

MT WELD RARE EARTHS PROJECT: DETAILED FLORA AND VEGETATION SURVEY – PHASE 2

PREPARED FOR **LYNAS CORPORATION LTD**

February 2021



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QUALITY STATEMENT

PROJECT MANAGER

Tracy Schwinkowski

PROJECT TECHNICAL LEAD

Paul Bolton

PREPARED BY

Daniel Roocke 19/02/2021

CHECKED BY

Daniel Roocke 19/02/2021

REVIEWED BY

Paul Bolton 19/02/2021

APPROVED FOR ISSUE BY

Paul Bolton 19/02/2021

PERTH

Ground Floor, 226 Adelaide Terrace, PERTH, WA 6000
TEL +61 (08) 6222 7000

REVISION SCHEDULE

Rev No.	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
1.0	29/05/2020	Draft Phase 1 Report	JH	DR	AB	FT
2.0	15/06/2020	Final Phase 1 Report	JH	DR	PB	PB
3.0	26/10/2020	Draft Phase 2 Report	JH	DR	DJ	PB
4.0	11/12/2020	Final Phase 2 Report	JH	DR	PB	PB
5.0	19/02/2021	Amended Final Phase 2 Report	DR	DR	PB	PB

Executive Summary

Mt Weld Mining Pty Ltd, a subsidiary of Lynas Corporation Ltd, commissioned Stantec Australia Pty Ltd, to undertake a two-phase detailed flora and vegetation survey (the Survey) within tenements associated with, and adjacent to the Mt Weld mine site (the Survey Area).

The intent of the Survey is to inform proposed applications to the Environmental Protection Authority to modify approved limits on disturbance areas and development envelopes prescribed in Ministerial Statement 476 as relevant to the Mt Weld Rare Earths Project. Stantec understands that Lynas will be seeking the modifications in two stages: firstly, via an application under Section 45C of the *Environmental Protection Act, 1986* for an additional 59 ha of disturbance proposed for quarter 4, 2020. A separate referral to the EPA for clearing an additional 440 ha will be submitted to accommodate Life of Mine disturbance.

Prior to the Survey, four Level 1 (now reconnaissance) surveys have been completed within sections of the Survey Area since 2011. Phase 1 was conducted between 30 March and 6 April 2020, across the Survey Area (3,254 hectares), and Phase 2 was conducted between 24 and 31 August 2020. The resultant data from each survey has been collated and used to produce this report, and to inform environmental approvals.

A total of 38 sample sites (35 quadrats and three relevés) were assessed during this Survey. Sixteen of these quadrats were positioned in a similar location to previously sampled relevés from surveys occurring in 2014 or 2018. The remaining 19 quadrats were installed during Phase 1 and re-sampled in Phase 2 to ensure adequate replication of quadrats within vegetation types, spatial distribution, and areas of particular interest were sufficiently surveyed. Quadrats comprised a 20 m by 20 m square, and survey area of 400 m², with the north-west corner permanently marked with a fence dropper. An additional two relevés were recorded during Phase 2 to assist in vegetation mapping refinement.

Eight vegetation types were recorded, none of which represent a threatened ecological community or priority ecological community. Vegetation was mapped using a combination of data collected from quadrats along with reconciling the previously described vegetation types, with refinements made as necessary. The most dominant vegetation type was AiAcaArrAtEma mapped across 1,762 hectares (54% of the Survey Area). The vegetation condition across the Survey Area was mapped as either 'Very Good', or in areas where there has been previous vegetation clearance and land disturbance for mining activities, the condition was mapped as 'Completely Degraded'. Previously cleared land accounted for approximately 10% of the Survey Area.

There were 89 vascular flora taxa recorded during the Survey. Fabaceae, Chenopodiaceae and Scrophulariaceae, and *Eremophila* and *Acacia* and were the most represented families and genera respectively. The timing of Phase 1 was within the recommended season for botanical assessments within the region, however, below average rainfall preceding both Phase 1 and Phase 2 resulted in sub-optimal on-ground conditions with lower species diversity than would typically be expected. As such, 71 records could not be confidently identified, some of which are likely to represent additional species. Some families (such as Poaceae) and genera within the dataset are considered to be under-represented compared to what would be expected to occur in optimal conditions. Despite this, 35 species (40% of the 2020 species list) recorded during the Survey were species not recorded in any of the previous surveys since 2011. Where appropriate, and despite taxonomic changes since 2011, the results of previous flora and vegetation surveys are considered to still be relevant for incorporation into this report. The incorporation of the applicable results from those reports provides a comprehensive understanding of the flora and vegetation values within the Survey Area. A total of 205 vascular flora taxa have been recorded within the Survey Area since 2011, with representation from 41 families and 100 genera.

No significant flora was recorded during the Survey. One Priority 3 species, *Goodenia lyrata* has previously been recorded within the Survey Area in 2011, in a location that has since been cleared. No other threatened or priority listed flora species are considered likely to occur within the Survey Area. Twelve flora of other significance were identified within the Survey Area since 2011, these represented range extensions for species compared to their known distribution as per vouchered records with the Western Australian Herbarium. An additional four flora records from previous surveys were considered erroneous and likely to be misidentifications. One species of introduced flora was recorded during the Survey: **Sonchus oleraceus* (Common Sowthistle). Three individuals were detected adjacent to buildings.

Lynas Corporation Ltd

Mt Weld Rare Earths Project: Detailed Flora and Vegetation Survey – Phase 2

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1. Introduction

1.1 Project Background and Location

Mt Weld Mining Pty Ltd, a subsidiary of Lynas Corporation Ltd (Lynas) has approval to mine, process and transport rare earth ore from their deposit at Mt Weld mine site (the Project). Lynas commissioned Stantec Australia Pty Ltd (Stantec) to undertake a two-phase detailed flora and vegetation survey (the Survey) within tenements associated with, and adjacent to the Project (the Survey Area). The Survey Area represents two separate areas, collectively covering 3,254.81 ha, located approximately 31 km south-east of Laverton in the Murchison bioregion, within the Eremaean Botanical Province of Western Australia (Figure 1-1).

The intent of the surveys is to inform proposed applications to the Environmental Protection Authority to modify approved limits on disturbance areas and development envelopes prescribed in Ministerial Statement 476 as relevant to the Mt Weld Rare Earths Project. Stantec understands that Lynas will be seeking the modifications in two stages, initially via an application under Section 45C of the *Environmental Protection Act, 1986* for an additional 59 ha of disturbance proposed for quarter 4, 2020. A separate referral to the EPA for clearing an additional 440 ha will be submitted to accommodate Life of Mine disturbance.

Several flora and vegetation surveys have previously been undertaken which overlap the Survey Area comprising Mattiske Consulting (2003), Outback Ecology (2011), Outback Ecology (2013), MWH (2014), Stantec (2017), Stantec (2018). However, additional survey work was required to inform environmental approvals for proposed expansion of the Project.

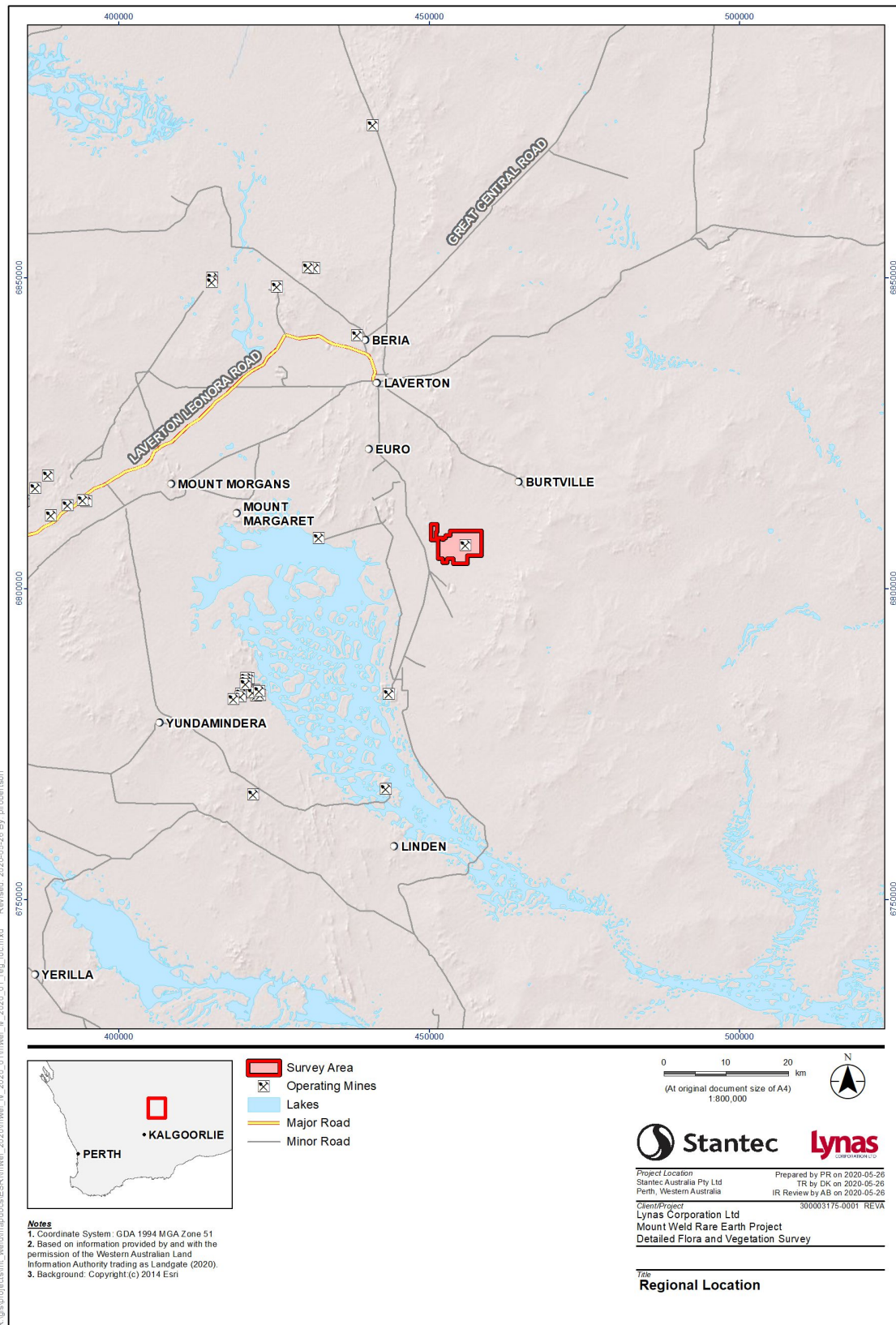
1.2 Report Scope and Objectives

The objective of the Survey was to provide a comprehensive understanding of the flora and vegetation values through a desktop assessment, and by conducting a dual season field survey, to inform environmental approvals for the Project. This report presents the results of a two-phase field survey and the consolidation of all applicable previous flora and vegetation surveys for the Project. The scope requirements to meet the objective included the following:

- complete a comprehensive desktop assessment of the Survey Area;
- conduct a two-phase detailed flora and vegetation field survey to develop a consolidated list of flora species recorded as occurring in the Survey Area, describe and map vegetation types and their condition;
- conduct targeted searches for flora and vegetation communities of significance, including species and communities of local and regional significance that may not be listed on government databases;
- assess the survey findings in a local and regional context, providing comparison with available data within the bioregion; and
- consolidate previous spatial data and mapping into a single mapping layer that can be used to inform an environmental impact assessment (EIA) in relation to the flora and vegetation environmental factor.

The objectives and methods adopted for these surveys are aligned with the following relevant regulatory guidelines:

- Environmental Protection Authority (EPA) (2016), Environmental Factor Guideline: Flora and Vegetation (EPA 2016c);
- EPA Technical Guide (2016), Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016a); and
- Department of Agriculture, Water and the Environment (2013), Matters of National Environmental Significance – significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (DotE 2013).



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Figure 1-1: Regional location of the Survey Area in the Murchison bioregion of Western Australia.

2. Background Information

2.1 Biophysical Environment

2.1.1 Biogeographic Location

The Interim Biogeographic Regionalisation for Australia (IBRA) is a bioregional framework that divides Australia into 89 biogeographic regions and 419 subregions on the basis of climate, geology, landforms, vegetation, and fauna (Thackway and Cresswell 1995). It was developed through collaboration between state and territory conservation agencies with coordination by the Commonwealth Department of the Environment, Water, Heritage and the Arts (now the Commonwealth Department of Agriculture, Water and the Environment).

The Survey Area is located in the Murchison bioregion in Western Australia, which covers an area of 281,200 km², with mining and grazing listed as the two main land uses (Australian Natural Resources Atlas 2010, DoE 2008). The Murchison bioregion encompasses the transitional zone between the eucalypt dominated environment of south-west Australia and the mulga/spinifex dominated areas of central Australia (Morton *et al.* 1995).

At the local scale, vegetation in the bioregion is closely associated with landscape position and soils. Areas of outcropping rock with skeletal soils support low mulga woodlands. Hummock grassland grows predominantly on sandy soils and samphire (*Tecticornia* sp.) low shrubland mostly on saline alluvium areas. In the east of the bioregion, red sandplains support mallee-mulga parkland over hummock grassland (Thackway and Cresswell 1995).

The Survey Area occurs within the Eastern Murchison subregion (MUR1), which consists of extensive areas of elevated red/red-brown desert sandplains with minimal dune development, breakaway complexes and internal drainage and salt lake systems associated with occluded palaeodrainage systems (Cowan *et al.* 2001). Mulga woodlands that are rich in ephemeral species dominate the subregion, together with hummock grasslands, saltbushes and *Tecticornia* shrublands.

2.1.2 Land Systems

Land systems are defined as an area or group of areas throughout which there is a recurring pattern of topography, soils and vegetation (Tille 2006). An assessment of land systems provides an indication of the occurrence and distribution of vegetation within and surrounding the Survey Area.

Table 2-1: Description of land systems associated with the Survey Area.

Land System	Description	Extent in bioregion		Extent in Survey Area	
		ha	%	ha	%
Monk	Hardpan plains with occasional sandy banks supporting mulga tall shrublands and wanderrie grasses	994,702.51	3.53	2,903.90	89.22
Jundee	Hardpan plains with variable gravelly mantles and minor sandy banks supporting weakly-groved mulga shrublands	588,270.49	2.09	122.71	3.77
Brooking	Prominent ridges of banded iron formations supporting mulga shrublands and occasional minor halophytic communities	96,065.86	0.34	113.04	3.47
Gundockerta	Extensive, gently undulating calcareous stony plains supporting bluebush shrublands.	329,501.36	1.17	104.31	3.20
Mindura	Low hills, ridges and outcrops of granite, gneiss and quartz above convex, quartz-strewn interfluves and lower plains supporting sparse <i>Acacia</i> shrublands becoming more dense in drainage floors.	380,980.65	1.35	10.85	0.33
Total		2,389,520.87	8.48	3,254.81	99.99*

* Some totals may not equal the sum of their parts due to rounding.

Land systems across the Murchison bioregion have been mapped by the Natural Resources Assessment Group of the Department of Primary Industries and Regional Development (Pringle *et al.* 1994). This mapping provides a comprehensive description of biophysical resources in the area.

The Survey Area intersects five land systems (**Table 2-1; Figure 2-1**). The Monk and Jundee land systems occupy most of the Survey Area (92.99%), defined by hardpan plains with gravelly or sandy substrate supporting mulga shrublands. Less than 1% of the Survey Area comprises the Mindura system.

2.1.3 Pre-European vegetation

Vegetation mapping of Western Australia was completed on a broad scale (1:1,000,000 and 1:250,000) by Beard (1975), classifying vegetation into broad vegetation associations. These vegetation associations were re-assessed by Shepherd *et al.* (2002) to account for clearing in the intensive land use zone, and to divide some of the larger vegetation units into smaller units. Additionally, Shepherd *et al.* (2002) developed a series of systems to assist in the removal of mosaics, although some still occur.

The Survey Area comprises entirely of the Laverton system, 'low woodland; mulga (*Acacia aneura*)' (**Table 2-2; Figure 2-2**). A summary of the current and pre-European extents of the Laverton vegetation association across three scales; state, bioregion and subregion is presented in **Table 2-3**. The current extents suggest that minimal land clearing has occurred across the three scales of assessment, with close to 100% of vegetation remaining.

Table 2-2: Pre-European vegetation system associations and the extent within the Survey Area.

System	System Code	Extent in Survey Area (%)	Description
Laverton	18	100	Low woodland; mulga (<i>Acacia aneura</i>)

Table 2-3: Extent of Pre-European vegetation system associations for the Survey Area remaining across three scales (state, bioregion and subregion).

System	Scale	Pre-European Extent	Current Extent	% remaining	Current extent within IUCN Class I-IV Reserves (ha)	% of current extent protected within IUCN Class I-IV Reserves
Laverton 18	State-wide	19,892,306.46	19,843,148.07	99.75	423,596.43	2.13
	Bioregion	12,403,172.30	12,363,252.47	99.68	45,093.82	0.36
	Sub-region	10,269,896.44	10,234,838.22	99.66	45,049.78	0.44

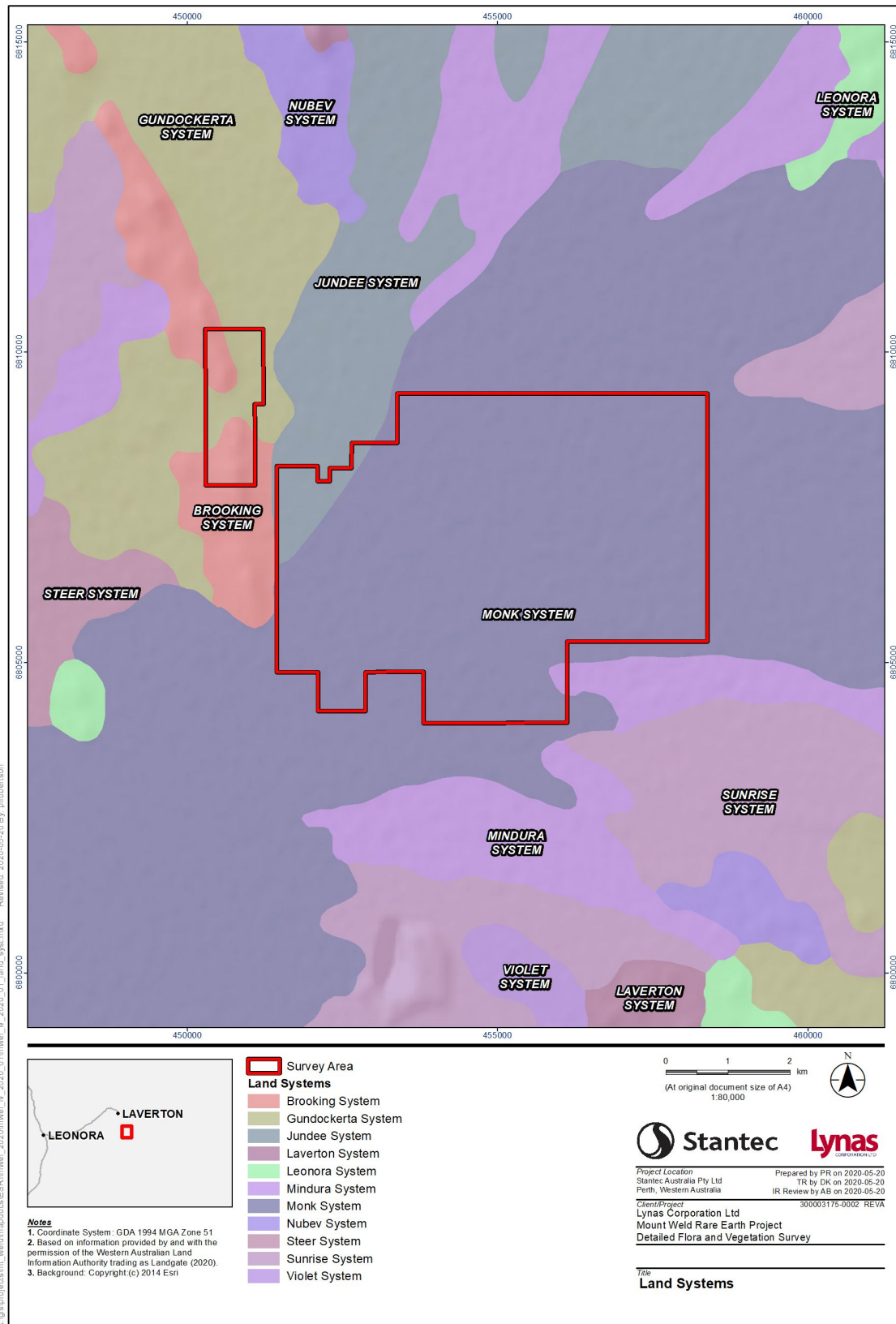


Figure 2-1: Land systems of the Survey Area.

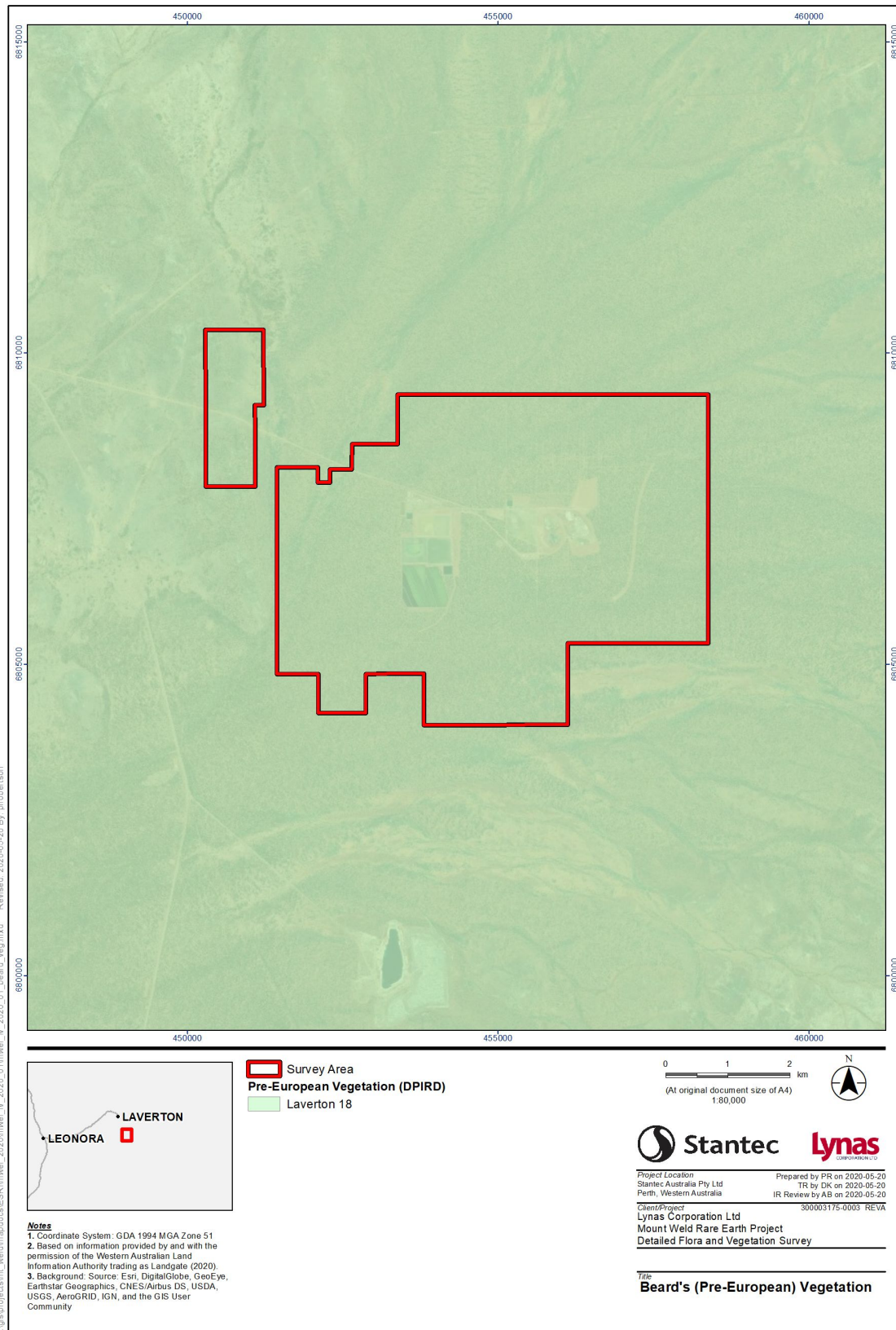


Figure 2-2: Pre-European vegetation of the Survey Area.

2.2 Physical Environment

2.2.1 Climate

The Survey Area is characterised by an arid to semi-arid climate. The closest Bureau of Meteorology (BOM) weather station to the Survey Area, with relevant long-term and recent climatic data is Laverton Weather Station (No. 012045), located approximately 30 km north-west.

The mean annual rainfall at Laverton is 211 mm, with February usually the wettest month of the year due to rainfall related to ex-tropical cyclone activity in the north-west of Western Australia. Mean monthly temperatures typically peak at approximately 35°C in January (**Figure 2-3**), with mean minimum monthly temperature close to 5°C in July (BoM 2020).

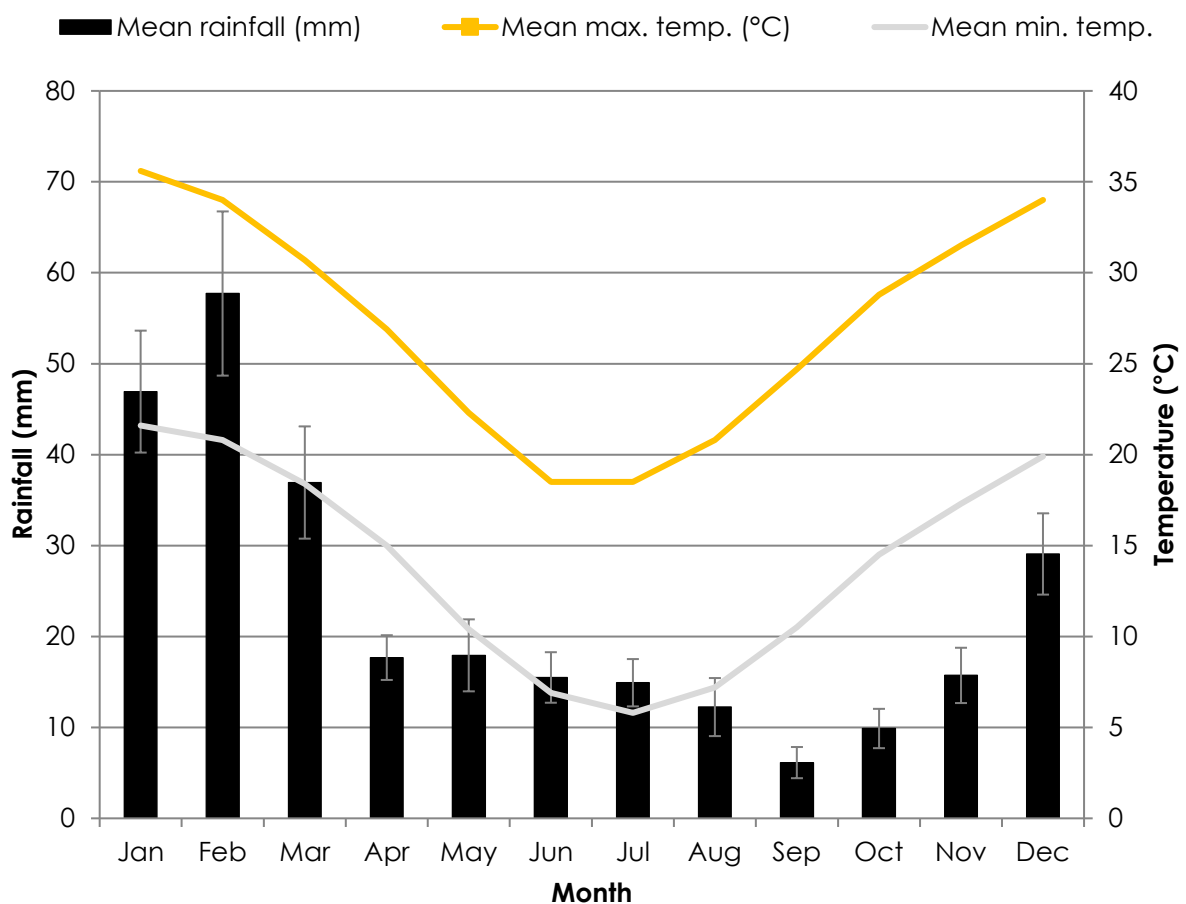


Figure 2-3: Long-term (1899-2020) climate data records for Laverton weather station (No. 012045) (BoM 2020).

2.2.2 Surface Geology and Soils

The surface geology of the Survey Area comprises two geological units (**Table 2-4; Figure 2-4**). These units were mapped at a scale of 1:1,000,000 by Geoscience Australia (2012). A cemented layer of red-brown hardpan has formed across many wash plains across the region; however, sandy and loamy wash plains are also present (DoE 2008). The soils of the MUR1 subregion consist of red sandy earths to red loams, red-brown hardpan and calcareous loamy earths in low lying areas, with stony soils found near mesas and breakaway complexes (DoE 2008).

Table 2-4: Geological units occurring within the Survey Area.

Name	Geological description	Extent within Survey Area	
		Ha	%
Colluvium 38491(Qrc)	Colluvium, sheetwash, talus; gravel piedmonts and aprons over and around bedrock; clay-silt-sand with sheet and nodular kankar; alluvial and aeolian sand-silt-gravel in depressions and broad valleys in Canning Basin; local calcrete, re-worked laterite	3102.13	95.31
Sedimentary rocks 74322(Ase)	Phyllitic schist, siltstone, sandstone, greywacke, pelite, conglomerate, quartzite, phyllite, shale, slate, claystone, chert, minor felsic volcanic and volcanoclastic rocks; arkose, para- and orthoamphibolites; rare banded iron formation	152.68	4.69
Total		3,254.81	100

2.2.3 Surface Hydrology and Drainage

Broad sheet-flow drainage is a feature of the mulga dominated woodlands of the Survey Area. The landscape exhibits some small low-lying depressions in the north-west, representing the upper reaches of drainage to Lake Carey, approximately 12 km south-west of the Survey Area.

There is no indication of natural permanent surface water within the Survey Area. The Survey Area has altered hydrology in the form of a flood bund in the eastern portion. This flood bund re-directs water flowing from the north, to south of the mine area.

No Wetlands of International Importance (Ramsar wetlands) or Nationally Important Wetlands occur within the Survey Area. The nearest significant wetland system is Lake Marmion, situated approximately 130 km south-east of the Survey Area (DotE 2019).

2.2.4 Land Tenure and Use

The dominant land use (85%) within the East Murchison subregion is grazing of sheep and cattle on native pastures (Australian Natural Resources Atlas 2010, Cowan *et al.* 2001). Other land uses include Unallocated Crown Land (UCL), Crown reserves, and mining. Mining in the subregion largely consists of gold and nickel; however most mining lease areas, including the Survey Area, are still required to be stocked, according to the pastoral lands act (Cowan *et al.* 2001).

2.2.5 Conservation Reserves, Environmentally Sensitive Areas

Conservation Reserves (including National Parks, Conservation Parks and Nature Reserves) are lands managed by DBCA for the preservation of wildlife and ecological values. National Parks often also represent Environmentally Sensitive Areas (ESA). Under Section 51B of the *Environmental Protection Act (1986)*, ESAs are declared by the Minister for Environment (Government of Western Australia 2017). The aim is to protect these areas such as declared rare flora, threatened ecological communities (TECs), national parks or significant wetlands from degradation of their environmental values. Criteria for the declaration of ESAs are presented in **Appendix A**, and do not include State-listed Priority Ecological Communities (PECs) which are protected under the *Biodiversity Conservation Act 2016* (BC Act).

No conservation reserves or ESAs intersect the Survey Area. There are two National Parks within 150 km of the Survey Area, comprising the De La Poer Nature Reserve, approximately 147 km to the north, and Goongarrie National Park, 135 km to the south-west (**Figure 2-5**). The De La Poer Range Nature Reserve (74,935 ha) was gazetted in 1974 (Barton and Cowan 2001) and Goongarrie National Park (60,397 ha) in 1995; both are characterised by a range of woodlands and mulga shrubland.

In addition to Lake Marmion (**Section 2.2.3**), Lake Ballard is 140 km south-east of the Survey Area and is listed as a Proposed Ramsar addition. Several other nature reserves, timber reserves and important wetlands occur within 250 km of the Survey Area (**Figure 2-5**).

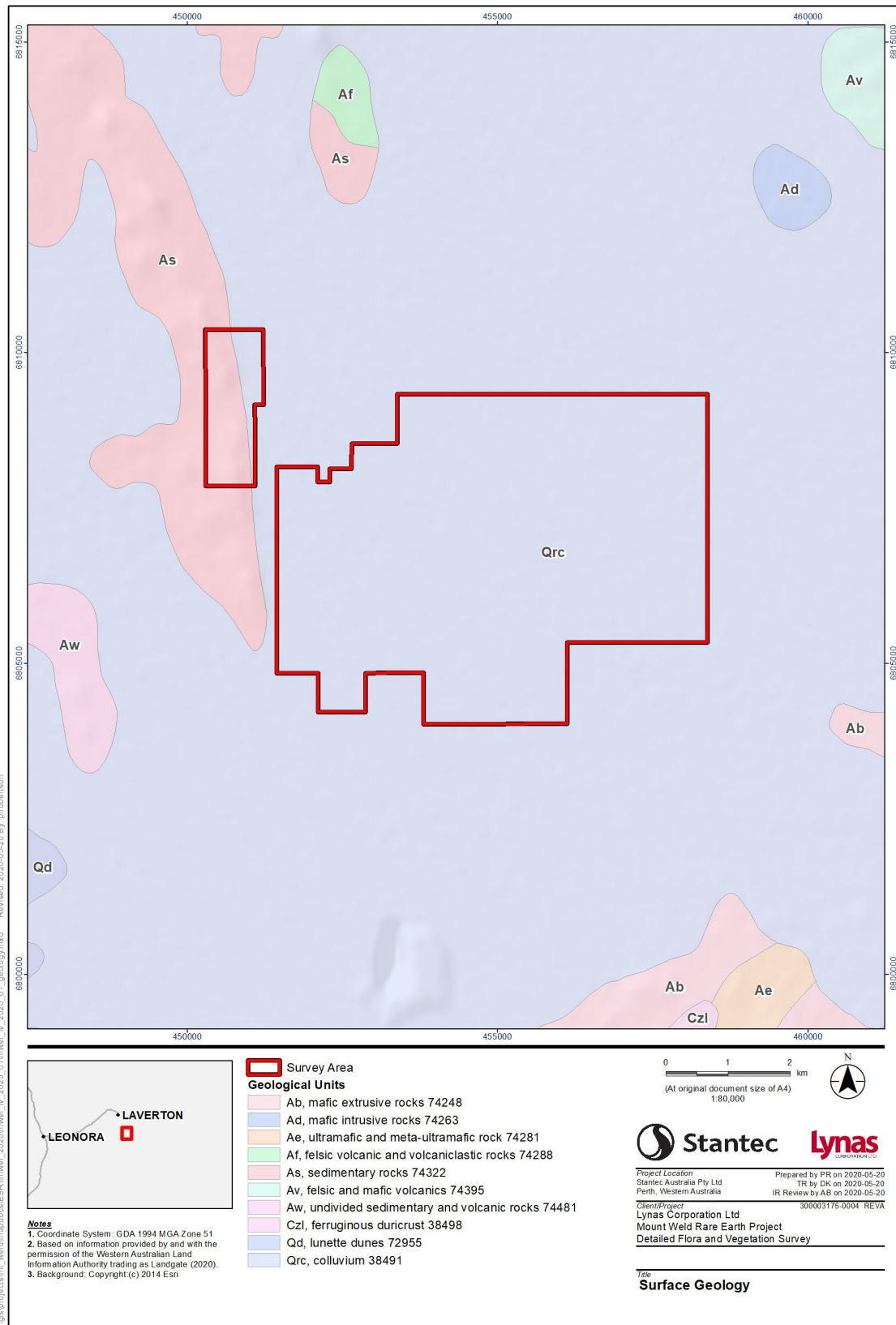


Figure 2-4: Surface geology of the Survey Area.

