



OB32 West, OB33 and OB28

**Single season detailed flora and
vegetation survey**

BHP Western Australia Iron Ore

01 June 2023

→ **The Power of Commitment**



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Executive summary

GHD Pty Ltd (GHD) was commissioned by BHP Western Australian Iron Ore (BHP WAIO) to undertake a single-season detailed flora and vegetation survey covering the OB32, OB33 and OB28 Part IV survey area (herein referred to as the survey area). The survey area is located from approximately 14 km west to 24 km east of Newman in the Pilbara bioregion of Western Australia and covers an area of 6,535.8 hectares (ha). The flora and vegetation survey involved a desktop assessment of biological features and constraints, and a detailed single-season flora and vegetation field survey. The field survey was conducted over seven days between 5 - 11 May 2021.

This flora and vegetation assessment will be used to inform future environmental assessment across the area, therefore the report does not assess any specific development proposed by BHP WAIO. This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.3.1 and the assumptions and qualifications contained throughout this report.

Key results

Vegetation

Nine vegetation types aligning with broad landforms were identified and described in the survey area, not including cleared tracks.

No Threatened Ecological Communities (TEC's) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Biodiversity Conservation Act 2016* (BC Act) were identified within the survey area during the field survey. A vegetation type consisting of *Acacia aneura* isolated trees on red/brown loamy clay on claypan (VT07) was recorded within the survey area. This claypan was dominated by *Dichanthium sericeum* subsp. *humilius*, *Eragrostis setifolia*, *Eragrostis tenellula* and *Aristida latifolia* tussock grasses. Vegetation type VT07 within the survey area is not analogous with the known cracking clay Priority Ecological Communities (PECs) in the Pilbara bioregion, inland from the coast, though is restricted in the survey area.

The condition of the vegetation within the survey area ranged from Excellent to Completely Degraded. Some areas have sustained past mining activities, resulting in areas of Poor to Completely Degraded vegetation. There are numerous tracks throughout the survey area, particularly in the central and southern areas. Established tracks are associated with mining activity and powerline corridors that occur within the survey area. The northern half of the survey area was mapped as Excellent to Very Good with limited previous disturbance.

Flora

A total of 308 flora taxa (including subspecies and varieties) representing 39 families and 122 genera were recorded from the survey area during the field survey. This total comprised of 301 native flora species and seven introduced species.

None of the seven introduced/naturalised flora taxa identified during the survey are listed as a Declared Pest under the *Biosecurity and Management Act 2007* or a Weed of National Significance.

No EPBC Act and State-listed Threatened flora species were recorded within the survey area. One species, *Seringia exastia* (T), listed as a Threatened flora taxon under the EPBC Act and BC Act was recorded within the survey area, however, this species is soon to be removed from the conservation list, after the genomic analysis deemed the species to be synonymous with the common species, *Seringia eliptica* (Binks et al. 2020). Five Priority flora species were recorded within the survey area: *Aristida lazardis* (P2), *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3), *Goodenia nuda* (P4), *Ipomoea racemigera* (P2) and *Lepidium catapycnon* (P4). All of these species were previously known from the survey area except for *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3) and *Ipomoea racemigera* (P2). Three additional Priority flora species were previously recorded, however, were not recorded during the current survey; *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (P3), *Aristida jerichoensis* var. *subspinulifera* (P3) and *Eremophila magnifica* subsp. *magnifica* (P3).

The likelihood of occurrence assessment conducted post-survey identified three species are Likely to occur; *Isotropis parviflora* (P2), *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3) and *Indigofera gilesii* (P3). A total of

six species are considered Possible to occur, with the remaining 22 species considered Unlikely to occur. Eight species are known to occur in the survey area, either recorded in the current survey or previously recorded (BHP WAIO database).

A collection of *Hibiscus* aff. *campanulatus* was recorded from nine locations (populations) with approximately 4,800 individuals recorded within the survey area. This taxon is considered to be a new taxon and is a flora of interest. This new collection of *H. aff. campanulatus* will be raised as a new Phrase name taxa and will be listed as a Priority species by the Department of Biodiversity Conservation and Attractions (DBCA). Therefore, this taxon should be treated as a significant flora taxon until it is formally recognised by the Western Australian (WA) Herbarium. It is recommended that additional surveys be completed to confirm the presence and population size of the species in the gullies across the survey area and outside the survey area, to determine the extent in which the species is present in the broader environment.

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1. Introduction

1.1 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by BHP Western Australian Iron Ore (BHP WAIO) to undertake a single-season detailed flora and vegetation survey covering the OB32 and OB33 Part IV survey area (herein referred to as the survey area). The survey area encompasses active and non-active Geoscience tenure, off tenure and mining operational areas. The flora and vegetation assessment will be used to inform future environmental assessment across the area, however, is intended to be general and does not address any specific development proposed by BHP WAIO.

1.2 Survey location

The survey area is located approximately 14 kilometres (km) west to 24 km east of Newman, in the Shire of East Pilbara, in the Pilbara bioregion of Western Australia (WA). The survey area location and extent is presented in Figure 1, Appendix A. The survey area is 6,535.8 hectares (ha) in size.

1.3 Scope of works

The scope of works included:

- A comprehensive flora and vegetation database and literature review as detailed in Section 3.3 of guidance document 0124627 (BHP WAIO 2020a)
- A single-season detailed flora and vegetation survey
- A technical report (this document) including the survey results in accordance with Section 3.10 of guidance document 0124627 (BHP WAIO 2020a)
- Data submitted in accordance with BHP WAIO guidelines (BHP WAIO 2020b) and the Index of Biodiversity Surveys for Assessments (IBSA).

1.3.1 Limitations

This report has been prepared by GHD for BHP WAIO and may only be used and relied on by BHP WAIO for the purpose agreed between GHD and BHP WAIO as set out in Section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than BHP WAIO arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by BHP WAIO and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Site conditions may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

This report has assessed desktop environmental aspects and biological factors in the field for the survey area. Should these areas change or be refined, further assessment may be required.

2. Methodology

2.1 BHP requirements

BHP WAIO requirements applied to this survey are set out in the Vegetation and Flora Survey Procedure (0124627 v3.0) (BHP WAIO 2020a). This document outlines BHP WAIO's expectations for survey components including the level of survey, desktop assessment, survey design and intensity, timing, vegetation assessment and reporting requirements. Biological survey spatial data requirements (BHP WAIO 2020b) set out all biodiversity data requirements to a standard and consistent format. These standards enable analysis of survey data and comparison between surveys spatially and temporally.

2.2 Relevant legislation and background information

In WA some ecological communities and flora are protected under both Federal and State Government legislation. The key Commonwealth and WA environmental legislation that may be relevant to the survey area is outlined in Table 1.

An overview of key legislation, conservation codes and background information relevant to this flora and vegetation survey are provided in Appendix B.

Table 1 Key environmental legislation relevant to the survey

Legislation	Responsible agency	Aspect
Commonwealth legislation		
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Department of Agriculture, Water and the Environment (DAWE)	Matters of National Environmental Significance (MNES) including Threatened flora
WA Legislation		
<i>Biodiversity Conservation Act 2016</i> (BC Act)	Department of Biodiversity, Conservation and Attractions (DBCA)	Conservation and protection of biodiversity and biodiversity components in WA
<i>Biosecurity and Agricultural Management Act 2007</i> (BAM Act)	Department of Primary Industries and Regional Development (DPIRD)	Weeds
<i>Conservation and Land management Act 1984</i>	DBCA	Use, protection and management of public lands and waters and its flora
<i>Environmental Protection Act 1986</i>	Environmental Protection Authority (EPA) (Part IV) Department of Water and Environmental Regulation (DWER)	Environmental impact assessment and management
Environmental Protection (Clearing of Native Vegetation) Regulations 2004	DWER	Clearing of native vegetation
<i>Rights in Water and Irrigation Act 1914</i> (RIWI Act)	DWER	Access to and use of water resources; protection and management of river flows and drainage
<i>Soil and Land Conservation Act 1945</i>	DPIRD	Protection of soil and prevention/management of soil erosion

2.3 Desktop assessment

A desktop assessment was completed to assess the potential presence of significant flora and vegetation within the survey area plus a buffer of 40 km (study area). The study area refers to the area covered by the desktop assessment, including all database searches. The flora and vegetation desktop assessment included:

- A literature review, including map-based information searches of all current and relevant literature sources and databases to identify Threatened and Priority Ecological Communities (TECs and PECs) and Threatened

and Priority listed flora species previously recorded within the survey area, or that may potentially occur within the survey area. This included searches of:

- The DAWE Protected Matters Search Tool (PMST) to identify species and communities listed under the EPBC Act potentially occurring in the study area (DAWE 2021) (Appendix C)
 - The DBCA *NatureMap* database for flora species previously recorded within the survey area (DBCA 2021a) (Appendix C)
 - The DBCA TEC and PEC database (DBCA 2021b) to determine the potential for TECs or PECs to be present within the study area
 - The DBCA Threatened and Priority Flora List (TPFL) and WA Herbarium databases for Threatened species listed under the BC Act and listed as Priority by the DBCA, previously recorded within the study area
- Review of aerial photography, geology/soils, land systems and hydrology information to provide background information on the variability of the environment and likely vegetation and habitat types present
 - A flora likelihood of occurrence assessment (Appendix D).

The information sources utilised in this assessment are presented in Table 2. Environmental values identified through the desktop assessment with associated spatial data are presented in Figure 2, Appendix A.

Table 2 *Information sources*

Aspect	Information source
Climate	Bureau of Meteorology (BoM) Climate Data Online (2021)
Geology, landforms and soil	1:500 000 State linear structures layer (Department of Mines Industry Regulation and Safety (DMIRS)-015) (DMIRS 2018) Soil Landscape Mapping – Systems (DPIRD-064) (DPIRD 2021).
Hydrology	DataWA (Government of Western Australia (GoWA) 2021) Ramsar Sites (DBCA-010) (DBCA 2017) Directory of Important Wetlands in Australia - Western Australia (DBCA-045) (DBCA 2018)
Conservation reserves and areas	DBCA – Legislated Land and Waters (DBCA-011) (DBCA 2021c) DBCA – Lands of interest (DBCA-012) (DBCA 2021d)
Environmentally Sensitive Areas (ESAs)	Clearing Regulations – Environmentally Sensitive Areas (DWER-046) (DWER 2020)
Vegetation	Interim Biogeographic Regionalisation of Australia (IBRA) (Commonwealth of Australia 2012) Pre-European Vegetation (DPIRD-006) (DPIRD 2019) Native Vegetation Extent (DPIRD-005) (DPIRD 2020) Statewide Vegetation Statistics (DBCA 2019)
(TECs and PECs)	DBCA TEC and PEC spatial dataset (DBCA 2021b) Priority Ecological Communities for Western Australia Version 31 (DBCA 2021e)
Significant flora	DBCA <i>NatureMap</i> database (DBCA 2021a) DBCA Threatened and Priority Flora database (DBCA 2021f) Western Australian Herbarium database (Western Australian Herbarium 2021a)
Matters of National Environmental Significance	EPBC Act PMST (DAWE 2021)

2.4 Field survey

2.4.1 Survey timing and personnel

The single-season detailed flora and vegetation survey was conducted by GHD Senior Botanists Joel Collins (Flora Permit FB62000200), Angela Benkovic (Flora Permit FB62000080-2), Pali Jayasekara (Flora Permit FB62000208-2) and Ecologist Nicola Barratt (Flora Permit FB62000307) over seven days on 5 - 11 May 2021.

2.4.2 Guiding documents

In addition to the BHP WAIO requirements listed in Section 2.1, the survey methodology and data collection was conducted in accordance with:

- Environmental Protection Authority (EPA) Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016a)
- EPA Environmental Factor Guideline – Flora and Vegetation (EPA 2016b).

2.4.3 Data collection and storage

Field data collection for the flora and vegetation survey was undertaken using Global Positioning System (GPS) enabled Samsung tablets using electronic forms in Collector and tailored to BHP WAIO spatial data requirements (SPR-IEN-EMS-015). Data was synced to the Cloud at the conclusion of each field day. Field photographs were stored and where applicable have been provided as part of the survey deliverables.

2.4.4 Detailed flora and vegetation survey

The detailed flora and vegetation survey was undertaken to identify and describe the broad dominant vegetation type(s) and assess vegetation condition through high intensity sampling of vascular flora taxa present at the time of survey. Opportunistic searches for significant flora taxa were also undertaken during the field survey.

Field survey methods involved a combination of high intensity quadrat sampling and traversing the survey area by vehicle and foot. Forty quadrats (50 x 50 m) and 11 relevés were conducted across the survey area to describe the broad-scale vegetation. The locations of each sample site is presented in Figure 3, Appendix A. Field data at each sampling site was recorded on a pro-forma data sheet. The parameters of the collected data are detailed in Table 3. The quadrat and relevé data are provided in Appendix D.

Table 3 *Flora and vegetation data collected during the field survey*

Aspect	Measurement
Collection attributes	Site code, personnel/recorder, date, photograph of the quadrat taken from the north west corner
Physical features	Landform, slope, aspect, soil attributes, ground surface cover
Location	Coordinates recorded in GDA94 datum using a hand-held GPS tool to an accuracy approximately ± 5 m. The coordinates of the north-western corner of each quadrat was recorded
Vegetation condition	Vegetation condition using the condition rating scale adapted by EPA (2016c) for the Eremaean Botanical Provinces
Disturbance	Level and nature of disturbances (e.g. weed presence, fire and time since last fire, impacts from grazing, exploration activities)
Flora	list of vascular plant species present, with detailed collection data (i.e. height and percentage cover) recorded only for the dominant species for each strata, significant species (including range extensions) and introduced flora species List of dominant flora from each structural layer, list of all species at relevé including stratum, average height and cover using National Vegetation Information System (NVIS Technical Working Group 2017)

A flora inventory was compiled from taxa listed in the quadrats and relevés and from opportunistic floristic records throughout the survey area.

2.4.4.1 Vegetation types

Fine-scale vegetation associations were identified and boundaries delineated using a combination of aerial photography, topographical features and field data/observations.

Vegetation types were described based on structure, dominant taxa and cover characteristics as defined by field observations. Vegetation type descriptions are consistent with NVIS Level V (Association). At Level V up to three taxa per stratum are used to describe the association (NVIS Technical Working Group 2017).

2.4.4.2 Vegetation condition

The vegetation condition was assessed and mapped in accordance with the vegetation condition rating scale for the Eremaean Botanical Provinces devised by Keighery (1994) and Trudgen (2002) and adapted by the EPA (2016a). The scale recognises the intactness of vegetation and consists of seven rating levels. The vegetation condition rating scale is outlined in Appendix B.

2.4.4.3 Flora identification and nomenclature

Species well known to the survey botanists and ecologist were identified in the field; all other species were collected and assigned a unique collection number to facilitate tracking. All specimens collected were identified using taxonomic literature, local and regional flora keys.

The conservation status of all recorded flora was compared against the current lists available on FloraBase (WA Herbarium 2021b). Nomenclature used in this report follows that used by the WA Herbarium as reported on FloraBase (WA Herbarium 2021b).

2.4.4.4 Significant flora

Prior to the field survey, information obtained from the desktop assessment was reviewed to determine significant flora taxa potentially present within the survey area, including existing locations and preferred habitat of target species. Targeted searches for significant flora involved searches and traverses on-foot through identified habitat. Where significant flora species were observed in the field, the following was recorded:

- Location coordinates and/or polygon for larger population extents
- Description of vegetation association in which the species is located
- Estimate or count of number of individuals
- A photograph of the plant in-situ.

2.5 Statistical analysis

PRIMER v6 (Clarke, K.R. and Gorley, R.N. 2006) was used to examine the similarity between sites using collected data. A presence / absence matrix was created of all species (including perennials and annuals) present in quadrats that are within the survey area. The dissimilarity between quadrats was determined using the Bray-Curtis measure and the Resemblance function in PRIMER. A Cluster analysis (using Agglomerative Hierarchical Clustering technique) based on group average was undertaken using the Bray-Curtis matrix and results presented as a dendrogram. In addition, a nonmetric multi-dimensional analysis (MDS) was undertaken using the Bray-Curtis matrix and results presented as a two dimensional scatter plot.

It is noted that PRIMER can be limited in use for this purpose as analysis is based on all species recorded in quadrats and does not take into account dominance of species.

2.6 Survey limitations

2.6.1 Desktop limitations

A limitation of the desktop results, specifically the EPBC Act PMST, is that it is based on bioclimatic modelling for the potential presence of species. As such, it does not represent actual records of flora species within the area. The records from the DBCA searches of Threatened and Priority flora provide more accurate information for the general area and local occurrence, however, some collection records cannot be dated and may misrepresent the current range of Threatened and Priority species.

2.6.2 Survey limitations

The EPA (EPA 2016a) states flora survey reports for environmental impact assessment in WA should contain a section describing the limitations of the survey methods used. The limitations and constraints associated with this field survey are discussed in Table 4.

Table 4 Flora survey limitations

Aspect	Constraint	Comment
Sources of information and availability of contextual information.	Nil	Adequate information is available for the survey area. Broad scale (1:250,000) mapping by Beard (1975) and digitised by Shepherd et al. (2002) and Regional biogeography (Van Vreeswyk et al. 2004) were utilised. In addition BHP WAIO vegetation mapping and flora records were provided (BHP WAIO 2021).
Scope (what life forms were sampled etc).	Nil	Vascular flora were sampled during the survey. Non-vascular flora were not surveyed.
Proportion of flora collected and identified (based on sampling, timing and intensity)	Nil	The detailed flora and vegetation survey was undertaken on 5 – 11 May 2021 (post-wet season). The May survey is within the recommended timing for flora surveys in the Eremaean Botanical Province region, which is March-June (EPA 2016a). The survey timing is considered suitable as the rainfall leading up to the survey was above average and the conditions were considered optimal with suitable flowering and fruiting of the full suite of flora species enabling suitable identification. The flora recorded from the field is detailed in Section 4 and a full flora species list is provided in Appendix D. The portion of flora collected and identified was considered representative for the survey area and considered above average diversity. The survey sampling and intensity was considered adequate for a detailed level survey, and seasonal conditions were considered satisfactory. All taxonomic groups were considered to be represented.
Flora determination	Minor	Flora determination was undertaken by GHD botanist/ecologist in the field and at the WA Herbarium by GHD Senior Botanist Pali Jayasekara. Fourteen taxa could be identified to genus level only due to lack of flowering and/or fruiting material required for identification. None of these species were considered to be potential significant flora. The taxonomy and conservation status of the WA flora is dynamic. This report was prepared with reliance on taxonomy and conservation status current at the time of report development, but it should be noted this may change in response to ongoing research and review of the International Union for Conservation Nature criteria.
Completeness and further work which might be needed (e.g. was the relevant area fully surveyed)	Minor	The survey area was accessible by vehicle and foot. Adequate time was available to complete the biological survey to the required standard for this level of assessment. Adequate number of floristic sampling was done for a detailed flora survey. A minimum of three quadrats were sampled per vegetation type, except for VT05 (two quadrats), VT07 (one quadrat) and VT09 (one quadrat and one releve).
Mapping reliability	Minor	The vegetation was mapped using high-resolution aerial imagery (Environmental Systems Research Institute (ESRI)) obtained from Landgate, topographical features, previous broad scale mapping (Beard 1975) and field data. Data was recorded in the field using hand-held

Aspect	Constraint	Comment
		GPS tools (e.g. Samsung tablet and Garmin GPS). Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers. The Garmin GPS units used for this survey are accurate to within ± 5 metres on average. Therefore the data points consisting of coordinates recorded from the GPS may contain minor inaccuracies.
Timing/weather/season cycle	Nil	The field survey was conducted in May 2020. In the six months prior to the survey (November 2020 to April 2021) the Newman Aero (No. 007176) station recorded a total of 334.2 mm of rainfall. The total rainfall is higher than the long-term average for the same period by 94.8 mm (Nov – April; 239.4 mm) (BoM 2020). The weather conditions recorded during the survey were considered unlikely to have impacted the survey results. The survey timing was considered appropriate for the flora and vegetation field survey.
Disturbances (e.g. fire, flood, accidental human intervention)	Nil	Some of the survey area has been subject to previous disturbances, including clearing for vehicle tracks, mining activity, powerline corridors, stock fences and stock grazing. These disturbances did not limit the biological survey.
Resources	Nil	Adequate resources were employed during the field survey. Twenty-eight person days were spent undertaking the survey using a dedicated team of botanists.
Access restrictions	Minor	The survey area was mostly accessible with no major restrictions to any part of the survey area. Areas in the north-east corner had the highest access restrictions from near-by tracks.
Experience levels	Nil	The botanists who executed the survey were practitioners suitably qualified in their respective fields. Joel Collins, Angela Benkovic, Pali Jayasekara and Nicola Barratt are botanists/ecologists with 17, 11, 13 and three years of experience undertaking ecological surveys in the Pilbara bioregion and other arid regions in WA, respectively.

3. Desktop assessment results

3.1 Climate

The survey area is located in the Pilbara region of Western Australia and experiences a semi-arid climate. Temperatures are warm to hot all year and rainfall is generally low, mostly falling in the late summer months due to the influence of tropical cyclones and monsoon. The closest meteorological recording station is located at Newman Aerodrome (No. 007176) approximately 11 km south east of the survey area (BoM 2021). Climatic data from this station indicates that the mean maximum temperature ranges from 39.2 °C in December, to 23.1 °C in July (BoM 2021). The mean minimum temperature ranges from 25.1 °C in January to 6.5 °C in July (BoM 2021). The mean annual rainfall for all years is 325.1 mm (BoM 2021). In the six months prior to the survey (November 2020 to April 2021) the Newman Aero (No. 007176) station recorded a total of 334.2 mm of rainfall, with higher than average totals received for the months of December, February and April (BoM 2021). The total rainfall is higher than the long-term average (239.7 mm) for the same period by 94.8 mm (BoM 2021).

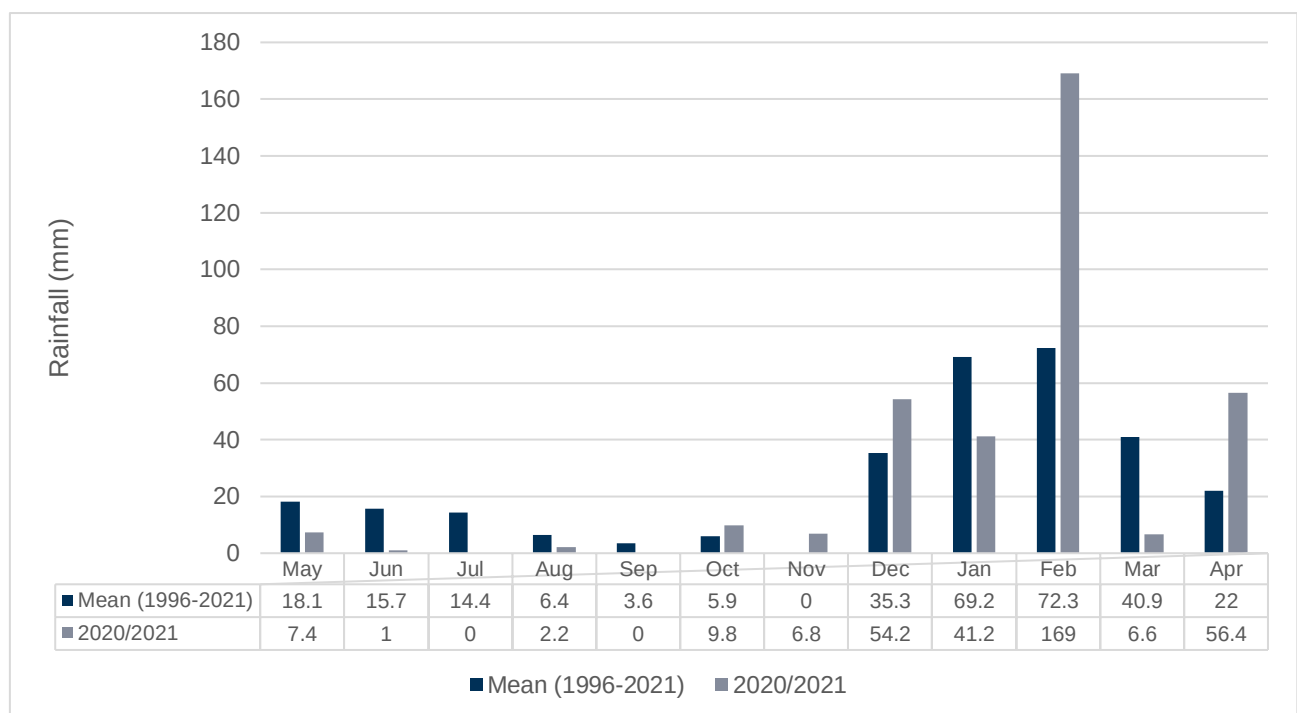


Plate 1 Newman Aero (007176) rainfall (Bureau of Meteorology 2021)

3.2 Land systems landforms and soils

DPIRD provides soil landscape mapping for pastoral areas of Western Australia at scales between 1:20,000 and 1:3,000,000 (DPIRD 2021). This database was used to assess the possible land systems which lie within the survey area. A total of seven land systems occur within the survey area, these are described and the total area calculated in the study area and the associated percentage that occurs in the survey area provided in Table 5 and mapped in Figure 2 (Appendix A).

Table 5 Land systems of the survey area

Land System	Description	Total ha within study area (40 km)	Total ha and % within survey area
Boolgeeda System	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	30298 ha	246.8 ha (0.8 %)

Land System	Description	Total ha within study area (40 km)	Total ha and % within survey area
Elimunna System	Stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands.	19099 ha	932.8 ha (4.8 %)
McKay System	Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands with acacias and occasional eucalypts.	4946 ha	811.6 ha (16.4 %)
Newman System	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	147150 ha	2864.1 ha (1.9 %)
River System	Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	20715 ha	427.8 ha (2.0 %)
Rocklea System	Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.	57049 ha	1018.9 ha (1.7 %)
Wannamunna System	Hardpan plains and internal drainage tracts supporting mulga shrublands and woodlands and occasionally eucalypt woodlands.	11462 ha	233.8 ha (2.0 %)

3.3 Hydrology

Desktop searches of hydrology data available on DataWA (2021) identified the water resource aspects present in the study area. These are detailed in Table 6.

Table 6 Hydrology aspects within the study area

Aspect	Details	Results
Groundwater Areas	Groundwater areas proclaimed under the RIWI Act	Pilbara Groundwater Area
Surface Water Areas	Surface water areas proclaimed under the RIWI Act	Pilbara Surface Water Area
Irrigation District	Irrigation districts proclaimed under the RIWI Act	Pilbara Surface Water Area
Rivers	Rivers proclaimed under the RIWI Act	None present
Public Drinking Water Source Areas (PDWSA)	PDWSA is a collective term used for the description of Water Reserves, Catchment Areas and Underground Pollution Control Areas declared (gazetted) under the provisions of the <i>Country Area Water Supply Act 1947</i>	Newman Water Reserve
Waterways Management Areas	Areas proclaimed under the <i>Waterway Conservation Act 1976</i>	None present

3.3.1 Surface water and drainage

The survey area is located within the Fortescue Marsh and Ophthalmia sub-catchments of the Upper Fortescue River catchment within the Fortescue River basin (DWER 2018). Surface water in the broader area is largely reliant on weather, and surface water in waterways is generally only present or flowing for parts of the year, often in response to larger cyclonic, rainfall events.

3.3.2 Wetlands

No Internationally (Ramsar) or nationally important wetlands are located within 40 km of the survey area (DBCA 2017; 2018).

3.4 Land use

3.4.1 Conservation reserves and areas

No DBCA managed area intersect the survey area. The nearest DBCA managed area; Collier Range National Park (R 35104), is located approximately 138 km south of the survey area (2021c).

3.4.2 Environmentally sensitive areas

One \ESA intersects the survey area, the buffer of the Threatened Ethel Gorge aquifer stygobiont community (DWER 2020). This is further discussed in section 3.5.3. The next nearest ESA is located approximately six km from the survey area, the Newman Training Depot (Defence) (DWER 2020). The ESA intersecting the survey area is presented in Figure 2, Appendix A.

3.5 Vegetation and flora

3.5.1 Regional biogeography

The study area is located in the Eremaean Botanical Province, within the Pilbara bioregion and the Hamersley sub-region (PIL03) as described by the IBRA (Commonwealth of Australia 2012).

The Pilbara bioregion is characterised by vast coastal plains and inland mountain ranges with cliffs and deep gorges (DAWE 2008). Vegetation is predominantly mulga low woodlands or snappy gum over bunch and hummock grasses (DAWE 2008). Tenure comprises Aboriginal land, leasehold (for grazing cattle) and conservation reserves (DAWE 2008). The bioregion provides the majority of Western Australia's exports in petroleum, natural gas and iron ore. Major population centres are Karratha, Port Hedland, Newman and Tom Price (DAWE 2008).

The Hamersley sub-region is the southern section of the Pilbara Craton Mountainous area of Proterozoic sedimentary ranges and plateaux, 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 (Kendrick 2001).

3.5.2 Broad vegetation associations

Broad scale (1:250,000) pre-European vegetation mapping of the study area has been completed by Beard (1975) at an association level. The mapping indicates the survey areas intersects two vegetation associations:

- Hummock grassland with scattered bloodwoods & snappy gum *Triodia* spp., *Corymbia dichromophloia*, *Eucalyptus leucophloia* (association 82)
- Mulga *Acacia aneura* and associated species (association 18).

Pre-European mapping has been adapted and digitised by Shepherd et al. (2002). The extent of the vegetation associations have been determined by the state-wide vegetation remaining extent calculations maintained by the DBCA (2019). The current extent of vegetation associations 18 and 82 are both above 98% of pre-European extents at the State, IBRA bioregion, IBRA subregion and Local Government Authority (LGA) level (Table 7).

3.5.3 Significant communities

The DBCA TEC and PEC database identified one TEC and two PECs within the study area (DBCA 2021b). These are described in Table 8.

3.5.4 Flora diversity

The *NatureMap* database identified 664 flora taxa, representing 68 families and 217 genera previously recorded within the desktop study area. This total comprised 641 native flora taxa and 23 naturalised (introduced) flora taxa. Dominant families recorded included Fabaceae (119 taxa), Poaceae (103 taxa) and Malvaceae (103 taxa) (DBCA 2021a). The *NatureMap* database search is provided in Appendix C.

The BHP WAIO flora database identified 853 flora taxa from 232 genera previously recorded within the desktop study area. This total comprised 807 native flora taxa and 46 naturalised (introduced) flora taxa. Dominant genera recorded included *Acacia* (63 taxa), *Eremophila* (28 taxa) and *Sida* (25 taxa).

3.5.5 Significant flora

The EPBC Act PMST, *NatureMap*, DBCA Threatened and Priority Flora, Western Australian Herbarium (WAHerb) and BHP WAIO Flora databases identified the presence/potential presence of 39 significant flora taxa within 40 km of the survey area (Appendix C). The searches identified:

- Two listed under the EPBC Act and/or as Threatened under the BC Act
- Five Priority One (P1) taxa
- Seven Priority Two (P2) taxa
- 18 Priority Three (P3) taxa
- Seven Priority Four (P4) taxa.

The locations of significant flora registered on the DBCA and BHP WAIO databases are mapped in Figure 2, Appendix A.

Table 7 *Extents of vegetation associations mapped within the survey area (GoWA 2019)*

Vegetation association	Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	Remaining within DBCA managed lands (%)	Hectares (ha) within the survey area	% of current extent within the survey area
18	State: WA	19,892,306.46	19,843,148.07	99.75	6.64	1,275.36	0.01
	IBRA bioregion: Pilbara	676,556.72	671,843.35	99.30	25.35		
	Sub-region: Hamersley	581,246.08	576,541.70	99.19	29.54		
	LGA: East Pilbara	359,372.12	355,446.47	98.91	1.49		
82	State: WA	2,565,901.28	2,553,206.19	99.51	11.57	5,253.22	0.21
	IBRA bioregion: Pilbara	2,563,583.23	2,550,888.14	99.50	11.58		
	Sub-region: Hamersley	2,177,573.90	2,165,224.21	99.43	13.57		
	LGA: East Pilbara	927,709.76	919,072.17	99.07	0.50		

Table 8 Threatened and Priority Ecological Communities identified in the desktop searches

Community type	EPBC Act	BC Act/ DBCA	Description (DBCA 2021e)	Proximity to survey area or hectares (ha) occurring within the survey area
Ethel Gorge aquifer stygobiont community	-	EN	The presence of a significant stygofauna community within the Ethel Gorge TEC first became apparent following survey work done in 1997 by Eberhard and Humphreys (1999). Recent work has documented 82 stygofauna species in the Ethel Gorge aquifer and/or adjacent local groundwaters in the Newman area, most of which occur in the TEC. About 40 species have been recorded only from the Ethel Gorge aquifer and/or adjacent local groundwater (Subterranean Ecology 2013). While this level of endemism would be regarded as high for surface fauna, it is not unusual for subterranean fauna (Halse et al. 2014).	Intersects the southeast corner of the survey area. Approximately 273.8 ha of the buffer of this community occurs in the survey area. The buffer for the community is 30458 ha in total. Approximately 0.8% of the buffer of this TEC occurs in the survey area.
Vegetation of sand dunes of the Hamersley Range/Fortescue Valley	-	P3	These red linear iron-rich sand dunes lie on the Divide Land system at the junction of the Hamersley Range and Fortescue Valley, between Kalgan Creek and the low hills to the west. A small number are vegetated with <i>Acacia dictyophleba</i> scattered tall shrubs over <i>Crotalaria cunninghamii</i> , <i>Trichodesma zeylanicum</i> var. <i>grandiflorum</i> open shrubland. They are regionally rare, small and fragile and highly susceptible to threatening processes. Threats: weed invasion, especially buffel grass, grazing by cattle, altered fire regimes, erosion and clearing for mining and infrastructure.	Approximately 29 km north of the survey area.
Kumina Land System	-	P3	Ferricrete duricrust plains, uplands and plateaux remnants, relief up to 15 m. Duricrust plains and plateau remnants support hard spinifex grasslands. Threats: mining.	Approximately 38 km northwest of the survey area.

3.6 Previous surveys

Several flora and vegetation surveys have been previously undertaken for BHP WAIO in the vicinity of the survey area. BHP WAIO provided 95 reports for review (including weed mapping and fauna surveys). The most relevant surveys have been summarised in Table 9.

Table 9 Previous surveys

Report	Survey Location	Methods	Results
ENV Australia (2009) Newman to Yandi Transmission Line Flora and Vegetation Assessment	Newman to Yandi transmission line Overlaps the current survey area	Level two single season flora and vegetation assessment	501 species recorded, including 14 introduced species A total of 30 vegetation associations were mapped No TECs or PECs recorded Five Priority flora species were recorded: – <i>Euphorbia australis</i> var. <i>glabra</i> P3 – <i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) P3 – <i>Acacia subtiliformis</i> P3 – <i>Goodenia nuda</i> P4 – <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) P3
Env Australia (2012) Eastern Ridge (OB23/24/25) Flora and Vegetation Assessment	Eight kilometres north-east of Newman	Level 2 flora and vegetation assessment, 51 quadrats and one mapping note Targeted searching for significant flora	455 species recorded, including 19 weed species A total of 13 vegetation associations recorded No TECs or PECs recorded Four Priority flora species were recorded: – <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> P1 – <i>Goodenia nuda</i> P4 – <i>Eremophila magnifica</i> var. <i>velutina</i> P3 – <i>Isotropis parviflora</i> P2
Syrinx Environmental (2012) Orebody 37 Flora and Vegetation Assessment.	Located 1.5 km east-north-east of Newman Approximately three kilometres south of the survey area	Level 2 flora and vegetation assessment, 30 quadrats, 16 relevés	Six range extensions recorded One Priority flora species recorded – <i>Goodenia nuda</i> P4
Onshore Environmental (2013) Targeted Flora and Vegetation Surveys Orebody 24	Approximately seven kilometres east-north-east of Newman	Targeted survey for significant flora with north-south transects spaced at one kilometre intervals More intensive survey was undertaken in the vicinity of previous records of significant flora	No TECs or PECs recorded One Priority flora species was recorded: <i>Goodenia nuda</i> P4
Onshore Environmental (2016) Cathedral Gorge Level 2 Flora and Vegetation Survey	Cathedral Gorge tenement Eight kilometres north-west of Newman and five kilometres north of the existing Mount Whaleback mining operation	Level 2 flora and vegetation assessment, 52 quadrats Targeted searching for significant flora	390 species recorded, including eight introduced species Dominant families: <i>Fabaceae</i> , <i>Poaceae</i> and <i>Malvaceae</i> Dominant genera: <i>Senna</i> , <i>Ptilotus</i> and <i>Sida</i> A total of 24 vegetation associations recorded No TECs or PECs recorded Five Priority flora species were recorded: – <i>Aristida lazardis</i> P2 – <i>Indigofera gilesii</i> P3 – <i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739) P3 – <i>Goodenia nuda</i> P4 – <i>Lepidium catapycnon</i> P4 One additional species of interest was recorded: – <i>Hibiscus</i> aff. sp. Canga (P.J.J Hurter and J. Naaykens 11012)
Onshore Environmental (2017) Reconnaissance Flora and Vegetation Survey and Fauna Assessment Newman to Mining Area C Powerline Corridor	Newman to Mining Area C powerline corridor Overlaps the current survey area	Reconnaissance flora and vegetation survey Targeted survey for significant flora species	113 flora species recorded, including eight introduced species A total of 44 vegetation associations described and mapped within the survey area No TECs or PECs recorded Eight Priority flora species were recorded – <i>Aristida jerichoensis</i> var. <i>subspinulifera</i> P3 – <i>Goodenia nuda</i> P4 – <i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) P3 – <i>Grevillea saxicola</i> P3 – <i>Gymnanthera cunninghamii</i> P3 – <i>Lepidium catapycnon</i> P4 – <i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794) P3 – <i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684) P1
Bennelongia Environmental Consultants (2019) OB32 Riparian and Groundwater Dependent Vegetation (GDV) Reconnaissance Flora and Vegetation Survey	Seven kilometres north of Newman north of OB32 and within BHP's Eastern Ridge mining operation Partial overlap with the survey area	Reconnaissance flora and vegetation survey, 22 relevés Targeted searching for significant flora	131 species, including three introduced species. Dominant families: <i>Fabaceae</i> , <i>Poaceae</i> and <i>Malvaceae</i> Dominant genera: <i>Acacia</i> and <i>Senna</i> Three Priority flora species were opportunistically recorded in relevés: – <i>Hibiscus</i> cf. <i>campanulatus</i> P1 – <i>Eremophila magnifica</i> subsp. <i>magnifica</i> P4 – <i>Lepidium catapycnon</i> P4

4. Field results

4.1 Vegetation types

Nine vegetation types aligning with broad landforms were identified and described in the survey area, not including cleared tracks:

- VT01 (MA - Major Drainage Line) *Eucalyptus victrix*, *Corymbia candida* and *Corymbia hamersleyana* woodland to open woodland on red/brown sandy loam on major drainage lines (MA EvCcCh)
- VT02 (MI - Minor Drainage Line) *Eucalyptus gamophylla* and *Corymbia hamersleyana* isolated trees on red/brown sandy loam with some rocky areas on minor drainage lines (MI EgCc)
- VT03 (SA - Sand Plain), *Eucalyptus gamophylla*, *Eucalyptus xerothermica* and *Corymbia hamersleyana* isolated trees on red loamy sand on sand plains (SA EgExCh)
- VT04 (HS – Hillslope) *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia deserticola* isolated trees on rocky hillslopes, low rocky rises and hills (HS EICd)
- VT05 (BA – Breakaway) *Eucalyptus leucophloia* subsp. *leucophloia* and *Eucalyptus gamophylla* isolated trees on brown sandy loam on shale breakaway ridgeline (BA EIEg)
- VT06 (SS – Sandy/ Stony Plain) *Acacia pteraneura* open woodland with occasional *Corymbia candida* and *Eucalyptus gamophylla* isolated trees on red/brown sandy loam sandy/stony plains (SS – Ap)
- VT07 (CY – Claypan) *Acacia aneura* isolated trees on red/brown loamy clay on claypan (CY Aa)
- VT08 (HS – Hillslope) *Eucalyptus leucophloia* subsp. *leucophloia* isolated trees on rocky hillslopes, low rocky rises and hills (HS EI)
- VT09 (HS – Hillslope) *Eucalyptus gamophylla*, *Eucalyptus xerothermica* and *Eucalyptus socialis* isolated mallee trees on red/brown sandy loam with rocky low hillslopes (HS EgExEs).

