathera</i> var. <i>holathera</i>		✓	✓	✓	
Poaceae	<i>Aristida inaequiglumis</i>		✓		✓	
Poaceae	<i>Aristida ingrata</i>				✓	
Poaceae	<i>Aristida latifolia</i>		✓			
Poaceae	<i>Aristida</i> sp. (inadequate material)		✓			
Poaceae	* <i>Cenchrus ciliaris</i>	Weed	✓		✓	
Poaceae	<i>Cymbopogon ambiguus</i>		✓	✓	✓	
Poaceae	<i>Cymbopogon obtectus</i>		✓		✓	
Poaceae	<i>Cymbopogon</i> sp. (inadequate material)		✓		✓	
Poaceae	<i>Cynodon convergens</i>				✓	
Poaceae	<i>Digitaria brownii</i>		✓	✓	✓	
Poaceae	<i>Enneapogon caerulescens</i>		✓	✓	✓	
Poaceae	<i>Enneapogon lindleyanus</i>		✓	✓	✓	
Poaceae	<i>Enneapogon polyphyllus</i>		✓	✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Poaceae	<i>Eriachne aristidea</i>		✓	✓	✓	
Poaceae	<i>Eriachne ciliata</i>		✓			
Poaceae	<i>Eriachne mucronata</i>		✓	✓	✓	
Poaceae	<i>Eriachne mucronata</i> (arid form)		✓			
Poaceae	<i>Eriachne mucronata</i> (typical form)		✓			
Poaceae	<i>Eriachne pulchella</i>		✓	✓		
Poaceae	<i>Eriachne pulchella</i> subsp. <i>dominii</i>				✓	
Poaceae	<i>Eriachne tenuiculmis</i>		✓		✓	
Poaceae	<i>Eulalia aurea</i>		✓	✓	✓	
Poaceae	<i>Paraneurachne muelleri</i>		✓	✓	✓	
Poaceae	<i>Paspalidium clementii</i>		✓			
Poaceae	<i>Paspalidium</i> sp. (inadequate material)		✓			
Poaceae	<i>Schizachyrium fragile</i>		✓	✓	✓	
Poaceae	<i>Themeda triandra</i>		✓	✓	✓	
Poaceae	<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)		✓	✓	✓	
Poaceae	<i>Triodia basitricha</i>	Priority 3	✓	✓		
Poaceae	<i>Triodia epactia</i>		✓	✓	✓	
Poaceae	<i>Triodia melvillei</i>			✓		
Poaceae	<i>Triodia wiseana</i>		✓	✓	✓	
Poaceae	<i>Tripogonella loliiformis</i>		✓		✓	
Poaceae	<i>Yakirra australiensis</i> var. <i>australiensis</i>			✓		
Polygalaceae	<i>Polygala glaucifolia</i>		✓			
Polygonaceae	* <i>Rumex vesicarius</i>	Weed			✓	
Proteaceae	<i>Grevillea berryana</i>				✓	
Proteaceae	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>			✓		
Proteaceae	<i>Grevillea wickhamii</i> (subsp. not determined; sterile)		✓	✓	✓	
Proteaceae	<i>Grevillea wickhamii</i> subsp. <i>aprica</i>			✓		
Proteaceae	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>			✓	✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Proteaceae	<i>Hakea chordophylla</i>		✓	✓	✓	
Proteaceae	<i>Hakea lorea</i> subsp. <i>lorea</i>		✓	✓		
Pteridaceae	<i>Cheilanthes brownii</i>		✓			
Pteridaceae	<i>Cheilanthes lasiophylla</i>				✓	
Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>				✓	
Pteridaceae	<i>Cheilanthes</i> sp. (inadequate material)				✓	
Rhamnaceae	<i>Cryptandra monticola</i>				✓	
Rubiaceae	<i>Oldenlandia crouchiana</i>		✓	✓	✓	
Rubiaceae	<i>Pomax rupestris</i>		✓			
Rubiaceae	<i>Psydrax latifolia</i>				✓	
Rubiaceae	<i>Psydrax rigidula</i>		✓			
Rubiaceae	<i>Psydrax suaveolens</i>		✓	✓	✓	
Santalaceae	<i>Santalum lanceolatum</i>		✓			
Sapindaceae	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>				✓	
Sapindaceae	<i>Diplopeltis stuartii</i> var. <i>stuartii</i>			✓	✓	
Sapindaceae	<i>Dodonaea coriacea</i>		✓	✓		
Sapindaceae	<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>		✓		✓	
Sapindaceae	<i>Dodonaea pachyneura</i>				✓	
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>				✓	
Scrophulariaceae	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>				✓	
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>				✓	
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>glabra</i>				✓	
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		✓		✓	
Scrophulariaceae	<i>Eremophila longifolia</i>		✓			
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	Priority 4			✓	✓
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Priority 3			✓	
Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Priority 3	✓		✓	
Solanaceae	<i>Nicotiana benthamiana</i>				✓	

Family	Species	Status	BS2 Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Solanaceae	<i>Solanum cleistogamum</i>			✓	✓	
Solanaceae	<i>Solanum diversiflorum</i>		✓	✓	✓	
Solanaceae	<i>Solanum elatius</i>		✓	✓	✓	
Solanaceae	<i>Solanum horridum</i>		✓		✓	
Solanaceae	<i>Solanum lasiophyllum</i>		✓		✓	
Solanaceae	<i>Solanum morrisonii</i>				✓	
Solanaceae	* <i>Solanum nigrum</i>	Weed			✓	
Surianaceae	<i>Stylobasium spathulatum</i>		✓	✓		
Violaceae	<i>Hybanthus aurantiacus</i>		✓	✓	✓	
Zygophyllaceae	<i>Tribulus hirsutus</i>				✓	
Zygophyllaceae	<i>Tribulus suberosus</i>		✓	✓	✓	

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Acanthaceae	<i>Dicladanthera forrestii</i>		✓			
Acanthaceae	<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>		✓			
Amaranthaceae	<i>Achyranthes aspera</i>		✓			
Amaranthaceae	<i>Alternanthera denticulata</i>		✓			
Amaranthaceae	<i>Alternanthera nana</i>		✓	✓		
Amaranthaceae	<i>Alternanthera nodiflora</i>			✓		
Amaranthaceae	<i>Amaranthus cuspidifolius</i>		✓			
Amaranthaceae	<i>Amaranthus undulatus</i>		✓			
Amaranthaceae	<i>Gomphrena canescens</i> subsp. <i>canescens</i>		✓			
Amaranthaceae	<i>Gomphrena cunninghamii</i>		✓	✓		
Amaranthaceae	<i>Ptilotus aervoides</i>		✓			
Amaranthaceae	<i>Ptilotus astrolasius</i>		✓	✓		
Amaranthaceae	<i>Ptilotus auriculifolius</i>		✓			
Amaranthaceae	<i>Ptilotus calostachyus</i>		✓	✓		
Amaranthaceae	<i>Ptilotus clementii</i>		✓	✓		
Amaranthaceae	<i>Ptilotus exaltatus</i>		✓	✓		
Amaranthaceae	<i>Ptilotus fusiformis</i>		✓	✓		
Amaranthaceae	<i>Ptilotus gaudichaudii</i>		✓			
Amaranthaceae	<i>Ptilotus helipteroides</i>		✓			
Amaranthaceae	<i>Ptilotus obovatus</i> var. <i>obovatus</i>		✓	✓	✓	
Amaranthaceae	<i>Ptilotus polystachyus</i>		✓	✓		
Amaranthaceae	<i>Ptilotus rotundifolius</i>		✓	✓	✓	
Apocynaceae	<i>Cynanchum floribundum</i>			✓		
Apocynaceae	<i>Cynanchum pedunculatum</i>		✓			
Apocynaceae	<i>Gymnanthera cunninghamii</i>	Priority 3	✓			
Apocynaceae	<i>Marsdenia australis</i>		✓			
Apocynaceae	<i>Vincetoxicum flexuosum</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Apocynaceae	<i>Vincetoxicum lineare</i>		✓			
Araliaceae	<i>Astrotricha hamptonii</i>		✓			
Araliaceae	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>		✓			
Asteraceae	* <i>Bidens bipinnata</i>	Weed	✓		✓	
Asteraceae	<i>Calocephalus beardii</i>		✓			
Asteraceae	<i>Calotis hispidula</i>				✓	
Asteraceae	<i>Centipeda minima</i> subsp. <i>macrocephala</i>		✓	✓		
Asteraceae	<i>Chrysocephalum gilesii</i>		✓			
Asteraceae	* <i>Flaveria trinervia</i>	Weed	✓			
Asteraceae	<i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>				✓	
Asteraceae	<i>Olearia fluvialis</i>		✓			
Asteraceae	<i>Olearia xerophila</i>		✓			
Asteraceae	<i>Peripleura arida</i>		✓			
Asteraceae	<i>Peripleura obovata</i>		✓			
Asteraceae	<i>Peripleura virgata</i>		✓			
Asteraceae	<i>Pluchea dentex</i>		✓			
Asteraceae	<i>Pluchea dunlopii</i>			✓		
Asteraceae	<i>Pluchea rubelliflora</i>		✓			
Asteraceae	<i>Pluchea tetranthera</i>			✓		
Asteraceae	<i>Podolepis capillaris</i>		✓			
Asteraceae	<i>Pseudognaphalium luteoalbum</i>		✓			
Asteraceae	<i>Pterocaulon serrulatum</i> var. <i>velutinum</i>		✓			
Asteraceae	<i>Pterocaulon sphacelatum</i>		✓	✓		
Asteraceae	<i>Pterocaulon</i> ? <i>sphacelatum</i> (juvenile)		✓			
Asteraceae	<i>Pterocaulon sphaeranthoides</i>		✓			
Asteraceae	<i>Rhodanthe charsleyae</i>		✓	✓		
Asteraceae	<i>Rhodanthe floribunda</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Asteraceae	<i>Rhodanthe manglesii</i>		✓			
Asteraceae	<i>Rhodanthe margarethae</i>		✓			
Asteraceae	<i>Roebuckiella similis</i>		✓			
Asteraceae	<i>Rutidosia helichrysoides</i> subsp. <i>helichrysoides</i>		✓			
Asteraceae	<i>Senecio hamersleyensis</i>		✓			
Asteraceae	* <i>Sigesbeckia orientalis</i>	Weed	✓		✓	
Asteraceae	<i>Streptoglossa bubakii</i>		✓			
Asteraceae	<i>Streptoglossa decurrens</i>		✓	✓		
Bignoniaceae	<i>Pandorea pandorana</i>		✓			
Boraginaceae	<i>Heliotropium cunninghamii</i>		✓			
Boraginaceae	<i>Heliotropium inexplicitum</i>		✓			
Boraginaceae	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		✓	✓		
Brassicaceae	<i>Lepidium catapycnon</i>	Priority 4	✓		✓	✓
Brassicaceae	<i>Lepidium echinatum</i>		✓			
Brassicaceae	<i>Lepidium pedicellosum</i>		✓			
Brassicaceae	<i>Lepidium phlebopetalum</i>		✓			
Campanulaceae	<i>Lobelia heterophylla</i> subsp. <i>pilbarensis</i>		✓			
Campanulaceae	<i>Wahlenbergia tumidifructa</i>		✓			
Capparaceae	<i>Capparis lasiantha</i>		✓	✓		
Capparaceae	<i>Capparis mitchellii</i>		✓			
Capparaceae	<i>Capparis spinosa</i> subsp. <i>nummularia</i>		✓			
Capparaceae	<i>Capparis umbonata</i>		✓	✓		
Caryophyllaceae	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>		✓			
Caryophyllaceae	<i>Polycarpaea holtzei</i>		✓			
Caryophyllaceae	<i>Polycarpaea longiflora</i>		✓	✓		
Celastraceae	<i>Stackhousia intermedia</i>			✓		
Celastraceae	<i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172)		✓			
Celastraceae	<i>Stackhousia</i> sp. <i>swollen gynophore</i> (W.R. Barker 2041)		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Chenopodiaceae	<i>Dysphania kalpari</i>		✓			
Chenopodiaceae	<i>Dysphania rhadinostachya</i>		✓			
Chenopodiaceae	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>		✓	✓		
Chenopodiaceae	<i>Dysphania</i> sp. (inadequate material)		✓			
Chenopodiaceae	<i>Maireana georgei</i>		✓			
Chenopodiaceae	<i>Maireana planifolia</i>		✓			
Chenopodiaceae	<i>Maireana planifolia</i> x <i>villosa</i>		✓			
Chenopodiaceae	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>		✓			
Chenopodiaceae	<i>Maireana villosa</i>		✓			
Chenopodiaceae	<i>Rhagodia eremaea</i>		✓			
Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Priority 3	✓		✓	
Chenopodiaceae	<i>Salsola australis</i>		✓			
Chenopodiaceae	<i>Sclerolaena densiflora</i>		✓			
Chenopodiaceae	<i>Sclerolaena eriacantha</i>		✓			
Cleomaceae	<i>Cleome viscosa</i>		✓	✓		
Commelinaceae	<i>Commelina ensifolia</i>		✓			
Convolvulaceae	<i>Bonamia erecta</i>		✓	✓		
Convolvulaceae	<i>Bonamia pilbarensis</i>		✓	✓		
Convolvulaceae	<i>Duperreya commixta</i>		✓	✓		
Convolvulaceae	<i>Evolvulus alsinoides</i> (var. not determined)		✓			
Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>		✓			
Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		✓	✓		
Convolvulaceae	<i>Polymeria ambigua</i>		✓			
Cucurbitaceae	<i>Cucumis melo</i>		✓			
Cucurbitaceae	<i>Cucumis variabilis</i>		✓	✓		
Cyperaceae	<i>Bulbostylis barbata</i>		✓	✓		
Cyperaceae	<i>Bulbostylis turbinata</i>		✓			
Cyperaceae	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>		✓	✓		

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Cyperaceae	<i>Cyperus vaginatus</i>		✓			
Cyperaceae	<i>Fimbristylis dichotoma</i>		✓			
Cyperaceae	<i>Fimbristylis simulans</i>		✓			
Elaeocarpaceae	<i>Tetratheca butcheriana</i>	Priority 1	✓		✓	✓
Euphorbiaceae	<i>Euphorbia biconvexa</i>		✓			
Euphorbiaceae	<i>Euphorbia boophthona</i>		✓			
Euphorbiaceae	<i>Euphorbia</i> ? <i>boophthona/tannensis</i> (sterile)		✓			
Euphorbiaceae	<i>Euphorbia coghlanii</i>			✓		
Euphorbiaceae	<i>Euphorbia ferdinandi</i> var. <i>ferdinandi</i>		✓			
Euphorbiaceae	<i>Euphorbia trigonosperma</i>		✓			
Euphorbiaceae	<i>Euphorbia</i> sp. (<i>biconvexa/coghlanii/trigonosperma</i> ; sterile)		✓			
Fabaceae	<i>Acacia adoxa</i> var. <i>adoxo</i>		✓			
Fabaceae	<i>Acacia adsurgens</i>		✓			
Fabaceae	<i>Acacia ancistrocarpa</i>		✓	✓		
Fabaceae	<i>Acacia aneura</i>		✓			
Fabaceae	<i>Acacia aptaneura</i>		✓	✓		
Fabaceae	<i>Acacia atkinsiana</i>		✓	✓	✓	
Fabaceae	<i>Acacia ayersiana</i>		✓			
Fabaceae	<i>Acacia ayersiana</i> (narrow phyllode variant)		✓			
Fabaceae	<i>Acacia bivenosa</i>		✓	✓	✓	
Fabaceae	<i>Acacia bivenosa</i> (wispy/weeping form)		✓			
Fabaceae	<i>Acacia bromilowiana</i>	Priority 4	✓		✓	✓
Fabaceae	<i>Acacia citrinoviridis</i>		✓			
Fabaceae	<i>Acacia coriacea</i> subsp. <i>pendens</i>		✓			
Fabaceae	<i>Acacia cowleana</i>			✓		
Fabaceae	<i>Acacia dictyophleba</i>		✓	✓		
Fabaceae	<i>Acacia elachantha</i>		✓			
Fabaceae	<i>Acacia exigua</i>		✓	✓		

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Fabaceae	<i>Acacia hamersleyensis</i>		✓	✓		
Fabaceae	<i>Acacia hilliania</i>		✓			
Fabaceae	<i>Acacia inaequilatera</i>		✓			
Fabaceae	<i>Acacia incurvaneura</i>		✓			
Fabaceae	<i>Acacia kempeana</i>		✓			
Fabaceae	<i>Acacia maitlandii</i>		✓	✓	✓	
Fabaceae	<i>Acacia marramamba</i>				✓	
Fabaceae	<i>Acacia monticola</i>		✓	✓	✓	
Fabaceae	<i>Acacia mulganeura</i>		✓			
Fabaceae	<i>Acacia orthocarpa</i>			✓		
Fabaceae	<i>Acacia pruinocarpa</i>		✓	✓	✓	
Fabaceae	<i>Acacia pyrifolia</i> (var. not determined)		✓	✓	✓	
Fabaceae	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		✓	✓		
Fabaceae	<i>Acacia sibirica</i>		✓			
Fabaceae	<i>Acacia sibirica</i> (linear form)		✓			
Fabaceae	<i>Acacia synchronicia</i>		✓			
Fabaceae	<i>Acacia tetragonophylla</i>		✓			
Fabaceae	<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		✓			
Fabaceae	<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>		✓			
Fabaceae	<i>Cullen leucochaetes</i>		✓			
Fabaceae	<i>Cullen pogonocarpum</i>		✓			
Fabaceae	<i>Daviesia eremaea</i>		✓			
Fabaceae	<i>Gompholobium oreophilum</i>		✓	✓		
Fabaceae	<i>Indigofera fractiflexa</i> subsp. <i>fractiflexa</i>		✓			
Fabaceae	<i>Indigofera monophylla</i>		✓	✓		
Fabaceae	<i>Indigofera rugosa</i>		✓			
Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Priority 3	✓			
Fabaceae	<i>Isotropis atropurpurea</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Fabaceae	<i>Mirbelia viminalis</i>		✓			
Fabaceae	<i>Petalostylis labicheoides</i>		✓			
Fabaceae	<i>Rhynchosia minima</i>		✓	✓		
Fabaceae	<i>Senna artemisioides</i> subsp. <i>helmsii</i>		✓	✓		
Fabaceae	<i>Senna artemisioides</i> subsp. <i>helmsii</i> ? x <i>oligophylla</i>		✓			
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		✓	✓		
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> (form with thinly sericeous leaves)		✓			
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>		✓	✓		
Fabaceae	<i>Senna ferraria</i>		✓			
Fabaceae	<i>Senna glaucifolia</i>		✓			
Fabaceae	<i>Senna glaucifolia</i> x		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		✓	✓	✓	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. x <i>luerssenii</i>		✓	✓		
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		✓	✓	✓	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. ? glaucifolia</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x <i>S. artemisioides</i> subsp. <i>oligophylla</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>		✓			
Fabaceae	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x <i>S. stricta</i>		✓			
Fabaceae	<i>Senna notabilis</i>		✓	✓		
Fabaceae	<i>Senna</i> sp.			✓		
Fabaceae	<i>Senna</i> sp. Karijini (M.E. Trudgen 10392)		✓			
Fabaceae	<i>Senna stricta</i>		✓			
Fabaceae	<i>Senna symonii</i>		✓			
Fabaceae	<i>Senna venusta</i>		✓			
Fabaceae	<i>Swainsona maccullochiana</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Fabaceae	<i>Templetonia egena</i>		✓			
Fabaceae	<i>Tephrosia oxalidea</i>		✓			
Fabaceae	<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)		✓			
Fabaceae	<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)		✓			
Fabaceae	<i>Tephrosia</i> sp. Fortescue (A.A. Mitchell 606)		✓	✓		
Fabaceae	<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)		✓			
Fabaceae	* <i>Vachellia farnesiana</i>	Weed	✓			
Fabaceae	<i>Vigna lanceolata</i> var. <i>lanceolata</i>		✓			
Fabaceae	<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)		✓			
Goodeniaceae	<i>Dampiera anonyma</i>	Priority 3	✓			
Goodeniaceae	<i>Dampiera candicans</i>		✓	✓		
Goodeniaceae	<i>Dampiera dentata</i>		✓			
Goodeniaceae	<i>Goodenia cusackiana</i>		✓	✓		
Goodeniaceae	<i>Goodenia microptera</i>		✓	✓		
Goodeniaceae	<i>Goodenia nuda</i>	Priority 4	✓		✓	
Goodeniaceae	<i>Goodenia prostrata</i>		✓			
Goodeniaceae	<i>Goodenia stobbsiana</i>		✓	✓		
Goodeniaceae	<i>Goodenia triodiophila</i>		✓			
Goodeniaceae	<i>Scaevola acacioides</i>		✓			
Goodeniaceae	<i>Scaevola parvifolia</i>		✓			
Goodeniaceae	<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>		✓			
Goodeniaceae	<i>Scaevola</i> sp. Mt Bruce (M.E. Trudgen 1333)		✓			
Goodeniaceae	<i>Scaevola spinescens</i> (broad form)		✓			
Gyrostemonaceae	<i>Codonocarpus cotinifolius</i>		✓	✓		
Haloragaceae	<i>Haloragis gossei</i> (var. not determined)		✓			
Haloragaceae	<i>Haloragis gossei</i> var. <i>gossei</i>		✓			
Hemerocallidaceae	<i>Tricoryne</i> sp. Hamersley Range (S. van Leeuwen 915)		✓			
Lamiaceae	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Lamiaceae	<i>Prostanthera albiflora</i>		✓			
Lamiaceae	<i>Teucrium disjunctum</i>		✓			
Lauraceae	<i>Cassytha capillaris</i>		✓	✓		
Loranthaceae	<i>Amyema fitzgeraldii</i>		✓			
Loranthaceae	<i>Amyema hilliiana</i>		✓			
Loranthaceae	<i>Diplatia grandibractea</i>		✓			
Loranthaceae	<i>Lysiana casuarinae</i>		✓			
Malvaceae	<i>Abutilon cunninghamii</i>		✓			
Malvaceae	<i>Abutilon fraseri</i> subsp. <i>fraseri</i>		✓			
Malvaceae	<i>Abutilon lepidum</i>		✓			
Malvaceae	<i>Abutilon otocarpum</i>		✓			
Malvaceae	<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)		✓	✓	✓	
Malvaceae	<i>Abutilon</i> sp. <i>Pilbara</i> (W.R. Barker 2025)		✓			
Malvaceae	<i>Androcalva luteiflora</i>		✓			
Malvaceae	<i>Brachychiton acuminatus</i>		✓		✓	
Malvaceae	<i>Corchorus crozophorifolius</i>		✓	✓	✓	
Malvaceae	<i>Corchorus incanus</i> subsp. <i>incanus</i>		✓			
Malvaceae	<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>		✓	✓	✓	
Malvaceae	<i>Corchorus sidoides</i> (subsp. not determined)			✓		
Malvaceae	<i>Corchorus tectus</i>				✓	
Malvaceae	<i>Gossypium australe</i>		✓		✓	
Malvaceae	<i>Gossypium robinsonii</i>		✓	✓	✓	
Malvaceae	<i>Hibiscus burtonii</i>		✓	✓		
Malvaceae	<i>Hibiscus coatesii</i>		✓	✓		
Malvaceae	<i>Hibiscus goldsworthii</i>		✓			
Malvaceae	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		✓	✓		
Malvaceae	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>		✓	✓		
Malvaceae	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>		✓	✓		