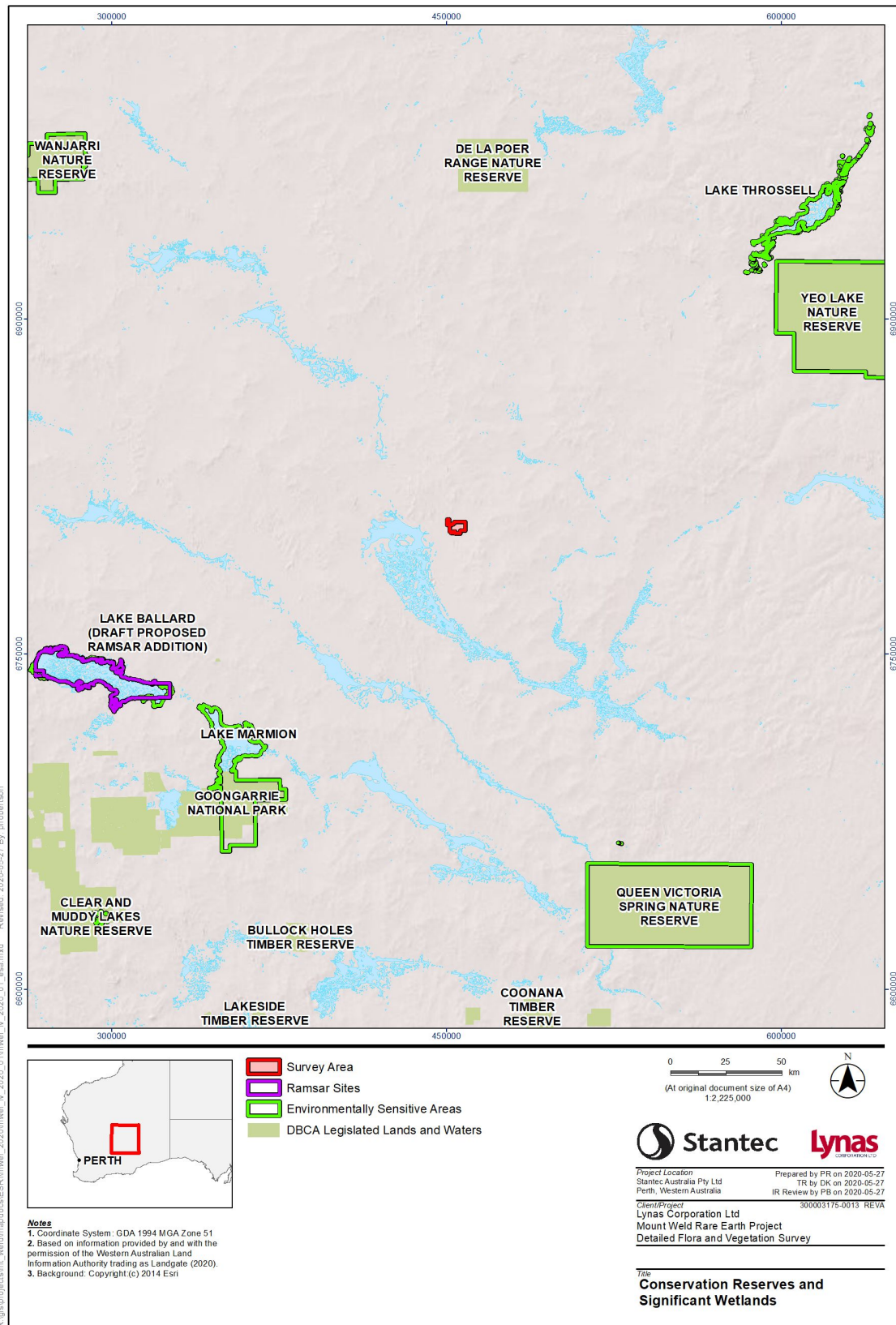


Figure 2-5: Conservation Reserves and Significant Wetlands within 250 km of the Survey Area.

3. Desktop Assessment

3.1 Methods

A desktop assessment, comprising database searches and a literature review, was undertaken to gather contextual information on the Survey Area. The purpose of the desktop assessment was to identify flora and vegetation potentially occurring within, and in the vicinity of the Survey Area, particularly species of significance. The conservation framework for flora and ecological communities of significance is provided in **Appendix B**.

3.1.1 Database Searches

Database searches were completed prior to undertaking the Survey, to generate a list of vascular flora and vegetation previously recorded within, and in the vicinity of, the Survey Area. The focus was on species and communities of significance and introduced species.

Six database searches were conducted based on a central coordinate within the Survey Area (51J .460747m E, 6815858 m S). Appropriate search buffers were applied according to the technical capabilities of the databases and the ecological features of the area (**Table 3-1**). The results of the database searches are presented in **Appendix C**.

Table 3-1: Database searches conducted for the desktop assessment.

Custodian	Database	Buffer (km)	Date of Receipt
Department of Agriculture, Water and the Environment (2020b)	Protected Matters Search Tool (PMST)	50	11/03/2020
Department of Biodiversity Conservation and Attractions (2020c)	NatureMap	40	16/03/2020
Department of Biodiversity Conservation and Attractions (2020a)	Threatened Ecological Community (TEC) and Priority Ecological Communities (PEC)	50	26/03/2020
Department of Biodiversity Conservation and Attractions (2020b)	Western Australian Herbarium Specimen Database	60	23/03/2020
Department of Biodiversity Conservation and Attractions (2020d)	Threatened (Declared Rare) and Priority Flora database (TPFL)		
Department of Biodiversity Conservation and Attractions (2018a)	Threatened and Priority Flora list (TP List)	50	05/11/2018
Department of Water and Environmental Regulation search tool (DWER 2020)	Environmentally Sensitive Areas	150	2020
Register of the National Estate spatial database (DoAWE 2020a)			2020
Western Australian Herbarium (WAH 2020)	FloraBase	n/a	2020
Commonwealth of Australia (2020)	Weeds of National Significance	n/a	2020
Department of Primary Industries and Regional Development (2020)	Declared Pests	n/a	2020

3.1.2 Literature review

Historic vegetation mapping (Beard 1975, Shepherd *et al.* 2002), soil and landform mapping and characteristics (Tille 2006), land system mapping and characteristics (Pringle *et al.* 1994), and IBRA classification system information (Cowan *et al.* 2001) were reviewed to provide broad contextual information. The literature review also comprised six flora and vegetation surveys conducted since 2003, which overlap the Survey Area, summarised in **Table 3-2** and shown in **Figure 3-1**. To assist in providing regional comparison to the results of this Survey, two publicly available Level 1 (now reconnaissance) flora and vegetation reports within approximately 70 km were also reviewed (**Table 3-3**).

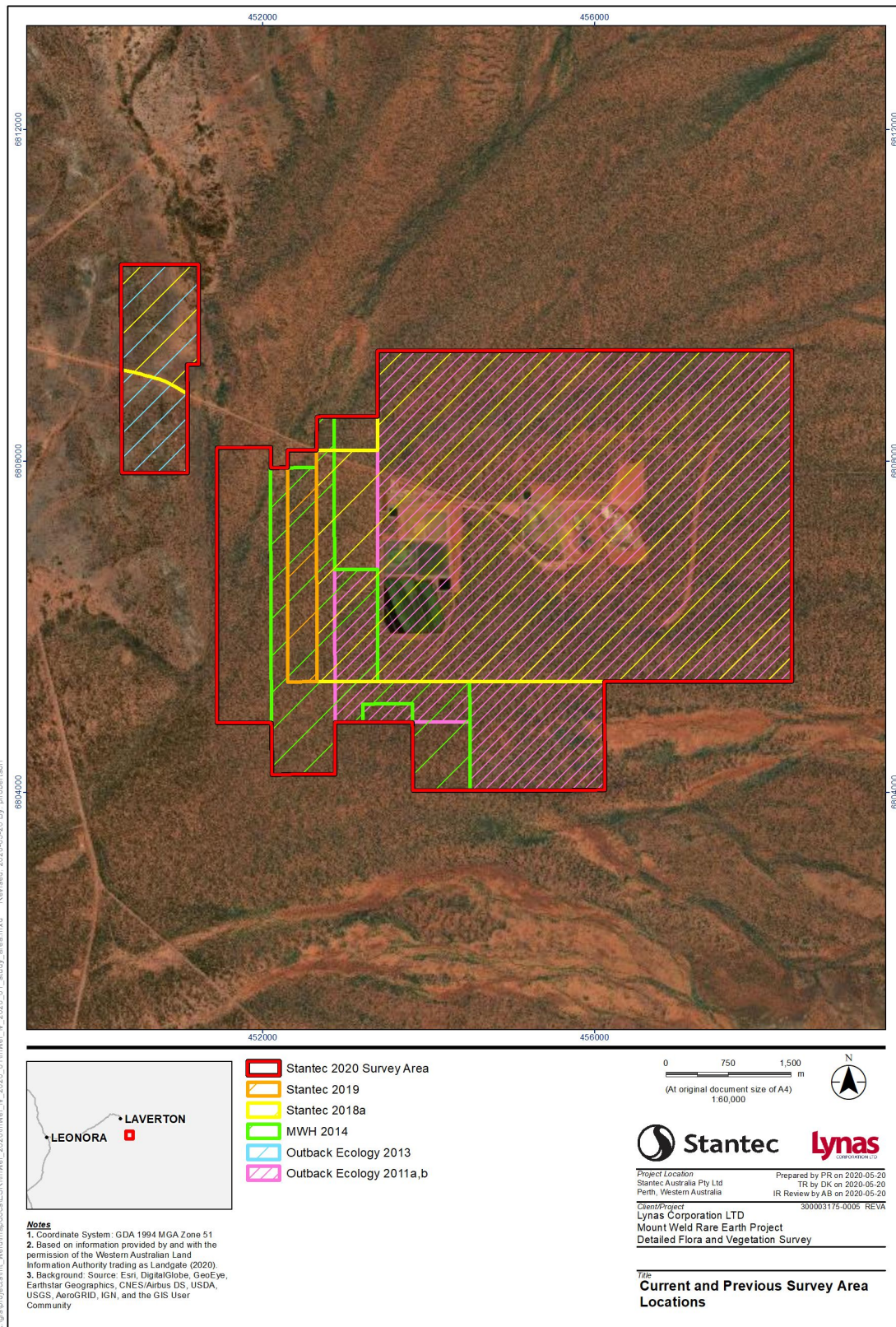
Table 3-2: Summary of the relevant previous flora and vegetation surveys completed that overlap the Survey Area.

Reference	Survey Details	Survey Timing & Field Staff	Survey Effort	Vegetation Types	Flora Recorded	Vegetation Condition	Flora and Vegetation of Significance	Limitations
Mt Weld Flora, Vegetation and Fauna Review (Stantec 2018)	Level 1 Flora, Vegetation and Fauna survey and ground truthing	26 to 28 September 2018 Alice Bott Crystal Heydenrych	9 relevés	Confirmation of previous vegetation type mapping from Outback Ecology (2013). Due to the taxonomic revision of the <i>Acacia aneura</i> complex in 2012, (after previous vegetation mapping of the Survey Area), some of the mulgas identified in the Survey Area were renamed and the vegetation type descriptions amended accordingly. Additionally, the vegetation type boundaries were refined in some places to better reflect their occurrence and extent within the area.	Ground truthing survey that added to the total species list for the site. <ul style="list-style-type: none">• 182 taxa• 23 families• 44 genera (cumulative totals from all surveys)	Very Good to Excellent	None	<ul style="list-style-type: none">• The survey occurred outside of the primary season for the Eremaean Botanical Province (March - June), however survey timing coincided with when the majority of significant flora would be flowering.• Below average rainfall prior to survey but adequate to verify existing mapping.
Mt Weld Flora and Fauna Review – including <i>Goodenia lyrata</i> occurrence (Stantec 2017)	Single-day site visit to confirm previous vegetation type mapping by Outback Ecology (2013), and targeted searches for significant flora, particularly <i>Goodenia lyrata</i>	6 October 2017 Clinton van den Bergh	One day targeted search	Previous vegetation type mapping from Outback Ecology (2013) was confirmed.	N/A	Very Good to Excellent	None	<ul style="list-style-type: none">• The timing of the survey was in early October; the species <i>Goodenia lyrata</i> is listed as flowering in August and has previously been recorded at the site in early September (Outback Ecology 2011).• Rainfall preceding the survey was below average in June, July and September.
Lynas Corporation Ltd. Mt Weld Rare Earths Project: Level 1 Vegetation, Flora and Fauna Survey (MWH 2014)	Level 1 Flora, Vegetation and Fauna survey	5 to 18 September 2014 Neal Henshaw Arnold Slabber	13 relevés	Four vegetation types were recorded: <ul style="list-style-type: none">• <i>Acacia aneura</i>, <i>A. caesaneura</i> and <i>A. aptaneura</i> Low Open Woodland with scattered <i>Santalum spicatum</i> over <i>A. tetragonophylla</i> and <i>Eremophila granitica</i> Open Shrubland over mixed annuals of <i>Rhodanthe charsleyae</i>, <i>Eragrostis lacunaria</i>, <i>Eragrostis pergracilis</i> and <i>Calandrinia Ptychosperma</i>;• <i>Acacia aneura</i>, <i>A. caesaneura</i> and <i>A. aptaneura</i> Low Open Woodland over <i>A. tetragonophylla</i> (and sometimes <i>A. ramulosa</i>, mainly in the southern sections of the Study Area) and <i>Eremophila granitica</i> Sparse Shrubland. Understorey largely depauperate, with <i>Eragrostis pergracilis</i> present in areas;• <i>Acacia aneura</i> and <i>A. caesaneura</i> (sometimes <i>A. aptaneura</i>) Low Open Woodland over <i>A. ramulosa</i> (and sometimes <i>A. tetragonophylla</i>) and <i>Eremophila margarethae</i> Open Shrubland with <i>Eragrostis pergracilis</i>, more dominant in low lying areas; and• <i>Acacia aneura</i> and <i>A. caesaneura</i> Low Open Woodland over <i>A. ramulosa</i> with mixed <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and <i>Eremophila margarethae</i> Open Shrubland.	77 flora taxa recorded including subspecies and variants) <ul style="list-style-type: none">• 23 families• 41 genera	Good to Excellent	None Weed species recorded: <ul style="list-style-type: none">• *<i>Sonchus oleraceus</i>	<ul style="list-style-type: none">• The survey occurred outside of the primary season for the Eremaean Botanical Province (March – June), however the timing of the survey coincided with when the majority of significant flora would be flowering.• Rainfall was below average in the three months prior to the survey.
Lynas Corporation Ltd. Mt Weld Rare Earths Project: Level 1 Vegetation, Flora and Fauna Assessment (Outback Ecology 2013)	Level 1 Vegetation Flora and Fauna	27 to 29 August 2012 Jeni Alford Michael Young	Relevé data unavailable	Six vegetation types were recorded: <ul style="list-style-type: none">• <i>Acacia quadrimarginea</i> tall open shrubland over <i>Ptilotus obovatus</i>, <i>Sida fibulifera</i> low shrubland;• <i>Hakea preissii</i> (<i>Allocasuarina acutivalvis</i>) Tall Open Shrubland to Scattered Tall Shrubs over <i>Senna artemisioides</i> and <i>Eremophila longifolia</i> Scattered Shrubs over <i>Maireana georgei</i> and <i>Ptilotus obovatus</i> Low Shrubland over <i>Enneapogon</i> sp. open Tussock Grassland;• <i>Acacia aneura</i> and <i>Acacia caesaneura</i> low open woodland over <i>Acacia craspedocarpa</i> and <i>Acacia tetragonophylla</i> (<i>Santalum lanceolatum</i>) tall open shrubland over <i>Senna artemisioides</i> subsp. <i>helmsii</i> low isolated shrubs;	72 flora taxa recorded including subspecies and variants) <ul style="list-style-type: none">• 22 families• 35 genera	Very Good to Excellent	None	<ul style="list-style-type: none">• The survey occurred outside of the primary season for the Eremaean Botanical Province (March – June), however the timing of the survey coincided with when the majority of significant flora would be flowering.• The survey occurred following slightly below average winter rainfall, however considerable rainfall was recorded in January, March and June of 2020.• A number of annual flora species had finished flowering; positive

Reference	Survey Details	Survey Timing & Field Staff	Survey Effort	Vegetation Types	Flora Recorded	Vegetation Condition	Flora and Vegetation of Significance	Limitations
				<ul style="list-style-type: none"> • <i>Acacia caesaneura</i>, <i>Acacia craspedocarpa</i> and <i>Acacia ramulosa</i> tall open shrubland to tall shrubland over <i>Maireana georgei</i>, <i>Ptilotus obovatus</i> and <i>Solanum lasiophyllum</i> low shrubland over scattered herbs and grasses; • <i>Acacia aneura</i> and <i>Acacia caesaneura</i> low open woodland over <i>Acacia craspedocarpa</i> and <i>Acacia tetragonophylla</i> (<i>Santalum lanceolatum</i>) tall open shrubland; and • <i>Atriplex amnicola</i>, <i>Eremophila glabra</i> and <i>Senna artemisioides</i> mid open shrubland over <i>Maireana triptera</i>, <i>Atriplex</i> sp. low isolated chenopod shrubs. 				identification was not possible, however many of the conservation significant species would be recognisable at least to genus outside of their flowering period.
Lynas Corporation Ltd. Mt Weld (Phase 2) Level 1 Vegetation and Flora Assessment of Mt Weld tenements (Outback Ecology 2011)	Vegetation and Flora Assessment	5 to 7 September 2011 Rick Davies Ashleigh Chapman	11 quadrats 10 relevés	<p>Three vegetation types were recorded:</p> <ul style="list-style-type: none"> • <i>Acacia aneura</i> Low (Open) Woodland over a sparse to very sparse understorey dominated by <i>Acacia ramulosa</i>, <i>Eremophila margarethae</i>, <i>Eragrostis pergracilis</i> and <i>Calandrinia creethiae</i>, on plains of clay loam with fine quartz gravel; • <i>Acacia aneura</i> Low (Open) Woodland over a sparse to very sparse understorey dominated by <i>Acacia tetragonophylla</i>, <i>Eragrostis pergracilis</i>, <i>Rhodanthe charsleyae</i> and sometimes <i>Ptilotus obovatus</i>, on plains of clay loam without quartz gravel; and • <i>Acacia tetragonophylla</i> Tall Open Shrubland (with emergent <i>A. aneura</i>) over a sparse to very sparse understorey dominated by <i>Sclerolaena</i> spp., <i>Tripogon loliiformis</i> and <i>Rhodanthe charsleyae</i> and sometimes <i>Ptilotus obovatus</i> and <i>Ptilotus macrocephalus</i>, on flood-out areas of heavy clay. 	142 flora taxa recorded including <ul style="list-style-type: none"> • 31 families • 79 genera 	Degraded to Excellent	<ul style="list-style-type: none"> • <i>Goodenia lyrata</i> (P3) <p>Weed species recorded:</p> <ul style="list-style-type: none"> • *<i>Malvastrum americanum</i> • *<i>Rumex vesicarius</i> • *<i>Sonchus oleraceus</i> 	<ul style="list-style-type: none"> • The survey occurred outside of the primary season for the Eremaean Botanical Province (March – June), however the timing of the survey coincided with when the majority of significant flora would be flowering and the survey followed above average winter rainfall.
Mt Weld Rare Earths Project Flora and Vegetation Assessment (Mattiske Consulting 2003)	Detailed flora and vegetation survey	24 to 26 March 2003	No raw data available in report	<p>Seven vegetation types:</p> <ul style="list-style-type: none"> • Tall Open Shrubland to Low Open Woodland of <i>Acacia aneura</i> over <i>Ptilotus obovatus</i> and Chenopodiaceae species over scattered annual species in sandy loam soil with dense laterised pebbles and quartz on the surface; • Low Open Woodland to Low Woodland of <i>Acacia aneura</i> over medium shrubs of mixed <i>Acacia</i> spp. and sparse low shrubs Chenopodiaceae species with scattered annual species in sandy loam soil with ironstone pebbles and quartz on the surface. • Open Woodland of <i>Acacia aneura</i> over scattered low shrubs over dense annual species in sandy loam soil within the flood plain channel; • Low Open Woodland to Tall Open Shrubland of <i>Acacia aneura</i> and other <i>Acacia</i> species over sparse low shrubs over open grasses dominated by <i>Eragrostis eriopoda</i> in sandy loam soil in areas of disturbance; • Open Shrubland of <i>Acacia aneura</i> and <i>Acacia ramulosa</i> over sparse low shrubs in sandy loam soil; • Open Shrubland of <i>Hakea preissii</i> over scattered mixed low shrub species including <i>Solanum lasiophyllum</i> and <i>Maireana brevifolia</i> in loamy sand soil with ironstone pebbles on the surface; and • Low Open Shrubland of Chenopodiaceae species in clayey loam soil with ironstone pebbles on the surface in very shallow depressions. 	113 flora taxa recorded including <ul style="list-style-type: none"> • 33 families • 62 genera 	Good	<p>None</p> <p>Weed species recorded:</p> <ul style="list-style-type: none"> • *<i>Citrullus lanatus</i> ^ • *<i>Chenopodium murale</i> • <i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i> • *<i>Lysimachia arvensis</i> <p>^ taxonomy updated to: *<i>Citrullus amarus</i></p>	<ul style="list-style-type: none"> • None provided; the survey was conducted within the primary season for the Eremaean Botanical Province (March – June), and following considerable summer rainfall. • However, the timing of the survey occurred outside the primary flowering period for some significant flora species

Table 3-3: Summary of selected, relevant regional flora surveys occurring within proximity of the Survey Area.

Reference & Study Details	Proximity to Survey Area	Survey Timing	Survey Effort	Vegetation types	Flora Recorded	Vegetation Condition	Flora and Vegetation of Significance	Limitations
Gawalia Materials Preliminary Environmental Impact Assessment, Flora Survey and Environmental Management Plan (GHD 2011) 32 ha	Approximately 63 km west of the survey area	7 November 2011	<ul style="list-style-type: none"> Vegetation type mapping Vegetation condition mapping Flora species inventory 	<ul style="list-style-type: none"> Tall open shrubland of <i>Acacia aneura</i> var. <i>aneura</i>, <i>A. aneura</i> var. <i>microcarpa</i> and <i>Acacia ramulosa</i> var. <i>ramulosa</i> over <i>Eremophila georgei</i>, <i>E. forrestii</i>, <i>Acacia tetragonophylla</i>, <i>Senna artemisioides</i> subsp. <i>filifolia</i> over <i>Ptilotus schwartzii</i> and <i>P. obovatus</i> on broad sheetwash plains. Tall shrubland of <i>Acacia aneura</i> var. <i>aneura</i>, <i>A. craspedocarpa</i> and <i>Grevillea nematophylla</i> subsp. <i>supraplana</i> with occasional <i>A. ramulosa</i> var. <i>ramulosa</i> over <i>Eremophila forrestii</i>, <i>E. latrobei</i> subsp. <i>latrobei</i> and <i>E. georgei</i>, over <i>Ptilotus schwartzii</i> on low rise. Low woodland of <i>Acacia aneura</i> var. <i>aneura</i>, <i>A. aneura</i> var. <i>argentea</i>, <i>Acacia burkittii</i> and <i>Acacia craspedocarpa</i> over an open low shrubland of <i>Eremophila platycalyx</i> subsp. <i>platycalyx</i>, <i>E. georgei</i>, <i>Ptilotus obovatus</i> and <i>Solanum lasiophyllum</i> along drainage line. In addition, areas mapped as 'Highly Disturbed' and 'Rehabilitated Area' 	<ul style="list-style-type: none"> 94 taxa from 23 families Includes five weed species recorded 	Very good to Completely Degraded (using the Keighery (1994) scale)	None recorded within Survey Area during either field or desktop assessments	<ul style="list-style-type: none"> The survey occurred outside the primary season for the Eremaean Botanical Province (March – June) Although the report documents the survey was conducted in dry seasonal conditions, substantial rainfall was recorded in the six weeks prior to the survey Survey was outside the typical season for some annual species
Level 1 Flora and Vegetation Survey of the Proposed Gas Pipeline from Murrin Murrin to Sunrise Dam Gold Mine (Botanica Consulting 2014) 3,339 ha	Approximately 8 km south-west of the survey area	28 to 30 October 2013 & 3 April 2014	<ul style="list-style-type: none"> Vegetation type mapping Vegetation condition mapping Flora species inventory 	<p>Twenty-five vegetation types were recorded.</p> <p>One of the vegetation communities identified within the survey area was representative of vegetation that characterises the Mount Jumbo Range Vegetation Complex PEC as defined by Keighery <i>et al.</i> (1994): Low Forest of <i>Acacia caesaneura</i> and <i>Acacia incurvaneura</i> over <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>Dodonaea rigida</i>, <i>Senna artemisioides</i> subsp. <i>artemisioides</i>, <i>Senna artemisioides</i> subsp. <i>helmsii</i>, <i>Senna cardiosperma</i> and <i>Ptilotus obovatus</i> on Banded Ironstone Hill,</p>	<ul style="list-style-type: none"> 214 taxa from 37 families and 83 genera 	Good to Very good (using the Keighery (1994) scale)	<p>One PEC: Mount Jumbo Range Vegetation Complex</p> <p>One Priority Flora: <i>Grevillea inconspicua</i> (P4)</p> <p>Three unrecognised taxa of <i>Tecticornia</i> (as identified by K.A Shepherd 867) were also identified in the area and are considered to be of significance.</p> <p>Five introduced taxa were identified:</p> <ul style="list-style-type: none"> *<i>Cenchrus ciliaris</i> *<i>Centaurea melitensis</i> *<i>Lysimachia arvensis</i> *<i>Salvia verbenaca</i> *<i>Sonchus oleraceus</i> 	<ul style="list-style-type: none"> The first survey occurred outside the primary season for the Eremaean Botanical Province (March – June) and followed below average rainfall in September, however above average rainfall was recorded in October Approximately 8 ha of previously cleared land, and areas of disturbance from grazing, mining and exploration activities. Completeness: below average rainfall may have limited the suite of species recorded. Diagnostic material was largely unavailable for the identification of Mulga (<i>Acacia aneura</i>) species Uncertainty on the distributions of recorded vegetation types beyond the survey area.



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Figure 3-1: Previous flora and vegetation surveys completed that overlap the Survey Area. Note Mattiske (2003) survey area boundary was unavailable.

3.1.3 Likelihood of Occurrence of Significant Flora

Prior to undertaking field work for the Survey, the significant species identified from the database searches and literature review were assessed for their likelihood of occurrence within the Survey Area. This assessment was based on the interpretation of habitat types from aerial imagery, known preferred habitat and the nearest known location of each species. Some species from the TP list search were excluded from the analysis due to a lack of geo-referenced coordinates, and were subsequently not considered applicable.

Following the field work for the Survey, the significant flora species identified from the database searches and literature review were re-assessed to determine the post-survey likelihood of occurrence within the Survey Area, the outcomes of which are presented in **Appendix D**. Each species of significant flora was assessed and ranked for likelihood of occurrence in the Survey Area according to the following criteria:

Recorded – the presence of the species in the Survey Area has been recorded unambiguously during the last ten years (i.e. during recent surveys of the Survey Area, from reliable records obtained via database searches or from current vouchered specimen at WA Herbarium).

Likely – there is a medium to high likelihood that the species occurs in the Survey Area as the Survey Area occurs within the known distribution of the species, contains suitable habitat and the species has been recorded recently nearby.

Possible – there is potential for the species to occur in the Survey Area, as:

- The species has not been recorded recently nearby, however:
 - The species may not have been detectable during current or previous surveys (e.g. rare, patchily distributed, non-optimal survey timing); and
 - The species is known to be cryptic and may not have been detectable despite extensive surveys.
- The species has been recorded recently nearby and species presence cannot be ruled out due to factors such as species ecology or distribution, however:
 - doubt remains over taxonomic identification; and
 - the majority of habitat does not appear suitable; and coordinates are doubtful.

Unlikely – The species is unlikely to occur in the Survey area as:

- the species has been recorded locally through DBCA database searches;
- the Survey Area lacks potential habitat, having at best marginally suitable habitat, and/or being severely degraded;
- only recorded from a few historic record/s and no other collections in the Survey Area; and the species has not been recorded in the Survey Area despite adequate survey efforts, such as a standardised methodology or targeted searching within potentially suitable habitat.

3.2 Results and Discussion

3.2.1 Threatened and Priority Ecological Communities

No TECs within the Murchison bioregion are listed by the DBCA (2018b) or the DoAWE (2020b). Database search results indicated two terrestrial vegetation PECs are located within 50 km of the Survey Area (**Table 3-4, Figure 3-2**). One previous survey in the region also recorded vegetation analogous to the Mount Jumbo Range vegetation complex; the Survey Area intersected the delineation of the PEC (Botanica Consulting 2014) (**Table 3-3**).

Table 3-4: Known terrestrial PEC's within 50 km of the Survey Area (DBCA 2018b, DoAWE 2020b).

Community	Conservation Category (WA)	Proximity to Survey Area
Mount Jumbo Range vegetation complex	3	15 km
Mount Linden Range banded ironstone ridge vegetation complex	3	48 km

3.2.2 Significant Flora

One Priority 3 flora species, *Goodenia lyrata*, has previously been recorded within the Survey Area in 2011 (Outback Ecology 2011). Only one individual was observed at the time, growing on the flats immediately east of the bank running south from the Grinding Ball Mill. Database search results of significant flora recorded within 50 km of the Survey Area are presented in **Figure 3-3** (DBCA 2020b, d).

A total of 36 flora taxa of significance were identified from database searches and the literature review. These comprised ten Priority 1 (P1), one Priority 2 (P2), 22 Priority 3 (P3) and three Priority 4 (P4) species (**Appendix D**).

3.2.3 Introduced Flora

The PMST database search results indicate three weed species within 50 km of the Survey Area (DoAWE 2020b): **Cenchrus ciliaris*, **Carrichtera annua* and **Tamarix aphylla*. NatureMap search (DBCA 2020c) results indicate records of **Lysimachia arvensis*, **Rumex hypogaeus* and **Spergularia bocconeii* occurring within 40 km of the Survey Area. Of these, **Spergularia bocconeii* is a declared pest, and **Tamarix aphylla* is both a declared pest and Weed of National Significance. These species are in addition to the introduced flora previously recorded within the Survey Area (**Section 3.1.2**).

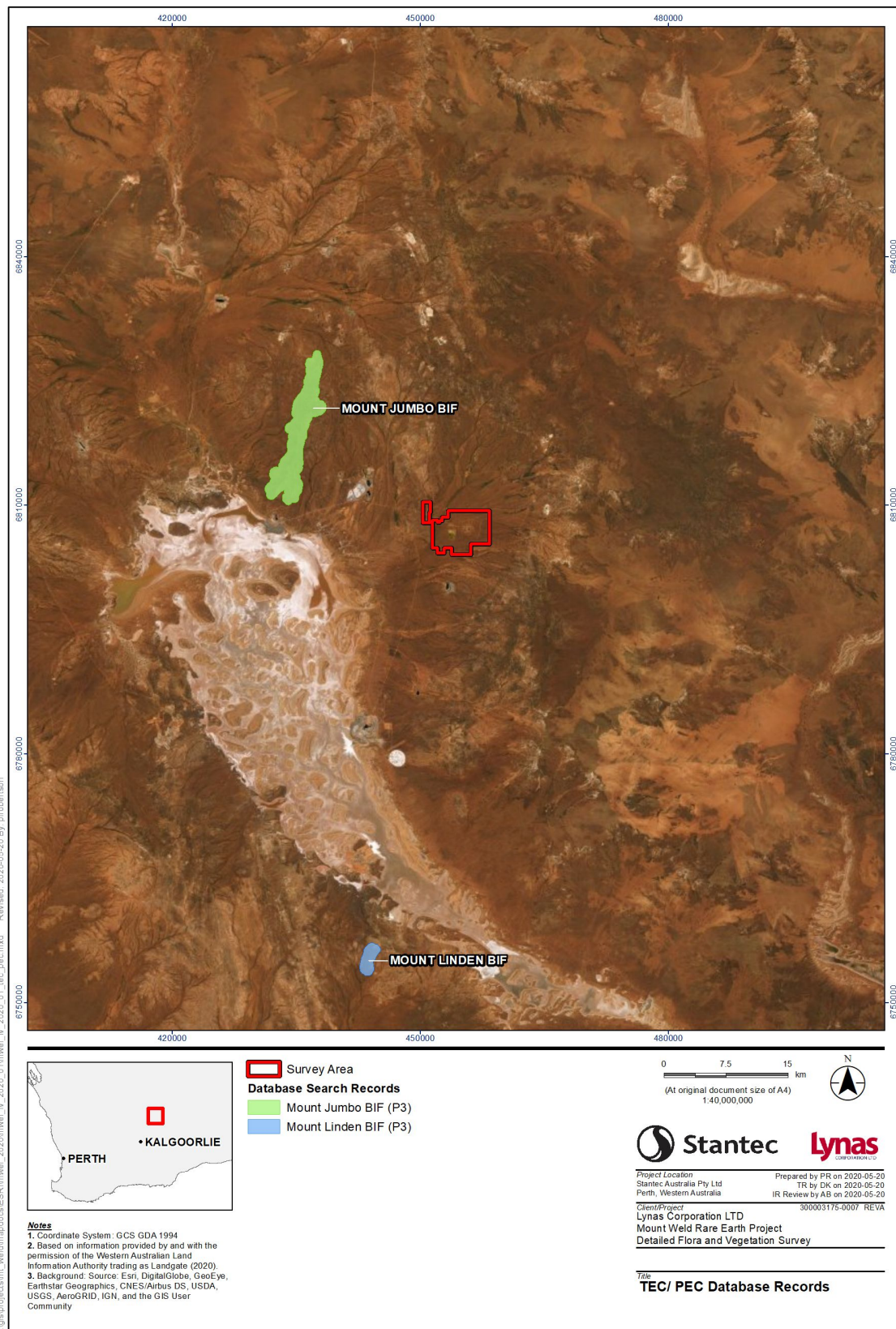


Figure 3-2: Known terrestrial vegetation PECs within 50 km of the Survey Area (DBCAs 2020a).

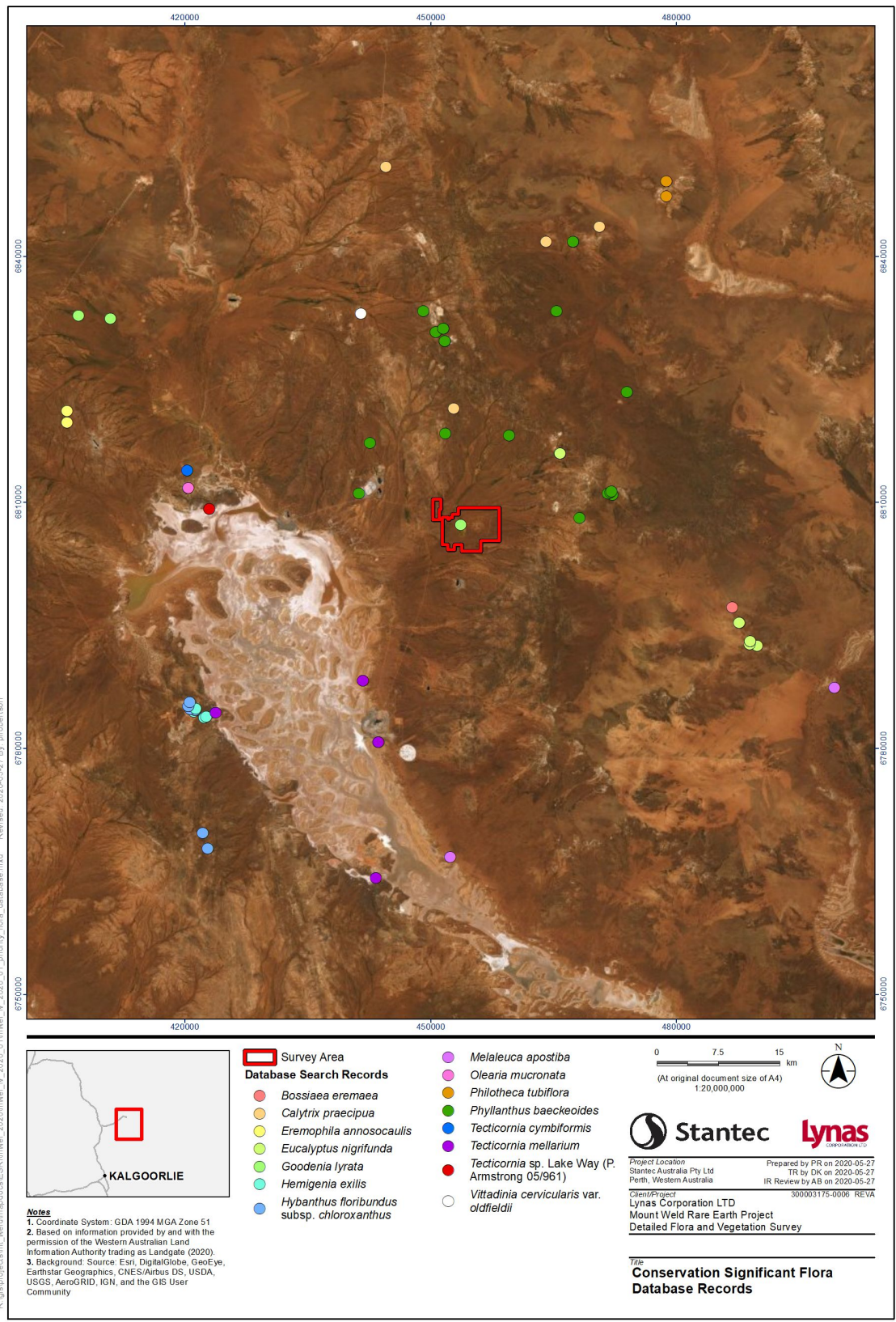


Figure 3-3: Previously recorded significant flora records within 50 km of the Survey Area (DBCA 2020b, d).