A more detailed description, spatial extent with the survey area, sample sites and representative photograph of each vegetation type is provided in Table 10. Vegetation mapping is presented in Figure 4, Appendix A

4.1.1 Floristic analyses

The similarity between all quadrats sampled within the survey area was examined using PRIMER. Outputs includes a MDS (Plate 2) and dendrogram (Appendix D). The MDS had a stress value of 0.18 indicating a poor/low representation.

The scatter plot and dendrogram showed general groupings of quadrats for each mapped and described vegetation type, with some overlap in similar landforms. Vegetation type VT04 quadrats on rocky hillslopes, low rocky rises and hills grouped with some other similar quadrats from VT08 and VT09 (Hillslopes) and VT05 (Breakaway).

Vegetation type VT01 grouped together with a 40 % similarity. Vegetation type VT02 (Minor Drainage Line) quadrat groupings overlap with VT06 (Sandy/ Stony Plain), with these vegetation types occurring in close proximity with each other.

Table 10 Vegetation types, description and extents

Vegetation Types	Vegetation code and description	Landform and substrate	Extent within and % of the survey area	Sample sites	Representative photograph
VT01	MA EvCcCh <i>Eucalyptus victrix</i>, <i>Corymbia candida</i> and <i>Corymbia hamersleyana</i> woodland to open woodland over <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> <i>Acacia citrinoviridis</i> and <i>Acacia dictyophleba</i> open shrubland over *<i>Cenchrus ciliaris</i>, <i>Chrysopogon fallax</i>, <i>Themeda triandra</i> tussock grassland over <i>Evolvulus alsinoides</i>, <i>Goodenia muelleriana</i> and <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> open forbland on red/brown sandy loam on major drainage lines. Other associated species include <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>, <i>Melaleuca glomerata</i>, <i>Petalostylis labicheoides</i> and <i>Aristida holathera</i>.	Major Drainage Line	481.75 ha 7.44 %	OB-02, OB-04, OB-06, OB-08, OB-21 (R), OB-55 (R)	
VT02	MI EgCc <i>Eucalyptus gamophylla</i> and <i>Corymbia hamerselyana</i> isolated trees over <i>Acacia dictyophleba</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Gossypium robinsonii</i> over <i>Themeda triandra</i>, <i>Aristida holathera</i> var. <i>holathera</i> and <i>Cymbopogon ambiguus</i> open tussock grassland over <i>Triodia pungens</i> and <i>Triodia vanleeuwenii</i> open hummock grassland over <i>Ptilotus exaltatus</i>, <i>Stemodia kingii</i> and <i>Rhynchosia minima</i> open forbland on red/brown sandy loam with some rocky areas on minor drainage lines. Other associated species include <i>Eucalyptus victrix</i>, <i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186), <i>Androcalva luteiflora</i>, <i>Melaleuca glomerata</i> and <i>Acacia citrinoviridis</i>	Minor Drainage Line	407.38 ha 6.29 %	OB-10, OB-11, OB-12, OB-13, OB-24, OB-31, OB-38 (R), OB-39, OB-43 (R), OB-58 (R), OB-59	

Vegetation Types	Vegetation code and description	Landform and substrate	Extent within and % of the survey area	Sample sites	Representative photograph
VT03	SA EgExCh <i>Eucalyptus gamophylla</i>, <i>Eucalyptus xerothermica</i> and <i>Corymbia hamersleyana</i> isolated trees over <i>Acacia inaequilatera</i>, <i>Acacia bivenosa</i> and <i>Acacia tenuissima</i> open shrubland over <i>Aristida holathera</i> var. <i>holathera</i> and <i>Aristida contorta</i> open tussock grassland over <i>Triodia pungens</i> open hummock grassland over <i>Ptilotus calostachyus</i>, <i>Ptilotus exaltatus</i> and <i>Arivela viscosa</i> isolated forbs on red loamy sand on sand plains. Other associated species include <i>Petalostylis labicheoides</i>, <i>Gomphrena kanisii</i>, <i>Indigofera monophylla</i>, <i>Scaevola parvifolia</i> and <i>Paraneurachne muelleri</i>.	Sand Plain	197.34 ha 3.05 %	OB-01, OB-03, OB-17	
VT04	HS EICd <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Corymbia deserticola</i> isolated trees over <i>Hakea lorea</i>, <i>Acacia inaequilatera</i> and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> isolated shrubs over <i>Aristida holathera</i> var. <i>holathera</i>, <i>Eriachne mucronata</i> and <i>Aristida contorta</i> open tussock grassland over <i>Triodia vanleeuwenii</i>, <i>Triodia pungens</i> and <i>Triodia wiseana</i> hummock grassland over <i>Gomphrena canescens</i>, <i>Ptilotus calostachyus</i> and <i>Ptilotus exaltatus</i> isolated forbs on rocky hillslopes, low rocky rises and hills. Other associated species include <i>Corymbia hamersleyana</i>, <i>Eucalyptus gamophylla</i>, <i>Senna glutinosa</i> subsp. <i>pruinosa</i>, <i>Acacia arida</i>, <i>Triodia longiceps</i> and <i>Triodia brizoides</i>.	Hillslope	4,150.57 ha 64.12 %	OB-05, OB-07, OB-09, OB-16, OB-18, OB-19 OB-20, OB-22, OB-23, OB-32, OB-33, OB-37, OB-40 (R), OB-41, OB-45, OB-47 (R), OB-57	

Vegetation Types	Vegetation code and description	Landform and substrate	Extent within and % of the survey area	Sample sites	Representative photograph
VT05	BA EIEg <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Eucalyptus gamophylla</i> isolated trees over <i>Acacia inaequilatera</i>, <i>Acacia bivenosa</i> and <i>Hakea lorea</i> isolated shrubs over <i>Eriachne mucronata</i>, <i>Aristida contorta</i> and <i>Aristida inaequiglumis</i> open tussock grassland over <i>Triodia wiseana</i> open hummock grassland over <i>Ptilotus astrolasius</i>, <i>Ptilotus auriculifolius</i> and <i>Ptilotus exaltatus</i> open forbland on brown sandy loam on shale breakaway ridgeline. Other associated species include <i>Solanum ferocissimum</i>, <i>Acacia maitlandii</i> and <i>Goodenia vilmorinae</i>.	Breakaway	34.66 ha 0.54 %	OB-26, OB-29	
VT06	SS Ap <i>Acacia pteraneura</i> open woodland with occasional <i>Corymbia candida</i> and <i>Eucalyptus gamophylla</i> isolated trees over <i>Acacia ancistrocarpa</i>, <i>Acacia sibirica</i> and <i>Acacia pruinocarpa</i> open shrubland over <i>*Cenchrus ciliaris</i>, <i>Themeda triandra</i> and tussock grassland over <i>Aristida holathera</i> var. <i>holathera</i> open tussock grassland over <i>Triodia pungens</i> and <i>Triodia vanleeuwenii</i> open hummock grassland over <i>Abutilon otocarpum</i> <i>Arivela viscosa</i> and <i>Ptilotus exaltatus</i> open forbland on red/brown sandy loam sandy/stony plains. Other associated species include <i>*Bidens bipinnata</i>, <i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543) <i>Duperreya commixta</i>, <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i> and <i>Acacia synchronicia</i>.	Sandy/ Stony Plain	916.69 ha 14.16 %	OB-25, OB-27, OB-34, OB-36 (R), OB-49 (R), OB-51 (R),	

Vegetation Types	Vegetation code and description	Landform and substrate	Extent within and % of the survey area	Sample sites	Representative photograph
VT07	CY Aa <i>Acacia aneura</i> isolated trees over <i>Senna artemisioides</i> subsp. <i>oligophylla</i>, <i>Senna artemisioides</i> subsp. <i>helmsii</i> and <i>Senna hamersleyensis</i> isolated shrubs over <i>Dichanthium sericeum</i> subsp. <i>humilius</i>, <i>Aristida contorta</i> and <i>Eragrostis setifolia</i> open tussock grassland over <i>Operculina aequiseapala</i>, <i>Ptilotus aervoides</i> and <i>Euphorbia australis</i> var. <i>subtomentosa</i> open forbland on red/brown loamy clay on claypan. Other associated species include <i>Aristida latifolia</i>, <i>Eragrostis tenellula</i>, <i>Rhagodia eremaea</i>, <i>Salsola australis</i>, <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>, <i>Rhynchosia minima</i> and <i>Goodenia muelleriana</i>.	Claypan	36.88 ha 0.57 %	OB-30	
VT08	HS EI <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> isolated trees over <i>Senna artemisioides</i> subsp. <i>oligophylla</i>, <i>Acacia inaequilatera</i> and <i>Hakea lorea</i> open shrubland over <i>Aristida contorta</i>, <i>Enneapogon caeruleus</i> and <i>Eriachne pulchella</i> open tussock grassland over <i>Triodia wiseana</i>, <i>Triodia vanleeuwenii</i> and <i>Triodia pungens</i> hummock grassland over <i>Ptilotus auriculifolius</i>, <i>Gomphrena canescens</i> and <i>Ptilotus astrolasius</i> and <i>Goodenia triodiophila</i> isolated forbs on rocky hillslopes, low rocky rises and hills. Other associated species include, <i>Senna glutinosa</i> subsp. <i>pruinosa</i>, <i>Indigofera monophylla</i>, <i>Hibiscus sturtii</i> var. <i>campylochlamys</i>, <i>Senna glutinosa</i> subsp. <i>glutinosa</i>, <i>Goodenia muelleriana</i> and <i>Triodia brizoides</i>.	Hillslope	185.01 ha 2.86 %	OB-14, OB-15, OB-28	
VT09	HS EgExEs <i>Eucalyptus gamophylla</i>, <i>Eucalyptus xerothermica</i> and <i>Eucalyptus socialis</i> isolated mallee trees over <i>Acacia bivenosa</i>, <i>Acacia inaequilatera</i> and <i>Acacia ancistrocarpa</i> open shrubland over <i>Aristida holathera</i> var. <i>holathera</i>, <i>Paraneurachne muelleri</i> and <i>Aristida contorta</i> open tussock grassland over <i>Triodia wiseana</i> and <i>Triodia vanleeuwenii</i> open hummock grassland over <i>Ptilotus exaltatus</i>, <i>Ptilotus astrolasius</i> and <i>Gompholobium oreophilum</i> isolated forbs on red/brown sandy loam with rocky low hillslopes. Other associated species include <i>Goodenia muelleriana</i>, <i>Acacia spondylophylla</i> and <i>Indigofera monophylla</i>.	Hillslope	62.83 ha 0.97 %	OB-35, OB-53 (R)	

Vegetation Types	Vegetation code and description	Landform and substrate	Extent within and % of the survey area	Sample sites	Representative photograph
Cleared	Cleared areas devoid of native vegetation	Cleared	62.57 ha 0.96 %	-	-

*R=Releve

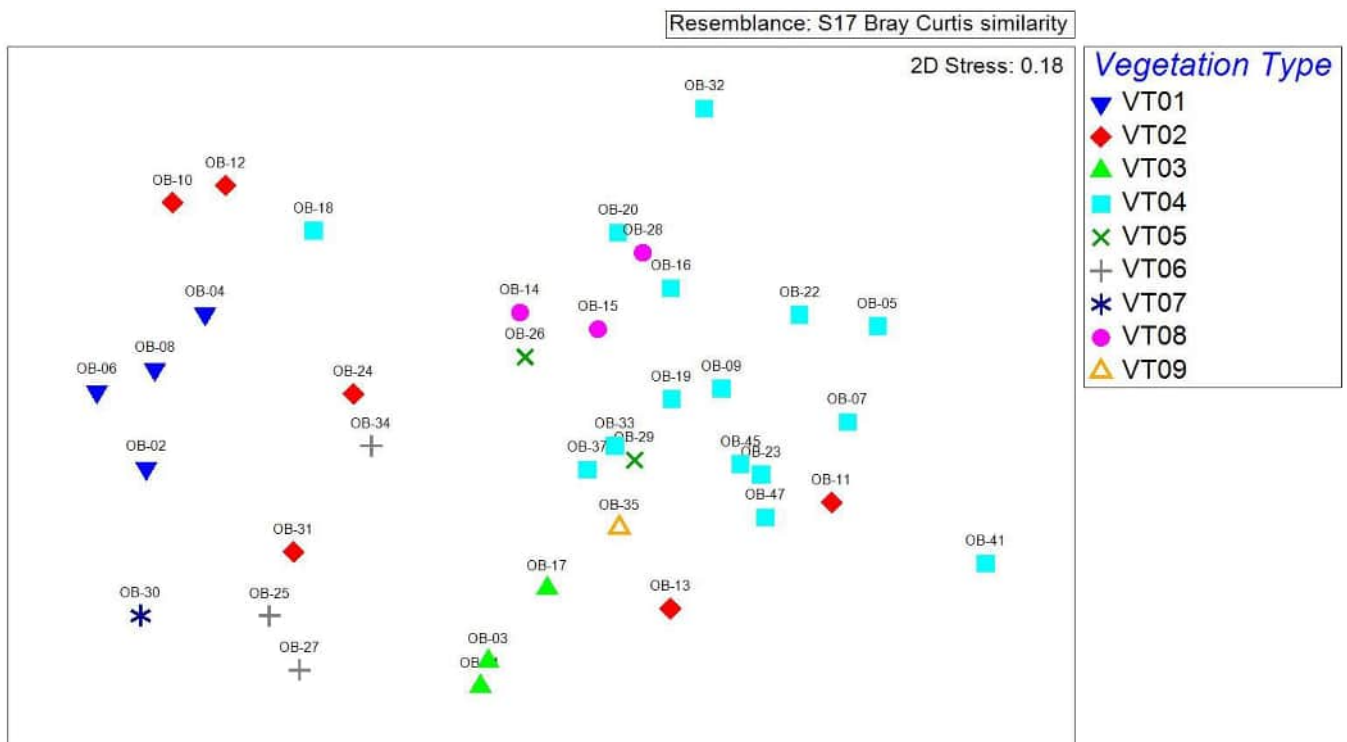


Plate 2 MDS showing general clustering of quadrats

4.2 Significant ecological communities

No TEC's listed under the EPBC Act or BC Act were identified within the survey area during the field survey.

Vegetation type VT07 Claypan *Acacia aneura* isolated trees on red/brown loamy clay on claypan was recorded within the survey area. This claypan was dominated by *Dichanthium sericeum* subsp. *humilius*, *Eragrostis setifolia*, *Eragrostis tenellula* and *Aristida latifolia* tussock grasses. Vegetation type VT07 within the survey area is not analogous with the known cracking clay PECs in the Pilbara bioregion, inland from the coast such as West Angelas Cracking Clays and Brockman Iron Cracking Clay Communities of the Hamersley Range (DBCA 2021e). These two PECs comprise *Astreleba* sp, which was not recorded within the mapped VT07 area in the survey area. While the vegetation type VT07 does not represent a cracking clay PECs it has a restricted distribution within the survey area.

4.3 Vegetation condition

The condition of the vegetation within the survey area ranged from Excellent to Completely Degraded. The extents of the vegetation condition within the survey area are detailed in Table 11 and mapped in Figure 5, Appendix A. Areas mapped as Poor to Completely Degraded were areas of previous mining activities resulting in vegetation clearing. There are numerous tracks throughout the survey area, particularly in the central and southern areas. Established tracks are associated with mining activity and powerline corridors that occur within the survey area. The northern half of the survey was mapped as Excellent to Very Good with limited previous disturbance, with Excellent condition being mapped over half of the survey area. Cattle grazing was limited at the time of the survey with some signs of previous grazing, in particular through the drainage systems and mulga flats.

Table 11 Vegetation condition ratings within the survey area

Vegetation condition	Extent in the survey area (ha) (%)
Completely Degraded	24.92 (0.38%)
Degraded	338.60 (5.18%)
Poor	184.98 (2.83%)
Good	1,353.72 (20.71%)
Very Good	1,050.99 (16.08%)
Excellent	3,519.98 (53.86%)
Cleared	62.58 (0.96%)

4.4 Flora diversity

A total of 308 flora taxa (including subspecies and varieties) representing 39 families and 122 genera were recorded from the survey area during the field survey. This total comprised of 301 native flora species and seven introduced species.

Dominant families recorded from the survey area included:

- Fabaceae (60 taxa)
- Poaceae (59 taxa)
- Malvaceae (34 taxa).

A complete list of flora identified within the survey area compiled by site and species list by family is provided in Appendix D.

4.4.1 Introduced flora

The seven introduced flora taxa recorded in the survey area were:

- **Aerva javanica*
- **Bidens bipinnata*
- **Cenchrus ciliaris*
- **Cenchrus setiger*
- **Malvastrum americanum*
- **Setaria verticillata*
- **Vachellia farnesiana*.

None of the seven introduced / naturalised flora taxa identified during the survey are listed as a Declared Pest under the *Biosecurity and Management Act 2007* (BAM Act) or a Weed of National Significance (WoNS).

The most commonly recorded introduced species recorded was **Cenchrus ciliaris* within the Major and Minor Drainage Lines and Mulga flats. All of the introduced flora have been previously recorded from the Newman area.

4.5 Significant flora

4.5.1 Recorded species

No EPBC Act and State-listed Threatened flora species was recorded within the survey area. *Seringia exastia* (T) recently underwent a genomic data study, which synonymised the common species, *Seringia elliptica* under *S. exastia* (Binks et al. 2020). The records of *S. exastia* recorded within the survey area would have been representative of the non-significant species *S. elliptica* under the previous classification. The taxon retains its Threatened status until the updated name has been officially endorsed and appears in the Gazettal Notice (WA Herbarium 2021b). As such, although this species is currently listed as Threatened, it is not considered to be significant in this context.

Five Priority flora species were recorded within the survey area during the 2021 survey:

- *Aristida lazaridis* (P2)
- *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3)
- *Goodenia nuda* (P4)
- *Ipomoea racemigera* (P2)
- *Lepidium catapycnon* (P4).

The locations of the Priority flora populations recorded within the survey area are mapped in Figure 6, Appendix A. Species location data and number of plants recorded at these locations, is presented in Appendix D.

***Aristida lazaridis* (P2)**

Aristida lazaridis is a tufted grass to 1.5 m high (WA Herbarium 2021b) (Plate 3). It differs from all other *Aristida* species by the involute lemma from the furrow of which one margin usually protrudes noticeably (Simon 1984). This species grows in red clay loam, floodplain, drainage lines and claypans on plains and occasionally on hill slopes and has a distribution from the Pilbara bioregion and confined to the Hamersley subregion in WA (WA 2021b). The species is also known from tropical Queensland and Northern Territory (CSIRO 2020). *A. lazaridis* has been previously recorded from six locations at the western boundary of the survey area in 2015. During the current survey, *A. lazaridis* was recorded from one location with an estimated 150 individuals at 5 % cover across the mapped flora polygon, which was from a previously known location (BHP WAIO 2021). This was the extent of the population for this species in the survey area.



Plate 3 *Aristida lazaridis* (P2)

***Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3)**

Eremophila sp. Hamersley Range (K. Walker KW 136) P3 is an erect shrub to 3.5 m high with pale pink to white flowers which are spotted on the inside (Rio Tinto Australia and WA Herbarium 2015) (Plate 4). Habitat is typically open rocky slopes, gullies and rock faces associated with large hills and cliffs (Rio Tinto Australia and WA Herbarium 2015). *E. sp.* Hamersley Range (K. Walker KW 136) has been previously recorded east of the survey area at Eastern Ridge and at Ore Body 24 (Western Australian Herbarium 2021a). During the current survey, *E. sp.* Hamersley Range (K. Walker KW 136) was recorded from six locations with a total of 144 individuals (Plate 4 and Plate 5). These six locations represent new populations not previously recorded.



Plate 4 *Eremophila* sp. Hamersley Range P3 (K. Walker KW 136) habit and habitat



Plate 5 *Eremophila* sp. Hamersley Range P3 (K. Walker KW 136) leaf morphology

***Goodenia nuda* (P4)**

Goodenia nuda is an erect to ascending herb to 0.5 m high with basal leaves prominently three veined towards the base (Carolin 1992). Typical habitat includes seasonally inundated clay soils and drainage lines often in association with mulga (Rio Tinto Australia and WA Herbarium 2015). *G. nuda* P4 has been previously recorded in the central east and central west of the survey area within a broad drainage system (BHP WAIO 2021). *G. nuda* was recorded from two locations with a total of two individuals. These records represent new locations not previously recorded.

***Ipomoea racemigera* (P2)**

Ipomoea racemigera is a pilose annual with twining stems and white funnel shaped flower (Johnson 2014). Habitat includes in sandy soils along water courses (Johnson 2014). *I. racemigera* P2 has been previously recorded between 15 and 26 km east of the survey area, east of the Fortescue River in association with the Fortescue River and Shovelanna Creek (BHP WAIO 2021). During the current survey *I. racemigera* was recorded from three locations (within the one population) with a total of six individuals. These records represent new locations not previously recorded.



Plate 6 *Ipomoea racemigera*



Plate 7 *Ipomoea racemigera*

***Lepidium catapycnon* (P4)**

Lepidium catapycnon is a papillose perennial shrub with stems bent at the nodes in a marked zig-zag manner (Hewson 1981). *L. catapycnon* P4 has been recorded at locations within and surrounding the survey area, there is a concentration of 138 records located west of Mount Whaleback starting less than one kilometre from the south west corner of the survey area. Within the survey area, *L. catapycnon* P4 has been recorded from approximately one kilometre south of Homestead Creek South and at three locations in the northern half of the survey area. During the current survey *L. catapycnon* was recorded from eight locations with a total of 106 individuals. These records are from previously known locations (BHP WAIO 2021).



Plate 8 *Lepidium catapycnon* - habit



Plate 9 *Lepidium catapycnon*

4.5.1.1 Likelihood of occurrence assessment

A likelihood of occurrence assessment was conducted for all significant flora taxa identified in the desktop assessment Appendix D. Of the 39 identified conservation listed species, five species have been recorded during this current survey, excluding *Seringia exastia*:

- *Aristida lazaridis* (P2)
- *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3)
- *Goodenia nuda* (P4)
- *Ipomoea racemigera* (P2)
- *Lepidium catapycnon* (P4).

Three species were previously recorded within the survey area, however, were not recorded during the current survey:

- *Goodenia* sp. East Pilbara (A.A. Mitchell PRP 727) (P3)
- *Aristida jerichoensis* var. *subspinulifera* (P3) (DBCA WAHerb record)
- *Eremophila magnifica* subsp. *magnifica* (P3).

Three species are Likely to occur:

- *Isotropis parviflora* (P2)
- *Rhagodia* sp. Hamersley (M. Trudgen 17794) (P3)
- *Indigofera gilesii* (P3).

Of the remaining identified conservation listed species, six species are considered Possible to occur, with the remaining 22 species considered Unlikely to occur post-survey.

4.5.2 Flora of interest

Hibiscus* aff. *campanulatus

The survey recorded *Hibiscus* aff. *campanulatus* from nine locations with approximately 4,800 individuals. At one location the population extended outside the survey area. The collection locations for the species are mapped in Figure 6, Appendix A. Location data and number of plants recorded is presented in Appendix D.

Hibiscus aff. *campanulatus* is considered a new taxon (Plate 10), as it is not synonymous with any of the species within its group (based on the current known taxonomic understanding of the species groups). A previous survey (Bennelongia 2019) recorded *Hibiscus* aff. *campanulatus*, however could not confirm the taxon due to insufficient characters for identification.

Hibiscus *campanulatus*, *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354), *Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708) and *Hibiscus* aff. *campanulatus* belong to the *Hibiscus* *haynaldii* species complex (group). All the species that belong to this complex have large flowers. Among these taxa, *H. campanulatus* has white flowers; which is a distinctive characteristic to separate it from others. The remaining three species have pink flowers and very similar leaf sizes and grow in similar habitats (large gorges).

H. sp. Mt Brockman (E. Thoma ET 1354), and *H. sp.* Gurinbiddy Range (M.E. Trudgen MET 15708) have a similar epicalyx, and it is very hard to identify in the field. In contrast, the collections of *H. aff. campanulatus* have a large obovate epicalyx and can be separated from the other known entities. This new collection of *H. aff. campanulatus* will be raised as a new Phrase name taxa and will be listed as a Priority species by the DBCA (pers comm Steve Dillon, October 2021, WA Herbarium).



Plate 10 *Hibiscus* aff. *Campanulatus* (GHD 2021)

Taxonomic anomalies

A further four collections from the survey area also represented taxonomic anomalies. These are discussed below and mapped in Figure 6, Appendix A.

Tribulus* aff. *terrestris

Tribulus aff. *terrestris* was recorded within quadrat OB-06 (Claypan). This collection did not fit the known characters of *Tribulus terrestris*. This was a singular collection and does not represent a population.

T. terrestris fruits have two lateral, widely diverging, medial spines 3-8 mm long and a shorter downward-pointing basal pair.

The WA Herbarium are aware of differences in specimens collected in the claypans and may choose to undertake a taxonomic revision to formally recognise potentially new entities in the future, however, there is currently not enough fertile material available to undertake a detailed study. In the medium term, no new phrase name entity will

be raised. Further surveys are not recommended as it cannot yet be separated into a new species with confidence.

Portulaca aff. australis

Portulaca aff. australis was recorded within quadrat OB-24. This collection had different seed morphology to that of the recognised taxa. This was a singular collection and does not represent a population. This is a complex species-group, and currently, no taxonomic expert is available in WA. Further surveys are not recommended as it cannot yet be separated into a new species with confidence.

Portulaca aff. decipiens

Portulaca aff. Decipiens was recorded within quadrat OB-30. This collection had different seed morphology to that of the recognised taxa. This was a singular collection and does not represent a population. This is a complex species-group, and currently, no taxonomic expert is available in WA. Further surveys are not recommended as it cannot yet be separated into a new species with confidence.

Aristida aff. nitidula

Aristida aff. nitidula was recorded within quadrat OB-30. This collection did not have the lemma and habit characteristics of the known *Aristida nitidula* or *A. burbidgeae* species. The WA Herbarium are aware of differences in specimens collected in the claypans and may choose to undertake a taxonomic revision to formally recognise potentially new entities in the future, however, there is currently not enough fertile material available to undertake a detailed study. In the medium term, no new phrase name entity will be raised. Further surveys are not recommended as it cannot yet be separated into a new species with confidence.

5. Discussion and conclusion

The survey area is located approximately 14 km west to 24 km east of Newman, in the Shire of East Pilbara, in the Pilbara bioregion of Western Australia.

Nine vegetation types aligning with broad landforms were identified and described in the survey area, not including cleared tracks. No TEC's listed under the EPBC Act or BC Act were identified within the survey area during the field survey. All recorded vegetation types are known to occur outside the survey area and are extensive within the local and regional area, except VT07 (Claypan) which has a restrictive distribution within the survey area. While VT07 does not represent the known cracking clay PECs, West Angelas Cracking Clays and Brockman Iron Cracking Clay Communities of the Hamersley Range (DBCA 2021e), claypans in the Pilbara are generally restrictive and poorly known with further survey and research required to understand and further determine their classification and what species are key indicators. The two aforementioned PECs comprise *Astreleba* sp as key species indicators, which was not a species present in VT07.

A total of 309 flora taxa (including subspecies and varieties) representing 41 families and 120 genera were recorded from the survey area during the field survey. The diversity of the survey area is considered to be high, which is likely to be as a result of the differing landforms occurring within the survey area (rocky slopes/hills, drainage systems and flats) and large areas of Excellent to Very Good vegetation condition.

Five Priority flora species were recorded within the survey area: *Aristida lazaridis* (P2), *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3), *Goodenia nuda* (P4), *Ipomoea racemigera* (P2) and *Lepidium catapycnon* (P4). All of these species were previously known from the survey area except for *Eremophila* sp. Hamersley Range (K. Walker KW 136) (P3) and *Ipomoea racemigera* (P2) are new records for the survey area. The Priority flora species recorded within the survey area are known to occur outside the survey area.

A collection of *Hibiscus* aff. *campanulatus* was recorded from nine locations (populations) with approximately 4800 individuals recorded within the survey area. This taxon is considered to be a new taxon and is a flora of interest. This new collection of *H. aff. campanulatus* will be raised as a new Phrase name taxa and will be listed as a Priority species by the DBCA, therefore, should be treated as a significant flora taxon until it is formally recognised by the WA Herbarium. It is unknown if there are other locations further outside of the survey area of this punitive new taxon. It is recommended that additional surveys be completed to confirm the presence of the species in the gullies across the survey area, to estimate population size, and outside the survey area, to determine the extent in which the species is present in the broader environment.

Four collections (*Tribulus* aff. *terrestris*, *Portulaca* aff. *australis*, *Portulaca* aff. *decipiens* and *Aristida* aff. *nitidula*) represented taxonomic anomalies that could not be accommodated easily within the current known taxonomic understanding of the species groups. However, these collections are not considered to be significant in the medium term, as they require further taxonomic analysis from those with expertise in the species complexes, and confirmation of their status by the WA Herbarium and DBCA. Further survey work for these species is not recommended until further development in the taxonomic review of the species is made.