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Priority 2	✓		✓	
Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Priority 2	✓			
Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Priority 1	✓		✓	✓
Malvaceae	* <i>Malvastrum americanum</i>	Weed	✓			
Malvaceae	<i>Seringia elliptica</i>			✓		
Malvaceae	<i>Seringia nephrosperma</i>			✓		
Malvaceae	<i>Seringia</i> sp. (inadequate material)		✓			
Malvaceae	<i>Sida arenicola</i>		✓			
Malvaceae	<i>Sida cardiophylla</i>		✓	✓		
Malvaceae	<i>Sida echinocarpa</i>		✓			
Malvaceae	<i>Sida fibulifera</i>		✓			
Malvaceae	<i>Sida platycalyx</i>		✓			
Malvaceae	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>		✓			
Malvaceae	<i>Sida spinosa</i>		✓			
Malvaceae	<i>Sida</i> sp. (inadequate material)		✓			
Malvaceae	<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)		✓			
Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Priority 3	✓		✓	
Malvaceae	<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)		✓	✓		
Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Priority 3	✓		✓	
Malvaceae	<i>Sida</i> sp. L (A.M. Ashby 4202)		✓	✓		
Malvaceae	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		✓	✓		
Malvaceae	<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)		✓			
Malvaceae	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		✓	✓		
Malvaceae	<i>Sida</i> sp. Supplejack Station (T.S. Henshall 2345)		✓	✓	✓	
Malvaceae	<i>Triumfetta leptacantha</i>		✓		✓	
Malvaceae	<i>Triumfetta maconochieana</i>		✓			
Malvaceae	<i>Waltheria indica</i>		✓			
Menispermaceae	<i>Tinospora smilacina</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Molluginaceae	<i>Trigastrotheca molluginea</i>		✓			
Moraceae	<i>Ficus brachypoda</i>		✓			
Moraceae	<i>Ficus geniculata</i> var. <i>insignis</i>		✓			
Myrtaceae	<i>Calytrix carinata</i>		✓			
Myrtaceae	<i>Corymbia deserticola</i> subsp. <i>deserticola</i>		✓		✓	
Myrtaceae	<i>Corymbia ferritcola</i>		✓		✓	
Myrtaceae	<i>Corymbia hamersleyana</i>		✓	✓	✓	
Myrtaceae	<i>Eucalyptus aridimontana</i>		✓			
Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>		✓			
Myrtaceae	<i>Eucalyptus gamophylla</i>		✓	✓	✓	
Myrtaceae	<i>Eucalyptus kingsmillii</i>		✓			
Myrtaceae	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		✓	✓	✓	
Myrtaceae	<i>Eucalyptus pilbarensis</i>		✓			
Myrtaceae	<i>Eucalyptus victrix</i>		✓			
Myrtaceae	<i>Eucalyptus xerothermica</i>		✓	✓		
Myrtaceae	<i>Melaleuca glomerata</i>		✓			
Nyctaginaceae	<i>Boerhavia</i> sp. (inadequate material)		✓			
Nyctaginaceae	<i>Commicarpus australis</i>		✓			
Oleaceae	<i>Jasminum didymum</i> subsp. <i>lineare</i>		✓	✓	✓	
Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	Priority 2	✓		✓	✓
Phyllanthaceae	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>		✓			
Phyllanthaceae	<i>Notoleptopus decaisnei</i>		✓			
Phyllanthaceae	<i>Phyllanthus erwinii</i>		✓			
Phyllanthaceae	<i>Phyllanthus maderaspatensis</i>		✓			
Plantaginaceae	<i>Stemodia grossa</i>		✓			
Plumbaginaceae	<i>Plumbago zeylanica</i>		✓			
Poaceae	<i>Amphipogon sericeus</i>		✓	✓	✓	
Poaceae	<i>Aristida burbidgeae</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Poaceae	<i>Aristida contorta</i>		✓	✓		
Poaceae	<i>Aristida holathera</i> var. <i>holathera</i>		✓	✓		
Poaceae	<i>Aristida inaequiglumis</i>		✓			
Poaceae	<i>Aristida ingrata</i>		✓			
Poaceae	<i>Aristida latifolia</i>		✓			
Poaceae	<i>Aristida obscura</i>		✓			
Poaceae	<i>Aristida</i> sp. (inadequate material)		✓			
Poaceae	<i>Bothriochloa ewartiana</i>		✓			
Poaceae	* <i>Cenchrus ciliaris</i>	Weed	✓			
Poaceae	* <i>Cenchrus setiger</i>	Weed	✓			
Poaceae	* <i>Chloris virgata</i>	Weed	✓			
Poaceae	<i>Chrysopogon fallax</i>		✓	✓		
Poaceae	<i>Cymbopogon ambiguus</i>		✓	✓	✓	
Poaceae	<i>Cymbopogon obtectus</i>		✓			
Poaceae	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>		✓			
Poaceae	<i>Digitaria ammophila</i>		✓			
Poaceae	<i>Digitaria brownii</i>		✓	✓		
Poaceae	<i>Enneapogon caeruleus</i>		✓	✓		
Poaceae	<i>Enneapogon lindleyanus</i>		✓			
Poaceae	<i>Enneapogon polyphyllus</i>		✓	✓		
Poaceae	<i>Enneapogon</i> ? <i>polyphyllus</i> (inadequate material)		✓			
Poaceae	<i>Enneapogon robustissimus</i>		✓			
Poaceae	<i>Eragrostis cumingii</i>		✓	✓		
Poaceae	<i>Eragrostis eriopoda</i>		✓			
Poaceae	<i>Eragrostis pergracilis</i>		✓	✓		
Poaceae	<i>Eragrostis tenellula</i>		✓			
Poaceae	<i>Eragrostis</i> sp. (inadequate material)		✓			
Poaceae	<i>Eriachne aristidea</i>		✓	✓		

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Poaceae	<i>Eriachne benthamii/flaccida</i>		✓			
Poaceae	<i>Eriachne ciliata</i>		✓			
Poaceae	<i>Eriachne lanata</i>		✓	✓		
Poaceae	<i>Eriachne mucronata</i> (form not determined)		✓	✓	✓	
Poaceae	<i>Eriachne mucronata</i> (arid form) (MET 12 736)		✓			
Poaceae	<i>Eriachne mucronata</i> (typical form)		✓			
Poaceae	<i>Eriachne pulchella</i>		✓	✓		
Poaceae	<i>Eriachne tenuiculmis</i>		✓			
Poaceae	<i>Eriachne</i> sp. (inadequate material)		✓			
Poaceae	<i>Eulalia aurea</i>		✓	✓		
Poaceae	<i>Iseilema membranaceum</i>		✓			
Poaceae	<i>Panicum effusum</i>		✓			
Poaceae	<i>Paraneurachne muelleri</i>		✓	✓	✓	
Poaceae	<i>Paspalidium clementii</i>		✓			
Poaceae	<i>Paspalidium gracile</i>		✓			
Poaceae	<i>Paspalidium rarum</i>		✓	✓		
Poaceae	<i>Paspalidium</i> sp. (inadequate material)		✓			
Poaceae	<i>Perotis rara</i>		✓			
Poaceae	<i>Schizachyrium fragile</i>		✓	✓		
Poaceae	* <i>Setaria verticillata</i>	Weed	✓			
Poaceae	<i>Sporobolus australasicus</i>		✓	✓		
Poaceae	<i>Themeda triandra</i>		✓	✓	✓	
Poaceae	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	Priority 3	✓			
Poaceae	<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)		✓			
Poaceae	<i>Triodia angusta</i>		✓			
Poaceae	<i>Triodia basitricha</i>	Priority 3	✓		✓	
Poaceae	<i>Triodia brizoides</i>		✓	✓	✓	
Poaceae	<i>Triodia epactia</i>		✓	✓	✓	

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Poaceae	<i>Triodia longiceps</i>		✓			
Poaceae	<i>Triodia wiseana</i>		✓	✓	✓	
Poaceae	<i>Tripogonella loliiformis</i>		✓			
Polygalaceae	<i>Polygala glaucifolia</i>		✓			
Polygonaceae	* <i>Rumex vesicarius</i>	Weed	✓		✓	
Proteaceae	<i>Grevillea berryana</i>		✓	✓		
Proteaceae	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>		✓			
Proteaceae	<i>Grevillea saxicola</i>	Priority 3	✓			
Proteaceae	<i>Grevillea wickhamii</i> (var. not determined; sterile)		✓			
Proteaceae	<i>Hakea chordophylla</i>		✓	✓	✓	
Proteaceae	<i>Hakea lorea</i> subsp. <i>lorea</i>		✓	✓		
Pteridaceae	<i>Cheilanthes austrotenuifolia</i>		✓			
Pteridaceae	<i>Cheilanthes brownii</i>		✓			
Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		✓			
Pteridaceae	<i>Paraceterach reynoldsii</i>		✓			
Rhamnaceae	<i>Ventilago viminalis</i>		✓			
Rubiaceae	<i>Oldenlandia crouchiana</i>		✓			
Rubiaceae	<i>Psyrax latifolia</i>		✓			
Rubiaceae	<i>Psyrax rigidula</i>		✓			
Rubiaceae	<i>Psyrax suaveolens</i>		✓			
Rubiaceae	<i>Spermacoce brachystema</i>		✓			
Rubiaceae	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>		✓			
Santalaceae	<i>Anthobolus leptomerioides</i>		✓	✓		
Santalaceae	<i>Santalum lanceolatum</i>		✓	✓		
Sapindaceae	<i>Dodonaea coriacea</i>		✓			
Sapindaceae	<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>		✓	✓		
Sapindaceae	<i>Dodonaea pachyneura</i>		✓		✓	
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>		✓			

Family	Species	Status	Lens G/Diesel Current Sampling (Ph1 & Ph2)	Historical Sampling Sites	Rio Tinto Records	DBCA Records
Scrophulariaceae	<i>Eremophila cuneifolia</i>		✓			
Scrophulariaceae	<i>Eremophila exilifolia</i>		✓			
Scrophulariaceae	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		✓			
Scrophulariaceae	<i>Eremophila lanceolata</i>		✓			
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>		✓			
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>glabra</i>				✓	
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		✓			
Scrophulariaceae	<i>Eremophila longifolia</i>		✓			
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	Priority 4	✓		✓	
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Priority 3	✓			
Solanaceae	<i>Nicotiana benthamiana</i>		✓			
Solanaceae	<i>Nicotiana</i> sp. (inadequate material)		✓			
Solanaceae	<i>Solanum diversiflorum</i>		✓	✓		
Solanaceae	<i>Solanum elatius</i>		✓	✓		
Solanaceae	<i>Solanum ferocissimum</i>		✓			
Solanaceae	<i>Solanum horridum</i>		✓	✓		
Solanaceae	<i>Solanum lasiophyllum</i>		✓	✓		
Solanaceae	<i>Solanum</i> sp. (inadequate material)		✓			
Surianaceae	<i>Stylobasium spathulatum</i>		✓	✓	✓	
Thymelaeaceae	<i>Pimelea microcephala</i> subsp. <i>microcephala</i>		✓			
Typhaceae	<i>Typha domingensis</i>		✓			
Violaceae	<i>Hybanthus aurantiacus</i>		✓			
Zygophyllaceae	<i>Tribulus astrocarpus</i>		✓			
Zygophyllaceae	<i>Tribulus macrocarpus</i>		✓			
Zygophyllaceae	<i>Tribulus suberosus</i>		✓			
Algae - Characeae	<i>Chara</i> sp.		✓			

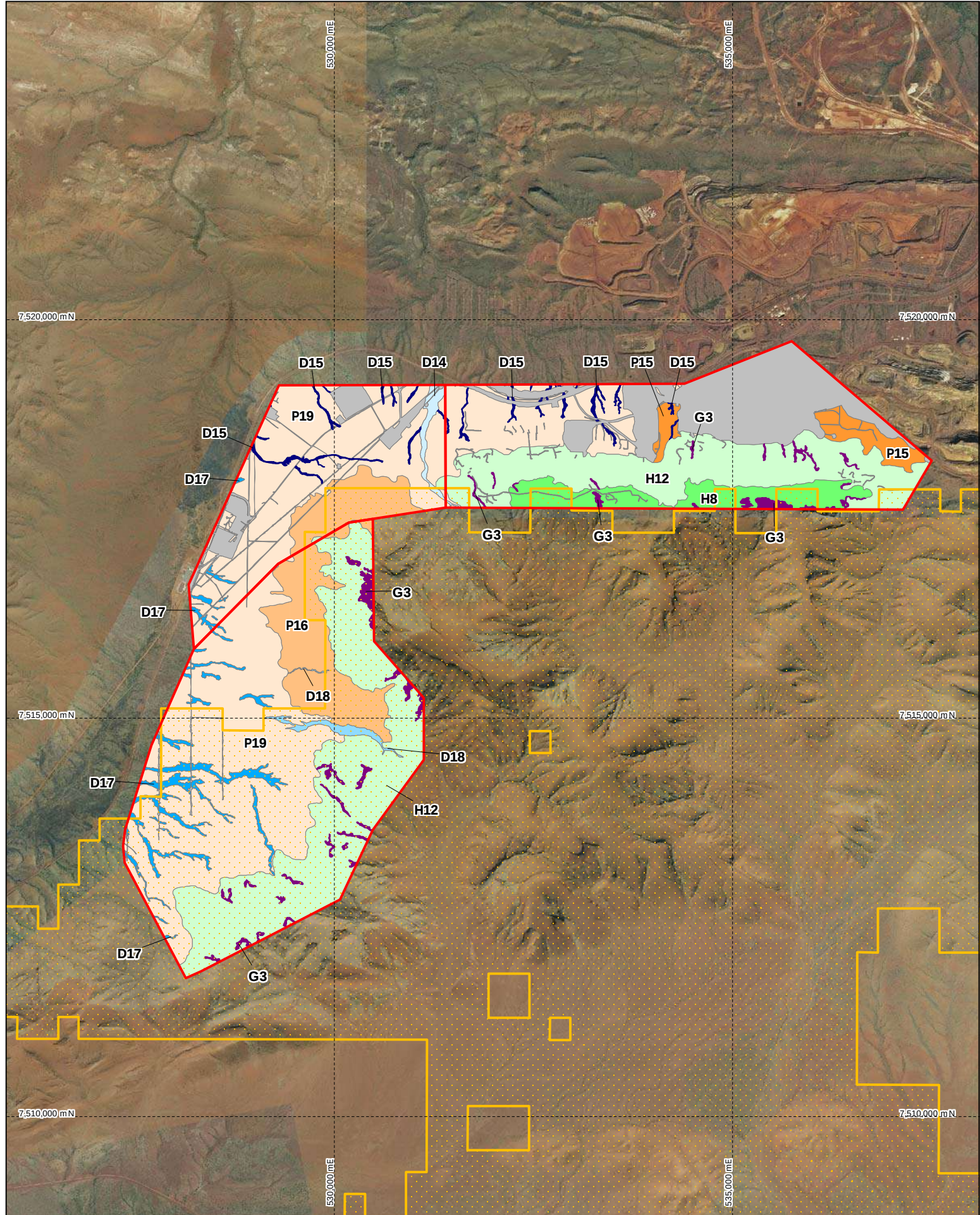
Appendix 8

Mapping and Description of Vegetation Types

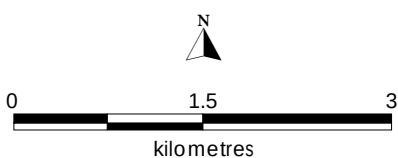


Brockman Syncline 2 South West/West Extension Vegetation Mapping Descriptions

D14	ChAtuGOrCOcPToTerTHtTe	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Gossypium robinsonii</i> tall open shrubland over <i>Acacia pyrifolia</i> open shrubland over <i>Corchorus crozophorifolius</i> , <i>Ptilotus obovatus</i> , <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186) low open shrubland over <i>Themeda triandra</i> (* <i>Cenchrus ciliaris</i>) very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
D15	ChAsppTHtTeTw	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia</i> spp. tall shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> , <i>T. wiseana</i> open hummock grassland
D17	CdEgAatAeTeTw	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> low open woodland over <i>Eucalyptus gamophylla</i> low open mallee woodland over <i>Acacia atkinsiana</i> , (<i>A. exigua</i>) tall open shrubland over <i>Triodia epactia</i> , <i>T. wiseana</i> hummock grassland
D18	ElChApyAiAmTeTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia hamersleyana</i> low open woodland over <i>Acacia pyrifolia</i> , <i>A. inaequilatera</i> , <i>A. maitlandii</i> tall open shrubland over <i>Triodia epactia</i> , <i>T. wiseana</i> hummock grassland
G3	ElCfApAanDpERImTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia ferritcola</i> , <i>Acacia pruinocarpa</i> , <i>A. 'aneura'</i> low open woodland over <i>Dodonaea pachyneura</i> scattered tall shrubs over <i>Eriachne mucronata</i> open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
P15	ElAeAsiTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>Acacia exigua</i> , <i>A. sibirica</i> scattered tall shrubs to tall open shrubland over <i>Triodia wiseana</i> hummock grassland
P16	ElAeTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Acacia exigua</i> open shrubland over <i>Triodia wiseana</i> open hummock grassland
P19	ElCdAatAeTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia deserticola</i> subsp. <i>deserticola</i> scattered low trees with occasional <i>E. gamophylla</i> scattered low mallees over <i>Acacia atkinsiana</i> , <i>A. exigua</i> tall open shrubland over <i>Triodia wiseana</i> and/or <i>T. epactia</i> hummock grassland
H8	ElEgAmTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia hamersleyana</i> low open woodland over <i>Eucalyptus gamophylla</i> low open mallee woodland over <i>Acacia maitlandii</i> scattered shrubs to open shrubland over <i>Triodia wiseana</i> open hummock grassland
H12	ElTwTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia deserticola</i> subsp. <i>deserticola</i> low open woodland over <i>Triodia wiseana</i> , <i>T. epactia</i> open hummock grassland



- Study area
 - Disturbed area
 - Fire scar Oct/Nov 2018
- Source: NAFI, downloaded 28/11/2018



**Brockman Syncline 2
South West/West Extension
Vegetation**

Biota
Environmental
Sciences

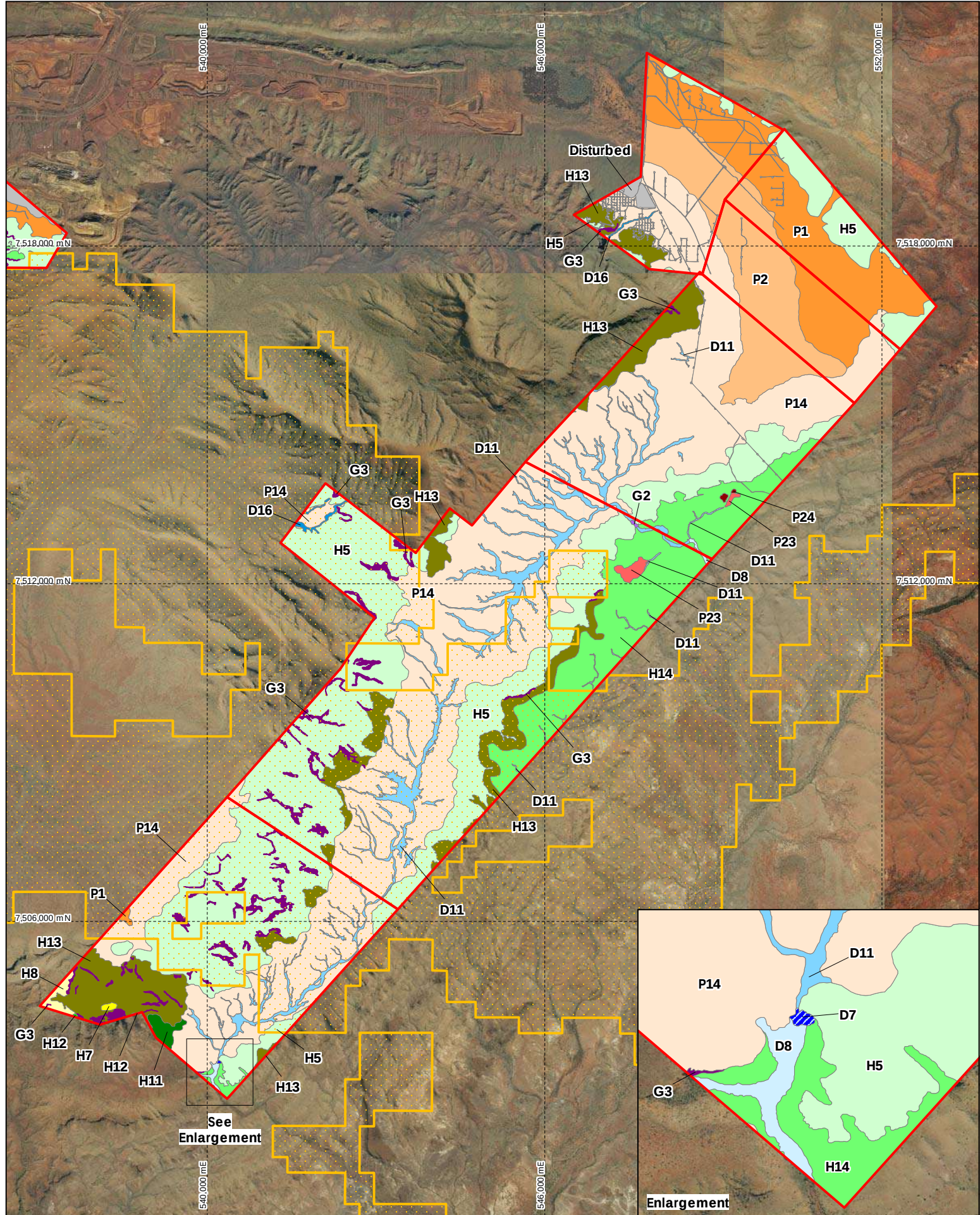
Lens G and Diesel Vegetation Mapping Descriptions