4. Field Survey

4.1 Methods

4.1.1 Survey Team and Licencing

The field work for both Phase 1 and Phase 2 of the Survey was led by Jeni Alford (Senior Botanist), a well-practiced botanist, with over 25 years' experience in conducting flora and vegetation surveys in Western Australia. Completing the survey team for Phase 1 was Thomas de Silva (Environmental Scientist), and for Phase 2, Scott Pansini (Botanist). The survey teams were supported by Julijanna Hantzis (Botanist) and Daniel Roocke (Senior Botanist) who were responsible for project management, survey planning and the development of reports.

Table 4-1: Summary of field personnel undertaking the field surveys.

Personnel	Survey Role	Years' Experience	Flora Licence(s)	Person days
Phase 1: 30 March – 6 April 2020				
Jeni Alford	Senior Botanist	25+	FB62000154	8
Thomas de Silva	Survey Scientist	8	-	8
Phase 2: 24 – 31 August 2020				
Jeni Alford	Senior Botanist	25+	FB62000154	8
Scott Pansini	Botanist	3	FB62000122 (Flora) TFL 22-1920 (DRF)	8

4.1.2 Survey Timing

The EPA (2016a) recommends that flora and vegetation surveys be undertaken following the season of highest rainfall, to optimise the likelihood of encountering flowering and fruiting taxa and capturing ephemeral species (a primary survey). A supplementary survey is undertaken during secondary peaks in rainfall or the flowering period for additional suites of species. The recommended timing for the Eremaean Botanical Province, within which the Survey Area lies, is six to eight weeks post-wet season (indicative: March to June) for the primary survey and after winter rainfall for the supplementary survey.

Rainfall recorded onsite via the mine weather station was compared to the long-term data from the Laverton BoM weather station (No. 012045). In the 18 month period between April 2019 and September 2020, only two months had rainfall totals above the Laverton BoM weather station long-term average for each corresponding month (**Figure 4-1**). Furthermore, almost all of the 16 months of drier than average conditions recorded rainfall that was significantly lower than the mean.

Rainfall recorded onsite at Mt Weld in the six months prior to Phase 1 (74.0 mm) was well below the long-term average (109.6 mm) in comparison to the Laverton BoM weather station (**Figure 4-1**). Preceding the Survey, there was above average rainfall in January, with 51.6 mm being recorded between 9 and 10 January 2020, associated with an ex-tropical cyclone. The Survey was conducted 11 weeks post this rainfall event. The total rainfall for February was 3.6 mm, approximately 89% lower than the long-term average for that month (31.4 mm). Near-average rainfall was recorded by the mine weather station in March (23.2 mm), which included 9.2 mm on 23 March, one week prior to the survey commencing.

Rainfall recorded onsite at Mt Weld in the five months between Phase 1 and Phase 2 (including August 2020) was well below average. A total of 27.6 mm was recorded onsite between April and August, less than 30% of the long-term total mean for that period of 96.8 mm. There was 18.2 mm of rainfall recorded onsite within three weeks of Phase 2, which was almost double the collective rainfall of 9.4 mm in the preceding four-month period (**Figure 4-1**).

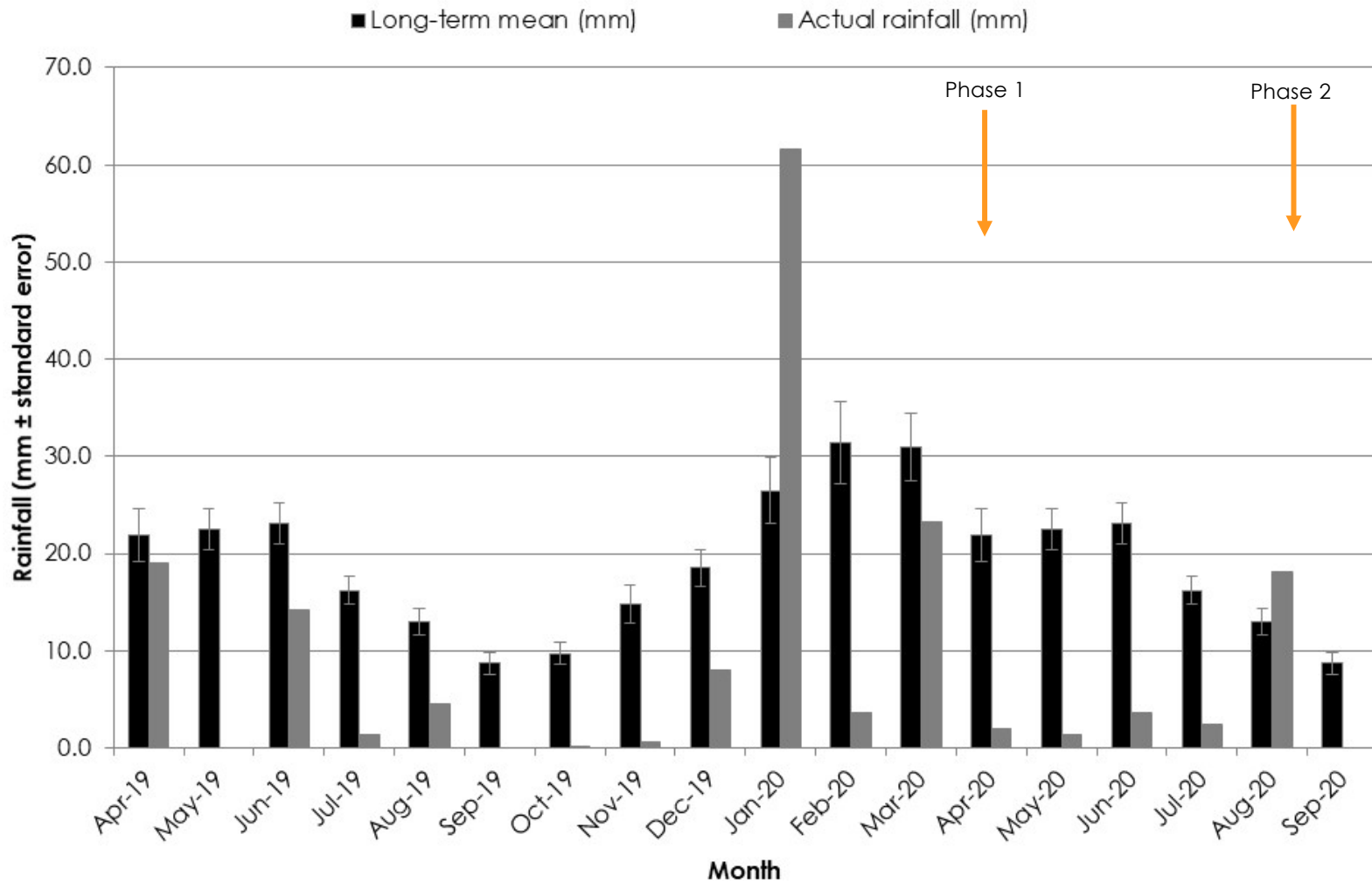


Figure 4-1: Long-term (1994-2020) mean monthly rainfall (mm) at Laverton BoM weather station (No. 012305) and the monthly rainfall (mm) on site preceding the Phase 1 and Phase 2 surveys (orange arrows indicate survey timing).

4.1.3 Sampling Techniques

4.1.3.1 Quadrats and Relevés

Prior to the field work for the Survey, a review was completed of the previous survey sites and the vegetation types which had been described and delineated within the Survey Area. This information was used to select indicative quadrat locations for assessment. Locations of quadrats were guided by the location of relevés from previous Level 1 (now reconnaissance) surveys (MWH 2014, Stantec 2018). Quadrats which were positioned at the approximate location of previously sampled relevés retained the original site name, however previously recorded information was omitted from the species dataset at each of these sites. Additional quadrats were selected for installation to meet EPA guidance and the replicates required to support vegetation type mapping, the proposed footprint of the Project and achieving adequate geographical distribution of quadrats.

A summary of quadrats and relevés assessed as part of this Survey, and also those from previous surveys are presented in **Table 4-2** and shown in **Figure 4-2**. Quadrats comprised a 20 m by 20 m square, and survey area of 400 m², with the north-west corner permanently marked with a fence dropper. Relevé data (**Table 4-3**) was sampled from an area of approximately 400 m².

Table 4-2: Sample sites assessed within the Survey Area.

Site name prefix	Year of original installation	Number originally installed	Number assessed in Phase 1	Number assessed in Phase 2
MWQ & MWR	2011	21	0	0
MW	2014	14	7	7
ER & WR	2018	9	9	9
SMW (this Survey)	2020	22 [^]	20	22 [^]
Total				38[^]

[^]Total include three relevés, two of which were newly recorded in Phase 2.

Table 4-3: Summary of data collected from each quadrat and relevé during the field work for the Survey.

Parameter	Description
Site ID	The unique name that was assigned to the site that was sampled
Coordinates	Measured using a handheld GPS device from the north-west corner of the site. To be in GDA94 format
Quadrat dimensions	Specific dimensions of the quadrat in meters
Recorder and Date	The recorder(s) involved in sampling the site and date
Site photograph	At least one landscape photograph taken from the north-west corner looking towards the south-east corner
Soil description	A description of the soil colour and types based on the guide in the Australian Soil and Land Survey Field Handbook (McDonald <i>et al.</i> 1998)
Geology type	A description of the outcropping geology (if present) and coarse fragments
Habitat type	A description of the landform type and aspect
Vegetation condition	Assessed according to the (Trudgen 1988) 6-point condition scale, as presented in (EPA 2016a) (Appendix E)
Vascular flora species	A record of each flora species present
Height	The average height of each species in meters
Percent foliar cover (PFC)	An estimate of the PFC for each species recorded
Specimen ID	A unique identifier code will be assigned to any species that cannot be identified in the field
Vegetation structure	A description of the vegetation in accordance with Aplin (1979) adaptation of the vegetation classification system of Specht (1970) and the National Vegetation Information System (NVIS), Level 5 – Association (ESCAVI 2003) (Appendix E)
Disturbances	A list of any disturbances in the quadrat and surrounding, if present
Time since fire	An estimation of the time since the vegetation was last burnt

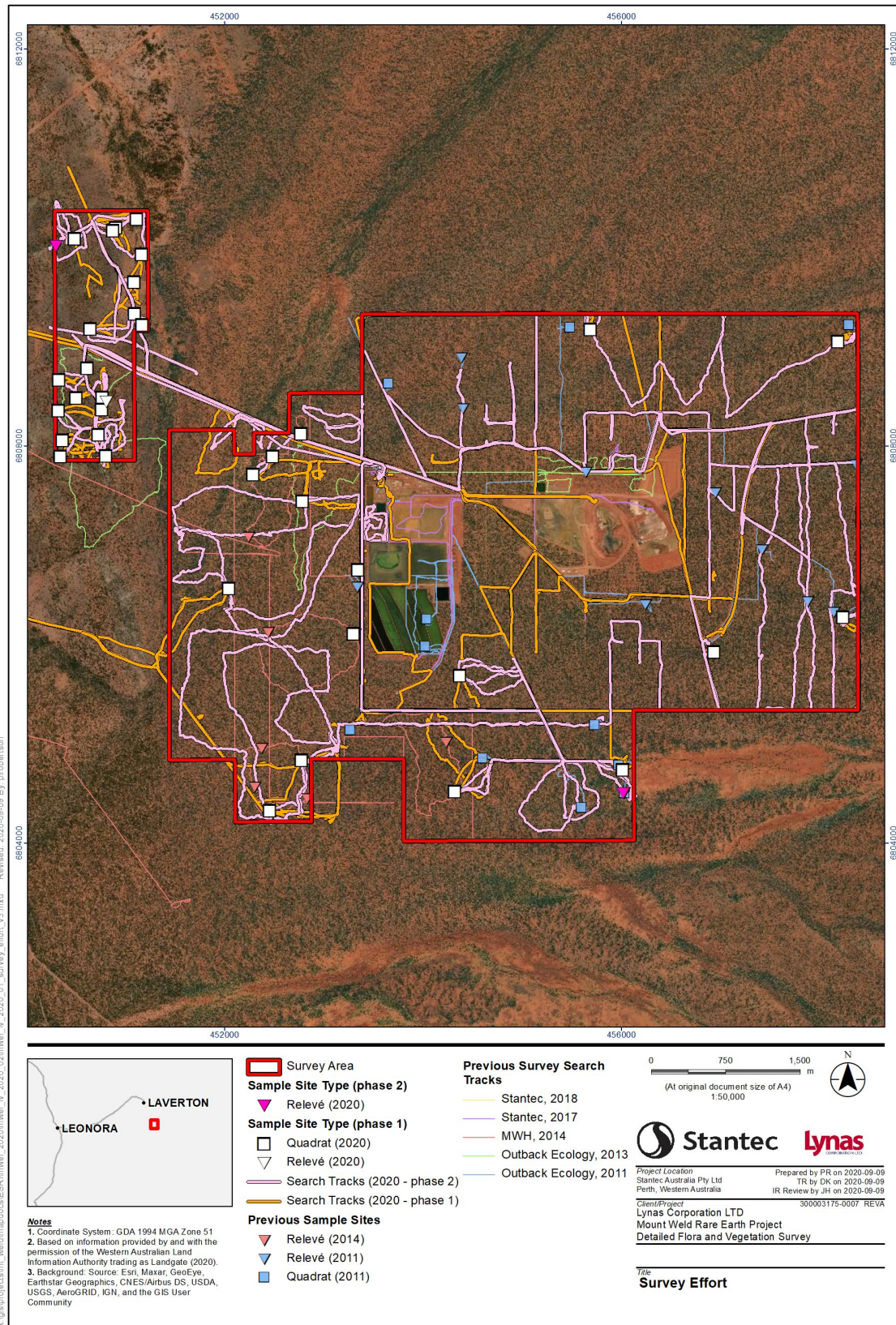


Figure 4-2: Overview of total survey effort since 2011, indicating quadrat and relevé locations.

4.1.3.2 Vegetation Type and Condition Mapping

In the field, vegetation types were described based on their structure and species composition, consistent with NVIS Level V – Association. Up to three dominant species from the upper, mid and ground strata are categorised based on dominant growth form, percent foliar cover and height. Where possible, vegetation was described and mapped to align with previous surveys. Where vegetation required revision of the previous mapping, vegetation polygon boundaries were adjusted, and amended vegetation descriptions assigned. Vegetation types were described and mapped using the data collected from quadrats and relevés, reconciled with the previously described vegetation types, with refinements made as necessary.

Vegetation condition was mapped according to vegetation type boundaries throughout the Survey Area, using a combination of quadrat and relevé data, opportunistic observations and the mean condition rating for each vegetation type. Vegetation condition was rated at each survey site using the Trudgen (1988) scale, then applied to the whole vegetation type polygon in which it was mapped. A mean condition rating was calculated for each vegetation type using the data collected from survey sites and this was applied to any polygons not already assigned a rating.

4.1.3.3 Targeted Searches for Significant Flora

Previous significant flora records and the known preferred habitat of these species were used to identify vegetation and habitat within the Survey Area with the potential to support significant flora. Targeted searches were then conducted within potentially suitable vegetation and habitat for the species. Searches for significant flora also occurred in conjunction with traversing quadrats and while conducting vegetation mapping. Population information and GPS location was captured electronically using a handheld device (Table 4-4).

Table 4-4: Summary of data collected for potential significant flora.

Parameter	Description
Coordinates	Recorded using a handheld GPS-enabled device in GDA94 format.
Recorder and Date	The recorder(s) involved in sampling the site and date.
ID of individual or pop	The unique name that was assigned to the individual or population that was sampled
Species	Species name
Specimen ID	A unique identifier code will be assigned to any species that cannot be identified in the field.
Abundance	A count of the species in a 20 m by 20 m area or; Estimate of density (PFC) within a mapped polygon (for large populations)
Reproductive characteristics	Whether the species is fruiting, flowering, vegetative
Photograph	A photograph of the species showing reproductive characteristics (if present) and habitat/form

4.1.3.4 Opportunistic Flora Records

Opportunistic flora records of additional species beyond those recorded within quadrats and relevés were taken to maximise the floristic inventory of the Survey Area. Each opportunistic collection was recorded electronically and geospatially referenced. All data was entered into a customised database enabling quality management and review.

4.1.3.5 Specimen Identifications and Nomenclature

The flora taxa that could not be identified in the field were collected and pressed for identification by senior taxonomist Sharyna Thomson (subconsultant). Sharyna has worked extensively in Western Australia and is highly experienced with the flora of the Murchison bioregion. *Tecticornia* specimens collected from within the survey area were sent to Dr Kelly Shepherd for identification. Dr Kelly Shepherd is a taxonomist specialising in the identification of *Tecticornia*. Any *Tecticornia* lacking diagnostic characteristics and therefore, unable to be identified, were treated as individual species as suggested by Dr Kelly Shepherd.

Species nomenclature was assigned according to the current listing of scientific names recognised by the Western Australian Herbarium (WAH). Where specimens lacked diagnostic characteristics or were in poor condition, they were assigned the 'sp. Indet' epithet (species indeterminant), indicating that identification could not be confirmed beyond family or genus level. Where a question mark is used preceding a taxon, this indicates a lack of confidence in assigning a particular identity, usually due to a lack of diagnostic characteristics also.

4.1.4 Analyses

4.1.4.1 Sampling Adequacy

The EstimateS software package ((Colwell 2013) V9.1.0) was used to assess the adequacy of this Survey by investigating the vascular flora species richness in the Survey Area. The species richness was analysed using species accumulation rarefaction and extrapolation curves, and various species richness estimates using abundance data.

The species richness analysis provides a statistical evaluation of the proportion of the taxa detected during the Survey. A range in the predicted number of species recorded within the Survey Area was developed using several species richness estimators (Chao1, Chao2, Bootstrap and Jackknife 1). This provides a more robust approach to the analysis (Hortal 2006). Only data pertaining to native flora which was recorded from within quadrats sampled during the 2020 detailed survey were used in the analysis.

4.1.4.2 Floristic Composition Analysis

Vegetation types were assigned and mapped in the field based on expert knowledge of the Murchison bioregion and aerial imagery interpretation. Hierarchical classification (cluster analysis) was performed on the Survey data using Primer v7 to determine the relationship between vegetation types throughout the Survey Area. It should be noted, however, that vegetation types were assigned and mapped using prior knowledge and the cluster analysis is explanatory only (Clarke and Gorley 2015).

Prior to analysis, the species recorded from within sample sites during the 2020 detailed survey only was reconciled to ensure consistency in nomenclature and treatment, including:

- old nomenclature was updated;
- unconfirmed species were excluded from the analysis;
- species belonging to the Western Australian Mulga Flora Group (*Acacia aneura* F. Muell. ex Benth. and its close relatives) were all treated as single species in the analysis (*Acacia aneura*);
- parasitic plants were excluded from the analysis (e.g. *Lysiana*);
- singletons (species recovered from only one site) were excluded from the analysis; and
- all weeds were removed.

The final dataset for the analysis comprised a site-by-species matrix of floristic taxa (presence/absence data). The Bray-Curtis similarity coefficient was applied to calculate similarities between quadrats based on community structure and to generate a resemblance matrix. The group average method cluster analysis was applied to generate a dendrogram output indicating the similarity between sites based on floristic composition.

A second analysis was undertaken based on percent foliar cover data of all species for quadrats and relevés sampled during the Survey, to support floristic groups. Percent foliar cover data was square-root transformed and the Bray-Curtis index was applied to calculate similarities between quadrats and generate a resemblance matrix. A cluster analysis was applied, using the group-average linking algorithm, the result of which was presented in the form of a dendrogram.

4.2 Results and Discussion

4.2.1 Flora

4.2.1.1 Overview

A total of 205 vascular flora taxa (including subspecies, varieties and forms), have been recorded within the Survey Area since 2011. There were 89 species fully identified during this detailed Survey, with another 16 recordings that could not be confirmed to species level, yet are considered likely to represent additional taxa to the suite of fully-identified species (**Appendix F**).

A total of 41 families and 100 genera have been recorded within the Survey Area since 2011, of which 31 families and 52 genera recorded during this Survey. The most represented family in this Survey was Fabaceae, while more diversity within the Chenopodiaceae family occurs when all records since 2011 are taken into account (**Table 4-5**). The most represented genera during this Survey were *Eremophila* 12 taxa and *Acacia* with 11 confirmed taxa.

Poaceae is the equal second-most represented family when results from all surveys since 2011 are combined, however there were only five confirmed species recorded in 2020 (**Table 4-5**). Significantly below average rainfall in most months immediately preceding the Phase 1 and Phase 2 (**Section 4.1.2**) is likely to have strongly influenced the lack of grasses within the 2020 dataset.

Thirty-five species recorded during the Survey represent species not recorded in any of the previous surveys since 2011, which represents over one-third of the species list from 2020. Due to a lack of diagnostic material, 71 specimens from this Survey were unable to be fully identified and were therefore classified to family or genus level only. Several of these specimens may represent additional species, however the majority are likely to represent species already included in the overall inventory of vascular flora for the Survey Area.

Data from the 35 quadrats and three relevés assessed in this Survey is presented in **Appendix G**. The site data reports from the 2011, 2014 and 2018 relevés are provided in **Appendix H**.

Table 4-5: Dominant families and genera recorded during the Survey and in surveys since 2011.

Family	Number of native species recorded within the Survey Area (2020)	Total number of native species recorded within the Survey Area (all surveys)
Fabaceae	16	23
Chenopodiaceae	14	29
Scrophulariaceae	12	17
Poaceae	5	23
Genus	Number of native species recorded within the Survey Area (2020)	Total number of native species recorded within the Survey Area (all surveys)
<i>Eremophila</i>	12	17
<i>Acacia</i>	10	13
<i>Senna</i>	6	9
<i>Ptilotus</i>	5	9

4.2.1.2 Species Accumulation Curves

A species accumulation curve for the Survey Area is provided in **Figure 4-3**. The actual estimated curves had not quite reached asymptotes and the four species richness estimators (Chao 1, Chao2, Bootstrap, and Jack 1) predicted higher species richness for the Survey Area than was recorded. The 79 taxa analysed from quadrats sampled during this Survey (not including opportunistically recorded species, weed species and species unable to be identified beyond genus) represented an estimated 53.8% to 85.5% of the total species predicted to occur (**Table 4-6**). For both phases of survey in 2020, seasonal conditions were extremely dry resulting in low representation of annual and ephemeral herb and grass species and a relatively large volume of records unable to be fully identified due to inadequate diagnostic material. In better conditions it would be expected that herbs and grasses would be more frequently recorded across the Survey Area, and there would be higher quality specimens available; these factors would likely influence the species estimators reaching asymptote.

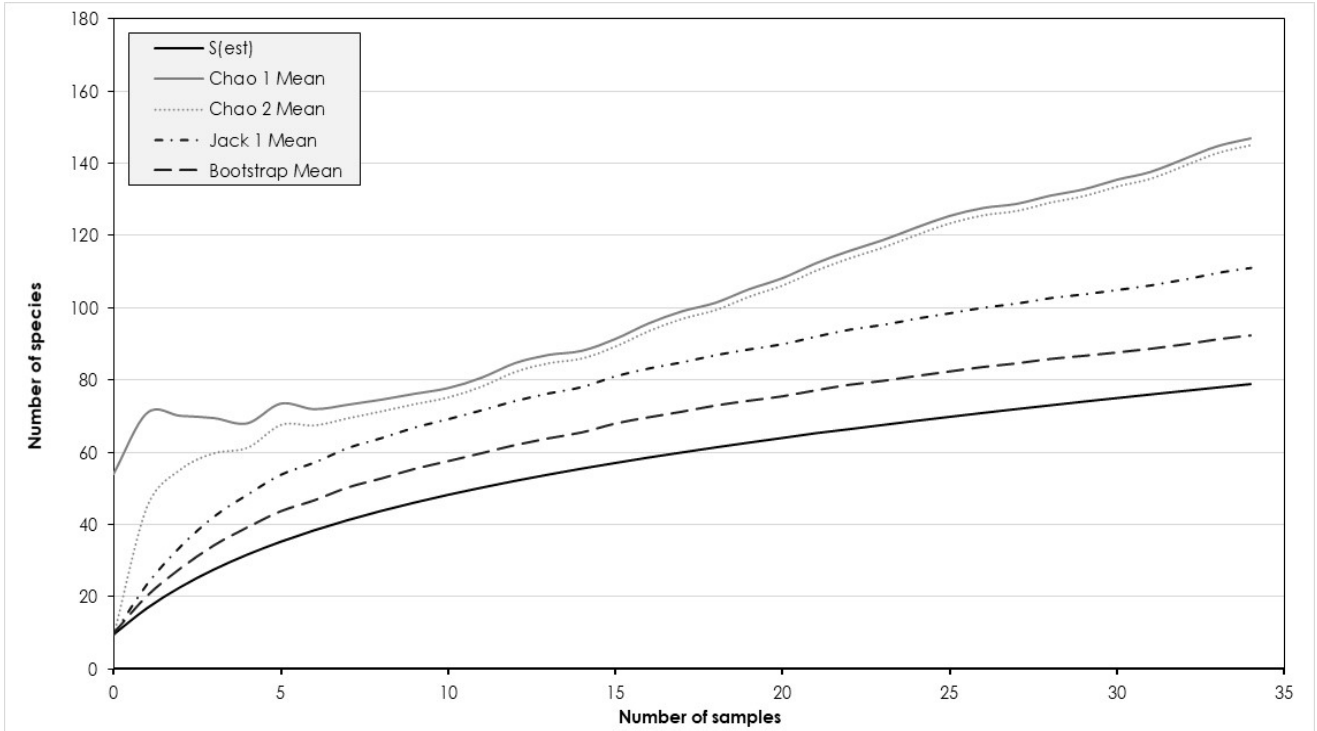


Figure 4-3: Species accumulation curves for the Survey Area (2020 quadrat data only).

Table 4-6: Recorded species richness for the Survey, compared with predicted species richness using incidence-based and abundance based estimators (2020 quadrat data only).

Species recorded within the Survey Area (2020 quadrat data only)			% of estimated richness recorded
Number of native species recorded (quadrats only)^		79	
Estimated number of species	Bootstrap	92.37	85.5
	Chao 1	146.86	53.8
	Chao 2	145.12	54.4
	Jackknife 1	111.06	71.1

^Dataset represents fully identified taxa within the inventory of species from 2020 sample sites only

4.2.1.3 Flora of Significance

One priority species, *Goodenia lyrata* (P3), has previously been recorded within the Survey Area (Outback Ecology 2011), with one individual detected within vegetation type AcaAanArAtEma, within Beard's Vegetation Association Code 18: Mulga Low Woodland, (Beard 1976) in the Monk land system. This record has since been confirmed as cleared during subsequent targeted searches for this species conducted by Stantec (2017) (**Figure 4-4**). One suspected *Goodenia* specimen was collected during Phase 1 however it was unable to be identified beyond genus level. It is unlikely to represent *Goodenia lyrata* given leaf shape characteristics were dissimilar.

Goodenia lyrata is a prostrate herb with basal leaves strongly lobed with the apical lobe much larger than the basal lobes (WAH 2020). *Goodenia lyrata* has been recorded in sand and clay, usually poorly drained flats and often occurring within mulga and *Eucalyptus victrix* woodlands (WAH 2020). The previous *Goodenia lyrata* record within the Survey Area represented the most southern known record for the species. There are 17 specimens of *Goodenia lyrata* vouchered at the WAH, with a wide-ranging, albeit scattered distribution in the Pilbara, Murchison, Gascoyne, Great Victoria Desert and Gibson Desert bioregions. Two of these voucher specimens are from lands managed by the DBCA for conservation purposes.

4.2.1.4 Flora of Other Significance

The EPA (2016a) advises that flora species, subspecies, varieties, hybrids and ecotypes may be considered significant for reasons other than listing as a threatened or priority flora species, and include the following:

- a keystone role in a habitat for Threatened species, or supporting large populations representing a significant proportion of the local regional population of a species;
- relic status;
- anomalous features that indicate a potential new discovery;
- 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);
- the presence of restricted subspecies, varieties, or naturally occurring hybrids;
- local endemism/a restricted distribution; and/or
- being poorly reserved.

Naturemap database results and WAH (2020) vouchered records were assessed against the 205 taxa recorded in surveys at Mt Weld since 2011. Four records were considered erroneous; of the remainder, 12 records represent range extensions when compared to the locations of vouchers as presented on FloraBase (WAH 2020) (**Table 4-7**). Many of these taxa represent common species within the Eremean Botanical Province, therefore it is possible that a lack of vouchering in the Murchison bioregion near the Survey Area has contributed to some species being listed as range extensions in this report.

Table 4-7: Recorded flora (2011-2020) representing possible range extensions.

Species	Approximate distance and direction to nearest lodged record (km)	Year of record at Mt Weld	Further information
<i>Acacia ayersiana</i>	250 north-west	2018	Represents the most southern record within the Murchison bioregion.
<i>Chrysocephalum pterochaetum</i>	220 east	2011	No other vouchered records within Murchison bioregion. Previously recorded in: Central Ranges, Gascoyne, Gibson Desert, Great Sandy Desert, Great Victoria Desert, Nullarbor, Pilbara bioregions.
<i>Eremophila latrobei</i> subsp. <i>filiformis</i>	130 north	2020	Represents the most southern record in Western Australia

Species	Approximate distance and direction to nearest lodged record (km)	Year of record at Mt Weld	Further information
<i>Hibiscus burtonii</i>	110 west	2011	Represents the most eastern record within the Murchison bioregion
* <i>Malvastrum americanum</i>	300 north-west	2011	Represents the most southern and eastern record within the Murchison bioregion
<i>Peplidium aithocheilum</i>	350 south-west, 380 west 390 north east	2011	Represents the most eastern record within the Murchison bioregion
<i>Portulaca oleracea</i>	240 south-west 250 north-east	2011 & 2020	Represents the most eastern record within the Murchison bioregion.
<i>Senna stricta</i>	375 north-east 480 north-west	2020	Represents the most southern and eastern record within the Murchison bioregion
<i>Sida ammophila</i>	270 north-north-west	2011	Represents the most southern and eastern record within the Murchison bioregion
<i>Swainsona phacoides</i>	290 north 310 north-west	2011	Represents the most eastern record within the Murchison bioregion. Only five vouchered records are published on FloraBase
<i>Trianthema triquetrum</i>	140 north-west	2020	Represents the most southern record in Western Australia
<i>Wahlenbergia gracilentia</i>	210 south-west 260 west	2011	Represents the most eastern record within the Murchison bioregion.

4.2.1.5 Post Survey Likelihood of Occurrence Assessment

Following completion of previous surveys and this Survey, there is a greater understanding of the landforms, soils and habitats of the Survey Area. A subsequent assessment of the likelihood of significant flora occurring in the Survey Area was conducted. Three species (*Vittadinia cervicalis* var. *oldfieldii* P1, *Calandrinia* sp. Menzies (F. Hort et al. FH 4100) P3 and *Calytrix hislopilii* P3) are considered 'Possible' to occur within the Survey Area (**Appendix D**).

While these species have not been recorded during any surveys, they represent taxa that are either ephemeral herbs and/or are more readily detectable in favourable seasonal conditions, particularly adequate post-rainfall. Each of these species are known to be flowering, and therefore most identifiable, in spring. They were considered 'Possible' to occur as they have been previously recorded within close proximity to the Survey Area and potentially suitable habitat within the Survey Area has been identified.

4.2.1.6 Introduced Flora

**Sonchus oleraceus* (Common Sowthistle) was the only weed species recorded during this Survey. Three individuals were recorded near minesite buildings and infrastructure. Across all surveys since 2011, three weed species have been detected (

Table 4-8, Figure 4-4). None of these weeds represent 'Weeds of National Significance' (WONS) or Declared Pests. The ecological impact and invasiveness classifications (DPaW 2013, 2015) for each weed species is provided in

Table 4-8. **Malvastrum americanum* (Spiked Malvastrum) was recorded by Outback Ecology in 2011, and represents the most southern and eastern record of this weed species in the Murchison bioregion. The nearest known record is in the vicinity of Wiluna, approximately 300 km north-west of Mt Weld.

Table 4-8: Introduced flora species identified in the Survey Area since 2011.

Species (Common Name)	Survey	Lifeform & habitat	DPaW Classification	
			Ecological impact	Invasiveness
* <i>Malvastrum americanum</i> (Spiked Malvastrum)	<ul style="list-style-type: none"> • Outback Ecology (2011) 	Erect perennial, herb or shrub. Stony ridges and hillsides, floodplains, drainage lines.	High	Rapid
* <i>Rumex vesicarius</i> (Ruby Dock)	<ul style="list-style-type: none"> • Outback Ecology (2011) 	Erect annual herb. A weed of disturbed areas, growing in rocky, sandy alluvial soils and gravelly ironstone soils.	High	Rapid
* <i>Sonchus oleraceus</i> (Common Sowthistle)	<ul style="list-style-type: none"> • Outback Ecology (2011) • MWH (2014) • Stantec (2020) 	Erect annual, herb. Variety of soils. Common weed of disturbed ground.	Unknown	Rapid

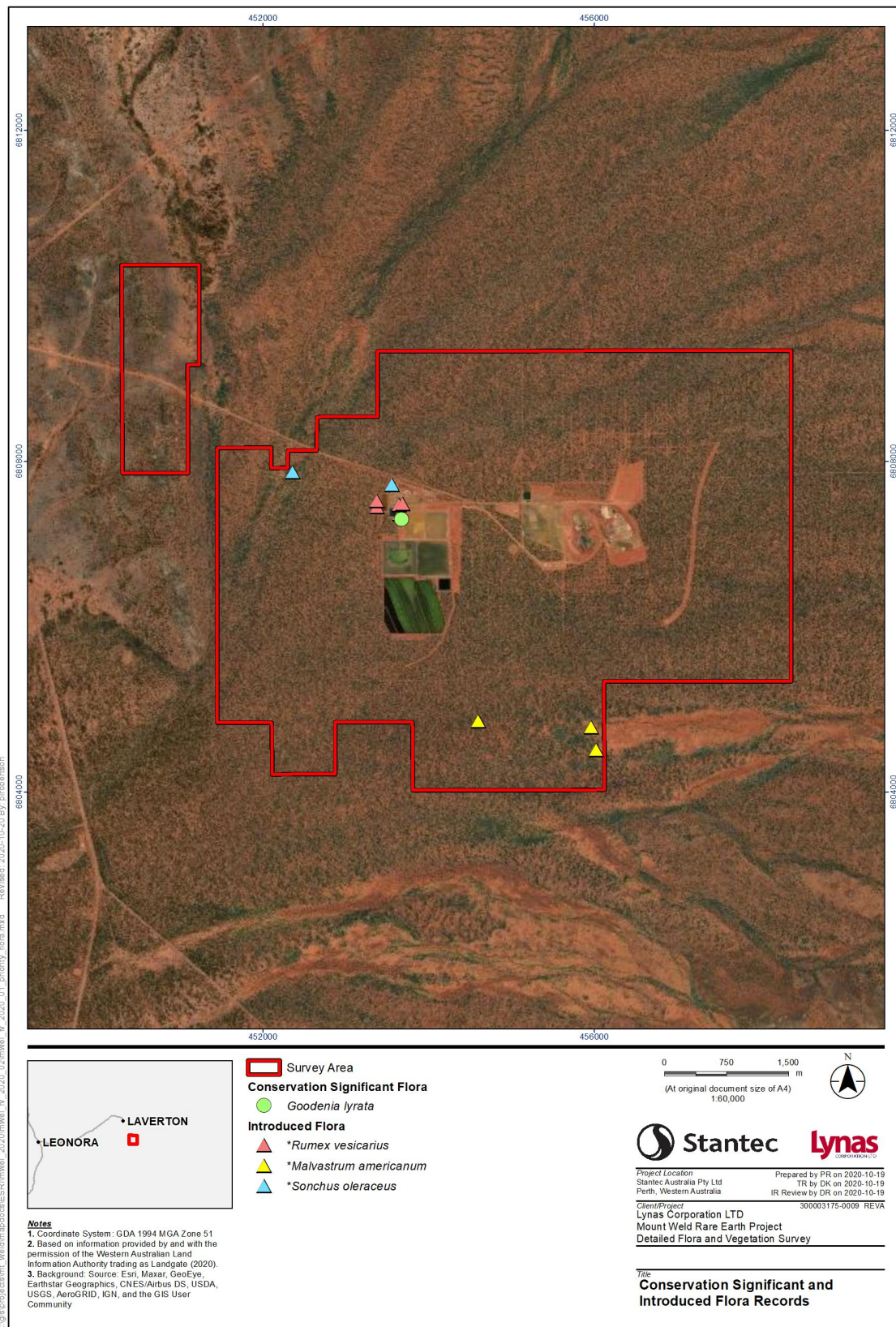


Figure 4-4: Overview of significant flora and introduced flora records within the Survey Area (2011-2020).