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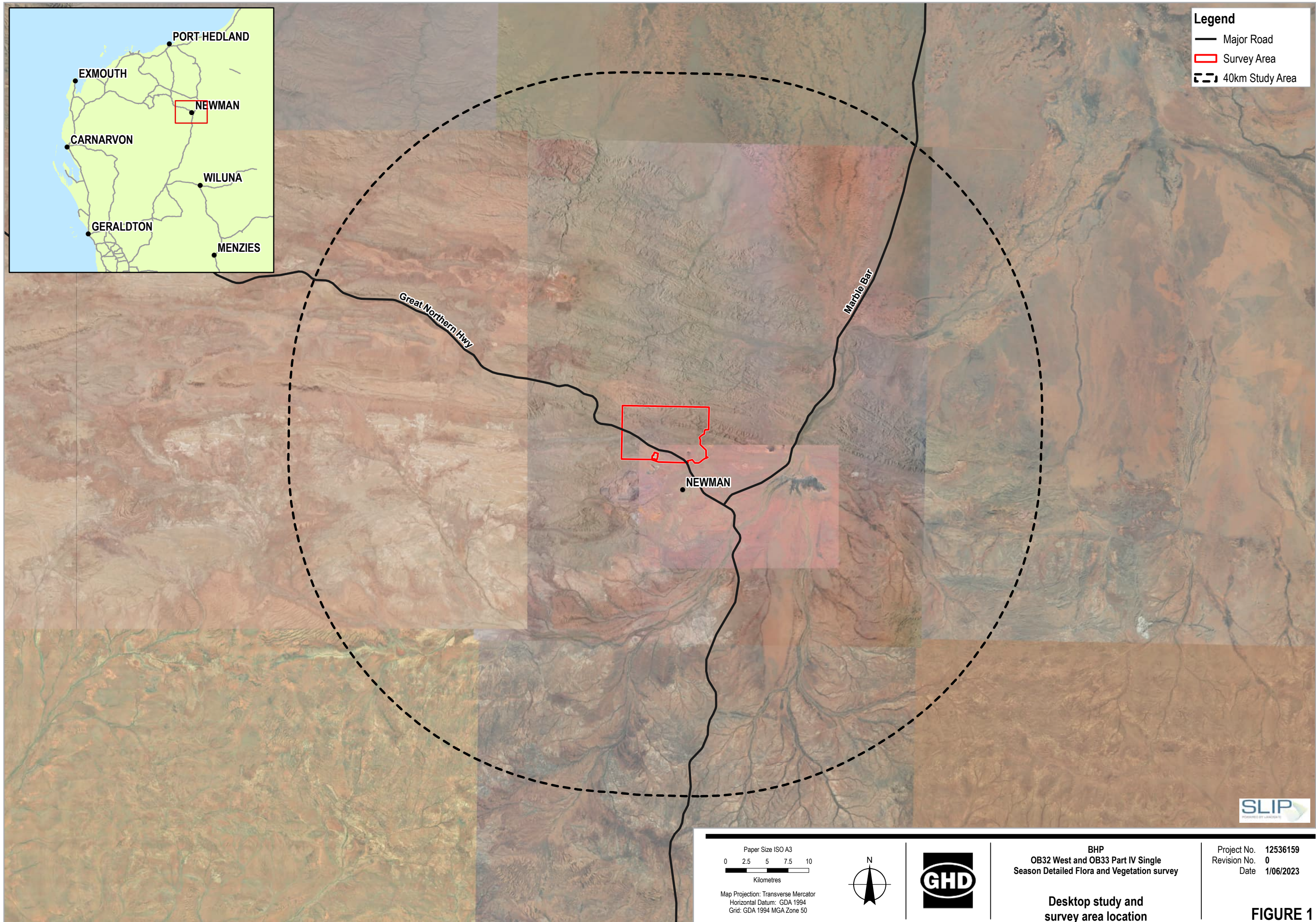
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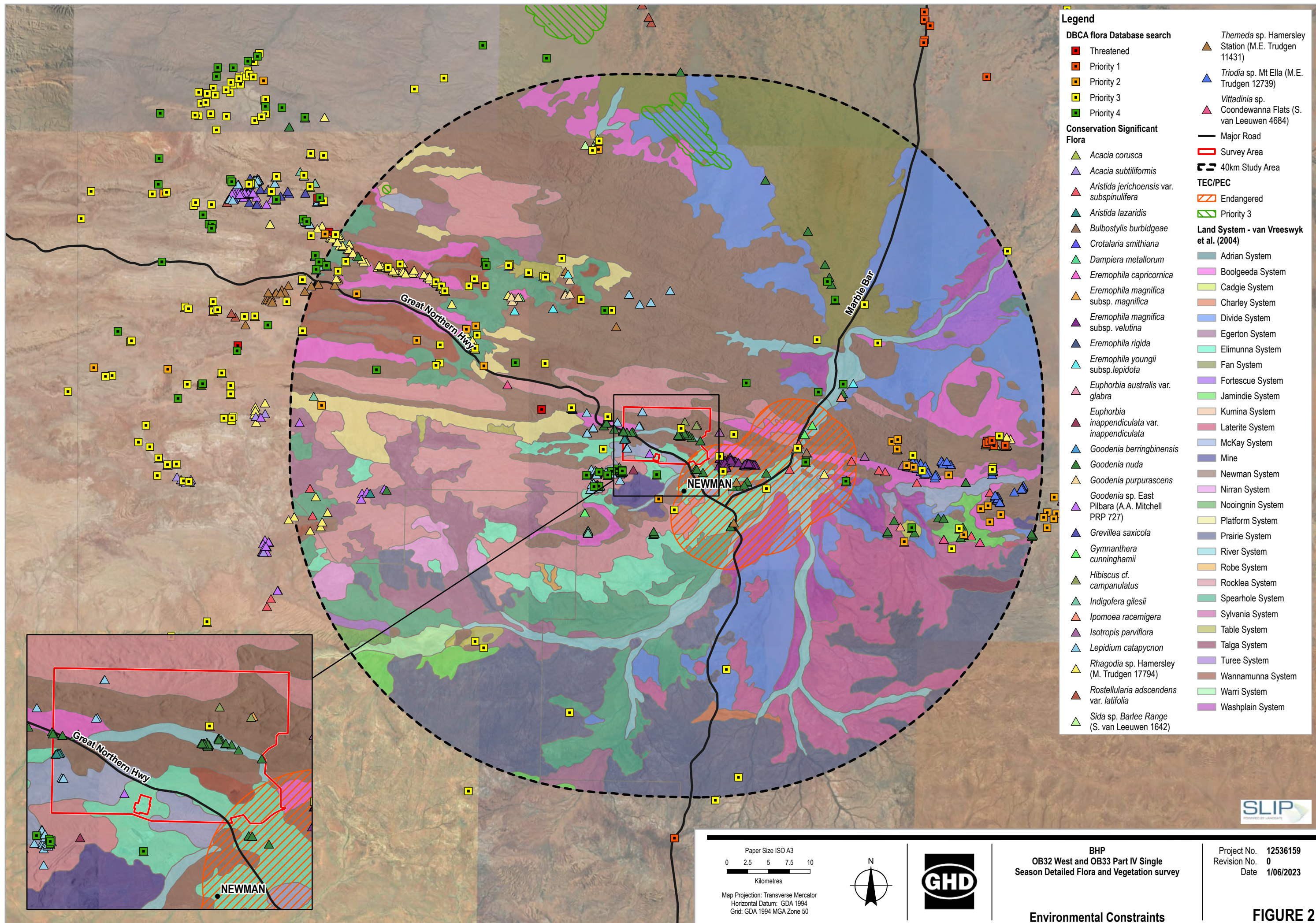
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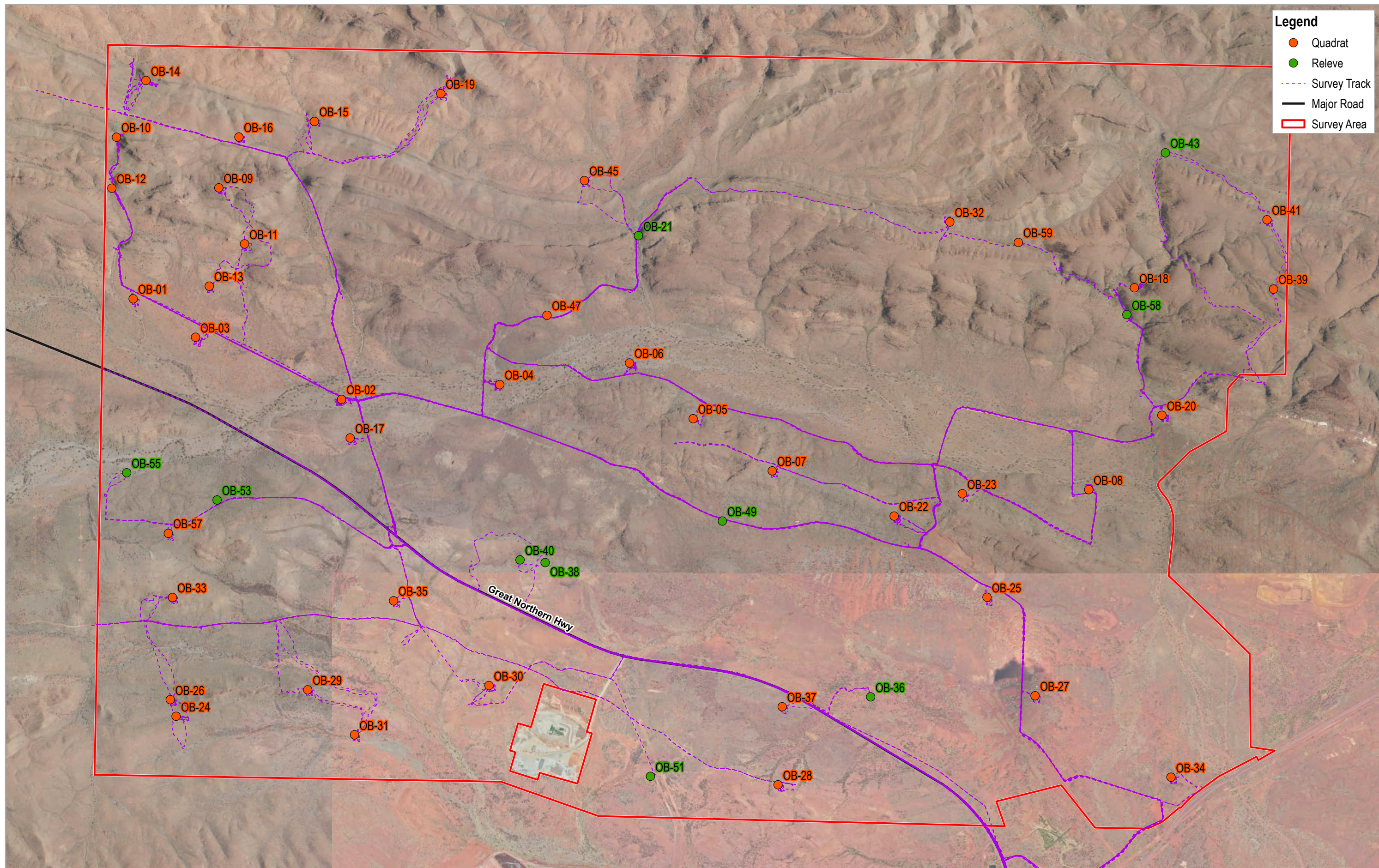
Appendices

Appendix A

Figures

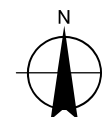






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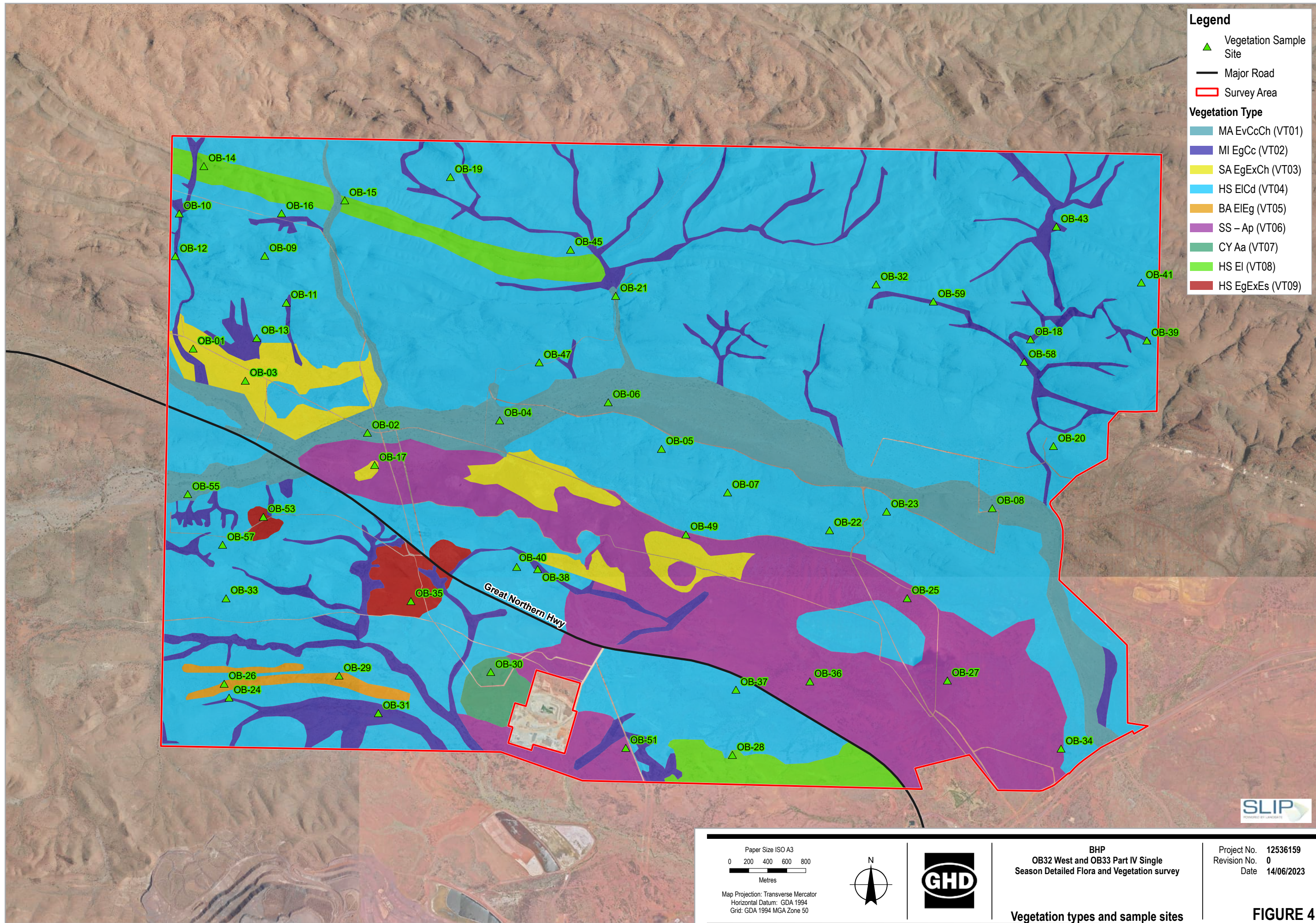


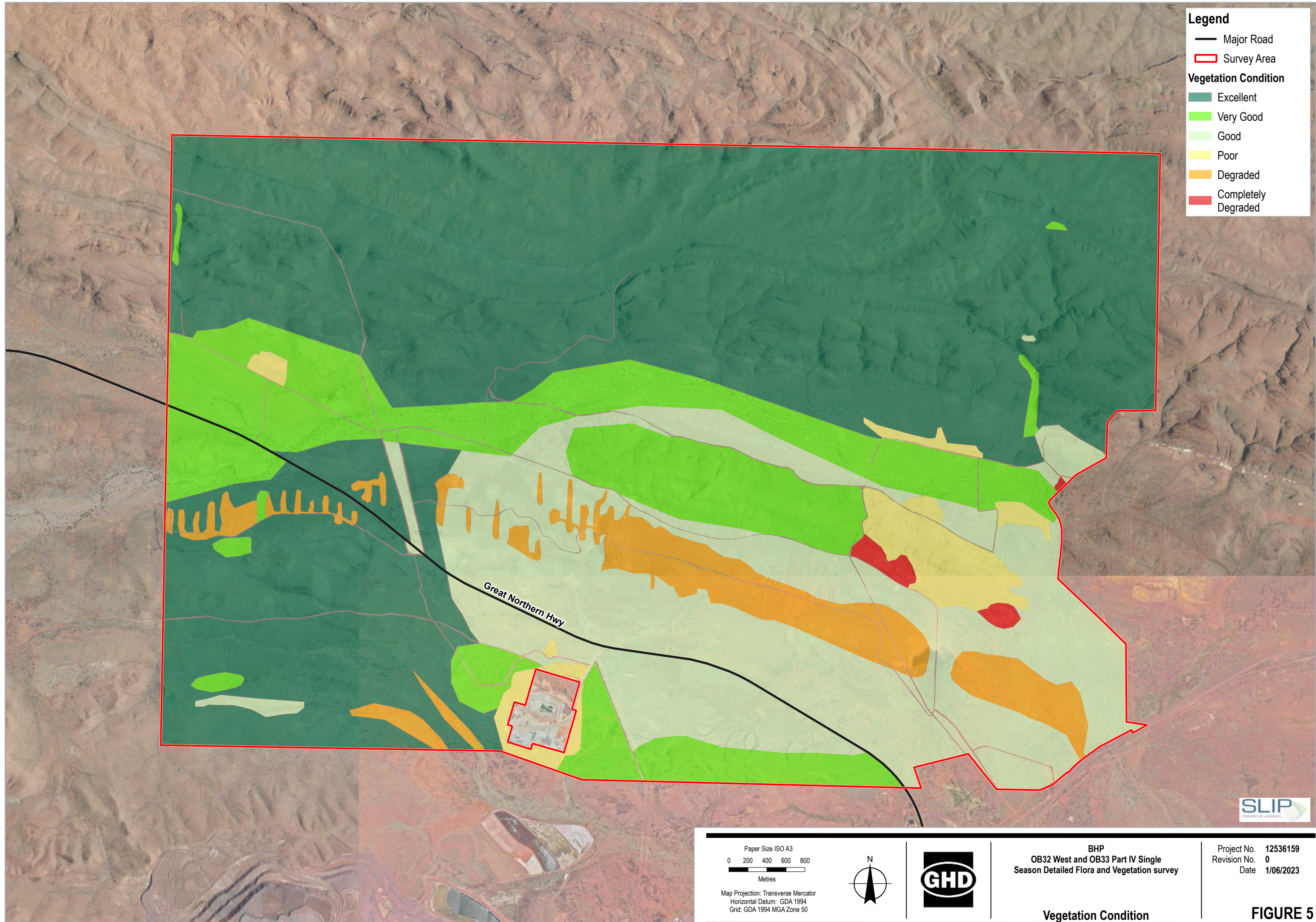
BHP
OB32 West and OB33 Part IV Single
Season Detailed Flora and Vegetation survey

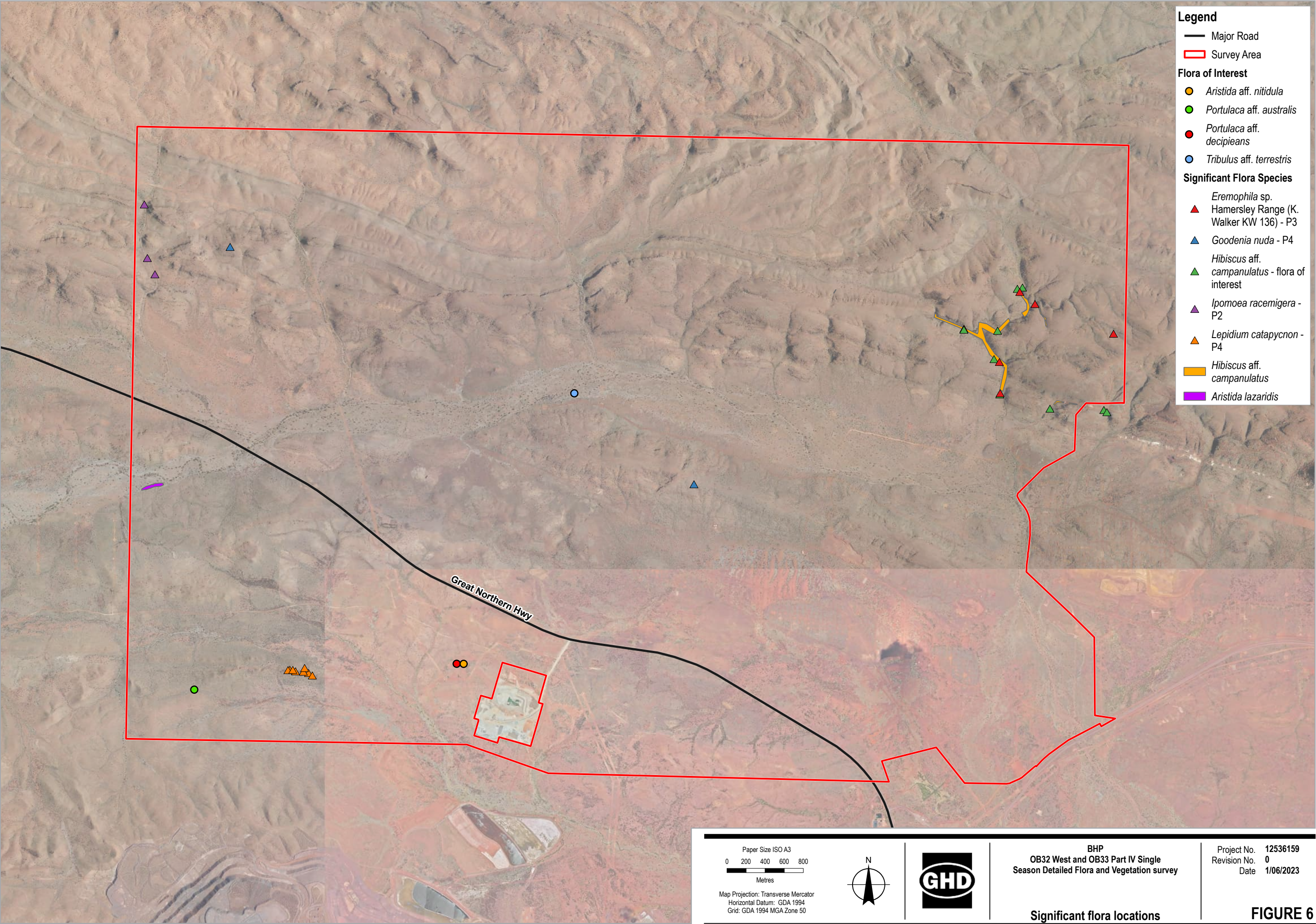
Survey Effort

Project No. 12536159
Revision No. 0
Date 1/06/2023

FIGURE 3







Appendix B

**Relevant legislation, background
information and conservation codes**

Relevant legislation

Federal *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Federal Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora and ecological communities and heritage places, which are defined in the EPBC Act as Matters of National Environmental Significance (MNES).

The biological aspects listed as MNES include:

- Nationally threatened flora species and ecological communities
- Migratory species

A person must not undertake an action that has, will have, or is likely to have a significant impact (direct or indirect) on MNES, without approval from the Federal Minister for the Environment.

The EPBC Act is administered by the Department of Agriculture, Water and the Environment (DAWE).

State *Environmental Protection Act 1986*

The *Environmental Protection Act 1986* (EP Act) is the primary legislative Act dealing with the protection of the environment in Western Australia. The Act allows the Environmental Protection Authority (EPA), to prevent, control and abate pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing. Part IV of the EP Act is administered by the EPA and makes provisions for the EPA to undertake environmental impact assessment of significant proposals, strategic proposals and land use planning schemes.

The Department of Water and Environment Regulation (DWER) is responsible for administering the clearing provisions of the EP Act (Part V). Clearing of native vegetation in Western Australia requires a permit from the DWER, unless exemptions apply. Applications for clearing permits are assessed by the Department and decisions are made to grant or refuse the application in accordance with the Act. When making a decision the assessment considers clearing against the ten clearing principles as specified in Schedule 5 of the EP Act:

1. Native vegetation should not be cleared if it comprises a high level of biodiversity.
2. Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significance habitat for fauna indigenous to Western Australia.
3. Native vegetation should not be cleared if it includes, or is necessary, for the continued existence of rare flora.
4. Native vegetation should not be cleared if it comprises the whole or part of native vegetation in an area that has been extensively cleared.
5. Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
6. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
7. Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
8. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
9. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

10. Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Exemptions for clearing include clearing that is a requirement of a written law or authorised under certain statutory processes (listed in Schedule 6 of the EP Act) and exemptions for prescribed low impact day-to-day activities (prescribed in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004); these exemptions do not apply in environmentally sensitive areas (ESAs).

State *Biodiversity and Conservation Act 2016*

The *Biodiversity Conservation Act 2016* (BC Act) provides for the conservation and protection of biodiversity and biodiversity components, as well as the promotion of the ecologically sustainable use of biodiversity components in Western Australia. The BC Act replaces both the repealed *Wildlife Conservation Act 1950* (WC Act) and the *Sandalwood Act 1929* (Sandalwood Act), as well as their associated regulations. To attain the objectives of the BC Act, principles of ecological sustainable development have been established:

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making
- Improved valuation, pricing and incentive mechanisms should be promoted.

The BC Act is administered by the Department of Biodiversity Conservation and Attractions (DBCA).

State *Biosecurity and Agriculture Management Act 2007*

The *Biosecurity and Agriculture Management Act 2007* (BAM Act) and associated regulations are administered by the Department of Primary Industries and Regional Development (DPIRD) and replace the repealed *Agriculture and Related Resources Protection Act 1976*. The main purposes of the BAM Act and its regulations are to:

- Prevent new animal and plant pests (vermin and weeds) and diseases from entering WA
- Manage the impact and spread of those pests already present in the state
- Safely manage the use of agricultural and veterinary chemicals
- Increased control over the sale of agricultural products that contain violative chemical residues.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act. A Declared Pest is a prohibited organism or an organism for which a declaration under Section 22(2) of the Act is in force. Declared Pests may be assigned a control category including: C1 (exclusion), C2 (eradication) and C3 (management). The category may apply to the whole of the State, LGAs, districts, individual properties or even paddocks, and all landholders are obliged to comply with the specific category of control. Categories of control are defined below.

DPIRD Categories for Declared Pests under the BAM Act

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

Background information

Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared by the Minister for Environment under Section 51B of the EP Act. The Table below outlines the aspects of areas declared as ESA in the Environmental Protection (Environmentally Sensitive Areas) Notice 2005.

Aspects of ESAs

Aspects of Environmentally Sensitive Areas
A declared World Heritage property as defined in Section 12 of the EPBC Act.
An area that is included on the Register of the National Estate (RNE), because of its natural values, under the <i>Australian Heritage Commission Act 1975</i> of the Commonwealth (the RNE was closed in 2007 and is no longer a statutory list – all references to the RNE were removed from the EPBC Act on 19 February 2012).
A defined wetland and the area within 50 m of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands.
The area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located.
The area covered by a Threatened Ecological Community.
A Bush Forever Site listed in “Bush Forever” Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission.
The areas covered by the Environmental Protection (Gnangara Mound Crown Land) Policy 1992.
The areas covered by the Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002.
The areas covered by the lakes to which the <i>Environmental Protection (Swan Coastal Plain Lakes) Policy 1992</i> (EPP Lakes) applies.
Protected wetlands as defined in the Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998.

Reserves and conservation areas

Department of Biodiversity, Conservation and Attractions managed lands and waters

DBCA manages lands and waters throughout Western Australia to conserve ecosystems and species, and to provide for recreation and appreciation of the natural environment. DBCA managed lands and waters include national parks, conservation parks and reserves, marine parks and reserves, regional parks, nature reserves, State forest and timber reserves. Access to, or through, some areas of DBCA managed lands may require a permit or could be restricted due to management activities. Proposed land use changes and development proposals that about DBCA managed lands will generally be referred to DBCA throughout the assessment process.

Wetlands

Wetlands include not only lakes with open water, but areas of seasonally, intermittently or permanently waterlogged soil.

Ramsar Wetlands (Wetlands of International Importance)

The Convention of Wetlands of International Importance was signed in 1971 at the Iranian town of Ramsar. The Convention has since been referred to as the Ramsar Convention. Ramsar Listed wetlands are “sites containing

representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity ... because of their ecological, botanical, zoological, limnological or hydrological importance” (DAWE 2020b). Once a Ramsar Listed Wetland is designated, the country agrees to manage its conservation and ensure its wise use. Under the Convention, wise use is broadly defined as “maintaining the ecological character of a wetland” (DAWE 2020b).

Nationally important wetlands

Wetlands of national significance are listed under the Directory of Important Wetlands in Australia. Nationally important wetlands are wetlands which meet at least one of the following criteria (DAWE 2020a):

- It is a good example of a wetland type occurring within a biogeographic region in Australia
- It is a wetland which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex
- It is a wetland which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail
- The wetland supports one percent or more of the national populations of any native plant or animal taxa
- The wetland supports native plant or animal taxa or communities which are considered endangered or vulnerable at the national level
- The wetland is of outstanding historical or cultural significance.

Vegetation extent and status

The National Objectives and Targets for Biodiversity Conservation 2001–2005 (Commonwealth of Australia 2001) recognise that the retention of 30 percent or more of the pre-clearing extent of each ecological community is necessary if Australia’s biological diversity is to be protected. This is the threshold level below which species loss appears to accelerate exponentially and loss below this level should not be permitted. This level of recognition is in keeping with the targets recommended in the review of the National Strategy for the Conservation of Australia’s Biological Diversity (ANZECC 2000).

The extent of remnant native vegetation in WA has been assessed by Shepherd et al. (2002) and the GoWA (2019), based on broadscale vegetation association mapping by Beard (various publications). The GoWA produces Statewide Vegetation Statistics Reports that are used for a number of purposes including conservation planning, land use planning and when assessing development applications. The reports are updated every 2-3 years.

Vegetation condition

The vegetation condition can be assessed in accordance with the vegetation condition rating scale for the South West and Interzone Botanical Provinces (EPA 2016a). The scale recognises the intactness of vegetation and consists of six rating levels as outlined below.

Vegetation condition rating scale for the Eremaean and Northern Botanical Provinces

Condition	Eremaean and Northern Botanical Provinces description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as at caused by low levels of grazing or slightly aggressive weed.
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.

Condition	Eremaean and Northern Botanical Provinces description
Degraded	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Conservation codes

Species of significant flora and communities are protected under both Federal and State Acts. The Federal EPBC Act provides a legal framework to protect and manage nationally important flora and communities. The State BC Act is the primary wildlife conservation legislation in Western Australia. Information on the conservation codes is summarised in the following sections.

Ecological communities

Significant communities

Ecological communities are defined as naturally occurring biological assemblages that occur in a particular type of habitat (English and Blyth 1997). Federally listed Threatened Ecological Communities (TECs) are protected under the EPBC Act. The BC Act provides for the Minister to list an ecological community as a TEC (section 27), or as a collapsed ecological community (section 31) statutory listing of State TECs by the Minister. The legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

Possible TECs that do not meet survey criteria are added to the DBCA Priority Ecological Community (PEC) List under Priorities 1, 2 and 3. These are ecological communities that are adequately known; are rare but not threatened, or meet criteria for Near Threatened. PECs 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. PECs are not listed under any formal Federal or State legislation, however, may be listed as TECs under the EPBC Act.

Codes and definitions for TECs listed under the EPBC Act and/or BC Act

Categories	Definition
Federal Government Conservation Categories (EPBC Act)	
Critically Endangered (CR)	An ecological community if, at that time, is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Endangered (EN)	An ecological community if, at that time: – is not critically endangered; and – is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Vulnerable (VU)	An ecological community if, at that time: – is not critically endangered or endangered; and – is facing a high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Western Australia Conservation Categories (BC Act)	
<u>Threatened Ecological Communities</u>	
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.
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.

Categories	Definition
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.
<u>Collapsed ecological communities</u>	
An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time – – there is no reasonable doubt that the last occurrence of the ecological community has collapsed); or – the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover – • its species composition or structure; or • its species composition and structure. Section 33 of the BC Act provides for a collapsed ecological community to be regarded as a threatened ecological community if it is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community.	

Categories and definitions for PECs as listed by the DBCA

Category	Descriptions
Priority 1	Poorly known ecological communities. Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority 2	Poorly known ecological communities. Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
Priority 3	Poorly known ecological communities. – 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: – Communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; – Communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, 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 4	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. – 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. – 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.

Category	Descriptions
	– Ecological communities that have been removed from the list of threatened communities during the past five years.
Priority 5	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.

Other significant vegetation

Vegetation may be significant for a range of reasons other than a statutory listing. The EPA (2016a, b) states that significant vegetation may include vegetation that includes the following:

- Restricted distribution
- Degree of historical impact from threatening processes
- A role as a refuge
- Providing an important function required to maintain ecological integrity of a significant ecosystem
- Local endemism in restricted habitats
- Novel combinations of taxa
- A role as a key habitat for Threatened species or large population representing a significant proportion of the local to regional total population of a species
- Being representative of a vegetation unit in 'pristine' condition in a highly cleared landscape, recently discovered range extensions, or isolated outliers of the main range.

This may apply at a number of levels, so the unit may be significant when considered at the fine-scale (intra-locality), intermediate-scale (locality or inter-locality) or broad-scale (local to region).

Flora

Significant flora

Species of significant flora are protected under both Federal and State legislation. Any activities that are deemed to have a significant impact on species that are recognised by the EPBC Act, and/or the BC Act can warrant referral to DAWE and/or the EPA.

The Federal conservation level of flora species and their significance status is assessed under the EPBC Act. The significance levels for flora used in the EPBC Act align with the International Union for Conservation of Nature (IUCN) Red List criteria, which are internationally recognised as providing best practice for assigning the conservation status of species.

The State conservation level of flora species and their significance status also follows the IUCN Red List criteria. Under the BC Act flora can be listed as Threatened, Extinct and as Specially Protected species.

Threatened species are those species which have been adequately searched for and are deemed to be, in the wild, either rare, under identifiable threat of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of Threatened species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria. Specially protected species meet 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 or Extinct species under the BC Act cannot also be listed as Specially Protected species.

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

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, 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.

For the purposes of this assessment, all species listed under the EPBC Act, BC Act and DBCA Priority species are considered significant.

Categories and definitions for EPBC Act and BC Act listed flora species

Conservation category	Definition
Threatened species	
Critically Endangered (CR)	Threatened species considered to be “facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
Endangered (EN)	Threatened species considered to be “facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
Vulnerable (VU)	Threatened species considered to be “facing a high risk of extinction in the wild in the medium term future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.
Extinct species	
Extinct (EX)	Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
Extinct in the Wild (EW)	Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Codes for DBCA listed Priority flora

Priority category	Definition
Priority 1	Poorly-known taxa 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.
Priority 2	Poorly-known taxa Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	Poorly-known taxa 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.
Priority 4	Rare, Near Threatened and other taxa in need of monitoring

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

Other significant flora

Flora species, subspecies, varieties, hybrids and ecotypes may be significant for a range of reasons, other than a statutory listing. The EPA (2016a, b) states that significant flora may include taxa that have/are:

- A keystone role in a particular habitat for Threatened or Priority flora species, or large populations representing a considerable proportion of the local or regional total population of a species
- Relictual status, being representation of taxonomic or physiognomic groups that no longer occur widely in the broader landscape
- New species or anomalous features that indicate a potential new species
- Being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- Unusual species, including restricted subspecies, varieties, or naturally occurring hybrids
- Local endemism (a restricted distribution) or association with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems).

Introduced plants (weeds)

Declared Pests

Information on species considered to be Declared Pests is provided under *State Biosecurity and Agriculture Management Act 2007*.

Weeds of National Significance

The spread of weeds across a range of land uses or ecosystems is important in the context of socio-economic and environmental values. The assessment of Weeds of National Significance (WoNS) is based on four major criteria:

- Invasiveness
- Impacts
- Potential for spread
- Socio-economic and environmental values.

Australian state and territory governments have identified thirty-two Weeds of National Significance (WoNS); a list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

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Appendix C

Desktop Searches



EPBC Act Protected Matters Report

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

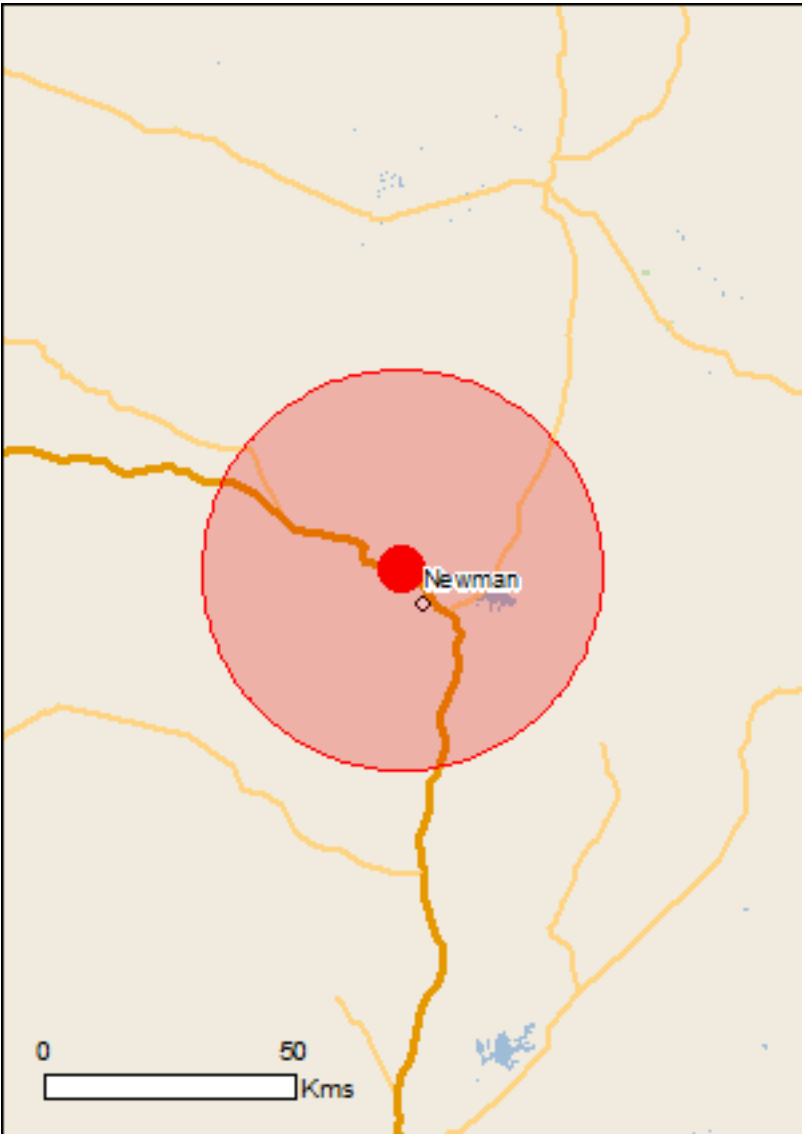
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

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

Report created: 15/07/21 12:44:51

- [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:	11
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:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	13
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

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat likely to occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Rhinonictoris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Plants		
Pityrodia augustensis Mt Augustus Foxglove [4962]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Liasis olivaceus barroni Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species	[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.	

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundo rustica		
Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to 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 known to 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

Commonwealth Land	[Resource Information]
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.	
Name	
Commonwealth Land - Defence - NEWMAN TRAINING DEPOT	

Listed Marine Species		[<u>Resource Information</u>]
* 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 known to occur within area
Apus pacificus		
Fork-tailed Swift [678]		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

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to 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 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]	Endangered*	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]		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		
Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
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
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

-23.30111 119.69472

Acknowledgements

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

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

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

Please feel free to provide feedback via the [Contact Us](#) page.