D7	EcFgFbTYdPLr	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> open woodland over <i>Ficus geniculata</i> var. <i>insignis</i> , (<i>F. brachypoda</i>) low open woodland over <i>Typha domingensis</i> very open sedgeland with <i>Pluchea rubelliflora</i> scattered low shrubs
D8	EcGOOrSsANITeTHtTe	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> (<i>E. victrix</i>) scattered trees to open woodland over <i>Gossypium robinsonii</i> (<i>Acacia citrinoviridis</i> , <i>A. coriacea</i> subsp. <i>pendens</i> , <i>Melaleuca glomerata</i>) tall shrubland over <i>Stylobasium spathulatum</i> , <i>Androcalva luteiflora</i> shrubland over <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186), (<i>Corchorus crozophorifolius</i>) low open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
D11	ExAcANITHTe	<i>Eucalyptus xerothermica</i> scattered low trees over <i>Acacia citrinoviridis</i> tall shrubland to tall open scrub over <i>Androcalva luteiflora</i> (<i>Acacia maitlandii</i>) open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
D16	EIChGOOrApyTHtTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia hamersleyana</i> scattered low trees over <i>Gossypium robinsonii</i> , <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
G2	CfAanAcIProaPToCYaTHtARb	<i>Corymbia ferritcola</i> , <i>Acacia aneura</i> woodland over <i>A. citrinoviridis</i> tall shrubland over <i>Eremophila latrobei</i> subsp. <i>latrobei</i> , <i>Santalum lanceolatum</i> , <i>Dodonaea pachyneura</i> , (<i>Gossypium robinsonii</i>) tall open shrubland over <i>Prostanthera albiflora</i> , <i>Ptilotus obovatus</i> subsp. <i>obovatus</i> , (<i>Corchorus crozophorifolius</i>) low shrubland over <i>Cymbopogon ambiguus</i> , (<i>Themeda triandra</i> , <i>Aristida burbridgeae</i>) open tussock grassland
G3	EICfApAanDpERImTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia ferritcola</i> , <i>Acacia pruinocarpa</i> , <i>A. aneura</i> low open woodland over <i>Dodonaea pachyneura</i> scattered tall shrubs over <i>Eriachne mucronata</i> open tussock grassland over <i>Triodia epactia</i> very open hummock grassland
P1	AanApAbAeTe	<i>Acacia 'aneura'</i> scattered low trees to low open woodland over <i>Acacia pruinocarpa</i> scattered tall shrubs over <i>Acacia bivenosa</i> , <i>A. exigua</i> open shrubland over <i>Triodia epactia</i> hummock grassland
P2	AanCHfTe	<i>Acacia 'aneura'</i> low open woodland to low open forest over <i>Chrysopogon fallax</i> scattered tussock grasses to tussock grassland over <i>Triodia epactia</i> open hummock grassland
P14	CdEgAeAatTwTe	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> scattered low trees to low open woodland over <i>Eucalyptus gamophylla</i> low open mallee woodland over <i>Acacia exigua</i> , <i>A. atkinsiana</i> (<i>A. kempeana</i>) tall open shrubland over <i>Triodia wiseana</i> , <i>T. epactia</i> open hummock grassland
P23	EIAbCAPuTspp	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>Acacia bivenosa</i> (wispy weeping form) scattered tall shrubs over <i>Capparis umbonata</i> scattered shrubs over <i>Triodia epactia</i> and/or <i>Triodia angusta</i> , (<i>Triodia wiseana</i>) open hummock grassland
P24	EIGsGOOsTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Grevillea saxicola</i> scattered tall shrubs over <i>Goodenia stobbsiana</i> low open shrubland over <i>Triodia wiseana</i> very open hummock grassland

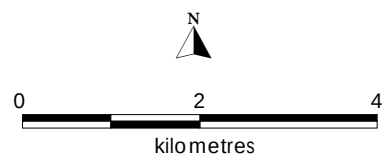
Lens G and Diesel Vegetation Mapping Descriptions

H5	EIAmTwTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Acacia maitlandii</i> open shrubland over <i>Triodia wiseana</i> and/or <i>T. epactia</i> open hummock grassland
H7	EIEgAbTwTb	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>E. gamophylla</i> low open mallee woodland over <i>Acacia bivenosa</i> scattered shrubs over <i>Triodia wiseana</i> , <i>T. brizoides</i> open hummock grassland
H8	EIEgAmTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia hamersleyana</i> low open woodland over <i>E. gamophylla</i> low open mallee woodland over <i>Acacia maitlandii</i> scattered shrubs to open shrubland over <i>Triodia wiseana</i> open hummock grassland
H11	ElTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>Triodia epactia</i> very open hummock grassland
H12	ElTwTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia deserticola</i> subsp. <i>deserticola</i> low open woodland over <i>Triodia wiseana</i> , <i>T. epactia</i> open hummock grassland
H13	ElTb	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Triodia brizoides</i> open hummock grassland
H14	ChAiAbTw	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia inaequilatera</i> , <i>A. bivenosa</i> open shrubland over <i>Triodia wiseana</i> hummock grassland





- Study area
 - Disturbed area
 - Fire scar Oct/Nov 2018
- Source: NAFI, downloaded 28/11/2018



Lens G and Diesel Vegetation

Alpha-numeric Code (old)	Vegetation Code	Vegetation Type	Associated Species	Condition Ranking	Sampling Sites	Area in BS2 Study Area (ha)	Area in Lens G/ Diesel Study Area (ha)
Broad Landform: Major Drainage Lines							
D7	EcFgFbTYdPLr	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> open woodland over <i>Ficus geniculata</i> var. <i>insignis</i> , (<i>F. brachypoda</i>) low open woodland over <i>Typha domingensis</i> very open sedgeland with <i>Pluchea rubelliflora</i> scattered low shrubs.	<u>Trees:</u> <i>Brachychiton acuminatus</i> , <i>Corymbia ferriticola</i> . <u>Shrubs:</u> <i>Clerodendrum floribundum</i> var. <i>angustifolium</i> , <i>Gymnanthera cunninghamii</i> , <i>Plumbago zeylanica</i> , <i>Santalum lanceolatum</i> , <i>Stemodia grossa</i> , <i>Ventilago viminalis</i> . <u>Grasses:</u> <i>Eulalia aurea</i> . <u>Herbs:</u> <i>Alternanthera denticulata</i> , <i>Commelina ensifolia</i> , <i>Commicarpus australis</i> , <i>Pseudognaphalium luteoalbum</i> , <i>Rhodanthe manglesii</i> , <i>Wahlenbergia tumidifructa</i> .	Very Good	<u>Current Sites:</u> LDS-REL06	0.0	0.3
D8	EcGOrSsANITeTHfTe	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , (<i>E. victrix</i>) scattered trees to open woodland over <i>Gossypium robinsonii</i> , (<i>Acacia citrinoviridis</i> , <i>A. coriacea</i> subsp. <i>pendens</i> , <i>Melaleuca glomerata</i>) tall shrubland over <i>Stylobasium spathulatum</i> , <i>Androcalva luteiflora</i> shrubland over <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186), (<i>Corchorus crozophorifolius</i>) low open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	<u>Shrubs:</u> <i>Acacia bivenosa</i> (wispy/weeping form), <i>A. pyrifolia</i> , <i>Clerodendrum floribundum</i> var. <i>angustifolium</i> , <i>Dodonaea lanceolata</i> var. <i>lanceolata</i> , <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Olearia fluvialis</i> , <i>Petalostylis labicheoides</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Stemodia grossa</i> , <i>Waltheria indica</i> . <u>Grasses:</u> <i>Cymbopogon ambiguus</i> , <i>Paspalidium gracile</i> . <u>Herbs:</u> <i>Alternanthera nana</i> , <i>Rhynchosia minima</i> .	Very Good	<u>Current Sites:</u> LDS10, LDS-REL04 Mapping notes	0.0	7.6
Broad Landform: Moderate to Minor Drainage Lines							
D11	ExAcANITHfTe	<i>Eucalyptus xerothermica</i> scattered low trees over <i>Acacia citrinoviridis</i> tall shrubland to tall open scrub over <i>Androcalva luteiflora</i> , (<i>Acacia maitlandii</i>) open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	<u>Trees:</u> <i>Eucalyptus gamophylla</i> . <u>Shrubs:</u> <i>Acacia bivenosa</i> , <i>A. maitlandii</i> , <i>A. pyrifolia</i> , <i>Dodonaea lanceolata</i> var. <i>lanceolata</i> , <i>Gossypium robinsonii</i> , <i>Hibiscus sturtii</i> var. <i>campylochlamys</i> , <i>Indigofera monophylla</i> , <i>Jasminum didymum</i> subsp. <i>lineare</i> . <u>Grasses:</u> <i>Digitaria brownii</i> , <i>Enneapogon lindleyanus</i> , <i>E. robustissimus</i> , <i>Eulalia aurea</i> . <u>Herbs:</u> <i>Peripleura arida</i> , <i>Polycarpaea longiflora</i> .	Excellent	<u>Current Sites:</u> LDS08, LDS26, LDS32, LDS-REL01, LDS-REL03	0.0	300.3
D14	ChAtuGOrCOcPToTeTHfTe	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Gossypium robinsonii</i> tall open shrubland over <i>A. pyrifolia</i> open shrubland over <i>Corchorus crozophorifolius</i> , <i>Ptilotus obovatus</i> , <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186) low open shrubland over <i>Themeda triandra</i> , (* <i>Cenchrus ciliaris</i>) very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	<u>Shrubs:</u> <i>Acacia maitlandii</i> , <i>A. pruinocarpa</i> , <i>Dicladanthera forrestii</i> , <i>Clerodendrum floribundum</i> var. <i>angustifolium</i> , <i>Eremophila longifolia</i> , <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301), <i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i> . <u>Grasses:</u> <i>Cymbopogon ambiguus</i> , <i>Digitaria brownii</i> . <u>Herbs:</u> <i>Amaranthus cuspidifolius</i> , <i>Cleome viscosa</i> , <i>Haloragis gossei</i> var. <i>inflata</i> .	Very Good	<u>Current Sites:</u> B2S04, B2S07 <u>Historical Sites (Q):</u> BKM12, BR2-13	12.9	0.0

Alpha-numeric Code (old)	Vegetation Code	Vegetation Type	Associated Species	Condition Ranking	Sampling Sites	Area in BS2 Study Area (ha)	Area in Lens G/ Diesel Study Area (ha)
D15	ChAsppTHiTeTw	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia</i> spp. tall shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> , <i>T. wiseana</i> open hummock grassland.	<u>Trees:</u> <i>Eucalyptus gamophylla</i> , <i>E. xerothermica</i> . <u>Shrubs:</u> <i>Acacia atkinsiana</i> , <i>A. bivenosa</i> , <i>A. monticola</i> , <i>A. tumida</i> var. <i>pilbarensis</i> , <i>Corchorus lasiocarpus</i> subsp. <i>parvus</i> , <i>Dodonaea lanceolata</i> var. <i>lanceolata</i> , <i>Gossypium robinsonii</i> , <i>Grevillea wickhamii</i> , <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186). <u>Grasses:</u> <i>Eriachne mucronata</i> , <i>E. tenuiculmis</i> . <u>Herbs:</u> <i>Notoleptopus decaisnei</i> , <i>Trachymene oleracea</i> subsp. <i>oleracea</i> .	Very Good	<u>Current Sites:</u> B2S-REL01, B2S-REL03, B2S-REL04, B2S-REL06, BKM-R02	18.6	0.0
D16	EiChGOrApyTHiTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia hamersleyana</i> scattered low trees over <i>Gossypium robinsonii</i> , <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> open shrubland over <i>Themeda triandra</i> very open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	-	Excellent	<u>Current Sites:</u> None; recorded from mapping notes only, area burnt during field survey. <u>Historic Sites (R):</u> B2EXR41	0.0	10.1
D17	CdEgAatAeTeTw	<i>Corymbia deserticola</i> subsp. <i>deserticola</i> low open woodland over <i>Eucalyptus gamophylla</i> low open mallee woodland over <i>Acacia atkinsiana</i> , (<i>A. exigua</i>) tall open shrubland over <i>Triodia epactia</i> , <i>T. wiseana</i> hummock grassland.	<u>Shrubs:</u> <i>Acacia ayersiana</i> , <i>A. bivenosa</i> , <i>A. incurvaneura</i> , <i>Bonamia erecta</i> , <i>Hibiscus sturtii</i> var. <i>campyloclamys</i> , <i>Sida arenicola</i> , <i>S. cardiophylla</i> , <i>Solanum elatius</i> . <u>Grasses:</u> <i>Digitaria brownii</i> , <i>Eulalia aurea</i> , <i>Themeda triandra</i> .	Excellent	<u>Current Sites:</u> B2S-REL05, B2S-REL07 <u>Historical Sites (Q):</u> BKM15	62.8	0.0
D18	EiChApyAiAmTeTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia hamersleyana</i> low open woodland over <i>Acacia pyrifolia</i> , <i>A. inaequilatera</i> , <i>A. maitlandii</i> tall open shrubland over <i>Triodia epactia</i> , <i>T. wiseana</i> hummock grassland.	-	Excellent	<u>Current Sites:</u> None; recorded from mapping notes only, area burnt during field survey.	12.6	0.0
Broad Landform: Gorges and Gullies							
G2	CfAanAciPROaPToCYaTHiARb	<i>Corymbia ferritcola</i> , <i>Acacia aneura</i> woodland over <i>A. citrinoviridis</i> tall shrubland over <i>Eremophila latrobei</i> subsp. <i>latrobei</i> , <i>Santalum lanceolatum</i> , <i>Dodonaea pachyneura</i> , (<i>Gossypium robinsonii</i>) tall open shrubland over <i>Prostanthera albiflora</i> , <i>Ptilotus obovatus</i> subsp. <i>obovatus</i> , (<i>Corchorus crozophorifolius</i>) low shrubland over <i>Cymbopogon ambiguus</i> , (<i>Themeda triandra</i> , <i>Aristida burbidgeae</i>) open tussock grassland.	<u>Shrubs:</u> <i>Acacia pruinocarpa</i> , <i>Olearia xerophila</i> .	Excellent	<u>Current Sites:</u> LDS-REL08	0.0	0.8
G3	EiCfApAanDpERImTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia ferritcola</i> , <i>Acacia pruinocarpa</i> , <i>A. 'aneura'</i> low open woodland over <i>Dodonaea pachyneura</i> scattered tall shrubs over <i>Eriachne mucronata</i> open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	<u>Trees:</u> <i>Grevillea berryana</i> . <u>Shrubs:</u> <i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618), <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> , <i>Clerodendrum floribundum</i> var. <i>angustifolium</i> , <i>Ptilotus obovatus</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842). <u>Grasses:</u> <i>Aristida burbidgeae</i> , <i>Cymbopogon ambiguus</i> . <u>Herbs:</u> <i>Amaranthus undulatus</i> , <i>Cheilanthes brownii</i> , <i>Lobelia heterophylla</i> subsp. <i>pilbarensis</i> , <i>Nicotiana benthamiana</i> , <i>Rhodanthe margarethae</i> , <i>Solanum horridum</i> , <i>Trachymene oleracea</i> subsp. <i>oleracea</i> .	Excellent	<u>Current Sites:</u> LDS-REL09 <u>Historic Sites (Q):</u> BN15 <u>Historic Sites (R):</u> BR2-07, BR2-08, BR2-09, J255-J266, B2EXR65, J2R39-R38 <u>Relevés sampled in vegetation unit in close proximity to study area:</u> BNV-RJ01, BNV-RPAA and BNV-RRPB (Biota 2014); and BMF-RMJ, BMF-RMR, BMF-RMW and BMFRSPB (Biota 2016).	39.4	111.9

Alpha-numeric Code (old)	Vegetation Code	Vegetation Type	Associated Species	Condition Ranking	Sampling Sites	Area in BS2 Study Area (ha)	Area in Lens G/ Diesel Study Area (ha)
Broad Landform: Clay Plains and Stony Plains							
P1	AanApAbAeTe	Acacia 'aneura' scattered low trees to low open woodland over A. pruinocarpa scattered tall shrubs over A. bivenosa, A. exigua open shrubland over Triodia epactia hummock grassland.	<u>Shrubs:</u> Abutilon otocarpum, Acacia ayersiana, A. synchronicia, A. bivenosa, Anthobolus leptomerioides, Hibiscus burtonii, Hibiscus sturtii var. grandiflorus, H. sturtii var. platychlamys, Maireana planifolia, M. villosa, Psydrax suaveolens, Senna stricta, Sida sp. L (A.M. Ashby 4202). <u>Grasses:</u> Aristida contorta, A. inaequiglumis, A. ingrata, Digitaria brownii. <u>Herbs:</u> Haloragis gossei var. gossei.	Excellent	<u>Current Sites:</u> LDS12, LDS21, LDS36, LDS39 <u>Historical Sites (Q):</u> ENIF07, ENIF12	0.0	658.8
P2	AanCHfte	Acacia 'aneura' low open woodland to low open forest over Chrysopogon fallax scattered tussock grasses to tussock grassland over Triodia epactia open hummock grassland.	<u>Shrubs:</u> Abutilon fraseri subsp. fraseri, Anthobolus leptomerioides, Eremophila lanceolata, Grevillea berryana, Hakea lorea subsp. lorea, Maireana villosa, Maireana planifolia x villosa. <u>Grasses:</u> Aristida obscura, Bothriochloa ewartiana, Eragrostis cumingii, Perotis rara. <u>Herbs:</u> Cheilanthes sieberi subsp. sieberi, Goodenia prostrata, Ptilotus gaudichaudii, Rhodanthe floribunda.	Very Good	<u>Current Sites:</u> LDS02, LDS03, LDS04, LDS05, LDS11, LDS15 <u>Historical Sites (Q):</u> ENIF06	0.0	579.2
P14	CdEgAeAatTwTe	Corymbia deserticola subsp. deserticola scattered low trees to low open woodland over Eucalyptus gamophylla low open mallee woodland over Acacia exigua, A. atkinsiana, (A. kempeana) tall open shrubland over Triodia wiseana, T. epactia open hummock grassland.	<u>Shrubs:</u> Acacia bivenosa, A. kempeana, Hakea chordophylla, Hibiscus sturtii var. campylochlamys, Psydrax suaveolens, Ptilotus rotundifolius, Senna artemisioides subsp. oligophylla, Senna symonii, Solanum lasiophyllum. <u>Grasses:</u> Amphipogon sericeus, Eriachne pulchella. <u>Herbs:</u> Dysphania rhadinostachya subsp. rhadinostachya, Heliotropium inexplicitum, Ptilotus clementii, P. helipteroides.	Excellent	<u>Current Sites:</u> LDS01, LDS06, LDS09, LDS25, LDS27, LDS29, LDS31 <u>Historical Sites (Q):</u> ENIF05, ENIF08	0.0	3011.0
P15	EIAeAsiTw	Eucalyptus leucophloia subsp. leucophloia low open woodland over Acacia exigua, A. sibirica scattered tall shrubs to tall open shrubland over Triodia wiseana hummock grassland.	<u>Shrubs:</u> Acacia atkinsiana, A. maitlandii, Capparis spinosa subsp. nummularia, Eremophila longifolia, Maireana georgei, Senna glutinosa subsp. x luerssenii, Senna glutinosa subsp. pruinosa. <u>Grasses:</u> Eriachne aristidea.	Excellent	<u>Current Sites:</u> B2S-REL02 <u>Historical Sites (Q):</u> BN01, BN04, BKM11	54.5	0.0
P16	EIAeTw	Eucalyptus leucophloia subsp. leucophloia scattered low trees over Acacia exigua open shrubland over Triodia wiseana open hummock grassland.	<u>Shrubs:</u> Acacia adsurgens, Acacia aptaneura, Corchorus lasiocarpus subsp. parvus, Gompholobium oreophilum, Hibiscus sturtii var. campylochlamys, Ptilotus rotundifolius, Senna glutinosa subsp. x luerssenii, S. glutinosa subsp. pruinosa, S. symoni. <u>Grasses:</u> Eriachne aristidea. <u>Herbs:</u> Ptilotus clementii, Trigastrotheca molluginea.	Excellent	<u>Current Sites:</u> B2S09, B2S12, B2S13 <u>Historical Sites (Q):</u> BKM09	254.0	0.0