4.2.2 Vegetation

4.2.2.1 Vegetation Types

The Survey Area broadly consists of clay-loam plains supporting mulga woodlands, with the smaller north-western component of the Survey Area also containing occasional rocky outcrops and stony rises interspersed with low chenopod shrublands. These features are considered to be represented beyond the Survey Area in the East Murchison subregion and do not represent Commonwealth or State listed TECS or PECs, nor are they considered to be either locally or regionally significant. Broad sheet-flow drainage is a feature of the mulga dominated woodlands of the Survey Area. Within the north-west of the Survey Area, the landscape exhibits some small low-lying depressions, representing the upper reaches of drainage to Lake Carey, which is situated approximately 12 km south-west of the Survey Area. There was no indication of natural permanent surface water within the Survey Area.

Eight vegetation types were described and delineated within the Survey Area (**Table 4-9**). Vegetation type mapping is presented in **Figure 4-5** and quadrat and relevé data is presented in **Appendix G**. The most dominant and widespread vegetation type was AiAcaArrAtEma (1,762 ha; 54%), largely occurring surrounding the existing mine infrastructure areas.

Replication of quadrats was not achieved for one vegetation type, which was mapped on a relatively small and unique claypan landform within the Survey Area; described as AcAptAaptAtRcSsp. This was represented by a single polygon which comprised only 6.7 ha (0.21% of the Survey Area). One quadrat (SMW25) was sampled in both phases, while one relevé was surveyed during Phase 2 within the limited area available at the south-western corner of the Survey Area.

4.2.2.2 Floristic Composition Analyses



The dendrograms and composition analysis (**Appendix I**) of the Survey data indicated some correlation between broad vegetation types and the floristic groups identified. However, vegetation types were primarily mapped in the field based on expert knowledge of the Murchison bioregion and aerial imagery interpretation. The dendrogram plots are explanatory only and were not used to define vegetation types.



At a finer scale, the analysis of the vegetation cover indicated that there were relationships between floristic groups. Sites representing the AiAcaArrAtEma vegetation unit (SMW05, SMW31, WR02, WR04, MW05, MW09) clustered together. Groupings were also evident based on sites with a well-defined shrub layer of *Eremophila* (SMW01, SMW24, WR01, WR03, MW07, MW13) informing the vegetation type of AiAcAaptAtArrEgr. Most sites representing AaptHpMtMsp.Po were also shown to be closely related to sites SMW25 and rMWp2-02 (vegetation type AcAptAaptAtRcSsp.) which grouped uniquely from the other sites, likely due to the characteristics of the soil and landform in this small pocket of the Survey Area and differences in some species, compared to the surrounding mulga woodlands. This pocket was noted to represent a claypan habitat with a sparser canopy stratum compared to the surrounding mulga woodlands. The boundaries of this vegetation type are similar to the boundaries of the Mindura land system, which is mapped as 0.33% of the Survey Area.



4.2.2.3 Vegetation of Significance



No vegetation types and landforms recorded within the Survey Area have an affinity with PECs, while no TECs are known to occur in the Murchison bioregion. In addition, the vegetation assemblages identified from the Survey Area were not considered locally significant, unique to the region or restricted within the Survey Area. This was based on local knowledge, and the comparison of findings from previous surveys. The vegetation supporting the one record of *Goodenia lyrata* (Outback Ecology 2011) within the Survey Area was the most dominant vegetation type, comprising an extent of 54%. Beyond the Survey Area, this vegetation is also considered to be relatively widespread in the region (Beard 1976, WAH 2020).

Table 4-9: Summary of vegetation types described and mapped within the Survey Area.

Vegetation Type Simplified Code	Vegetation Code	Type	Vegetation Type Description and Associated Species	Extent		Sample Sites	Vegetation Condition	Representative Photograph
				Hectares (ha)	Proportion (%)			
Clay loam plains supporting Mulga								
VT1	AiAcaArrAtEma		<p><i>Acacia incurvaneura</i> and <i>Acacia caesaneura</i> low woodland over <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> and <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila margarethae</i> open shrubland to low open shrubland</p> <p>Associated species: <i>Acacia mulganeura</i>, <i>Eragrostis pergracilis</i>, <i>Eremophila latrobei</i> subsp. <i>filiformis</i></p>	1,761.97	54.13	SMW05 SMW31 WR02 WR04 MW05 MW09	Very Good	
VT2	AiAcAaptAtArrEgr		<p><i>Acacia incurvaneura</i>, <i>Acacia caesaneura</i> and <i>Acacia aptaneura</i> low open forest to low woodland over <i>Acacia tetragonophylla</i> and <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> tall open shrubland over <i>Eremophila granitica</i> low open shrubland</p> <p>Associated species: <i>Eragrostis pergracilis</i>, <i>Ptilotus obovatus</i>, <i>Eremophila margarethae</i></p>	902.83	27.34	SMW01 SMW24 WR01 WR03 MW07 MW13	Excellent - Very Good	

Vegetation Type Simplified Code	Vegetation Code	Type	Vegetation Type Description and Associated Species	Extent		Sample Sites	Vegetation Condition	Representative Photograph
				Hectares (ha)	Proportion (%)			
Low stony rise								
VT3	AaptHpMtMsp.Po		<p><i>Acacia ?aptaneura</i> and <i>Hakea preissii</i> low open woodland over <i>Maireana triptera</i>, <i>Maireana</i> sp. and <i>Ptilotus obovatus</i> low shrubland to low open shrubland</p> <p>Associated species: <i>Acacia caesaneura</i>, <i>Maireana pyramidata</i>, <i>Maireana georgei</i></p>	138.08	4.24	SMW11 SMW12 SMW19 SMW20 SMW21 ER01 rMWp2-01	Excellent - Very Good	
Minor, broad drainage supporting Mulga								
VT4	AcAaptAanAtSsPo		<p><i>Acacia caesaneura</i>, <i>Acacia aptaneura</i> and <i>Acacia aneura</i> low open forest over <i>Acacia tetragonophylla</i> and <i>Santalum spicatum</i> tall open shrubland over <i>Ptilotus obovatus</i> scattered low shrubs</p> <p>Associated species: <i>Eremophila youngii</i> subsp. <i>youngii</i>, <i>Rhodanthe charsleyae</i>, <i>Ptilotus obovatus</i>, <i>Eragrostis pergracilis</i></p>	55.75	1.71	SMW27 ER02 ER04 MW01 MW02 MW03	Very Good	

Vegetation Type Simplified Code	Vegetation Code	Type	Vegetation Type Description and Associated Species	Extent		Sample Sites	Vegetation Condition	Representative Photograph
				Hectares (ha)	Proportion (%)			
Chenopod-dominated clay plain								
VT5	HpMpEyy		<p><i>Hakea preissii</i> scattered tall shrubs to tall open shrubland over <i>Maireana pyramidata</i> and <i>Eremophila youngii</i> subsp. <i>youngii</i> open shrubland to low open shrubland</p> <p>Associated species: <i>Maireana</i> sp., <i>Eremophila</i> sp., <i>Tecticornia</i> sp.</p>	32.13	0.99	SMW07 SMW07-a SMW09 ER03	Very Good	
Stony plain supporting Mulga								
VT6	HpAapMtPo		<p><i>Hakea preissii</i> and <i>Acacia ?aptaneura</i> low open woodland over <i>Maireana triptera</i> and <i>Ptilotus obovatus</i> low shrubland</p> <p>Associated species: <i>Acacia pteraneura</i>, <i>Acacia incurvaneura</i>, <i>Senna cardiosperma</i></p>	22.74	0.70	SMW16 SMW17 SMW18	Very Good	

Vegetation Type Simplified Code	Vegetation Code	Type	Vegetation Type Description and Associated Species	Extent		Sample Sites	Vegetation Condition	Representative Photograph
				Hectares (ha)	Proportion (%)			
Rocky ridge and outcropping								
VT7	AptAptPsMsp.Esp.		<p><i>Acacia pteraneura</i> and <i>Acacia aptaneura</i> low woodland over <i>Ptilotus schwartzii</i>, <i>Maireana</i> sp. and <i>Eremophila</i> sp. low open shrubland</p> <p>Associated species: <i>Acacia ayersiana</i>, <i>Acacia minyura</i>, <i>Acacia incurvaneura</i>, <i>Acacia ?quadrimarginea</i>, <i>Santalum lanceolatum</i>, <i>Eremophila latrobei</i> subsp. <i>latrobei</i>, <i>Ptilotus obovatus</i>, <i>Senna</i> sp. <i>Meekatharra</i> (E. Bailey 1-26) and <i>Senna artemisioides</i> subsp. <i>?helmsii</i></p>	13.89	0.43	SMW14 SMW15 SMWR01 ER05	Very Good	
Minor, broad depression of clay soils supporting Mulga								
VT8	AcAptAptAtRcSpp.		<p><i>Acacia craspedocarpa</i> and/or <i>Acacia pteraneura</i>/<i>Acacia aptaneura</i> low open woodland over <i>Acacia tetragonophylla</i> scattered shrubs over <i>Rhodanthe charleyae</i> and <i>Sclerolaena</i> spp. open herbland</p> <p>Associated species: <i>Eremophila serrulata</i>, <i>Senna charlesiana</i>, <i>Senna artemisioides</i> subsp. <i>xartemisioides</i></p>	6.74	0.21	SMW25 rMWp2-02	Excellent - Very Good	
NA	C		Cleared	320.68	9.85	-	Completely Degraded	n/a

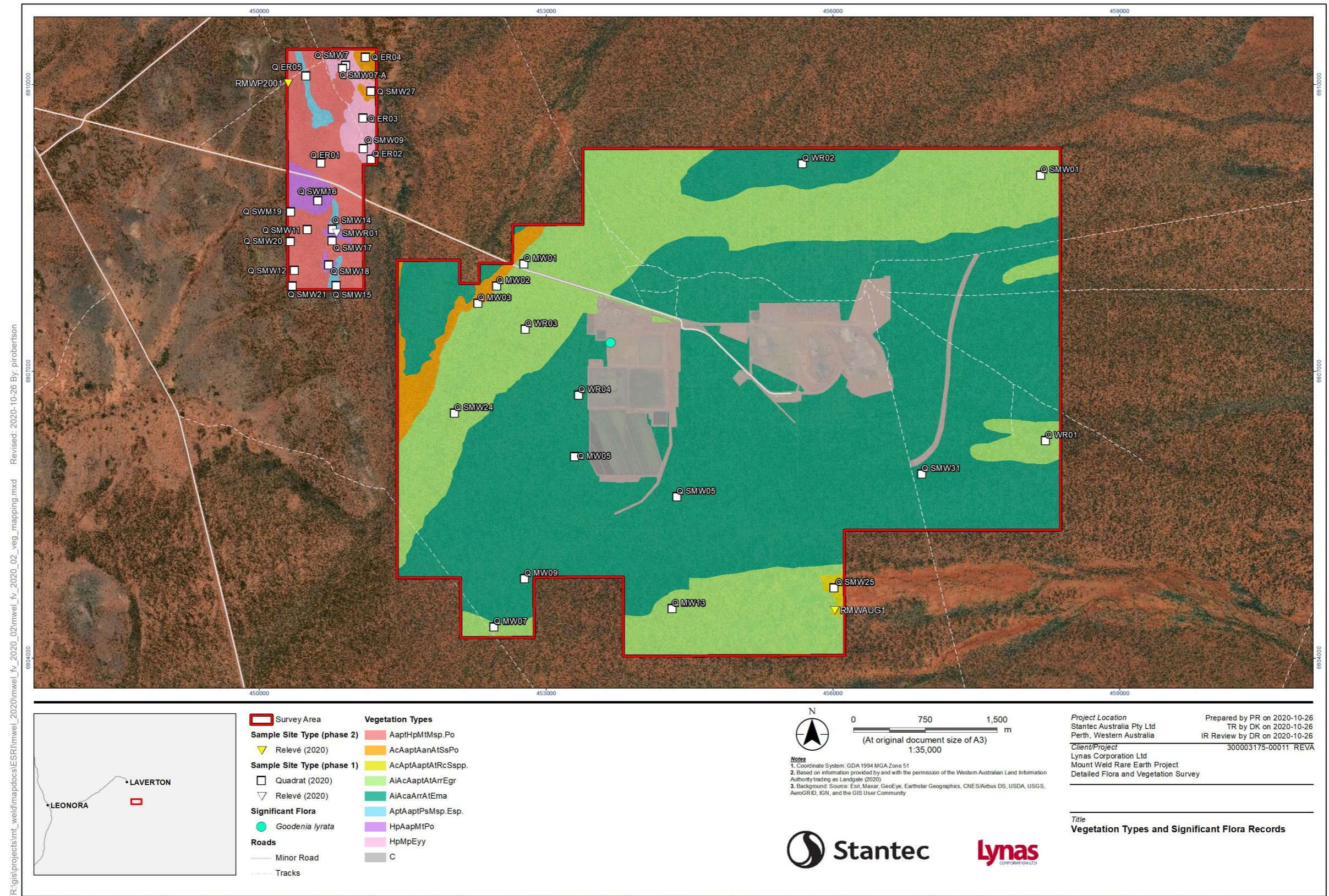


Figure 4-5: Vegetation type mapping for the Survey Area.

4.2.2.4 Vegetation Condition

The vegetation condition of 90.15% of the Survey Area was classified as being in 'Very Good' condition (**Table 4-10, Figure 4-6**). Predominant causes of the minor decline in condition were a result of introduced ungulate activity (such as grazing and trampling by cattle and camels), vegetation clearance for access tracks and mining infrastructure, occasional rabbit warrens and localised minor soil erosion.

Approximately 320 ha (9.85%) of the Survey Area was classified as 'Completely Degraded', due to clearing or highly modified landforms, and lacked native vegetation cover. The majority of cleared areas represented the Mt Weld disturbance footprint, which includes mining operation areas, soil banks, soil stockpiles and the flood control drain.

Table 4-10: Summary of vegetation condition within the Survey Area.

Vegetation Condition (Trudgen 1988)	Total Mapped Area (ha)	Proportion of the Survey Area (%)
Very Good	2,934.14	90.15
Completely Degraded (Cleared)	320.68	9.85
Total	3,254.81	100

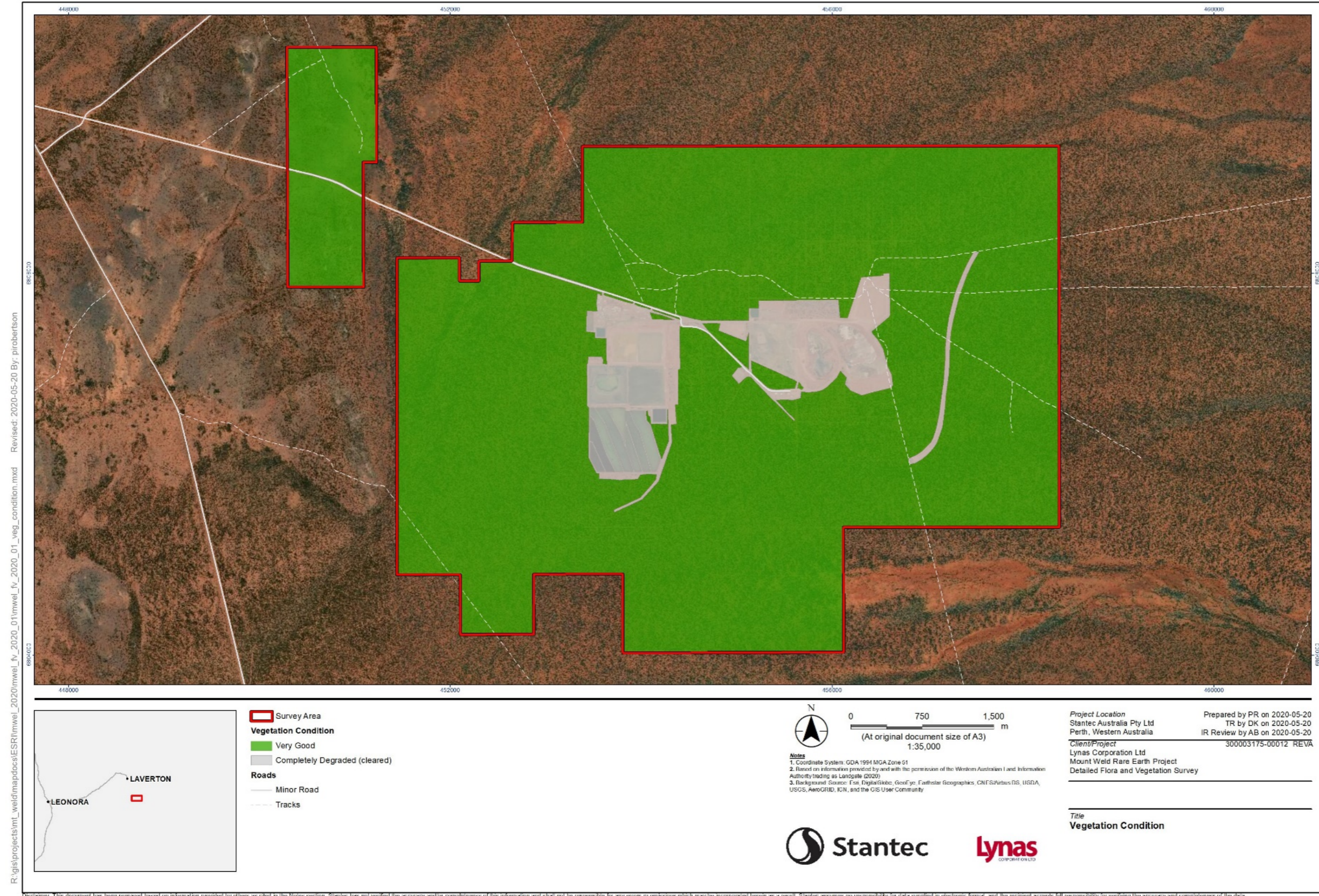


Figure 4-6: Vegetation condition mapping for the Survey Area.

5. Limitations and Constraints

Following completion of the Survey, a review of limiting factors that may affect a complete assessment was conducted, with potential limitations and constraints outlined in **Table 5-1**.

Table 5-1: Potential limitations and constraints of the Survey.

Factor	Constraint	Comments
Competency and experience of consultants	No	The scientists responsible for undertaking the field survey have considerable experience in conducting environmental surveys for the purpose of environmental impact assessment, and to facilitate environmental approvals processes. Specifically, the field team lead in both Phase 1 and Phase 2, Jeni Alford (Senior Botanist), has over 25 years' experience in the Eremaean region and has previously undertaken flora and vegetation surveys at Mt Weld (Outback Ecology 2013).
Scope	No	The scope of works was well developed to ensure alignment with the EPA Technical Guidance (EPA 2016a), and had specific aims and objectives established. Geoff Cockerton (Western Botanical) conducted a peer review of the Phase 1 report. The Phase 2 report was reviewed by Dr Darren Brearley (Onshore Environmental).
Proportion of species identified	Partial	<p>Phase 1 was conducted in March and early April 2020, the season which typically coincides with the recommended timing for the Eremaean Botanical Province. Relatively dry conditions preceded this survey (see Section 4.1.2) which resulted few annual and ephemeral species being recorded. Very dry conditions preceded the Phase 2 survey also, which was conducted in late August 2020. The proportion of species identified is considered underrepresented compared to surveys conducted following more substantial rainfall (Section 4.2.1.2). Nine records could not be identified to family level and were listed as 'Indet sp.'</p> <p>The analysis of 79 taxa recorded during the survey represents between 53.8% to 85.5% of the total species predicted to occur.</p> <p>Generally there was a lack of diagnostic material available during both phases of this survey; particularly the case in mulga (<i>Acacia aneura</i> complex) where there was often an absence of flowers, pods and new growth. Several genera within the Chenopodiaceae were also regularly unable to be confidently identified. However, upon incorporation of previous work within the Survey Area since 2011, a more comprehensive species inventory has been compiled (205 taxa). Information from previous mapping and sample sites assisted the identification of dominant species for vegetation mapping purposes.</p>
Information sources (e.g. historic or recent)	Partial	<p>Broad scale information is available for the Survey Area from sources including the IBRA biological framework, mapping by Beard (1976), Tille (2006), Pringle <i>et al.</i> (1994) and other technical resources and databases, including those maintained by the Western Australian government. Land Systems mapping is available (from the Department of Primary Industries & Regional Development) for the entire north-eastern Goldfields region. Aerial photography was of good resolution and generally accurately represented ground conditions.</p> <p>The previous work conducted within the Survey Area was fully available and amended or updated where necessary for incorporation into this report where required.</p> <p>Within the wider region (within approximately 70 km of the Survey Area), two publicly available Level 1 (now reconnaissance) flora and vegetation survey reports were reviewed for contextual information.</p>

Factor	Constraint	Comments
		However, more detailed comparisons between information from within the Survey Area to the data from surveys in proximity was not possible.
Completeness and intensity	No	The Survey Area was considered sufficiently surveyed to gain adequate replication of quadrats, map vegetation boundaries and conduct targeted flora searches. One vegetation unit (0.21% of the Survey Area) is represented by two sample sites: one quadrat and one relevé. The number of sample sites and survey intensity across the Survey Area since 2011 is considered adequate.
Timing / Weather / Season / Cycle	Yes	Despite the timing of Phase 1 coinciding with a typically optimal season (March-April), conditions were considered dry, with rainfall being below average in the eight weeks prior to the survey, and also in the 6 months preceding the survey. However, above average rainfall was recorded in January, courtesy of an ex-tropical cyclone system. Below average rainfall occurred in the five months between Phase 1 and Phase 2, with 27.6 mm recorded, compared to an average of 96.8 mm for that period. The majority of previous surveys since 2011 have occurred either outside the recommended season for surveys in the Eremaean Province or following relatively dry conditions.
Disturbances	No	A history of mining activity and low level grazing from introduced ungulates was evident throughout the survey area but did not impede the ability to sample quadrats, map vegetation types and condition or conduct targeted searches. Effects from fire were minimal, as time since last fire at each quadrat was rated as either 'unknown' or 'old'.
Resources	No	Resources were adequate; all tools and materials were available to complete the tasks involved.
Remoteness / access problems	No	The Survey Area was readily accessed by vehicle and on foot.

6. Summary

Stantec has completed a two-phase detailed flora and vegetation survey within tenements associated with, and adjacent to the Project (the Survey Area). The Survey Area represents two separate areas, collectively covering approximately 3,255 ha, located approximately 31 km south-east of Laverton. Phase 1 was conducted between 30 March and 6 April 2020, and Phase 2 was conducted between 24 and 31 August 2020. The resultant data from each survey has been collated and used to produce this report, and to inform environmental approvals.

The Survey Area broadly consists of clay-loam plains supporting mulga woodlands, with the smaller north-western component of the Survey Area also containing occasional rocky outcrop rises interspersed with low chenopod shrublands. The eight vegetation types recorded within the Survey Area are representative of similar broad landforms in the East Murchison subregion and do not represent Commonwealth or State listed TECS or PECs, nor are they considered to be either locally or regionally significant. Approximately 90% of the Survey Area was considered to be in 'Very Good' condition, with the remainder representing previously cleared land, and mapped as 'Completely Degraded'.

Thirty-eight sample sites (35 quadrats and three relevés) were assessed during this Survey. Sixteen quadrats were located in a similar position to that of previously sampled relevés from surveys occurring in 2014 or 2018. The remaining 19 quadrats were installed to ensure adequate replication of quadrats within vegetation types, spatial distribution, and areas of interest were sufficiently surveyed. Quadrats comprised a 20 m by 20 m square, and survey area of 400 m², with the north-west corner permanently marked with a fence dropper.

There were 89 taxa identified from sampling of quadrats, relevés and opportunistic collections from this Survey. Dry conditions restricted the availability of good quality specimens; this resulted in another 71 records that could not be identified to species level. Some of these may represent additional species, however most are likely to already be represented in the total species list. None of the specimens that were unable to be fully identified are considered likely to represent Threatened or Priority flora.

Where appropriate, and despite taxonomic changes since 2011, the results of previous flora and vegetation surveys are considered to still be relevant for incorporation into this report. The incorporation of the applicable results from those reports provides a comprehensive understanding of the flora and vegetation values within the Survey Area. Across all surveys since 2011, and including this Survey, a cumulative total of 205 species have been recorded. The 79 taxa analysed from this 2020 detailed Survey (not including opportunistic species, weed species and species unable to be identified beyond genus) represent an estimated 53.8% to 85.5% of the total species predicted to occur. Only three weed species have been identified from the Survey Area, each are considered common and widespread throughout the Eremaean Province.

One individual of *Goodenia lyrata* (P3) was recorded during the 2011 survey in a location that has been since cleared, with subsequent targeted surveys not detecting any additional records. A further three significant flora species returned from the database search results are considered to have the 'Potential' to occur, based on proximity, habitat and lifeform information. These include *Vittadinia cervicalis* var. *oldfieldii* P1, *Calandrinia* sp. Menzies (F. Hort et al. FH 4100) P3, and *Calytrix hislopilii* P3.

Twelve flora of other significance were identified within the Survey Area since 2011, these represented range extensions for species compared to their known distribution as per vouchered records with the Western Australian Herbarium. An additional four flora records from previous surveys were considered erroneous and likely to be misidentifications.

In the 18-month period between April 2019 and September 2020, only two months had rainfall totals above the Laverton BoM weather station long-term average for each corresponding month. Given the dry conditions were not conducive for the growth of annuals or herbs, or for perennials displaying diagnostic characters, there is still a possibility three species from the database search results may occur within the Survey Area. All other significant flora identified in the desktop assessment are considered unlikely to occur within the Survey Area.

Table 6-1: Summary of key findings of the Survey.

Component	Key outcomes	
Desktop Assessment	<p>A total of 36 Priority flora species identified from the desktop assessment, comprising:</p> <ul style="list-style-type: none"> • 10 Priority 1 species; • one Priority 2 species; • 22 Priority 3 species; and • three Priority 4 species. 	
Flora recorded	<p>A total of 89 vascular flora taxa were recorded during the Survey. A cumulative total of 205 taxa have been recorded from all surveys within the Survey Area since 2011.</p>	
	<p>2020 Survey</p> <ul style="list-style-type: none"> • 52 genera <p>Most prevalent: <i>Eremophila</i> (12 taxa)</p> <ul style="list-style-type: none"> • 31 families <p>Most prevalent: Fabaceae (16 taxa)</p>	<p>Cumulative since 2011</p> <ul style="list-style-type: none"> • 100 genera <p>Most prevalent: <i>Eremophila</i> (17 taxa)</p> <ul style="list-style-type: none"> • 41 families <p>Most prevalent: Chenopodiaceae (29 taxa)</p>
Vegetation recorded	<p>Eight vegetation types were recorded from landform and community groups including clay-loam plains supporting mulga woodlands, and undulating surfaces containing occasional rocky outcrop rises, interspersed with low chenopod shrublands.</p> <ul style="list-style-type: none"> • None of the vegetation types are considered significant; • The majority of the Survey Area was mapped as AiAcaArrAtEma (1,762 ha; 54%) • 90% of the Survey Area was assessed as being in 'Very Good' condition. 	
Significant findings	<ul style="list-style-type: none"> • No TECs or PECs were recorded. • No ESAs occur within, or in the vicinity of the Survey Area. • No Threatened or Priority flora were recorded during the Survey. • One Priority flora species (<i>Goodenia lyrata</i> P3) has been previously recorded in the Survey Area (Outback Ecology 2011). • One weed species (<i>*Sonchus oleraceus</i>) was recorded during the Survey, a species which has been recorded during a previous surveys. • A total of three weed species have been recorded within the Survey Area across all surveys since 2011. 	

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A close-up photograph of a hand reaching out from the left side of the frame. The hand is silhouetted against a bright, golden sunset sky. The sun is visible in the background, creating a strong lens flare and illuminating the scene with a warm, orange glow. The foreground is filled with dark, out-of-focus grasses and foliage, suggesting a field or meadow. The overall mood is serene and contemplative.

Appendices

Appendix A Environmentally Sensitive Area Criteria

The following areas are declared to be ESAs:

- a declared World Heritage property as defined in section 13 of the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth;
- an area that is included on the Register of the National Estate, because of its natural heritage value, under the Australian Heritage Council Act 2003 of the Commonwealth;
- a defined wetland and the area within 50 metres of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands;
- the area covered by vegetation within 50 metres 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 Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 applies; and
- protected wetlands as defined in the Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998.

Appendix B Codes and Terms Used to Describe Communities and Species of Significance, and Categories for Introduced Flora

Flora and Vegetation: The Environmental Factor Guideline for Flora and Vegetation (EPA 2016c) states that flora and vegetation may be considered significant for a range of reasons, including, but not limited to the following:

Flora: being identified as threatened or priority species; locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems); new species or anomalous features that indicate a potential new species; representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range); unusual species, including restricted subspecies, varieties or naturally occurring hybrids; relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Vegetation: being identified as threatened or priority ecological communities; 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.

Fauna: The Environmental Factor Guidelines for Terrestrial Fauna (EPA 2016b) states that terrestrial fauna may be significant for a range of reasons, including: being identified as a threatened or priority species; species with restricted distribution; degree of historical impact from threatening processes and providing an important function required to maintain the ecological integrity of a significant ecosystem. (EPA 2016c, d) (EPA 2016b, c)

Those flora, vegetation and fauna defined as Threatened and Priority are legislated protection under the EPBC Act and/or the BC Act, or by being listed on the DBCA Priority Species List. This Appendix presents a summary of the different rankings and listings used to describe conservation status. Some categories, such as 'extinct', 'extinct in the wild' and 'conservation dependent' (EPBC Act) are not presented here, as the table includes only the information needed to fully understand the codes presented in the preceding report. Refer to the relevant legislation for a full description of all codes in use, as well as their associated criteria.

Categories used under the EPBC Act		
Status	Code	Description
Critically Endangered	Cr	Taxa considered to be facing an extremely high risk of extinction in the wild in the immediate future
Endangered	En	Taxa considered to be facing a very high risk of extinction in the wild in the near future
Vulnerable	Vu	Taxa considered to be facing a high risk of extinction in the wild in the medium-term future
Migratory	Mi	Species that migrate to, over and within Australia and its external territories

Conservation Codes used under the BC Act		
Status	Code	Description
Critically Endangered	CR	Taxa rare or likely to become extinct, as critically endangered taxa
Endangered	EN	Taxa rare or likely to become extinct, as endangered taxa
Vulnerable	VU	Taxa rare or likely to become extinct, as vulnerable taxa
Presumed Extinct	EX	Taxa presumed to be extinct
Migratory	IA	Birds subject to international agreements relating to the protection of migratory birds
Conservation Dependent	CD	Taxa of special conservation need, being species dependent on ongoing conservation intervention
Special Protection	OS	Taxa in need of special protection

Priority Flora and Fauna Under the BC Act		
Status	Code	Description
Priority 1: Poorly-known Species	P1	Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2: Poorly-known Species	P2	Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3: Poorly-known Species	P3	Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Priority 4: Rare, Near Threatened and other species in need of monitoring	P4	(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Definitions, Categories and Criteria for Threatened and Priority Ecological Communities

General Definitions

Ecological Community	A naturally occurring biological assemblage that occurs in a particular type of habitat. Note: The scale at which ecological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified.
Threatened Ecological Community (TEC)	A threatened ecological community (TEC) is one which is found to fit into one of the following categories; "presumed totally destroyed", "critically endangered", "endangered" or "vulnerable". Possible threatened ecological communities that do not meet survey criteria are added to DEC's Priority Ecological Community (PEC) Lists under Priorities 1, 2 and 3. Ecological Communities that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.
Assemblage	An assemblage is a defined group of biological entities.
Habitat	Habitat is defined as the areas in which an organism and/or assemblage of organisms lives. It includes the abiotic factors (e.g. substrate and topography), and the biotic factors.
Occurrence	A discrete example of an ecological community, separated from other examples of the same community by more than 20 meters of a different ecological community, an artificial surface or a totally destroyed community. By ensuring that every discrete occurrence is recognised and recorded future changes in status can be readily monitored.
Adequately Surveyed	An ecological community that has been searched for thoroughly in most likely habitats, by relevant experts.
Community structure	The spatial organisation, construction and arrangement of the biological elements comprising a biological assemblage (eg. Eucalyptus salmonophloia woodland over scattered small shrubs over dense herbs; structure in a faunal assemblage could refer to trophic structure, eg. dominance by feeders on detritus as distinct from feeders on live plants).

Definitions and Criteria for Presumed Totally Destroyed, Critically Endangered, Endangered and Vulnerable Ecological Communities	
Presumed Totally Destroyed (PD)	<p>An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence of it is likely to recover its species composition and/or structure in the foreseeable future.</p> <p>An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant and either of the following applies (A or B):</p> <ul style="list-style-type: none"> A) Records within the last 50 years have not been confirmed despite thorough searches of known or likely habitats or B) All occurrences recorded within the last 50 years have since been destroyed
Critically Endangered (CR)	<p>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.</p> <p>An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting any one or more of the following criteria (A, B or C):</p> <ul style="list-style-type: none"> A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% and either or both of the following apply (i or ii): <ul style="list-style-type: none"> i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 10 years); ii) modification throughout its range is continuing such that in the immediate future (within approximately 10 years) the community is unlikely to be capable of being substantially rehabilitated. B) Current distribution is limited, and one or more of the following apply (i, ii, iii) <ul style="list-style-type: none"> i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 10 years); ii) there are few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes; iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes . C) The ecological community exists only as highly modified occurrences that may be capable of being rehabilitated if such work begins in the immediate future (within approximately 10 years).
Endangered (EN)	<p>An ecological community that has been adequately surveyed and found to have been subject to a major contraction in an 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</p> <p>An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. This will be determined on the basis of the best available information by it meeting any one or more of the following criteria (A, B, or C):</p>

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

	<ul style="list-style-type: none"> A) Geographic range, and/or total area occupied, and/or number of discrete occurrences have been reduced by at least 70% since European settlement and either or both of the following apply (i or ii): <ul style="list-style-type: none"> i) the estimated geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term future (within approximately 20 years); ii) modification throughout its range is continuing such that in the short term future (within approximately 20 years) the community is unlikely to be capable of being substantially restored or rehabilitated. B) Current distribution is limited, and one or more of the following apply (i, ii, iii) <ul style="list-style-type: none"> i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 20 years); ii) There are few occurrences, each of which is small and/or isolated and all or most occurrences are very vulnerable to known threatening processes; iii) There may be many occurrences but total area is small and all or most occurrences are small and/or isolated and very vulnerable to known threatening processes. C) The ecological community exists only as very modified occurrences that may be capable of being substantially restored or rehabilitated if such work begins in the short-term future (within approximately 20 years).
<p>Vulnerable (VU)</p>	<p>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.</p> <p>An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing a high risk of total destruction or significant modification in the medium (within approximately 50 years) to long-term future. This will be determined on the basis of the best available information by it meeting any one or more of the following criteria (A, B or C):</p> <ul style="list-style-type: none"> A) The ecological community exists largely as modified occurrences that are likely to be capable of being substantially restored or rehabilitated. B) The ecological community may already be modified and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations. C) The ecological community may be still widespread but is believed likely to move into a category of higher threat in the medium to long-term future because of existing or impending threatening processes.