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NatureMap Species Report

Created By Guest user on 15/07/2021

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 119° 41' 41" E, 23° 18' 04" S
Buffer 40km

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1.	4886 <i>Abutilon amplum</i>			
2.	4889 <i>Abutilon cryptopetalum</i>			
3.	9080 <i>Abutilon cunninghamii</i>			
4.	4891 <i>Abutilon fraseri</i> (Lantern Bush)			
5.	4895 <i>Abutilon lepidum</i>			
6.	4898 <i>Abutilon macrum</i>			
7.	4899 <i>Abutilon malvifolium</i> (Bastard Marshmallow)			
8.	4901 <i>Abutilon otocarpum</i> (Desert Chinese Lantern)			
9.	43020 <i>Abutilon oxycarpum</i> subsp. <i>Prostrate</i> (A.A. Mitchell PRP 1266)			
10.	42920 <i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)			
11.	14113 <i>Abutilon</i> sp. <i>Pilbara</i> (W.R. Barker 2025)			
12.	3198 <i>Acacia acradenia</i>			
13.	11215 <i>Acacia adoxa</i> var. <i>adoxo</i>			
14.	44585 <i>Acacia adoxa</i> var. <i>adoxo</i> x <i>spondylophylla</i>			
15.	3205 <i>Acacia adsurgens</i>			
16.	3209 <i>Acacia ampliceps</i>			
17.	3214 <i>Acacia ancistrocarpa</i> (Fitzroy Wattle)			
18.	37260 <i>Acacia aptaneura</i>			
19.	3223 <i>Acacia arida</i>			
20.	3228 <i>Acacia atkinsiana</i>			
21.	3232 <i>Acacia ayersiana</i>			
22.	3241 <i>Acacia bivenosa</i>			
23.	29571 <i>Acacia bromilowiana</i>		P4	
24.	23524 <i>Acacia catenulata</i> subsp. <i>occidentalis</i>			
25.	3260 <i>Acacia citrinoviridis</i>			
26.	17013 <i>Acacia colei</i> var. <i>colei</i>			
27.	17014 <i>Acacia colei</i> var. <i>ileocarpa</i>			
28.	3270 <i>Acacia coriacea</i> (Wirewood)			
29.	13502 <i>Acacia coriacea</i> subsp. <i>pendens</i>			
30.	49085 <i>Acacia corusca</i> (Shimmer Wattle)		P1	
31.	3300 <i>Acacia dictyophleba</i> (Sandhill Wattle, Ngarkalya)			
32.	16174 <i>Acacia elachantha</i>			
33.	3326 <i>Acacia eriopoda</i> (Broome Pindan Wattle)			
34.	36781 <i>Acacia fuscaneura</i>			
35.	3360 <i>Acacia hamersleyensis</i>			
36.	3370 <i>Acacia hilliana</i>			
37.	3377 <i>Acacia inaequilatera</i> (Baderi)			
38.	36418 <i>Acacia incurvaneura</i>			
39.	37240 <i>Acacia macraneura</i>			
40.	3434 <i>Acacia maitlandii</i> (Maitland's Wattle)			
41.	19305 <i>Acacia melleodora</i>			
42.	3447 <i>Acacia monticola</i> (Gawar, Lilwardi)			
43.	36416 <i>Acacia mulganeura</i>			
44.	3475 <i>Acacia pachyacra</i>			
45.	3476 <i>Acacia pachycarpa</i>			
46.	15724 <i>Acacia paraneura</i>			
47.	3500 <i>Acacia pruinocarpa</i> (Gidgee)			
48.	36800 <i>Acacia pteraneura</i>			
49.	3501 <i>Acacia pychophylla</i>			
50.	29016 <i>Acacia pyrifolia</i> var. <i>morrisonii</i>			
51.	29015 <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>			
52.	3519 <i>Acacia rhodophloia</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
53.	44584	<i>Acacia rhodophloia</i> x <i>sibirica</i>			
54.	13078	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
55.	29135	<i>Acacia sericophylla</i>			
56.	8949	<i>Acacia sibirica</i> (Bastard Mulga)			
57.	29997	<i>Acacia</i> sp. <i>Jimblebar</i> (S. van Leeuwen 1342)			
58.	3553	<i>Acacia spondylophylla</i>			
59.	23528	<i>Acacia subtiliformis</i>		P3	
60.	13070	<i>Acacia synchronicia</i>			
61.	3573	<i>Acacia tenuissima</i>			
62.	3577	<i>Acacia tetragonophylla</i> (Kurara, Wakalpuka)			
63.	23521	<i>Acacia trudgeniana</i>			
64.	20319	<i>Acacia tumida</i> var. <i>pilbarensis</i>			
65.	3595	<i>Acacia victoriae</i> (Bramble Wattle, Ngatunpa)			
66.	3598	<i>Acacia wanyu</i>			
67.	19901	<i>Actinobole oldfieldianum</i>			
68.	39781	<i>Aenictophyton reconditum</i> subsp. <i>macrophyllum</i>			
69.	2647	<i>Alternanthera angustifolia</i>			
70.	2651	<i>Alternanthera nana</i> (Hairy Joyweed)			
71.	2652	<i>Alternanthera nodiflora</i> (Common Joyweed)			
72.	2653	<i>Alternanthera pungens</i> (Khaki Weed)	Y		
73.	2660	<i>Amaranthus cuspidifolius</i>			
74.	11035	<i>Amaranthus induratus</i>			
75.	2666	<i>Amaranthus mitchellii</i> (Boggabri Weed)			
76.	20018	<i>Amaranthus undulatus</i>			
77.	5278	<i>Ammannia multiflora</i>			
78.	196	<i>Amphipogon caricinus</i> (Long Greybeard Grass)			
79.	19835	<i>Amphipogon sericeus</i>			
80.	13700	<i>Amyema bifurcata</i>			
81.	2372	<i>Amyema fitzgeraldii</i> (Pincushion Mistletoe)			
82.	11614	<i>Amyema gibberula</i> var. <i>gibberula</i>			
83.	2374	<i>Amyema hilliania</i>			
84.	2383	<i>Amyema preissii</i> (Wireleaf Mistletoe)			
85.	40917	<i>Androcalva loxophylla</i>			
86.	40910	<i>Androcalva luteiflora</i> (Yellow-flowered Rulingia)			
87.	2333	<i>Anthobolus leptomerioides</i>			
88.	204	<i>Aristida burbridgeae</i>			
89.	207	<i>Aristida contorta</i> (Bunched Kerosene Grass)			
90.	12063	<i>Aristida holathera</i> var. <i>holathera</i>			
91.	212	<i>Aristida inaequiglumis</i> (Feathertop Threeawn)			
92.	17918	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>		P3	
93.	215	<i>Aristida latifolia</i> (Feathertop Wiregrass)			
94.	216	<i>Aristida lazardis</i>		P2	
95.	218	<i>Aristida obscura</i> (Brush Threeawn)			
96.		<i>Aristida</i> sp.			
97.	227	<i>Astrebla elymoides</i> (Weeping Mitchell Grass)			
98.	229	<i>Astrebla pectinata</i> (Barley Mitchell Grass)			
99.	6202	<i>Astrotricha hamptonii</i> (Ironplant)			
100.	2453	<i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
101.	2476	<i>Atriplex semilunaris</i> (Annual Saltbush)			
102.	33030	<i>Austrobryonia pilbarensis</i>			
103.	17246	<i>Austrostipa nitida</i>			
104.	5184	<i>Bergia pedicellaris</i>			
105.	7854	<i>Bidens bipinnata</i> (Bipinnate Beggartick)	Y		
106.	46339	<i>Bidens subalternans</i> var. <i>araneosa</i>	Y		
107.	46338	<i>Bidens subalternans</i> var. <i>simulans</i>	Y		
108.	2770	<i>Boerhavia coccinea</i> (Tar Vine, Wituka)			
109.	2772	<i>Boerhavia gardneri</i>			
110.	2774	<i>Boerhavia repleta</i>			
111.	11167	<i>Bonamia erecta</i>			
112.	44782	<i>Bonamia pilbarensis</i>			
113.	6609	<i>Bonamia rosea</i> (Feltly Bellflower)			
114.	45034	<i>Brachyscome rudallensis</i>			
115.	7413	<i>Brunonia australis</i> (Native Cornflower)			
116.	15885	<i>Brunonia australis</i> var. <i>A Kimberley Flora</i> (K.F. Kenneally 5452)			
117.	19070	<i>Brunonia</i> sp. <i>Long hairs</i> (D.E. Symon 2440)			
118.	750	<i>Bulbostylis barbata</i>			
119.	752	<i>Bulbostylis turbinata</i>			
120.	2864	<i>Calandrinia ptychosperma</i>			
121.	2868	<i>Calandrinia reticulata</i>			
122.	2869	<i>Calandrinia schistorhiza</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
123.	2870 <i>Calandrinia stagnensis</i>			
124.	2872 <i>Calandrinia tepperiana</i>			
125.	14090 <i>Calocephalus beardii</i>			
126.	48223 <i>Calocephalus pilbarensis</i>			
127.	7903 <i>Calotis hispidula</i> (Bindy Eye)			
128.	7904 <i>Calotis latiuscula</i>			
129.	7905 <i>Calotis multicaulis</i> (Many-stemmed Burr-daisy)			
130.	7906 <i>Calotis plumulifera</i>			
131.	5446 <i>Calytrix carinata</i>			
132.	2976 <i>Capparis lasiantha</i> (Split Jack, Balqarda)			
133.	2982 <i>Capparis umbonata</i> (Wild Orange, Nanggalu)			
134.	2949 <i>Cassytha capillaris</i>			
135.	258 <i>Cenchrus ciliaris</i> (Buffel Grass)	Y		
136.	29721 <i>Cenchrus setiger</i> (Birdwood Grass)	Y		
137.	7919 <i>Centipeda minima</i> (Spreading Sneezewood, Kanjirralaa, Inteng-inteng, Karengkal, Kata-palkalpa, Munyu-parnti-parnti)			
138.	19762 <i>Centipeda minima</i> subsp. <i>macrocephala</i>			
139.	32 <i>Cheilanthes brownii</i>			
140.	37 <i>Cheilanthes lasiophylla</i> (Woolly Cloak Fern)			
141.	12815 <i>Cheilanthes sieberi</i> subsp. <i>pseudovellea</i>			
142.	12818 <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			
143.	8462 <i>Cheilanthes tenuifolia</i> (Rock Fern)			
144.	269 <i>Chloris pectinata</i> (Comb Chloris)			
145.	270 <i>Chloris pumilio</i>			
146.	<i>Chloris</i> sp.			
147.	272 <i>Chloris virgata</i> (Feathertop Rhodes Grass)	Y		
148.	12612 <i>Chrysocephalum apiculatum</i>			
149.	33516 <i>Chrysocephalum gilesii</i>			
150.	12614 <i>Chrysocephalum pterochaetum</i>			
151.	273 <i>Chrysopogon fallax</i> (Golden Beard Grass)			
152.	48838 <i>Citrullus amarus</i>	Y		
153.	2985 <i>Cleome oxalidea</i>			
154.	2988 <i>Cleome viscosa</i> (Tickweed, Tjinduwadhu)			
155.	13692 <i>Clerodendrum floribundum</i> var. <i>angustifolium</i>			
156.	2778 <i>Codonocarpus cotinifolius</i> (Native Poplar, Kundurangu)			
157.	1165 <i>Commelina ensifolia</i> (Wandering Jew, Buargu)			
158.	6612 <i>Convolvulus clementii</i>			
159.	7939 <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
160.	<i>Conyza</i> sp.			
161.	13560 <i>Corchorus crozophorifolius</i>			
162.	4857 <i>Corchorus elachocarpus</i>			
163.	13659 <i>Corchorus laniflorus</i>			
164.	17405 <i>Corchorus lasiocarpus</i>			
165.	18409 <i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>			
166.	18408 <i>Corchorus lasiocarpus</i> subsp. <i>parvus</i>			
167.	<i>Corchorus</i> sp.			
168.	20242 <i>Corchorus</i> sp. <i>Hamersley Range hilltops</i> (S. van Leeuwen 3826)			
169.	17661 <i>Corchorus tectus</i>			
170.	4865 <i>Corchorus tridens</i>			
171.	17073 <i>Corymbia aspera</i>			
172.	16783 <i>Corymbia candida</i>			
173.	16780 <i>Corymbia candida</i> subsp. <i>dipsodes</i>			
174.	17082 <i>Corymbia deserticola</i>			
175.	17083 <i>Corymbia deserticola</i> subsp. <i>deserticola</i>			
176.	17077 <i>Corymbia ferriticola</i>			
177.	17093 <i>Corymbia hamersleyana</i>			
178.	17092 <i>Corymbia opaca</i>			
179.	14859 <i>Crotalaria smithiana</i>		P3	
180.	16189 <i>Cryptandra monticola</i>			
181.	17117 <i>Cullen cinereum</i>			
182.	17436 <i>Cullen graveolens</i>			
183.	17439 <i>Cullen lachnostachys</i>			
184.	17118 <i>Cullen leucanthum</i>			
185.	17119 <i>Cullen leucochaites</i>			
186.	17120 <i>Cullen pogonocarpum</i>			
187.	279 <i>Cymbopogon ambiguus</i> (Scentgrass)			
188.	282 <i>Cymbopogon procerus</i> (Lemon Grass)			
189.	6584 <i>Cynanchum floribundum</i> (Dumara Bush, Tjipa)			
190.	46558 <i>Cynodon convergens</i>			
191.	283 <i>Cynodon dactylon</i> (Couch)	Y		

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
192.	46555	<i>Cynodon prostratus</i>			
193.	12799	<i>Cyperus betchei</i> subsp. <i>commiscens</i>			
194.	774	<i>Cyperus bifax</i> (Downs Nutgrass)			
195.	786	<i>Cyperus cunninghamii</i>			
196.	12811	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>			
197.	798	<i>Cyperus iria</i>			
198.	799	<i>Cyperus ixiocarpus</i>			
199.	807	<i>Cyperus pulchellus</i>			
200.	814	<i>Cyperus squarrosus</i>			
201.	816	<i>Cyperus tenuiflorus</i> (Scaly Sedge)	Y		
202.	818	<i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
203.	290	<i>Dactyloctenium radulans</i> (Button Grass)			
204.	7424	<i>Dampiera candidans</i>			
205.	7426	<i>Dampiera cinerea</i>			
206.	6218	<i>Daucus glochidiatus</i> (Australian Carrot)			
207.	48642	<i>Desmanthus virgatus</i>	Y		
208.	3852	<i>Desmodium campylocaulon</i>			
209.	3853	<i>Desmodium filiforme</i>			
210.	303	<i>Dichanthium fecundum</i> (Curly Bluegrass)			
211.	13741	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>			
212.	11964	<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>			
213.	7164	<i>Dicladantha forrestii</i>			
214.	6754	<i>Dicrastylis cordifolia</i>			
215.	31838	<i>Dicrastylis kumarinensis</i>			
216.	308	<i>Digitaria ammophila</i> (Silky Umbrella Grass)			
217.	310	<i>Digitaria brownii</i> (Cotton Panic Grass)			
218.	313	<i>Digitaria ctenantha</i> (Comb Finger Grass)			
219.	48380	<i>Diplachne fusca</i> subsp. <i>muelleri</i>			
220.	12023	<i>Diplopeltis stuartii</i> var. <i>stuartii</i> (Desert Pepperflower)			
221.	7169	<i>Dipteracanthus australasicus</i>			
222.	11320	<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>			
223.	4759	<i>Dodonaea coriacea</i>			
224.	11406	<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>			
225.	4772	<i>Dodonaea pachyneura</i>			
226.	43544	<i>Drosera finlaysoniana</i>			
227.	31274	<i>Duperreya commixta</i>			
228.	2502	<i>Dysphania kalpari</i> (Rat's Tail, Kalpari)			
229.	33479	<i>Dysphania melanocarpa</i> (Black Crumbweed)			
230.	33596	<i>Dysphania melanocarpa</i> forma <i>leucocarpa</i>			
231.	11653	<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>			
232.	11890	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>			
233.	32348	<i>Eccremidium arcuatum</i>			
234.	328	<i>Echinochloa colona</i> (Awnless Barnyard Grass)	Y		
235.	828	<i>Eleocharis pallens</i> (Pale Spikerush)			
236.	355	<i>Elytrophorus spicatus</i> (Spikegrass)			
237.	12064	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Barrier Saltbush)			
238.	357	<i>Enneapogon caeruleus</i> (Limestone Grass)			
239.	360	<i>Enneapogon lindleyanus</i> (Wiry Nineawn, Purple-head Nineawn)			
240.	365	<i>Enneapogon polyphyllus</i> (Leafy Nineawn)			
241.	20377	<i>Enneapogon robustissimus</i>			
242.	368	<i>Enteropogon ramosus</i> (Windmill Grass, Curly Windmill Grass)			
243.	375	<i>Eragrostis cumingii</i> (Cuming's Love Grass)			
244.	378	<i>Eragrostis dielsii</i> (Mallee Lovegrass)			
245.	379	<i>Eragrostis elongata</i> (Clustered Lovegrass)			
246.	380	<i>Eragrostis eriopoda</i> (Woollybutt Grass, Wangurnu)			
247.	387	<i>Eragrostis lanipes</i> (Creeping Wanderrie)			
248.	388	<i>Eragrostis leptocarpa</i> (Drooping Lovegrass)			
249.	17608	<i>Eragrostis olida</i>			
250.	392	<i>Eragrostis pergracilis</i>			
251.	393	<i>Eragrostis setifolia</i> (Neverfail Grass)			
252.	395	<i>Eragrostis speciosa</i> (Handsome Lovegrass)			
253.	398	<i>Eragrostis tenellula</i> (Delicate Lovegrass)			
254.	399	<i>Eragrostis xerophila</i> (Knotty-butt Neverfail)			
255.	15167	<i>Eremophila canaliculata</i>			
256.	7189	<i>Eremophila clarkei</i> (Turpentine Bush)			
257.	7192	<i>Eremophila cuneifolia</i> (Pinyuru, T'iranjū)			
258.	7205	<i>Eremophila exilifolia</i>			
259.	15052	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>			
260.	16696	<i>Eremophila fraseri</i> subsp. <i>fraseri</i>			
261.	29532	<i>Eremophila galeata</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
262.	17519	<i>Eremophila jucunda</i> subsp. <i>pulcherrima</i>			
263.	7228	<i>Eremophila lachnocalyx</i> (Woolly-calyxed <i>Eremophila</i>)			
264.	16940	<i>Eremophila lanceolata</i>			
265.	17597	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>			
266.	17576	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>			
267.	7234	<i>Eremophila longifolia</i> (Berrigan, <i>Tulypurpa</i>)			
268.	16363	<i>Eremophila maculata</i> subsp. <i>brevifolia</i> (Native <i>Fuchsia</i>)			
269.	16362	<i>Eremophila maculata</i> subsp. <i>maculata</i>			
270.	14893	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>		P4	
271.	7239	<i>Eremophila margarethae</i> (Sandbank Poverty Bush)			
272.	48950	<i>Eremophila platycalyx</i> subsp. <i>Neds Creek</i> (N.H. Speck 1228)			
273.	15160	<i>Eremophila platycalyx</i> subsp. <i>pardalota</i>			
274.	15031	<i>Eremophila rigida</i>		P3	
275.	40643	<i>Eremophila</i> sp. <i>Hamersley Range</i> (K. Walker KW 136)		P3	
276.	20256	<i>Eremophila</i> sp. <i>West Angelas</i> (S. van Leeuwen 4068)		P1	
277.	16040	<i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	
278.	400	<i>Eriachne aristidea</i>			
279.	403	<i>Eriachne benthamii</i> (Swamp Wanderrrie)			
280.	408	<i>Eriachne flaccida</i> (Claypan Grass)			
281.	13660	<i>Eriachne lanata</i>			
282.	413	<i>Eriachne mucronata</i> (Mountain Wanderrrie Grass)			
283.	414	<i>Eriachne obtusa</i> (Northern Wandarrrie Grass)			
284.	16485	<i>Eriachne pulchella</i> subsp. <i>dominii</i>			
285.	16486	<i>Eriachne pulchella</i> subsp. <i>pulchella</i>			
286.	421	<i>Eriachne tenuiculmis</i>			
287.	426	<i>Eriochloa pseudoacrotricha</i> (Perennial Cupgrass)			
288.	4335	<i>Erodium cygnorum</i> (Blue Heronsbill)			
289.	35345	<i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i> (Blunt-budded River Red Gum)			
290.	35343	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>			
291.	5641	<i>Eucalyptus ewartiana</i> (Ewart's Mallee)			
292.	5655	<i>Eucalyptus gamophylla</i> (Twin-leaf Mallee, Warilu)			
293.	5684	<i>Eucalyptus kingsmillii</i> (Kingsmill's Mallee)			
294.	5698	<i>Eucalyptus leucophloia</i> (Snappy Gum, Migum)			
295.	18088	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>			
296.	5703	<i>Eucalyptus lucasii</i> (Barlee Box)			
297.	18058	<i>Eucalyptus repullulans</i>			
298.	5773	<i>Eucalyptus socialis</i> (Red Mallee, Altarpa)			
299.	19576	<i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>			
300.	29733	<i>Eucalyptus trivalva</i> (Victoria Spring Mallee)			
301.	14548	<i>Eucalyptus victrix</i>			
302.	15592	<i>Eucalyptus xerothermica</i>			
303.	11011	<i>Eulalia aurea</i>			
304.	42844	<i>Euphorbia australis</i> var. <i>hispidula</i>			
305.	35303	<i>Euphorbia australis</i> var. <i>subtomentosa</i>			
306.	4619	<i>Euphorbia biconvexa</i>			
307.	4620	<i>Euphorbia boophthona</i> (Gascoyne Spurge)			
308.	9048	<i>Euphorbia careyi</i>			
309.	4623	<i>Euphorbia coghlanii</i> (Namana)			
310.	42860	<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i>		P2	
311.	42869	<i>Euphorbia porcata</i>			
312.	12097	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Desert Spurge)			
313.	42879	<i>Euphorbia trigonosperma</i>			
314.	11200	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>			
315.	851	<i>Fimbristylis dichotoma</i> (Eight Day Grass)			
316.	862	<i>Fimbristylis microcarya</i>			
317.	12159	<i>Fimbristylis simulans</i>			
318.	35558	<i>Flaveria trinervia</i> (Speedy Weed)	Y		
319.	5212	<i>Frankenia setosa</i> (Bristly Frankenia)			
320.	3903	<i>Gastrolobium grandiflorum</i> (Wallflower Poison)			
321.	3938	<i>Glycine canescens</i> (Silky Glycine)			
322.	7988	<i>Gnephosis arachnoidea</i> (Cobwebby-headed <i>Gnephosis</i>)			
323.	41245	<i>Gompholobium oreophilum</i>			
324.	2676	<i>Gomphrena canescens</i> (Batchelors Buttons)			
325.	2680	<i>Gomphrena cunninghamii</i>			
326.	18367	<i>Gomphrena kanisii</i>			
327.	18372	<i>Gomphrena lanata</i>			
328.	11131	<i>Gomphrena sordida</i>			
329.	6151	<i>Gonocarpus ephemerus</i>			
330.	7490	<i>Goodenia armitiana</i>			
331.	20523	<i>Goodenia azurea</i> subsp. <i>hesperia</i>			

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332.	12512	<i>Goodenia berringbinensis</i>		P4	
333.	12517	<i>Goodenia cusackiana</i>			
334.	7509	<i>Goodenia forrestii</i>			
335.	18638	<i>Goodenia hartiana</i> (Hart's <i>Goodenia</i>)		P2	
336.	7521	<i>Goodenia lamprosperma</i>			
337.	7526	<i>Goodenia microptera</i>			
338.	12552	<i>Goodenia muelleriana</i>			
339.	7530	<i>Goodenia nuda</i>		P4	
340.	12571	<i>Goodenia pascua</i>			
341.	12574	<i>Goodenia prostrata</i>			
342.	7544	<i>Goodenia ramelii</i>			
343.	7545	<i>Goodenia scaevolina</i> (Ngurubi)			
344.	29381	<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727) (O'Meara's <i>Goodenia</i>)		P3	
345.	29673	<i>Goodenia</i> sp. Sandy Creek (R.D. Royce 1653)			
346.	7550	<i>Goodenia stellata</i>			
347.	10982	<i>Goodenia stobbsiana</i>			
348.	7556	<i>Goodenia tenuiloba</i>			
349.	7558	<i>Goodenia triodiophila</i>			
350.	7560	<i>Goodenia vilmorinae</i>			
351.	4918	<i>Gossypium robinsonii</i> (Wild Cotton)			
352.	11559	<i>Gossypium sturtianum</i> var. <i>sturtianum</i>			
353.	15845	<i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>			
354.	2079	<i>Grevillea pyramidalis</i> (Caustic Bush, Tjunga)			
355.	2096	<i>Grevillea stenobotrya</i>			
356.	2099	<i>Grevillea striata</i> (Beefwood)			
357.	13440	<i>Grevillea wickhamii</i> subsp. <i>aprica</i>			
358.	19478	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>			
359.	12832	<i>Gymnanthera cunninghamii</i>		P3	
360.	2138	<i>Hakea chordophylla</i>			
361.	19137	<i>Hakea lorea</i> subsp. <i>lorea</i>			
362.	2196	<i>Hakea preissii</i> (Needle Tree, Dandjin)			
363.	6688	<i>Halgania erecta</i>			
364.	30258	<i>Halgania solanacea</i> var. <i>Mt Doreen</i> (G.M. Chippendale 4206)			
365.	6174	<i>Haloragis gossei</i>			
366.	23465	<i>Haloragis gossei</i> var. <i>gossei</i>			
367.	20669	<i>Haloragis maierae</i>			
368.	6706	<i>Heliotropium cunninghamii</i>			
369.	6712	<i>Heliotropium heteranthum</i>			
370.	17307	<i>Heliotropium inexplicitum</i>			
371.	17309	<i>Heliotropium pachyphyllum</i>			
372.	17315	<i>Heliotropium tanythrix</i>			
373.	6718	<i>Heliotropium tenuifolium</i> (Mamukata)			
374.	29317	<i>Hibiscus austrinus</i> var. <i>austrinus</i>			
375.	4923	<i>Hibiscus brachysiphonius</i>			
376.	4924	<i>Hibiscus burtonii</i>			
377.	48312	<i>Hibiscus campanulatus</i>		P1	
378.	4925	<i>Hibiscus coatesii</i>			
379.	4931	<i>Hibiscus haynaldii</i>			
380.	40560	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)		P2	
381.	40640	<i>Hibiscus</i> sp. Mt Robinson (G. Byrne 3537)			
382.	4942	<i>Hibiscus sturtii</i> (Sturt's <i>Hibiscus</i>)			
383.	11651	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>			
384.	11385	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>			
385.	11893	<i>Hibiscus sturtii</i> var. <i>truncatus</i>			
386.	43081	<i>Hibiscus verdcourtii</i>			
387.	5215	<i>Hybanthus aurantiacus</i>			
388.	48203	<i>Hypertelis cerviana</i>			
389.	3973	<i>Indigofera colutea</i> (Sticky Indigo)			
390.	3974	<i>Indigofera georgei</i> (Bovine Indigo)			
391.	17716	<i>Indigofera gilesii</i>		P3	
392.	3982	<i>Indigofera monophylla</i>			
393.	3985	<i>Indigofera rugosa</i>			
394.	6624	<i>Ipomoea costata</i> (Rock Morning Glory, Kanti)			
395.	6631	<i>Ipomoea lonchophylla</i> (Cowvine)			
396.	6633	<i>Ipomoea muelleri</i> (Poison Morning Glory, Yumbu)			
397.	11312	<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>			
398.	6636	<i>Ipomoea plebeia</i> (Bellvine)			
399.	6639	<i>Ipomoea racemigera</i>		P2	
400.	458	<i>Iseilema dolichotrichum</i>			
401.	459	<i>Iseilema eremaum</i>			

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402.	464 <i>Iseilema membranaceum</i> (Small Flinders Grass)			
403.	465 <i>Iseilema vaginiflorum</i> (Red Flinders Grass)			
404.	3989 <i>Isotropis atropurpurea</i> (Poison Sage)			
405.	17790 <i>Isotropis parviflora</i>		P2	
406.	48615 <i>Isotropis</i> sp. Arid zone (G. Byrne 2775)			
407.	8088 <i>Ixiochlamys cuneifolia</i>			
408.	3996 <i>Jacksonia aculeata</i>			
409.	12059 <i>Jasminum didymum</i> subsp. <i>lineare</i> (Desert Jasmine)			
410.	4043 <i>Kennedia prorepens</i>			
411.	8095 <i>Lactuca saligna</i> (Wild Lettuce, Willow-leaf Lettuce)	Y		
412.	5846 <i>Lamarchea sulcata</i>			
413.	19727 <i>Leiocarpa semicalva</i> subsp. <i>semicalva</i>			
414.	3022 <i>Lepidium catapycnon</i> (Hamersley Lepidium)		P4	
415.	3025 <i>Lepidium echinatum</i>			
416.	3032 <i>Lepidium muelleri-ferdinandii</i>			
417.	3033 <i>Lepidium oxytrichum</i>			
418.	3035 <i>Lepidium pedicellosum</i>			
419.	3037 <i>Lepidium phlebopetalum</i> (Veined Peppergrass)			
420.	3038 <i>Lepidium pholidogynum</i>			
421.	3039 <i>Lepidium platypetalum</i> (Slender Peppergrass)			
422.	471 <i>Leptochloa digitata</i> (Whorled Cane Grass)			
423.	4061 <i>Lotus cruentus</i> (Redflower Lotus)			
424.	2396 <i>Lysiana casuarinae</i>			
425.	4728 <i>Macgregoria racemigera</i> (Snow Flower)			
426.	2538 <i>Maireana carnosae</i> (Cottony Bluebush)			
427.	2544 <i>Maireana georgei</i> (Satiny Bluebush)			
428.	2551 <i>Maireana melanocoma</i> (Pussy Bluebush)			
429.	2556 <i>Maireana planifolia</i> (Low Bluebush)			
430.	2560 <i>Maireana pyramidata</i> (Sago Bush)			
431.	2567 <i>Maireana tomentosa</i> (Felt Bluebush)			
432.	2571 <i>Maireana villosa</i>			
433.	4962 <i>Malvastrum americanum</i> (Spiked Malvastrum)	Y		
434.	74 <i>Marsilea drummondii</i> (Common Nardoo)			
435.	75 <i>Marsilea exarata</i>			
436.	76 <i>Marsilea hirsuta</i> (Nardoo)			
437.	19500 <i>Maytenus</i> sp. Mt Windell (S. van Leeuwen 846)			
438.	5879 <i>Melaleuca bracteata</i> (River Teatree)			
439.	5915 <i>Melaleuca glomerata</i>			
440.	3054 <i>Menkea villosula</i>			
441.	7082 <i>Mimulus gracilis</i>			
442.	8109 <i>Minuria integerrima</i> (Smooth Minuria)			
443.	4097 <i>Mirbelia ramulosa</i>			
444.	4105 <i>Mirbelia viminalis</i>			
445.	6519 <i>Mitrasacme connata</i>			
446.	490 <i>Monachather paradoxus</i>			
447.	4111 <i>Muelleranthus trifoliolatus</i>			
448.	17158 <i>Myoporum montanum</i> (Native Myrtle)			
449.	3614 <i>Neptunia dimorphantha</i> (Sensitive Plant)			
450.	6786 <i>Newcastelia cephalantha</i>			
451.	6791 <i>Newcastelia hexarrhena</i> (Lambs' Tails)			
452.	20252 <i>Newcastelia</i> sp. Hamersley Range (S. van Leeuwen 4264)			
453.	6971 <i>Nicotiana benthamiana</i> (Tjuntiwari)			
454.	6976 <i>Nicotiana occidentalis</i> (Native Tobacco)			
455.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
456.	6977 <i>Nicotiana rosulata</i> (Rosetted Tobacco)			
457.	11734 <i>Nicotiana rosulata</i> subsp. <i>rosulata</i>			
458.	7338 <i>Oldenlandia crouchiana</i>			
459.	12635 <i>Olearia fluvialis</i>			
460.	8153 <i>Olearia xerophila</i>			
461.	6651 <i>Operculina aequisejala</i>			
462.	17 <i>Ophioglossum lusitanicum</i> (Adders Tongue)			
463.	30374 <i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)		P2	
464.	503 <i>Panicum decompositum</i> (Native Millet, Kaltu-kaltu)			
465.	504 <i>Panicum effusum</i> (Hairy Panic Grass)			
466.	515 <i>Paraneurachne muelleri</i> (Northern Mulga Grass)			
467.	518 <i>Paspalidium clementii</i> (Clements Paspalidium)			
468.	519 <i>Paspalidium constrictum</i> (Knottybutt Grass)			
469.	523 <i>Paspalidium rarum</i> (Rare Paspalidium)			
470.	7091 <i>Peplidium maritimum</i>			
471.	35001 <i>Peripleura virgata</i>			

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472.	546	<i>Perotis rara</i> (Comet Grass)			
473.	3674	<i>Petalostylis cassioides</i>			
474.	3675	<i>Petalostylis labicheoides</i> (Slender Petalostylis)			
475.	4680	<i>Phyllanthus maderaspatensis</i>			
476.	4687	<i>Phyllanthus virgatus</i>			
477.	5245	<i>Pimelea forrestiana</i>			
478.	17816	<i>Pluchea ferdinandi-muelleri</i>			
479.	8168	<i>Pluchea rubelliflora</i>			
480.	6491	<i>Plumbago zeylanica</i> (Native Plumbago)			
481.	8173	<i>Podolepis capillaris</i> (Wiry Podolepis)			
482.	12075	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>			
483.	2901	<i>Polycarpaea holtzei</i>			
484.	2902	<i>Polycarpaea involucrata</i>			
485.	2903	<i>Polycarpaea longiflora</i>			
486.	41365	<i>Polygala glaucifolia</i>			
487.	6655	<i>Polymeria calycina</i>			
488.		<i>Polymeria</i> sp.			
489.	2879	<i>Portulaca cyclophylla</i>			
490.	43981	<i>Portulaca decipiens</i>			
491.	2881	<i>Portulaca filifolia</i>			
492.	2882	<i>Portulaca intraterranea</i>			
493.	2884	<i>Portulaca oleracea</i> (Purslane, Wakati)			
494.	12707	<i>Prostanthera albiflora</i>			
495.	18154	<i>Psyrax latifolia</i>			
496.	18210	<i>Psyrax rigidula</i>			
497.	41221	<i>Pterocaulon serrulatum</i> var. <i>velutinum</i>			
498.	8192	<i>Pterocaulon sphacelatum</i> (Apple Bush, Fruit Salad Plant)			
499.	8193	<i>Pterocaulon sphaeranthoides</i>			
500.	2690	<i>Ptilotus aervoides</i>			
501.	2693	<i>Ptilotus aphyllus</i>			
502.	2696	<i>Ptilotus astrolasius</i>			
503.	2698	<i>Ptilotus auriculifolius</i>			
504.	2699	<i>Ptilotus axillaris</i> (Mat Mulla Mulla)			
505.	2704	<i>Ptilotus calostachyus</i> (Weeping Mulla Mulla)			
506.	2706	<i>Ptilotus carinatus</i>			
507.	2711	<i>Ptilotus clementii</i> (Tassel Top)			
508.	2721	<i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
509.	2725	<i>Ptilotus fusiformis</i>			
510.	2727	<i>Ptilotus gaudichaudii</i>			
511.	2728	<i>Ptilotus gomphrenoides</i>			
512.	2731	<i>Ptilotus helipteroides</i> (Hairy Mulla Mulla)			
513.	2734	<i>Ptilotus incanus</i>			
514.	2746	<i>Ptilotus nobilis</i> (Tall Mulla Mulla)			
515.	2747	<i>Ptilotus obovatus</i> (Cotton Bush)			
516.	2751	<i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
517.	2755	<i>Ptilotus rotundifolius</i> (Royal Mulla Mulla)			
518.	2757	<i>Ptilotus schwartzii</i>			
519.	2582	<i>Rhagodia eremaea</i> (Thorny Saltbush)			
520.	20168	<i>Rhagodia</i> sp. <i>Hammersley</i> (M. Trudgen 17794)		P3	
521.	13308	<i>Rhodanthe charsleyae</i>			
522.	13301	<i>Rhodanthe floribunda</i>			
523.	13246	<i>Rhodanthe humboldtiana</i>			
524.	13310	<i>Rhodanthe margarethae</i>			
525.	42011	<i>Rhodanthe polakii</i>			
526.	13251	<i>Rhodanthe propinqua</i>			
527.	13303	<i>Rhodanthe sterilescens</i>			
528.	13254	<i>Rhodanthe stricta</i>			
529.	4190	<i>Rhynchosia australis</i> (Rhynchosia)			
530.	4191	<i>Rhynchosia minima</i> (Rhynchosia)			
531.		<i>Riccia crinita</i>			
532.	45178	<i>Roebuckiella similis</i>			
533.	5285	<i>Rotala diandra</i>			
534.	2443	<i>Rumex vesicarius</i> (Ruby Dock)	Y		
535.	116	<i>Ruppia polycarpa</i>			
536.	8198	<i>Rutidosia helichrysoides</i> (Grey Wrinklewort)			
537.	17985	<i>Rutidosia helichrysoides</i> subsp. <i>helichrysoides</i>			
538.	30434	<i>Salsola australis</i>			
539.	2357	<i>Santalum lanceolatum</i> (Northern Sandalwood, Yarnguli)			
540.	12578	<i>Scaevola acacioides</i>			
541.	12579	<i>Scaevola browniana</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
542.	13150	<i>Scaevola browniana</i> subsp. <i>browniana</i>			
543.	13172	<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>			
544.	25786	<i>Scaevola</i> sp. Mt Nameless (P.A.S. Wurm 1443)			
545.	7644	<i>Scaevola spinescens</i> (Currant Bush, Maroon)			
546.	599	<i>Schizachyrium fragile</i> (Senale Redgrass)			
547.	48362	<i>Schoenoplectiella laevis</i>			
548.	2602	<i>Sclerolaena convexula</i>			
549.	2603	<i>Sclerolaena cornishiana</i> (Cartwheel Burr)			
550.	2604	<i>Sclerolaena costata</i>			
551.	2606	<i>Sclerolaena cuneata</i> (Yellow Bindii)			
552.	2607	<i>Sclerolaena densiflora</i>			
553.	2609	<i>Sclerolaena diacantha</i> (Grey Copperburr)			
554.	2619	<i>Sclerolaena lanicuspis</i> (Spinach Burr)			
555.	2623	<i>Sclerolaena minuta</i>			
556.	2631	<i>Sclerolaena tetragona</i>			
557.	17645	<i>Senna artemisioides</i>			
558.	12276	<i>Senna artemisioides</i> subsp. <i>filifolia</i>			
559.	12279	<i>Senna artemisioides</i> subsp. <i>helmsii</i>			
560.	12280	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>			
561.	17558	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>			
562.	12283	<i>Senna artemisioides</i> subsp. x <i>sturtii</i>			
563.	18443	<i>Senna ferraria</i>			
564.	18449	<i>Senna glaucifolia</i>			
565.	12307	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
566.	12309	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>			
567.	12308	<i>Senna glutinosa</i> subsp. x <i>luerssenii</i>			
568.	18451	<i>Senna hamersleyensis</i>			
569.	12312	<i>Senna notabilis</i>			
570.	10848	<i>Senna occidentalis</i>	Y		
571.	14578	<i>Senna</i> sp. Billabong (J.D. Alonzo 721)			
572.	18445	<i>Senna stricta</i>			
573.	12319	<i>Senna venusta</i>			
574.	46816	<i>Seringia elliptica</i> (Showy fire-bush)			
575.	46821	<i>Seringia nephrosperma</i> (Free carpel fire-bush)			
576.	606	<i>Setaria dielsii</i> (Diels' Pigeon Grass)			
577.	612	<i>Setaria surgens</i> (Pigeon Grass)			
578.	613	<i>Setaria verticillata</i> (Whorled Pigeon Grass)	Y		
579.	4966	<i>Sida arenicola</i>			
580.	31758	<i>Sida arsinata</i>			
581.	4969	<i>Sida brownii</i>			
582.	4970	<i>Sida calyxhymenia</i> (Tall Sida)			
583.	4971	<i>Sida cardiophylla</i>			
584.	4976	<i>Sida echinocarpa</i>			
585.	31759	<i>Sida ectogama</i>			
586.	4977	<i>Sida fibulifera</i> (Silver Sida)			
587.	4986	<i>Sida platycalyx</i> (Lifesaver Burr)			
588.	16616	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)		P3	
589.	31854	<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)			
590.	48867	<i>Sida</i> sp. L (A.M. Ashby 4202)			
591.	33698	<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)			
592.	16993	<i>Sida</i> sp. Rabbit Flat (B.J. Carter 626)			
593.	20253	<i>Sida</i> sp. Shovelanna Hill (S. van Leeuwen 3842)			
594.	16617	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)			
595.	18144	<i>Sida</i> sp. tiny glabrous fruit (A.A. Mitchell PRP1152)			
596.	16923	<i>Sida trichopoda</i>			
597.	42547	<i>Solanum austropiceum</i>			
598.	6995	<i>Solanum centrale</i> (Desert Raisin, Kampurarpa)			
599.	6998	<i>Solanum cleistogamum</i>			
600.	42544	<i>Solanum elatius</i>			
601.	7016	<i>Solanum lachnophyllum</i>			
602.	7018	<i>Solanum lasiophyllum</i> (Flannel Bush, Mindjulu)			
603.	9258	<i>Solanum morrisonii</i>			
604.	7022	<i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
605.	42546	<i>Solanum piceum</i>			
606.	8231	<i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
607.	619	<i>Sorghum plumosum</i> (Plume Canegrass)			
608.	13575	<i>Spermacoe brachystema</i>			
609.	628	<i>Sporobolus actinocladius</i> (Ray Grass, Katoora)			
610.	629	<i>Sporobolus australasicus</i> (Fairy Grass)			
611.	4731	<i>Stackhousia intermedia</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
612.	18405	<i>Stackhousia</i> sp. swollen gynophore (W.R. Barker 2041)			
613.	7098	<i>Stemodia grossa</i> (Marsh Stemodia, Mindjaara)			
614.	7102	<i>Stemodia viscosa</i> (Pagurda)			
615.	3075	<i>Stenopetalum decipiens</i>			
616.	3078	<i>Stenopetalum nutans</i>			
617.	3082	<i>Stenopetalum velutinum</i> (Velvet Thread Petal)			
618.	8236	<i>Streptoglossa cylindriceps</i>			
619.	8237	<i>Streptoglossa decurrens</i>			
620.	8238	<i>Streptoglossa liatroides</i>			
621.	8239	<i>Streptoglossa macrocephala</i>			
622.	8240	<i>Streptoglossa odora</i>			
623.	12492	<i>Striga squamigera</i>			
624.	4220	<i>Swainsona canescens</i> (Grey Swainsona)			
625.	4223	<i>Swainsona decurrens</i>			
626.	4233	<i>Swainsona leana</i>			
627.	25902	<i>Symphyotrichum squamatum</i> (Bushy Starwort)	Y		
628.	48206	<i>Synostemon rhytidospermus</i>			
629.	31492	<i>Tecticornia disarticulata</i>			
630.	49016	<i>Tephrosia densa</i>			
631.	41986	<i>Tephrosia oxalidea</i>			
632.	41825	<i>Tephrosia rosea</i> var. <i>Fortescue</i> creeks (M.I.H. Brooker 2186)			
633.	17768	<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)			
634.	42442	<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)			
635.	42225	<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)			
636.	44719	<i>Tephrosia</i> sp. Willowra (G.M. Chippendale 4809)			
637.	40060	<i>Tephrosia</i> sp. clay soils (S. van Leeuwen et al. PBS 0273)			
638.	43963	<i>Tephrosia</i> sp. deserts (J.R. Maconochie 1403)			
639.	4285	<i>Tephrosia supina</i>			
640.	17820	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)		P3	
641.	17819	<i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)			
642.	673	<i>Themeda triandra</i>			
643.	674	<i>Thyridolepis mitchelliana</i> (Mulga Grass)			
644.	676	<i>Thyridolepis xerophila</i>			
645.	6265	<i>Trachymene bialata</i>			
646.	6278	<i>Trachymene oleracea</i>			
647.	19043	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>			
648.	19053	<i>Trachymene pilbarensis</i>			
649.	678	<i>Tragus australianus</i> (Small Burrgrass)			
650.	44241	<i>Trianthema glossostigmum</i>			
651.	44305	<i>Trianthema pilosum</i>			
652.	44362	<i>Trianthema triquetrum</i>			
653.	4374	<i>Tribulus astrocarpus</i>			
654.	14379	<i>Tribulus eichlerianus</i>			
655.	4377	<i>Tribulus hirsutus</i>			
656.	4379	<i>Tribulus macrocarpus</i>			
657.	18072	<i>Tribulus suberosus</i>			
658.	4383	<i>Tribulus terrestris</i> (Caltrop)	Y		
659.	6727	<i>Trichodesma zeylanicum</i> (Camel Bush, Kumbalin)			
660.	11750	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>			
661.	29483	<i>Tricoryne</i> sp. Hamersley Range (S. van Leeuwen 915)			
662.	48201	<i>Trigastrotheca molluginea</i>			
663.	679	<i>Triodia angusta</i>			
664.	680	<i>Triodia basedowii</i> (Lobed Spinifex)			
665.	681	<i>Triodia brizoides</i>			
666.	690	<i>Triodia longiceps</i> (Giant Grey Spinifex)			
667.	17877	<i>Triodia melvillei</i>			
668.	696	<i>Triodia pungens</i> (Soft Spinifex)			
669.	17873	<i>Triodia schinzii</i>			
670.	19534	<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739)		P3	
671.	48463	<i>Triodia vanleeuwenii</i>			
672.	704	<i>Triodia wiseana</i> (Limestone Spinifex)			
673.	4879	<i>Triumfetta leptacantha</i>			
674.	14942	<i>Triumfetta maconochieana</i>			
675.	98	<i>Typha domingensis</i> (Bulrush, Djandjidi)			
676.	717	<i>Urochloa piligera</i>			
677.	7654	<i>Velleia connata</i> (Cup Velleia)			
678.	7660	<i>Velleia glabrata</i> (Pee the Bed)			
679.	31391	<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)			
680.	8265	<i>Vittadinia eremaea</i>			
681.	33026	<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)		P1	