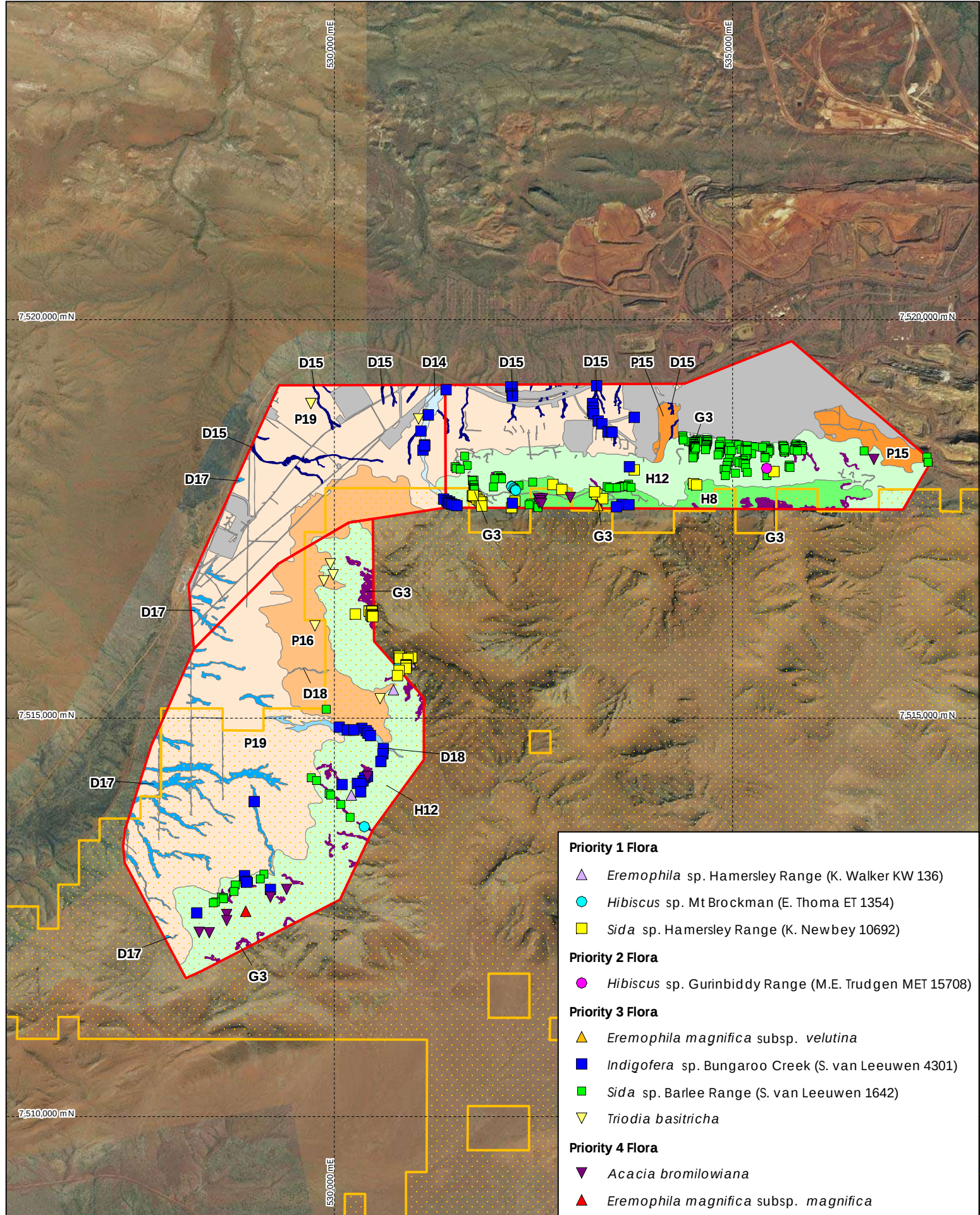
Alpha-numeric Code (old)	Vegetation Code	Vegetation Type	Associated Species	Condition Ranking	Sampling Sites	Area in BS2 Study Area (ha)	Area in Lens G/ Diesel Study Area (ha)
P19	EICdAatAeTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> , <i>Corymbia deserticola</i> subsp. <i>deserticola</i> scattered low trees with occasional <i>E. gamophylla</i> scattered low mallees over <i>Acacia atkinsiana</i> , <i>A. exigua</i> tall open shrubland over <i>Triodia wiseana</i> and/or <i>T. epactia</i> hummock grassland.	<u>Trees:</u> <i>Eucalyptus gamophylla</i> . <u>Shrubs:</u> <i>Acacia bivenosa</i> , <i>Hakea chordophylla</i> , <i>Hibiscus brachychlaenus</i> , <i>Jasminum didymum</i> subsp. <i>lineare</i> , <i>Solanum elatius</i> . <u>Grasses:</u> <i>Amphipogon sericeus</i> , <i>Aristida holathera</i> var. <i>holathera</i> , <i>Eriachne aristidea</i> , <i>Triodia basitricha</i> . <u>Herbs:</u> <i>Haloragis gossei</i> var. <i>gossei</i> , <i>Melhania oblongifolia</i> , <i>Peripleura virgata</i> , <i>Ptilotus fusiformis</i> .	Excellent	<u>Current Sites:</u> B2S02, B2S03, B2S05, B2S06 <u>Historical Sites (Q):</u> BKM13, BKM14, Br2-01, BR2-04, BR2-05, BR2-17, BRO30 <u>Historical Sites (R):</u> B2EXR53, J329, VP06	1100.1	0.0
P23	EIAbCAPuTspp	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>Acacia bivenosa</i> (wispy weeping) scattered tall shrubs over <i>Capparis umbonata</i> scattered shrubs over <i>Triodia epactia</i> open hummock grassland.	<u>Shrubs:</u> <i>Acacia exigua</i> , <i>A. kempeana</i> , <i>A. synchronicia</i> , <i>Capparis lasiantha</i> , <i>Maireana georgei</i> , <i>Sida echinocarpa</i> , <i>Solanum lasiophyllum</i> , <i>Templetonia egena</i> . <u>Herbs:</u> <i>Euphorbia boophthona</i> , <i>Streptoglossa bubakii</i> .	Excellent	<u>Current Sites:</u> LDS34, LDS35	0.0	15.5
P24	EIGsGOOsTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Grevillea saxicola</i> scattered tall shrubs over <i>Triodia wiseana</i> very open hummock grassland and <i>Goodenia stobbsiana</i> very open herbland.	<u>Shrubs:</u> <i>Goodenia stobbsiana</i> , <i>Petalostylis labicheoides</i> . <u>Grasses:</u> <i>Eriachne mucronata</i> .	Excellent	<u>Current Sites:</u> LDS38	0.0	1.9
Broad Landform: Stony Hillslopes, Hillcrests and Foothills							
H5	EIAmTwTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Acacia maitlandii</i> open shrubland over <i>Triodia wiseana</i> and/or <i>T. epactia</i> open hummock grassland.	<u>Shrubs:</u> <i>Acacia atkinsiana</i> , <i>A. adsurgens</i> , <i>A. exigua</i> , <i>Calytrix carinata</i> , <i>Dodonaea coriacea</i> , <i>Gompholobium oreophilum</i> , <i>Hakea chordophylla</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>Solanum horridum</i> <u>Grasses:</u> <i>Eriachne mucronata</i> , <i>E. pulchella</i> , <i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471) <u>Sedges:</u> <i>Fimbristylis dichotoma</i>	Excellent	<u>Current Sites:</u> LDS07, LDS13, LDS14, LDS18, LDS19, LDS20, LDS28, LDS-REL05 <u>Historical Sites (Q):</u> ENIF10, ENIF11, ENIF13, ENIF15 <u>Historical Sites (R):</u> B2EXR45	0.0	2159.4
H7	EIEgAbTwTb	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>E. gamophylla</i> low open mallee woodland over <i>Acacia bivenosa</i> scattered shrubs over <i>Triodia wiseana</i> , <i>T. brizoides</i> open hummock grassland.	<u>Trees:</u> <i>Corymbia deserticola</i> subsp. <i>deserticola</i> , <i>Eucalyptus aridimontana</i> . <u>Shrubs:</u> <i>Acacia elachantha</i> , <i>Dodonaea viscosa</i> subsp. <i>mucronata</i> , <i>Hakea chordophylla</i> . <u>Grasses:</u> <i>Cymbopogon obtectus</i> , <i>Tripogonella loliiformis</i> . <u>Herbs:</u> <i>Peripleura obovata</i> .	Excellent	<u>Current Sites:</u> LDS30 Mapping notes	0.0	3.0
H8	EIEgAmTw	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia hamersleyana</i> low open woodland over <i>E. gamophylla</i> low open mallee woodland over <i>Acacia maitlandii</i> scattered shrubs to open shrubland over <i>Triodia wiseana</i> open hummock grassland.	<u>Shrubs:</u> <i>Acacia pruinocarpa</i> , <i>A. pyrifolia</i> var. <i>pyrifolia</i> , <i>Dodonaea coriacea</i> , <i>Hakea chordophylla</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>S. glutinosa</i> subsp. <i>pruinosa</i> , <i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842), <i>Triumfetta maconochieana</i> . <u>Grasses:</u> <i>Eriachne mucronata</i> , <i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471). <u>Herbs:</u> <i>Goodenia cusackiana</i> .	Excellent	<u>Current Sites:</u> B2S11, B2S14, B2S15 <u>Historical Sites (Q):</u> BN02 <u>Historical Sites (R):</u> BNR-13, BR2-08, BR2-10	108.2	16.9

Alpha-numeric Code (old)	Vegetation Code	Vegetation Type	Associated Species	Condition Ranking	Sampling Sites	Area in BS2 Study Area (ha)	Area in Lens G/ Diesel Study Area (ha)
H11	EITe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> low open woodland over <i>Triodia epactia</i> very open hummock grassland.	<u>Shrubs:</u> <i>Dodonaea coriacea</i> , <i>Hakea chordophylla</i> , <i>Ptilotus astrolasius</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543). <u>Grasses:</u> <i>Eriachne mucronata</i> .	Excellent	None from this study area. However two sites from Caves Creek (CCS19, CCS-REL18).	0.0	19.4
H12	EITwTe	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia deserticola</i> subsp. <i>deserticola</i> low open woodland over <i>Triodia wiseana</i> , <i>T. epactia</i> open hummock grassland.	<u>Shrubs:</u> <i>Acacia ancistrocarpa</i> , <i>A. arida</i> , <i>A. bivenosa</i> , <i>Hakea chordophylla</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>S. glutinosa</i> subsp. <i>pruinosa</i> , <i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925), <i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842). <u>Grasses:</u> <i>Amphipogon sericeus</i> , <i>Eriachne ciliata</i> , <i>E. mucronata</i> <u>Herbs:</u> <i>Euphorbia careyi</i> , <i>Oldenlandia crouchiana</i>	Very Good to Excellent	<u>Current Sites:</u> B2S01, B2S08, B2S10 <u>Historical Sites (Q):</u> BN11, BR2-12, BR2-15, BR2-16; BKM06 (small gully within) <u>Historical Sites (R):</u> BNR-02, BNR-06, BNR-07, BNR-12, BNR-15, BNR-15, BNR-17, BNR-18; BKM-R01 (small gully within)	775.5	0.9
H13	EITb	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> scattered low trees over <i>Triodia brizoides</i> open hummock grassland.	<u>Trees:</u> <i>Corymbia ferritcola</i> . <u>Shrubs:</u> <i>Acacia pruinocarpa</i> , <i>Hibiscus coatesii</i> , <i>Senna glutinosa</i> subsp. <i>glutinosa</i> , <i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842). <u>Grasses:</u> <i>Cymbopogon ambiguus</i> , <i>Eriachne mucronata</i> . <u>Herbs:</u> <i>Peripleura virgata</i> , <i>Ptilotus clementii</i> , <i>Streptoglossa decurrens</i> , <i>Trachymene oleracea</i> subsp. <i>oleracea</i> .	Very Good to Excellent	<u>Current Sites:</u> LDS16, LDS17, LDS-REL02, LDS-REL07	0.0	571.7
H14	ChAiAbTw	<i>Corymbia hamersleyana</i> low open woodland over <i>Acacia inaequilatera</i> , <i>A. bivenosa</i> open shrubland over <i>Triodia wiseana</i> hummock grassland.	<u>Shrubs:</u> <i>Acacia maitlandii</i> , <i>Corchorus incanus</i> subsp. <i>incanus</i> , <i>Cullen leucochaetes</i> , <i>Indigofera rugosa</i> , <i>Ptilotus rotundifolius</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> <u>Grasses:</u> <i>Cymbopogon ambiguus</i> <u>Herbs:</u> <i>Oldenlandia crouchiana</i> , <i>Polymeria ambigua</i> , <i>P. longiflora</i> .	Excellent	<u>Current Sites:</u> LDS22, LDS23, LDS24	0.0	641.5

Appendix 9

Mapping and Locations of Flora of Conservation Significance



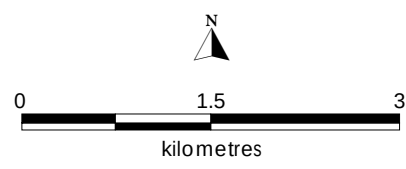


Study area

Disturbed area

Fire scar Oct/Nov 2018

Source: NAFL, downloaded 28/11/2018



Brockman Syncline 2 South West/West Extension Vegetation



Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record		WA Herbarium record	530378	7513641		1	WA Herbarium
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530814	7515701		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530815	7515678		1	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530817	7515753		27	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530817	7515756		15	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530835	7515743		10	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530928	7515748		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-CI	530931	7515740		15	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	19/10/18	OPP-B2-SC	530955	7515734		1	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	22/09/14	Opportunistic	531777	7517768	0.5	5	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	20/09/14	Opportunistic	531778	7517769	0.5	1	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	22/09/14	Opportunistic	531854	7517660	0.5	20	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	20/09/14	Opportunistic	532227	7517904	0.5	1	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	24/09/14	Opportunistic	532227	7517912	0.5	10	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	24/09/14	Opportunistic	532256	7517883	0.5	1	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	24/09/14	Opportunistic	532272	7517872	0.5	6	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	24/09/14	Opportunistic	532279	7517861	0.5	2	Astron (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	2/07/14	Opportunistic	534504	7517937	0.5	5	Astron (2014b)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	2/07/14	Opportunistic	534525	7517933	0.5	3	Astron (2014b)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	1/07/14	Opportunistic	535516	7518093	0.005	5	Astron (2014b)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Historical record	1/07/14	Releve	535425	7518134	0.005	1	Astron (2014b)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	11/07/15	Opportunistic	528273	7512559		1	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	11/07/15	Opportunistic	528874	7513022		13	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	11/07/15	Opportunistic	528895	7512952		2	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	3/05/10	Opportunistic	528901	7512941	scattered	10	Biota (2010a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	4/05/10	Quadrat	528995	7513954	scattered	20	Biota (2010a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	11/07/15	Opportunistic	529201	7512852		5	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530063	7514886		9	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530100	7514166		1	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530162	7514853		8	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530245	7514851		10	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530289	7514184		1	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	15/03/19	OPP-B2-TB	530333	7514074		50	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530333	7514178		2	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530345	7514875		6	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530362	7514215		4	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530384	7514251		1	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530402	7514845		14	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530418	7514270		4	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530425	7514813		3	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530456	7514781		2	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530584	7514454		6	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530609	7514555		1	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	10/07/15	Opportunistic	530617	7514620		2	Rio Tinto (2015)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	2/05/10	Quadrat	531087	7518600	scattered	20	Biota (2010a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	17/10/18	OPP-B2-BrM	531112	7518362		10	Biota (current survey, P1)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	4/05/10	Opportunistic	531132	7518428	scattered	20	Biota (2010a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	17/10/18	B2S04	531134	7518420	0.5	26	Biota (current survey, P1)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	16/03/19	B2S04R	531134	7518420	0.5	26	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	18/10/18	B2S07	531179	7518807	0.5	41	Biota (current survey, P1)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	16/03/19	B2S07R	531179	7518807	0.5	41	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531372	7517746	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531402	7519121	0.5	5	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531415	7517726	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531427	7517706	0.5	6	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531446	7517695	0.5	3	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531448	7517711	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531477	7517688	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531508	7517679	0.5	2	Astron (2014a)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	531543	7517668	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	532218	7519157	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	532234	7519062	0.5	5	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	532236	7519039	0.5	5	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	532236	7519158	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	532237	7519042	0.5	3	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	24/09/14	Opportunistic	532238	7517695	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	533240	7518853	1	10	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	533245	7518947	0.5	10	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	533255	7518897	1	8	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	19/09/14	Opportunistic	533259	7518818	0.5	3	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533293	7519171	0.5	3	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533313	7518728	1	8	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533359	7518691	0.5	3	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533436	7518594	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533472	7518592	0.5	2	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533487	7518587	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	20/09/14	Opportunistic	533542	7517650	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	20/09/14	Opportunistic	533611	7517683	0.5	5	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	20/09/14	Opportunistic	533701	7517676	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533707	7518157	0.5	1	Astron (2014a)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Historical record	22/09/14	Opportunistic	533765	7518774	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	11/07/15	Opportunistic	528273	7512559		8	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528481	7512684		5	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528508	7512693		1	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528583	7512756		4	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528608	7512733		2	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528608	7512750		5	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528742	7512824		6	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528759	7512907		4	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528877	7512974		1	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528880	7512972		4	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528893	7512962		3	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/05/10	Opportunistic	528901	7512941	scattered	10	Biota (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	528922	7512951		4	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	529070	7512985		1	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/04/10	Opportunistic	529117	7513044		2	Rio Tinto (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	529711	7514254		2	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	529780	7514218		14	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	529900	7515113		5	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	529935	7514057		10	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	529955	7514035		8	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	10/07/15	Opportunistic	530085	7513916		10	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	18/10/18	OPP-B2-PL	530198	7513757		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531517	7518153	0.5	4	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531531	7518135	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531581	7518124	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531635	7518289	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531669	7518171	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531736	7517980	0.5	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531737	7517927	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531746	7517802	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531749	7517895	0.5	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	531752	7517881	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531755	7517987	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531756	7517927	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531757	7517868	0.5	4	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531758	7517889	1	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	531999	7517900	0.5	3	Astron (2014a)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532011	7518000	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532057	7518042	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532083	7518022	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532093	7518013	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532100	7518001	2	20	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	24/09/14	Opportunistic	532252	7517893	0.5	6	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	24/09/14	Opportunistic	532259	7517887	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532320	7517923	1	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	24/09/14	Opportunistic	532447	7517679	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532465	7517696	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532493	7517961	0.5	8	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	532505	7517697	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	24/09/14	Opportunistic	532555	7517642	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	24/09/14	Opportunistic	532556	7517662	0.5	7	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533427	7517908	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533451	7517889	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533474	7517890	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533502	7517890	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533541	7517890	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	20/09/14	Opportunistic	533573	7517662	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533583	7517900	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533604	7517904	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533621	7517913	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533634	7517914	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533639	7517914	0.5	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533656	7517910	1	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533676	7517917	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533695	7517937	0.5	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	22/09/14	Opportunistic	533723	7517896	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534375	7518517		15	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534376	7518539		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534381	7518491		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534447	7518471		6	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534501	7518353		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534502	7518264		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534507	7517942		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534509	7518330		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534509	7518344		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534509	7518366		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534509	7518441		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534509	7518451		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534509	7518466		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534511	7518377		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534513	7518445		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534514	7518416		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534515	7518290		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534516	7518409		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534518	7518347		4	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534518	7518367		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534518	7518411		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534519	7518360		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534520	7518422		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534522	7518306		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534522	7518477		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534526	7518372		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534526	7518404		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534526	7518416		4	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534528	7518467		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534533	7517925		4	Astron (2014b)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534533	7518388		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534534	7518397		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534534	7518472		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534538	7518479		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534549	7518481		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534555	7518493		7	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534556	7518476		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534658	7518386		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534660	7518368		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534661	7518372		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534666	7518404		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534670	7518441		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534671	7518425		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534672	7518494		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534673	7518434		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534678	7518490		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534679	7518472		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	3/07/14	Opportunistic	534683	7518466		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534689	7518492		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534819	7518303		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534830	7518328		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534831	7518332		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534835	7518431		1	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534836	7518342		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534839	7518337		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534840	7518408		4	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534842	7518373		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Releve	534842	7518395	0.01	3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534843	7518372		4	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534843	7518377		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534848	7518396		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534849	7518415		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534850	7518384		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534850	7518429		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534851	7518475		3	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534891	7518122		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534910	7518042		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534918	7518120		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534931	7518169		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534941	7518210		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534943	7518440		3	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534953	7518358		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	534962	7518272		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534963	7518404		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534967	7518314		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534969	7518347		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534975	7518346		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	534983	7518357		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535029	7518441		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535037	7518073		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535046	7518432		4	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535054	7518227		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535077	7518427		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535081	7518207		4	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535106	7518373		3	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535130	7518201		4	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535131	7518238		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535151	7518329		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535154	7518360		3	Rio Tinto (2010b)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535157	7518415		15	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535158	7518183		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535161	7518196		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535161	7518287		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535165	7518143		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535165	7518393		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535166	7518367		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Releve	535169	7518307	0.005	2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535171	7518367		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535171	7518371		15	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535172	7518377		8	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535176	7518303		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535176	7518332		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535176	7518397		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535178	7518342		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535182	7518086		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	2/07/14	Opportunistic	535182	7518318		6	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535182	7518358		4	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535183	7518371		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535183	7518417		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535186	7518321		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535241	7518319		1	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535251	7518407		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535284	7518403		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535377	7518396		1	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535405	7518266		3	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535405	7518276		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535408	7518340		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535409	7518315		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535413	7518421		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Releve	535425	7518134	0.005	2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535429	7518341		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535432	7518380		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535433	7518041		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535433	7518117		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535437	7518370		10	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535441	7518104		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535441	7518323		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535451	7518346		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535454	7518369		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535456	7518388		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535465	7518357		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535631	7518423		2	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/04/10	Opportunistic	535633	7518410		5	Rio Tinto (2010b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535642	7518356		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Quadrat	535644	7518385	0.005	2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535646	7518345		20	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535646	7518411		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535649	7518338		7	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535655	7518377		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535656	7518345		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535656	7518346		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535705	7518155		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535710	7518173		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535720	7518145		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535772	7518363		4	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535777	7518372		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535784	7518415		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535785	7518381		5	Astron (2014b)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535791	7518402		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535795	7518364		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535799	7518439		5	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535808	7518379		10	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Releve	535811	7518352	0.01	3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	1/07/14	Opportunistic	535842	7518420		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535856	7518423		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535869	7518405		3	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535873	7518408		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535876	7518357		2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	30/06/14	Opportunistic	535880	7518385		7	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	29/06/14	Releve	536651	7518355	0.005	2	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record		Opportunistic	537436	7518275	scattered	10	Biota (2010a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record		Opportunistic	537456	7518209	scattered	10	Biota (2010a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530264	7516308		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530439	7516342		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530440	7516344		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530440	7516345		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530441	7516345		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530452	7516348		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530461	7516296		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530463	7516300		2	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530472	7516339		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530473	7516278		3	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530473	7516287		2	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530473	7516340		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530474	7516341		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530475	7516340		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530476	7516339		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530483	7516274		6	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	3/06/11	Opportunistic	530483	7516283		1	Rio Tinto (2011)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530793	7515535		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530813	7515779		25	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530815	7515602		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530817	7515753		45	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-SC	530899	7515672		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-SC	530900	7515657		14	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-SC	530903	7515624		6	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530912	7515666		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-CI	530928	7515748		20	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	19/10/18	OPP-B2-SC	530973	7515763		15	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531733	7517789	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	531743	7517788	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	531746	7517796	0.5	3	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531750	7517783	0.5	5	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	531752	7517789	1	7	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	531761	7517782	2	20	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531781	7517772	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531797	7517746	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531819	7517731	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531836	7517714	1	20	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531849	7517663	0.5	4	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	531850	7517706	0.5	10	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	24/09/14	Opportunistic	532227	7517642	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	24/09/14	Opportunistic	532268	7517721	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	532747	7517933	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	532854	7517868	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	533267	7517838	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	533271	7517837	0.5	1	Astron (2014a)