Definitions and Criteria for Priority Ecological Communities

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community List under priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

<p>Priority 1</p> <p>Poorly-known ecological communities</p>	<p>Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.</p>
<p>Priority 2</p> <p>Poorly-known ecological communities</p>	<p>Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) 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.</p>
<p>Priority 3</p> <p>Poorly-known ecological communities</p>	<p>i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat or habitat destruction or degradation</p> <p>ii) communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;</p> <p>iii) communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes</p> <p>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</p>
<p>Priority 4</p> <p>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</p>	<p>a) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.</p> <p>b) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>c) Ecological communities that have been removed from the list of threatened communities during the past five years</p>
<p>Priority 5</p> <p>Conservation Dependent ecological communities</p>	<p>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</p>

Introduced flora: Weed species are classified at both a state and federal level. The Australian Weeds Strategy identified 32 'Weeds of National Significance' (WONS), and although non-statutory, the weeds listed have the potential to substantially impact primary industry, environmental, and/or social values.

The Western Australian Department of Primary Industries regulates introduced flora under the *Biosecurity and Agriculture Management Act 2007*. Species listed under this act are allocated one of three declared pest categories which define the required level of management. Declared pest species under this act can be assigned to one of three control categories, while prohibited organisms can be assigned as only a C1 or C2 control category.

Category	Definition
C1 Exclusion	Organisms that should be excluded from part or all of Western Australia: Pests that are not established in Western Australia and control measures are to be taken, in order to prevent them entering and establishing in the State.
C2 Eradication	Organisms that should be eradicated from part or all of Western Australia: Pests that are present in Western Australia in low enough numbers, or limited areas that their eradication is still a possibility.
C3 Management	Organisms that should have some form of management applied that will alleviate the harmful impact of the organism: Pests that 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 numbers or density or contain the spread of the pest.

Appendix C Database Search Results

WA Herbarium Database Search

FID	Sheet	NameID	Taxon	Cons Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Latitude	Longitude	Geo Method	Precision	Date
11714	1551507	30236	Bossiaea eremaea	3	Erect dwarf shrub 80 cm high; flowers yellow and purple.	Broad dune, red sand.			Abundance: occasional	SE of Merolia Station	-28.783333	122.65	AUTO	4	32709
11721	7857993	30236	Bossiaea eremaea	3	Shrub to 0.8 m tall.	Sandplain, red sand.	With Eucalyptus gongyocarpa, Triodia basedowii, Callitris preissii.	minimum 30 plants.		Ca 60 km SE of Laverton, on track that runs past Merolia Station	-28.952928	122.865071	GPS	1	39288
12875	8831467	48309	Calandrinia sp. Menzies (F. Hort et al. FH 4100)	3	Annual herb with blue/pink flowers growing up to 0.03 m tall.	Stony open black gravelly hardpan plain.	Very open mulga tall shrubland with sparse understorey.	common locally.		RO 34, N section of Yundamindra Station, NE Goldfields	-29.377972	122.381417	GPS	1	40480
12876	8831572	48309	Calandrinia sp. Menzies (F. Hort et al. FH 4100)	3	Succulent annual with bright pinkish flowers, growing up to 0.1 m tall.	Stony hardpan plain with saline inclusions.	Open tall mulga shrubland.	infrequent.		RO 40, N section of Yundamindra Station, NE Goldfields	-29.330556	122.370361	GPS	1	40479
13666	7091842	43546	Calytrix hislopii	3		On granite gully loam.				W of White Cliffs Station, ca 40 km W of Laverton	-28.433333	122.883333	TOPO	3	/09/1975
13785	1123645	5473	Calytrix praecipua	3	Erect shrub 30 cm high. Flowers deep crimson. Leaves glandular, pungent, subangular.	Cilcrete plateaux (granite bedrock). Yellow sand.			Abundance: occasional.	5 km NW of Cogleia Well, Merolia Station.	-28.783333	122.65	MAN	3	32709
13786	1014943	5473	Calytrix praecipua	3	Shrub 30-70 cm, flowers pink.	On rock outcrop.				15 miles E of Laverton.	-28.55	122.633333	MAN	3	23191
13788	1216813	5473	Calytrix praecipua	3	Low spreading shrub, calyx/corolla light purple, leaves angular.	Lateritic/granite breakaway.			Abundance: frequent	Mount Weld west of SW corner of Merolia Station.	-28.733333	122.516667	MAN	3	32707
13790	1217798	5473	Calytrix praecipua	3	Dwarf shrub 35 cm high, flowers pink-pink, red.	Weathered granite breakaway.			Abundance: frequent	5 km W of Bubbles Well, Laverton Downs [Station]	-28.466667	122.433333	MAN	4	32807
13798	1014986	5473	Calytrix praecipua	3	Shrubs to 50 cm tall, petals pinkish white, filaments white.	Sandstone breakaway N of the road.			Abundance: scattered.	30 km E of Laverton on the White Cliffs road	-28.55	122.666667	MAN	3	30198
13801	7091850	5473	Calytrix praecipua	3	Shrub to 1 m.	In granite rock soil pocket.				ca 30 km E of Laverton	-28.533333	122.7	TOPO	3	/09/1975
19630	4057376	31235	Eremophila annosocaulis	3						2 km S side of Laverton - Leonora road, c. 2.1 km SW of Mount Morgans Mine turnoff	-28.733333	122.033333	TOPO	3	33144
19632	5474272	31235	Eremophila annosocaulis	3		On stony loams (ironstone laterite).	In low mulga shrubland (3-4 m tall) with Ptilotus obovatus.	common, ca 500 plants.		Small hill, ca 2 km S of the Laverton - Leonora road, 2.1 km SW of Mount Morgan's Mine turnoff, Austin Botanical District, NW of Cogleia Well, SE of Laverton	-28.746179	122.033079	GPS	1	34271
23485	8187533	12900	Eucalyptus nigrifunda	4	Spreading tree to 6 m tall with grey-green leaves, glaucous branchlets and dark rough stocking bark low on the trunk.	Breakaway W facing. White sand over quartzite/granite.	Sparse shrubs. Eucalyptus spp.	several plants at breakaway.			-28.993917	122.886667	GPS	1	39466
23486	1133500	12900	Eucalyptus nigrifunda	4	Erect tree growing to 6m high. Black butt, peeling upper bark of pale grey silver.	Silcrete capped granite breakaway plateau.	In woodland.		Abundance: frequent.	5 km NW of Cogleia Well, Merolia Station	-28.783333	122.65	MAN	3	32709
23487	1133489	12900	Eucalyptus nigrifunda	4	Erect tree growing to 6m high.	Silcrete crusted granite breakaway.			Abundance: frequent.	5 km NW of Cogleia Well, Merolia Station	-28.783333	122.65	MAN	3	32709
23490	1260685	12900	Eucalyptus nigrifunda	4	Erect tree 5 m high. Black rough bark 2 m up trunk. Glossy upper branchlets.	Breakaway footslope face. Red heavy clay associated with granite.			Abundance: abundant.	1 km NW of Inv. 446 Goldfield Survey Rangelands, Merolia Stn [Station]	-28.783333	122.65	AUTO	3	32748
23492	1133497	12900	Eucalyptus nigrifunda	4	Erect tree to 6m high, glaucous branches.	On upper footslope of granite breakaway, white sandy clay.			Abundance: frequent.	5 km NW of Cogleia Well, Merolia Station	-28.783333	122.65	MAN	3	32709
23493	5226899	12900	Eucalyptus nigrifunda	4	Tree 10 m tall. Bark rough from 10-80 cm between trees, then smooth coppery and white. Leaves dull grey green. Stems glaucous.	Growing on and around rock breakaway.	With Acacia and Dodonaea spp.			200 m W of below co-ordinates on rocky outcrop [SE of Laverton]	-28.995278	122.896389	MAN	0	34243

WA Herbarium Database Search

FID	Sheet	NameID	Taxon	Cons Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Latitude	Longitude	Geo Method	Precision	Date
23496	7472854	12900	Eucalyptus nigrifunda	4		Pastoral lease, breakaway. Dry white clay over granite.	Open woodland over low open shrubland. Associated vegetation: Atriplex ? vescaria, Dodonaea sp., Frankenia sp., Acacia aneura, Acacia ramulosa.	30-40 plants, few seedlings.	Healthy population. Potential threat - mining, roadworks.	Breakaway ridge adjacent Burtville road, Laverton	-28.990361	122.8875	GPS	1	38896
23498	5790174	12900	Eucalyptus nigrifunda	4	Tree.					Mount Dennis region, SE of Laverton,	-28.990368	122.887499	GPS	1	36682
23499	7719329	12900	Eucalyptus nigrifunda	4		Pastoral lease, breakaway. Dry white clay over granite.	Open woodland over low open shrubland. Associated vegetation: Atriplex ? vescaria, Dodonaea sp., Frankenia sp., Acacia aneura, Acacia ramulosa.	30 - 40 plants, few seedlings.	Healthy population. Potential threat - mining, roadworks.	Breakaway ridge adjacent Burtville Road, Laverton	-28.990361	122.8875	GPS	1	38896
23500	7757506	12900	Eucalyptus nigrifunda	4	Spreading tree to 6 m tall with grey-green leaves, glaucous branchlets and dark rough stocking bark low on the trunk.	White sand over quartz/granite on breakaway W facing.	Sparse shrubs with Dodonaea sp., Frankenia sp., halophytes and Sida sp.	around 30 plants.	Several plants in population not fruiting.	NW of Coggia Well, SE of Laverton and approximately 2 km N of Mount Dennis	-28.970333	122.874278	GPS	1	39467
23502	9051236	12900	Eucalyptus nigrifunda	4	Tree with short stout trunk and spreading crown. Leaves glaucous and branchlets pruinose. Bark smooth, orange and grey with 0-1.5 m of black scruffy persistent bark at base.	Aspect N; base of breakaway, gentle slope; pale stony clay loam.	Chenopod low shrubland with scattered trees.	dominant.		61 km SE of Laverton along Merolia Road, c. 100 m SW of road	-28.970278	122.873889	GPS	1	41160
26847	8307601	12529	Goodenia lyrata	3		Plain. Red brown sandy clay loam with fine quartzite gravel.	Acacia aneura low open woodland over Eremophila margarethae low open shrubland.	one plant.		Mt Weld RE Project (Tenement L38/197). On flat immediately E of bank running S from Grinding Ball Mill	-28.861222	122.52503	GPS	1	40782
26853	1607774	12529	Goodenia lyrata	3	Prostrate; flowers yellow.	In red sandy loam, near claypan.				20 miles W of Laverton	-28.628333	122.048333	AUTO	3	22515
31308	6367593	6853	Hemigenia exilis	4	Multi stemmed shrub 1.2 m tall.		Eriostemon brucei, Hybanthus floribundus subsp. chloroxanthus, Eremophila oppositifolia. Acacia aneura woodland.			ca 5 km E of Lake Carey on Glenorn Station	-29.059539	122.182433	MAN	2	35732
31309	6367585	6853	Hemigenia exilis	4	Multi stemmed shrub 1.2 m tall.	Outcropping laterite.	Very open Acacia aneura woodland. Ptilotus helipteroides, P. obovatus.			Low rise above Lake Carey	-29.072557	122.202477	MAN	2	35732
31312	6367437	6853	Hemigenia exilis	4	Multi stemmed shrub 1 m tall. Flowers purple.		Hakea preissii, Acacia ramulosa, Ptilotus obovatus. Very open shrubland.			Eucalyptus lease ca 2 km E of Lake Carey	-29.063959	122.191038	MAN	2	35793
32377	6367372	19157	Hybanthus floribundus subsp. chloroxanthus	3	Multi stemmed shrub, 40 cm tall.	Outcropping laterite.	Eremophila oppositifolia, Acacia aneura woodland. Associated species: Eriostemon baucii, Hemigenia exilis, Eremophila oppositifolia			Eucalyptus lease Glenorn Station. E of Laverton	-29.059539	122.182433	MAN	2	35732
32379	6367429	19157	Hybanthus floribundus subsp. chloroxanthus	3	Multi stemmed shrub 40 cm tall.		Hakea preissii, Acacia ramulosa. Very open shrubland.			Eucalyptus lease, Glenorn Station	-29.063959	122.191038	MAN	2	35732
32386	6367577	19157	Hybanthus floribundus subsp. chloroxanthus	3	Multi stemmed shrub 40 cm tall.	Outcropping laterite, quartz and dolerite.	Eucalyptus clelandii, Acacia aneura, Eremophila oppositifolia woodland. Ptilotus obovatus.			Eucalyptus lease ca 5 km E of Lake Carey, Glenorn Station	-29.055046	122.184256	MAN	2	35732
32387	6367615	19157	Hybanthus floribundus subsp. chloroxanthus	3	Multi stemmed shrub 40 cm tall.	Outcropping laterite.	Dodonaea rigida, Ptilotus helichrysoideis, Acacia aneura, A. tetragonophylla very open shrubland.			Eucalyptus lease Glenorn Station. E of Laverton	-29.06262	122.184505	MAN	2	35732

WA Herbarium Database Search

FID	Sheet	NameID	Taxon	Cons Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Latitude	Longitude	Geo Method	Precision	Date
32388	8800871	19157	Hybanthus floribundus subsp. chloroxanthus	3	Low shrub to 30 cm tall x 20 cm in diameter.	Low slopes of hills. Orange sandy loamy with rocky laterite.	Scrub mulga 3 - 5 m tall.	20 plants in 20 m area inspected.		50 N of main track; 2.2 km E of Eucalyptus Bore; 3.5 km SE of Eucalyptus Dam; 19.6 km SE of Yudaminderan airstrip. 67.9 km SW of Laverton	-29.216285	122.205376	GPS	0	39701
32390	8803102	19157	Hybanthus floribundus subsp. chloroxanthus	3	Low shrub to 30 cm tall x 20 cm in diameter.	Mid slopes of hills. Orange sandy clay loamy.	Scrub Mulga 3 - 5 m tall (Muir 1977).	50 plants in 20 m area inspected.		Adjacent to mine exploration gridline, 1.8 km SE of Eucalyptus Dam, 3.1 km E of Eucalyptus Bore, 18.2 km SE of Yundamindera airstrip, 66.2 km SW of Laverton	-29.199444	122.199334	GPS	1	39700
34984	5823331	19474	Lechenaultia aphylla	1		Growing in soft shoulder of road in red sand.	Leptosema chambersii and Goodenia spp.		12+ plants seen. Some in seed in confined area.	Between Cosmo Newbery and Laverton,	-28.33617	122.633348	GPS	1	37003
34985	5613612	19474	Lechenaultia aphylla	1	Small tangled plant, 30 cm high x 30 cm wide. Growing intertwined with Leptosema chambersii. No flowers.	Growing in drain sloping east. Red sand.	Eucalypts, Eremophilas, Acacias, Grevillea juncifolia, G. acacioides, Diplopeltis stuartii with Triodia.	3 plants seen. Only 1 in seed.		Between Cosmo Newbery and Laverton	-28.33617	122.633348	GPS	1	36677
37640	8430217	12385	Melaleuca apostiba	3	Spreading shrubs to 1.8 m high x 5 m diam.; foliage silvery. Flowers crimson; inflorescences on older wood.	Dunes; red sand.	Mulga woodland, edge of brackish playa.	frequent but localised.		Bindah Rd c. 18.5 km direct line SSE of Sunrise Dam mine	-29.2275	122.51	GPS	1	40658
37644	7858043	12385	Melaleuca apostiba	3	Shrub to 1.8 m tall.	Kopi dunes associated with salt lake.	Melaleuca xerophylla dominated.	2 plants seen.		Ca 75 km SE of Laverton, along track that passes Merolia Station	-29.041532	122.99319	GPS	1	39289
39507	537314	12638	Olearia mucronata	3	shrub 2-3 ft apparently yellow				Checked in W.E. Blackall's collecting book. - M.A. Lewington 31.03.2015.	Mount Margaret	-28.818889	122.183889	MAN	3	11547
39509	844810	12638	Olearia mucronata	3	Shrub 2-3 feet tall, erectly and densely branched.	On schistose hills.				Mount Margaret	-28.818889	122.183889	MAN	3	11547
40742	995568	4505	Philotheca tubiflora	1	Shrub to 30 cm. Flowers white.	On rocky rise.				At Deeba Rock Hole, 24 miles NE of Laverton.	-28.366667	122.6	MAN	3	22516
40744	1641360	4505	Philotheca tubiflora	1	Rounded brittle divaricately branched shrub 20-50 cm high. Petals and staminal filaments white, anthers pink, flower buds pale pink outside.	Growing in marl on limestone outcrop. Rocky limestone cliffs.				Adam Range, Laverton - Cosmo Newbery road	-28.383333	122.65	MAN	0	33493
40746	1070541	4505	Philotheca tubiflora	1	Shrub to 60 cm, flowers pale pink and white.	On rocky hill.	With Callitris huegelii.			26 miles ENE of Laverton	-28.483333	122.783333	MAN	3	23191
40747	1070568	4505	Philotheca tubiflora	1	Shrub to 60 cm, flowers pale pink and white.	On rocky hill.	With Callitris huegelii.			26 miles ENE of Laverton	-28.483333	122.783333	MAN	3	23191
40748	1087320	4505	Philotheca tubiflora	1	Shrub to 60 cm, flowers pale pink and white.	On rocky hill.	With Callitris huegelii.			26 miles ENE of Laverton	-28.483333	122.783333	MAN	3	23191
40749	7093020	4505	Philotheca tubiflora	1		Weathered granite hill.				Point Kidman, ca 40 km E of Laverton	-28.5	122.783333	TOPO	3	//1975
40750	995541	4505	Philotheca tubiflora	1	Shrub to 30 cm. Flowers white.	On rocky rise.				At Deeba Rock Hole, 24 miles NE of Laverton	-28.366667	122.6	MAN	3	22516
40752	7420951	4505	Philotheca tubiflora	1	Up to ca 40 cm tall. No plants with flowers, fruits or buds.	Limestone outcrop.		common on outcrop.	MJB 293-297 are different individuals from the same locality.	33.3 km NE of Leonora - Laverton Road, on road to Cosmo - Newbery	-28.369226	122.596127	GPS	1	34710

WA Herbarium Database Search

FID	Sheet	NameID	Taxon	Cons Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Latitude	Longitude	Geo Method	Precision	Date
40844	8802904	17619	Phyllanthus baeckeoides	3	Low spreading shrub growing to 60 cm tall with a spread to 40 cm.	BIF ridge. Skeletal red sandy loam.	Open Scrub of mulga and Acacia quadrimarginea over mixed Dwarf Scrub (Muir 1977).	100 - 200 plants in 160 m x 50 m area inspected.		50 m W of existing TSF [Tailings Storage Facilities] of Granny Smith Mine, 7 km SW of Mt Weld, 7.2 km WSW of New Well, 22.5 km S of Leonora	-28.82645	122.397621	GPS	1	40479
40849	1870181	17619	Phyllanthus baeckeoides	3	Shrub 60 cm tall, flowers withered.	Sandstone breakaway N of the road.				30 km E of Laverton on the White Cliffs road	-28.55	122.666667	MAN	0	30198
40850	1870203	17619	Phyllanthus baeckeoides	3	Shrub 60 cm tall, fruit green.	Sandstone breakaway N of the road.				30 km E of Laverton on the White Cliffs road	-28.55	122.666667	MAN	0	30198
40851	6895360	17619	Phyllanthus baeckeoides	3	Male.	Dry, red sand-loam over laterite. Sandy soil with ironstone outcropping. Hilltop, outcrop.	Acacia quadrimarginea, Acacia aneura, Senna artemisoides subsp. filifolia, Grevillea nematophylla subsp. supraplana.	5-10 plants.	Condition of population: healthy.	10.5 km SE of Laverton	-28.658694	122.505972	GPS	1	38236
40852	7483457	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops with red-brown loamy soils.	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac			11 km SE of Laverton	-28.826081	122.712862	GPS	1	38785
40853	7483449	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops with red-brown loamy soils.	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac			11 km SE of Laverton	-28.828956	122.71517	GPS	1	38785
40854	7483430	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops with red-brown loamy soils.	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac			11 km SE of Laverton	-28.64899	122.495016	GPS	1	38785
40855	7483422	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops with red-brown loamy soils.	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac			11 km SE of Laverton	-28.658797	122.50596	GPS	1	38785
40856	7483465	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open			11 km SE of Laverton	-28.645017	122.504305	GPS	1	38785

WA Herbarium Database Search

FID	Sheet	NameID	Taxon	Cons Code	Plant_Desc	Site	Vegetation	Frequency	Notes	Locality	Latitude	Longitude	Geo Method	Precision	Date	
						with red-brown loamy soils.	shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac									
40857	7483473	17619	Phyllanthus baeckeoides	3	1-1.7 m high. Flowers small, white to cream. Flowering March.	Hill slopes of laterite gravels and occasional laterite outcrops with red-brown loamy soils.	The vegetation is Acacia sp. (predominantly Acacia aneura) open scrub to high shrubland over open shrubland of Eremophila sp. and Phyllanthus baeckeoides over scattered herbs. Associated plants: Acacia aneura var. aneura, Acacia aneura var ? argentea, Ac			11 km SE of Laverton	-28.645017	122.504305	GPS	1	38785	
40861	7858019	17619	Phyllanthus baeckeoides	3	Shrub to 1.2 m tall.	Small ironstone ridge.	Acacia aneura, A. quadrimarginea, Spartothamnella teucriflora, Baeckea sp. Melita Station.	minimum 30 plants.		Ca 7.5 km E of Laverton	-28.626086	122.479463	GPS	1	39285	
40862	7858027	17619	Phyllanthus baeckeoides	3	Shrub to 1.2 m tall.	Upper slope on rocky substrate.	With Acacia aneura, A. quadrimarginea, Eremophila punctata, Scaevola spinescens.	minimum 1000 plants.		Ca 39 km SE of Laverton, ca 10 km on track that runs past Merolia Station	-28.825144	122.713684	GPS	1	39287	
40868	8754551	17619	Phyllanthus baeckeoides	3	Shrub from 0.5-1.5 m.	Low rise hill. Red-orange sandy loam surface crust over laterite gravel.	Low woodland of Acacia aptaneura with sparse mid shrubland of Dodonaea rigida, Eremophila punctata, with isolated low shrubs of Ptilotus schwartzei and Olearia humilis and tussock grasses of Eriachne mucronata. With Acacia tetragonophylla, Grevillea berr	135 plants.		33 km SE of Laverton, nearby (N of track) to Cooma-Merolia Road	-28.715439	122.733789	GPS	1	41396	
48071	4910605	31844	Tecticornia cymbiformis	3		Calcrete area.	Between stands of spinifex and mulga.			To N of Mount Margaret, near Lake Carey Map Ref. 428589 KJ 6813199	-28.8	122.183333	MAN	0	35211	
48175	4316797	46514	Tecticornia mellarium	1	Erect sub shrub.	Edge of salt lake and flow line from 'freshwater lake'.	Halosarcia undulata, Frankenia cinerea, Grevillea sarissa (dune), Halosarcia pergranulata, Frankenia cf. pauciflora.			Lake Carey, Sunrise Dam, eastern edge	-29.100278	122.420556	MAN	0	34627	
48176	5100348	46514	Tecticornia mellarium	1						Lake Carey, Angel Fish Island,	-29.25	122.416667	MAN	0	/07/1998	
48177	5117763	46514	Tecticornia mellarium	1						Sunrise Well, ca 45 km S of Laverton,	-29.032778	122.401667	AUTO	3	//1994	
48179	7899513	46514	Tecticornia mellarium	1						Lake Carey	-29.383333	122.75	UNK	3	/07/1998	
48180	5588022	46514	Tecticornia mellarium	1	Rounded 30 cm high shrub. Fleshy, pea-shaped segments.	Gypsiferous dunes. Growing close to salt lake.				Cleo area, Lake Carey,	-29.066667	122.216667	MAN	4	35087	
48245	6866522	34958	Tecticornia sp. Lake Way (P. Armstrong 05/961)	1	Shrub to 50 cm, dense succulent, foliage yellow and green.	Flat, clay, salt lake on playa surface at edge of lake.	Samphires.			c. 2 km SE from Mount Margaret trig on the edge of Lake Carey	-28.842222	122.21	GPS	1	38061	
49452	5764270	6062	Thryptomene nealensis	3						Between Laverton and Cosmo Newbery	-28.316667	122.65	MAN	5	26897	
52728	522341	11885	Vittadinia cervicalis var. oldfieldii	1		red alluvial	Mulga			Skull Creek Laverton	-28.628333	122.401667	AUTO	3	11544	

TPFL database search

FID	Popid	Nameid	Taxon	ConsStatus	PopNumber	Location	District	Vesting	Purpose1	Purpose2	Gda94Lat	Gda94Long	CountDate	Method	MatCount	LiveTotal	InFlower	HabNotes	SoilCondit	Landform	RockType	Gravel	SoilType	SoilColor	AssSpecies	Veg_domA1	Veg_domB1	Veg_domC1	Veg_domD1		
9877	90178	12529	Goodenia lyrata	3	1	20 miles [32.186 km] west of Laverton [ca 8 km by road, south-east of Korong Homestead]. Weld Location 55 (L 3114 1768).	KALGOORLIE	RDL	PAS			-28.631944	122.088333	22515		0	0	Y	Near claypan.					LOAM_SND	RED						
11477	88826	6853	Hemigenia exilis	4	10	Yundamin dra Station, western side of Lake Carey.	KALGOORLIE	NO N	PAS	MI N	-29.065625	122.188916	35108	ESTMT	150	150	N			RIDGE	LATERITE			LOAM	RED	Acacia aneura, A. ramulosa, A. tetragonophylla	Acacia aneura, A. ramulosa, A. tetragonophylla				
11478	88827	6853	Hemigenia exilis	4	11	Yundamin dra Station, west side of Lake Carey.	KALGOORLIE	NO N	PAS	MI N	-29.071458	122.204749	35108	ESTMT	30	30	N			SLOPE	LATERITE					Acacia aneura, A. ramulosa, A. tetragonophylla, Scaevola spinescens, Eremophila oldfieldii	Acacia aneura, A. ramulosa, A. tetragonophylla	Scaevola spinescens	Eremophila oldfieldii		
11479	88828	6853	Hemigenia exilis	4	12	Yundamin dra Station, western side of Lake Carey, ca.12km north-east of Mt Keith.	KALGOORLIE	NO N	PAS	MI N	-29.062291	122.191694	35108	ESTMT	300	300	N			RIDGE	LATERITE					Acacia aneura, A. ramulosa, A. tetragonophylla	Acacia aneura	A. ramulosa	A. tetragonophylla		
12521	94779	19474	Lechenaultia aphylla	1	1	Between Cosmo, Newberry and Laverton. [ca 35.5 km NE of Beria on Great Central Road.]	KALGOORLIE	MR D	VER			-28.336167	122.633361	37003		0	3	N						SAND	RED	Leptosema chambersii	Leptosema chambersii				
14356	87107	4505	Philotheca tubiflora	1	1	33.3 km NE of Leonora-Laverton Rd [on Great Central Rd] to Cosmo-Newberry. [500 m W of Deebea Rockhole.]	KALGOORLIE	WR C	WA T	MI N	-28.369222	122.596139	34710		0	0	N			OUTCROP	LIMESTON										
14375	94024	17619	Phyllanthus baeckeoides	3	3	Pastoral Lease (3114-1270), Lot 42. Mt Weld Station. Ca. 7.5km E of Laverton. [Ca. 1km S of White Cliffs Rd].	KALGOORLIE	PLB	PAS			-28.626083	122.646139	39285	ESTMT	30	30	N			RIDGE						Acacia aneura, Acacia quadrimarginea, Spartothamnella teucriiflora, Baeckea sp. Melita Station (H. Pringle 2738)	Acacia aneura	Spartothamnella teucriiflora	Baeckea sp. Melita Station (H. Pringle 2738)	Acacia quadrimarginea

TPFL database search

FID	PopId	NameId	Taxon	ConsStatus	PopNumber	Location	District	Vesting	Purpose1	Purpose2	Gda94Lat	Gda94Long	CountDate	Method	MatCount	LiveTotal	InFlower	HabNotes	SoilCondit	Landform	RockType	Gravel	SoilType	SoilColor	AssSpecies	Veg_domA1	Veg_domB1	Veg_domC1	Veg_domD1
14376	94025	17619	Phyllanthus baeckeoides	3	4	Pastoral Lease (3114-1270), Lot 42. Mt Weld Station. Mining Tenement M38/1032. 11km SE [10.3km ESE] of Laverton. [Ca. 2km NW of Mt Barnicoat].	KALGOORLIE	PLB	PAS	MIN	-28.645028	122.504306	38785		200	200	Y	Dom sp: Acacia aneura var. ?argentea, Brachychiton gregorii & Eremophila glutinosa.		SLOPE	LATERITE	GRVL_30	LOAM	RED_BRWN	Acacia aneura var. aneura, Acacia ramulosa var. ramulosa, Acacia quadrimarginea, Eremophila forrestii subsp. forrestii	Acacia aneura var. aneura	Acacia quadrimarginea	Eremophila forrestii subsp. forrestii	Acacia ramulosa var. ramulosa
14377	94026	17619	Phyllanthus baeckeoides	3	5	Pastoral Lease (3114-1270), Lot 42. Mt Weld Station. 11km SE [9.5km ESE] of Laverton. [Ca. 1.2km NNW of Mt Barnicoat].	KALGOORLIE	PLB	PAS		-28.649	122.495028	38785		0	0	Y	Dom sp: Acacia aneura var. ?argentea, Brachychiton gregorii, Eremophila glutinosa.		SLOPE	LATERITE	GRVL_30	LOAM	RED_BRWN	Acacia aneura var. aneura, Acacia ramulosa var. ramulosa, Acacia quadrimarginea, Eremophila forrestii subsp. forrestii	Acacia aneura var. aneura	Acacia quadrimarginea	Eremophila forrestii subsp. forrestii	Acacia ramulosa var. ramulosa
14378	94027	17619	Phyllanthus baeckeoides	3	6	Pastoral Lease (3114-1270), Lot 42. Mt Weld Station. Mining Tenement M38/1032. 11km SE of Laverton. [Ca. 1.5km W of Mt Barnicoat].	KALGOORLIE	PLB	PAS	MIN	-28.658806	122.505972	38785	ESTMT	1855	1855	Y	Acacia ramulosa var. ramulosa, Brachychiton gregorii, Eremophila forrestii subsp. forrestii, E. glutinosa	DRY	SLOPE	LATERITE	GRVL_30	LOAM	RED_BRWN	Acacia quadrimarginea, Acacia aneura, Senna artemisioides subsp. filifolia, Grevillea nematophylla subsp. supraplana	Acacia quadrimarginea	Senna artemisioides subsp. filifolia	Grevillea nematophylla subsp. supraplana	Acacia aneura
14379	94028	17619	Phyllanthus baeckeoides	3	7	UCL. Ca. 37.2km SE of Laverton. [On E side of Coglia-Merolia Rd]. Ca. 10km on track that runs past Merolia Station.	KALGOORLIE	NON	UCL		-28.827528	122.709694	39899	ESTMT	350	350	Y	Acacia aneura var. ?argentea, Brachychiton gregorii, E. glutinosa, E. punctata, Scaevola spinescens.		SLOPE	LATERITE	GRVL_30	LOAM	RED_BRWN	Acacia aneura var. aneura, Acacia ramulosa var. ramulosa, Acacia quadrimarginea, Eremophila forrestii subsp. forrestii	Acacia aneura var. aneura	Acacia quadrimarginea	Eremophila forrestii subsp. forrestii	Acacia ramulosa var. ramulosa
14380	94029	17619	Phyllanthus baeckeoides	3	8	UCL. Exploration Tenement E38/2349. 36.7km SE of Laverton. [Ca. 5.8km SE of Jerusalem Mine Centre].	KALGOORLIE	NON	UCL	EXL	-28.854028	122.673667	39899	ESTMT	386	386	N	Psydrax latifolia, Santalum spicatum, Dodonaea lobulata, D. rigida, Dodonaea viscosa subsp. spatulata	DRY	RI_BRKY	GRANITE			RED_BRWN	Eucalyptus lucasii, Acacia aneura, Acacia quadrimarginea, Acacia craspedocarpa	Eucalyptus lucasii	Acacia quadrimarginea	Acacia craspedocarpa	Acacia aneura
14381	94030	17619	Phyllanthus	3	9	Pastoral Lease (3114-	KALGOORLIE	PLB	PAS		-28.763028	122.586111	40068	ACT_IN D	356	356	N	Dodonaea rigida, Philotheca		CREST	LATERITE				Acacia aneura var. aneura, Acacia quadrimarginea, Acacia	Acacia aneura var. aneura	Acacia tetragonophylla	Acacia craspedocarpa	Acacia quadrimarginea

TPFL database search

FID	PopId	NameId	Taxon	ConsStatus	PopNumber	Location	District	Vesting	Purpose1	Purpose2	Gda94Lat	Gda94Long	CountDate	Method	MatCount	LiveTotal	InFlower	HabNotes	SoilCondit	Landform	RockType	Gravel	SoilType	SoilColor	AssSpecies	Veg_domA1	Veg_domB1	Veg_domC1	Veg_domD1	
			baeckeoides			1270), Lot 42. Mt Weld Station. 24kmm SE of Laverton. [Ca. 5.3km WNW of Burtville].												brucei subsp. brucei, Eremophila forrestii subsp. forrestii.						tetragonophylla,Acacia craspedocarpa						
14382	94015	17619	Phyllanthus baeckeoides	3	10	Pastoral Lease (3114-1270), Lot 42. Mt Weld Station. Exploration Lease E38/1866. [Ca. 18km SSE of Laverton]. [Ca. 13km WNW of Burtville]. [Ca. 3.2km SW of Mt Weld].	KALGOORLIE	PLB	PAS	EXL	-28.760944	122.506056	40069	ACT_IN D	733	733	N	Dodonaea rigida, Calytrix praecipua, Eremophila latrobei subsp. latrobei, Scaevola spinescens		RIDGE	LATERITE			Acacia aneura var. aneura,Acacia craspedocarpa,Acacia quadrimarginea,Calytrix praecipua	Acacia aneura var. aneura	Acacia quadrimarginea	Calytrix praecipua	Acacia craspedocarpa		
14383	94016	17619	Phyllanthus baeckeoides	3	11	Pastoral Lease (3114-1270), Lot 42. Mining Tenement M38/162. 16.5km S of Laverton. [Ca. 2.8km W of Mt Weld Homestead].	KALGOORLIE	PLB	PAS	MIN	-28.770583	122.411667	39932	ACT_IN D	772	772	N	A. craspedocarpa, A. ramulosa var. ramulosa, Grevillea aff. nematophylla, Psydrax rigidula	MOIST	OUTCROP	LATERITE		LOAM	RED	Acacia aneura var. intermedia,Acacia aneura var. macrocarpa,Acacia quadrimarginea,Acacia tetragonophylla	Acacia aneura var. intermedia	Acacia quadrimarginea	Acacia tetragonophylla	Acacia aneura var. macrocarpa	
16175	95987	46514	Tecticornia mellarium	1	1	Lake Carey, Sunrise dam, eastern edge. [11.8 km W of Wilga rd. ca 5 km ENE of Wilga dam.]	KALGOORLIE	PLB	PAS	MIN	-29.100278	122.420556	34627		0	0	N			CD_LKBED					Halosarcia undulata,Frankeniacinerea,Grevillea sarissa,Halosarcia pergranulata	Halosarcia pergranulata	Halosarcia undulata	Frankeniacinerea	Grevillea sarissa	
16176	95988	46514	Tecticornia mellarium	1	2	[2.6 km NW of Sunrise dam. 2 km (ca.) W of restricted access road.] Sunrise well, ca. 45 km S of Laverton.	KALGOORLIE	PLB	PAS	MIN	-29.032778	122.401667	34699		0	0	N													
16181	96644	34958	Tecticornia sp. Lake Way (P. Armstrong 05/961)	1	2	ca 2 km SE from Mount Magnet trig on the edge of Lake Carey.	KALGOORLIE	WRC	WAT	MIN	-28.842222	122.21	38061		0	0	N			CD_LKBED			CLAY							