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
682.	7393	<i>Wahlenbergia tumidifructa</i>			
683.	5107	<i>Waltheria virgata</i>			
684.	1392	<i>Wurmbea deserticola</i>			
685.	730	<i>Xerochloa imberbis</i> (Rice Grass)			
686.	48251	<i>Xerochrysum boreale</i>		P3	
687.	11894	<i>Yakirra australiensis</i> var. <i>australiensis</i>			

Conservation Codes

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

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

Appendix D

Flora Data

Flora species list

Significant flora and flora of interest data

Flora species by site matrix

Vegetation site statistical analysis dendrogram

Quadrat data

Flora likelihood of occurrence assessment guidelines

Flora likelihood of occurrence assessment of significant flora identified in the desktop assessment

Flora species list

Family	Taxon	Status
Acanthaceae	<i>Dipteracanthus australasicus</i>	
Aizoaceae	<i>Trianthema glossostigmum</i>	
Aizoaceae	<i>Trianthema pilosum</i>	
Amaranthaceae	<i>Aerva javanica</i>	*
Amaranthaceae	<i>Alternanthera angustifolia</i>	
Amaranthaceae	<i>Alternanthera nodiflora</i>	
Amaranthaceae	<i>Amaranthus cuspidifolius</i>	
Amaranthaceae	<i>Amaranthus undulatus</i>	
Amaranthaceae	<i>Gomphrena canescens</i>	
Amaranthaceae	<i>Gomphrena cunninghamii</i>	
Amaranthaceae	<i>Gomphrena kanisii</i>	
Amaranthaceae	<i>Maireana tomentosa</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 gomphrenoides</i>	
Amaranthaceae	<i>Ptilotus helipteroides</i>	
Amaranthaceae	<i>Ptilotus obovatus</i>	
Amaranthaceae	<i>Ptilotus polystachyus</i>	
Amaranthaceae	<i>Ptilotus rotundifolius</i>	
Araliaceae	<i>Astrotricha hamptonii</i>	
Asteraceae	<i>Bidens bipinnata</i>	*
Asteraceae	<i>Chrysocephalum gilesii</i>	
Asteraceae	<i>Pluchea tetranthera</i>	
Asteraceae	<i>Pterocaulon serrulatum</i>	
Asteraceae	<i>Pterocaulon sp.</i>	
Boraginaceae	<i>Heliotropium chrysocarpum</i>	
Boraginaceae	<i>Heliotropium heteranthum</i>	
Boraginaceae	<i>Heliotropium inexplicitum</i>	
Boraginaceae	<i>Heliotropium sp.</i>	
Boraginaceae	<i>Heliotropium tenuifolium</i>	
Boraginaceae	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	
Brassicaceae	<i>Lepidium catapycnon</i>	P4
Brassicaceae	<i>Lepidium echinatum</i>	
Brassicaceae	<i>Stenopetalum decipiens</i>	

Family	Taxon	Status
Capparaceae	<i>Capparis umbonata</i>	
Caryophyllaceae	<i>Polycarpaea corymbosa</i>	
Caryophyllaceae	<i>Polycarpaea holtzei</i>	
Caryophyllaceae	<i>Polycarpaea longiflora</i>	
Chenopodiaceae	<i>Dysphania sp.</i>	
Chenopodiaceae	<i>Maireana georgei</i>	
Chenopodiaceae	<i>Maireana planifolia</i>	
Chenopodiaceae	<i>Maireana sp.</i>	
Chenopodiaceae	<i>Rhagodia eremaea</i>	
Chenopodiaceae	<i>Salsola australis</i>	
Chenopodiaceae	<i>Sclerolaena sp.</i>	
Cleomaceae	<i>Arivela viscosa</i>	
Convolvulaceae	<i>Bonamia erecta</i>	
Convolvulaceae	<i>Bonamia pilbarensis</i>	
Convolvulaceae	<i>Convolvulus clementii</i>	
Convolvulaceae	<i>Duperreya commixta</i>	
Convolvulaceae	<i>Evolvulus alsinoides</i>	
Convolvulaceae	<i>Evolvulus alsinoides var. decumbens</i>	
Convolvulaceae	<i>Evolvulus alsinoides var. villosicalyx</i>	
Convolvulaceae	<i>Ipomoea racemigera</i>	P2
Convolvulaceae	<i>Operculina aequiseipala</i>	
Convolvulaceae	<i>Polymeria ambigua</i>	
Cucurbitaceae	<i>Cucumis variabilis</i>	
Cyperaceae	<i>Bulbostylis barbata</i>	
Cyperaceae	<i>Cyperus iria</i>	
Cyperaceae	<i>Cyperus sp.</i>	
Cyperaceae	<i>Fimbristylis dichotoma</i>	
Cyperaceae	<i>Fimbristylis simulans</i>	
Cyperaceae	<i>Fimbristylis sp.</i>	
Euphorbiaceae	<i>Adriana tomentosa var. tomentosa</i>	
Euphorbiaceae	<i>Euphorbia australis var. australis</i>	
Euphorbiaceae	<i>Euphorbia australis var. subtomentosa</i>	
Euphorbiaceae	<i>Euphorbia biconvexa</i>	
Euphorbiaceae	<i>Euphorbia boophthona</i>	
Euphorbiaceae	<i>Euphorbia tannensis subsp. eremophila</i>	
Euphorbiaceae	<i>Euphorbia trigonosperma</i>	
Fabaceae	<i>Acacia adoxa var. adoxa</i>	
Fabaceae	<i>Acacia adsurgens</i>	
Fabaceae	<i>Acacia ancistrocarpa</i>	
Fabaceae	<i>Acacia aneura</i>	
Fabaceae	<i>Acacia arida</i>	

Family	Taxon	Status
Fabaceae	<i>Acacia ayersiana</i>	
Fabaceae	<i>Acacia bivenosa</i>	
Fabaceae	<i>Acacia catenulata</i>	
Fabaceae	<i>Acacia catenulata</i> subsp. <i>occidentalis</i>	
Fabaceae	<i>Acacia citrinoviridis</i>	
Fabaceae	<i>Acacia colei</i> var. <i>colei</i>	
Fabaceae	<i>Acacia dictyophleba</i>	
Fabaceae	<i>Acacia elachantha</i>	
Fabaceae	<i>Acacia hamersleyensis</i>	
Fabaceae	<i>Acacia hilliania</i>	
Fabaceae	<i>Acacia inaequilatera</i>	
Fabaceae	<i>Acacia maitlandii</i>	
Fabaceae	<i>Acacia pachyacra</i>	
Fabaceae	<i>Acacia paraneura</i>	
Fabaceae	<i>Acacia pruinocarpa</i>	
Fabaceae	<i>Acacia pteraneura</i>	
Fabaceae	<i>Acacia ptychophylla</i>	
Fabaceae	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	
Fabaceae	<i>Acacia rhodophloia</i>	
Fabaceae	<i>Acacia sibirica</i>	
Fabaceae	<i>Acacia</i> sp.	
Fabaceae	<i>Acacia spondylophylla</i>	
Fabaceae	<i>Acacia synchronicia</i>	
Fabaceae	<i>Acacia tenuissima</i>	
Fabaceae	<i>Acacia tetragonophylla</i>	
Fabaceae	<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	
Fabaceae	<i>Glycine canescens</i>	
Fabaceae	<i>Gompholobium oreophilum</i>	
Fabaceae	<i>Gompholobium polyzygum</i>	
Fabaceae	<i>Indigofera georgei</i>	
Fabaceae	<i>Indigofera linifolia</i>	
Fabaceae	<i>Indigofera monophylla</i>	
Fabaceae	<i>Indigofera rugosa</i>	
Fabaceae	<i>Isotropis atropurpurea</i>	
Fabaceae	<i>Isotropis iophyta</i>	
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>oligophylla</i>	
Fabaceae	<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>	

Family	Taxon	Status
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	
Fabaceae	<i>Senna hamersleyensis</i>	
Fabaceae	<i>Senna notabilis</i>	
Fabaceae	<i>Senna sericea</i>	
Fabaceae	<i>Senna symonii</i>	
Fabaceae	<i>Swainsona decurrens</i>	
Fabaceae	<i>Tephrosia densa</i>	
Fabaceae	<i>Tephrosia oxalidea</i>	
Fabaceae	<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)	
Fabaceae	<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	
Fabaceae	<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)	
Fabaceae	<i>Vachellia farnesiana</i>	*
Fabaceae	<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)	
Goodeniaceae	<i>Dampiera candicans</i>	
Goodeniaceae	<i>Goodenia cusackiana</i>	
Goodeniaceae	<i>Goodenia microptera</i>	
Goodeniaceae	<i>Goodenia muelleriana</i>	
Goodeniaceae	<i>Goodenia nuda</i>	P4
Goodeniaceae	<i>Goodenia prostrata</i>	
Goodeniaceae	<i>Goodenia stobbsiana</i>	
Goodeniaceae	<i>Goodenia triodiophila</i>	
Goodeniaceae	<i>Goodenia vilmorinae</i>	
Goodeniaceae	<i>Scaevola amblyanthera</i> var. <i>centralis</i>	
Goodeniaceae	<i>Scaevola parvifolia</i>	
Lamiaceae	<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>	
Lauraceae	<i>Cassytha capillaris</i>	
Loranthaceae	<i>Lysiana casuarinae</i>	
Malvaceae	<i>Abutilon cunninghamii</i>	
Malvaceae	<i>Abutilon lepidum</i>	
Malvaceae	<i>Abutilon leucopetalum</i>	
Malvaceae	<i>Abutilon otocarpum</i>	
Malvaceae	<i>Abutilon</i> sp.	
Malvaceae	<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	
Malvaceae	<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)	
Malvaceae	<i>Androcalva loxophylla</i>	
Malvaceae	<i>Androcalva luteiflora</i>	
Malvaceae	<i>Corchorus lasiocarpus</i>	
Malvaceae	<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	
Malvaceae	<i>Corchorus tridens</i>	
Malvaceae	<i>Gossypium australe</i>	

Family	Taxon	Status
Malvaceae	<i>Gossypium robinsonii</i>	
Malvaceae	<i>Gossypium sturtianum</i> var. <i>sturtianum</i>	
Malvaceae	<i>Hibiscus burtonii</i>	
Malvaceae	<i>Hibiscus</i> aff. <i>campanulatus</i>	New taxon
Malvaceae	<i>Hibiscus coatesii</i>	
Malvaceae	<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)	
Malvaceae	<i>Hibiscus sturtii</i>	
Malvaceae	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	
Malvaceae	<i>Hibiscus sturtii</i> var. <i>forrestii</i>	
Malvaceae	<i>Hibiscus sturtii</i> var. <i>platychlamys</i>	
Malvaceae	<i>Malvastrum americanum</i>	*
Malvaceae	<i>Seringia exastia</i>	T
Malvaceae	<i>Sida arenicola</i>	
Malvaceae	<i>Sida echinocarpa</i>	
Malvaceae	<i>Sida fibulifera</i>	
Malvaceae	<i>Sida</i> sp.	
Malvaceae	<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)	
Malvaceae	<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	
Malvaceae	<i>Sida</i> sp. <i>L</i> (A.M. Ashby 4202)	
Malvaceae	<i>Sida</i> sp. <i>Pilbara</i> (A.A. Mitchell PRP 1543)	
Malvaceae	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	
Marsileaceae	<i>Marsilea</i> sp.	
Molluginaceae	<i>Trigastrotheca molluginea</i>	
Moraceae	<i>Ficus brachypoda</i>	
Myrtaceae	<i>Calytrix carinata</i>	
Myrtaceae	<i>Corymbia candida</i>	
Myrtaceae	<i>Corymbia deserticola</i>	
Myrtaceae	<i>Corymbia hamersleyana</i>	
Myrtaceae	<i>Corymbia opaca</i>	
Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	
Myrtaceae	<i>Eucalyptus gamophylla</i>	
Myrtaceae	<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>	
Myrtaceae	<i>Eucalyptus repullulans</i>	
Myrtaceae	<i>Eucalyptus socialis</i>	
Myrtaceae	<i>Eucalyptus victrix</i>	
Myrtaceae	<i>Eucalyptus xerothermica</i>	
Myrtaceae	<i>Lamarchea sulcata</i>	
Myrtaceae	<i>Melaleuca glomerata</i>	
Nyctaginaceae	<i>Boerhavia coccinea</i>	
Nyctaginaceae	<i>Boerhavia schomburgkiana</i>	
Nyctaginaceae	<i>Boerhavia</i> sp.	

Family	Taxon	Status
Oleaceae	<i>Jasminum didymum</i>	
Oleaceae	<i>Jasminum didymum</i> subsp. <i>lineare</i>	
Phyllanthaceae	<i>Phyllanthus maderaspatensis</i>	
Plantaginaceae	<i>Stemodia kingii</i>	
Poaceae	<i>Amphipogon caricinus</i>	
Poaceae	<i>Amphipogon caricinus</i> var. <i>caricinus</i>	
Poaceae	<i>Aristida contorta</i>	
Poaceae	<i>Aristida holathera</i>	
Poaceae	<i>Aristida holathera</i> var. <i>holathera</i>	
Poaceae	<i>Aristida inaequiglumis</i>	
Poaceae	<i>Aristida latifolia</i>	
Poaceae	<i>Aristida lazardis</i>	P2
Poaceae	<i>Bothriochloa ewartiana</i>	
Poaceae	* <i>Cenchrus ciliaris</i>	*
Poaceae	* <i>Cenchrus setiger</i>	*
Poaceae	<i>Chrysopogon fallax</i>	
Poaceae	<i>Cymbopogon ambiguus</i>	
Poaceae	<i>Cymbopogon oblectus</i>	
Poaceae	<i>Cynodon prostratus</i>	
Poaceae	<i>Dactyloctenium radulans</i>	
Poaceae	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	
Poaceae	<i>Digitaria brownii</i>	
Poaceae	<i>Enneapogon caeruleus</i>	
Poaceae	<i>Enneapogon polyphyllus</i>	
Poaceae	<i>Enneapogon robustissimus</i>	
Poaceae	<i>Enteropogon ramosus</i>	
Poaceae	<i>Eragrostis cumingii</i>	
Poaceae	<i>Eragrostis eriopoda</i>	
Poaceae	<i>Eragrostis setifolia</i>	
Poaceae	<i>Eragrostis tenellula</i>	
Poaceae	<i>Eragrostis xerophila</i>	
Poaceae	<i>Eriachne aristidea</i>	
Poaceae	<i>Eriachne lanata</i>	
Poaceae	<i>Eriachne mucronata</i>	
Poaceae	<i>Eriachne obtusa</i>	
Poaceae	<i>Eriachne pulchella</i>	
Poaceae	<i>Eriachne tenuiculmis</i>	
Poaceae	<i>Eulalia aurea</i>	
Poaceae	<i>Iseilema dolichotrichum</i>	
Poaceae	<i>Iseilema eremaeum</i>	
Poaceae	<i>Iseilema vaginiflorum</i>	

Family	Taxon	Status
Poaceae	<i>Panicum effusum</i>	
Poaceae	<i>Paraneurachne muelleri</i>	
Poaceae	<i>Paspalidium basicladum</i>	
Poaceae	<i>Paspalidium clementii</i>	
Poaceae	<i>Paspalidium rarum</i>	
Poaceae	<i>Perotis rara</i>	
Poaceae	<i>Schizachyrium fragile</i>	
Poaceae	<i>Setaria surgens</i>	
Poaceae	<i>Setaria verticillata</i>	*
Poaceae	<i>Sorghum plumosum</i>	
Poaceae	<i>Sporobolus australasicus</i>	
Poaceae	<i>Themeda triandra</i>	
Poaceae	<i>Themeda avenacea</i>	
Poaceae	<i>Tragus australianus</i>	
Poaceae	<i>Triodia angusta</i>	
Poaceae	<i>Triodia brizoides</i>	
Poaceae	<i>Triodia longiceps</i>	
Poaceae	<i>Triodia pungens</i>	
Poaceae	<i>Triodia</i> sp.	
Poaceae	<i>Triodia vanleeuwenii</i>	
Poaceae	<i>Triodia wiseana</i>	
Poaceae	<i>Yakirra australiensis</i>	
Polygalaceae	<i>Polygala isingii</i>	
Portulacaceae	<i>Portulaca</i> sp.	
Portulacaceae	<i>Portulaca</i> aff. <i>australis</i>	
Portulacaceae	<i>Portulaca</i> aff. <i>decipiens</i>	
Portulacaceae	<i>Portulaca decipiens</i>	
Portulacaceae	<i>Portulaca intraterranea</i>	
Portulacaceae	<i>Portulaca oleracea</i>	
Proteaceae	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	
Proteaceae	<i>Grevillea wickhamii</i>	
Proteaceae	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	
Proteaceae	<i>Hakea chordophylla</i>	
Proteaceae	<i>Hakea lorea</i>	
Pteridaceae	<i>Cheilanthes lasiophylla</i>	
Pteridaceae	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	
Rubiaceae	<i>Dolichocarpa crouchiana</i>	
Rubiaceae	<i>Psyrax latifolia</i>	
Rubiaceae	<i>Psyrax suaveolens</i>	
Rubiaceae	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	
Santalaceae	<i>Anthobolus leptomerioides</i>	

Family	Taxon	Status
Santalaceae	<i>Santalum lanceolatum</i>	
Sapindaceae	<i>Dodonaea coriacea</i>	
Sapindaceae	<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>	
Sapindaceae	<i>Dodonaea pachyneura</i>	
Scrophulariaceae	<i>Eremophila forrestii</i>	
Scrophulariaceae	<i>Eremophila lachnocalyx</i>	
Scrophulariaceae	<i>Eremophila latrobei</i>	
Scrophulariaceae	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	
Scrophulariaceae	<i>Eremophila longifolia</i>	
Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3
Solanaceae	<i>Nicotiana benthamiana</i>	
Solanaceae	<i>Solanum centrale</i>	
Solanaceae	<i>Solanum cleistogamum</i>	
Solanaceae	<i>Solanum ferocissimum</i>	
Solanaceae	<i>Solanum lasiophyllum</i>	
Violaceae	<i>Afrohybanthus aurantiacus</i>	
Zygophyllaceae	<i>Tribulus</i> aff. <i>terrestris</i>	
Zygophyllaceae	<i>Tribulus hirsutus</i>	
Zygophyllaceae	<i>Tribulus macrocarpus</i>	
Zygophyllaceae	<i>Tribulus platypterus</i>	
Zygophyllaceae	<i>Tribulus</i> sp.	
Zygophyllaceae	<i>Tribulus suberosus</i>	

Significant flora and flora of interest data

Taxon	Status	Number of plants	Easting	Northing
<i>Aristida lazardis</i>	P2	~150	771982.87	7420563.83
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	8	780870.3035	7421893.54
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	10	780878.1255	7421566.84
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	20	780498.9763	7422241.74
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	1	782066.5757	7422189.70
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	100	781243.458	7422501.35
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)	P3	5	781084.1016	7422627.24
<i>Goodenia nuda</i>	P4	1	772723.64	7423119.19
<i>Goodenia nuda</i>	P4	1	777625.68	7420732.23
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	1	780813.9781	7421923.84
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	60	780874.5249	7421553.87
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	1000	780498.3511	7422232.06
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	450	781965.401	7421390.97
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	150	781058.5365	7422660.29
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	100	781400.311	7421404.56
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	50	781112.2861	7422674.06
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	80	781996.5933	7421367.82
<i>Hibiscus</i> aff. <i>campanulatus</i>	Flora of interest	10	780851.4819	7422220.94
<i>Ipomoea racemigera</i>	P2	1	772020.3426	7422812.18
<i>Ipomoea racemigera</i>	P2	4	771940.8773	7422982.75
<i>Ipomoea racemigera</i>	P2	1	771908.982	7423543.92
<i>Lepidium catapycnon</i>	P4	10	773630.1837	7418635.56
<i>Lepidium catapycnon</i>	P4	10	773493.2924	7418652.82
<i>Lepidium catapycnon</i>	P4	15	773575.7943	7418649.40

Taxon	Status	Number of plants	Easting	Northing
<i>Lepidium catapycnon</i>	P4	10	773669.753 2	7418608.8 5
<i>Lepidium catapycnon</i>	P4	25	773434.072 6	7418668.4 4
<i>Lepidium catapycnon</i>	P4	25	773414.733 2	7418665.0 2
<i>Lepidium catapycnon</i>	P4	10	773465.242 4	7418667.6 4
<i>Lepidium catapycnon</i>	P4	1	773588.768 5	7418687.8 3

Flora species by site matrix

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Abutilon cunninghamii</i>				1				1																
<i>Abutilon lepidum</i>												1	1		1									
<i>Abutilon leucopetalum</i>																								
<i>Abutilon otocarpum</i>	1	1										1	1		1									
<i>Abutilon</i> sp.																								
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)																						1		
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)																						1		
<i>Acacia adoxa</i> var. <i>adoxo</i>			1	1	1	1		1		1	1								1	1				
<i>Acacia adsurgens</i>		1		1			1																	
<i>Acacia ancistrocarpa</i>		1				1	1		1					1				1				1		
<i>Acacia aneura</i>																								
<i>Acacia arida</i>				1							1													
<i>Acacia ayersiana</i>																								
<i>Acacia bivenosa</i>		1			1	1	1			1	1			1	1	1	1	1		1	1	1	1	
<i>Acacia catenulata</i>																								
<i>Acacia catenulata</i> subsp. <i>occidentalis</i>																								
<i>Acacia citrinoviridis</i>		1																				1	1	
<i>Acacia colei</i> var. <i>colei</i>																								
<i>Acacia dictyophleba</i>																					1	1	1	
<i>Acacia elachantha</i>						1	1																	
<i>Acacia hamersleyensis</i>																								
<i>Acacia hilliana</i>											1								1	1				
<i>Acacia inaequilatera</i>	1	1					1	1	1	1				1		1	1	1		1				1
<i>Acacia maitlandii</i>					1			1		1				1		1							1	
<i>Acacia pachyacra</i>																								

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Acacia paraneura</i>																								
<i>Acacia pruinocarpa</i>									1		1			1	1	1	1	1						
<i>Acacia pteraneura</i>												1	1		1						1			
<i>Acacia ptychophylla</i>			1																					
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>																						1	1	
<i>Acacia rhodophloia</i>											1													
<i>Acacia sibirica</i>														1		1	1	1						
<i>Acacia</i> sp.		1																						
<i>Acacia spondylophylla</i>										1														
<i>Acacia synchronicia</i>																		1						
<i>Acacia tenuissima</i>	1	1		1			1		1					1			1	1						
<i>Acacia tetragonophylla</i>																								
<i>Adriana tomentosa</i> var. <i>tomentosa</i>																								
* <i>Aerva javanica</i>																								
<i>Afrohybanthus aurantiacus</i>																						1	1	
<i>Alternanthera angustifolia</i>																						1	1	
<i>Alternanthera nodiflora</i>													1											
<i>Amaranthus cuspidifolius</i>								1																
<i>Amaranthus undulatus</i>																						1	1	
<i>Amphipogon caricinus</i>																						1		1
<i>Amphipogon caricinus</i> var. <i>caricinus</i>																			1	3	1			
<i>Androcalva loxophylla</i>	1																							
<i>Androcalva luteiflora</i>				1		1		1														1	1	
<i>Anthobolus leptomerioides</i>																					1			
<i>Aristida contorta</i>					1			1	1	1		1	1	1	1	1	1	1		1	1			1
<i>Aristida holathera</i>																								1

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Aristida holathera</i> var. <i>holathera</i>	1	1					1		1	1	1						1		1	1	1			
<i>Aristida inaequiglumis</i>				1				1	1			1	1		1									
<i>Aristida latifolia</i>																								
<i>Aristida lazardis</i> P2																								
<i>Arivela viscosa</i>	1	1						1				1	1		1							1	1	1
<i>Astrotricha hamptonii</i>																								
* <i>Bidens bipinnata</i>												1	1										1	
<i>Boerhavia schomburgkiana</i>	1											1			1	1						1		
<i>Boerhavia coccinea</i>																						1		
<i>Boerhavia</i> sp.																								
<i>Bonamia erecta</i>	1	1					1		1											1				
<i>Bonamia pilbarensis</i>																								
<i>Bothriochloa ewartiana</i>																								
<i>Bulbostylis barbata</i>																								1
<i>Calytrix carinata</i>																		1	1					
<i>Capparis umbonata</i>																								
<i>Cassytha capillaris</i>																								
** <i>Cenchrus ciliaris</i>		1							1		1	1	1	1	1			1				1	1	
** <i>Cenchrus setiger</i>																								
<i>Cheilanthes lasiophylla</i>																								1
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>																						1		
<i>Chrysocephalum gilesii</i>																								
<i>Chrysopogon fallax</i>												1	1		1									
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>				1				1																
<i>Convolvulus clementii</i>															1									
<i>Corchorus lasiocarpus</i>			1	1							1			1	1	1								

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>																						1	1	
<i>Corchorus tridens</i>																								
<i>Corymbia candida</i>																								
<i>Corymbia hamersleyana</i>					1			1	1		1													
<i>Corymbia opaca</i>																								
<i>Corymbia deserticola</i>				1							1													
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>																						1	1	
<i>Cucumis variabilis</i>							1					1	1		1							1		
<i>Cymbopogon ambiguus</i>																						1	1	
<i>Cymbopogon obtectus</i>	1						1					1	1			1					1			
<i>Cynodon prostratus</i>																								
<i>Cyperus</i> sp.																								
<i>Cyperus iria</i>																						1		
<i>Dactyloctenium radulans</i>															1	1								
<i>Dampiera candidans</i>				1	1		1		1		1					1			1	1	1			
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>													1											
<i>Digitaria brownii</i>																								
<i>Dipteracanthus australasicus</i>																								
<i>Dodonaea coriacea</i>				1																				
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>																						1	1	
<i>Dodonaea pachyneura</i>																								
<i>Dolichocarpa crouchiana</i>																				1				
<i>Duperreya commixta</i>		1				1			1		1			1		1		1	1					
<i>Dysphania</i> sp.																1								
<i>Enneapogon caerulescens</i>								1														1		1
<i>Enneapogon polyphyllus</i>		1							1		1	1	1	1	1	1		1						1

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Enneapogon robustissimus</i>																								
<i>Enteropogon ramosus</i>																								
<i>Eragrostis cumingii</i>																						1	1	
<i>Eragrostis eriopoda</i>	1								1									1						
<i>Eragrostis setifolia</i>																								
<i>Eragrostis tenellula</i>						1						1			1							1	1	
<i>Eragrostis xerophila</i>																								
<i>Eremophila forrestii</i>																								
<i>Eremophila lachnocalyx</i>																								
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>																					1			
<i>Eremophila longifolia</i>															1									
<i>Eremophila latrobei</i>																1								
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136) P3																								
<i>Eriachne aristidea</i>								1	1	1						1				1		1		1
<i>Eriachne lanata</i>				1							1								1	1	1			
<i>Eriachne mucronata</i>			1							1				1		1	1	1						1
<i>Eriachne obtusa</i>																								
<i>Eriachne pulchella</i>								1		1	1			1		1		1		1	1			1
<i>Eriachne tenuiculmis</i>																						1	1	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>																								
<i>Eucalyptus gamophylla</i>	1	1					1		1	1		1	1		1		1	1						
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>			1	1	1	1					1					1			1	1	1			
<i>Eucalyptus repullulans</i>																								
<i>Eucalyptus socialis</i>																								
<i>Eucalyptus victrix</i>																						1	1	
<i>Eucalyptus xerothermica</i>	1	1																						

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Eulalia aurea</i>																						1	1	
<i>Euphorbia australis</i> var. <i>australis</i>	1	1													1	1				1				
<i>Euphorbia australis</i> var. <i>subtomentosa</i>																						1		1
<i>Euphorbia biconvexa</i>												1	1		1	1		1						
<i>Euphorbia boophthona</i>																								
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>		1															1	1						
<i>Euphorbia trigonosperma</i>																							1	
<i>Evolvulus alsinoides</i>								1		1		1	1		1		1	1						
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>																						1	1	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>																							1	1
<i>Ficus brachypoda</i>																								
<i>Fimbristylis dichotoma</i>					1			1		1													1	1
<i>Fimbristylis simulans</i>			1	1	1	1				1	1								1	1				
<i>Fimbristylis</i> sp.																						1		
<i>Glycine canescens</i>																								
<i>Gompholobium oreophilum</i>			1	1			1		1		1							1	1	1				
<i>Gompholobium polyzygum</i>																								
<i>Gomphrena canescens</i>																								1
<i>Gomphrena cunninghamii</i>								1																
<i>Gomphrena kanisii</i>	1	1						1	1	1		1	1		1	1	1	1						
<i>Goodenia cusackiana</i>									1	1				1		1								
<i>Goodenia microptera</i>																								
<i>Goodenia muelleriana</i>	1		1		1		1	1		1					1		1	1				1	1	1
<i>Goodenia nuda</i> P4				1	1																			
<i>Goodenia prostrata</i>																								
<i>Goodenia stobbsiana</i>				1	1					1	1					1		1	1	1				

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Goodenia triodiophila</i>										1	1					1			1	1	1			
<i>Goodenia vilmoriniae</i>	1						1		1									1		1		1	1	
<i>Gossypium australe</i>										1													1	
<i>Gossypium robinsonii</i>				1		1		1														1	1	
<i>Gossypium sturtianum</i> var. <i>sturtianum</i>																								
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>																								
<i>Grevillea wickhamii</i>			1	1	1									1	1	1		1						
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>																								
<i>Hakea chordophylla</i>																								
<i>Hakea lorea</i>		1		1	1				1		1	1				1			1	1				
<i>Heliotropium chrysocarpum</i>																				1				
<i>Heliotropium heteranthum</i>																								
<i>Heliotropium inexplicitum</i>										1										1				
<i>Heliotropium</i> sp.																						1	1	
<i>Heliotropium tenuifolium</i>								1		1												1	1	
<i>Hibiscus burtonii</i>											1													
<i>Hibiscus campanulatus</i>																								
<i>Hibiscus coatesii</i>				1	1			1		1				1		1								1
<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)														1		1	1	1						
<i>Hibiscus</i> aff. <i>campanulatus</i>																								
<i>Hibiscus sturtii</i>																								
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>																				1				1
<i>Hibiscus sturtii</i> var. <i>forrestii</i>																								
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>																								
<i>Indigofera georgei</i>	1																							
<i>Indigofera linifolia</i>																								1

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Indigofera monophylla</i>	1			1	1			1	1	1	1			1		1	1	1		1	1	1	1	1
<i>Indigofera rugosa</i>								1																
<i>Ipomoea racemigera</i> P2																						1		
<i>Iseilema dolichotrichum</i>																								1
<i>Iseilema eremaeum</i>													1											
<i>Iseilema vaginiflorum</i>																								
<i>Isotropis atropurpurea</i>																							1	
<i>Isotropis iophyta</i>																						1		
<i>Jasminum didymum</i>		1				1										1								
<i>Jasminum didymum</i> subsp. <i>lineare</i>																						1		
<i>Lamarchea sulcata</i>																			1					
<i>Lepidium catapycnon</i> P4														1										
<i>Lepidium echinatum</i>																						1		
<i>Lysiana casuarinae</i>																								
<i>Maireana planifolia</i>																								
<i>Maireana georgei</i>														1										
<i>Maireana</i> sp.																								
<i>Maireana tomentosa</i>		1										1			1						1			
* <i>Malvastrum americanum</i>													1											
<i>Marsilea</i> sp.													1											
<i>Melaleuca glomerata</i>																						1	1	
<i>Mirbelia viminalis</i>				1																				
<i>Nicotiana benthamiana</i>																								
<i>Operculina aequisejala</i>																								
<i>Panicum effusum</i>													1											
<i>Paraneurachne muelleri</i>	1	1		1	1		1	1	1	1	1			1		1	1	1		1	1			1