Records from BS2. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	533295	7517809	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	20/09/14	Opportunistic	533367	7517753	0.5	2	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	22/09/14	Opportunistic	533768	7518112	0.5	1	Astron (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	2/07/14	Opportunistic	534512	7517939		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	2/07/14	Opportunistic	534546	7517925		1	Astron (2014b)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/07/14	Opportunistic	535516	7518093	0.005	2	Astron (2014b)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	B2S03	529707	7518946	2	100	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	16/03/19	B2S03R	529707	7518946	2		Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	18/10/18	OPP-B2-PL	529759	7516157		200	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	18/10/18	OPP-B2-PL	529867	7516723		100	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	18/10/18	OPP-B2-PL	529951	7516938		2000	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	18/10/18	OPP-B2-PL	529985	7516798		400	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	19/10/18	OPP-B2-SC	530574	7515244		100	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	16/03/19	OPP-B2-SC	531059	7518755		200	Biota (current survey, P2)
P3	Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Historical record	22/09/14	Opportunistic	533308	7517666	0.5	1	Astron (2014a)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Historical record	10/07/15	Opportunistic	530214	7514035		50	Rio Tinto (2015)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Current survey	19/10/18	OPP-B2-CI	530745	7515358		1	Biota (current survey, P1)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Current survey	19/10/18	OPP-B2-SC	530899	7515672		19	Biota (current survey, P1)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Current survey	19/10/18	OPP-B2-CI	530912	7515666		15	Biota (current survey, P1)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Current survey	19/10/18	OPP-B2-SC	530948	7515719		12	Biota (current survey, P1)
P3	Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	Current survey	19/10/18	OPP-B2-SC	530956	7515694		8	Biota (current survey, P1)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	528306	7512312		4	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	528431	7512306		10	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	528648	7512535		25	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	528649	7512460		3	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	529201	7512755		6	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	11/07/15	Opportunistic	529403	7512852		12	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	10/07/15	Opportunistic	530418	7514270		9	Rio Tinto (2015)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	20/09/14	Opportunistic	532563	7517753	10	30	Astron (2014a)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	20/09/14	Opportunistic	532574	7517695	10	10	Astron (2014a)
P4	Fabaceae	<i>Acacia bromilowiana</i>	Historical record	20/09/14	Opportunistic	532582	7517727	20	50	Astron (2014a)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510720		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542561	7510712		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542576	7510696		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542587	7510667		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542593	7510383		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542609	7510377		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542594	7510361		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542646	7510348		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542638	7510263		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542655	7510207		1	Rio Tinto (2016)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542597	7510196		29	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542619	7510142		6	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542608	7510137		15	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542622	7510132		34	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542621	7510130		2	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542629	7510101		5	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542638	7510091		9	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542638	7510091		4	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542629	7510082		2	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542628	7510066		6	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542635	7510065		4	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542635	7510050		3	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/04/18	Opportunistic	542634	7510047		2	Rio Tinto (2018)
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Current survey	18/03/19	OPP-LG-SC	542647	7510359		10	Biota (current survey, P2)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547035	7518301		10	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547035	7518301		10	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547035	7518301		10	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547005	7518294		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547005	7518294		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547005	7518294		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547030	7518293		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547030	7518293		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547030	7518293		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547014	7518286		4	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547014	7518286		4	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547014	7518286		4	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547226	7518282		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547226	7518282		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547226	7518282		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547045	7518281		3	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547045	7518281		3	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547045	7518281		3	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546946	7518280		5	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546946	7518280		5	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546946	7518280		5	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547008	7518279		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547008	7518279		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547008	7518279		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547033	7518278		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547033	7518278		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547033	7518278		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547180	7518276		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547180	7518276		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547180	7518276		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547240	7518274		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547240	7518274		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547240	7518274		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547189	7518273		6	Rio Tinto (2014)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetratheca butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547189	7518273		6	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547189	7518273		6	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547223	7518273		6	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547223	7518273		6	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547223	7518273		6	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547205	7518272		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547205	7518272		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547205	7518272		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547047	7518271		1	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547047	7518271		1	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547047	7518271		1	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546956	7518270		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546956	7518270		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546956	7518270		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546956	7518264		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546956	7518264		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546956	7518264		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546984	7518263		3	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546984	7518263		3	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546984	7518263		3	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546976	7518259		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546976	7518259		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546976	7518259		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	547069	7518258		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547069	7518258		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	547069	7518258		2	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546947	7518255		4	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546947	7518255		4	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546947	7518255		4	Eco Logical (2014a)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	23/04/13	Opportunistic	546963	7518252		2	Rio Tinto (2014)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546963	7518252		2	Eco Logical (2014c)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Historical record	5/06/13	Opportunistic	546963	7518252		2	Eco Logical (2014a)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	18/10/18	OPP-LG-SC	547134	7512445		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	18/10/18	OPP-LG-SC	547167	7512433		25	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	15/10/18	OPP-LG-PL	543919	7512419		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543149	7512378		14	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543028	7512302		60	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	542856	7512293		9	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	542895	7512289		9	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543121	7512272		1	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	542912	7512264		3	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543038	7512260		8	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	542965	7512257		15	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543127	7512255		4	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	543187	7512254		2	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	18/10/18	OPP-LG-SC	546985	7511897		30	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	18/10/18	OPP-LG-SC	546957	7511876		50	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-TB	542813	7511548		2	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-PL	538461	7504412		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-PL	538392	7504396		5	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-PL	538485	7504378		8	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-PL	538405	7504369		7	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-SC	540177	7503502		20	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-SC	540092	7503446		6	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-PL	542632	7513444		18	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	15/10/18	OPP-LG-PL	543858	7512839		10	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-MM	542768	7511526		10	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	17/10/18	OPP-LG-MM	542871	7511461		15	Biota (current survey, P1)
P1	Malvaceae	<i>Hibiscus</i> sp. Mt Brockman (E. Thoma ET 1354)	Current survey	16/10/18	OPP-LG-SC	539692	7503234		75	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Historical record	14/04/18	Opportunistic	542635	7510050		12	Rio Tinto (2018)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	18/03/19	OPP-LG-SC	542437	7510282		18	Biota (current survey, P2)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	18/03/19	OPP-LG-SC	542672	7510369		7	Biota (current survey, P2)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	19/03/19	OPP-LG-BRM	547448	7513207		2	Biota (current survey, P2)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	19/03/19	OPP-LG-BRM	547674	7513054		20	Biota (current survey, P2)
P2	Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	19/03/19	OPP-LG-BRM	547688	7513045		10	Biota (current survey, P2)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	16/10/18	OPP-LG-PL	543149	7512378		6	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	16/10/18	OPP-LG-PL	543127	7512255		20	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	16/10/18	OPP-LG-PL	543241	7512157		30	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	16/10/18	OPP-LG-PL	540290	7505631		3	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	16/10/18	OPP-LG-PL	540235	7505560		5	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	17/10/18	OPP-LG-PL	538615	7504397		2	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	17/10/18	OPP-LG-PL	538524	7504396		2	Biota (current survey, P1)
P2	Malvaceae	<i>Hibiscus</i> aff. sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	Current survey	17/10/18	OPP-LG-PL	538368	7504382		1	Biota (current survey, P1)
P2	Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	Current survey	15/10/18	OPP-LG-PL	548273	7516865		1	Biota (current survey, P1)
P2	Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	Historical record	2/08/15	Opportunistic	538124	7504193		20	Biota (2016)
P2	Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	Historical record	2/08/15	Opportunistic	538110	7504185		30	Biota (2016)
P3	Apocynaceae	<i>Gymnanthera cunninghamii</i>	Current survey	17/03/19	LDS-REL06	540189	7503491	0.1	6	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/10/18	LDS15	548807	7519878	0.1	1	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/10/18	LDS04	547981	7519634	0.1	1	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	15/10/18	LDS02	549132	7519196	0.1	2	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	15/10/18	LDS12	551343	7517123	0.1	1	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	550079	7516360		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549925	7516278		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549804	7516240		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549748	7516222		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549751	7516156		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549764	7516109		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	15/10/18	LDS03	550031	7516071	0.1	1	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549974	7515913		1	Rio Tinto (2018)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record	13/04/18	Opportunistic	549972	7515909		1	Rio Tinto (2018)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/10/18	LDS05	549174	7515451	0.1	2	Biota (current survey, P1)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Historical record		Opportunistic	550430	7514834		1	Rio Tinto (2010)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	19/03/19	OPP-LG-BRM	547684	7513048		3	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/03/19	LDS04R	547981.3	7519633.5	0.1	1	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/03/19	LDS15R	548806.5	7519878.3	0.1	1	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	16/03/19	LDS02R	549132.3	7519195.5	0.1	2	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	17/03/19	LDS05R	549174	7515451.3	0.1	2	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	17/03/19	LDS03R	550030.5	7516071	0.1		Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	17/03/19	OPP-LG-SC	550083	7515927		1	Biota (current survey, P2)
P3	Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	Current survey	17/03/19	LDS12R	551342.8	7517122	0.1	3	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	16/10/18	LDS10	548874	7512416	0.1	14	Biota (current survey, P1)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	18/03/19	LDS32	548106.5	7512955	0.1	14	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	18/03/19	OPP-LG-TB	548127	7512837		1	Biota (current survey, P2)
P3	Fabaceae	<i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301)	Current survey	18/03/19	LDS10R	548873.8	7512415.5	0.1	17	Biota (current survey, P2)
P3	Goodeniaceae	<i>Dampiera anonyma</i>	Current survey	16/10/18	OPP-LG-PL	542965	7512257		60	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546981	7518622		5	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546981	7518622		5	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546981	7518622		5	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546934	7518598		3	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546935	7518598		3	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546935	7518598		3	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546922	7518562	0-2%	1	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546922	7518562	0-2%	1	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Releve	546922	7518562		1	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546924	7518554		5	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546924	7518554		5	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546924	7518554		5	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546885	7518489		8	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546885	7518489		8	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	546885	7518489		8	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547088	7518192		22	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547088	7518192		22	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547088	7518192		22	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547084	7518187		2	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547084	7518187		2	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547084	7518187		2	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	15/10/18	OPP-LG-MM	547584	7518101		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547218	7518079		17	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547218	7518079		17	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547675	7518054		6	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547675	7518054		6	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547675	7518054		6	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547672	7518043	0-2%	1	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547672	7518043		1	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Releve	547672	7518043		1	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	15/10/18	OPP-LG-MM	547522	7518006		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547950	7517912		5	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547951	7517912		5	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547951	7517912		5	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547567	7517902		4	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547567	7517902		4	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547567	7517902		4	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547934	7517886		16	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547934	7517886		16	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	547934	7517886		16	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	548018	7517842		2	Eco Logical (2014b)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	548018	7517842		2	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	5/06/13	Opportunistic	548018	7517842		2	Eco Logical (2014a)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetradleca butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543241	7512142		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542363	7513390		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542676	7512800		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542310	7512696		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542589	7512695		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	15/10/18	OPP-LG-PL	543936	7512478		8	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542726	7512390		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543159	7512380		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543028	7512302		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543168	7512287		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543121	7512272		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	542912	7512264		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543038	7512260		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543187	7512254		30	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543203	7512222		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543241	7512157		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543256	7512088		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543206	7512067		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543084	7512016		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	16/10/18	OPP-LG-PL	543033	7511996		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542681	7511784		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	543051	7511554		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542820	7511551		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	543101	7511491		5	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	543080	7511487		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542962	7511461		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542962	7511461		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542978	7511459		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542992	7511454		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542952	7511430		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542994	7511424		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	542991	7511396		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/07/15	Opportunistic	543015	7510777		4	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/07/15	Opportunistic	542719	7510548		6	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Historical record	14/07/15	Opportunistic	542667	7510317		10	Rio Tinto (2015)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-PL	540238	7506921		13	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-TB	542835	7511492		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	542880	7511427		2	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	542887	7511416		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	17/10/18	OPP-LG-MM	542896	7511406		4	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-PL	543105	7512306		25	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547293	7513434		20	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547337	7513296		2	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547346	7513387	25+.		Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547354	7513359		5	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547356	7513323		2	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547370	7513274		10	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547375	7513327		5	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547381	7513296		1	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547402	7513245		7	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547414	7513222		10	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547424	7513256		20	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547432	7513270		20	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547442	7513196		5	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547448	7513207		3	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547459	7513227		5	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547480	7513168		15	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547493	7513184		3	Biota (current survey, P2)

Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetralochea butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547528	7513112		20	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547550	7513091		20	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547577	7513129		5	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547579	7513072		3	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-BRM	547639	7513050		2	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	Current survey	19/03/19	OPP-LG-RM	547666	7513045		2	Biota (current survey, P2)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546963	7518252		1	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546963	7518252		1	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546984	7518251		5	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546984	7518251		5	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546997	7518250		8	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546997	7518250		8	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546968	7518247		3	Eco Logical (2014c)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	5/06/13	Opportunistic	546968	7518247		3	Eco Logical (2014a)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548369	7518080		7	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548273	7516865		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548318	7516845		15	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548335	7516840		20	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548344	7516823		6	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548427	7516749		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548440	7516720		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548483	7516700		5	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548484	7516677		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548500	7516660		1	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	15/10/18	OPP-LG-PL	548519	7516646		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		539250	7504501		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		539020	7504425		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		538984	7504417		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		538947	7504413		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538461	7504412		40	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538294	7504408		3	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		539053	7504408		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538493	7504399		10	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538392	7504396		30	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538524	7504396		6	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		538873	7504383		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538485	7504378		12	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538405	7504369		25	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Current survey	17/10/18	OPP-LG-PL	538352	7504363		25	Biota (current survey, P1)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	1/06/08		538856	7504362		1	Rio Tinto (2008)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	2/08/15	Opportunistic	538077	7504195		3	Biota (2016)
P3	Malvaceae	<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Historical record	2/08/15	Opportunistic	538097	7504191		2	Biota (2016)
P3	Poaceae	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	Current survey	15/10/18	LDS11	549842	7517450	0.5	30	Biota (current survey, P1)
P3	Poaceae	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	Current survey	17/03/19	LDS11R	549841.8	7517450.3	0.5		Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	LDS29	542897	7507114	1	200	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	16/10/18	OPP-LG-SC	542529	7506382		200	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	OPP-LG-MM	541989	7506130		200	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	OPP-LG-MM	541996	7506016		20	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540624	7505705		120	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	OPP-LG-MM	541487	7505408		20	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	OPP-LG-MM	541374	7505266		40	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	17/10/18	OPP-LG-MM	541310	7505206		20	Biota (current survey, P1)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540651	7504682		20	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540660	7504659		40	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540643	7504651		20	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540616	7504630		40	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540697	7504622		120	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540637	7504617		40	Rio Tinto (2018)

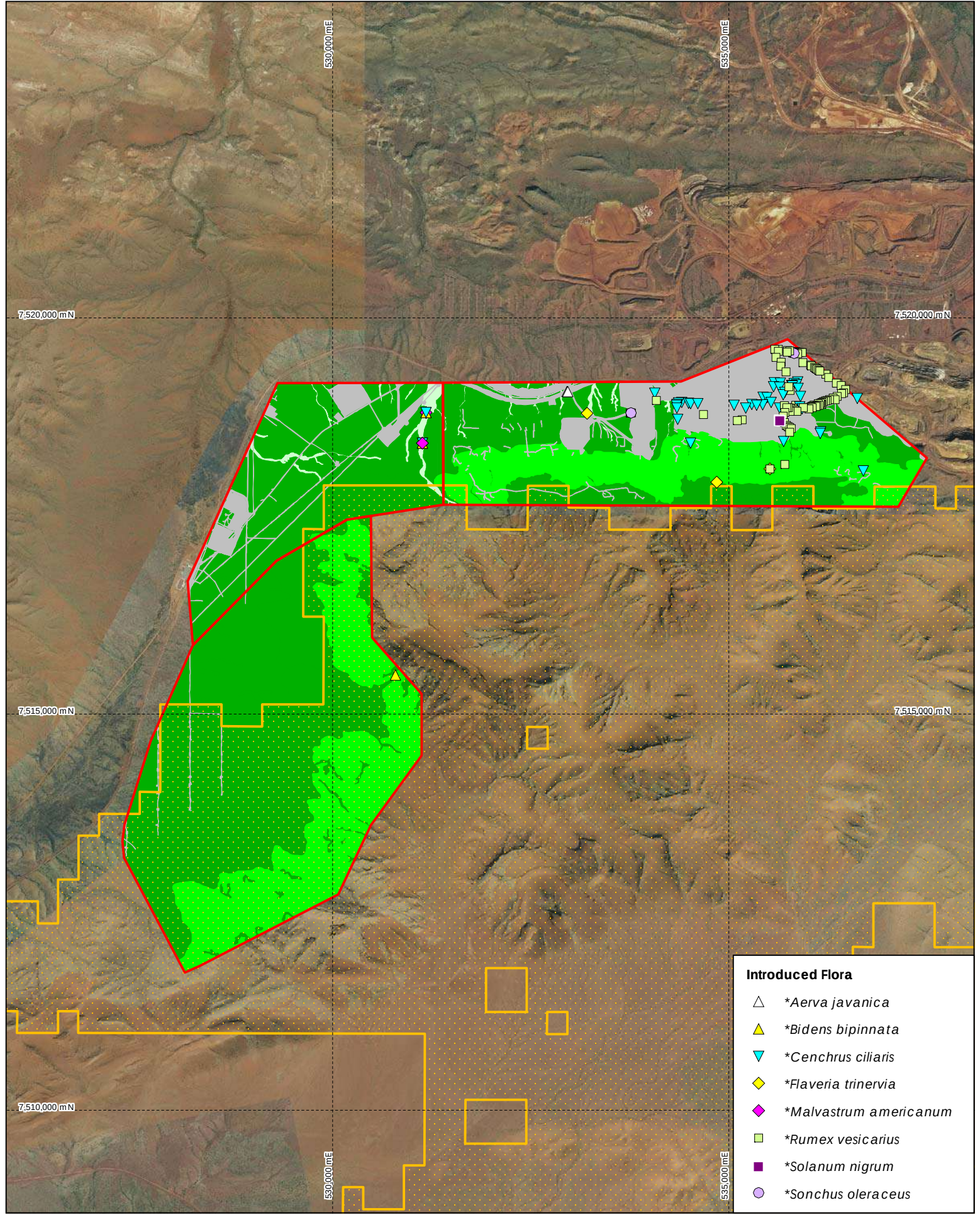
Records from Lens G/Diesel. NB. Records shaded grey are outside current study area; records shaded blue are duplicate records at same location (not included in counts).

Status	Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	Number of Individuals	Source
P1	Elaeocarpaceae	<i>Tetratheca butcheriana</i>	Historical record	14/07/15	Opportunistic	542548	7510722		1	Rio Tinto (2016)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540673	7504599		40	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540702	7504594		180	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Historical record	17/04/18	Opportunistic	540689	7504564		25	Rio Tinto (2018)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	19/03/19	OPP-LG-RM	542177	7506514		200	Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	19/03/19	OPP-LG-RM	542343	7506450		500	Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	19/03/19	OPP-LG-RM	542350	7506609		20	Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	19/03/19	OPP-LG-RM	542493	7506470		1000	Biota (current survey, P2)
P3	Poaceae	<i>Triodia basitricha</i>	Current survey	18/03/19	LDS29R	542897	7507114	1	200	Biota (current survey, P2)
P3	Proteaceae	<i>Grevillea saxicola</i>	Current survey	18/03/19	OPP-LG-PL	547225	7511532		4	Biota (current survey, P2)
P3	Proteaceae	<i>Grevillea saxicola</i>	Current survey	18/03/19	OPP-LG-PL	548098	7512603		9	Biota (current survey, P2)
P3	Proteaceae	<i>Grevillea saxicola</i>	Current survey	18/03/19	OPP-LG-PL	548198	7513117		8	Biota (current survey, P2)

Appendix 10

Mapping of Vegetation Condition and Locations of Introduced Flora (Weeds)



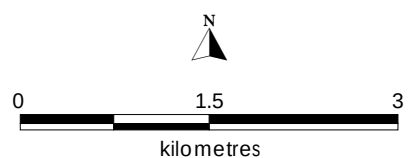


- Introduced Flora**
- △ **Aerva javanica*
 - ▲ **Bidens bipinnata*
 - ▼ **Cenchrus ciliaris*
 - ◆ **Flaveria trinervia*
 - ◆ **Malvastrum americanum*
 - **Rumex vesicarius*
 - **Solanum nigrum*
 - **Sonchus oleraceus*



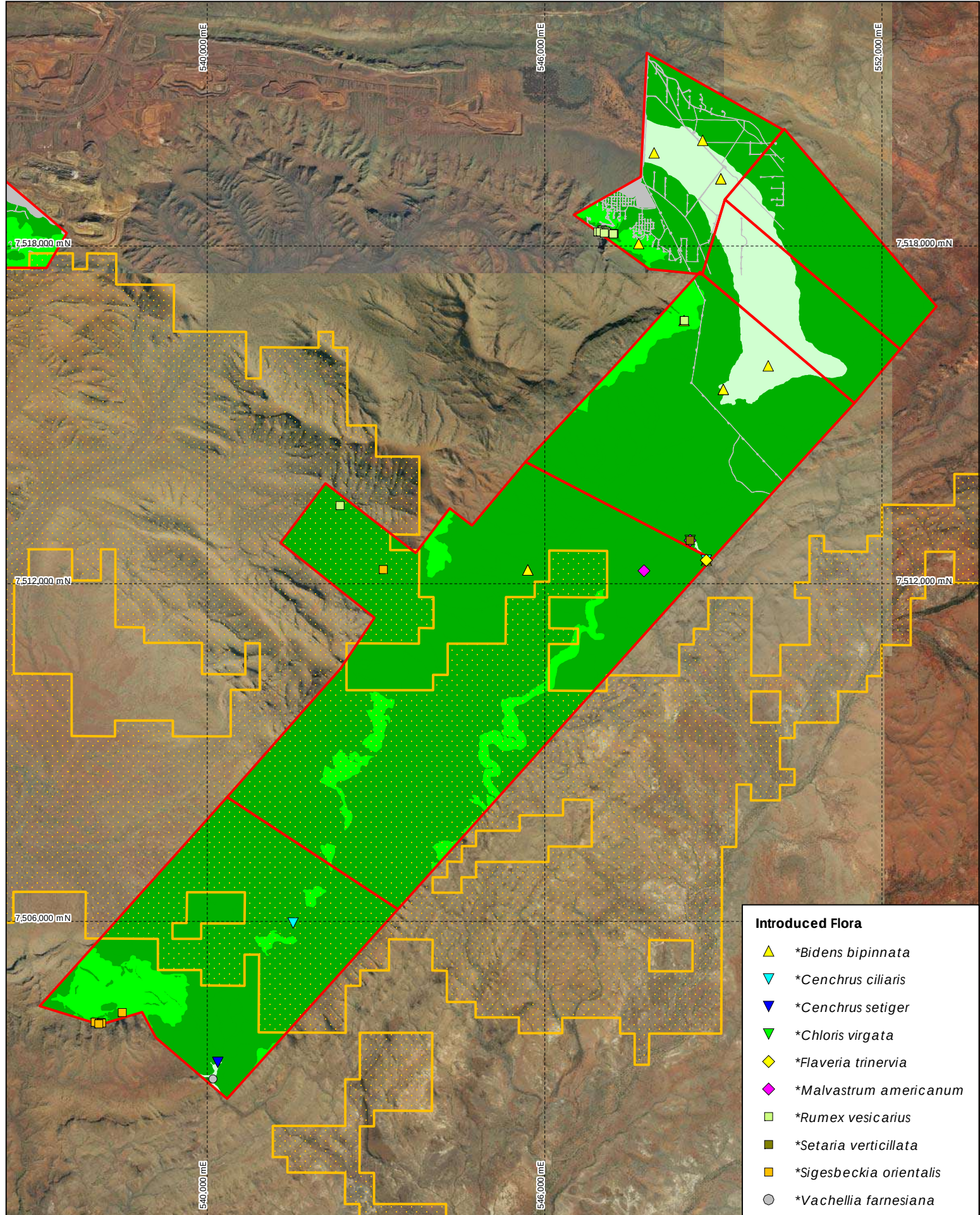
- Vegetation Condition**
- Excellent
 - Very Good to Excellent
 - Very Good
 - Completely Degraded

Fire scar Oct/Nov 2018
Source: NAFI, downloaded 28/11/2018



**Brockman Syncline 2
South West/West Extension
Vegetation Condition**

Biota
Environmental
Sciences

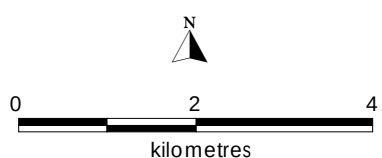


- Introduced Flora**
- ▲ **Bidens bipinnata*
 - ▼ **Cenchrus ciliaris*
 - ▼ **Cenchrus setiger*
 - ▼ **Chloris virgata*
 - ◆ **Flaveria trinervia*
 - ◆ **Malvastrum americanum*
 - **Rumex vesicarius*
 - **Setaria verticillata*
 - **Sigesbeckia orientalis*
 - **Vachellia farnesiana*

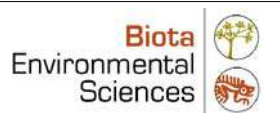


- Vegetation Condition**
- Excellent
 - Very Good to Excellent
 - Very Good
 - Completely Degraded

Fire scar Oct/Nov 2018
Source: NAFL, downloaded 28/11/2018



Lens G and Diesel Vegetation Condition



Records from BS2. NB. Records shaded blue are duplicate historical records at same location (not included in counts).

Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	No. of Individuals	Source
Amaranthaceae	* <i>Aerva javanica</i>	Historical record	8/05/16	Opportunistic	532966	7519068	1	1	Astron (2016)
Amaranthaceae	* <i>Aerva javanica</i>	Historical record	7/06/17	Opportunistic	532960	7519070	1	5	Astron (2017)
Asteraceae	* <i>Bidens bipinnata</i>	Current Suvey	19/10/18	OPP-B2-SC	530793	7515495		2	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Suvey	16/03/19	B2S04R	531134	7518419.5	0.1	100	Biota (current survey, P2)
Asteraceae	* <i>Bidens bipinnata</i>	Current Suvey	17/10/18	B2S04	531134	7518420	0.1	250	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Suvey	18/10/18	B2S07	531179	7518807	0.1	200	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Suvey	16/03/19	B2S07R	531179	7518807.3	0.1	200	Biota (current survey, P2)
Asteraceae	* <i>Flaveria trinervia</i>	Historical record	2/07/14	Opportunistic	534850	7517925	0.5	1	Astron (2014b)
Asteraceae	* <i>Flaveria trinervia</i>	Historical record	1/07/14	Opportunistic	535516	7518093	0.5	1	Astron (2014b)
Asteraceae	* <i>Flaveria trinervia</i>	Historical record			533210	7518796		1	HGM (1998)
Asteraceae	* <i>Sonchus oleraceus</i>	Historical record	7/09/16	Opportunistic	533766	7518799	1	10	Astron (2016)
Asteraceae	* <i>Sonchus oleraceus</i>	Historical record	28/08/16	Opportunistic	535822	7519552	1	10	Astron (2016)
Malvaceae	* <i>Malvastrum americanum</i>	Current Suvey	16/03/19	B2S04R	531134	7518419.5	0.1	4	Biota (current survey, P2)
Malvaceae	* <i>Malvastrum americanum</i>	Current Suvey	17/10/18	B2S04	531134	7518420	0.1	4	Biota (current survey, P1)
Malvaceae	* <i>Malvastrum americanum</i>	Current Suvey	18/10/18	B2S07	531179	7518807	0.1	5	Biota (current survey, P1)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	29/06/14	Quadrat	536697	7518069	0.5	1	Astron (2014b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	3/07/14	Opportunistic	534520	7518417	0.5	6	Astron (2014b)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Suvey	16/03/19	B2S04R	531134	7518419.5	0.5	20	Biota (current survey, P2)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Suvey	17/10/18	B2S04	531134	7518420	0.5	20	Biota (current survey, P1)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535689	7518439		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	29/06/14	Opportunistic	536153	7518543	0.5	1	Astron (2014b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	29/06/14	Opportunistic	536158	7518563	0.5	1	Astron (2014b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534353	7518719		10	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Suvey	18/10/18	B2S07	531179	7518807	0.5	100	Biota (current survey, P1)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Suvey	16/03/19	B2S07R	531179	7518807.3	0.5	20	Biota (current survey, P2)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535803	7518843		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535923	7518849		30	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534344	7518859		10	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535642	7518859		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535214	7518860		30	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535892	7518875		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535349	7518894		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534340	7518895		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535066	7518897		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535429	7518900		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534344	7518907		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535290	7518909		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534518	7518918		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534609	7518918		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534493	7518922		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534365	7518926		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	534405	7518930		60	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535536	7518934		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	2/05/10	Opportunistic	536621	7518981		70	Biota (2010a)

Records from BS2. NB. Records shaded blue are duplicate historical records at same location (not included in counts).

Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	No. of Individuals	Source
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535483	7518992		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535430	7519000		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535904	7519007		10	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535684	7519029		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	24/09/14	Opportunistic	534065	7519047	20	250	Astron (2014a)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535704	7519058		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535872	7519112		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535783	7519115		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535638	7519127		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535564	7519131		5	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535801	7519142		20	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535794	7519144		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535855	7519158		50	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535822	7519171		10	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535651	7519177		1	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535575	7519179		10	Rio Tinto (2010b)
Poaceae	* <i>Cenchrus ciliaris</i>	Historical record	14/04/10	Opportunistic	535869	7519193		10	Rio Tinto (2010b)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	1/07/14	Opportunistic	535516	7518093	0.5	1	Astron (2014b)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	1/07/14	Opportunistic	535708	7518148	0.5	8	Astron (2014b)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535768	7518555	5	70	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535785	7518603	10	200	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535765	7518616	10	150	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535748	7518626	10	150	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535728	7518644	1	40	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535702	7518678	1	30	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535106	7518701	1	1	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535662	7518711	5	120	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535169	7518715	1	5	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535687	7518758	1	15	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	534681	7518782	1	1	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	7/09/16	Opportunistic	533758	7518799	1	15	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	7/09/16	Opportunistic	533773	7518802	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535705	7518804	1	30	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535774	7518818	1	5	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535860	7518821	1	40	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535826	7518833	1	2	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535817	7518834	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	536009	7518850	1	15	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535784	7518857	1	2	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535807	7518859	1	5	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535775	7518862	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535751	7518865	1	3	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	535942	7518865	1	1	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	2/07/16	Opportunistic	536054	7518866	1	1	Astron (2016)

Records from BS2. NB. Records shaded blue are duplicate historical records at same location (not included in counts).

Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	No. of Individuals	Source
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	535732	7518868	1	1	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	535971	7518868	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536036	7518878	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536095	7518880	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536050	7518886	1	50	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536112	7518889	1	1	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	535699	7518892	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	535844	7518894	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536072	7518894	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536077	7518897	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536138	7518898	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536166	7518908	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536174	7518909	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536128	7518919	1	9	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536155	7518922	1	50	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536176	7518930	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536193	7518940	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536221	7518951	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536241	7518957	1	9	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	7/09/16	Opportunistic	534084	7518958	1	1	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536270	7518966	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536340	7518970	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536316	7518989	1	2	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536365	7519008	5	200	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536421	7519042	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536449	7519053	1	2	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	535772	7519085	1	20	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536472	7519092	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	535757	7519128	1	20	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536419	7519145	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536358	7519174	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536372	7519176	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	536260	7519245	1	1	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536222	7519289	1	2	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	535720	7519317	1	3	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536146	7519330	1	50	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536132	7519339	1	20	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536112	7519354	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536096	7519363	1	10	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536080	7519373	1	3	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	28/08/16	Opportunistic	535656	7519391	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536043	7519395	1	5	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	536029	7519405	1	1	Astron (2016)
Polygonaceae	*Rumex vesicarius	Historical record	2/07/16	Opportunistic	535937	7519436	1	10	Astron (2016)

Records from BS2. NB. Records shaded blue are duplicate historical records at same location (not included in counts).

Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	No. of Individuals	Source
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535663	7519442	1	2	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535592	7519502	1	1	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535868	7519548	1	5	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535825	7519553	1	30	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535804	7519556	1	20	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535925	7519562	1	20	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535899	7519564	1	40	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535735	7519566	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535876	7519567	1	15	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535849	7519570	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535824	7519573	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535625	7519579	1	5	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535767	7519581	1	10	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535743	7519585	1	1	Astron (2016)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	8/06/17	Opportunistic	535580	7519600	1	1	Astron (2017)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	28/08/16	Opportunistic	535626	7519603	1	10	Astron (2016)
Solanaceae	* <i>Solanum nigrum</i>	Historical record	28/08/16	Opportunistic	535646	7518718	1	20	Astron (2016)

Records from Lens G/Diesel. NB. Records shaded blue are duplicate historical records at same location (not included in counts).

Family	Species	Project	Date	Site	Easting	Northing	Cover (%)	No. of Individuals	Source
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	17/03/19	LDS26R	545703	7512244.8	0.1	30	Biota (current survey, P2)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	17/10/18	LDS26	545703	7512245	0.1	30	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	16/10/18	LDS10	548874	7512416	0.1	5	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	16/10/18	LDS05	549174	7515451	0.1	50	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	17/03/19	LDS05R	549174	7515451.3	0.1	50	Biota (current survey, P2)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	17/10/18	OPP-LG-MM	549971	7515871		10	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	15/10/18	OPP-LG-PL	548481	7516680		10	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Historical record	5/06/13	Releve	547672	7518043	1	0	Eco Logical (2014a)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	16/03/19	LDS02R	549132	7519195.5	0.1	20	Biota (current survey, P2)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	15/10/18	LDS02	549132	7519196	0.1	20	Biota (current survey, P1)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	16/03/19	OPP-LG-SC	547947	7519658		8	Biota (current survey, P2)
Asteraceae	* <i>Bidens bipinnata</i>	Current Survey	16/10/18	LDS15	548807	7519878	0.1	635	Biota (current survey, P1)
Asteraceae	* <i>Flaveria trinervia</i>	Current Survey	18/03/19	LDS10R	548874	7512415.5	0.1	20	Biota (current survey, P2)
Asteraceae	* <i>Flaveria trinervia</i>	Current Survey	16/10/18	LDS10	548874	7512416	0.1	20	Biota (current survey, P1)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Historical record	2/08/15	Opportunistic	538069	7504175		30	Biota (2016)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Historical record	2/08/15	Opportunistic	538124	7504193		100	Biota (2016)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Historical record	2/08/15	Opportunistic	538077	7504195		50	Biota (2016)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Historical record	2/08/15	Opportunistic	538111	7504196		200	Biota (2016)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Historical record	2/08/15	Opportunistic	538008	7504203		100	Biota (2016)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Current Survey	17/10/18	OPP-LG-PL	538485	7504378		1	Biota (current survey, P1)
Asteraceae	* <i>Sigesbeckia orientalis</i>	Current Survey	16/10/18	OPP-LG-PL	543127	7512255		1	Biota (current survey, P1)
Fabaceae	* <i>Vachellia farnesiana</i>	Current Survey	16/10/18	OPP-LG-SC	540103	7503197		5	Biota (current survey, P1)
Malvaceae	* <i>Malvastrum americanum</i>	Current Survey	18/03/19	OPP-LG-PL	547764	7512231		40	Biota (current survey, P2)
Malvaceae	* <i>Malvastrum americanum</i>	Current Survey	16/10/18	LDS-REL04	548586	7512768	0.1	10	Biota (current survey, P1)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Survey	17/03/19	LDS-REL06	540189	7503491	0.1	3	Biota (current survey, P2)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Survey	17/10/18	OPP-LG-MM	541529	7505971		3	Biota (current survey, P1)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Survey	18/03/19	LDS10R	548874	7512415.5	0.1	80	Biota (current survey, P2)
Poaceae	* <i>Cenchrus ciliaris</i>	Current Survey	16/10/18	LDS10	548874	7512416	0.1	80	Biota (current survey, P1)
Poaceae	* <i>Cenchrus setiger</i>	Current Survey	17/03/19	LDS-REL06	540189	7503491	0.1	1	Biota (current survey, P2)
Poaceae	* <i>Chloris virgata</i>	Current Survey	16/10/18	LDS-REL04	548586	7512768	0.1	1	Biota (current survey, P1)
Poaceae	* <i>Setaria verticillata</i>	Current Survey	16/10/18	LDS10	548874	7512416	0.1	5	Biota (current survey, P1)
Poaceae	* <i>Setaria verticillata</i>	Current Survey	16/10/18	LDS-REL04	548586	7512768	0.1	50	Biota (current survey, P1)
Polygonaceae	* <i>Rumex vesicarius</i>	Current Survey	16/10/18	OPP-LG-PL	542363	7513390		20	Biota (current survey, P1)
Polygonaceae	* <i>Rumex vesicarius</i>	Current Survey	15/10/18	OPP-LG-PL	548484	7516677		40	Biota (current survey, P1)
Polygonaceae	* <i>Rumex vesicarius</i>	Current Survey	15/10/18	OPP-LG-PL	548481	7516680		8	Biota (current survey, P1)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547219	7518219	1	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547234	7518222	1	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547063	7518236	2	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547093	7518245	2	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	546991	7518253	2	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	546944	7518255	2	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547075	7518270	2	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547032	7518280	1	0	Eco Logical (2014a)
Polygonaceae	* <i>Rumex vesicarius</i>	Historical record	5/06/13	Opportunistic	547017	7518288	2	0	Eco Logical (2014a)

Appendix 11

Selected Inputs and Outputs of the Floristic Analyses



Table 1: Omitted and merged taxa

Name in Original Data	Name Referred to for Analysis
<i>Abutilon</i> sp.	omitted
<i>Acacia</i> ? <i>distant</i>	omitted
<i>Acacia acradenia</i>	omitted
<i>Acacia ancistrocarpa</i> x <i>trachycarpa</i>	omitted
<i>Acacia arrecta</i>	omitted
<i>Acacia bivenosa</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>	omitted
<i>Acacia ligulata</i>	omitted
<i>Acacia ptychophylla</i>	omitted
<i>Acacia</i> sp.	omitted
<i>Acacia sphaerostachya</i> x	omitted
<i>Aerva javanica</i>	omitted
<i>Alternanthera pungens</i>	omitted
<i>Amaranthus cochleitepalus</i>	omitted
<i>Amaranthus interruptus</i>	omitted
<i>Amaranthus</i> sp.	omitted
All <i>Amyema</i> spp.	omitted
<i>Apowollastonia hamersleyensis</i>	omitted
<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	omitted
<i>Aristida</i> sp.	omitted
Asteraceae sp.	omitted
<i>Atriplex bunburyana</i>	omitted
<i>Bergia perennis</i>	omitted
<i>Bidens bipinnata</i>	omitted
<i>Boerhavia schomburgkiana</i>	omitted
<i>Boerhavia</i> sp.	omitted
<i>Bonamia</i> ? sp. (HD94-6)	omitted
<i>Bothriochloa</i> sp.	omitted
<i>Calandrinia balonensis</i>	omitted
<i>Calandrinia pumila</i>	omitted
<i>Calandrinia</i> sp.	omitted
<i>Calandrinia</i> sp. Black angular seeds (A.A. Mitchell PRP 1661)	omitted
<i>Calocephalus beardii</i>	omitted
<i>Calotis squamigera</i>	omitted
<i>Capparis mitchellii</i>	omitted
<i>Carissa lanceolata</i>	omitted
<i>Cassytha filiformis</i>	omitted
<i>Chara</i> sp.	omitted
<i>Cheilanthes</i> sp.	omitted
<i>Chloris virgata</i>	omitted
<i>Citrullus colocynthis</i>	omitted
<i>Citrullus lanatus</i>	omitted
<i>Conyza bonariensis</i>	omitted
<i>Corchorus</i> sp.	omitted
<i>Corchorus trilocularis</i>	omitted
<i>Cucumis</i> sp.	omitted
<i>Cullen lachnostachys</i>	omitted
<i>Cullen martinii</i>	omitted
<i>Cullen</i> sp.	omitted
<i>Cymbopogon</i> sp.	omitted
<i>Cynodon dactylon</i>	omitted
<i>Cyperus</i> sp.	omitted
<i>Dacryopinax spathularia</i>	omitted
<i>Datura leichhardtii</i>	omitted
<i>Desmodium filiforme</i>	omitted
<i>Dichanthium</i> sp.	omitted
<i>Diplachne</i> sp.	omitted
<i>Diplatia grandibractea</i>	omitted
<i>Drosera finlaysonian</i>	omitted
<i>Dysphania plantaginella</i>	omitted
<i>Dysphania</i> sp.	omitted
<i>Echinochloa colona</i>	omitted
<i>Enneapogon</i> sp.	omitted
<i>Eragrostis</i> sp.	omitted
<i>Eragrostis surreyana</i>	omitted
<i>Eremophila accrescens</i>	omitted
<i>Eremophila forrestii</i> x <i>latrobei</i>	omitted
<i>Eremophila latrobei</i>	omitted
<i>Eremophila petrophila</i> subsp. <i>petrophila</i>	omitted
<i>Eremophila phyllopoda</i> x <i>exilifolia</i>	omitted
<i>Eremophila platycalyx</i> subsp. <i>pardalota</i>	omitted
<i>Eremophila</i> sp.	omitted
<i>Eriachne</i> ? <i>helmsii</i>	omitted
<i>Eriachne</i> sp.	omitted
<i>Eucalyptus repullulans</i>	omitted
<i>Eucalyptus</i> sp.	omitted
<i>Eucalyptus trivalva</i>	omitted
<i>Euphorbia</i> ? <i>boophthona/tannensis</i>	omitted

Name in Original Data	Name Referred to for Analysis
<i>Euphorbia hirta</i>	omitted
<i>Euphorbia</i> sp.	omitted
<i>Euphorbia</i> sp. (aff. <i>wheeleri</i>)	omitted
<i>Euphorbia</i> sp. (B34-11)	omitted
<i>Euphorbia</i> sp. (BPBS10-50)	omitted
<i>Euphorbia</i> sp. (FMLMC-10)	omitted
<i>Euphorbia</i> sp. (site 1089)	omitted
<i>Euphorbia</i> sp. (site 1163)	omitted
<i>Euphorbia</i> sp. (sterile)	omitted
<i>Euphorbia</i> sp. (WTS15-27)	omitted
<i>Exocarpos sparteus</i>	omitted
<i>Fimbristylis littoralis</i>	omitted
<i>Flaveria</i> sp. Tom Price (M.E. Trudgen 11246) PN	omitted
<i>Flaveria trinervia</i>	omitted
<i>Ganoderma steyaertanum</i>	omitted
<i>Gomphrena</i> sp.	omitted
<i>Goodenia</i> sp.	omitted
<i>Grevillea</i> sp.	omitted
<i>Halgania</i> sp.	omitted
<i>Haloragis odontocarpa</i> forma <i>pterocarpa</i>	omitted
<i>Haloragis</i> sp.	omitted
<i>Heliotropium crispatum</i>	omitted
<i>Heliotropium</i> sp.	omitted
<i>Hibiscus</i> sp.	omitted
<i>Indigofera georgei</i>	omitted
<i>Ipomoea costata</i>	omitted
<i>Ipomoea</i> sp.	omitted
<i>Iseilema</i> sp.	omitted
<i>Isotropis parviflora</i>	omitted
<i>Lactuca serriola</i> forma <i>serriola</i>	omitted
<i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>	omitted
<i>Lepidium didymum</i>	omitted
<i>Lepidium echinatum</i>	omitted
<i>Lepidium oxytrichum</i>	omitted
<i>Lepidium</i> sp.	omitted
<i>Lysiana casuarinae</i>	omitted
<i>Maireana eriosphaera</i>	omitted
<i>Maireana integra</i>	omitted
<i>Maireana platycarpa</i>	omitted
<i>Maireana</i> sp.	omitted
<i>Malvastrum americanum</i>	omitted
<i>Melinis repens</i>	omitted
<i>Melochia pyramidata</i>	omitted
moss sp.	omitted
<i>Najas tenuifolia</i>	omitted
<i>Nicotiana</i> sp.	omitted
<i>Nicotiana umbratica</i>	omitted
<i>Oldenlandia</i> ? <i>pterospora</i>	omitted
<i>Pandorea pandorana</i>	omitted
<i>Panus</i> aff. <i>caespiticola</i>	omitted
<i>Paspalidium</i> sp.	omitted
<i>Passiflora foetida</i> var. <i>hispida</i>	omitted
<i>Peplidium</i> sp. E Evol. Fl. Fauna Arid Aust. (A.S. Weston 12768)	omitted
<i>Peripleura</i> sp.	omitted
<i>Phyllanthus baccatus</i>	omitted
<i>Pisolithus</i> sp.	omitted
<i>Plectranthus intraterraneus</i>	omitted
<i>Pleurocarpaea gracilis</i>	omitted
<i>Podaxis pistillaris</i>	omitted
<i>Podolepis capillaris</i>	omitted
<i>Polycarpaea</i> sp.	omitted
<i>Polymeria lanata</i>	omitted
<i>Polymeria</i> sp.	omitted
<i>Portulaca conspicua</i>	omitted
<i>Portulaca pilosa</i>	omitted
<i>Portulaca</i> sp.	omitted
<i>Psydraz</i> sp.	omitted
<i>Ptilotus murrayi</i>	omitted
<i>Ptilotus roei</i>	omitted
<i>Ptilotus</i> sp.	omitted
<i>Ptilotus trichocephalus</i>	omitted
<i>Pycnoporus coccineus</i>	omitted
<i>Rhodanthe charsleyae</i>	omitted
<i>Rhodanthe humboldtiana</i>	omitted
<i>Rhodanthe manglesii</i>	omitted
<i>Riccia</i> sp. (Liverwort)	omitted
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	omitted
<i>Rotala diandra</i>	omitted
<i>Rumex vesicarius</i>	omitted

Name in Original Data	Name Referred to for Analysis
<i>Schoenia ayersii</i>	omitted
<i>Schoenoplectus laevis</i>	omitted
<i>Sclerolaena diacantha</i>	omitted
<i>Sclerolaena</i> sp.	omitted
<i>Senna artemisioides</i> subsp. x <i>artemisioides</i> x <i>S. stricta</i>	omitted
<i>Senna ferraria</i> x <i>S. artemisioides</i> subsp. <i>helmsii</i>	omitted
<i>Senna glaucifolia</i> x <i>S. ferraria</i>	omitted
<i>Senna glaucifolia</i> x <i>S. glutinosa</i> subsp. <i>glutinosa</i>	omitted
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> ? x <i>S. glaucifolia</i>	omitted
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x <i>S. artemisioides</i> subsp. <i>oligophylla</i>	omitted
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>pruinosa</i>	omitted
<i>Senna glutinosa</i> subsp. x <i>luerssenii</i> x	omitted
<i>Senna sericea</i>	omitted
<i>Senna</i> sp.	omitted
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)	omitted
<i>Senna</i> sp. Port Hedland (SBP 20-09-05B)	omitted
<i>Seringia</i> sp.	omitted
<i>Setaria verticillata</i>	omitted
<i>Sida clementii</i>	omitted
<i>Sida</i> sp.	omitted
<i>Sigesbeckia orientalis</i>	omitted
<i>Solanum lucani</i>	omitted
<i>Solanum nigrum</i>	omitted
<i>Solanum</i> sp.	omitted
<i>Sonchus oleraceus</i>	omitted
<i>Sporobolus actinocladius</i>	omitted
<i>Stackhousia</i> sp.	omitted
<i>Stenopetalum anfractum</i>	omitted
<i>Streptoglossa</i> sp.	omitted
<i>Striga squamigera</i>	omitted
<i>Swainsona</i> ? <i>complanata</i>	omitted
<i>Swainsona formosa</i>	omitted
<i>Swainsona</i> sp.	omitted
<i>Tephrosia</i> aff. <i>clelandii</i>	omitted
<i>Tephrosia</i> sp.	omitted
<i>Tephrosia uniovulata</i>	omitted
<i>Themeda</i> sp.	omitted
<i>Trametes marianna</i>	omitted
<i>Trianthema oxycalyptum</i> var. <i>oxycalyptum</i>	omitted
<i>Tribulopsis angustifolia</i>	omitted
<i>Tribulus terrestris</i>	omitted
<i>Trigonella suavissima</i>	omitted
<i>Triodia lanigera</i>	omitted
<i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835)	omitted
<i>Triumfetta appendiculata</i>	omitted
<i>Triumfetta</i> sp.	omitted
<i>Tulostoma</i> sp.	omitted
<i>Urochloa</i> sp.	omitted
<i>Urochloa subquadrifera</i>	omitted
<i>Vachellia farnesiana</i>	omitted
<i>Abutilon fraseri</i>	<i>Abutilon fraseri</i> subsp. <i>fraseri</i>
<i>Abutilon</i> aff. <i>lepidum</i>	<i>Abutilon lepidum</i>
<i>Abutilon</i> aff. <i>lepidum</i> (1) (MET 15 352)	<i>Abutilon lepidum</i>
<i>Abutilon</i> aff. <i>lepidum</i> (4)	<i>Abutilon lepidum</i>
<i>Abutilon</i> aff. <i>otocarpum</i>	<i>Abutilon otocarpum</i>
<i>Abutilon</i> ? <i>oxycarpum</i> subsp. Prostrate (A.A. Mitchell PRP 1266)	<i>Abutilon oxycarpum</i> subsp. Prostrate (A.A. Mitchell PRP 1266) PN
<i>Abutilon</i> aff. <i>dioicum</i> (WTS18-10)	<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618) PN
<i>Abutilon</i> aff. <i>dioicum</i> (WW20-63)	<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618) PN
<i>Acacia</i> ? <i>adsurgens</i>	<i>Acacia adsurgens</i>
<i>Acacia</i> aff. <i>adsurgens</i> (1)	<i>Acacia adsurgens</i>
<i>Acacia</i> aff. <i>adsurgens</i> (3)	<i>Acacia adsurgens</i>
All Mulga taxa	<i>Acacia aneura</i>
<i>Acacia</i> aff. <i>ayersiana</i> (narrow form; MET 15,786)	<i>Acacia ayersiana</i> (narrow phyllode variant)
<i>Acacia</i> aff. <i>ayersiana</i> (YBI08-01)	<i>Acacia ayersiana</i> (narrow phyllode variant)
<i>Acacia colei</i> var. <i>ileocarpa</i>	<i>Acacia colei</i>
<i>Acacia kempeana</i> (1)	<i>Acacia kempeana</i>
<i>Acacia kempeana</i> (2)	<i>Acacia kempeana</i>
<i>Acacia</i> aff. <i>paraneura</i>	<i>Acacia paraneura</i>
<i>Acacia pyrifolia</i> (slender form)	<i>Acacia pyrifolia</i>
<i>Acacia pyrifolia</i> var. <i>morisonii</i>	<i>Acacia pyrifolia</i>
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<i>Acacia pyrifolia</i>
<i>Acacia sclerosperma</i> hybrid	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>
<i>Acacia sibirica</i> (crowded smaller phyllodes)	<i>Acacia sibirica</i>
<i>Acacia</i> aff. <i>sibirica</i> (linear form)	<i>Acacia sibirica</i> (linear form)
<i>Acacia tumida</i> var. <i>pilbarensis</i> x <i>A. kempeana</i> (1)	<i>Acacia tumida</i> var. <i>pilbarensis</i>
<i>Acacia victoriae</i>	<i>Acacia victoriae</i> subsp. <i>victoriae</i>
<i>Amphipogon caricinus</i>	<i>Amphipogon sericeus</i>
<i>Amphipogon sericeus</i> (Newman form; BR2-21)	<i>Amphipogon sericeus</i>
<i>Amphipogon</i> sp.	<i>Amphipogon sericeus</i>