Appendix D Likelihood of Occurrence of Significant Flora in the Survey Area

Species name	Habit (WAH 2020)	Broad habitat (WAH 2020)	Nearest known locality	Flowering information (WAH 2020)	Resource	Pre-survey likelihood of assessment	Post-survey likelihood assessment
PRIORITY 1							
<i>Beyeria lapidicola</i>	Erect, straggly shrub to 1 m.	Ironstone outcrop/breakaways on midslopes of range.	240 km W	No information available	TPList	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.
<i>Calandrinia quartzitica</i>	Perennial and scrambling habit, seeds with an obvious, bright metallic lustre at maturity.	Unusual habitat dominated by quartzite (the species epithet is derived from the quartz geology). It is currently known to occur from the edge of five salt lakes just north of Kalgoorlie in the Eastern Murchison sub-bioregion.	80 km SW	Mid-September to mid-October.	TPList	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.
<i>Eremophila arachnoides</i> subsp. <i>tenera</i>	Broom-like shrub, to 3 m high, branches with tubercles often elongated & coalescing.	From Laverton to Kambalda area, growing in low shrubland with <i>Maireana sedifolia</i>	>70 km E	White/blue-purple.	TPList	Unlikely: Suitable habitat may occur within the Survey Area but outside of known distribution of this species.	Unlikely: <i>Maireana</i> habitat searched within the Survey Area. Outside of known distribution of this species.
<i>Eremophila eversa</i>	Shrub.	Known from a single plant near the southern boundary of Yerilla Station east of Menzies, growing with <i>Eremophila georgei</i> and <i>E. homoplastica</i> .	>100 km WSW	Lilac to purple. September.	TPList	Unlikely: Outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.
<i>Lechenaultia aphylla</i>	Small tangled shrub, 0.3 m High, apparently leafless	Red sand. Slopes, drainage areas	>60 km NNE	No information available	TPFL TPList	Unlikely: Habitat unlikely to occur within the Survey Area	Unlikely: No suitable habitat occurs within the Survey Area
<i>Philotheca tubiflora</i>	Compact, much-branched shrub, 0.2-0.6 m high.	Rocky rises and hills, outcrops.	47 km NNE	Pink-white, June to October	NatureMap TPFL WAHerb TPList	Possible: suitable habitat may occur in the Survey Area	Unlikely: Rocky rises within Survey Area were searched
<i>Ptilotus tetrandrus</i>	Annual, herb, 0.15-0.3 m high.	Loamy sand.	>75 km WSW	October	TPList	Unlikely: Marginally suitable habitat may occur within the Survey Area but outside of known distribution of this species.	Unlikely: Outside of known distribution of this species
<i>Tecticornia mellarium</i>	Dwarf shrub. Dull green	On edge of salt lake. Gypsiferous dunes. Growing close to salt lake.	19 km S	No information available	NatureMap TPFL WAHerb	Unlikely: Records not in close proximity. Habitat unlikely to occur within the Survey Area	Unlikely: Records not in close proximity to Survey Area
<i>Tecticornia</i> sp. Lake Way (P. Armstrong 05/961)	Small upright shrub 0.3-0.4 m with a spread to 0.1 m	Lake bed. Level that would occasionally be inundated. Grey loamy clay sand.	27 km W	No information available	NatureMap TPFL WAHerb	Unlikely: Records not in close proximity; suitable habitat is unlikely to occur in the Survey Area	Unlikely: Records not in close proximity to Survey Area
<i>Vittadinia cervicularis</i> var. <i>oldfieldii</i>	Annual, herb, 0.1-0.3 m high.	Alluvium.	24 km NW	White-purple-blue, August to September.	NatureMap WAHerb TPList	Possible: Suitable habitat may occur in the Survey Area	Possible: Suitable habitat may occur in the Survey Area. Seasonal conditions for Phase 1 were not conducive to detecting many herbaceous species. Phase 2 coincides with known flowering period.
PRIORITY 2							
<i>Eremophila mirabilis</i>	Shrub, 0.3-2 m high.	Clay sand, stony clayey loam. Granite country.	>120 km W	Yellow, July to September.	TPList	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.
PRIORITY 3							
<i>Acacia eremophila</i> var. Numerous-nerved variant (A.S.George 11924)	Dense, spreading shrub, 1-2 m high.	Sandy soils. Flats.	>60 km SW	Yellow, September.	TPList	Unlikely: No suitable habitat occurs within the Survey Area and outside of known range of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known range of this species.
<i>Acacia</i> sp. Marshall Pool (G. Cockerton 3024) PN	Large shrub to 1-5 m.	Low basalt hill. Dry brown clayey sand. Rocky hill with brown clayey sand over basalt. On creek line.	>100 km W	No information available	TPList	Unlikely: Survey Area is outside of known range of this species.	Unlikely: Survey Area is outside of known range of this species.
<i>Angianthus prostratus</i>	Prostrate annual, herb.	Red clay or loamy soils. Saline depressions.	>80 km WNW	White-yellow,	TPList	Unlikely: No suitable habitat occurs within the Survey Area	Unlikely: No suitable habitat occurs within the Survey Area

Species name	Habit (WAH 2020)	Broad habitat (WAH 2020)	Nearest known locality	Flowering information (WAH 2020)	Resource	Pre-survey likelihood of assessment	Post-survey likelihood assessment
				July to September.			
<i>Bossiaea eremaea</i>	Divaricately-branched, spreading shrub, to 1.2 m high.	Deep red sand.	10 km NE	Red-yellow-purple-brown. July to September.	NatureMap WAHerb	Unlikely: Record in close proximity but suitable habitat is unlikely to occur in the Survey Area	Unlikely: No suitable habitat occurs in the Survey Area.
<i>Calandrinia</i> sp. Menzies (F. Hort et al. FH 4100)	Semi erect to erect annual herb, height 3-6.5 cm, width 2-10 cm.	Flat plains with very gentle slope. Soil red-brown clayey sand with some gravels and quartz stones. Very open mulga tall shrubland with sparse understory.	51 km SW	Pink, purple, blue. April, August and October.	WAHerb TPList	Possible: suitable habitat occurs in the Survey Area and records within close proximity.	Possible: suitable habitat occurs in the Survey Area and records within close proximity. Sub-optimal seasonal conditions in Phase 1 for detecting herbaceous species. Phase 2 coincides with known flowering period
<i>Calytrix hislopii</i>	Squat gnarled subshrub, 30 cm tall. Yellow flowers, very small green linear leaves	Often associated with mulga woodland. Granite or Lateritic breakaways, red-brown sand, loam, clay.	55 km	Pale yellow, calyx pale brown.	WAHerb	Possible: suitable habitat may occur in the Survey Area	Possible: Suitable habitat occurs in the Survey Area. Sub-optimal seasonal conditions in 2020 for detecting small subshrubs with small, potentially desiccated, leaves. Phase 2 coincides season of previous collections.
<i>Calytrix praecipua</i>	Shrub, 0.3-0.7 m high.	Skeletal sandy soils over granite or laterite. Breakaways, outcrops.	10 km NE	Pink-white. June to July or September to November.	NatureMap WAHerb TPList	Possible: suitable habitat may occur in the Survey Area and records within close proximity.	Unlikely: Rocky outcrop habitat searched.
<i>Cratystylis centralis</i>	Much-branched, brittle, greyish shrub, to 1 m high.	Red sandy loam with ironstone gravel. Flat plains, breakaway country.	>70 km W	No information available	TPList	Possible: Suitable habitat may occur within the Survey Area	Unlikely: Flat plains within Survey Area were searched
<i>Eremophila annosocaulis</i>	A shrub to 0.8 m high.	Found on the slopes of low rocky hills between Leonora and Carnegie, growing in stony ironstone soils with <i>Acacia aneura</i> and <i>Ptilotus obovatus</i>	46 km NW	Mauve or purple corolla. June to September.	WAHerb TPList	Possible: Suitable habitat may occur within the Survey Area	Unlikely: Rocky rises within Survey Area were searched
<i>Eremophila simulans</i> subsp. <i>megacalyx</i>	Shrub, 0.9-2 m high.	Found in rocky and sandy-clay soils between Murchison settlement and Meekatharra, growing with <i>Acacia aneura</i> and <i>Eremophila</i> species over annuals	>120 km NW	Violet. August to September.	TPList	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and outside of known distribution of this species.
<i>Goodenia lyrata</i>	Prostrate herb, with lyrate leaves.	Red sandy loam. Near claypan.	Survey Area	Yellow. August.	NatureMap TPFL WAHerb TPList (Outback Ecology 2011)	Confirmed (2011): previously recorded from Survey Area.	Previously recorded within Survey Area in 2011 (Outback Ecology 2011), however not recorded since. Seasonal conditions were sub-optimal for detecting herbaceous species, however Phase 2 coincides with known flowering period
<i>Grevillea obliquistigma</i> subsp. <i>cullenii</i>	Spreading shrub, 0.3-0.7 m high	Red sand.	50 km N	Cream. March.	TPList	Unlikely: Marginal suitable habitat occurs within the Survey Area but outside of known distribution of this species.	Unlikely: Marginal suitable habitat occurs within the Survey Area but outside of known distribution of this species.
<i>Homalocalyx echinulatus</i>	Shrub, 0.45-1 m high.	Laterite. Breakaways, sandstone hills.	>230 km NE	Pink. June to September.	TPList	Unlikely: No suitable habitat occurs within the Survey Area and well outside of known distribution of this species.	Unlikely: No suitable habitat occurs within the Survey Area and well outside of known distribution of this species.
<i>Hybanthus floribundus</i> subsp. <i>chloroxanthus</i>	Multi-stemmed shrub, to 0.7 m high.	Dark red-brown soil, never sandy, high in iron oxide, laterite. Rocky areas, creek banks, along drainage lines.	36 km SW	Blue and white August to October.	WAHerb TPList	Possible: Records in close proximity to Survey Area and marginal habitat occurs	Unlikely: Rocky rises and drainage lines within Survey Area were searched

Species name	Habit (WAH 2020)	Broad habitat (WAH 2020)	Nearest known locality	Flowering information (WAH 2020)	Resource	Pre-survey likelihood of assessment	Post-survey likelihood assessment
<i>Melaleuca apostiba</i>	Spreading shrub, to 2 m high, with grey fissured bark and dull green leaves.	Low lying salt flats, at edge of salt lake in dry red loam sands, seasonally inundated. Edge of wetland.	37 km S	Red. June.	WAHerb	Unlikely: Records in moderate proximity but suitable habitat is unlikely to occur in the Survey Area	Unlikely: No suitable habitat occurs within the Survey Area
<i>Mirbelia stipitata</i>	Spiny shrub, ca 0.6 m high.	Red sandy loam.	>150 km N	August.	TPList	Unlikely: Suitable habitat occurs within the Survey Area but outside of known distribution of this species.	Unlikely: Survey Area outside of known distribution of this species
<i>Olearia mucronata</i>	Densely branched unpleasantly aromatic shrub, 0.6-1 m high.	Schistose hills, along drainage channels.	30 km W	White-yellow August to January.	WAHerb	Possible: Records in moderate proximity to Survey Area and marginal habitat occurs	Unlikely: Marginal habitat within Survey Area searched
<i>Phyllanthus baeckeoides</i>	Shrub, 0.5-1.5 m high.	Red lateritic and sandy clay soils. Granite outcrops.	8 km W	White-yellow/green-yellow. July to September	NatureMap TPFL WAHerb TPList	Possible: Records in close proximity to Survey Area and marginal habitat occurs.	Unlikely: Marginal habitat within Survey Area searched
<i>Tecticornia cymbiformis</i>	Erect, perennial shrub, 0.3-0.5 m high.	Saline soils. Along edges of creeklines.	30 km W	No information available.	WAHerb	Unlikely: Records in moderate proximity, but suitable habitat is unlikely to occur in the Survey Area	Unlikely: No suitable habitat occurs within the Survey Area
<i>Thryptomene nealensis</i>	Shrub, 0.3 m high.	Lateritic breakaways	59 km NE	Pink. October.	WAHerb TPList	Possible: Records in moderate proximity to Survey Area and marginal habitat occurs	Unlikely: No suitable habitat occurs within the Survey Area
<i>Verticordia jamiesonii</i>	Shrub, 0.2-0.6 m high.	Sandy clay soils. Lateritic breakaways.	200 km NW	White/pink. September to October.	TPList	Unlikely: Suitable habitat occurs within the Survey Area but well outside of known distribution of this species.	Unlikely: Unlikely: Survey Area is well outside of known distribution of this species and no suitable habitat occurs
<i>Vittadinia pustulata</i>	Low annual, herb (sometimes persisting as an under-shrub), 0.1-0.3 m high.	Drainage depression in red sandplain/ Sand flat adjacent to sand dune on one side.	30 km N	September.	TPList	Unlikely: Records in moderate proximity to Survey Area but no suitable habitat occurs.	Unlikely: No suitable habitat occurs within the Survey Area
PRIORITY 4							
<i>Eucalyptus nigrifunda</i>	Tree, 5-7 m high, bark rough and black on trunk	Sandy clay. Breakaways of decomposing granite.	10 km NE	White.	NatureMap WAHerb	Unlikely: Marginally suitable habitat may occur within the Survey Area	Unlikely: No suitable habitat occurs within the Survey Area. Rocky outcrop habitat searched, and species is readily identifiable year round
<i>Grevillea inconspicua</i>	Intricately branched, spreading shrub, 0.6-2 m high.	Loam, gravel. Along drainage lines on rocky outcrops, creeklines.	~50 km W	White/pink-white. June to August.	(Botanica Consulting 2014) (WAH 2020)	Possible: Suitable habitat may occur in the Survey Area and records within close proximity.	Unlikely: Potentially suitable habitat searched.
<i>Hemigenia exilis</i>	Erect multi-stemmed shrub, 0.5-2 m high.	Laterite. Breakaways, slopes.	36 km SW	Blue-purple/white. April or September to November.	TPFL WAHerb TPList	Possible: Suitable habitat may occur within the Survey Area and records within close proximity.	Unlikely: Records within close proximity to the Survey Area but no suitable habitat occurs.

Appendix E NVIS Vegetation Structural Classification and Vegetation Condition Scale

Trees > 30 m	Tall Closed Forest	Tall Open Forest	Tall Woodland	Tall Open Woodland	Scattered Tall Trees
Trees 10-30 m	Closed Forest	Open Forest	Woodland	Open Woodland	Scattered Trees
Trees < 10 m	Low Closed Forest	Low Open Forest	Low Woodland	Low Open Woodland	Scattered Low Trees
Shrubs > 2 m	Tall Closed Scrub	Tall Open Scrub	Tall Shrubland	Tall open Shrubland	Scattered Tall Shrubs
Shrubs 1-2 m	Closed Heath	Open Heath	Shrubland	Open Shrubland	Scattered Shrubs
Shrubs < 1 m	Low Closed Heath	Low Open Heath	Low Shrubland	Low Open Shrubland	Scattered Low Shrubs
Hummock Grasses	Closed Hummock Grassland	Hummock Grassland	Open Hummock Grassland	Very Open Hummock Grassland	Scattered Hummock Grasses
Grasses, Sedges, Herbs	Closed Tussock Grassland / Bunch Grassland / Sedgeland / Herbland	Tussock Grassland / Bunch Grassland / Sedgeland / Herbland	Open Tussock Grassland / Bunch Grassland / Sedgeland / Herbland	Very Open Tussock Grassland / Bunch Grassland / Sedgeland / Herbland	Scattered Tussock Grasses / Bunch Grasses / Sedges / Herbs

Based on Muir (1977), and Aplin's (1979) modification of the vegetation classification system of Specht (1970); Aplin T.E.H. (1979). The Flora. Chapter 3 In O'Brien, B.J. (ed.) (1979). Environment and Science. University of Western Australia Press; Muir B.G. (1977). Biological Survey of the Western Australian Wheatbelt. Part II: Vegetation and habitat of Bendering Reserve. Records of the Western Australian Museum, Suppl. No. 3; Specht R.L. (1970). Vegetation. In: The Australian Environment. 4th edn (Ed. G.W. Leeper). Melbourne

Rating	Description
1 - Excellent	Pristine or nearly so; no obvious signs of damage caused by human activities since European settlement.
0.8 - 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.
0.6 - Good	More obvious signs of damage caused by human activities since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or by selective logging. Weeds as above, possibly plus some more aggressive ones such as <i>Cenchrus</i> spp.
0.4 - Poor	Still retains basic vegetation structure or ability to regenerate to it after very obvious impacts of activities of European man, such as grazing, partial clearing (chaining) or frequent fires. Weeds as above, probably plus some more aggressive ones such as <i>Cenchrus</i> spp.
0.2 - 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 including very aggressive species.
0.1 - 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.

adapted from Trudgen (1988), as presented in EPA Technical Guidance (2016).

Appendix F Species Lists (2020 & Consolidated) and Site by Species Matrices (2020 data only)

Species	ER01	ER02	ER03	ER04	ER05	MW01	MW02	MW03	MW05	MW07	MW09	MW13	rMWp2-01	rMWp2-02	SMW01	SMW05	SMW07	SMW07-A	SMW09	SMW11	SMW12	SMW14	SMW15	SMW16	SMW17	SMW18	SMW19	SMW20	SMW21	SMW24	SMW25	SMW27	SMW31	SMWR01	WR01	WR02	WR03	WR04		
?Anthobolus leptomerioides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0			
?Enchylaena tomentosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0		
?Maireana sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0			
?Portulaca oleracea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
?Ptilotus sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
?Teucrium sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0			
Abutilon oxycarpum	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Abutilon sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0			
Acacia ?aptaneura	0	0	1	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	1	0		
Acacia ?caesaneura	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0			
Acacia ?incurvaneura	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0		
Acacia ?minyura	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0			
Acacia ?paraneura	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Acacia ?pteraneura	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0		
Acacia ?quadrimarginea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Acacia aneura complex	0	0	0	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1		
Acacia aptaneura	0	1	0	1	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0		
Acacia caesaneura	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1		
Acacia craspedocarpa	0	1	0	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	1		
Acacia incurvaneura	0	0	0	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
Acacia minyura	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Acacia mulganeura	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
Acacia pteraneura	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
Acacia quadrimarginea	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
Acacia ramulosa var. ramulosa	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1	0	1	
Acacia sp. Indet	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	
Acacia tetragonophylla	1	1	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	1	0		
Amyema fitzgeraldii	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Amyema sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Aristida sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Atriplex ?semilunaris	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Atriplex ?vesicaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Atriplex codonocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Atriplex semilunaris	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Atriplex sp. Indet	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
Boerhavia ?coccinea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
Boerhavia sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Centipeda thespidioides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
Cheilanthes ?lasiophylla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Cheilanthes sieberi subsp. sieberi	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	

<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
<i>Sida</i> ? <i>fibulifera</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Sida</i> ?sp. <i>Excedentifolia</i> (J. L. Egan 1925)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Sida calyxhymenia</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<i>Sida</i> sp. Indet	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	1	1	1	0	0		
<i>Solanum</i> ? <i>lasiophyllum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<i>Solanum lasiophyllum</i>	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1
<i>Solanum nummularium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0		
<i>Tecticornia disarticulata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Tecticornia</i> sp. Indet 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Tecticornia</i> sp. Indet 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Tecticornia</i> sp. Indet 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Teucrium</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Teucrium teucriiflorum</i>	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
<i>Thyridolepis mitchelliana</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
<i>Trianthema triquetrum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0		
<i>Vittadinia sulcata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Species	ER01	ER02	ER03	ER04	ER05	MW01	MW02	MW03	MW05	MW07	MW09	MW13	rMW/p2-01	rMW/p2-02	SMW01	SMW05	SMW07	SMW07-A	SMW09	SMW11	SMW12	SMW14	SMW15	SMW16	SMW17	SMW18	SMW19	SMW20	SMW21	SMW24	SMW25	SMW27	SMW31	SMWR01	WR01	WR02	WR03	WR04	
<i>?Anthobolus leptomerioides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	
<i>?Enchylaena tomentosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
<i>?Maireana</i> sp. Indet.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	
<i>?Portulaca oleracea</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>?Ptilotus</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>?Teucrium</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
<i>Abutilon oxycarpum</i>	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Abutilon</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0
<i>Acacia ?aptaneura</i>	0	0	0.1	0	0	0	0	16	5	0	0	0	5	0.5	5	0	0	0	0	0	0	0	0	0	8	5	8	0	0	0	0	0	0	0	20	3	0	20	0
<i>Acacia ?caesaneura</i>	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.1	0	1	0	0	0	0	0	0	0	0
<i>Acacia ?incurvaneura</i>	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	10	0	0	0	
<i>Acacia ?minyura</i>	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0.1	5	0	0	0	0	0	
<i>Acacia ?paraneura</i>	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Acacia ?pteraneura</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	25	25	0	0	0	0	0	0	0
<i>Acacia ?quadrimarginea</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Acacia aneura</i> complex	0	0	0	10	0	10	8	20	0	11	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0	15	0	0	0	0	0	0	1
<i>Acacia aptaneura</i>	0	6	0	10	0	15	20	0	0	10	1	2	0	0	0	0	0	0	0	0	7	0	4	0	0	0	0	0	30	0	0	0	6	0	0	0	0	0	
<i>Acacia caesaneura</i>	0	0	0	40	0	15	5	0	20	0	8	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	3	0	15	30	20	8	
<i>Acacia craspedocarpa</i>	0	50	0	0.1	0	0.1	1	0	0.1	0	0	2.5	0	0.5	0	0	0	0	0.5	0	0	0	0	0	0	0	0.5	0	0.1	0	1	0	0	0.1	0	0	0	2.5	
<i>Acacia incurvaneura</i>	0	0	0	0	3	0	0	0	0	12	15	0	0	0.1	8	20	0	0	0	0	0	0	0.1	0	1	0	0	0	0	0	0	0	0	0	0	10	0	25	
<i>Acacia minyura</i>	0	0	0	0	0	0	0	0	0	0	0	10	0	5	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Acacia mulganeura</i>	0	0	0	0	0	0	0	0	0	10	3	5	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0
<i>Acacia pteraneura</i>	1	0	0	0	25	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
<i>Acacia quadrimarginea</i>	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	0	0	0	0	0	0	0	10	8	3	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0	1	1.5	0	0	10	0	0	2	0	6	
<i>Acacia</i> sp. Indet	0	0	0	20	5	0.1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0.1	0	0		
<i>Acacia tetragonophylla</i>	0.1	1.5	0	1	0	5	25	9	2.5	2	2.5	4	0	0	5	0	0	0	0	0	0	0.5	0.1	0	0.1	0	0.1	0.1	0	1	1	10	0	0	5	0	4	0	
<i>Amyema fitzgeraldii</i>	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Amyema</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	
<i>Aristida</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
<i>Atriplex ?semilunaris</i>	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Atriplex ?vesicaria</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Atriplex codonocarpa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Atriplex semilunaris</i>	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Atriplex</i> sp. Indet	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Boerhavia ?coccinea</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0
<i>Boerhavia</i> sp. Indet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
<i>Centipeda thespidioides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
<i>Cheilanthes ?lasiophylla</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0

Family	Species (recorded in the 2020 detailed flora and vegetation survey only)
Aizoaceae	<i>Trianthema triquetrum</i>
Amaranthaceae	<i>Ptilotus aervoides</i>
	<i>Ptilotus divaricatus</i>
	<i>Ptilotus obovatus</i>
	<i>Ptilotus polystachyus</i>
	<i>Ptilotus schwartzii</i>
Apocynaceae	<i>Marsdenia australis</i>
Aspleniaceae	<i>Asplenium subglandulosum</i>
Asteraceae	<i>Centipeda thespidioides</i>
	<i>Erodiophyllum acanthocephalum</i>
	* <i>Sonchus oleraceus</i>
	<i>Vittadinia sulcata</i>
Campanulaceae	<i>Isotoma petraea</i>
Casuarinaceae	<i>Casuarina pauper</i>
Chenopodiaceae	<i>Atriplex bunburyana</i>
	<i>Atriplex codonocarpa</i>
	<i>Atriplex ?vesicaria</i>
	<i>Dysphania cristata</i>
	<i>Enchylaena tomentosa</i>
	<i>Maireana ?eriosphaera</i>
	<i>Maireana carnosae</i>
	<i>Maireana georgei</i>
	<i>Maireana pyramidata</i>
	<i>Maireana triptera</i>
	<i>Rhagodia drummondii</i>
	<i>Rhagodia eremaea</i>
	<i>Sclerolaena cuneata</i>
	<i>Sclerolaena diacantha</i>
	<i>Tecticornia disarticulata</i>
	<i>Tecticornia</i> sp. Indet. 1
	<i>Tecticornia</i> sp. Indet. 2.
	<i>Tecticornia</i> sp. Indet. 3.
Convolvulaceae	<i>Duperreya commixta</i>
Euphorbiaceae	<i>Euphorbia boophthona</i>
Fabaceae	<i>Acacia ?paraneura</i>
	<i>Acacia aneura</i>
	<i>Acacia aptaneura</i>
	<i>Acacia caesaneura</i>
	<i>Acacia craspedocarpa</i>
	<i>Acacia incurvaneura</i>
	<i>Acacia minyura</i>
	<i>Acacia mulganeura</i>
	<i>Acacia pteraneura</i>
	<i>Acacia quadrimarginea</i>
	<i>Acacia ramulosa</i> var. <i>ramulosa</i>

Family	Species (recorded in the 2020 detailed flora and vegetation survey only)
	<i>Acacia tetragonophylla</i>
	<i>Senna artemisioides</i> subsp. <i>helmsii</i>
	<i>Senna artemisioides</i> subsp. <i>X artemisioides</i>
	<i>Senna cardiosperma</i>
	<i>Senna charlesiana</i>
	<i>Senna glutinosa</i> subsp. <i>chatelainiana</i>
	<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)
	<i>Senna stricta</i>
Goodeniaceae	<i>Goodenia</i> sp. Indet
	<i>Scaevola spinescens</i>
Hemerocallidaceae	<i>Dianella revoluta</i>
Lamiaceae	<i>Teucrium teucriiflorum</i>
Loranthaceae	<i>Amyema fitzgeraldii</i>
	<i>Lysiana casuarinae</i>
Malvaceae	<i>Brachychiton gregorii</i>
	<i>Hibiscus</i> sp. Gardneri (A.L. Payne 1435)
	<i>Sida ectogama</i>
	<i>Sida</i> sp. Excedentifolia (J.L.Egan 1925)
Myrtaceae	<i>Eucalyptus</i> sp. Indet.
Nyctaginaceae	<i>Boerhavia</i> ? <i>coccinea</i>
Pittosporaceae	<i>Pittosporum angustifolium</i>
Phyllanthaceae	<i>Phyllanthus erwinii</i>
Poaceae	<i>Aristida</i> sp. Indet.
	<i>Enneapogon polyphyllus</i>
	<i>Eragrostis eriopoda</i>
	<i>Eragrostis lacunaria</i>
	<i>Eriachne</i> sp. Indet.
	<i>Neurachne</i> sp. Indet.
	<i>Paspalidium clementii</i>
	<i>Thyridolepis mitchelliana</i>
Portulacaceae	<i>Portulaca oleracea</i>
Proteaceae	<i>Grevillea berryana</i>
	<i>Hakea leucoptera</i> subsp. <i>sericipes</i>
	<i>Hakea lorea</i> subsp. <i>lorea</i>
	<i>Hakea preissii</i>
Pteridaceae	<i>Cheilanthes</i> ? <i>lasiophylla</i>
	<i>Cheilanthes sieberi</i>
Rubiaceae	<i>Psydrax rigidula</i>
	<i>Psydrax suaveolens</i>
Santalaceae	? <i>Anthobolus leptomerioides</i>
	<i>Exocarpos</i> ? <i>aphyllus</i>
	<i>Santalum lanceolatum</i>
	<i>Santalum spicatum</i>
Sapindaceae	<i>Dodonaea rigida</i>
Scrophulariaceae	<i>Eremophila georgei</i>

Family	Species (recorded in the 2020 detailed flora and vegetation survey only)
	<i>Eremophila gilesii</i> subsp. <i>variabilis</i>
	<i>Eremophila granitica</i>
	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>
	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>
	<i>Eremophila longifolia</i>
	<i>Eremophila margarethae</i>
	<i>Eremophila oppositifolia</i> subsp. <i>angustifolia</i>
	<i>Eremophila platycalyx</i>
	<i>Eremophila scoparia</i>
	<i>Eremophila serrulata</i>
	<i>Eremophila youngii</i> subsp. <i>youngii</i>
Solanaceae	<i>Nicotiana cavicola</i>
	<i>Solanum lasiophyllum</i>
	<i>Solanum nummularium</i>
Thymelaeaceae	Thymelaeaceae sp. Indet.

Family	Consolidated species list	Year sampled			
		2011	2014	2018	2020
Aizoaceae	<i>Trianthema triquetrum</i>				X
	<i>Tetragonia eremaea</i>	X			
Amaranthaceae	<i>Alternanthera denticulata</i>	X			
	<i>Ptilotus aevroides</i>	X	X		X
	<i>Ptilotus divaricatus</i>	X	X		X
	<i>Ptilotus exaltatus</i>	X			
	<i>Ptilotus gaudichaudii</i>	X	X		
	<i>Ptilotus helipteroides</i>	X			
	<i>Ptilotus macrocephalus</i>	X	X		
	<i>Ptilotus obovatus</i>	X	X	X	X
	<i>Ptilotus polystachyus</i>				X
	<i>Ptilotus schwartzii</i>	X			X
	Apocynaceae	<i>Marsdenia australis</i>	X	X	X
<i>Vincetoxicum lineare</i>		X			
Asphodelaceae	<i>Bulbine semibarbata</i>	X			
Aspleniaceae	<i>Asplenium subglandulosum</i>				X
Asteraceae	<i>Brachyscome ciliaris</i>	X			
	<i>Calocephalus knappii</i>	X			
	<i>Calocephalus multiflorus</i>	X			
	<i>Calotis hispidula</i>	X			
	<i>Calotis multicaulis</i>	X			
	<i>Centipeda thespidioides</i>	X			X
	<i>Cephalipterum drummondii</i>	X			
	<i>Chrysocephalum pterochaetum</i>	X			
	<i>Chthonocephalus pseudevax</i>	X			
	<i>Erodiophyllum acanthocephalum</i>	X	X		X
	<i>Gnephosis arachnoidea</i>		X		
	<i>Helipterum craspedioides</i>		X		
	<i>Isoetopsis graminifolia</i>	X			
	<i>Lemooria burkittii</i>	X			
	<i>Podolepis kendallii</i>	X			
	<i>Podolepis lessonii</i>	X			
	<i>Rhodanthe charsleyae</i>	X	X		
	<i>Rhodanthe maryonii</i>	X			
	<i>Rhodanthe propinqua</i>	X	X		
	<i>Roebuckiella ciliocarpa</i>	X			
	<i>Senecio gregorii</i>	X			
	<i>*Sonchus oleraceus</i>	X			X
	<i>Vittadinia sulcata</i>	X			X
	<i>Vittadinia eremaea</i>	X			
	<i>Waitzia acuminata</i>	X	X		
	Brassicaceae	<i>Lepidium oxytrichum</i>	X		
<i>Lepidium platypetalum</i>		X			
Campanulaceae	<i>Isotoma petraea</i>	X			X
	<i>Lobelia winfridae</i>	X			

Family	Consolidated species list	Year sampled			
		2011	2014	2018	2020
	<i>Wahlenbergia gracilenta</i>	X			
	<i>Wahlenbergia tumidifruca</i>	X	X		
Casuarinaceae	<i>Allocasuarina acutivalvis</i> #	X			
	<i>Casuarina pauper</i>				X
Chenopodiaceae	<i>Atriplex amnicola</i>	X			
	<i>Atriplex bunburyana</i>				X
	<i>Atriplex codonocarpa</i>				X
	<i>Atriplex semilunaris</i>	X		X	
	<i>Atriplex ?vesicaria</i>	X			X
	<i>Dysphania cristata</i>				X
	<i>Dysphania kalpari</i>	X			
	<i>Dysphania melanocarpa</i>	X			
	<i>Dysphania glomulifera</i> subsp. <i>eremaea</i>	X			
	<i>Enchylaena tomentosa</i>	X			X
	<i>Maireana ?eriosphaera</i>				X
	<i>Maireana atkinsiana</i>	X			
	<i>Maireana carnosa</i>	X	X		X
	<i>Maireana integra</i>	X	X		
	<i>Maireana georgei</i>	X	X	X	X
	<i>Maireana planifolia</i>	X			
	<i>Maireana pyramidata</i>				X
	<i>Maireana suaedifolia</i>		X		
	<i>Maireana thesioides</i>	X			
	<i>Maireana tomentosa</i>			X	
	<i>Maireana triptera</i>	X	X	X	X
	<i>Maireana villosa</i>		X		
	<i>Rhagodia drummondii</i>	X		X	X
	<i>Rhagodia eremaea</i>	X	X	X	X
	<i>Sclerolaena ?costata</i>			X	
	<i>Sclerolaena cuneata</i>				X
	<i>Sclerolaena diacantha</i>	X			X
	<i>Sclerolaena eriacantha</i>			X	
	<i>Sclerolaena eurotioides</i>	X			
	<i>Sclerolaena gardneri</i>	X			
	<i>Sclerolaena lanicuspis</i>	X			
	<i>Sclerolaena obliquicuspis</i>	X			
	<i>Tecticornia disarticulata</i>				X
	<i>Tecticornia</i> sp. Indet. 1				X
	<i>Tecticornia</i> sp. Indet. 2.				X
	<i>Tecticornia</i> sp. Indet. 3.				X
Convolvulaceae	<i>Convolvulus angustissimus</i> #	X	X		
	<i>Cuscuta australis</i> #	X			
	<i>Duperreya commixta</i>	X			X
Crassulaceae	<i>Crassula colorata</i> var. <i>acuminata</i>	X			
Cyperaceae	<i>?Fimbristylis dichotoma</i>			X	

Family	Consolidated species list	Year sampled			
		2011	2014	2018	2020
	<i>Bulbostylis barbata</i>	X			
Euphorbiaceae	<i>Euphorbia boophthona</i>				X
	<i>Euphorbia drummondii</i>	X			
	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	X	X		
Fabaceae	<i>Acacia ?paraneura</i>				X
	<i>Acacia aneura</i>	X	X	X	X
	<i>Acacia aptaneura</i>	X	X	X	X
	<i>Acacia ayersiana</i>			X	
	<i>Acacia burkittii</i>	X	X		
	<i>Acacia caesaneura</i>		X	X	X
	<i>Acacia craspedocarpa</i>	X	X	X	X
	<i>Acacia incurvaneura</i>			X	X
	<i>Acacia minyura</i>	X			X
	<i>Acacia mulganeura</i>				X
	<i>Acacia pteraneura</i>				X
	<i>Acacia quadrimarginea</i>				X
	<i>Acacia ramulosa</i> var. <i>ramulosa</i>	X	X	X	X
	<i>Acacia tetragonophylla</i>	X	X	X	X
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>			X	
	<i>Senna artemisioides</i> subsp. <i>helmsii</i>				X
	<i>Senna artemisioides</i> subsp. <i>X artemisioides</i>				X
	<i>Senna cardiosperma</i>				X
	<i>Senna charlesiana</i>	X	X		X
	<i>Senna glutinosa</i> subsp. <i>chatelainiana</i>				X
	<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)				X
	<i>Senna stowardii</i>		X		
	<i>Senna stricta</i>				X
<i>Swainsona phacoides</i>	X				
Geraniaceae	<i>Erodium cygnorum</i>	X			
Goodeniaceae	<i>Brunonia australis</i>	X			
	<i>Brunonia</i> sp. Goldfields (K.R. Newbey 6044)	X			
	<i>Goodenia havilandii</i>	X			
	<i>Goodenia lyrata</i> (P3)	X			
	<i>Goodenia mimuloides</i>	X			
	<i>Goodenia rosea</i>	X			
	<i>Scaevola spinescens</i>			X	X
Hemerocallidaceae	<i>Dianella revoluta</i>	X			X
Lamiaceae	<i>Teucrium teucriiflorum</i>	X	X	X	X
Loranthaceae	<i>Amyema fitzgeraldii</i>		X		X
	<i>Lysiana casuarinae</i>				X
	<i>Lysiana murrayi</i>		X		
Malvaceae	* <i>Malvastrum americanum</i>	X			
	<i>Abutilon cryptopetalum</i>	X			
	<i>Abutilon oxycarpum</i>	X	X		
	<i>Brachychiton gregorii</i>	X			X