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Paspalidium basicladum</i>																								
<i>Paspalidium clementii</i>																								1
<i>Paspalidium rarum</i>																						1	1	
<i>Perotis rara</i>															1							1		
<i>Petalostylis labicheoides</i>									1										1			1		
<i>Phyllanthus maderaspatensis</i>																						1	1	
<i>Pluchea tetranthera</i>																						1	1	
<i>Polycarpaea corymbosa</i>																								
<i>Polycarpaea holtzei</i>																				1				
<i>Polycarpaea longiflora</i>								1				1	1		1							1		1
<i>Polygala isingii</i>																								
<i>Polymeria ambigua</i>																						1	1	
<i>Portulaca</i> sp.																								
<i>Portulaca</i> aff. <i>australis</i>																								
<i>Portulaca</i> aff. <i>decipiens</i>																								
<i>Portulaca decipiens</i>																								
<i>Portulaca intraterranea</i>																								
<i>Portulaca oleracea</i>								1	1															
<i>Psydrax latifolia</i>												1			1									
<i>Psydrax suaveolens</i>																								
<i>Pterocaulon serrulatum</i>												1	1		1									
<i>Pterocaulon</i> sp.																						1		
<i>Ptilotus aervoides</i>				1																				
<i>Ptilotus astrolasius</i>														1		1	1	1		1		1	1	1
<i>Ptilotus auriculifolius</i>								1	1		1	1		1	1	1	1	1		1	1			1
<i>Ptilotus calostachyus</i>	1	1	1	1	1	1	1	1	1	1	1			1		1		1	1	1	1			1

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Ptilotus clementii</i>																								
<i>Ptilotus exaltatus</i>	1	1			1	1	1		1	1		1	1	1	1	1	1	1		1	1	1	1	1
<i>Ptilotus fusiformis</i>					1		1			1	1					1	1	1		1				1
<i>Ptilotus gaudichaudii</i>																							1	
<i>Ptilotus gomphrenoides</i>					1																			
<i>Ptilotus helipteroides</i>		1							1						1									
<i>Ptilotus obovatus</i>	1	1			1		1	1	1	1	1	1		1	1	1					1			
<i>Ptilotus polystachyus</i>	1								1															
<i>Ptilotus rotundifolius</i>			1							1						1	1	1			1			
<i>Rhagodia eremaea</i>		1											1											
<i>Rhynchosia minima</i>	1	1										1	1		1	1						1	1	
<i>Salsola australis</i>												1			1							1		
<i>Santalum lanceolatum</i>			1						1													1	1	
<i>Scaevola amblyanthera</i> var. <i>centralis</i>																								
<i>Scaevola parvifolia</i>	1	1							1															
<i>Schizachyrium fragile</i>					1					1										1				1
<i>Sclerolaena</i> sp.																								
<i>Senna artemisioides</i> subsp. <i>helmsii</i>												1			1									
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1	1	1		1	1		1	1			1	1		1	1	1		1	1			1
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		1																						
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>			1	1	1	1		1			1		1	1		1		1			1			1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>			1	1	1	1	1	1		1	1			1		1	1	1		1	1			1
<i>Senna hamersleyensis</i>																								
<i>Senna notabilis</i>		1	1						1			1	1		1	1	1	1		1	1		1	
<i>Senna sericea</i>																								
<i>Senna symonii</i>										1														

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Seringia exastia</i> T		1																	1		1			
<i>Setaria surgens</i>																						1	1	
* <i>Setaria verticillata</i>																								
<i>Sida arenicola</i>				1	1		1		1											1	1			1
<i>Sida echinocarpa</i>					1			1		1														
<i>Sida fibulifera</i>																								
<i>Sida</i> sp.																								
<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)																						1		
<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)														1		1								
<i>Sida</i> sp. L (A.M. Ashby 4202)																								
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	1				1	1			1		1													
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)														1		1	1	1	1	1	1			
<i>Solanum centrale</i>																								
<i>Solanum cleistogamum</i>																								
<i>Solanum ferocissimum</i>																								
<i>Solanum lasiophyllum</i>				1	1	1	1	1	1	1		1	1		1	1		1	1	1	1			1
<i>Sorghum plumosum</i>																								
<i>Sporobolus australasicus</i>																								1
<i>Stemodia kingii</i>							1				1							1		1		1	1	
<i>Stenopetalum decipiens</i>																								
<i>Swainsona decurrens</i>																								
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>										1													1	
<i>Tephrosia densa</i>																								
<i>Tephrosia oxalidea</i>																								
<i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186)								1								1						1	1	
<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)								1																

Species	OB-01	OB-03	OB-05	OB-07	OB-09	OB-11	OB-13	OB-15	OB-17	OB-19	OB-23	OB-25	OB-27	OB-29	OB-31	OB-33	OB-35	OB-37	OB-41	OB-45	OB-57	OB-10	OB-12	OB-14
<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)		1																						
<i>Themeda triandra</i>				1								1			1	1						1	1	1
<i>Themeda avenacea</i>																								
<i>Tragus australianus</i>																								
<i>Trianthema glossostigmum</i>											1						1	1	1	1	1			
<i>Trianthema pilosum</i>	1																							
<i>Tribulus</i> aff. <i>terrestris</i>																								
<i>Tribulus hirsutus</i>								1								1								
<i>Tribulus macrocarpus</i>																								
<i>Tribulus platypterus</i>																								
<i>Tribulus</i> sp.		1			1				1		1			1		1								
<i>Tribulus suberosus</i>																1				1	1			
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	1										1							1				1	1	
<i>Trigastrotheca molluginea</i>										1										1				
<i>Triodia angusta</i>																								
<i>Triodia brizoides</i>																								1
<i>Triodia longiceps</i>																								
<i>Triodia pungens</i>	1	1	1	1	1	1	1	1		1	1	1	1		1					1	1	1	1	1
<i>Triodia</i> sp.																								
<i>Triodia vanleeuwenii</i>			1	1	1	1	1	1		1	1					1	1	1	1	1	1			
<i>Triodia wiseana</i>								1		1				1		1	1	1						
* <i>Vachellia farnesiana</i>																								
<i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)																								
<i>Yakirra australiensis</i>	1	1			1	1		1								1	1	1	1	1				

Flora species by site matrix (continued)

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Abutilon cunninghamii</i>																									
<i>Abutilon lepidum</i>																									
<i>Abutilon leucopetalum</i>																									
<i>Abutilon otocarpum</i>											1		1												
<i>Abutilon</i> sp.						1																			
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)											1														
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)						1																			
<i>Acacia adoxa</i> var. <i>adoxo</i>					1													1							
<i>Acacia adsurgens</i>					1																				
<i>Acacia ancistrocarpa</i>														1					1		1				
<i>Acacia aneura</i>									1																
<i>Acacia arida</i>																									
<i>Acacia ayersiana</i>																							1		
<i>Acacia bivenosa</i>					1	1	1	1						1				1	1						
<i>Acacia catenulata</i>																							1		
<i>Acacia catenulata</i> subsp. <i>occidentalis</i>								1																	
<i>Acacia citrinoviridis</i>		1												1											
<i>Acacia colei</i> var. <i>colei</i>																								1	
<i>Acacia dictyophleba</i>		1	1							1		1	1	1			1					1			
<i>Acacia elachantha</i>																									
<i>Acacia hamersleyensis</i>																									
<i>Acacia hilliana</i>					1																				
<i>Acacia inaequilatera</i>	1			1	1	1	1												1						
<i>Acacia maitlandii</i>						1	1									1	1								

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Acacia pachyacra</i>						1	1					1	1	1											
<i>Acacia paraneura</i>																				1					
<i>Acacia pruinocarpa</i>					1	1					1								1					1	
<i>Acacia pteraneura</i>						1														1			1		
<i>Acacia ptychophylla</i>																									
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1	1									1	1	1	1		1					1			
<i>Acacia rhodophloia</i>																									
<i>Acacia sibirica</i>							1				1														
<i>Acacia</i> sp.											1														
<i>Acacia spondylophylla</i>	1					1	1														1				
<i>Acacia synchronicia</i>				1				1			1									1					
<i>Acacia tenuissima</i>										1									1						
<i>Acacia tetragonophylla</i>						1		1			1														
<i>Adriana tomentosa</i> var. <i>tomentosa</i>																									
* <i>Aerva javanica</i>			1																						
<i>Afrohybanthus aurantiacus</i>																									
<i>Alternanthera angustifolia</i>																									
<i>Alternanthera nodiflora</i>																									
<i>Amaranthus cuspidifolius</i>																									
<i>Amaranthus undulatus</i>																									
<i>Amphipogon caricinus</i>			1			1																			
<i>Amphipogon caricinus</i> var. <i>caricinus</i>																		1							
<i>Androcalva loxophylla</i>						1								1											
<i>Androcalva luteiflora</i>		1	1												1										
<i>Anthobolus leptomerioides</i>											1														

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Aristida contorta</i>	1	1		1		1		1	1	1	1							1					1		
<i>Aristida holathera</i>	1	1		1		1					1		1	1											
<i>Aristida holathera</i> var. <i>holathera</i>																	1	1		1					
<i>Aristida inaequiglumis</i>						1	1	1	1		1												1		
<i>Aristida latifolia</i>									1																
<i>Aristida lazaridis</i> P2																						1			
<i>Arivela viscosa</i>		1	1			1			1		1	1	1												
<i>Astrotricha hamptonii</i>																									
<i>*Bidens bipinnata</i>											1														
<i>Boerhavia schomburgkiana</i>			1									1	1												
<i>Boerhavia coccinea</i>						1			1																
<i>Boerhavia</i> sp.						1																			
<i>Bonamia erecta</i>														1											
<i>Bonamia pilbarensis</i>	1						1																		
<i>Bothriochloa ewartiana</i>			1																						
<i>Bulbostylis barbata</i>				1				1	1	1	1														
<i>Calytrix carinata</i>																									
<i>Capparis umbonata</i>			1																						
<i>Cassytha capillaris</i>					1																				
<i>*Cenchrus ciliaris</i>		1	1	1		1			1		1	1	1	1	1		1			1		1			
<i>*Cenchrus setiger</i>													1												
<i>Cheilanthes lasiophylla</i>										1															
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>											1														
<i>Chrysocephalum gilesii</i>											1														
<i>Chrysopogon fallax</i>			1			1					1	1	1	1								1			

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>																									
<i>Convolvulus clementii</i>			1																						
<i>Corchorus lasiocarpus</i>						1																			
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	1	1			1	1	1					1													
<i>Corchorus tridens</i>													1												
<i>Corymbia candida</i>											1		1	1											
<i>Corymbia hamersleyana</i>			1			1						1	1	1		1	1					1		1	
<i>Corymbia opaca</i>																						1			
<i>Corymbia deserticola</i>		1																							
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		1				1			1																
<i>Cucumis variabilis</i>																									
<i>Cymbopogon ambiguus</i>		1																							
<i>Cymbopogon obtectus</i>						1																			
<i>Cynodon prostratus</i>								1																	
<i>Cyperus</i> sp.			1								1														
<i>Cyperus iria</i>																									
<i>Dactyloctenium radulans</i>			1																						
<i>Dampiera candidans</i>		1																							
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>									1																
<i>Digitaria brownii</i>											1														
<i>Dipteracanthus australasicus</i>			1										1												
<i>Dodonaea coriacea</i>																									
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>																									
<i>Dodonaea pachyneura</i>																									
<i>Dolichocarpa crouchiana</i>				1																					

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Duperreya commixta</i>			1			1					1														
<i>Dysphania</i> sp.																									
<i>Enneapogon caerulescens</i>	1	1		1		1		1			1														
<i>Enneapogon polyphyllus</i>			1	1		1		1	1		1														
<i>Enneapogon robustissimus</i>			1						1																
<i>Enteropogon ramosus</i>									1																
<i>Eragrostis cumingii</i>						1					1														
<i>Eragrostis eriopoda</i>											1														
<i>Eragrostis setifolia</i>						1			1																
<i>Eragrostis tenellula</i>		1				1			1																
<i>Eragrostis xerophila</i>														1											
<i>Eremophila forrestii</i>																									
<i>Eremophila lachnocalyx</i>									1																
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>					1			1			1														
<i>Eremophila longifolia</i>		1	1			1								1											
<i>Eremophila latrobei</i>																									
<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136) P3																									
<i>Eriachne aristidea</i>	1	1		1																					
<i>Eriachne lanata</i>					1													1							
<i>Eriachne mucronata</i>				1	1			1		1		1													
<i>Eriachne obtusa</i>						1																			
<i>Eriachne pulchella</i>				1			1	1	1		1														
<i>Eriachne tenuiculmis</i>		1																							
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>																									
<i>Eucalyptus gamophylla</i>						1	1										1		1		1				

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>				1	1		1	1		1						1		1							1
<i>Eucalyptus repullulans</i>																									
<i>Eucalyptus socialis</i>																									
<i>Eucalyptus victrix</i>		1													1							1			
<i>Eucalyptus xerothermica</i>																					1				
<i>Eulalia aurea</i>		1				1																			
<i>Euphorbia australis</i> var. <i>australis</i>																									
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		1				1			1			1													
<i>Euphorbia biconvexa</i>			1						1																
<i>Euphorbia boophthona</i>												1													
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	1		1									1	1	1											
<i>Euphorbia trigonosperma</i>		1				1			1			1	1												
<i>Evolvulus alsinoides</i>																									
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>			1									1	1	1											
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		1				1	1		1		1	1		1											
<i>Ficus brachypoda</i>																									
<i>Fimbristylis dichotoma</i>	1	1			1			1		1															
<i>Fimbristylis simulans</i>	1																								
<i>Fimbristylis</i> sp.																									
<i>Glycine canescens</i>		1	1						1																
<i>Gompholobium oreophilum</i>																		1	1		1				
<i>Gompholobium polyzygum</i>					1																				
<i>Gomphrena canescens</i>	1	1		1		1	1	1		1	1		1												
<i>Gomphrena cunninghamii</i>		1																							
<i>Gomphrena kanisii</i>																									

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Goodenia cusackiana</i>																									
<i>Goodenia microptera</i>						1	1				1														
<i>Goodenia muelleriana</i>		1	1	1		1	1	1	1	1	1	1		1											
<i>Goodenia nuda</i> P4																									
<i>Goodenia prostrata</i>											1														
<i>Goodenia stobbsiana</i>				1	1			1										1							
<i>Goodenia triodiophila</i>					1			1		1															
<i>Goodenia vilmorinae</i>						1	1							1											
<i>Gossypium australe</i>	1																								
<i>Gossypium robinsonii</i>		1								1					1										
<i>Gossypium sturtianum</i> var. <i>sturtianum</i>												1													
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>																									
<i>Grevillea wickhamii</i>																1	1								
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>		1			1							1													
<i>Hakea chordophylla</i>					1		1			1														1	
<i>Hakea lorea</i>	1		1				1	1				1	1					1							
<i>Heliotropium chrysocarpum</i>																									
<i>Heliotropium heteranthum</i>				1																					
<i>Heliotropium inexplicitum</i>				1																					
<i>Heliotropium</i> sp.												1													
<i>Heliotropium tenuifolium</i>	1					1			1																
<i>Hibiscus burtonii</i>											1														
<i>Hibiscus campanulatus</i>		1																							
<i>Hibiscus coatesii</i>	1			1		1	1				1	1													
<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)																									

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Hibiscus</i> aff. <i>campanulatus</i>																									
<i>Hibiscus sturtii</i>					1							1		1											
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	1						1	1																	
<i>Hibiscus sturtii</i> var. <i>forrestii</i>						1																			
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>											1														
<i>Indigofera georgei</i>			1									1	1												
<i>Indigofera linifolia</i>									1					1											
<i>Indigofera monophylla</i>	1			1	1	1	1	1										1			1				
<i>Indigofera rugosa</i>																									
<i>Ipomoea racemigera</i> P2																									
<i>Iseilema dolichotrichum</i>				1																					
<i>Iseilema eremaeum</i>																									
<i>Iseilema vaginiflorum</i>									1	1															
<i>Isotropis atropurpurea</i>																									
<i>Isotropis iophyta</i>																									
<i>Jasminum didymum</i>																									
<i>Jasminum didymum</i> subsp. <i>lineare</i>			1			1							1												
<i>Lamarchea sulcata</i>																									
<i>Lepidium catapycnon</i> P4																									
<i>Lepidium echinatum</i>																									
<i>Lysiana casuarinae</i>																									
<i>Maireana planifolia</i>								1																	
<i>Maireana georgei</i>																				1					
<i>Maireana</i> sp.				1				1			1														
<i>Maireana tomentosa</i>																									

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>*Malvastrum americanum</i>			1						1				1												
<i>Marsilea</i> sp.																									
<i>Melaleuca glomerata</i>		1																							
<i>Mirbelia viminalis</i>																									
<i>Nicotiana benthamiana</i>																									
<i>Operculina aequisejala</i>									1																
<i>Panicum effusum</i>																									
<i>Paraneurachne muelleri</i>				1		1		1	1	1	1									1	1				
<i>Paspalidium basicladum</i>				1																					
<i>Paspalidium clementii</i>	1									1															
<i>Paspalidium rarum</i>																									
<i>Perotis rara</i>			1			1					1		1												
<i>Petalostylis labicheoides</i>		1	1				1					1	1	1	1					1	1				
<i>Phyllanthus maderaspatensis</i>		1																							
<i>Pluchea tetranthera</i>		1																							
<i>Polycarpaea corymbosa</i>						1																			
<i>Polycarpaea holtzei</i>				1		1		1																	
<i>Polycarpaea longiflora</i>																									
<i>Polygala isingii</i>									1		1														
<i>Polymeria ambigua</i>		1	1									1	1												
<i>Portulaca</i> sp.								1	1																
<i>Portulaca</i> aff. <i>australis</i>						1																			
<i>Portulaca</i> aff. <i>decipiens</i>									1																
<i>Portulaca decipiens</i>									1																
<i>Portulaca intraterranea</i>												1													

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Portulaca oleracea</i>																									
<i>Psyrax latifolia</i>																									
<i>Psyrax suaveolens</i>											1														
<i>Pterocaulon serrulatum</i>																									
<i>Pterocaulon</i> sp.			1			1						1		1											
<i>Ptilotus aervoides</i>									1																
<i>Ptilotus astrolasius</i>	1	1		1			1	1				1							1		1				
<i>Ptilotus auriculifolius</i>	1					1	1						1					1							
<i>Ptilotus calostachyus</i>	1			1	1		1	1		1	1							1	1		1				
<i>Ptilotus clementii</i>	1	1				1	1	1																	
<i>Ptilotus exaltatus</i>	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1		1	1				
<i>Ptilotus fusiformis</i>		1		1		1												1							
<i>Ptilotus gaudichaudii</i>				1																					
<i>Ptilotus gomphrenoides</i>										1															
<i>Ptilotus helipteroides</i>				1				1			1														
<i>Ptilotus obovatus</i>			1			1		1		1	1	1		1						1	1				
<i>Ptilotus polystachyus</i>																									
<i>Ptilotus rotundifolius</i>								1																	
<i>Rhagodia eremaea</i>			1			1			1																
<i>Rhynchosia minima</i>		1	1			1			1				1	1											
<i>Salsola australis</i>			1						1			1	1												
<i>Santalum lanceolatum</i>												1	1	1											
<i>Scaevola amblyanthera</i> var. <i>centralis</i>						1																			
<i>Scaevola parvifolia</i>														1											
<i>Schizachyrium fragile</i>				1																					

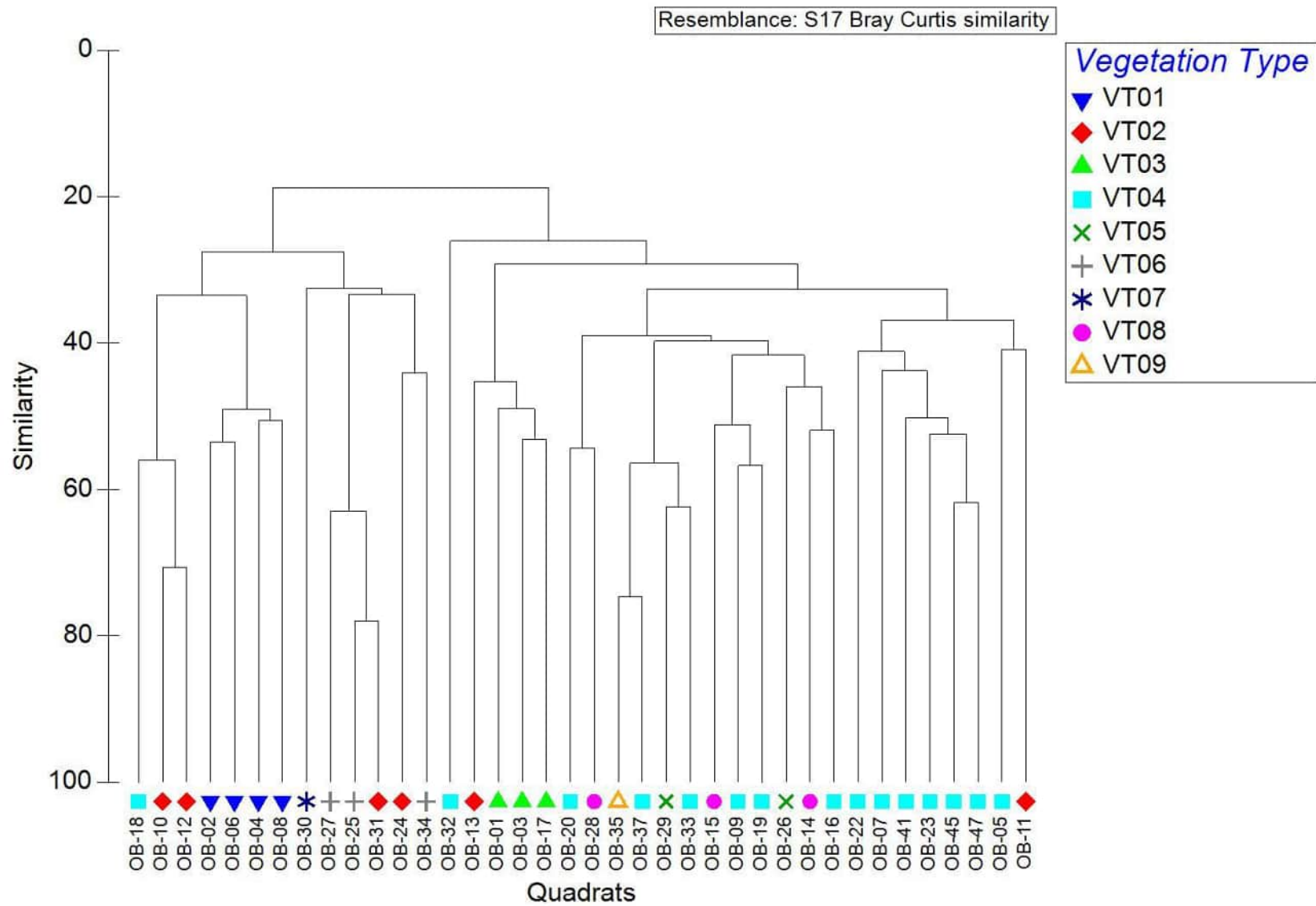
Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Sclerolaena</i> sp.								1			1														
<i>Senna artemisioides</i> subsp. <i>helmsii</i>									1																
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	1		1		1	1	1	1	1		1							1			1				
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>			1			1						1													
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	1	1			1		1	1		1															
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	1			1														1							
<i>Senna hamersleyensis</i>									1																
<i>Senna notabilis</i>		1				1	1	1	1		1	1													
<i>Senna sericea</i>										1															
<i>Senna symonii</i>																									
<i>Seringia exastia</i>																									
<i>Setaria surgens</i>																									
* <i>Setaria verticillata</i>			1																						
<i>Sida arenicola</i>		1				1																			
<i>Sida echinocarpa</i>	1					1																			
<i>Sida fibulifera</i>									1																
<i>Sida</i> sp.										1															
<i>Sida</i> sp. Articulation below (A.A. Mitchell PRP 1605)																									
<i>Sida</i> sp. Excedentifolia (J.L. Egan 1925)			1											1											
<i>Sida</i> sp. L (A.M. Ashby 4202)			1			1	1		1			1	1	1											
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)				1		1	1	1			1														
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)																									
<i>Solanum centrale</i>					1																				
<i>Solanum cleistogamum</i>				1							1														
<i>Solanum ferocissimum</i>							1																		

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Solanum lasiophyllum</i>	1	1		1	1	1	1				1		1					1							
<i>Sorghum plumosum</i>																									
<i>Sporobolus australasicus</i>		1				1	1		1		1		1												
<i>Stemodia kingii</i>		1		1																					
<i>Stenopetalum decipiens</i>										1															
<i>Swainsona decurrens</i>						1																			
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>																									
<i>Tephrosia densa</i>			1											1											
<i>Tephrosia oxalidea</i>							1																		
<i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186)																									
<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)																									
<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	1						1																		
<i>Themeda triandra</i>		1	1			1						1	1	1			1					1		1	
<i>Themeda avenacea</i>			1																						
<i>Tragus australianus</i>									1																
<i>Trianthema glossostigma</i>					1			1																	
<i>Trianthema pilosum</i>												1													
<i>Tribulus</i> aff. <i>terrestris</i>													1												
<i>Tribulus hirsutus</i>																									
<i>Tribulus macrocarpus</i>	1						1				1	1													
<i>Tribulus platypterus</i>	1																								
<i>Tribulus</i> sp.			1																						
<i>Tribulus suberosus</i>					1	1		1		1	1														
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		1	1	1	1	1		1			1	1	1	1	1					1	1				
<i>Trigastrotheca molluginea</i>																									

Species	OB-16	OB-18	OB-02	OB-20	OB-22	OB-24	OB-26	OB-28	OB-30	OB-32	OB-34	OB-04	OB-06	OB-08	OB-21 (R)	OB-39	OB-43 (R)	OB-47 (R)	OB-49 (R)	OB-51 (R)	OB-53 (R)	OB-55 (R)	OB-36 (R)	OB-38 (R)	OB-40 (R)
<i>Triodia angusta</i>				1				1																	
<i>Triodia brizoides</i>				1				1		1															
<i>Triodia longiceps</i>		1				1																			
<i>Triodia pungens</i>	1	1	1		1	1					1	1		1		1	1	1		1	1		1		1
<i>Triodia sp.</i>					1																				
<i>Triodia vanleeuwenii</i>	1			1				1										1	1						
<i>Triodia wiseana</i>	1			1			1	1		1															1
* <i>Vachellia farnesiana</i>																									
<i>Vigna sp.</i> Hamersley Clay (A.A. Mitchell PRP 113)																									
<i>Yakirra australiensis</i>	1			1		1				1															

*R=Releve

Vegetation site statistical analysis Dendrogram



Quadrat data

Site ID:	OB-12	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	771868.33 E	7423095.30 N	
Landform and slope:	Gully		
Drainage:	Very good		
Aspect:	Flat		
Soil colour & type:	Red, clay loam		
Vegetation condition:	Good		
Fire age & intensity:	Old (6 + years)		
Disturbances:	Weeds		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1.75	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia citrinoviridis</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia dictyophleba</i>		1.75	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia maitlandii</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia bivenosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Afrohybanthus aurantiacus</i>		0.2	<10%	Forb (G)	2
<i>Alternanthera angustifolia</i>		0.1	<10%	Forb (G)	2
<i>Amaranthus undulatus</i>		0.1	<10%	Forb (G)	2
<i>Androcalva luteiflora</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
* <i>Bidens bipinnata</i>	*	0.1	<10%	Forb (G)	2
<i>Boerhavia schomburgkiana</i>		0.2	<10%	Forb (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	2
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		0.1	<10%	Fern (G)	2
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		0.1	<10%	Forb (G)	2
<i>Cymbopogon ambiguus</i>		0.5	<10%	Tussock grass (G)	2
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eragrostis tenellula</i>		0.2	<10%	Tussock grass (G)	2
<i>Eragrostis cumingii</i>		0.2	<10%	Tussock grass (G)	2
<i>Eriachne tenuiculmis</i>		0.2	<10%	Tussock grass (G)	5
<i>Eucalyptus victrix</i>		7	<10%	Tree, palm	8
<i>Eulalia aurea</i>		1	<10%	Tussock grass (G)	2
<i>Euphorbia trigonosperma</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>		0.1	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Goodenia vilmoriniae</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Gossypium robinsonii</i>		1.75	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Gossypium australe</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Heliotropium</i> sp.		0.1	<10%	Forb (G)	2
<i>Heliotropium tenuifolium</i>		0.2	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Indigofera monophylla</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Isotropis atropurpurea</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Melaleuca glomerata</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Paspalidium rarum</i>		0.2	<10%	Tussock grass (G)	2
<i>Phyllanthus maderaspatensis</i>		0.2	<10%	Forb (G)	2
<i>Pluchea tetranthera</i>		0.25	<10%	Forb (G)	2
<i>Polymeria ambigua</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus gaudichaudii</i>		0.2	<10%	Forb (G)	2
<i>Rhynchosia minima</i>		0.1	<10%	Forb (G)	2
<i>Santalum lanceolatum</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		0.5	<10%	Forb (G)	2
<i>Setaria surgens</i>		0.2	<10%	Tussock grass (G)	2
<i>Stemodia kingii</i>		0.1	<10%	Forb (G)	2
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>		0.2	<10%	Forb (G)	2
<i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186)		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Themeda triandra</i>		0.3	<10%	Tussock grass (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.5	<10%	Forb (G)	2
<i>Triodia pungens</i>		1	<10%	Hummock grass (G)	2

Site ID:	OB-09	VT: 01
Type:	Quadrat	Size: 50 x 50 m
Date:	7/05/2021	Described by: Joel Collins
Co-ordinates:	772807.97 E	7423099.15 N
Landform and slope:	Hillslope	
Drainage:	Steep	
Aspect:	West	
Soil colour & type:	Red, sandy loam	
Vegetation condition:	Excellent	
Fire age & intensity:	Recent (0 to 2 yr)	
Disturbances:	None discernible	



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	10
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Acacia maitlandii</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Aristida contorta</i>		0.25	<2% Few than 10	Tussock grass (G)	0.5
<i>Corymbia hamersleyana</i>		0.25	<2% Few than 10	Tree mallee (U)	0.1
<i>Dampiera candidans</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		8	<10%	Tree mallee (U)	4
<i>Fimbristylis simulans</i>		0.5	30-10%	Sedge (G)	115
<i>Fimbristylis dichotoma</i>		0.25	<2% Numerous	Sedge (G)	0.5
<i>Goodenia stobbsiana</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Goodenia nuda</i>	P4	0.5	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.1	<2% Few than 10	Other grass (G)	0.1
<i>Grevillea wickhamii</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Hakea lorea</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Hibiscus coatesii</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Indigofera monophylla</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus calostachyus</i>		0.25	<10%	Forb (G)	4
<i>Ptilotus gomphrenoides</i>		0.75	<10%	Forb (G)	5
<i>Ptilotus exaltatus</i>		0.5	<10%	Forb (G)	3
<i>Ptilotus obovatus</i>		0.25	<2% Few than 10	Forb (G)	0.5
<i>Ptilotus fusiformis</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Schizachyrium fragile</i>		0.5	<2% Numerous	Tussock grass (G)	0.1
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Sida arenicola</i>		0.5	<2% Few than 10	Forb (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Sida echinocarpa</i>		0.25	<2% Few than 10	Fern (G)	0.1
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.25	<2% Numerous	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		3	<2% Few than 10	Forb (G)	0.1
<i>Tribulus</i> sp.		0.25	<2% Numerous	Forb (G)	0.5
<i>Triodia vanleeuwenii</i>		0.5	70-30%	Hummock grass (G)	40
<i>Triodia pungens</i>		0.5	70-30%	Hummock grass (G)	4
<i>Yakirra australiensis</i>		0.25	<2% Numerous	Tussock grass (G)	0.5

Site ID:	OB-11	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Joel Collins	
Co-ordinates:	773033.99 E	7422606.24 N	
Landform and slope:	Minor drainage line		
Drainage:	low		
Aspect:	South		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	None discernible		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia ancistrocarpa</i>		1.5	70-30%	Tree mallee (U)	45
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	10
<i>Acacia elachantha</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Androcalva luteiflora</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	8
<i>Duperreya commixta</i>		1	<2% Few than 10	Vine (G)	0.1
<i>Eragrostis tenellula</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		8	<2% Few than 10	Tree mallee (U)	1
<i>Fimbristylis simulans</i>		0.5	<10%	Sedge (G)	5
<i>Gossypium robinsonii</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1.5
<i>Jasminum didymum</i>		0.75	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.25	<2% Numerous	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Triodia vanleeuwenii</i>		0.5	70-30%	Hummock grass (G)	40
<i>Triodia pungens</i>		0.5	30-10%	Hummock grass (G)	20
<i>Yakirra australiensis</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1

Site ID:	OB-13	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Joel Collins	
Co-ordinates:	772724.00 E	7422234.98 N	
Landform and slope:	Minor drainage line		
Drainage:	Low		
Aspect:	South		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Very good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Mining Exploration		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia ancistrocarpa</i>		1.5	70-30%	Tree mallee (U)	45
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Acacia tenuissima</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia inaequilatera</i>		1	<2% Few than 10	Tree mallee (U)	1
<i>Acacia adsurgens</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Acacia elachantha</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	<2% Numerous	Tussock grass (G)	0.5
<i>Bonamia erecta</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Cucumis variabilis</i>		1	<2% Few than 10	Forb (G)	0.1
<i>Cymbopogon obtectus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Dampiera candidans</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	2
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Goodenia vilmorinae</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	0.1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus fusiformis</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Sida arenicola</i>		0.5	<2% Few than 10	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Stemodia kingii</i>		0.5	<2% Few than 10	Forb (G)	0.5
<i>Triodia vanleeuwenii</i>		0.5	70-30%	Hummock grass (G)	15

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Triodia pungens</i>		0.5	30-10%	Hummock grass (G)	20

Site ID:	OB-15	VT: 08
Type:	Quadrat	Size: 50 x 50 m
Date:	7/05/2021	Described by: Joel Collins
Co-ordinates:	773647.70 E	7423682.57 N
Landform and slope:	Hillslope	
Drainage:	steep	
Aspect:	North	
Soil colour & type:	Red, sandy loam	
Vegetation condition:	Excellent	
Fire age & intensity:	Recent (0 to 2 yr)	
Disturbances:	None discernible	



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon cunninghamii</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Acacia inaequilatera</i>		3	<2% Numerous	Tree mallee (U)	0.2
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia maitlandii</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Amaranthus cuspidifolius</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Androcalva luteiflora</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Aristida contorta</i>		0.25	30-10%	Tussock grass (G)	10
<i>Aristida inaequiglumis</i>		0.25	<2% Numerous	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.5	<10%	Forb (G)	4
<i>Clerodendrum floribundum</i> var. <i>angustifolium</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Corymbia hamersleyana</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Enneapogon caeruleus</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Eriachne pulchella</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Eriachne aristidea</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Evolvulus alsinoides</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Fimbristylis dichotoma</i>		0.25	<2% Numerous	Sedge (G)	0.2
<i>Gomphrena cunninghamii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.1	<2% Numerous	Forb (G)	1
<i>Gossypium robinsonii</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1.5
<i>Heliotropium tenuifolium</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Hibiscus coatesii</i>		0.1	<2% Few than 10	Forb (G)	0
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Indigofera rugosa</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Hummock grass (G)	0.2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Polycarpaea longiflora</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Portulaca oleracea</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus auriculifolius</i>		0.5	70-30%	Forb (G)	20
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	1
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Senna glutinosa subsp. pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa subsp. glutinosa</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Sida echinocarpa</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H. Brooker 2186)		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Tephrosia</i> sp. Newman (A.A. Mitchell PRP 29)		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Tribulus hirsutus</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Triodia wiseana</i>		0.5	70-30%	Hummock grass (G)	40
<i>Triodia vanleeuwenii</i>		0.5	70-30%	Hummock grass (G)	15
<i>Triodia pungens</i>		0.5	30-10%	Hummock grass (G)	20
<i>Yakirra australiensis</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1

Site ID:	OB-17	VT: 03	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Joel Collins	
Co-ordinates:	773962.23 E	7420901.23 N	
Landform and slope:	Sand Plain		
Drainage:	low		
Aspect:	North		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Very good		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Mining Exploration		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia tenuissima</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Acacia pruinocarpa</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia ancistrocarpa</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Aristida contorta</i>		0.25	30-10%	Tussock grass (G)	15
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	70-30%	Tussock grass (G)	35
<i>Aristida inaequiglumis</i>		0.5	<2% Numerous	Hummock grass (G)	2
<i>Bonamia erecta</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Bonamia erecta</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.2
* <i>Cenchrus ciliaris</i>	*	0.25	<2% Numerous	Tussock grass (G)	1
<i>Corymbia hamersleyana</i>		4	<2% Few than 10	Tree mallee (U)	1
<i>Dampiera candidans</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Duperreya commixta</i>		0.25	<2% Numerous	Vine (G)	0.1
<i>Enneapogon polyphyllus</i>		0.5	<2% Numerous	Tussock grass (G)	0.5
<i>Eragrostis eriopoda</i>		0.25	<2% Numerous	Tussock grass (G)	1
<i>Eriachne aristidea</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	2
<i>Gompholobium oreophilum</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Gomphrena kanisii</i>		0.2	<2% Few than 10	Forb (G)	0.1
<i>Goodenia vilmoriniae</i>		0.5	<2% Numerous	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Goodenia cusackiana</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Hakea lorea</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Petalostylis labicheoides</i>		1.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	15
<i>Portulaca oleracea</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus auriculifolius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<10%	Forb (G)	2
<i>Ptilotus helipteroides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Ptilotus polystachyus</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Santalum lanceolatum</i>		1	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Scaevola parvifolia</i>		0.25	<2% Numerous	Forb (G)	1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna notabilis</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Sida arenicola</i>		0.5	<2% Few than 10	Forb (G)	0.5
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.25	<2% Numerous	Forb (G)	1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Tribulus</i> sp. (not collected)		-	<2% Few than 10	-	-