Name in Original Data	Name Referred to for Analysis
<i>Aristida nitidula</i>	<i>Aristida</i> aff. <i>nitidula</i>
<i>Aristida</i> ? <i>holathera</i> var. <i>holathera</i>	<i>Aristida</i> <i>holathera</i> var. <i>holathera</i>
<i>Aristida</i> <i>holathera</i> var. <i>latifolia</i>	<i>Aristida</i> <i>holathera</i> var. <i>holathera</i>
<i>Aristida</i> aff. ? <i>inaequiglumis</i>	<i>Aristida</i> <i>inaequiglumis</i>
<i>Astrebla</i> sp.	<i>Astrebla</i> <i>pectinata</i>
<i>Brachychiton</i> sp.	<i>Brachychiton</i> <i>acuminatus</i>
<i>Calocephalus</i> sp. Wittenoom (A.S. George 1082)	<i>Calocephalus</i> <i>pilbarensis</i>
<i>Cenchrus</i> sp.	<i>Cenchrus</i> <i>ciliaris</i>
<i>Centipeda minima</i>	<i>Centipeda minima</i> subsp. <i>macrocephala</i>
<i>Chloris pumilio</i>	<i>Chloris</i> <i>pectinata</i>
<i>Chrysocephalum apiculatum</i>	<i>Chrysocephalum apiculatum</i> subsp. <i>pilbarensis</i>
<i>Clerodendrum</i> sp.	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>
<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>	<i>Convolvulus</i> sp.
<i>Convolvulus clementii</i>	<i>Convolvulus</i> sp.
<i>Convolvulus remotus</i>	<i>Convolvulus</i> sp.
<i>Corchorus</i> aff. <i>lasiocarpus</i> subsp. <i>lasiocarpus</i>	<i>Corchorus</i> <i>lasiocarpus</i>
<i>Corchorus</i> aff. <i>lasiocarpus</i> subsp. <i>parvus</i>	<i>Corchorus</i> <i>lasiocarpus</i>
<i>Corchorus lasiocarpus</i> (subsp. not determined)	<i>Corchorus</i> <i>lasiocarpus</i>
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	<i>Corchorus</i> <i>lasiocarpus</i>
<i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>	<i>Corchorus</i> <i>lasiocarpus</i>
<i>Corchorus sidoides</i> subsp. <i>sidoides</i>	<i>Corchorus</i> <i>sidoides</i>
<i>Cucumis</i> ? <i>picrocarpus</i>	<i>Cucumis</i> <i>picrocarpus</i>
<i>Cymbopogon</i> ? <i>ambiguus</i>	<i>Cymbopogon</i> <i>ambiguus</i>
<i>Cymbopogon procerus</i>	<i>Cymbopogon</i> <i>ambiguus</i>
<i>Cymbopogon</i> ? <i>obtectus</i>	<i>Cymbopogon</i> <i>obtectus</i>
<i>Cyperus cunninghamii</i>	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>
<i>Digitaria</i> ? <i>ammophila</i>	<i>Digitaria</i> <i>ammophila</i>
<i>Digitaria</i> ? <i>brownii</i>	<i>Digitaria</i> <i>brownii</i>
<i>Dodonaea viscosa</i>	<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>
<i>Dysphania melanocarpa</i> forma <i>leucocarpa</i>	<i>Dysphania</i> <i>melanocarpa</i>
<i>Dysphania melanocarpa</i> forma <i>melanocarpa</i>	<i>Dysphania</i> <i>melanocarpa</i>
<i>Dysphania rhadinostachya</i> (subsp. not determined)	<i>Dysphania</i> <i>rhadinostachya</i>
<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>	<i>Dysphania</i> <i>rhadinostachya</i>
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	<i>Dysphania</i> <i>rhadinostachya</i>
<i>Enneapogon</i> ? <i>caerulescens</i>	<i>Enneapogon</i> <i>caerulescens</i>
<i>Enneapogon</i> ? <i>polyphyllus</i>	<i>Enneapogon</i> <i>polyphyllus</i>
<i>Eragrostis</i> ? <i>xerophila</i>	<i>Eragrostis</i> <i>xerophila</i>
<i>Eremophila cuneifolia</i> x ?	<i>Eremophila</i> <i>cuneifolia</i>
<i>Eremophila forrestii</i>	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>
<i>Eremophila latrobei</i> subsp. aff. <i>filiformis</i>	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>
<i>Eremophila tietkensis</i>	<i>Eremophila</i> sp. (<i>tietkensis</i> / sp. Hamersley Range)
<i>Eriachne</i> aff. <i>aristidea</i>	<i>Eriachne</i> <i>aristidea</i>
<i>Eriachne</i> aff. <i>flaccida</i>	<i>Eriachne benthamii</i> / <i>flaccida</i>
<i>Eriachne benthamii</i>	<i>Eriachne benthamii</i> / <i>flaccida</i>
<i>Eriachne</i> ? <i>mucronata</i> (typical form)	<i>Eriachne</i> <i>mucronata</i>
<i>Eriachne mucronata</i> (arid form) (MET 12 736)	<i>Eriachne</i> <i>mucronata</i>
<i>Eriachne mucronata</i> (typical form)	<i>Eriachne</i> <i>mucronata</i>
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	<i>Eriachne</i> <i>pulchella</i>
<i>Eriachne pulchella</i> subsp. <i>pulchella</i>	<i>Eriachne</i> <i>pulchella</i>
<i>Eulalia</i> sp.	<i>Eulalia</i> <i>aurea</i>
<i>Euphorbia</i> aff. <i>australis</i>	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia</i> aff. <i>australis</i> var. 1 (MET 12 337)	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia</i> aff. <i>australis</i> var. 3 (SD 038)	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia australis</i> (mid-green form)	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia australis</i> (undescribed variant)	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia australis</i> var. <i>glabra</i>	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia australis</i> var. <i>hispidula</i>	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia australis</i> var. <i>subtomentosa</i>	<i>Euphorbia</i> <i>australis</i>
<i>Euphorbia</i> aff. <i>boophthona</i> (large seed form)	<i>Euphorbia</i> <i>boophthona</i>
<i>Euphorbia boophthona</i> (large seed form)	<i>Euphorbia</i> <i>boophthona</i>
<i>Euphorbia</i> aff. <i>careyi</i>	<i>Euphorbia</i> <i>careyi</i>
<i>Euphorbia</i> aff. <i>coghlanii</i> (HD186-18)	<i>Euphorbia</i> <i>coghlanii</i>
<i>Euphorbia</i> aff. <i>drummondii</i> (MET 15,211)	<i>Euphorbia</i> <i>drummondii</i>
<i>Euphorbia ferdinandi</i> (undescribed variant)	<i>Euphorbia ferdinandi</i> var. <i>ferdinandi</i>
<i>Euphorbia</i> ? <i>inappendiculata</i> var. <i>queenslandica</i>	<i>Euphorbia inappendiculata</i> var. <i>queenslandica</i>
<i>Euphorbia alsiniflora</i>	<i>Euphorbia</i> sp. (<i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)
<i>Euphorbia</i> sp. (<i>coghlanii</i> / <i>trigonosperma</i>)	<i>Euphorbia</i> sp. (<i>biconvexa</i> / <i>coghlanii</i> / <i>trigonosperma</i> ; sterile)
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Hamersley form)	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Panorama form)	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>
<i>Evolvulus alsinoides</i>	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>
<i>Fimbristylis</i> ? <i>depauperata</i>	<i>Fimbristylis</i> <i>dichotoma</i>
<i>Goodenia</i> ? <i>nuda</i>	<i>Goodenia</i> <i>nuda</i>
<i>Goodenia</i> aff. <i>nuda</i>	<i>Goodenia</i> <i>nuda</i>
<i>Goodenia</i> aff. <i>pascua</i>	<i>Goodenia</i> <i>pascua</i>
<i>Goodenia</i> aff. <i>pedicellata</i>	<i>Goodenia</i> <i>pedicellata</i>
<i>Gossypium australe</i> (Burrup Peninsula form)	<i>Gossypium</i> <i>australe</i>
<i>Gossypium australe</i> (Whim Creek form)	<i>Gossypium</i> <i>australe</i>
<i>Grevillea</i> ? <i>saxicola</i>	<i>Grevillea</i> <i>saxicola</i>
<i>Grevillea wickhamii</i> subsp. <i>aprica</i>	<i>Grevillea</i> <i>wickhamii</i>

Name in Original Data	Name Referred to for Analysis
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	<i>Grevillea wickhamii</i>
<i>Haloragis gossei</i> var. <i>gossei</i>	<i>Haloragis gossei</i>
<i>Haloragis gossei</i> var. <i>inflata</i>	<i>Haloragis gossei</i>
<i>Heliotropium</i> ? <i>conocarpum</i>	<i>Heliotropium conocarpum</i>
<i>Heliotropium</i> aff. <i>cunninghamii</i>	<i>Heliotropium cunninghamii</i>
<i>Heliotropium</i> ? <i>pachyphyllum</i>	<i>Heliotropium pachyphyllum</i>
<i>Hibiscus</i> aff. <i>coatesii</i>	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (BRO12-03)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (MET 15 012)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (MET 16,542)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (site 1446)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (site 664)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (site 693)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>coatesii</i> (site 733)	<i>Hibiscus coatesii</i>
<i>Hibiscus</i> aff. <i>sturtii</i> (site 1209)	<i>Hibiscus sturtii</i>
<i>Hibiscus</i> aff. <i>sturtii</i> (site 903)	<i>Hibiscus sturtii</i>
<i>Hibiscus</i> aff. <i>sturtii</i> (Site B9)	<i>Hibiscus sturtii</i>
<i>Hibiscus sturtii</i> forma	<i>Hibiscus sturtii</i>
<i>Hibiscus sturtii</i> var. ?	<i>Hibiscus sturtii</i>
<i>Hibiscus sturtii</i> var. aff. <i>campylochlamys</i> (MET 15,957)	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>
<i>Hibiscus sturtii</i> var. aff. <i>grandiflorus</i>	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>
<i>Hibiscus</i> aff. <i>platychlamys</i> (MET 15,067)	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>
<i>Hibiscus</i> aff. <i>platychlamys</i> (site 1139)	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>
<i>Hibiscus sturtii</i> var. aff. <i>platychlamys</i>	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>
<i>Indigofera monophylla</i> (brown calyx form)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (Cape Preston form)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (grey leaflet form)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (grey/green leaflet form)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (HD195-15)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (MJOPP-2)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (small calyx form)	<i>Indigofera monophylla</i>
<i>Indigofera monophylla</i> (small leaflet form)	<i>Indigofera monophylla</i>
<i>Indigofera trita</i>	<i>Indigofera trita</i> subsp. <i>trita</i>
<i>Josephinia</i> ? sp. Marandoo (M.E. Trudgen 1554)	<i>Josephinia</i> sp.
<i>Josephinia</i> sp. Marandoo (M.E. Trudgen 1554)	<i>Josephinia</i> sp.
<i>Lepidium</i> ? <i>muelleri-ferdinandii</i>	<i>Lepidium muelleri-ferdinandii</i>
<i>Maireana tomentosa</i>	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>
<i>Marsilea</i> sp.	<i>Marsilea hirsuta</i>
<i>Melhania</i> sp. Robe Valley (MJ1-35)	<i>Melhania oblongifolia</i>
<i>Neptunia dimorphantha</i>	<i>Neptunia</i> sp.
<i>Neptunia gracilis</i> forma <i>glandulosa</i>	<i>Neptunia</i> sp.
<i>Neptunia gracilis</i> forma <i>gracilis</i>	<i>Neptunia</i> sp.
<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>	<i>Nicotiana occidentalis</i>
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>	<i>Nicotiana occidentalis</i>
<i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>	<i>Notoleptopus decaisnei</i>
<i>Notoleptopus decaisnei</i> var. <i>orbicularis</i> (A.B. Craig 428) PN	<i>Notoleptopus decaisnei</i>
<i>Paspalidium gracile</i>	<i>Paspalidium constrictum</i>
<i>Polygala</i> aff. <i>isingii</i>	<i>Polygala glaucifolia</i>
<i>Polymeria</i> aff. <i>ambigua</i>	<i>Polymeria ambigua</i>
<i>Polymeria</i> aff. <i>ambigua</i> (CGC-25)	<i>Polymeria ambigua</i>
<i>Polymeria</i> aff. <i>ambigua</i> (MET12,302)	<i>Polymeria ambigua</i>
<i>Polymeria</i> aff. <i>ambigua</i> (PAN 26B-20)	<i>Polymeria ambigua</i>
<i>Portulaca intraterranea</i>	<i>Portulaca oleracea</i> /intraterranea
<i>Portulaca oleracea</i>	<i>Portulaca oleracea</i> /intraterranea
<i>Pterocaulon serrulatum</i>	<i>Pterocaulon serrulatum</i> var. <i>velutinum</i>
<i>Pterocaulon</i> ? <i>sphacelatum</i>	<i>Pterocaulon</i> sp.
<i>Pterocaulon sphacelatum</i>	<i>Pterocaulon</i> sp.
<i>Pterocaulon sphaeranthoides</i>	<i>Pterocaulon</i> sp.
<i>Ptilotus nobilis</i> subsp. <i>nobilis</i>	<i>Ptilotus exaltatus</i>
<i>Ptilotus gaudichaudii</i> subsp. <i>gaudichaudii</i>	<i>Ptilotus gaudichaudii</i>
<i>Ptilotus gomphrenoides</i> var. <i>gomphrenoides</i>	<i>Ptilotus gomphrenoides</i>
<i>Ptilotus obovatus</i>	<i>Ptilotus obovatus</i> var. <i>obovatus</i>
<i>Roebuckiella ciliocarpa</i>	<i>Roebuckiella similis</i>
<i>Zygophyllum eichleri</i>	<i>Roepera eichleri</i>
<i>Rostellularia</i> sp.	<i>Rostellularia adscendens</i> var. <i>clementii</i>
<i>Rutidosia helichrysoides</i>	<i>Rutidosia helichrysoides</i> subsp. <i>helichrysoides</i>
<i>Santalum acuminatum</i>	<i>Santalum lanceolatum</i>
<i>Scaevola amblyanthera</i> var. <i>amblyanthera</i>	<i>Scaevola amblyanthera</i>
<i>Scaevola amblyanthera</i> var. <i>centralis</i>	<i>Scaevola amblyanthera</i>
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	<i>Scaevola parvifolia</i>
<i>Scaevola browniana</i> subsp. <i>browniana</i>	<i>Scaevola</i> sp. Mt Bruce (M.E. Trudgen 1333)
<i>Schenkia australis</i>	<i>Schenkia</i> sp.
<i>Schenkia clementii</i>	<i>Schenkia</i> sp.
<i>Senna artemisioides</i> subsp. <i>helmsii</i> x	<i>Senna artemisioides</i> subsp. <i>helmsii</i>
<i>Senna artemisioides</i> subsp. ? <i>oligophylla</i> x	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>
<i>Senna artemisioides</i> subsp. aff. <i>oligophylla</i>	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>
<i>Senna artemisioides</i> subsp. <i>helmsii</i> ? x <i>oligophylla</i>	<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>
<i>Senna glaucifolia</i> x ? (site 626)	<i>Senna glaucifolia</i> x
<i>Senna glutinosa</i>	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>

Name in Original Data	Name Referred to for Analysis
<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>
<i>Senna glutinosa</i> subsp. aff. <i>pruinosa</i> (MET 15,687)	<i>Senna glutinosa</i> subsp. <i>glutinosa</i> x subsp. <i>pruinosa</i>
<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x subsp. ? <i>glutinosa</i>	<i>Senna glutinosa</i> subsp. <i>pruinosa</i> x subsp. <i>glutinosa</i>
<i>Sida</i> ? <i>echinocarpa</i>	<i>Sida echinocarpa</i>
<i>Sida</i> aff. <i>echinocarpa</i> (MET 15,350)	<i>Sida echinocarpa</i>
<i>Sida</i> aff. <i>fibulifera</i>	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> 'var. L'	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (B181-5B)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (B235-7)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (B64-13B)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (grey; MET 15 783)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (HD186.1)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (HD200-6)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (HD234-9)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (HD237-9)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (MET 16,494)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (oblong; MET 15 220)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (prostrate A.A. Mitchell 3 572)	<i>Sida fibulifera</i>
<i>Sida</i> aff. <i>fibulifera</i> (site 1394)	<i>Sida fibulifera</i>
<i>Sida fibulifera</i> (long cymes form)	<i>Sida fibulifera</i>
<i>Sida fibulifera</i> (short cymes form)	<i>Sida fibulifera</i>
<i>Sida fibulifera</i> (solitary flowers form)	<i>Sida fibulifera</i>
<i>Sida fibulifera</i> (wrinkled fruit form)	<i>Sida fibulifera</i>
<i>Sida</i> sp. A Kimberley Flora (P.A. Fryxell & L.A. Craven 3900)	<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)
<i>Sida</i> aff. <i>pilbarensis</i> (EOB46-01B)	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543) (ferruginous form)	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)
<i>Solanum</i> aff. <i>sturtianum</i>	<i>Solanum elatius</i>
<i>Solanum sturtianum</i>	<i>Solanum elatius</i>
<i>Solanum sturtianum</i> (Green Form)	<i>Solanum elatius</i>
<i>Solanum</i> ? <i>gabrielae</i>	<i>Solanum gabrielae</i>
<i>Solanum</i> aff. <i>horridum</i>	<i>Solanum horridum</i>
<i>Solanum</i> ? <i>lasiophyllum</i>	<i>Solanum lasiophyllum</i>
<i>Spermacoce</i> sp.	<i>Spermacoce brachystema</i>
<i>Stackhousia muricata</i>	<i>Stackhousia muricata</i> subsp. annual (W.R. Barker 2172)
<i>Tephrosia</i> aff. <i>clementii</i>	<i>Tephrosia clementii</i>
<i>Tephrosia</i> aff. <i>clementii</i> (11)	<i>Tephrosia clementii</i>
<i>Tephrosia</i> aff. <i>clementii</i> (2)	<i>Tephrosia clementii</i>
<i>Tephrosia</i> aff. <i>clementii</i> (7) (HD191-11)	<i>Tephrosia clementii</i>
<i>Tephrosia</i> aff. <i>supina</i>	<i>Tephrosia supina</i>
<i>Tephrosia</i> aff. <i>supina</i> (HD133-20)	<i>Tephrosia supina</i>
<i>Tephrosia</i> aff. <i>supina</i> (HD205-10)	<i>Tephrosia supina</i>
<i>Tephrosia</i> aff. <i>supina</i> (WW23-22)	<i>Tephrosia supina</i>
<i>Themeda</i> aff. <i>triandra</i> (MET 16,046)	<i>Themeda triandra</i>
<i>Mollugo molluginea</i>	<i>Trigastrotheca molluginea</i>
<i>Triodia</i> aff. <i>melvillei</i>	<i>Triodia basitricha</i>
<i>Triodia</i> aff. <i>epactia</i>	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia</i> aff. <i>epactia</i> (small lemma form; WTS50-03)	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia</i> aff. <i>pungens</i>	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia</i> aff. <i>pungens</i> (WTS27-02)	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia</i> <i>pungens</i>	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia</i> <i>epactia</i>	<i>Triodia</i> sp. (<i>epactia/pungens</i>)
<i>Triodia wiseana</i> (Burrup Form)	<i>Triodia wiseana</i>
<i>Tripogon loliiformis</i>	<i>Tripogonella loliiformis</i>
<i>Urochloa occidentalis</i>	<i>Urochloa occidentalis</i> var. <i>ciliata</i>
<i>Vittadinia pustulata</i>	<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)

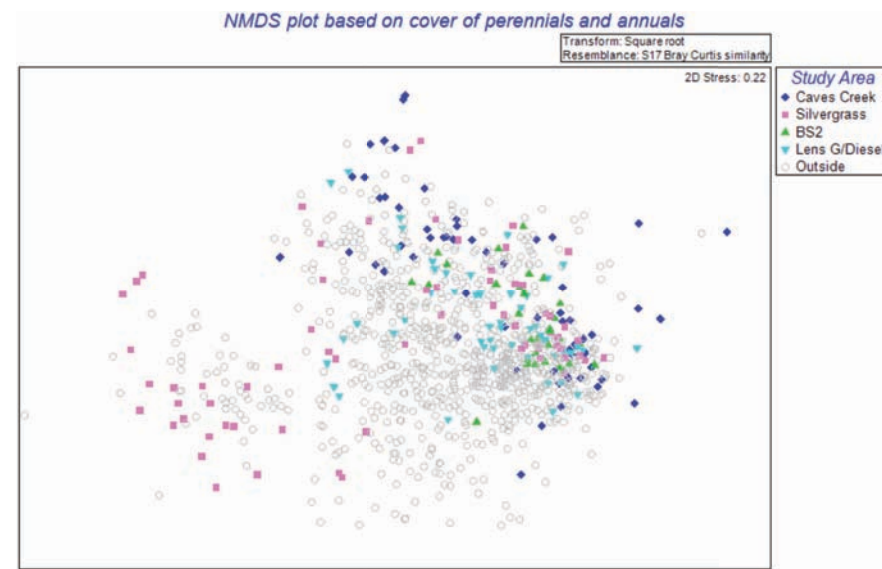
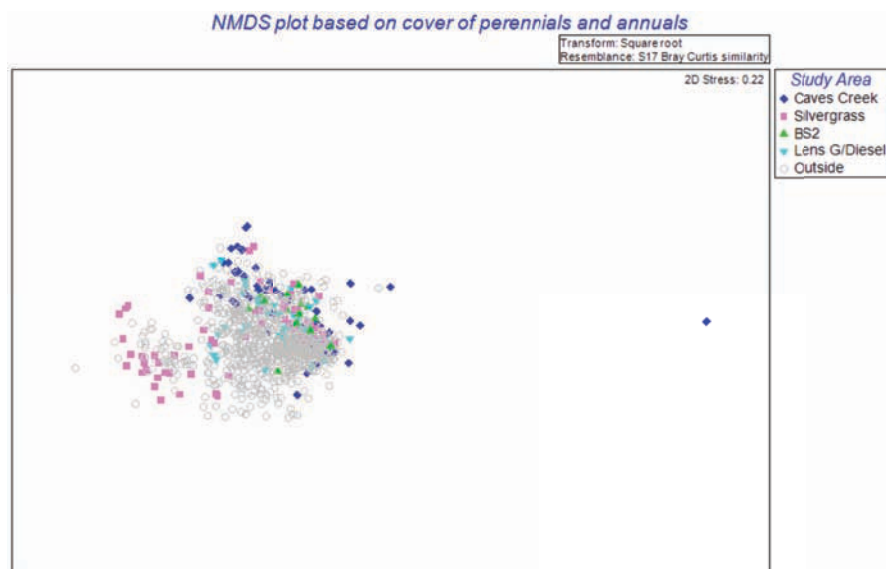


Figure 1: NMDS plots showing all sites in the floristic analysis data set grouped by study area: cover of all species (left), with enlargement excluding CCS34 (right).