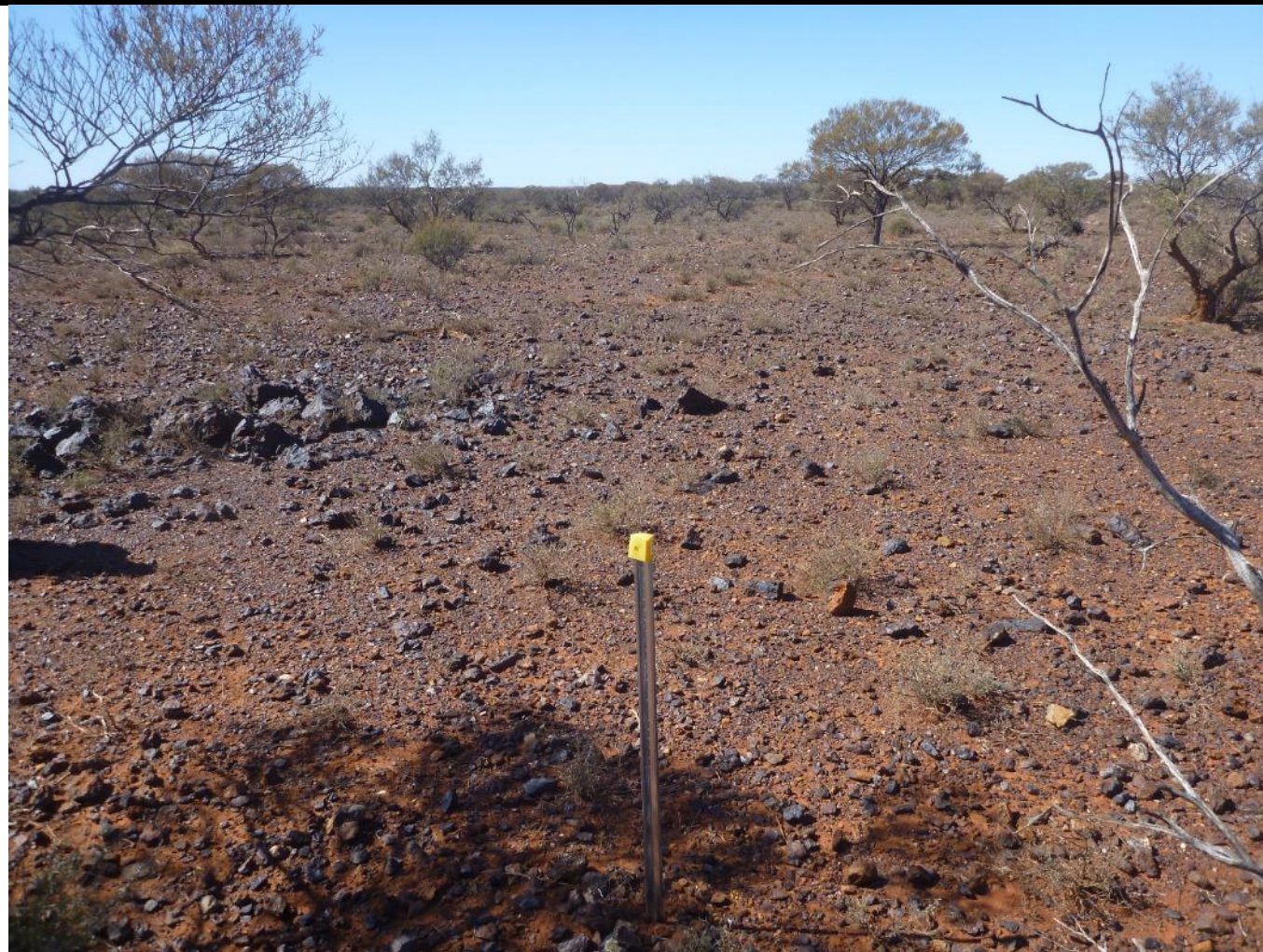
Family	Consolidated species list	Year sampled			
		2011	2014	2018	2020
	<i>Hibiscus burtonii</i>	X			
	<i>Hibiscus</i> sp. Gardneri (A.L. Payne 1435)				X
	<i>Sida ammophila</i>	X			
	<i>Sida calyxhymania</i>		X		
	<i>Sida ectogama</i>	X		X	X
	<i>Sida fibulifera</i>	X	X		
	<i>Sida</i> sp. Excedentifolia (J.L.Egan 1925)				X
	<i>Sida</i> sp. golden calyces glabrous (H. N. Foote 32)	X			
Montiaceae	<i>Calandrinia creethiae</i>	X			
	<i>Calandrinia polyandra</i>	X			
	<i>Calandrinia ptychosperma</i>	X	X		
Myrtaceae	<i>Eucalyptus</i> sp. Indet.				X
Nyctaginaceae	<i>Boerhavia</i> ?coccinea				X
Phrymaceae	<i>Peplidium aithocheilum</i>	X			
Pittosporaceae	<i>Pittosporum angustifolium</i>	X			X
Phyllanthaceae	<i>Phyllanthus erwinii</i>				X
Plantaginaceae	<i>Plantago debilis</i>	X			
Poaceae	<i>Aristida</i> sp. Indet.				X
	<i>Aristida contorta</i>	X	X	X	
	<i>Aristida holathera</i>		X		
	<i>Austrostipa elegantissima</i>	X	X		
	<i>Austrostipa scabra</i>	X	X		
	<i>Chloris truncata</i>	X			
	<i>Dactyloctenium radulans</i>	X			
	<i>Digitaria brownii</i>	X			
	<i>Enneapogon caerulescens</i>	X			
	<i>Enneapogon cylindricus</i>	X			
	<i>Enneapogon polyphyllus</i>				X
	<i>Enteropogon ramosus</i>	X			
	<i>Eragrostis dielsii</i>	X			
	<i>Eragrostis eriopoda</i>	X	X		X
	<i>Eragrostis lacunaria</i>		X		X
	<i>Eragrostis leptocarpa</i>	X			
	<i>Eragrostis pergracilis</i>	X	X		
	<i>Eriachne</i> sp. Indet.				X
	<i>Eriachne flaccida</i>	X	X		
	<i>Eriachne helmsii</i>	X			
	<i>Eriachne pulchella</i> subsp. <i>pulchella</i>		X		
	<i>Neurachne</i> sp. Indet.				X
	<i>Monachather paradoxus</i>	X		X	
	<i>Paspalidium clementii</i>				X
	<i>Themeda triandra</i>			X	
	<i>Thyridolepis mitchelliana</i>				X
	<i>Triopogonella loliformis</i>	X			

Family	Consolidated species list	Year sampled			
		2011	2014	2018	2020
Polygonaceae	* <i>Rumex vesicarius</i>	X			
Portulacaceae	<i>Portulaca oleracea</i>	X			X
Proteaceae	<i>Grevillea berryana</i>	X	X		X
	<i>Grevillea nematophylla</i>	X			
	<i>Hakea leucoptera</i> subsp. <i>sericipes</i>	X			X
	<i>Hakea lorea</i> subsp. <i>lorea</i>				X
	<i>Hakea preissii</i>	X	X	X	X
Pteridaceae	<i>Cheilanthes</i> ? <i>lasiophylla</i>				X
	<i>Cheilanthes sieberi</i>	X		X	X
Rhamnaceae	<i>Cryptandra pungens</i> #		X		
Rubiaceae	<i>Psydrax rigidula</i>			X	X
	<i>Psydrax suaveolens</i>	X	X	X	X
Santalaceae	? <i>Anthobolus leptomerioides</i>				X
	<i>Exocarpos</i> ? <i>aphyllus</i>				X
	<i>Santalum acuminatum</i>	X			
	<i>Santalum lanceolatum</i>	X	X		X
	<i>Santalum spicatum</i>		X	X	X
Sapindaceae	<i>Dodonaea rigida</i>	X	X		X
Scrophulariaceae	<i>Eremophila</i> ? <i>alternifolia</i>	X			
	<i>Eremophila eriocalyx</i>			X	
	<i>Eremophila foliosissima</i>	X			
	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	X	X	X	
	<i>Eremophila georgei</i>	X			X
	<i>Eremophila gilesii</i> subsp. <i>variabilis</i>				X
	<i>Eremophila glabra</i>	X	X		
	<i>Eremophila granitica</i>	X	X	X	X
	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	X	X	X	X
	<i>Eremophila latrobei</i> subsp. <i>filiformis</i>				X
	<i>Eremophila longifolia</i>	X	X		X
	<i>Eremophila margarethae</i>	X	X		X
	<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>	X			
	<i>Eremophila oppositifolia</i> subsp. <i>angustifolia</i>				X
	<i>Eremophila platycalyx</i>			X	X
	<i>Eremophila scoparia</i>				X
	<i>Eremophila serrulata</i>	X	X		X
<i>Eremophila youngii</i> subsp. <i>youngii</i>	X			X	
Solanaceae	<i>Nicotiana cavicola</i>				X
	<i>Nicotiana rosulata</i> subsp. <i>rosulata</i>	X			
	<i>Solanum ferocissimum</i>	X	X		
	<i>Solanum lasiophyllum</i>	X	X	X	X
	<i>Solanum nummularium</i>				X
	<i>Solanum terraneum</i>	X	X		
Thymelaeaceae	Thymelaeaceae sp. Indet.				X
Zygophyllaceae	<i>Tribulus astrocarpus</i>	X	X		

represents erroneous records from 2011 and 2014 surveys.

Appendix G Sample Site Data Reports (2020 survey)


Site Type	Site Name	Date	Site Photograph
Quadrat	ER01	1/4/2020 27/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450645	mE	
Northing	6809178	mN	
Site Characteristics			
Landform	Plateau on a Low rise		
Slope	Low		
Aspect	South-east		
Condition			
Vegetation Condition	Excellent		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	no		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Very common		
Exposed Bedrock (%)	Limited outcropping		
Vegetation Description	<p><i>Hakea preissii</i> and <i>Acacia pteraneura</i> low woodland over <i>Maireana triptera</i>, <i>Maireana pyramidata</i> and <i>Ptilotus obovatus</i> low shrubland.</p>		



ER01

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia pteraneura</i>	2ER01-02	4	1
<i>Acacia ?aptaneura</i>	2ER01-01	3	0.5
<i>Acacia tetragonophylla</i>		0.3	0.1
<i>Atriplex ?semilunaris</i>	2SMW07-02	0.1	0.1
<i>Atriplex</i> sp. Indet.	= SMW16-2	0.55	0.1
<i>Enneapogon polyphyllus</i>	SMW21-04	0.04	0.1
<i>Hakea preissii</i>		3.2	2
<i>Maireana pyramidata</i>	SMW21-08	0.8	0.5
<i>Maireana georgei</i>	2SMW01-05	0.15	0.1
<i>Maireana triptera</i>	2ER01-04	0.2	2
<i>Ptilotus obovatus</i>		0.6	1

Site Type	Site Name	Date	Site Photograph
Quadrat	ER02	1/4/2020 27/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	451170	mE	
Northing	6809220	mN	
Site Characteristics			
Landform	Drainage area, Floodplain		
Slope	Flat		
Aspect	South-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia craspedocarpa</i>, <i>Acacia aptaneura</i>, <i>Hakea preissii</i> low open forest over <i>Acacia tetragonophylla</i> scattered tall shrubs over <i>Eremophila platycalyx</i> open shrubland over <i>Ptilotus obovatus</i> scattered low shrubs.</p>		

ER02

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia aptaneura</i>	Q ER02 – 03 2ER02-01	6	6
<i>Acacia craspedocarpa</i>	SMW21-14 2ER02-02	6.5	50
<i>Acacia tetragonophylla</i>		4	1.5
<i>Atriplex</i> sp. Indet.	2ER02-05	0.3	0.1
<i>Enchylaena tomentosa</i>		0.3	0.1
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	2ER02-04	0.4	0.1
<i>Eremophila platycalyx</i>		1.5	3
<i>Hakea preissii</i>	SMW12-03	4	5
<i>Maireana pyramidata</i>	SMW21-08	0.5	0.1
<i>Portulaca</i> sp. Indet.	Not collected	0.02	0.1
<i>Ptilotus obovatus</i>		0.25	1.5
<i>Rhagodia drummondii</i>		0.5	0.1
<i>Rhagodia</i> sp. Indet.	= SMW12-2	0.8	0.1
<i>Santalum lanceolatum</i>		3.7	0.1
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>	2ER02-03	1.5	0.1
<i>Solanum lasiophyllum</i>		Not recorded	Not recorded

Site Type	Site Name	Date	Site Photograph
Quadrat	ER03	2/4/2020 27/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	451084	mE	
Northing	6809650	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	East		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Hakea preissii</i> tall open shrubland over <i>Eremophila youngii</i> subsp. <i>youngii</i> scattered shrubs over <i>Maireana pyramidata</i> scattered low shrubs.</p>		

ER03

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	2ER03-6	0.8	0.1
<i>Atriplex semilunaris</i>	SMW12-01 2SMW07-02	0.15	0.1
Chenopodiaceae sp. Indet.	Q ER03 - 03	0.4	0.1
Chenopodiaceae sp. Indet.	Q ER03 - 04	0.1	0.1
<i>Eremophila</i> sp. Indet.	Not collected	0.15	0.1
<i>Eremophila youngii</i> subsp. <i>youngii</i>	Q ER03 - 01	1.4	1.5
<i>Hakea preissii</i>	SMW12-03	2.2	5
<i>Maireana ?triptera</i>	Q ER03 - 02	0.15	0.1
<i>Maireana georgei</i>	2ER03-5	0.1	0.1
<i>Maireana pyramidata</i>	SMW21-08	0.6	1.5
<i>Maireana triptera</i>	2ER03-4	0.15	0.1
<i>Sclerolaena cuneata</i>		0.1	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	ER04	2/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	451110	mE	
Northing	6810284	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	East		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia caesaneura</i>, <i>Acacia</i> sp. Indet. <i>Acacia aneura</i> complex and <i>Acacia aptaneura</i> low open forest over <i>Acacia tetragonophylla</i> tall scattered shrubs over <i>Eremophila youngii</i> subsp. <i>youngii</i> open shrubland over <i>Ptilotus obovatus</i> low shrubland.</p>		

ER04

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia aneura</i> complex	Q ER04 – 02	5	10
<i>Acacia caesaneura</i>	Q ER04-01	5	40
<i>Acacia craspedocarpa</i>	2ER04-6	1.7	0.1
<i>Acacia</i> sp. Indet.	2ER04-1	3	20
<i>Acacia tetragonophylla</i>		2.5	1
<i>Atriplex</i> sp. Indet.	2ER04-08	0.4	0.1
<i>Enchylaena tomentosa</i>		0.1	0.1
<i>Eremophila</i> ? <i>forrestii</i> subsp. <i>forrestii</i>	2ER04-10	0.3	0.1
<i>Eremophila youngii</i> subsp. <i>youngii</i>	Q ER04 - 03	1.9	2
<i>Grevillea berryana</i>	SMW16-02 2ER04-08	0.4	0.1
Indet sp.	Q ER04 - 05	0.5	0.1
Indet sp.	Q ER04 - 04	2	0.5
<i>Maireana</i> ? <i>georgei</i>	2ER04-12	0.1	0.1
<i>Portulaca</i> sp. Indet.	Not collected	0.04	0.1
<i>Ptilotus obovatus</i>		0.4	1

Site Type	Site Name	Date	Site Photograph
Quadrat	ER05	2/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450485	mE	
Northing	6810090	mN	
Site Characteristics			
Landform	Ironstone outcrops		
Slope	Moderate		
Aspect	North-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Boulders		
Abundance (%)	Very common		
Exposed Bedrock (%)	Extensive outcropping		
Vegetation Description	<p><i>Acacia pteraneura</i> <i>Acacia</i> sp. Indet., <i>Acacia incurvaneura</i> and <i>Acacia quadrimarginea</i> low woodland over <i>Ptilotus obovatus</i>, <i>Ptilotus schwartzii</i> and <i>Eremophila</i> sp. Indet. low open heath.</p>		

ER05

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia incurvaneura</i>	2ER05-2	5	3
<i>Acacia pteraneura</i>	Q ER05 - 03	6	25
<i>Acacia quadrimarginea</i>	2ER05-1	3.5	2
<i>Acacia</i> sp. Indet.	2ER05-8	5	5
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>		0.1	0.1
<i>Duperreya commixta</i>	2ER05-7	0	0.1
<i>Enchylaena tomentosa</i>		0.4	0.1
<i>Eremophila</i> sp. Indet.	2ER05-5	0.3	5
<i>Grevillea berryana</i>		2	1
<i>Maireana pyramidata</i>		0.6	0.1
<i>Marsdenia australis</i>		0.5	0.1
<i>Pleurosorus rutifolius</i>		0.07	0.1
<i>Portulaca</i> sp. Indet.	Not collected	0.01	0.1
<i>Ptilotus obovatus</i>	Q ER05 - 02	0.3	30
<i>Ptilotus schwartzii</i>		0.3	15
<i>Santalum lanceolatum</i>	2ER05-4	3	0.1
<i>Santalum spicatum</i>		3.2	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW01	3/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452766	mE	
Northing	6808124	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	East		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Old		
Fire Notes	Fire scar		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia aptaneura</i> and <i>Acacia ?incurvaneura</i> and <i>Acacia</i> sp. Indet. (mulga complex) low woodland over <i>Acacia tetragonophylla</i> and <i>Santalum lanceolatum</i> tall open shrubland</p>		

MW01

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?caesaneura</i>	2MW01-2	2.2	0.1
<i>Acacia ?incurvaneura</i>	2MW01-5	3.5	5
<i>Acacia ?minyura</i>	2MW01-4	1.1	0.1
<i>Acacia aptaneura</i>	2MW01-05	5	15
<i>Acacia craspedocarpa</i>		2	0.1
<i>Acacia</i> sp. Indet. (mulga complex)	2MW01-11	5	10
<i>Acacia tetragonophylla</i>	2MW01-09	3	5
<i>Eremophila granitica</i>	Q MW01 - 2	0.8	0.5
<i>Erodiophyllum acanthocephalum</i>	2MW01-8	Not recorded	0.1
<i>Lysiana casuarinae</i>	2MW01-01	Not applicable	0.1
<i>Marsdenia australis</i>		0.5	0.1
<i>Teucrium teucriiflorum</i>	2MW01-10	1.2	0.1
<i>Ptilotus obovatus</i>		0.4	0.1
<i>Rhagodia eremaea</i>		1.5	0.1
<i>Santalum lanceolatum</i>		2.5	1
<i>Senna charlesiana</i>		1.5	0.1
<i>Senna glutinosa</i> subsp. <i>chatelainiana</i>	2MW01-7	1.2	0.1
<i>Senna</i> sp. Indet.	2MW01-07	0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW02	4/4/2020 24/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452483	mE	
Northing	6807892	mN	
Site Characteristics			
Landform	Plain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty clay loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia aptaneura</i>, <i>Acacia aneura</i> complex, <i>Acacia caesaneura</i>, low open forest over <i>Acacia tetragonophylla</i> and <i>Santalum lanceolatum</i> tall shrubland over <i>Acacia craspedocarpa</i> and <i>Eremophila serrulata</i> scattered shrubs over <i>Eremophila granitica</i> low open shrubland over <i>Eragrostis lacunaria</i> tussock grassland with <i>Rhodanthe charsleyae</i> herbland.</p>		

MW02

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?minyura</i>	2MW02-04	2	0.1
<i>Acacia aneura complex</i>	Not collected	7	8
<i>Acacia aptaneura</i>	2MW02-03	6	20
<i>Acacia caesaneura</i>	Q MW02 – 5 2MW02-02	3	5
<i>Acacia craspedocarpa</i>	Q MW02 - 9	1.5	1
<i>Acacia tetragonophylla</i>		3	25
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	2MW02-09	0.8	0.1
<i>Eremophila granitica</i>	Q MW02 - 2	0.5	9
<i>Eremophila serrulata</i>		1.2	1
<i>Lysiana murrayi</i>		Not applicable	0.1
<i>Phyllanthus erwinii</i>	Q MW02 - 6	0.04	0.1
<i>Portulaca oleracea</i>		0.04	0.1
<i>Psydrax</i> sp. Indet.	Not collected	1	0.1
<i>Santalum lanceolatum</i>	Q MW02 – 10 2MW02-01	2.4	1
<i>Senna cardiosperma</i>	Q MW02 – 7 2MW02-05	0.4	0.1
<i>Sida</i> sp. Indet.	Not collected	0.03	0.1


Site Type		Site Name	Date	Site Photograph
Quadrat		MW03	4/4/2020 24/8/2020	
Dimensions		20 x 20		
Described by		Jeni Alford, Scott Pansini		
Location (UTM)				
Easting		452286	mE	
Northing		6807710	mN	
Site Characteristics				
Landform		Drainage Area, Floodplain		
Slope		Low		
Aspect		North-west		
Condition				
Vegetation Condition		Very good		
Disturbance Type		Cattle grazing		
Disturbance Fauna		Cattle		
Fire Age		Unknown		
Fire Notes		Bare ground		
Water Presence		No		
Soils				
Soil Texture		Silty loam		
Soil Colour		Red-brown		
Rock Type		Ironstone		
Coarse Surface Particles				
Maximum Size (mm)		Gravel		
Abundance (%)		Rare		
Exposed Bedrock (%)		Negligible		
Vegetation Description		<p><i>Acacia ?aptaneura</i>/<i>Acacia aneura</i> low woodland over <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila serrulata</i> and <i>Ptilotus obovatus</i> scattered low shrubs</p>		



MW03

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Abutilon</i> sp. Indet.		0.3	0.1
<i>Acacia</i> ? <i>aptaneura</i>	2MW03-01	5	16
<i>Acacia aneura</i>	2MW03-02	5	20
<i>Acacia tetragonophylla</i>		4	9
<i>Amyema fitzgeraldii</i>		Not applicable	0.1
<i>Eremophila granitica</i>		0.7	0.5
<i>Eremophila longifolia</i>		1.4	0.1
<i>Eremophila serrulata</i>		0.9	1
Indet sp.	2MW03-03	0.1	0.1
<i>Ptilotus obovatus</i>		0.5	1
<i>Rhagodia eremaea</i>		1	0.1
<i>Santalum spicatum</i>		0.15	0.5
<i>Teucrium teucriiflorum</i>	2MW03-04	0.6	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW05	3/4/2020 27/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	453297	mE	
Northing	6806106	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia caesaneura</i> and <i>Acacia ?aptaneura</i> low woodland over <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila ?margarethae</i> and <i>Acacia ramulosa</i> var. <i>ramulosa</i> low shrubland.</p>		

MW05

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	2MW05-3	5	5
<i>Acacia caesaneura</i>	2MW05-4	7	20
<i>Acacia craspedocarpa</i>		2	0.1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		0.7	10
<i>Acacia tetragonophylla</i>		2.5	2.5
<i>Eremophila ?margarethae</i>	Q MW05 - 1	1	15
<i>Psyrax suaveolens</i>		0.6	0.1
<i>Rhagodia drummondii</i>	2MW05-1	1.3	0.1
<i>Teucrium teucriiflorum</i>		0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW07	4/4/2020 29/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452453	mE	
Northing	6804322	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia incurvaneura</i>, <i>Acacia mulganeura</i> and <i>Acacia aneura</i> complex low open forest over <i>Acacia ramulosa</i> var. <i>ramulosa</i> and <i>Acacia tetragonophylla</i> tall open shrubland over <i>Ptilotus obovatus</i> and <i>Eremophila granitica</i> low open shrubland over <i>Eragrostis pergracilis</i> very open tussock grassland.</p>		

MW07

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia aneura</i>	Not collected	4	11
<i>Acacia incurvaneura</i>	2MW07-2	5	12
<i>Acacia mulganeura</i>	2MW07-4	5	10
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		2.5	8
<i>Acacia tetragonophylla</i>		3	2
<i>Eragrostis pergracilis</i>		0.2	5
<i>Eremophila granitica</i>	Q MW07 - 3	0.6	1
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		1	0.1
<i>Eremophila margarethae</i>		0.4	0.1
<i>Eriachne flaccida</i>		0.4	0.1
<i>Psydrax suaveolens</i>		2.2	0.1
<i>Ptilotus obovatus</i>	Q MW07 - 4	0.5	2
<i>Rhagodia eremaea</i>		0.3	0.1
<i>Sida calyxhymenia</i>		0.6	0.1
<i>Solanum lasiophyllum</i>		0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW09	4/4/2020 29/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452773	mE	
Northing	6804828	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia incurvaneura</i>, <i>Acacia caesaneura</i> and <i>Acacia mulganeura</i> low woodland over <i>Acacia ramulosa</i> var. <i>ramulosa</i> and <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila margarethae</i> open shrubland.</p>		

MW09

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	2MW09-4	2.5	1
<i>Acacia caesaneura</i>	2MW09-5	5	8
<i>Acacia incurvaneura</i>	2MW09-1	5	15
<i>Acacia mulganeura</i>	2MW09-2	5	3
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		2.5	3
<i>Acacia tetragonophylla</i>		3	2.5
<i>Eremophila margarethae</i>		1.1	2
<i>Eriachne flaccida</i>		0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	MW13	3/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	454317	mE	
Northing	6804514	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?paraneura</i>, <i>Acacia minyura</i>, <i>Acacia mulganeura</i>, <i>Acacia tetragonophylla</i>, <i>Acacia craspedocarpa</i> and <i>Acacia aptaneura</i> low open forest over <i>Acacia ramulosa</i> var. <i>ramulosa</i> tall shrubland over <i>Eremophila granitica</i> low open shrubland.</p>		

MW13

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?paraneura</i>	Q MW13 - 1	6	20
<i>Acacia craspedocarpa</i>	Q MW13 - 4	3	2.5
<i>Acacia minyura</i>	2MW13-1	6.5	10
<i>Acacia mulganeura</i>	2MW13-3	6	5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		2.2	5
<i>Acacia tetragonophylla</i>		6	4
<i>Eremophila granitica</i>	Q MW13 - 3	0.3	2.5
<i>Sida</i> sp. Indet.	Q MW13 - 5	1	0.1
<i>Teucrium</i> sp. Indet.	Not collected	0.6	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW01	5/4/2020 29/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	458176	mE	
Northing	6809053	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty clay loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia pteraneura</i>, <i>Acacia incurvaneura</i> and <i>Acacia mulganeura</i> low woodland over <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila granitica</i> low shrubland.</p>		

SMW01

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	2SMW01-04	6	5
<i>Acacia incurvaneura</i>	2SMW01-05	5	8
<i>Acacia mulganeura</i>	2SMW01-02	4	4
<i>Acacia pteraneura</i>	2SMW01-03	6	10
<i>Acacia tetragonophylla</i>		2.5	5
<i>Cheilanthes</i> sp. Indet.	Not collected	0.1	0.1
<i>Eremophila granitica</i>		1	15
<i>Eremophila margarethae</i>		0.8	0.1
<i>Maireana</i> sp. Indet.	Not collected	1	0.1
Poaceae sp. Indet.	Not collected	0.6	0.1
<i>Ptilotus obovatus</i>		0.7	0.1
<i>Santalum lanceolatum</i>	Q SMW01 - 4	2.2	0.1
<i>Sida</i> sp. Indet.	Q SMW01 - 5	1.3	0.1
<i>Teucrium</i> sp. Indet.	Not collected	0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW05	4/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	454368	mE	
Northing	6805686	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia incurvaneura</i> low woodland over <i>Acacia ramulosa</i> var. <i>ramulosa</i> scattered shrubs over <i>Eremophila margarethae</i> low open shrubland.</p>		

SMW05

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia incurvaneura</i>	Q SMW05 – 2 2SMW05-1	6	20
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		1.4	1
<i>Eremophila georgei</i>	2SMW05-2	1.2	0.1
<i>Eremophila margarethae</i>		0.6	6

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW07	5/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450901	mE	
Northing	6810201	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	East		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Rhagodia</i> sp. Indet. scattered shrubs over <i>Maireana triptera</i>, <i>Maireana pyramidata</i> and <i>Ptilotus obovatus</i> low open shrubland.</p>		

SMW07

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Atriplex ?semilunaris</i>	2SMW07-2	0.05	0.1
<i>Atriplex ?vesicaria</i>	Q SMW7 – 4 2SMW07-5	0.6	0.1
<i>Hakea preissii</i>		1.5	0.1
<i>Maireana carnosa</i>		0.1	0.1
<i>Maireana georgei</i>	2SMW07-3	0.1	0.1
<i>Maireana pyramidata</i>		0.7	0.5
<i>Maireana triptera</i>	Q SMW7 - 2 2SMW07-1	0.3	1
<i>Portulaca oleracea</i>		0.03	0.1
<i>Ptilotus obovatus</i>		0.4	0.5
<i>Rhagodia</i> sp. Indet.	Q SMW7 - 7	1.2	1
<i>Sclerolaena cuneata</i>		0.04	0.1
<i>Solanum lasiophyllum</i>		0.12	0.1
<i>Tecticornia disarticulata</i>	2SMW07-7	0.1	0.1
<i>Tecticornia</i> sp. Indet. 1	Tecticornia 1	0.1	0.1
<i>Tecticornia</i> sp. Indet. 2	Tecticornia 2	0.1	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW07-A	2/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450871	mE	
Northing	6810170	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Flat		
Aspect	South-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red Orange		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Tecticornia</i> sp. Indet. 3 and <i>Maireana</i> sp. Indet. low shrubland.</p>		

SMW07-A

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Atriplex ?vesicaria</i>	2SMW07-a-2	0.05	0.1
<i>Atriplex codonocarpa</i>	2SMW07-a-3	0.15	0.1
Chenopodiaceae sp. Indet.	2SMW07-a-4	0.04	0.1
<i>Enchylaena tomentosa</i>		0.1	0.1
<i>Hakea preissii</i>		0.7	0.1
<i>Maireana</i> sp. Indet.	ER04-12	0.2	5
<i>Portulaca</i> sp. Indet.	Not collected	0.05	0.1
<i>Sclerolaena cuneata</i>		0.1	0.1
<i>Solanum lasiophyllum</i>		0.05	0.1
<i>Tecticornia</i> sp. Indet.3	Q SMW07-A - 1	0.2	15

Site Type		Site Name	Date	Site Photograph	
Quadrat		SMW09	1/4/2020 27/8/2020		
Dimensions		20 x 20			
Described by		Jeni Alford, Scott Pansini			
Location (UTM)					
Easting		451089	mE		
Northing		6809329	mN		
Site Characteristics					
Landform		Stony plain			
Slope		Flat			
Aspect		West			
Condition					
Vegetation Condition		Very good			
Disturbance Type		Cattle grazing			
Disturbance Fauna		Cattle			
Fire Age		Old			
Fire Notes		Fire scar			
Water Presence		No			
Soils					
Soil Texture		Silty loam			
Soil Colour		Red-brown			
Rock Type		Ironstone			
Coarse Surface Particles					
Maximum Size (mm)		Pebbles			
Abundance (%)		Very common			
Exposed Bedrock (%)		Negligible			
Vegetation Description		<p><i>Hakea preissii</i> and <i>Eremophila youngii</i> subsp. <i>youngii</i> open shrubland over <i>Maireana pyramidata</i> low open shrubland.</p>			

SMW09

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia craspedocarpa</i>	Q SMW09 - 5	1	0.5
<i>Atriplex ?vesicaria</i>	SMW16-02 2SMW09-1	0.25	0.5
<i>Eremophila youngii</i> subsp. <i>youngii</i>	SMWR02-01 2SMW09-3	1.5	1
<i>Hakea preissii</i>	SMW12-03	1.8	1
<i>Maireana pyramidata</i>	SMW21-08	0.9	3
<i>Maireana</i> sp. Indet.	ER03-4	0.2	0.1
<i>Ptilotus obovatus</i>		0.2	0.1
<i>Sclerolaena ?diacantha</i>	Q SMW09 - 1	0.15	0.1
<i>Sclerolaena cuneata</i>		0.06	0.1
<i>Sida ?fibulifera</i>	Q SMW09 - 3	0.05	0.1
<i>Solanum lasiophyllum</i>		0.05	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW11	1/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450502	mE	
Northing	6808483	mN	
Site Characteristics			
Landform	Footslope		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia caesaneura</i> low woodland over <i>Maireana</i> sp. Indet. low open shrubland.</p>		

SMW11

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia caesaneura</i>	Q SMW11 – 05 2SMW11-1	6	19
<i>Enchylaena tomentosa</i>		1.2	0.1
<i>Maireana georgei</i>	2SWM11-6	0.1	0.1
<i>Maireana</i> sp. Indet.	2SMW19-5	0.4	5
<i>Marsdenia australis</i>		0.8	0.1
<i>Psyrax suaveolens</i>		0.1	0.1
<i>Ptilotus obovatus</i>		0.6	0.1
<i>Rhagodia eremaea</i>		1.2	0.1
<i>Senna</i> sp. Indet.	Q SMW11 - 02	0.6	0.1
<i>Solanum lasiophyllum</i>		0.1	0.1


Site Type		Site Name	Date	Site Photograph
Quadrat		SMW12	31/3/2020 25/8/2020	
Dimensions		20 x 20		
Described by		Jeni Alford, Scott Pansini		
Location (UTM)				
Easting		450364	mE	
Northing		6808054	mN	
Site Characteristics				
Landform		Hillslope		
Slope		Moderate		
Aspect		West		
Condition				
Vegetation Condition		Very good		
Disturbance Type		None discernible		
Disturbance Fauna		None discernible		
Fire Age		Unknown		
Fire Notes		Bare ground		
Water Presence		No		
Soils				
Soil Texture		Silty loam		
Soil Colour		Red-brown		
Rock Type		Ironstone		
Coarse Surface Particles				
Maximum Size (mm)		Small rocks		
Abundance (%)		Very common		
Exposed Bedrock (%)		Limited outcropping		
Vegetation Description		<p><i>Hakea preissii</i> tall shrubland over <i>Maireana</i> sp. Indet. and <i>Ptilotus obovatus</i> low shrubland.</p>		



SMW12

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Atriplex ?semilunaris</i>	Q SMW12 - 01	0.1	0.1
<i>Enchylaena tomentosa</i>	2SMW12-3	0.5	0.1
<i>Eremophila youngii</i> subsp. <i>youngii</i>	2SMW12-2	0.2	0.1
<i>Hakea preissii</i>	Q SMW12 - 03	4	11
<i>Maireana pyramidata</i>	Q SMW12 - 04	0.7	0.1
<i>Maireana</i> sp. Indet.	2SMW12-4	0.3	5
<i>Ptilotus obovatus</i>		1.1	0.5
<i>Rhagodia drummondii</i>		2.1	0.1
<i>Sclerolaena ?diacantha</i>	Q SMW12 - 05	0.1	0.1
<i>Sclerolaena cuneata</i>		0.05	0.1
<i>Solanum lasiophyllum</i>		0.15	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW14	31/3/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450765	mE	
Northing	6808486	mN	
Site Characteristics			
Landform	Ironstone Outcrops		
Slope	Moderate		
Aspect	North-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Sandy Loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Small rocks		
Abundance (%)	Very common		
Exposed Bedrock (%)	Extensive outcropping		
Vegetation Description	<i>Acacia aptaneura</i> low open woodland over <i>Acacia minyura</i> and <i>Santalum lanceolatum</i> tall shrubland over <i>Maireana</i> sp. Indet. low shrubland		