Site ID:	OB-19	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Joel Collins	
Co-ordinates:	774758.02 E	7423927.17 N	
Landform and slope:	Hillslope		
Drainage:	Moderate		
Aspect:	South		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	None discernible		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia maitlandii</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Acacia bivenosa</i>		0.1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Acacia spondylophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	<2% Numerous	Tussock grass (G)	0.2
<i>Aristida contorta</i>		0.5	<10%	Tussock grass (G)	8
<i>Eriachne mucronata</i>		0.25	<10%	Tussock grass (G)	5
<i>Eriachne pulchella</i>		0.1	<2% Numerous	Tussock grass (G)	0.1
<i>Eriachne aristidea</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	2
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Fimbristylis dichotoma</i>		0.25	<2% Numerous	Sedge (G)	0.2
<i>Fimbristylis simulans</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.1	<2% Numerous	Forb (G)	1
<i>Goodenia stobbsiana</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Goodenia triodiophila</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Goodenia cusackiana</i>		0.25	<2% Numerous	Forb (G)	1
<i>Gossypium australe</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Heliotropium tenuifolium</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Heliotropium inexplicitum</i>		0.25	<2% Numerous	Forb (G)	50
<i>Hibiscus coatesii</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus fusiformis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus rotundifolius</i>		0.5	<2% Few than 10	Forb (G)	0.5
<i>Schizachyrium fragile</i>		0.1	<2% Numerous	Tussock grass (G)	5
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna symonii</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Sida echinocarpa</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Trigastrotheca molluginea</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Triodia wiseana</i>		0.5	70-30%	Tussock grass (G)	30
<i>Triodia vanleeuwenii</i>		0.5	70-30%	Hummock grass (G)	55

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Triodia pungens</i>		0.5	<2% Few than 10	Hummock grass (G)	0.5

Site ID:	OB-21	VT: 01	
Type:	Releve	Size:	
Date:	08/05/2021	Described by:	Joel Collins
Co-ordinates:	776494.00 E	7422678.60 N	
Landform and slope:	Major Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Poor		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Road/ Access Track		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Androcalva luteiflora</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
* <i>Cenchrus ciliaris</i>	*	0.5	70-30%	Tussock grass (G)	65
<i>Eucalyptus victrix</i>		12	<10%	Tree mallee (U)	8
<i>Gossypium robinsonii</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Petalostylis labicheoides</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.25	<2% Numerous	Forb (G)	0.5

Site ID:	OB-23	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	08/05/2021	Described by: Joel Collins	
Co-ordinates:	779339.60 E	7420410.98 N	
Landform and slope:	Hillslope		
Drainage:	Moderate		
Aspect:	North		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Mining Exploration		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pruinocarpa</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia rhodophloia</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia hilliana</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.3
<i>Acacia arida</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
* <i>Cenchrus ciliaris</i>	*	0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Corchorus lasiocarpus</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Corymbia hamersleyana</i>		2	<2% Few than 10	Tree mallee (U)	0.5
<i>Corymbia deserticola</i>		6	<10%	Tree mallee (U)	4
<i>Dampiera candicans</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Duperreya commixta</i>		0.5	<2% Few than 10	Vine (G)	0.01
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eriachne pulchella</i>		0.1	<2% Few than 10	Tussock grass (G)	0.1
<i>Eriachne lanata</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		5	<10%	Tree mallee (U)	5
<i>Fimbristylis simulans</i>		0.5	<10%	Sedge (G)	5
<i>Gompholobium oreophilum</i>		0.25	<2% Few than 10	Forb (G)	
<i>Goodenia stobbsiana</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Goodenia triodiophila</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Hakea lorea</i>		1	<10%	Tree mallee (U)	5
<i>Hibiscus burtonii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus auriculifolius</i>		0.25	<2% Few than 10	Forb (G)	
<i>Ptilotus fusiformis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.25	<2% Few than 10	Forb (G)	0.1
<i>Stemodia kingii</i>		1	<2% Few than 10	Forb (G)	0.1
<i>Trianthema glossostigma</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Tribulus</i> sp.		0.1	<2% Few than 10	Forb (G)	0.1
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.6	<2% Numerous	Forb (G)	0.1
<i>Triodia vanleeuwenii</i>		0.25	70-30%	Tussock grass (G)	55
<i>Triodia pungens</i>		0.5	<2% Few than 10	Hummock grass (G)	0.5

Site ID:	OB-25	VT: 06	
Type:	Quadrat	Size: 50 x 50 m	
Date:	08/05/2021	Described by: Joel Collins	
Co-ordinates:	779556.46 E	7419501.09 N	
Landform and slope:	Sandy/Stony Plain		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Red, sandy loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Mining Exploration		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon otocarpum</i>		0.25	<10%	Forb (G)	5
<i>Abutilon lepidum</i>		0.25	<2% Numerous	Forb (G)	1
<i>Acacia pteraneura</i>		3	70-30%	Tree mallee (U)	50
<i>Aristida contorta</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Aristida inaequiglumis</i>		0.5	<2% Numerous	Hummock grass (G)	2
<i>Arivela viscosa</i>		0.5	<10%	Forb (G)	4
* <i>Bidens bipinnata</i>	*	0.25	<2% Numerous	Forb (G)	2
<i>Boerhavia schomburgkiana</i>		0.25	<2% Numerous	Forb (G)	0.5
* <i>Cenchrus ciliaris</i>	*	0.5	30-10%	Tussock grass (G)	20
<i>Chrysopogon fallax</i>		1.5	<2% Numerous	Tussock grass (G)	0.5
<i>Cucumis variabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Cymbopogon obtectus</i>		0.5	<2% Few than 10	Tussock grass (G)	0.5
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eragrostis tenellula</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia biconvexa</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Hakea lorea</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree- fern (M)	1.5
<i>Maireana tomentosa</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Polycarpaea longiflora</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Psydrax latifolia</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree- fern (M)	0.5
<i>Pterocaulon serrulatum</i>		0.75	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus exaltatus</i>		0.5	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Rhynchosia minima</i>		0.25	<2% Numerous	Forb (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Salsola australis</i>		0.25	<2% Few than 10	Chenopod shrub (M)	0.1
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Themeda triandra</i>		1	<10%	Tussock grass (G)	5
<i>Triodia pungens</i>		0.5	<2% Few than 10	Hummock grass (G)	0.5

Site ID:	OB-27	VT: 06	
Type:	Quadrat	Size: 50 x 50 m	
Date:	08/05/2021	Described by: Joel Collins	
Co-ordinates:	779978.63 E	7418635.91 N	
Landform and slope:	Sandy/Stony Plain		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Red, clay loam		
Vegetation condition:	Good		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Mining Exploration		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon otocarpum</i>		0.25	<10%	Forb (G)	5
<i>Abutilon lepidum</i>		0.25	<2% Numerous	Forb (G)	1
<i>Acacia pteraneura</i>		3	70-30%	Tree mallee (U)	50
<i>Alternanthera nodiflora</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Aristida contorta</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Aristida inaequiglumis</i>		0.5	<2% Numerous	Hummock grass (G)	2
<i>Arivela viscosa</i>		0.5	<10%	Forb (G)	4
* <i>Bidens bipinnata</i>	*	0.25	<2% Numerous	Forb (G)	2
* <i>Cenchrus ciliaris</i>	*	0.5	70-30%	Tussock grass (G)	35
<i>Chrysopogon fallax</i>		1.5	<2% Numerous	Tussock grass (G)	0.5
<i>Cucumis variabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Cymbopogon oblectus</i>		0.5	<2% Few than 10	Tussock grass (G)	0.5
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia biconvexa</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Iseilema eremaeum</i>		1.25	<2% Numerous	Tussock grass (G)	0.5
<i>Malvastrum americanum</i>	*	0.25	<10%	Forb (G)	3
<i>Marsilea</i> sp.		0.1	<2% Few than 10	Forb (G)	0.1
<i>Panicum effusum</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Polycarpaea longiflora</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Pterocaulon serrulatum</i>		0.75	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus exaltatus</i>		0.5	<10%	Forb (G)	2
<i>Rhagodia eremaea</i>		1	<2% Few than 10	Chenopod shrub (M)	0.1
<i>Rhynchosia minima</i>		0.25	<2% Numerous	Forb (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Triodia pungens</i>		0.5	<2% Few than 10	Hummock grass (G)	0.5

Site ID:	OB-29	VT: 05	
Type:	Quadrat	Size: 50 x 50 m	
Date:	09/05/2021	Described by: Joel Collins	
Co-ordinates:	773588.77 E	7418687.83 N	
Landform and slope:	Breakaway		
Drainage:	Flat		
Aspect:	North		
Soil colour & type:	Brown, sandy loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Frequent Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia bivenosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia maitlandii</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Acacia pruinocarpa</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	31
<i>Acacia tenuissima</i>		0.75	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.2
<i>Acacia ancistrocarpa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia sibirica</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Aristida contorta</i>		0.5	<10%	Tussock grass (G)	2
* <i>Cenchrus ciliaris</i>	*	0.5	<2% Few than 10	Tussock grass (G)	.0.1
<i>Corchorus lasiocarpus</i>		0.5	<2% Numerous	Forb (G)	0.2
<i>Duperreya commixta</i>		0.5	<2% Few than 10	Vine (G)	0.01
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eriachne pulchella</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Eriachne mucronata</i>		0.5	30-10%	Tussock grass (G)	15
<i>Goodenia cusackiana</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Grevillea wickhamii</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Hibiscus coatesii</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Hibiscus</i> sp. Gardneri (A.L. Payne PRP 1435)		0.25	<2% Few than 10	Forb (G)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Lepidium catapycnon</i>	P4	0.25	<2% Numerous	Forb (G)	
<i>Maireana georgei</i>		0.25	<2% Few than 10	Chenopod shrub (M)	0.1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.5	<2% Numerous	Forb (G)	0.2
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		0.25	<2% Few than 10	Forb (G)	0.1
<i>Tribulus</i> sp.			<2% Few than 10	Forb (G)	0.1
<i>Triodia wiseana</i>		0.25	70-30%	Hummock grass (G)	30

Site ID:	OB-31	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	09/05/2021	Described by: Joel Collins	
Co-ordinates:	774000.55 E	7418293.09 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Red, Medium clay		
Vegetation condition:	Degraded		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Frequent Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon otocarpum</i>		0.25	<2% Numerous	Forb (G)	2
<i>Abutilon lepidum</i>		0.25	<2% Numerous	Forb (G)	1
<i>Acacia bivenosa</i>		1.25	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia pruinocarpa</i>		1	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia pteraneura</i>		3	70-30%	Tree mallee (U)	50
<i>Aristida contorta</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Aristida inaequiglumis</i>		0.5	<2% Numerous	Hummock grass (G)	2
<i>Arivela viscosa</i>		0.5	<10%	Forb (G)	4
<i>Boerhavia schomburgkiana</i>		0.25	<2% Numerous	Forb (G)	0.5
* <i>Cenchrus ciliaris</i>	*	0.5	30-10%	Tussock grass (G)	20
<i>Chrysopogon fallax</i>		1.5	<2% Numerous	Tussock grass (G)	0.5
<i>Chrysopogon fallax</i>		0.5	<2% Numerous	Tussock grass (G)	1
<i>Convolvulus clementii</i>		0.25	<2% Few than 10	Vine (G)	0.1
<i>Corchorus lasiocarpus</i>		0.5	<2% Numerous	Forb (G)	0.2
<i>Cucumis variabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Dactyloctenium radulans</i>		0.1	<2% Few than 10	Tussock grass (G)	0.1
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eragrostis tenellula</i>		0.25	70-30%	Tussock grass (G)	30
<i>Eremophila longifolia</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia australis</i> var. <i>australis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Euphorbia biconvexa</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.5	<2% Few than 10	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Grevillea wickhamii</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Maireana tomentosa</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Perotis rara</i>		0.1	<2% Few than 10	Tussock grass (G)	0.1
<i>Polycarpaea longiflora</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Psydrax latifolia</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Pterocaulon serrulatum</i>		0.75	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus exaltatus</i>		0.5	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus helipteroides</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Rhynchosia minima</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Salsola australis</i>		0.25	<2% Few than 10	Chenopod shrub (M)	0.1
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Themeda triandra</i>		1	<10%	Tussock grass (G)	5
<i>Triodia pungens</i>		0.5	<2% Few than 10	Hummock grass (G)	0.5

Site ID:	OB-33	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	09/05/2021	Described by: Joel Collins	
Co-ordinates:	772401.12 E	7419499.50 N	
Landform and slope:	Hillslope		
Drainage:	Moderate		
Aspect:	North		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Frequent Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia bivenosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia maitlandii</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Acacia pruinocarpa</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	31
<i>Acacia maitlandii</i>			<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	
<i>Acacia bivenosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia sibirica</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Aristida contorta</i>		0.5	<10%	Tussock grass (G)	2
<i>Boerhavia schomburgkiana</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Corchorus lasiocarpus</i>		0.5	<2% Numerous	Forb (G)	0.2
<i>Cymbopogon oblectus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Cymbopogon oblectus</i>		0.5	<2% Few than 10	Tussock grass (G)	0.5
<i>Dactyloctenium radulans</i>		0.1	<2% Numerous	Tussock grass (G)	0.1
<i>Dampiera candidans</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Duperreya commixta</i>		0.5	<2% Few than 10	Vine (G)	0.01
<i>Dysphania</i> sp.		0.25	<2% Few than 10	Chenopod shrub (M)	0.5
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eremophila latrobei</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Eriachne pulchella</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Eriachne mucronata</i>		0.5	30-10%	Tussock grass (G)	15
<i>Eriachne aristidea</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		5	<2% Few than 10	Tree mallee (U)	0.2
<i>Euphorbia australis</i> var. <i>australis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Euphorbia biconvexa</i>		0.25	<10%	Forb (G)	5
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia cusackiana</i>		0.25	<2% Few than 10	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Goodenia stobbsiana</i>		0.2	<2% Numerous	Forb (G)	0.1
<i>Goodenia triodiophila</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Grevillea wickhamii</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Hakea lorea</i>		1	<10%	Tree mallee (U)	5
<i>Hibiscus coatesii</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Hibiscus</i> sp. Gardneri (A.L. Payne PRP 1435)		0.25	<2% Few than 10	Forb (G)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Jasminum didymum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus obovatus</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus rotundifolius</i>		0.25	<2% Few than 10	Forb (G)	0.5
<i>Ptilotus fusiformis</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Rhynchosia minima</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.5	<2% Numerous	Forb (G)	0.2
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		0.25	<2% Few than 10	Forb (G)	0.1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Tephrosia rosea</i> var. <i>Fortescue creeks</i> (M.I.H. Brooker 2186)		0.1	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Themeda triandra</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Tribulus</i> sp.		0.1	<2% Few than 10	Forb (G)	0.1
<i>Tribulus hirsutus</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Tribulus suberosus</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Triodia wiseana</i>		0.25	70-30%	Hummock grass (G)	30
<i>Triodia vanleeuwenii</i>		0.3	<2% Numerous	Hummock grass (G)	1
<i>Yakirra australiensis</i>		0.25	<2% Few than 10	Other grass (G)	0.5

Site ID:	OB-35	VT: 09	
Type:	Quadrat	Size: 50 x 50 m	
Date:	09/05/2021	Described by: Joel Collins	
Co-ordinates:	774343.28 E	7419470.40 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	South		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	None discernible		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia bivenosa</i>		0.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	20
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia pruinocarpa</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia tenuissima</i>		0.75	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.4
<i>Acacia sibirica</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Aristida contorta</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	<2% Numerous	Tussock grass (G)	1
<i>Eriachne mucronata</i>		0.1	<2% Numerous	Tussock grass (G)	0.2
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)		0.5	<2% Few than 10	Forb (G)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus rotundifolius</i>		0.25	<2% Numerous	Forb (G)	0.2
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus fusiformis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.25	<2% Numerous	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Trianthema glossostigmum</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Triodia wiseana</i>		0.25	70-30%	Hummock grass (G)	35
<i>Triodia vanleeuwenii</i>		0.3	30-10%	Hummock grass (G)	15
<i>Yakirra australiensis</i>		0.2	<2% Few than 10	Tussock grass (G)	0.1

Site ID:	OB-37	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	09/05/2021	Described by: Joel Collins	
Co-ordinates:	777757.37 E	7418539.64 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	South		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ years)		
Disturbances:	None discernible		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia bivenosa</i>		0.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	20
<i>Acacia inaequilatera</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Acacia pruinocarpa</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia tenuissima</i>		0.75	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.4
<i>Acacia ancistrocarpa</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	6
<i>Acacia sibirica</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Aristida contorta</i>		0.5	<2% Few than 10	Tussock grass (G)	0.1
<i>Calytrix carinata</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
* <i>Cenchrus ciliaris</i>	*	0.1	<2% Few than 10	Tussock grass (G)	0.5
<i>Duperreya commixta</i>		0.2	<2% Few than 10	Forb (G)	0.1
<i>Enneapogon polyphyllus</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eragrostis eriopoda</i>		1.5	<10%	Tussock grass (G)	3
<i>Eriachne mucronata</i>		0.1	<2% Numerous	Tussock grass (G)	0.2
<i>Eriachne pulchella</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>		0.5	<2% Few than 10	Forb (G)	0.1
<i>Euphorbia biconvexa</i>		0.25	<10%	Forb (G)	5
<i>Evolvulus alsinoides</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Gomphrena kanisii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Goodenia muelleriana</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Goodenia stobbsiana</i>		0.2	<2% Few than 10	Forb (G)	0.1
<i>Goodenia vilmorinae</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Grevillea wickhamii</i>		3	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.2
<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)		0.5	<2% Few than 10	Forb (G)	0.1

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus rotundifolius</i>		0.25	<2% Numerous	Forb (G)	0.2
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus fusiformis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Senna notabilis</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Seringia exastia</i>	T	1	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.25	<2% Numerous	Forb (G)	0.1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Stemodia kingii</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Trianthema glossostigma</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.5	<2% Few than 10	Forb (G)	0.2
<i>Triodia wiseana</i>		0.25	70-30%	Hummock grass (G)	60
<i>Triodia vanleeuwenii</i>			70-30%	Hummock grass (G)	15
<i>Yakirra australiensis</i>		3	<2% Few than 10	Tussock grass (G)	0.1

Site ID:	OB-39	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	782074.05 E	7422209.34 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Moderate		
Aspect:	North/West		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ years)		
Disturbances:	None discernible		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Androcalva luteiflora</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
* <i>Cenchrus ciliaris</i>	*	0.5	70-30%	Tussock grass (G)	65
<i>Eucalyptus victrix</i>		12	<10%	Tree mallee (U)	8
<i>Gossypium robinsonii</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Petalostylis labicheoides</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5

Site ID:	OB-41	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	782015.89 E	782015.89 N	
Landform and slope:	Hillslope		
Drainage:	Moderate		
Aspect:	North/East		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ years)		
Disturbances:	Nil		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia hilliana</i>		0.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	20
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Amphipogon caricinus</i> var. <i>caricinus</i>		0.25	<2% Numerous	Tussock grass (G)	1
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	70-30%	Tussock grass (G)	35
<i>Calytrix carinata</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Dampiera candidans</i>		0.1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Duperreya commixta</i>		2	<2% Few than 10	Vine (G)	0.1
<i>Eriachne lanata</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Fimbristylis simulans</i>		0.5	<10%	Sedge (G)	5
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Forb (G)	1
<i>Goodenia stobbsiana</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Goodenia triodiophila</i>		0.25	<2% Numerous	Forb (G)	0.2
<i>Hakea lorea</i>		2	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Lamarchea sulcata</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Petalostylis labicheoides</i>		0.25	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Seringia exastia</i>	T	0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.25	<2% Numerous	Forb (G)	0.1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Trianthema glossostigium</i>		0.1	<2% Numerous	Forb (G)	0.5
<i>Triodia vanleeuwenii</i>			100-70%	Hummock grass (G)	55
<i>Yakirra australiensis</i>		3	<2% Numerous	Tussock grass (G)	1

Site ID:	OB-43	VT: 02	
Type:	Releve	Size:	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	781123.87 E	7423406.76 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Very Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weed Invasion		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		2.25	<10%	Tree mallee (U)	3
<i>Acacia dictyophleba</i>		0.25	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Acacia maitlandii</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	30-10%	Tussock grass (G)	20
* <i>Cenchrus ciliaris</i>	*	0.5	<2% Numerous	Tussock grass (G)	0.5
<i>Corymbia hamersleyana</i>		5	<2% Few than 10	Tree mallee (U)	0.5
<i>Eucalyptus gamophylla</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Grevillea wickhamii</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	4
<i>Themeda triandra</i>		0.4	30-10%	Tussock grass (G)	20
<i>Triodia pungens</i>		0.5	70-30%	Hummock grass (G)	70

Site ID:	OB-45	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	776019.58 E	7423163.10 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	North		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Frequent Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia hilliana</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	20
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia inaequilatera</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Amphipogon caricinus</i> var. <i>caricinus</i>		0.25	<2% Numerous	Tussock grass (G)	1
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	70-30%	Tussock grass (G)	35
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	4
<i>Bonamia erecta</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.2
<i>Dampiera candicans</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Dolichocarpa crouchiana</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Eriachne lanata</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Eriachne aristidea</i>		0.25	<2% Few than 10	Tussock grass (G)	0.1
<i>Eriachne pulchella</i>		0.1	<2% Numerous	Tussock grass (G)	0.5
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Euphorbia australis</i> var. <i>australis</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Fimbristylis simulans</i>		0.5	<10%	Sedge (G)	5
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Forb (G)	1
<i>Goodenia stobbsiana</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Goodenia triodiophila</i>		0.25	<2% Numerous	Forb (G)	0.2
<i>Goodenia vilmorinae</i>		0.1	<2% Numerous	Forb (G)	0.2
<i>Hakea lorea</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Heliotropium inexplicitum</i>		0.1	<2% Few than 10	Forb (G)	0.1
<i>Heliotropium chrysocarpum</i>		0.1	<2% Numerous	Forb (G)	0.1
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Paraneurachne muelleri</i>		0.25	<2% Numerous	Tussock grass (G)	0.5

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Polycarpaea holtzei</i>		0.5		Forb (G)	0.1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus fusiformis</i>		0.25	<2% Numerous	Forb (G)	
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Schizachyrium fragile</i>		0.1	<2% Few than 10	Tussock grass (G)	0.1
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Senna notabilis</i>		0.1	<2% Numerous	Forb (G)	0.5
<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)		0.25	<2% Numerous	Forb (G)	0.1
<i>Sida arenicola</i>		0.2	<2% Numerous	Forb (G)	0.5
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Stemodia kingii</i>		0.2	<2% Numerous	Forb (G)	0.1
<i>Trianthema glossostigma</i>		0.1	<2% Numerous	Forb (G)	0.5
<i>Tribulus suberosus</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Trigastrotheca molluginea</i>		0.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Triodia vanleeuwenii</i>		0.3	70-30%	Hummock grass (G)	40
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	5
<i>Yakirra australiensis</i>		3	<2% Numerous	Tussock grass (G)	1

Site ID:	OB-47	VT: 04	
Type:	Releve	Size:	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	775691.12 E	7421979.26 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	East		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Frequent Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia bivenosa</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Acacia inaequilatera</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Amphipogon caricinus</i> var. <i>caricinus</i>		0.25	<2% Numerous	Tussock grass (G)	1
<i>Aristida holathera</i> var. <i>holathera</i>		0.5	70-30%	Tussock grass (G)	35
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	4
<i>Eriachne lanata</i>		0.25	<2% Numerous	Tussock grass (G)	0.5
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		2	<2% Few than 10	Tree mallee (U)	1
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Forb (G)	1
<i>Goodenia stobbsiana</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Hakea lorea</i>		2	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Indigofera monophylla</i>		0.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus exaltatus</i>		0.5	<2% Numerous	Forb (G)	1
<i>Ptilotus fusiformis</i>		0.25	<2% Numerous	Forb (G)	0.1
<i>Ptilotus auriculifolius</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.5
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	0.1
<i>Solanum lasiophyllum</i>		0.25	<2% Few than 10	Forb (G)	0.1
<i>Triodia vanleeuwenii</i>		0.3	70-30%	Hummock grass (G)	40
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	5

Site ID:	OB-49	VT: 06	
Type:	Releve	Size:	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	777231.79 E	7420170.87 N	
Landform and slope:	Sandy/ Stony Plain		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Brown, Sandy Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Road/ Access Track		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia ancistrocarpa</i>		1.5	30-10%	Shrub, cycad, grass-tree, tree-fern (M)	20
<i>Acacia pruinocarpa</i>		1.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Acacia bivenosa</i>		1.25	<2% Numerous	Shrub, cycad, grass-tree, tree-fern (M)	0.2
<i>Acacia tenuissima</i>		1	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Eucalyptus gamophylla</i>		2	<10%	Tree mallee (U)	5
<i>Gompholobium oreophilum</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Ptilotus calostachyus</i>		0.25	<2% Numerous	Forb (G)	0.5
<i>Ptilotus astrolasius</i>		0.5	<2% Numerous	Forb (G)	0.5
<i>Triodia vanleeuwenii</i>		0.3	70-30%	Hummock grass (G)	50

Site ID:	OB-36	VT: 06	
Type:	Releve	Size:	
Date:	11/05/2021	Described by:	Angela Benkovic and Pali Jayasekara
Co-ordinates:	778534.09 E	7418626.13 N	
Landform and slope:	Sandy/ Stony Plain		
Drainage:	Good		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Rubbish/ Litter		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia catenulata</i>		1.5	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia ayersiana</i>		8	<2% Few than 10	Shrub, cycad, grass-tree, tree-fern (M)	1
<i>Acacia pteraneura</i>		7	30-10%	Tree mallee (U)	25
<i>Aristida contorta</i>		0.1	30-10%	Tussock grass (G)	30
<i>Aristida inaequiglumis</i>		0.2	<2% Numerous	Tussock grass (G)	3
<i>Triodia pungens</i>		0.4	30-10%	Hummock grass (G)	15

Site ID:	OB-58	VT: 02
Type:	Releve	Size: 50 x 50 m
Date:	10/05/2021	Described by: Joel Collins
Co-ordinates:	780785.20 E	7421985.23 N
Landform and slope:	Minor drainage line, next to cliff	
Drainage:	Steep	
Aspect:	North/East	
Soil colour & type:	Red brown sandy loam	
Vegetation condition:	Very good	
Fire age & intensity:	Old (6+ yr)	
Disturbances:	Weeds	



Site ID:	OB-59	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Joel Collins	
Co-ordinates:	779831.18 E	7422619.03 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Weeds		



Site ID:	OB-10	VT: 02
Type:	Quadrat	Size: 50 x 50 m
Date:	07/05/2021	Described by: Angela Benkovic and Pali Jayasekara
Co-ordinates:	771908.98 E	7423543.92 N
Landform and slope:	Minor Drainage Line	
Drainage:	Flat	
Aspect:	Flat	
Soil colour & type:	Red, Clay Loam	
Vegetation condition:	Very Good	
Fire age & intensity:	Old (6+ yr)	
Disturbances:	Weeds	



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)		0.2	<10%	Forb (G)	2
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)		0.2	<10%	Forb (G)	2
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Acacia bivenosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia citrinoviridis</i>		7	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia ancistrocarpa</i>		1.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia dictyophleba</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Afrohybanthus aurantiacus</i>		0.2	<10%	Forb (G)	2
<i>Alternanthera angustifolia</i>		0.1	<10%	Forb (G)	2
<i>Amaranthus undulatus</i>		0.1	<10%	Forb (G)	2
<i>Amphipogon caricinus</i>		0.2	<10%	Tussock grass (G)	2
<i>Androcalva luteiflora</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
<i>Boerhavia coccinea</i>		0.2	<10%	Forb (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	2
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		0.1	<10%	Forb (G)	2
<i>Cucumis variabilis</i>		0.2	<10%	Vine (G)	2
<i>Cymbopogon ambiguus</i>		0.3	<10%	Tussock grass (G)	2
<i>Cyperus iria</i>		0.1	<10%	Sedge (G)	2
<i>Dodonaea lanceolata</i> var. <i>lanceolata</i>		0.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Enneapogon caeruleus</i>		0.1	<10%	Tussock grass (G)	2
<i>Eragrostis tenellula</i>		0.2	<10%	Tussock grass (G)	2
<i>Eragrostis cumingii</i>		0.2	<10%	Tussock grass (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Eriachne tenuiculmis</i>		0.3	<10%	Tussock grass (G)	2
<i>Eriachne aristidea</i>		0.3	<10%	Tussock grass (G)	2
<i>Eucalyptus victrix</i>		9	30-10%	Tree, palm	15
<i>Eulalia aurea</i>		0.4	<10%	Tussock grass (G)	2
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>		0.1	<10%	Forb (G)	2
<i>Fimbristylis</i> sp.		0.1	<10%	Sedge (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Goodenia vilmorinae</i>		0.1	<10%	Forb (G)	2
<i>Gossypium robinsonii</i>		0.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Heliotropium</i> sp.		0.2	<10%	Forb (G)	2
<i>Heliotropium tenuifolium</i>		0.1	<10%	Forb (G)	2
<i>Indigofera monophylla</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Ipomoea racemigera</i>	P2	0.1	<10%	Forb (G)	2
<i>Isotropis iophyta</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Jasminum didymum</i> subsp. <i>lineare</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Lepidium echinatum</i>		0.2	<10%	Forb (G)	2
<i>Melaleuca glomerata</i>		5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Paspalidium rarum</i>		0.1	<10%	Tussock grass (G)	2
<i>Perotis rara</i>		0.2	<10%	Tussock grass (G)	2
<i>Petalostylis labicheoides</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Phyllanthus maderaspatensis</i>		0.3	<10%	Forb (G)	2
<i>Pluchea tetranthera</i>		0.2	<10%	Forb (G)	2
<i>Polycarpaea longiflora</i>		0.1	<10%	Forb (G)	2
<i>Polymeria ambigua</i>		0.1	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Pterocaulon sp.</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.1	<10%	Forb (G)	2
<i>Rhynchosia minima</i>		0.2	<10%	Forb (G)	2
<i>Salsola australis</i>		0.2	<10%	Chenopod shrub (M)	2
<i>Santalum lanceolatum</i>		1.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Setaria surgens</i>		0.2	<10%	Tussock grass (G)	2
<i>Sida sp.</i> Articulation below (A.A. Mitchell PRP 1605)		0.2	<10%	Forb (G)	2
<i>Stemodia kingii</i>		0.1	<10%	Forb (G)	2
<i>Tephrosia rosea</i> var. Fortescue creeks (M.I.H.Brooker 2186)		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Themeda triandra</i>		0.5	<10%	Tussock grass (G)	3
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		1	<10%	Forb (G)	2
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	2

Site ID:	OB-14	VT: 08	
Type:	Quadrat	Size: 50 x 50 m	
Date:	7/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	772167.85 E	7424042.27 N	
Landform and slope:	Hillslope		
Drainage:	Steep		
Aspect:	South		
Soil colour & type:	Red, Clay Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Nil		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia inaequilatera</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	3
<i>Amphipogon caricinus</i>		0.2	<10%	Tussock grass (G)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida holathera</i>		0.2	<10%	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
<i>Bulbostylis barbata</i>		0.1	<10%	Sedge (G)	2
<i>Cheilanthes lasiophylla</i>		0.1	<10%	Fern (G)	2
<i>Enneapogon polyphyllus</i>		0.1	<10%	Tussock grass (G)	2
<i>Enneapogon caeruleus</i>		0.2	<10%	Tussock grass (G)	2
<i>Eriachne mucronata</i>		0.3	<10%	Tussock grass (G)	2
<i>Eriachne aristidea</i>		0.3	<10%	Tussock grass (G)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Gomphrena canescens</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus coatesii</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera linifolia</i>		0.4	<10%	Forb (G)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Iseilema dolichotrichum</i>		0.1	<10%	Tussock grass (G)	2
<i>Paraneurachne muelleri</i>		0.3	<10%	Tussock grass (G)	2
<i>Paspalidium clementii</i>		0.2	<10%	Tussock grass (G)	2
<i>Polycarpea longiflora</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.4	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Ptilotus calostachyus</i>		0.4	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus fusiformis</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.1	<10%	Forb (G)	2
<i>Schizachyrium fragile</i>		0.1	<10%	Tussock grass (G)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida arenicola</i>		0.3	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sporobolus australasicus</i>		0.1	<10%	Tussock grass (G)	2
<i>Themeda triandra</i>		0.5	<10%	Tussock grass (G)	2
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	2T
<i>Triodia brizoides</i>		0.3	<10%	Hummock grass (G)	3

Site ID:	OB-16	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	8/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	772984.27 E	7423545.81 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weeds		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia inaequilatera</i>		1.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia spondylophylla</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida holathera</i>		0.2	<10%	Tussock grass (G)	2
<i>Bonamia pilbarensis</i>		0.1	<10%	Forb (G)	2
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Enneapogon caeruleus</i>		0.1	<10%	Tussock grass (G)	2
<i>Eriachne aristidea</i>		0.2	<10%	Tussock grass (G)	2
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>		0.2	<10%	Forb (G)	2
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Fimbristylis simulans</i>		0.2	<10%	Sedge (G)	2
<i>Gomphrena canescens</i>		0.1	<10%	Forb (G)	2
<i>Gossypium australe</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hakea lorea</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Heliotropium tenuifolium</i>		0.2	<10%	Forb (G)	2
<i>Hibiscus coatesii</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Paspalidium clementii</i>		0.1	<10%	Tussock grass (G)	2
<i>Ptilotus astrolasius</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus calostachyus</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus clementii</i>		0.1	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida echinocarpa</i>		0.2	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Tephrosia</i> sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Tribulus macrocarpus</i>		0.1	<10%	Forb (G)	2
<i>Tribulus platypterus</i>		0.1	<10%	Forb (G)	2
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	2
<i>Triodia vanleeuwenii</i>		0.3	<10%	Hummock grass (G)	2
<i>Triodia wiseana</i>		0.5	<10%	Hummock grass (G)	2
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	2
<i>Yakirra australiensis</i>		0.2	<10%	Tussock grass (G)	2

Site ID:	OB-18	VT: 04
Type:	Quadrat	Size: 50 x 50 m
Date:	8/05/2021	Described by: Angela Benkovic and Pali Jayasekara
Co-ordinates:	780851.48 E	7422220.94 N
Landform and slope:	Hillslope	
Drainage:	Flat	
Aspect:	Flat	
Soil colour & type:	Orange, Clay Loam	
Vegetation condition:	Good	
Fire age & intensity:	Old (6+ yr)	
Disturbances:	Weed Invasion	



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia dictyophleba</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia citrinoviridis</i>		1.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Androcalva luteiflora</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida holathera</i>		0.2	<10%	Tussock grass (G)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	70-30%	Tussock grass (G)	40
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Corymbia deserticola</i>		5	<10%	Tree, palm	2
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		0.2	<10%	Forb (G)	2
<i>Cymbopogon ambiguus</i>		0.3	<10%	Tussock grass (G)	2
<i>Dampiera candidans</i>		0.2	<10%	Forb (G)	2
<i>Enneapogon caerulescens</i>		0.1	<10%	Tussock grass (G)	2
<i>Eragrostis tenellula</i>		0.2	<10%	Tussock grass (G)	2
<i>Eremophila longifolia</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne aristidea</i>		0.2	<10%	Tussock grass (G)	2
<i>Eriachne tenuiculmis</i>		0.2	30-10%	Tussock grass (G)	20
<i>Eucalyptus victrix</i>		8	<10%	Tree, palm	3
<i>Eulalia aurea</i>		0.3	30-10%	Tussock grass (G)	10
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Euphorbia trigonosperma</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Glycine canescens</i>		0.2	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Gomphrena cunninghamii</i>		0.1	<10%	Forb (G)	2
<i>Gomphrena canescens</i>		0.1	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Gossypium robinsonii</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus</i> aff. <i>campanulatus</i>	New taxon	1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	10 plants
<i>Melaleuca glomerata</i>		4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Petalostylis labicheoides</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Phyllanthus maderaspatensis</i>		0.2	<10%	Forb (G)	2
<i>Pluchea tetranthera</i>		0.3	<10%	Forb (G)	2
<i>Polymeria ambigua</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus fusiformis</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus clementii</i>		0.2	<10%	Forb (G)	2
<i>Rhynchosia minima</i>		0.1	<10%	Forb (G)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		0.2	<10%	Forb (G)	2
<i>Sida arenicola</i>		0.1	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sporobolus australasicus</i>		0.2	<10%	Tussock grass (G)	2
<i>Stemodia kingii</i>		0.2	<10%	Forb (G)	2
<i>Themeda triandra</i>		0.4	<10%	Tussock grass (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		1	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Triodia pungens</i>		0.6	<10%	Hummock grass (G)	2
<i>Triodia longiceps</i>		1	<10%	Hummock grass (G)	2