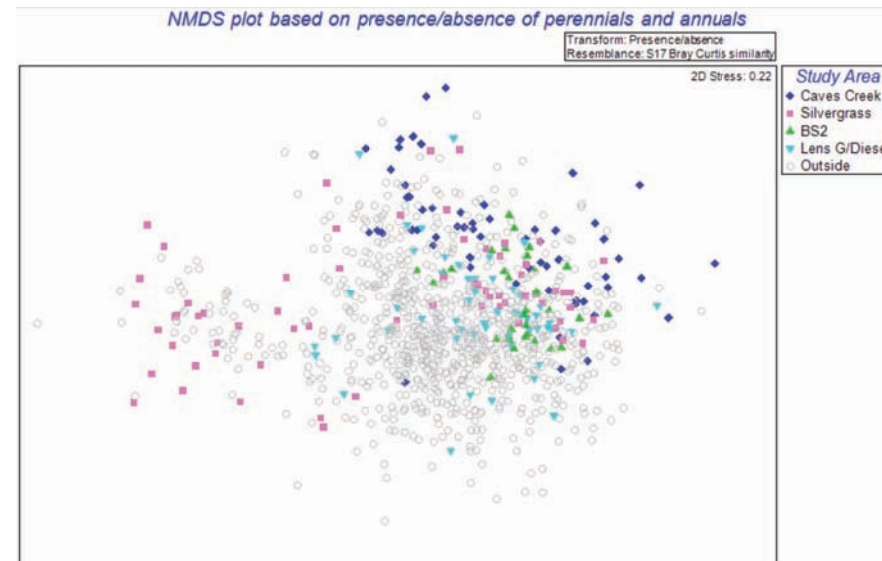
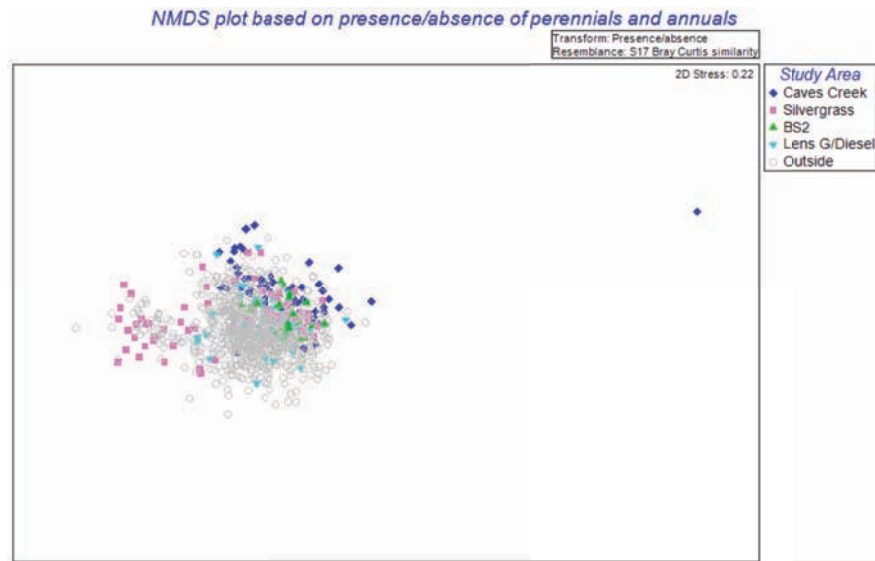


Figure 2: NMDS plots showing all sites in the floristic analysis data set grouped by study area: presence/absence of all species (left), with enlargement excluding CCS34 (right).

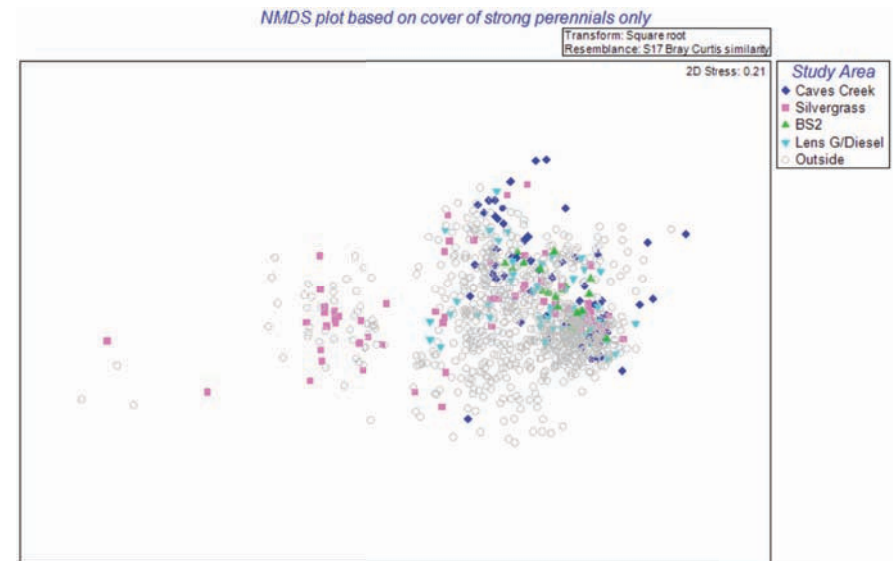
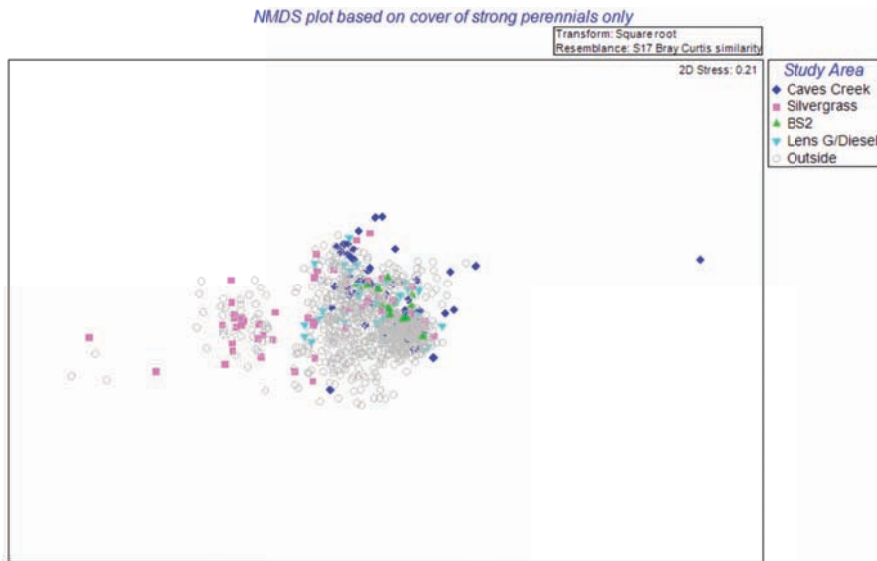


Figure 3: NMDS plots showing all sites in the floristic analysis data set grouped by study area: cover of strong perennials only (left), with enlargement excluding CCS34 (right).

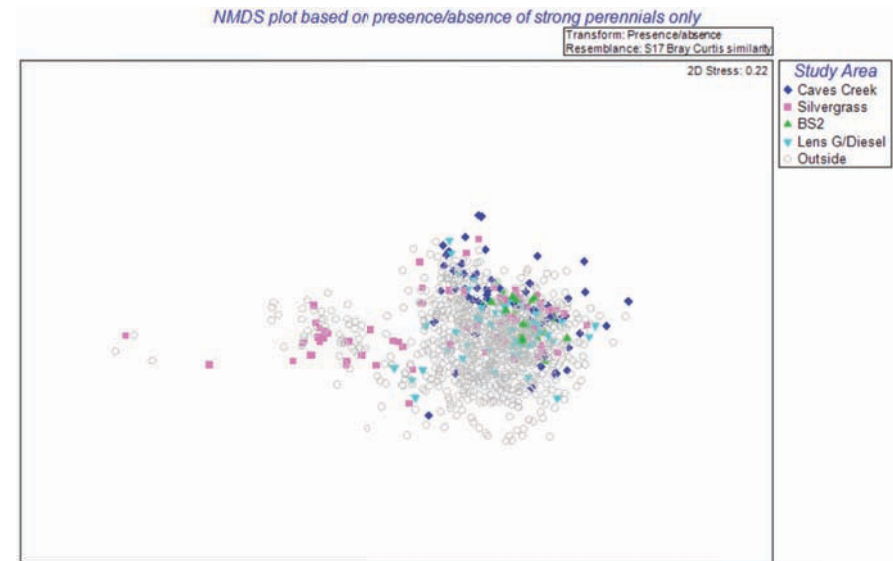
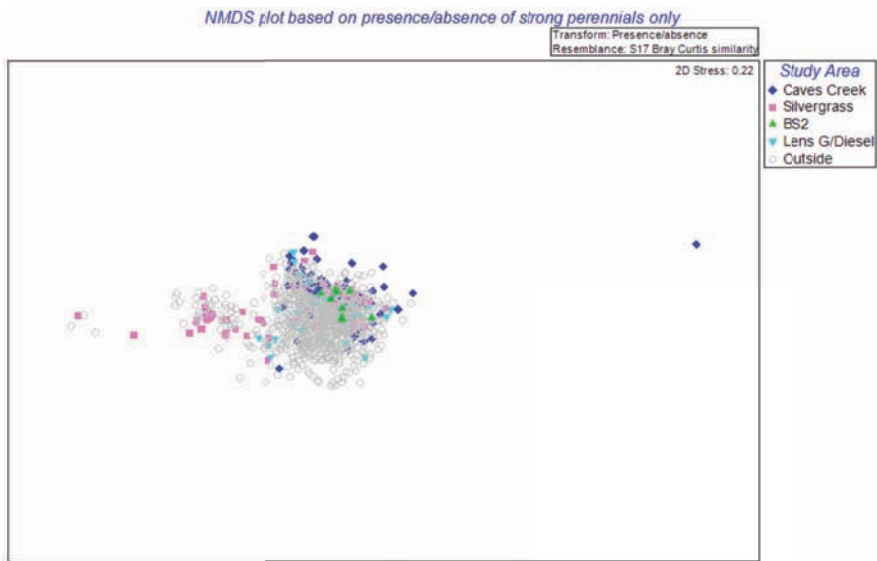


Figure 4: NMDS plots showing all sites in the floristic analysis data set grouped by study area: presence/absence of strong perennials only (left), with enlargement excluding CCS34 (right).

NMDS plot based on presence/absence of strongly perennial species only

Transform: Presence/absence
Resemblance: S17 Bray Curtis similarity

2D Stress: 0.22

Veg Code

▲ D1	□ P12
▼ D2	◇ P13
■ D3	▲ P14
◆ D4	▼ P15
△ D5	■ P16
▽ D6	◆ P17
□ D7	● P18
◇ D8	▲ P19
▲ D9	▽ P20
▼ D10	□ P21
■ D11	◇ P22
◆ D12	○ P23
● D13	× P24
▲ D14	▲ H1
▼ D15	▲ H2
▲ D17	▼ H3
▲ G1	▼ H4
▼ G2	■ H5
▲ P1	◆ H6
▼ P2	▲ H7
▲ P3	◆ H8
▼ P4	▲ H9
■ P5	▽ H10
◆ P6	□ H11
▲ P7	◇ H12
△ P10	▼ H13
▽ P11	× H14

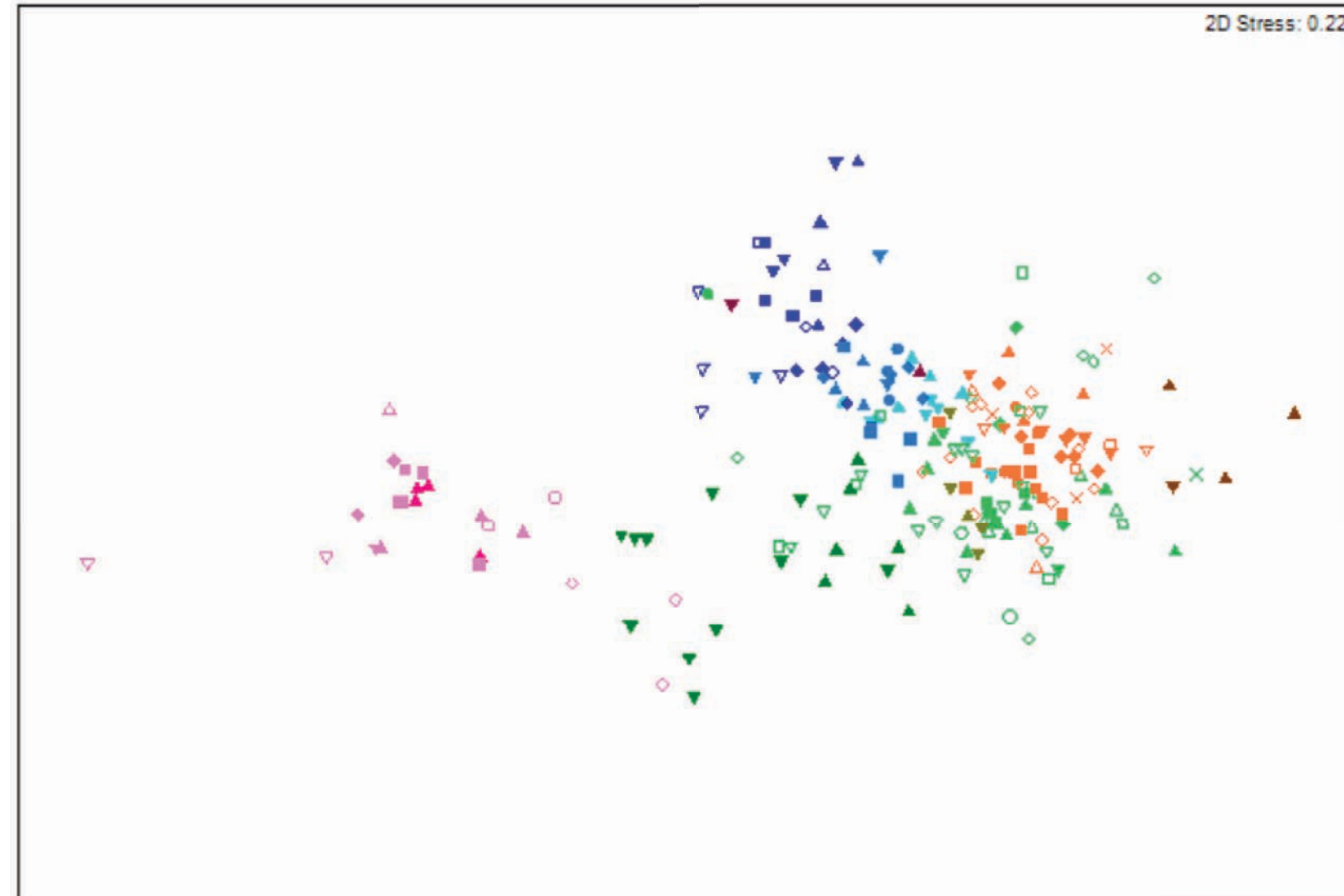


Figure 5: NMDS plots showing all sites in the floristic analysis data set grouped by vegetation code: presence/absence of strongly perennial species only (CCS34 not shown).

NMDS plot based on cover of perennials and annuals

Transform: Square root
Resemblance: S17 Bray Curtis similarity

2D Stress: 0.22

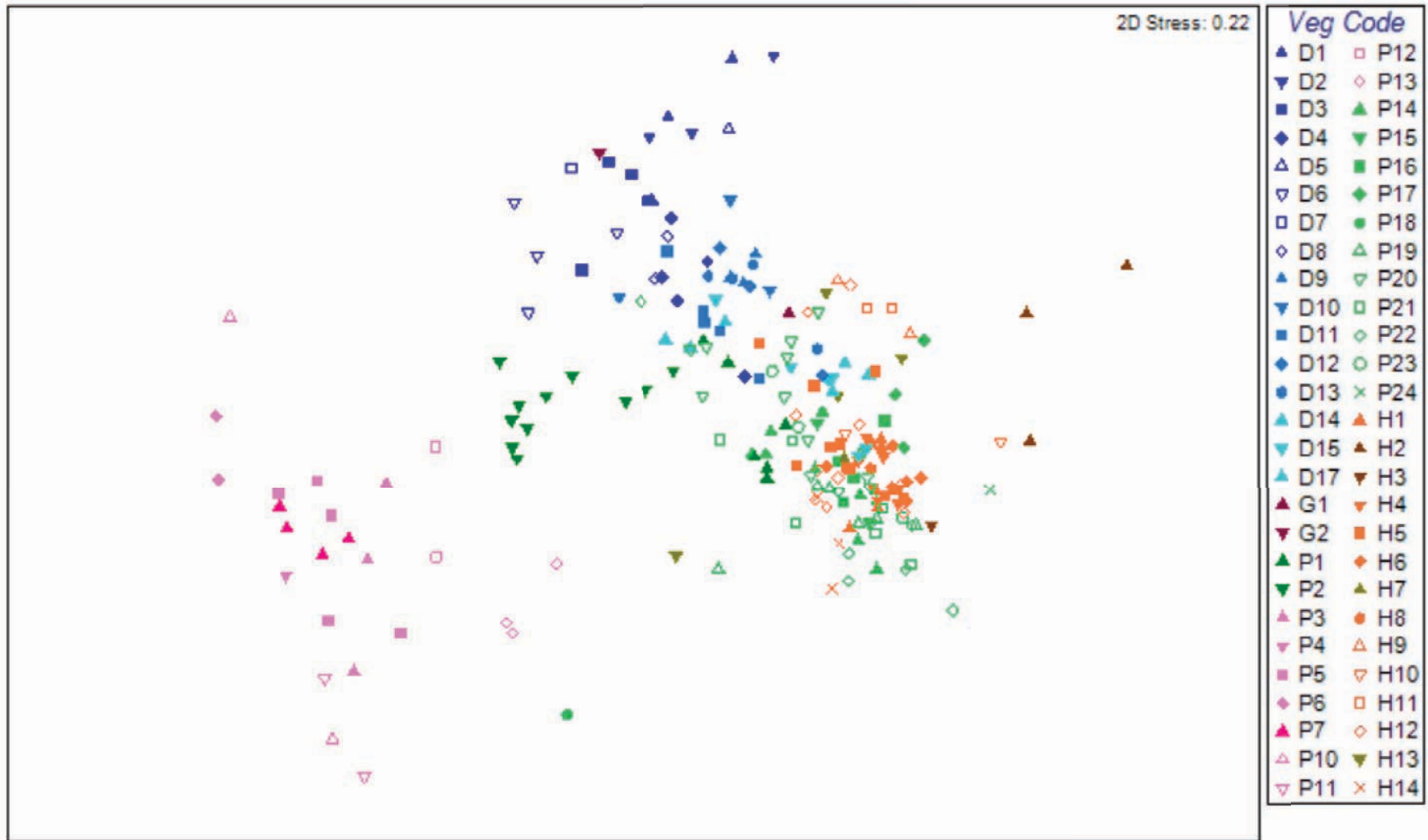


Figure 6: NMDS plots showing all sites in the floristic analysis data set grouped by vegetation code: cover of all species (CCS34 not shown).

Table 2: Summary of floristic groups identified by the SIMPROF test for the BS2 and Lens G/Diesel component of the B2NAM Study PRIMER analysis (based on presence/absence of strongly perennial species only).

Floristic Group	Caves Creek	Silvergrass	BS2	Lens G/Diesel	Outside B2NAM	Total Sites in Dataset
v	5	1		1	7	14
ah		2		5	2	9
aj		2		1		3
ao	1			1		2
ap			1	1	9	11
bd		1		1	5	7
bm			1	1	3	5
bq			3			3
br	1		1			2
bs				3	8	11
bt		3	3	1	2	9
cb				3		3
db				1	11	12
do				2	4	6
ee				3	3	6
ef			1		1	2
eg				1	22	23
eh		1		5	5	11
ej		2	2		1	5
ek		3	2		1	6
el			1		2	3
eo				1	3	4
eq			1	2	2	5
ez		2		3	26	31
fa				1	2	3
fb			1		6	7
fh		1	1	1	1	4
fk			1		9	10
fn			1	1	26	28
fq			2	8	5	15
ft		2		1		3
fu			4	2	11	17
fv		5	5	4	10	24
fw		1	1		2	4

Table 3: Summary of floristic groups identified by the SIMPROF test for the BS2 and Lens G/Diesel component of the B2NAM Study PRIMER analysis (based on cover of all species).

Floristic Group	Caves Creek	Silvergrass	BS2	Lens G/Diesel	Outside B2/NAM	Total Sites in Dataset
y	5	1		1	4	11
ad		1		1		2
ai				2	2	4
ap				2	4	6
bk				2		2
dl				3		3
du			1		7	8
dv				1	3	4
eh				3	4	7
et				1	5	6
eu				2	1	3
ez			1		1	2
fh		1	5			6
fj				1		1
fm	1			1	8	10
fn	3	6	4	3	19	35
fo			3	2	14	19
fs	4	5	3	7	19	38
ft				2		2
gj			1		13	14
gn			1		1	2
go			1			1
gq				2	4	6
gz				1	1	2
ha				3	4	7
hn	1		1	2		4
hq			3			3
hr		1	2	1	6	10
hu	1	2		1	4	8
hv		5	3		12	20
hx	1	4	1	3	8	17
ib			2		1	3
id				1	4	5
io				1		1
iw				5	20	25