Site ID:	OB-20	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	8/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	7421100.38 E	7421100.38 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	West		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Nil		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia inaequilatera</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia synchronicia</i>		1.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida holathera</i>		0.2	<10%	Tussock grass (G)	2
<i>Bulbostylis barbata</i>		0.2	<10%	Sedge (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	2
<i>Dolichocarpa crouchiana</i>		0.2	<10%	Forb (G)	2
<i>Enneapogon caeruleus</i>		0.1	<10%	Tussock grass (G)	2
<i>Enneapogon polyphyllus</i>		0.1	<10%	Tussock grass (G)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Eriachne aristidea</i>		0.2	<10%	Tussock grass (G)	2
<i>Eriachne mucronata</i>		0.3	<10%	Tussock grass (G)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		5	<10%	Tree mallee (U)	3
<i>Gomphrena canescens</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.1	<10%	Forb (G)	2
<i>Goodenia stobbsiana</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Heliotropium heteranthum</i>		0.1	<10%	Forb (G)	2
<i>Heliotropium inexplicitum</i>		0.1	<10%	Forb (G)	2
<i>Hibiscus coatesii</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Iseilema dolichotrichum</i>		0.1	<10%	Tussock grass (G)	2
<i>Maireana</i> sp.		0.2	<10%	Chenopod shrub (M)	2
<i>Paraneurachne muelleri</i>		0.2	<10%	Tussock grass (G)	2
<i>Paspalidium basicladum</i>		0.2	<10%	Tussock grass (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Polycarpaea holtzei</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus calostachyus</i>		0.4	<10%	Forb (G)	2
<i>Ptilotus fusiformis</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus gaudichaudii</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus helipteroides</i>		0.1	<10%	Forb (G)	2
<i>Schizachyrium fragile</i>		0.2	<10%	Tussock grass (G)	2
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.3	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Solanum cleistogamum</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Stemodia kingii</i>		0.2	<10%	Forb (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		1	<10%	Forb (G)	2
<i>Triodia angusta</i>		0.3	<10%	Hummock grass (G)	8
<i>Triodia wiseana</i>		0.5	30-10%	Hummock grass (G)	10
<i>Triodia brizoides</i>		0.3	<10%	Hummock grass (G)	2
<i>Triodia brizoides</i>		0.2	<10%	Hummock grass (G)	2
<i>Triodia vanleeuwenii</i>		0.3	<10%	Hummock grass (G)	2
<i>Yakirra australiensis</i>		0.2	<10%	Tussock grass (G)	2

Site ID:	OB-22	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	8/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	778740.91 E	7420214.75 N	
Landform and slope:	Hillslope		
Drainage:	Low		
Aspect:	South/East		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Very Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weeds		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia bivenosa</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia hilliana</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia inaequilatera</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia pruinocarpa</i>		3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia adoxa</i> var. <i>adoxo</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia adsurgens</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Cassytha capillaris</i>		0.2	<10%	Vine (G)	2
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne mucronata</i>		0.3	<10%	Tussock grass (G)	2
<i>Eriachne lanata</i>		0.2	<10%	Tussock grass (G)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		5	<10%	Tree mallee (U)	6
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Gompholobium polyzygum</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Goodenia stobbsiana</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Goodenia triodiophila</i>		0.2	<10%	Forb (G)	2
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hakea chordophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Ptilotus calostachyus</i>		0.2	<10%	Forb (G)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Solanum centrale</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Solanum lasiophyllum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Trianthema glossostigma</i>		0.2	<10%	Forb (G)	2
<i>Tribulus suberosus</i>		0.2	<10%	Forb (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.5	<10%	Forb (G)	2
<i>Triodia vanleeuwenii</i>		1	30-10%	Hummock grass (G)	20
<i>Triodia pungens</i>		1	30-10%	Hummock grass (G)	15

Site ID:	OB-26	VT: 05	
Type:	Quadrat	Size: 50 x 50 m	
Date:	9/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	772381.24 E	7418601.90 N	
Landform and slope:	Breakaway		
Drainage:	Low		
Aspect:	North		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Very Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Fire		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia inaequilatera</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia bivenosa</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia spondylophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia maitlandii</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia pachyacra</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia sibirica</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida inaequiglumis</i>		0.5	<10%	Tussock grass (G)	2
<i>Bonamia pilbarensis</i>		0.1	<10%	Forb (G)	2
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		3	<10%	Tree mallee (U)	4
<i>Eucalyptus gamophylla</i>		1	<10%	Tree mallee (U)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Gomphrena canescens</i>		0.1	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Goodenia vilmorinae</i>		0.2	<10%	Forb (G)	2
<i>Goodenia microptera</i>		0.1	<10%	Forb (G)	2
<i>Hakea chordophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hakea lorea</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus coatesii</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Petalostylis labicheoides</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Ptilotus calostachyus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus clementii</i>		0.1	<10%	Forb (G)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		0.3	<10%	Forb (G)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.2	<10%	Forb (G)	2
<i>Sida</i> sp. L (A.M. Ashby 4202)		0.1	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Solanum ferocissimum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sporobolus australasicus</i>		0.1	<10%	Tussock grass (G)	2
<i>Tephrosia oxalidea</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Tephrosia</i> sp. NW Eremaean (S.van Leeuwen et al. PBS 0356)		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Tribulus macrocarpus</i>		0.1	<10%	Forb (G)	2
<i>Triodia wiseana</i>		0.2	<10%	Hummock grass (G)	8

Site ID:	OB-28	VT: 08
Type:	Quadrat	Size: 50 x 50 m
Date:	9/05/2021	Described by: Angela Benkovic and Pali Jayasekara
Co-ordinates:	777720.62 E	7417854.21 N
Landform and slope:	Hillslope	
Drainage:	Low	
Aspect:	Flat	
Soil colour & type:	Orange, Clay Loam	
Vegetation condition:	Very Good	
Fire age & intensity:	Moderate (3 to 5 yr)	
Disturbances:	None discernible	



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia tetragonophylla</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia bivenosa</i>		1.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia catenulata</i> subsp. <i>occidentalis</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia synchronicia</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida inaequiglumis</i>		0.3	<10%	Tussock grass (G)	2
<i>Bulbostylis barbata</i>		0.1	<10%	Sedge (G)	2
<i>Cynodon prostratus</i>		0.2	<10%	Tussock grass (G)	2
<i>Enneapogon caeruleus</i>		0.1	<10%	Tussock grass (G)	2
<i>Enneapogon polyphyllus</i>		0.1	<10%	Tussock grass (G)	2
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Eriachne mucronata</i>		0.1	<10%	Tussock grass (G)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		6	<10%	Tree mallee (U)	3
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Gomphrena canescens</i>		0.3	<10%	Forb (G)	2
<i>Goodenia triodiophila</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Goodenia stobbsiana</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Goodenia triodiophila</i>		0.2	<10%	Forb (G)	2
<i>Hakea lorea</i>		1.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>		0.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Maireana planifolia</i>		0.2	<10%	Chenopod shrub (M)	2
<i>Maireana sp.</i>		0.2	<10%	Chenopod shrub (M)	2
<i>Paraneurachne muelleri</i>		0.2	<10%	Tussock grass (G)	2
<i>Polycarpaea holtzei</i>		0.1	<10%	Forb (G)	2
<i>Portulaca sp.</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus obovatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus astrolasius</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus calostachyus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus clementii</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus rotundifolius</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus helipteroides</i>		0.2	<10%	Forb (G)	2
<i>Sclerolaena sp.</i>		0.2	<10%	Chenopod shrub (M)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		1.2	<10%	Forb (G)	2
<i>Sida sp.</i> Pilbara (A.A. Mitchell PRP 1543)		0.3	<10%	Forb (G)	2
<i>Trianthema glossostigmum</i>		0.2	<10%	Forb (G)	2
<i>Tribulus suberosus</i>		0.2	<10%	Forb (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.7	<10%	Forb (G)	2
<i>Triodia vanleeuwenii</i>		0.4	<10%	Hummock grass (G)	2
<i>Triodia angusta</i>		0.5	<10%	Hummock grass (G)	2
<i>Triodia wiseana</i>		0.5	<10%	Hummock grass (G)	2
<i>Triodia brizoides</i>		0.3	<10%	Hummock grass (G)	2

Site ID:	OB-32	VT: 04	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	779229.73 E	7422798.59 N	
Landform and slope:	Hillslope		
Drainage:	Very Steep		
Aspect:	South		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Nil		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia dictyophleba</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia tenuissima</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Bulbostylis barbata</i>		0.1	<10%	Sedge (G)	2
<i>Cheilanthes lasiophylla</i>		0.1	<10%	Fern (G)	2
<i>Eriachne mucronata</i>		0.3	<10%	Tussock grass (G)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		7	<10%	Tree mallee (U)	2
<i>Fimbristylis dichotoma</i>		0.1	<10%	Sedge (G)	2
<i>Gomphrena canescens</i>		0.3	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Goodenia triodiophila</i>		0.2	<10%	Forb (G)	2
<i>Gossypium robinsonii</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hakea chordophylla</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Iseilema vaginiflorum</i>		0.2	<10%	Tussock grass (G)	2
<i>Paraneurachne muelleri</i>		0.2	<10%	Tussock grass (G)	2
<i>Paspalidium clementii</i>		0.1	<10%	Tussock grass (G)	2
<i>Ptilotus exaltatus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus calostachyus</i>		0.4	<10%	Forb (G)	2
<i>Ptilotus obovatus</i>		0.4	<10%	Forb (G)	2
<i>Ptilotus gomphrenoides</i>		0.2	<10%	Forb (G)	2
<i>Senna sericea</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida</i> sp.		0.2	<10%	Forb (G)	2
<i>Stenopetalum decipiens</i>		0.1	<10%	Forb (G)	40 plants
<i>Tribulus suberosus</i>		0.2	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Triodia wiseana</i>		1	70-30%	Hummock grass (G)	30
<i>Triodia brizoides</i>		1	<10%	Hummock grass (G)	5
<i>Yakirra australiensis</i>		0.2	<10%	Tussock grass (G)	2

Site ID:	OB-24	VT: 02	
Type:	Quadrat	Size: 50 x 50 m	
Date:	9/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	772432.62 E	7418455.71 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weed Invasion		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon</i> sp.		0.2	<10%	Forb (G)	2
<i>Abutilon</i> sp. Pilbara (W.R. Barker 2025)		0.2	<10%	Forb (G)	2
<i>Acacia inaequilatera</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia bivenosa</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia maitlandii</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia spondylophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia tetragonophylla</i>		1.7	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia pruinocarpa</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia pachyacra</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia pteraneura</i>		2	<10%	Tree mallee (U)	2
<i>Amphipogon caricinus</i>		0.2	<10%	Tussock grass (G)	2
<i>Androcalva loxophylla</i>		0.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida inaequiglumis</i>		0.2	<10%	Tussock grass (G)	2
<i>Aristida holathera</i>		0.2	<10%	Tussock grass (G)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida inaequiglumis</i>		0.3	<10%	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
<i>Boerhavia coccinea</i>		0.2	<10%	Forb (G)	2
<i>Boerhavia</i> sp.		0.2	<10%	Forb (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	7
<i>Chrysopogon fallax</i>		0.5	<10%	Tussock grass (G)	3
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	8
<i>Corchorus lasiocarpus</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Corymbia hamersleyana</i>		4	<10%	Tree, palm	2
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		0.1	<10%	Forb (G)	2
<i>Cymbopogon oblectus</i>		0.5	<10%	Tussock grass (G)	2
<i>Duperreya commixta</i>		0.5	<10%	Forb (G)	2
<i>Enneapogon polyphyllus</i>		0.1	<10%	Tussock grass (G)	2
<i>Enneapogon caerulescens</i>		0.1	<10%	Tussock grass (G)	2
<i>Eragrostis tenellula</i>		0.2	<10%	Tussock grass (G)	2
<i>Eragrostis setifolia</i>		0.2	<10%	Tussock grass (G)	2
<i>Eragrostis cumingii</i>		0.2	<10%	Tussock grass (G)	2
<i>Eremophila longifolia</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne obtusa</i>		0.3	<10%	Tussock grass (G)	2
<i>Eucalyptus gamophylla</i>		4	<10%	Tree mallee (U)	5
<i>Eulalia aurea</i>		0.5	<10%	Tussock grass (G)	2
<i>Euphorbia trigonosperma</i>		0.3	<10%	Forb (G)	2
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Gomphrena canescens</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Goodenia microptera</i>		0.2	<10%	Forb (G)	2
<i>Goodenia vilmorinae</i>		0.2	<10%	Forb (G)	2
<i>Heliotropium tenuifolium</i>		0.1	<10%	Forb (G)	2
<i>Hibiscus coatesii</i>		0.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i> var. <i>forrestii</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Indigofera monophylla</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Jasminum didymum</i> subsp. <i>lineare</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Paraneurachne muelleri</i>		0.3	<10%	Tussock grass (G)	2
<i>Perotis rara</i>		0.2	<10%	Tussock grass (G)	2
<i>Polycarpaea holtzei</i>		0.1	<10%	Forb (G)	2
<i>Polycarpaea corymbosa</i>		0.1	<10%	Forb (G)	2
<i>Portulaca</i> aff. <i>australis</i>		0.1	<10%	Forb (G)	2
<i>Pterocaulon</i> sp.		0.2	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus auriculifolius</i>		0.4	<10%	Forb (G)	2
<i>Ptilotus obovatus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus fusiformis</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus clementii</i>		0.4	<10%	Forb (G)	2
<i>Rhagodia eremaea</i>		1	<10%	Chenopod shrub (M)	2
<i>Rhynchosia minima</i>		0.3	<10%	Forb (G)	2
<i>Scaevola amblyanthera</i> var. <i>centralis</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		1	<10%	Forb (G)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna artemisioides</i> subsp. <i>x artemisioides</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.3	<10%	Forb (G)	2
<i>Sida</i> sp. L (A.M. Ashby 4202)		0.3	<10%	Forb (G)	2
<i>Sida echinocarpa</i>		0.3	<10%	Forb (G)	2
<i>Sida arenicola</i>		0.2	<10%	Forb (G)	2
<i>Solanum lasiophyllum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sporobolus australasicus</i>		0.2	<10%	Tussock grass (G)	2
<i>Swainsona decurrens</i>		0.1	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Swainsona decurrens</i>		0.2	<10%	Forb (G)	2
<i>Themeda triandra</i>		0.6	<10%	Tussock grass (G)	3
<i>Tribulus suberosus</i>		0.2	<10%	Forb (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.5	<10%	Forb (G)	2
<i>Triodia pungens</i>		0.5	<10%	Hummock grass (G)	3
<i>Triodia longiceps</i>		0.7	<10%	Hummock grass (G)	2
<i>Yakirra australiensis</i>		0.1	<10%	Tussock grass (G)	2

Site ID:	OB-30	VT: 07	
Type:	Quadrat	Size: 50 x 50 m	
Date:	10/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	775181.66 E	775181.66 N	
Landform and slope:	Claypan		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Orange, Light Clay		
Vegetation condition:	Very Good		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Weeds, grazing		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia aneura</i>		5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	8
<i>Aristida latifolia</i>		0.3	<10%	Tussock grass (G)	2
<i>Aristida inaequiglumis</i>		0.3	<10%	Tussock grass (G)	2
<i>Aristida latifolia</i>		0.3	<10%	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.1	<10%	Forb (G)	2
<i>Boerhavia coccinea</i>		0.2	<10%	Forb (G)	2
<i>Bulbostylis barbata</i>		0.1	<10%	Sedge (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	2
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>		0.1	<10%	Forb (G)	2
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>		0.4	70-30%	Tussock grass (G)	30
<i>Enneapogon polyphyllus</i>		0.2	<10%	Tussock grass (G)	2
<i>Enneapogon robustissimus</i>		0.2	<10%	Tussock grass (G)	2
<i>Enteropogon ramosus</i>		0.2	<10%	Tussock grass (G)	2
<i>Eragrostis tenellula</i>		0.3	<10%	Tussock grass (G)	2
<i>Eragrostis setifolia</i>		0.3	<10%	Tussock grass (G)	8
<i>Eremophila lachnocalyx</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	8
<i>Eriachne pulchella</i>		0.3	<10%	Tussock grass (G)	2
<i>Euphorbia biconvexa</i>		0.1	<10%	Forb (G)	2
<i>Euphorbia australis</i> var. <i>subtomentosa</i>		0.2	<10%	Forb (G)	2
<i>Euphorbia trigonosperma</i>		0.2	<10%	Forb (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Glycine canescens</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Heliotropium tenuifolium</i>		0.1	<10%	Forb (G)	2
<i>Indigofera linifolia</i>		0.2	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Iseilema vaginiflorum</i>		0.2	<10%	Tussock grass (G)	2
<i>Malvastrum americanum</i>	*	0.2	<10%	Forb (G)	2
<i>Operculina aequisejala</i>		0.1	<10%	Forb (G)	2
<i>Paraneurachne muelleri</i>		0.2	<10%	Tussock grass (G)	2
<i>Polygala isingii</i>		0.1	<10%	Forb (G)	2
<i>Portulaca sp.</i>		0.1	<10%	Forb (G)	2
<i>Portulaca decipiens</i>		0.1	<10%	Forb (G)	2
<i>Portulaca aff. decipiens</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus aervoides</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus exaltatus</i>		0.2	<10%	Forb (G)	2
<i>Rhagodia eremaea</i>		1	<10%	Chenopod shrub (M)	2
<i>Rhynchosia minima</i>		0.2	<10%	Forb (G)	2
<i>Salsola australis</i>		0.3	<10%	Chenopod shrub (M)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		1	<10%	Forb (G)	2
<i>Senna hamersleyensis</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sida sp. L (A.M. Ashby 4202)</i>		0.3	<10%	Forb (G)	2
<i>Sida fibulifera</i>		0.2	<10%	Forb (G)	2
<i>Sporobolus australasicus</i>		0.12	<10%	Tussock grass (G)	2
<i>Tragus australianus</i>		0.3	<10%	Tussock grass (G)	2

Site ID:	OB-34	VT: 06	
Type:	Quadrat	Size: 50 x 50 m	
Date:	11/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	781172.66 E	7417920.48 N	
Landform and slope:	Sandy/ Stony Plain		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weed Invasion		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Abutilon otocarpum</i>		0.2	<10%	Forb (G)	2
<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)		0.2	<10%	Forb (G)	2
<i>Acacia</i> sp.		1	70-30%	Shrub, cycad, grass-tree, tree-fern (M)	30
<i>Acacia pruinocarpa</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia tetragonophylla</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia synchronicia</i>		1.2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Acacia sibirica</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	5
<i>Anthobolus leptomerioides</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Aristida inaequiglumis</i>		0.3	<10%	Tussock grass (G)	2
<i>Aristida contorta</i>		0.1	<10%	Tussock grass (G)	2
<i>Aristida holathera</i>		0.4	<10%	Tussock grass (G)	2
<i>Arivela viscosa</i>		0.5	<10%	Forb (G)	2
* <i>Bidens bipinnata</i>	*	0.1	<10%	Forb (G)	2
<i>Bulbostylis barbata</i>		0.1	<10%	Sedge (G)	2
* <i>Cenchrus ciliaris</i>	*	0.3	<10%	Tussock grass (G)	2
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		0.1	<10%	Fern (G)	2
<i>Chrysocephalum gilesii</i>		0.3	<10%	Forb (G)	2
<i>Chrysopogon fallax</i>		0.3	<10%	Tussock grass (G)	2
<i>Corymbia candida</i>		5	<10%	Tree, palm	2
<i>Cyperus</i> sp.		0.1	<10%	Sedge (G)	2
<i>Digitaria brownii</i>		0.2	<10%	Tussock grass (G)	2
<i>Duperreya commixta</i>		0.3	<10%	Forb (G)	2
<i>Enneapogon polyphyllus</i>		0.1	<10%	Tussock grass (G)	2
<i>Enneapogon caeruleus</i>		0.1	<10%	Tussock grass (G)	2
<i>Eragrostis cumingii</i>		0.2	<10%	Tussock grass (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Eragrostis eriopoda</i>		0.2	<10%	Tussock grass (G)	2
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eriachne pulchella</i>		0.1	<10%	Tussock grass (G)	2
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		0.1	<10%	Forb (G)	2
<i>Gomphrena canescens</i>		0.2	<10%	Forb (G)	2
<i>Goodenia prostrata</i>		0.2	<10%	Forb (G)	2
<i>Goodenia microptera</i>		0.2	<10%	Forb (G)	2
<i>Goodenia muelleriana</i>		0.2	<10%	Forb (G)	2
<i>Hibiscus burtonii</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus sturtii</i> var. <i>platychlamys</i>		1	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Hibiscus coatesii</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Maireana</i> sp.		0.2	<10%	Chenopod shrub (M)	2
<i>Paraneurachne muelleri</i>		0.2	<10%	Tussock grass (G)	2
<i>Perotis rara</i>		0.1	<10%	Tussock grass (G)	2
<i>Polygala isingii</i>		0.2	<10%	Forb (G)	2
<i>Psydrax suaveolens</i>		0.6	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Ptilotus exaltatus</i>		0.3	<10%	Forb (G)	2
<i>Ptilotus helipteroides</i>		0.1	<10%	Forb (G)	2
<i>Ptilotus calostachyus</i>		0.2	<10%	Forb (G)	2
<i>Ptilotus obovatus</i>		0.4	<10%	Forb (G)	2
<i>Sclerolaena</i> sp.		0.2	<10%	Chenopod shrub (M)	2
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>		1.4	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Senna notabilis</i>		1.2	<10%	Forb (G)	2
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)		0.3	<10%	Forb (G)	2

Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Solanum lasiophyllum</i>		0.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Solanum cleistogamum</i>		0.3	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Sporobolus australasicus</i>		0.2	<10%	Tussock grass (G)	2
<i>Tribulus suberosus</i>		0.1	<10%	Forb (G)	2
<i>Tribulus macrocarpus</i>		0.1	<10%	Forb (G)	2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		0.8	<10%	Forb (G)	2
<i>Triodia pungens</i>		0.5	30-10%	Hummock grass (G)	10

Site ID:	OB-38	VT: 02	
Type:	Releve	Size:	
Date:	11/05/2021	Described by: Angela Benkovic and Pali Jayasekara	
Co-ordinates:	775674.74 E	7419806.36 N	
Landform and slope:	Minor Drainage Line		
Drainage:	Flat		
Aspect:	Flat		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Weed Invasion		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia colei</i> var. <i>colei</i>		1.5	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Corymbia hamersleyana</i>		6	<10%	Tree, palm	2
<i>Themeda triandra</i>		1	70-30%	Tussock grass (G)	35

Site ID:	OB-40	VT: 04	
Type:	Releve	Size:	
Date:	11/05/2021	Described by:	Angela Benkovic and Pali Jayasekara
Co-ordinates:	775454.39 E	7419830.13 N	
Landform and slope:	Hillslope		
Drainage:	Good		
Aspect:	Gentle		
Soil colour & type:	Orange, Clay Loam		
Vegetation condition:	Good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Road/ Access Track		



Species	Status	Height	Density	Form/stratum	Cover (%)
<i>Acacia pruinocarpa</i>		1.8	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>		7	<10%	Tree mallee (U)	5
<i>Hakea chordophylla</i>		2	<10%	Shrub, cycad, grass-tree, tree-fern (M)	2
<i>Triodia pungens</i>		0.5	70-30%	Hummock grass (G)	30
<i>Triodia wiseana</i>		0.5	30-10%	Hummock grass (G)	10

Flora likelihood of occurrence assessment guidelines

Likelihood of occurrence	Guideline
Known	Species previously recorded within the survey area through current or previous survey/s
Likely	Species previously recorded within the study area and large areas of suitable habitat occur in the survey area with records within 5 km.
Possible	Species previously recorded within the study area and areas of suitable habitat occur/may occur in the survey area.
Unlikely	Species previously recorded within the study area, but suitable habitat does not occur in the survey area.
Highly unlikely	Species not previously recorded within the study area, suitable habitat does not occur in the survey area and/or the survey area is outside the natural distribution of the species.
Other considerations	Intensity of survey, availability of access, growth form type, recorded flowering times, cryptic nature of species

Source information - desktop searches

PMST – DAWE Protected Matters Search Tool (PMST) to identify flora listed under the EPBC Act potentially occurring within the study area

TPFL and WA Herbarium – records of Threatened flora from TPFL and WA Herbarium database searches within the study area

NM – DBCA *NatureMap*

BHP WAIO flora database

Flora likelihood of occurrence assessment of significant flora identified in the desktop assessment

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
Amaranthaceae	<i>Amaranthus centralis</i>		P3	Erect annual herb to 0.6 m high. Inflorescences of axillary globular clusters. Flowers and fruits throughout the year. Red sand in ephemeral watercourses, sandy to clayey loam on river banks and edges of permanent pools in eucalypt lined channels, or <i>Acacia</i> shrubland. It also occurs in areas of permanent watering, e.g. bore overflows, gardens and cultivation (Palmer 2009).	Unlikely – while potential suitable habitat is present the survey did not record the species and has not been previously recorded	40.40	TPFL
Apocynaceae	<i>Gymnanthera cunninghamii</i>		P3	Erect shrub, 1-2 m high. Fl. cream-yellow-green, Jan to Dec. Sandy soils.	Possible –potential suitable habitat is present	7.7	BHP WAIO, TPFL, <i>NatureMap</i>
Asteraceae	<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)		P1	Somewhat woody, annual herb, or short lived perennial subshrub to 1 m high. Fl. white, but appearing pink when dry, May to Sep. Clay-loams, clay, cracking clay and gilgai in association with low open woodland, typically mulga.	Possible –potential suitable habitat is present	14.2	BHP WAIO, <i>NatureMap</i>
Asteraceae	<i>Xerochrysum boreale</i>		P3	Erect perennial, branched herb to 0.5 m high. Fl. yellow with outer bracts pale yellowish brown. Loamy, sandy or gravelly soils in grassland or woodland, sometimes seasonally inundated areas (Wilson 2017).	Unlikely – suitable habitat is not present	31.9	<i>NatureMap</i>
Brassicaceae	<i>Lepidium catapycnon</i>		P4	Open, woody perennial, herb or shrub, 0.2-0.3 m high, stems zigzag. Fl. white, Oct. Skeletal soils. Hillsides.	Known - recorded during current survey	0	BHP WAIO, TPFL, <i>NatureMap</i>
Chenopodiaceae	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)		P3	Shrubs, sometimes scrambling to 4 m high. Recorded from mulga on cracking clays (Rio Tinto Australia and Western Australian Herbarium 2015).	Likely - potential suitable habitat is present	10.5	BHP WAIO, TPFL, <i>NatureMap</i>
Convolvulaceae	<i>Ipomoea racemigera</i>		P2	Creeping annual, herb or climber. Fl. white.	Known - recorded during current survey	4.3	BHP WAIO, <i>NatureMap</i>

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
Cyperaceae	<i>Bulbostylis burbridgeae</i>		P4	Tufted, erect to spreading annual, grass-like or herb (sedge), 0.03-0.25 m high, spikelets in a simple umbel or rarely solitary; stamens 3; involucre bracts long, hairy. Fl. brown, Mar or Jun to Aug. Granitic soils. Granite outcrops, cliff bases.	Unlikely – suitable habitat is not present	11.7	BHP WAIO
Euphorbiaceae	<i>Euphorbia australis</i> var. <i>glabra</i>		P3	Prostrate annual herb with milky latex, upper surface of leaves glabrous.	Unlikely – suitable habitat is not present	31.5	BHP WAIO
Euphorbiaceae	<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i>		P2	Prostrate, slender, multi-stemmed herb to 0.1 m high. Loamy depressions, cracking clay floodplains.	Unlikely – suitable habitat is not present	1.7	BHP WAIO, NatureMap
Fabaceae	<i>Acacia bromilowiana</i>		P4	Tree or shrub, to 12 m high, bark dark grey, fibrous; phyllodes more or less glaucous & slightly pruinose; inflorescence in spikes. Fl. yellow/pink, Jul to Aug. Red skeletal stony loam, orange-brown pebbly gravel loam, laterite, banded ironstone, basalt. Rocky hills, breakaways, scree slopes, gorges, creek beds.	Unlikely – while potential suitable habitat is present the current survey did not record the species that is highly conspicuous	30	TPFL, NatureMap
Fabaceae	<i>Acacia corusca</i>		P1	Rounded multi-stemmed shrub or small tree 1.5-4 m high, inflorescences simple or vestigial racemes. Flowering has been observed from April to August. Red brown sandy loam soils on hill crests, ridges, slopes and minor drainage lines upon low, subdued and undulating stony hills (Bull et al. 2019).	Unlikely - while potential suitable habitat is present the current survey did not record the species that is conspicuous	33.2	BHP WAIO, NatureMap
Fabaceae	<i>Acacia subtiliformis</i>		P3	Spindly, slender, erect shrub, to 3.5 m high, phyllodes green, new growth slightly viscid, resinous, aromatic; inflorescence in heads to 6 mm diameter; peduncles red. Fl. yellow, Jun. On rocky calcrete plateau.	Unlikely – suitable habitat is not present	19.3	BHP WAIO, TPFL, NatureMap
Fabaceae	<i>Indigofera gilesii</i>		P3	Spreading shrub or sub-shrub, 0.3 to 0.75 m high. Leaves pinnate with 9-13 leaflets. Fl. Purple to pinkish red. In ranges or on stony ground in red, sandy soil.	Likely – suitable habitat is present	1.9	BHP WAIO, TPFL, NatureMap
Fabaceae	<i>Isotropis parviflora</i>		P2	Shrub, 0.1 m high. Fl. white/pink, Mar. Valley slope of ironstone plateau.	Likely – suitable habitat is present	1.2	BHP WAIO, NatureMap

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
Fabaceae	<i>Swainsona thompsoniana</i>		P3	Prostrate annual herb to 0.1 m high. Fl. mauve with cream to yellow centres, throughout the year. Gibber plains, crabhole plains and gilgai, usually at some elevation and in association with tussock grasses (Rio Tinto Australia and Western Australian Herbarium 2015).	Possible - while potential suitable habitat is present the current survey did not record the species that is conspicuous	5.8	WA Herbarium
Fabaceae	<i>Crotalaria smithiana</i>		P3	Annual, herb, to 0.4 m high. Fl. yellow, Jun. Regeneration site on floodplain.	Unlikely – suitable habitat is not present	21.6	NatureMap
Goodeniaceae	<i>Goodenia berringbinensis</i>		P4	Ascending annual, herb, 0.1-0.3 m high. Fl. yellow, Oct. Red sandy loam. Along watercourses.	Unlikely - while potential suitable habitat is present the current survey did not record the species	25.7	BHP WAIO, NatureMap
Goodeniaceae	<i>Goodenia hartiana</i>		P2	Erect to spreading, multistemmed perennial, herb or shrub (sub-shrub). Sand. Sand dune swales, sandhills.	Unlikely - suitable habitat is not present	28.8	TPFL, NatureMap
Goodeniaceae	<i>Goodenia nuda</i>		P4	Erect to ascending herb, to 0.5 m high. Fl. yellow, Apr to Aug.	Known - recorded during current survey	0	BHP WAIO, NatureMap
Goodeniaceae	<i>Goodenia purpurascens</i>		P3	Erect perennial or annual, herb, 0.1-0.3 m high. Fl. blue-purple/white/yellow, Jan or Apr or Jun or Sep or Dec. Clay, mud. Swamps & seasonally wet depressions.	Unlikely - suitable habitat is not present	15.1	BHP WAIO
Goodeniaceae	<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)		P3	Open, erect annual or biennial, herb, to 0.2 m high. Fl. yellow. Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.	Known - previously recorded (BHP WAIO 2021)	0	BHP WAIO, TPFL, NatureMap
Lamiaceae	<i>Pityrodia augustensis</i>	T(VU)	T (VU)	Bushy shrub, ca 1 m high. Fl. purple/purple-red, Aug to Sep. Amongst rocks on slopes or in drainage lines.	Unlikely - suitable habitat is not present	no distance	PMST
Malvaceae	<i>Hibiscus campanulatus</i>		P1	Woody shrub, 1.8-3 m high. Fl. white to pale lilac, Mar to Nov, but also sporadically over summer months in response to localised rainfall events (Perkins, 2017). Incised ironstone gullies, protected areas below cliffs, rocky creeklines and	Unlikely – while suitable habitat is potentially present the species closest record is within 40	within 40 km	NatureMap

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
				below breakaways, often with underlying loamy to skeletal ironstone soils (Perkins, 2017).	km and is out of range of known distribution. <i>Hibiscus</i> aff. <i>campanulatus</i> was recorded (see section 4.6.3)		
Malvaceae	<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)		P2	Large, diffuse shrub, 1.5-2.5 m. high. Fl. Pale mauve with a darker mauve marking at the base. Sheltered or rocky drainage lines below associated cliff-lines or rocky ridges.	Unlikely – while suitable habitat is potentially present the species was not recorded. <i>Hibiscus</i> aff. <i>campanulatus</i> was recorded (see section 4.6.3)	31.1	NatureMap
Malvaceae	<i>Seringia exastia</i> ¹	T(CR)	T(CR)	Shrub. Fl. purple Apr to Dec.	Known – recorded during current survey. Not considered significant due to taxonomic revision	9.9	WA Herbarium
Malvaceae	<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)		P3	Spreading shrub, to 0.5 m high. Fl. yellow, Aug. Skeletal red soils pockets. Steep slope.	Unlikely - while potential suitable habitat is present the current survey did not record the species	31	BHP WAIO, NatureMap
Oxalidaceae	<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)		P2	Erect to ascending herb, leaves trifoliate. Fl. yellow, May to Sep. In shaded areas around rock outcrops and gullies.	Unlikely - while potential suitable habitat is present the current survey did not record the species	34.8	
Poaceae	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>		P3	Compactly tufted perennial, grass-like or herb, 0.3-0.8 m high, lemma groove muricate. Hardpan plains.	Known - previously recorded as a DBCA record in the survey area.	0	BHP WAIO, WA Herbarium, NatureMap

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
Poaceae	<i>Aristida lazaridis</i>		P2	Tufted perennial, grass-like or herb, 0.4-1.5 m high. Fl. green/purple, Apr. Sand or loam.	Known – recorded during current survey	0	BHP WAIO, <i>NatureMap</i>
Poaceae	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)		P3	Tussocky perennial, grass-like or herb, 0.9-1.8 m high. Fl. Aug. Red clay. Clay pan, grass plain.	Possible - while potential suitable habitat is present the current survey did not record the species	4.3	BHP WAIO, <i>NatureMap</i>
Poaceae	<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739)		P3	Perennial, grass-like or herb, 0.4 m high. Light orange-brown, pebbly loam. Amongst rocks & outcrops, gully slopes.	Possible - while potential suitable habitat is present the current survey did not record the species	6.1	BHP WAIO, <i>NatureMap</i>
Scrophulariaceae	<i>Eremophila capricornica</i>		P1	A small shrub to 0.75 m high. Branches with woolly dendritic hairs and leaves, grey, clustered towards the ends of branches. Fl. mauve to lilac, Jun to Aug, but also at other times of the year in response to rainfall. Sandy clay loams in open mulga shrubland with an understorey of <i>Triodia</i> spp. and other grasses (Buirchell and Brown 2016).	Unlikely - while potential suitable habitat is present the current survey did not record the species	34.80	TPFL
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>		P4	Shrub, 0.5-1.5 m high. Fl. blue, Aug to Nov. Skeletal soils over ironstone. Rocky screes.	Known - previously recorded (BHP WAIO 2021)	0	BHP WAIO, <i>NatureMap</i>
Scrophulariaceae	<i>Eremophila magnifica</i> subsp. <i>velutina</i>		P3	Shrub, 0.5-1.5 m high. Fl. blue-purple, Aug to Sep. Skeletal soils over ironstone. Summits.	Possible - while potential suitable habitat is present the current survey did not record the species	1.2	BHP WAIO
Scrophulariaceae	<i>Eremophila rigida</i>		P3	Bushy shrub, 0.3-4 m high. Fl. cream, Sep. Red sand alluvium. Hardpan plains, stony clay depressions.	Unlikely - suitable habitat is not present	24.8	TPFL, <i>NatureMap</i>

Family	Taxon	EPBC Act	BCA/ DBCA	Description (source: Florabase (Western Australian Herbarium 2021b) unless otherwise specified)	Post-survey likelihood of occurrence	Closest record to survey area (km)	Source
Scrophulariaceae	<i>Eremophila</i> sp. Hamersley Range (K. Walker KW 136)		P3	Erect shrub 1-3.5 m high. Fl. pale pink to white, spotted inside, Jun-Oct. Open rocky slopes, gullies and rock faces associated with large hills and cliffs.	Known - recorded during current survey	1.3	WA Herbarium, <i>NatureMap</i>
Scrophulariaceae	<i>Eremophila</i> sp. West Angelas (S. van Leeuwen 4068)		P1	Spindly, single-stemmed shrub to 3 m high. Fl. purple, Sep to Oct. Rocky hills or ridges and mulga bands in clay soil between rocky ridges.	Unlikely - suitable habitat is not present	30	<i>NatureMap</i>
Scrophulariaceae	<i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	Dense, spreading shrub, (0.2-)1-3 m high. Fl. purple-red-pink, Jan or Mar or Jun or Aug to Sep. Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats.	Unlikely - suitable habitat is not present	13.1	BHP WAIO, <i>NatureMap</i>

1 - This species has been revised to now include the widespread *S. elliptica* as per Binks *et al* (2020). It retains its 'Threatened' status until the new classification has been officially endorsed and appears in the Gazettal Notice.



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