SMW14

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>?Portulaca oleracea</i>	Q SMW14 - 01	0.03	0.1
<i>?Ptilotus</i> sp. Indet.	Not collected	0.03	0.1
<i>Acacia aptaneura</i>		5	7
<i>Acacia minyura</i>	Q SMW14 – 01 2SMW14-1	2.5	25
<i>Acacia tetragonophylla</i>		0.7	0.5
<i>Eremophila ?glutinosa</i>	Q SMW14 – 03 2SMW14-5	0.3	0.1
<i>Eremophila longifolia</i>		0.5	0.1
<i>Hibiscus</i> sp. <i>Gardneri</i> (A. L. Payne PRP 1435)		0.8	0.1
<i>Maireana georgei</i>	2SMW14-9	0.2	0.1
<i>Maireana pyramidata</i>		0.7	0.5
<i>Maireana</i> sp. Indet.	2SMW14-8	0.4	15
<i>Marsdenia australis</i>		0.8	0.1
<i>Psyrax suaveolens</i>		0.05	0.1
<i>Ptilotus obovatus</i>		0.5	0.1
<i>Santalum lanceolatum</i>		2	1
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		0.3	0.1
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>	2SMW14-6	0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW15	5/4/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450803	mE	
Northing	6807896	mN	
Site Characteristics			
Landform	Footslope		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-orange		
Rock Type	Shale		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia pteraneura</i>, <i>Acacia</i> ?<i>paraneura</i>, and <i>Acacia</i> ?<i>quadrimarginea</i> low woodland over <i>Eremophila latrobei</i> subsp. <i>latrobei</i>, <i>Ptilotus schwartzii</i> and <i>Maireana triptera</i> low open shrubland.</p>		

SMW15

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?paraneura</i>	Q SMW15 - 1	3.5	5
<i>Acacia ?quadrilmarginea</i>	Q SMW15 - 3 2SMW15-12	1.4	2
<i>Acacia aneura complex</i>	Q SMW15 - 2	1.4	5
<i>Acacia incurvaneura</i>	2SMW15-11	3	0.1
<i>Acacia pteraneura</i>	2SMW15-10	3	5
<i>Acacia tetragonophylla</i>		1	0.1
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	2SMW15-4	0.08	0.1
<i>Enchylaena tomentosa</i>	Q SMW15 - 4 2SMW15-7	0.8	0.1
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	2SMW15-9	0.9	1
<i>Hakea preissii</i>		1.4	0.5
<i>Maireana georgei</i>	2SMW15-13	0.2	0.1
<i>Maireana triptera</i>	2SMW15-1	0.4	3
<i>Marsdenia australis</i>		1	0.1
<i>Poaceae</i> sp. Indet.	2SMW15-14	0.08	0.1
<i>Psydrax suaveolens</i>	2SMW15-2	0.3	0.1
<i>Ptilotus obovatus</i>		0.5	0.1
<i>Ptilotus schwartzii</i>	2SMW15-3	0.5	5
<i>Rhagodia drummondii</i>	2SMW15-5	1.7	0.5
<i>Santalum spicatum</i>		1.5	0.1
<i>Scaevola spinescens</i>		0.8	0.1
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	2SMW15-6	0.15	0.1


Site Type	Site Name	Date	Site Photograph
Quadrat	SMW16	31/3/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450612	mE	
Northing	6808784	mN	
Site Characteristics			
Landform	Ironstone Outcrops		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Common		
Exposed Bedrock (%)	Limited outcropping		
Vegetation Description	<p><i>Acacia aptaneura</i> and <i>Hakea preissii</i> low woodland over <i>Maireana triptera</i> and <i>Ptilotus obovatus</i> low shrubland.</p>		



SMW16

Species List


Taxon	Specimen number	Height (m)	Cover (%)
? <i>Enchylaena tomentosa</i>	2SMW16-5	0.7	0.5
<i>Acacia aptaneura</i>	SMW17-05 2SMW16-2	4	4
<i>Atriplex</i> sp. Indet.	Not collected	0.7	0.5
<i>Eremophila longifolia</i>	2SMW16-1	0.4	0.1
<i>Hakea preissii</i>		3	4
<i>Maireana pyramidata</i>	SMW12-04	0.4	0.1
<i>Maireana triptera</i>	2SMW16-4	0.2	10
<i>Ptilotus obovatus</i>		0.5	1
<i>Sclerolaena cuneata</i>		0.1	0.1
<i>Sclerolaena diacantha</i>		0.05	0.1
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)	Q SWM16 - 01	0.3	0.1
<i>Solanum nummularium</i>		0.6	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW17	31/3/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450762	mE	
Northing	6808364	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Hakea preissii</i>, <i>Acacia ?aptaneura</i>, <i>Acacia pteraneura</i> and <i>Acacia incurvaneura</i> low woodland over <i>Senna cardiosperma</i> open shrubland over <i>Maireana triptera</i> and <i>Ptilotus obovatus</i> low open shrubland.</p>		

SMW17

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	Q SMW17 – 05 2SMW17-2	5	8
<i>Acacia ?caesaneura</i>	Q SMW17 - 02	0.5	0.5
<i>Acacia ?minyura</i>	2SMW17-9	3.5	0.5
<i>Acacia incurvaneura</i>	= SMW17-4	4.5	1
<i>Acacia pteraneura</i>	2SMW17-3	5	1
<i>Acacia tetragonophylla</i>	2SMW17-1	0.5	0.1
<i>Enchylaena tomentosa</i>		0.5	0.1
<i>Hakea preissii</i>	SMW12-03	4.5	10
<i>Maireana georgei</i>	2SMW17-11	0.1	0.1
<i>Maireana pyramidata</i>	= SMW21-8	0.2	0.1
<i>Maireana triptera</i>	2SMW17-8 2SMW17-10	0.2	8
<i>Pittosporum angustifolium</i>	2SMW17-5	0.5	0.1
<i>Ptilotus obovatus</i>		0.4	1
<i>Senna cardiosperma</i>	2SMW17-4	2	10
<i>Sida</i> sp. Indet.	SMW21-10 2SMW17-7	0.6	0.1
<i>Solanum lasiophyllum</i>		0.4	0.1
<i>Solanum nummularium</i>	2SMW17-6	0.1	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW18	30/3/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450726	mE	
Northing	6808111	mN	
Site Characteristics			
Landform	Ironstone Outcrops		
Slope	Low		
Aspect	West		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Old		
Fire Notes	Fire scar		
Water Presence	No		
Soils			
Soil Texture	Loamy sand		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?aptaneura</i> and <i>Hakea preissii</i> low open woodland over <i>Eremophila youngii</i> subsp. <i>youngii</i> scattered tall shrubs over <i>Ptilotus obovatus</i> and <i>Maireana</i> sp. Indet. low shrubland.</p>		

SMW18

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	2SMW18-4	5	5
<i>Enchylaena tomentosa</i>		0.2	0.1
<i>Eremophila youngii</i> subsp. <i>youngii</i>	2SMW18-1	3	5
<i>Hakea preissii</i>		4	2
Indet sp.	Not collected	0.05	0.1
<i>Maireana ?georgei</i>	2SMW15-8	0.4	0.1
<i>Maireana pyramidata</i>		0.2	0.1
<i>Maireana</i> sp. Indet.	2SMW15-3	0.3	10
Poaceae sp. Indet.	Not collected	0.05	0.1
<i>Ptilotus obovatus</i>		0.7	15
<i>Sclerolaena cuneata</i>		0.1	0.5
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		1	0.1
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>	2SMW18-3	0.4	0.1
<i>Solanum lasiophyllum</i>		0.2	0.1
<i>Solanum nummularium</i>		0.4	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW19	1/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450327	mE	
Northing	6808666	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red Orange		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?pteraneura</i>, <i>Acacia ?aptaneura</i> and <i>Hakea preissii</i> low woodland over <i>Maireana triptera</i> low open shrubland.</p>		

SMW19

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>?Maireana</i> sp.	2SWMW19-10	0.2	0.1
<i>Acacia ?aptaneura</i>	Q SWM19 – 05 2SWMW19-3	3	8
<i>Acacia ?pteraneura</i>	Q SWM19 - 02	3.5	10
<i>Acacia craspedocarpa</i>	Q SWM19 – 01 2SWMW19-4	1.7	0.5
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2SWMW19-1	0.3	0.1
<i>Acacia tetragonophylla</i>		0.6	0.1
<i>Atriplex</i> sp. Indet.	= SMW16-2	0.6	0.1
<i>Enchylaena tomentosa</i>		0.4	0.1
<i>Enneapogon polyphyllus</i>		0.05	0.1
<i>Eremophila ?granitica</i>	Q SWM19 - 05 2SWMW19-11	0.3	0.1
<i>Hakea preissii</i>		2.1	1
<i>Maireana pyramidata</i>		0.9	0.1
<i>Maireana triptera</i>	2SWMW19-5	0.3	9
<i>Psyrax suaveolens</i>		0.2	0.1
<i>Ptilotus obovatus</i>		0.6	0.1
<i>Scaevola spinescens</i>		0.6	0.1
<i>Sclerolaena cuneata</i>		0.5	0.1
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>		0.3	0.1
<i>Senna cardiosperma</i>		0.4	0.1
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)		0.6	0.1
<i>Sida</i> sp. Indet.	SMW21-11 2SWMW19-2	0.7	0.1
<i>Solanum lasiophyllum</i>		0.5	0.5

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW20	2/4/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450324	mE	
Northing	6808358	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	West		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty clay Loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	None		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia aneura</i> scattered shrubs over <i>Maireana</i> sp. Indet. low open shrubland.</p>		

SMW20

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia aneura</i> complex	Q SMW20 - 2	2	1
<i>Acacia tetragonophylla</i>		1	0.1
<i>Enneapogon polyphyllus</i>	SMW21-04	0.02	0.1
<i>Hakea preissii</i>		1	0.1
Indet sp.	Not collected	0.02	0.1
<i>Maireana</i> sp. Indet.	2SMW20-1	0.3	5
<i>Portulaca oleracea</i>		0.02	0.1
<i>Ptilotus obovatus</i>		0.06	0.1
<i>Sclerolaena cuneata</i>		0.1	0.1
<i>Senna artemisioides</i> subsp. <i>?helmsii</i>	2SMW20-2	0.6	0.1
<i>Solanum ?lasiophyllum</i>	2SMW21-7	0.2	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW21	31/3/2020 25/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450344	mE	
Northing	6807892	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	East		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia aptaneura</i> low woodland over <i>Acacia ramulosa</i> var. <i>ramulosa</i> tall scattered shrubs over <i>Sida</i> sp. Indet. open shrubland over <i>Ptilotus obovatus</i>, <i>Maireana triptera</i> and <i>Chenopodiaceae</i> sp. low shrubland.</p>		

SMW21

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?caesaneura</i>	2SMW21-6	0.5	0.1
<i>Acacia ?minyura</i>	Q SMW21 - 17	0.6	0.5
<i>Acacia aptaneura</i>	Q SMW21 - 07	7	30
<i>Acacia craspedocarpa</i>	Q SMW21 - 14	0.9	0.1
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		2.5	1
<i>Boerhavia ?coccinea</i>	Q SMW21 - 03	0.02	0.1
Chenopodiaceae sp. Indet.	Q SMW21 - 05	0.5	5
<i>Enchylaena tomentosa</i>	2SMW21-8	0.3	0.1
<i>Enneapogon polyphyllus</i>	Q SMW21 - 04	0.05	0.1
Indet sp.	SMW21-06	3	0.1
Indet sp.	Not collected	0.5	0.1
<i>Maireana pyramidata</i>	Q SMW21 - 08	1.5	0
<i>Maireana triptera</i>	Q SMW21 - 02 2SMW21-4 2SMW21-5	0.4	10
<i>Marsdenia australis</i>	Q SMW21 - 11	0.5	0.1
<i>Psydrax rigidula</i>		0.45	0.1
<i>Ptilotus obovatus</i>		0.5	12
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>	Q SMW21 - 13 Q SMW21 - 15	1	0.1
<i>Sida</i> sp. Indet.	Q SMW21 - 10 Q SMW21 - 12	1.1	3
<i>Solanum ?lasiophyllum</i>	2SMW21-7	0.8	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW24	6/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452041	mE	
Northing	6806562	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-east		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Old		
Fire Notes	Fire scar		
Water Presence	No		
Soils			
Soil Texture	Silty clay Loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?incurvaneura</i> low woodland over <i>Acacia ramulosa</i> var. <i>ramulosa</i> and <i>Acacia tetragonophylla</i> tall open shrubland.</p>		

SMW24

Species List

Taxon	Specimen number	Height (m)	Cover (%)
? <i>Teucrium</i> sp. Indet.	Not collected	0.3	0.1
<i>Acacia</i> ? <i>incurvaneura</i>	Q SMW24 - 1 Q SMW24 - 4 2SMW24-2	4	15
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	Q SMW24 - 3	2.1	1.5
<i>Acacia tetragonophylla</i>		2.0	1
<i>Eremophila gilesii</i> subsp. <i>variabilis</i>	Q SMW24 - 2	0.6	0.1
<i>Ptilotus obovatus</i>		0.5	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW25	3/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	456011	mE	
Northing	6804733	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty clay loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<i>Acacia ?pteraneura</i> , <i>Acacia craspedocarpa</i> and <i>Acacia ?caesaneura</i> low woodland over <i>Acacia tetragonophylla</i> scattered shrubs		

SMW25

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?caesaneura</i>	2SMW25-2	2.3	1
<i>Acacia ?pteraneura</i>	Q SMW25 - 1 Q SMW25 - 2 2SMW25-1	5	25
<i>Acacia craspedocarpa</i>	Q SMW25 - 3	2.4	1
<i>Acacia tetragonophylla</i>		1.3	1
<i>Maireana</i> sp. Indet.	Q SMW25 - 6	0.03	0.1
<i>Portulaca oleracea</i>		0.02	0.1
<i>Ptilotus polystachyus</i>		0.1	0.1
<i>Rhagodia drummondii</i>	Q SMW25 - 4 2SMW25-4	1.8	0.1
<i>Senna</i> sp. Indet.	Not collected	1.4	0.1
<i>Sida ?fibulifera</i>	Q SMW25 - 7	0.04	0.1
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)	Q SMW25 - 5	0.03	0.1
<i>Vittadinia sulcata</i>	Q SMW25 - 9	0.08	0.1


Site Type	Site Name	Date	Site Photograph
Quadrat	SMW27	2/4/2020 26/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	451165	mE	
Northing	6809931	mN	
Site Characteristics			
Landform	Footslope		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?pteraneura</i> and <i>Acacia aneura</i> and low open forest over <i>Acacia tetragonophylla</i>, <i>Eremophila youngii</i> subsp. <i>youngii</i>, <i>Santalum lanceolatum</i> and <i>Santalum spicatum</i> tall shrubland over <i>Senna artemisioides</i> subsp. <i>helmsii</i> scattered shrubs over <i>Ptilotus obovatus</i> low open shrubland.</p>		



SMW27

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Abutilon</i> sp. Indet.	Not collected	0.04	0.5
<i>Acacia</i> ? <i>minyura</i>	2SMW27-1	0.5	0.1
<i>Acacia</i> ? <i>pteraneura</i>	Q SMW27 – 10 2SMW27-3	5	25
<i>Acacia aneura</i> complex	Q SMW27 - 9	7	15
<i>Acacia tetragonophylla</i>		2	10
<i>Amyema</i> sp. Indet.	Not collected	0	0.1
<i>Centipeda thespidioides</i>	2SMW27-8	0.1	0.1
<i>Duperreya commixta</i>	2SMW27-5	0.3	0.1
<i>Enchylaena tomentosa</i>		0.6	0.1
<i>Eremophila</i> ? <i>latrobei</i> subsp. <i>latrobei</i>	2SMW27-7	0.9	0.1
<i>Eremophila longifolia</i>		1.7	0.1
<i>Eremophila youngii</i> subsp. <i>youngii</i>		2	2
<i>Goodenia</i> sp. Indet.	Q SMW27 - 5	0.05	0.1
Indet sp.	2ER04-11	0	0.1
<i>Maireana</i> sp. Indet.	ER04-12	0.3	0.1
Poaceae sp. Indet.	Q SMW27 - 2	6	0.1
<i>Portulaca</i> sp. Indet.	Not collected	0.04	0.1
<i>Psyrax rigidula</i>		1.4	0.1
<i>Ptilotus aevoides</i>	Q SMW27 - 4	0.03	0.1
<i>Ptilotus divaricatus</i>	Q SMW27 - 7	0.3	0.1
<i>Ptilotus obovatus</i>		0.4	1
<i>Rhagodia eremaea</i>	Q SMW27 - 8	2	0.1
<i>Santalum lanceolatum</i>		4	5
<i>Santalum spicatum</i>		2	2
<i>Scaevola spinescens</i>		1.4	0.1
<i>Senna artemisioides</i> subsp. <i>helmsii</i>		1.3	1
<i>Trianthema triquetrum</i>	Q SMW27 - 3	0.03	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	SMW31	5/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	456931	mE	
Northing	6805924	mN	
Site Characteristics			
Landform	Stony plain		
Slope	Flat		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia aptaneura</i>, <i>Acacia</i> ?<i>minyura</i> and <i>Acacia caesaneura</i> low open forest over <i>Acacia ramulosa</i> var. <i>ramulosa</i> and <i>Acacia</i> sp. Indet. tall shrubland over <i>Eremophila latrobei</i> subsp. <i>filiformis</i> and <i>Eremophila</i> ?<i>margarethae</i> low open shrubland.</p>		

SMW31

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>?Anthobolus leptomerioides</i>	Not collected	0.5	0.1
<i>Acacia ?minyura</i>	Q SMW31 – 3 2 SMW31-3	5	5
<i>Acacia aptaneura</i>	2 SMW31-4	4	6
<i>Acacia caesaneura</i>	2 SMW31-5	5	3
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	Q SMW31 - 8	3	10
<i>Acacia</i> sp. Indet.	Q SMW31 - 1	3	2
<i>Aristida</i> sp. Indet.	2 SMW31-6	0.1	0.1
<i>Cheilanthes</i> sp.	Not collected	0.7	0.1
<i>Dianella revoluta</i>		0.7	0.1
<i>Eragrostis eriopoda</i>		0.2	0.1
<i>Eremophila ?margarethae</i>	Q SMW31 - 7	0.6	2.5
<i>Eremophila latrobei</i> subsp. <i>filiformis</i>		0.8	2
<i>Eriachne</i> sp. Indet.	Not collected	0.15	0.1
<i>Psydrax suaveolens</i>		0.3	0.1
<i>Rhagodia ?drummondii</i>	Q SMW31 – 9 2 SMW31-2	0.5	0.1
<i>Sida</i> sp. Indet.	Q SMW31 - 6	0.9	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	WR01	3/4/2020 30/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	458227	mE	
Northing	6806271	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Rare		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia caesaneura</i>, <i>Acacia ?incurvaneura</i> and <i>Acacia ?aptaneura</i> low woodland over <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila granitica</i> scattered low shrubs</p>		

WR01

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	Q WR01 – 3 2wr01-3	6	3
<i>Acacia ?incurvaneura</i>	Q WR01 – 1 2wr01-1	4	10
<i>Acacia caesaneura</i>		4.5	15
<i>Acacia tetragonophylla</i>		3	5
<i>Eremophila granitica</i>		0.35	1
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		0.4	0.1
<i>Marsdenia australis</i>		0.6	0.1
<i>Psydrax rigidula</i>		0.45	0.1
<i>Psydrax suaveolens</i>		1	0.1
<i>Ptilotus obovatus</i>		0.3	0.1
<i>Santalum spicatum</i>		1.1	0.1
<i>Sida</i> sp. Indet.	SMW21-10	0.6	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	WR02	3/4/2020 29/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	455682	mE	
Northing	6809173	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	South-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia caesaneura</i>, <i>Acacia incurvaneura</i> and <i>Acacia mulganeura</i> low open forest over <i>Acacia ramulosa</i> var. <i>ramulosa</i> and <i>Grevillea berryana</i> tall open shrubland over <i>Eremophila margarethae</i> low shrubland over <i>Monachather paradoxus</i> scattered tussock grasses.</p>		

WR02

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia caesaneura</i>	Q WR02 - 2	6	30
<i>Acacia incurvaneura</i>	2MR02-03	4	10
<i>Acacia mulganeura</i>	2MR02-06	5	8
<i>Acacia ramulosa</i> var. <i>ramulosa</i>		2.5	2
<i>Acacia</i> sp. Indet.	2MR02-04	1.8	0.1
<i>Eragrostis</i> sp. Indet.	Not collected	0.1	0.1
<i>Eremophila margarethae</i>		0.9	12
<i>Grevillea berryana</i>	2WR02-1	3.2	1
<i>Psyrax suaveolens</i>		0.8	0.1
<i>Solanum lasiophyllum</i>		0.5	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	WR03	4/4/2020 28/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	452781	mE	
Northing	6807439	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	North-west		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia ?aptaneura</i>, <i>Acacia caesaneura</i> and <i>Acacia pteraneura</i> low open forest over <i>Acacia tetragonophylla</i> tall open shrubland over <i>Eremophila granitica</i> scattered low shrubs</p>		

WR03

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	Q WR03 – 4 2WR03-2	5	20
<i>Acacia caesaneura</i>		3.5	20
<i>Acacia pteraneura</i>	Q WR03 – 5 2WR03-1	5	3
<i>Acacia tetragonophylla</i>		2.5	4
<i>Eremophila granitica</i>		0.6	2
<i>Teucrium teucriiflorum</i>		0.5	0.1

Site Type	Site Name	Date	Site Photograph
Quadrat	WR04	3/4/2020 27/8/2020	
Dimensions	20 x 20		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	453340	mE	
Northing	6806751	mN	
Site Characteristics			
Landform	Drainage Area, Floodplain		
Slope	Low		
Aspect	West		
Condition			
Vegetation Condition	Very good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Silty loam		
Soil Colour	Red-brown		
Rock Type	Quartz		
Coarse Surface Particles			
Maximum Size (mm)	Gravel		
Abundance (%)	Moderate		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia incurvaneura</i>, <i>Acacia caesaneura</i> and <i>Acacia craspedocarpa</i> low open forest over <i>Acacia ramulosa</i> var. <i>ramulosa</i> tall shrubland over <i>Eremophila margarethae</i> low open shrubland.</p>		

WR04

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia aneura</i> complex	2WR04-3	3	1
<i>Acacia caesaneura</i>		4	8
<i>Acacia craspedocarpa</i>	Q WR04 - 2	3	2.5
<i>Acacia incurvaneura</i>	Q WR04 - 1 2WR04-2	4.5	25
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2WR04-1	2.5	6
<i>Eremophila margarethae</i>		0.8	4
<i>Eremophila</i> sp. Indet.	Not collected	0.9	0.1
<i>Marsdenia australis</i>		0.2	0.1
<i>Psydrax</i> sp. Indet.	Not collected	1.4	0.1
<i>Solanum lasiophyllum</i>		0.4	0.1
<i>Teucrium teucriiflorum</i>		0.4	0.1

Site Type	Site Name	Date	Site Photograph
Relevé	SMWR01	1/4/2020 30/8/2020	
Dimensions	Approximately 400 m ²		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450805	mE	
Northing	6808446	mN	
Site Characteristics			
Landform	Ironstone outcrops		
Slope	Moderate		
Aspect	North		
Condition			
Vegetation Condition	Excellent		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare ground		
Water Presence	No		
Soils			
Soil Texture	Sandy Loam		
Soil Colour	Red-brown		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Large rocks		
Abundance (%)	Very common		
Exposed Bedrock (%)	Extensive outcropping		
Vegetation Description	<p><i>Acacia ?aptaneura</i>, <i>Acacia quadrimarginea</i> and <i>Hakea preissii</i> low open forest over <i>Acacia</i> sp. Indet.. open shrubland over <i>Eremophila latrobei</i> subsp. <i>latrobei</i> and <i>Ptilotus schwartzii</i> low shrubland.</p>		

SMWR01

Species List


Taxon	Specimen number	Height (m)	Cover (%)
<i>?Enchylaena tomentosa</i>	SMWR01 – 04	0.4	0.1
<i>Acacia ?aptaneura</i>	SMWR01 – 06 = SMW21-07	4.5	20
<i>Acacia craspedocarpa</i>		3	0.1
<i>Acacia quadrimarginea</i>	SMWR01 - 04	4	10
<i>Acacia</i> sp. Indet.	SMWR01 - 07	2	1
<i>Boerhavia</i> sp. Indet.	Not collected	0.05	0.1
<i>Cheilanthes ?lasiophylla</i>	SMWR01 - 10	0.1	0.1
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	SMWR01 - 05	0.1	0
<i>Dodonaea rigida</i>		1.3	0.1
<i>Eragrostis lacunaria</i>	2smwr01-3	0.1	0.1
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>		1.6	10
<i>Eremophila</i> sp.	Not collected	0.15	0.1
<i>Euphorbia boophthona</i>	2smwr01-11	0.1	0
<i>Hakea preissii</i>		3	2
Indet sp.	SMWR01 - 06	1.7	0.1
<i>Isotoma petraea</i>		0.15	0.1
<i>Maireana triptera</i>		1	0
<i>Marsdenia australis</i>		0.15	0.1
<i>Paspalidium clementii</i>		0.1	0
Poaceae sp. Indet.	SMWR01 – 11 SMWR01 – 12 SMWR01 - 08	0.15	0.1
<i>Portulaca oleracea</i>		0.05	0.1
<i>Psyrax</i> sp. Indet.	SMW21-09	0.8	0.1
<i>Ptilotus obovatus</i>		0.15	0.1
<i>Ptilotus schwartzii</i>		0.4	5
<i>Rhagodia drummondii</i>	2smwr01-14	0.8	0.1
<i>Santalum lanceolatum</i>	2smwr01-4	2.5	0.5
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>		0.3	0.1
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)		1.1	0.1
<i>Sida</i> sp. Indet.	2smwr01-2	0.8	0.1
<i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)		0.9	0.1
<i>Solanum lasiophyllum</i>		0.05	0.1
<i>Thyridolepis mitchelliana</i>	SMWR01 – 09 2smwr01-8	0.07	0.1

Site Type	Site Name	Date	Site Photograph
Relevé	rMWp2-01	27/8/20	
Dimensions	Approximately 400 m ²		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	450303	mE	
Northing	6810017	mN	
Site Characteristics			
Landform	Slope of low rise		
Slope	Low		
Aspect	West		
Condition			
Vegetation Condition	Excellent		
Disturbance Type	None discernible		
Disturbance Fauna	None discernible		
Fire Age	Unknown		
Fire Notes	Bare Ground		
Water Presence	No		
Soils			
Soil Texture	Silty Loam		
Soil Colour	Red-orange		
Rock Type	Ironstone		
Coarse Surface Particles			
Maximum Size (mm)	Pebbles		
Abundance (%)	Very common		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<i>Acacia ?aptaneura</i> low open woodland over <i>Senna</i> sp. Meekatharra (E. Bailey 1-26) and <i>Senna artemisioides</i> subsp. <i>?helmsii</i> open shrubland		

rMWp2-01

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	rMWp2001 - 4	4	5
<i>Acacia ?caesaneura</i>	rMWp2001 - 5	4	0.1
<i>Dodonaea rigida</i>	rMWp2001 - 6	1.2	0.1
<i>Maireana triptera</i>	rMWp2001 - 3	0.2	0.1
<i>Senna artemisioides</i> subsp. <i>?helmsii</i>	rMWp2001 - 2	1.1	2
<i>Senna</i> sp. Meekatharra (E. Bailey 1-26)	rMWp2001 - 1	1.2	5

Site Type	Site Name	Date	Site Photograph
Relevé	rMWp2-02	30/8/20	
Dimensions	Approximately 400 m ²		
Described by	Jeni Alford, Scott Pansini		
Location (UTM)			
Easting	456018	mE	
Northing	6804498	mN	
Site Characteristics			
Landform	Drainage Area/Floodplain		
Slope	Flat		
Aspect	N/A		
Condition			
Vegetation Condition	Very Good		
Disturbance Type	Cattle grazing		
Disturbance Fauna	Cattle		
Fire Age	Unknown		
Fire Notes	Bare Ground		
Water Presence	No		
Soils			
Soil Texture	Clay loam		
Soil Colour	Red-brown		
Rock Type	None discernible		
Coarse Surface Particles			
Maximum Size (mm)	Negligible		
Abundance (%)	None		
Exposed Bedrock (%)	Negligible		
Vegetation Description	<p><i>Acacia minyura</i> x? and <i>Acacia craspedocarpa</i> low open woodland</p>		

rMWp2-02

Species List

Taxon	Specimen number	Height (m)	Cover (%)
<i>Acacia ?aptaneura</i>	rmwAug1 - 5	1.5	0.5
<i>Acacia craspedocarpa</i>	rmwAug1 - 4	2.5	0.5
<i>Acacia incurvaneura</i>	rmwAug1 - 1	4	0.1
<i>Acacia minyura</i> x?	rmwAug1 - 2 rmwAug1 - 6	3	5
<i>Eremophila granitica</i>	rmwAug1 - 12	0.3	0.1
<i>Eremophila serrulata</i>	rmwAug1 - 7	0.8	0.5
<i>Eremophila youngii</i> subsp. <i>youngii</i>	rmwAug1 - 13	0.25	0.1
<i>Senna artemisioides</i> subsp. <i>xartemisioides</i>	rmwAug1 - 10	0.4	0.1
<i>Senna charlesiana</i>	rmwAug1 - 9	1.3	0.1
<i>Sida</i> ?sp. <i>Excedentifolia</i> (J. L. Egan 1925)	rmwAug1 - 8	0.04	0.1

Appendix H Site Data Reports from Previous Surveys (2011, 2014 & 2018)

Wr01

Site Details:

Described by: Crystal Heydenrych

Date: 26-09-2018

Type: Relevé

MGA Zone: 51J 458223 mE 6806257 mN

Environmental Variables:

Landform: Plain

Aspect: N/A

Slope: Level (0-3°)

Water Presence: No - never

Land Surface/Soils:

Soil Type Sandy loam

Soil Colour: Brown

Rock Type: N/A

Coarse Surface Particles:

Site coverage: 0

Size: N/A

Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia caesaneura and *Acacia tetragonophylla* tall sparse shrubland over *Eremophila granitica* low isolated shrubs

Species List

Species	Height	Cover
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	0.5	0.1
<i>Acacia tetragonophylla</i>	3	5
<i>Acacia caesaneura</i>	4.5	20
<i>Aristida contorta</i>	0.25	0.1
<i>Cheilanthes sieberi</i>	0.2	0.1
<i>Eremophila forrestii</i>	0.38	0.1
<i>Eremophila granitica</i>	0.35	3
<i>Eremophila latrobei</i>	0.4	0.1
? <i>Fimbristylis dichotoma</i>	0.1	0.1
<i>Monachather paradoxus</i>	0.35	0.1
<i>Psyrax rigidula</i>	0.45	0.1
<i>Psyrax suaveolens</i>	1	0.1
<i>Ptilotus obovatus</i>	0.4	0.1
<i>Santalum spicatum</i>	1.1	0.1
<i>Sida ectogama</i>	0.45	0.1

Species	Height	Cover
<i>Spartothamnella teucriflora</i>	0.65	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
65	5	35

Veg Condition: Very Good

Disturbance fauna: Rabbits, cattle

Weeds: -

Disturbance Type: feral scats

Fire Age: N/A

Fire Notes: N/A

SITE PHOTOGRAPH



Wr02

Site Details:

Described by: Alice Bott
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 455686 mE 6809172 mN

Environmental Variables:

Landform: Plain
Aspect: Northwest
Slope: Level (0-3°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Clay loam
Soil Colour: Orange Brown
Rock Type: N/A

Coarse Surface Particles:

Site coverage: 0
Size: 2-6
Outcropping: <2

FLORA AND VEGETATION DATA

Description:

Acacia caesaneura, *Acacia aneura* and *Acacia ramulosa* subsp. *ramulosa* tall isolated shrubs over *Eremophila margarethae* low isolated shrubs over *Monachather paradoxus* low tussock grasses

Species List

Species	Height	Cover
<i>Acacia aneura</i>	4	15
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2.5	8
<i>Acacia tetragonophylla</i>	1.1	0.1
<i>Acacia caesaneura</i>	4	15
<i>Eremophila margarethae</i>	0.9	12
<i>Grevillea berryana</i>	3.2	1
<i>Monachather paradoxus</i>	0.4	1
<i>Psydrax suaveolens</i>	0.8	0.1
<i>Rhagodia eremaea</i>	1.1	0.1
<i>Solanum lasiophyllum</i>	0.4	0.1
<i>Spartothamnella teucriflora</i>	0.5	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
75	5	30

Veg Condition: Very Good

Disturbance fauna: Cattle

Weeds: -

Disturbance Type: feral trampling, grazing

Fire Age: 3-5

Fire Notes: N/A

SITE PHOTOGRAPH



Wr03

Site Details:

Described by: Crystal Heydenrych

Date: 26-09-2018

Type: Relevé

MGA Zone: 51J 452788 mE 6807445 mN

Environmental Variables:

Landform: Plain

Aspect: N/A

Slope: Level (0-3°)

Water Presence: No - never

Land Surface/Soils:

Soil Type: Sandy loam

Soil Colour: Brown

Rock Type: N/A

Coarse Surface Particles:

Site coverage: 0

Size: N/A

Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia caesaneura and *Acacia tetragonophylla* tall sparse shrubland over *Eremophila granitica* low isolated shrubs

Species List

Species	Height	Cover
<i>Acacia tetragonophylla</i>	2	12
<i>Acacia caesaneura</i>	3.5	20
<i>Cheilanthes sieberi</i>	0.1	0.1
<i>Eremophila granitica</i>	0.8	8
<i>Marsdenia australis</i>	0.1	0.1
<i>Ptilotus obovatus</i>	0.3	0.1
<i>Santalum spicatum</i>	1.5	0.1
<i>Sida ectogama</i>	0.2	0.1
<i>Solanum lasiophyllum</i>	0.3	0.1
<i>Spartothamnella teucriflora</i>	0.5	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
45	5	50

Veg Condition: Very Good

Disturbance fauna: Rabbit

Weeds: -

Disturbance Type: Feral scats, grazing

Fire Age: N/A

Fire Notes: N/A

SITE PHOTOGRAPH



Wr04

Site Details:

Described by: Alice Bott

Date: 26-09-2018

Type: Relevé

MGA Zone: 51J 453342 mE 6806755 mN

Environmental Variables:

Landform: Plain

Aspect: N/A

Slope: Level (0-3°)

Water Presence: No - never

Land Surface/Soils:

Soil Type: Clay loam

Soil Colour: Orange brown

Rock Type: N/A

Coarse Surface Particles:

Site coverage: <2

Size: 2-6

Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia caesaneura and *Acacia ramulosa* subsp. *ramulosa* tall sparse shrubland over *Eremophila margarethae* low isolated shrubs

Species List

Species	Height	Cover
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	1.8	3
<i>Acacia caesaneura</i>	4	12
<i>Acacia craspedocarpa</i>	0.5	0.1
<i>Eremophila margarethae</i>	0.45	12
<i>Monachather paradoxus</i>	0.1	0.1
<i>Ptilotus obovatus</i>	0.5	0.1
<i>Solanum lasiophyllum</i>	0.4	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
75	2	25

Veg Condition: Very Good

Disturbance fauna: Cattle, rabbit

Weeds: -

Disturbance Type: Clearing, Feral trampling, Grazing, Poor understorey cover, Tracks

Fire Age: 3-5 years.

Fire Notes: N/A

SITE PHOTOGRAPH



Er01

Site Details:

Described by: Crystal Heydenrych
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 450646 mE 6809184 mN

Environmental Variables:

Landform: Plain
Aspect: N/A
Slope: Level (0-3°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Clayey loam
Soil Colour: Brown
Rock Type: Ironstone

Coarse Surface Particles:

Site coverage: 2-10
Size: 2-6, 6-20, 20-60, 60-200
Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia aptaneura, *Acacia caesaneura*, *Hakea preissii* tall shrubland over *Maireana georgei*, *Ptilotus obovatus*, *Maireana pyramidata* low shrubland

Species List

Species	Height	Cover
<i>Acacia aptaneura</i>	3.1	8
<i>Acacia caesaneura</i>	3.5	7
<i>Atriplex ? semilunaris</i>	0.1	0.1
<i>Hakea preissii</i>	0.9	0.1
<i>Maireana pyramidata</i>	0.5	0.1
<i>Maireana tomentosa</i>	0.2	0.1
<i>Maireana georgei</i>	0.35	20
<i>Marsdenia australis</i>	0.1	0.1
<i>Neurachne</i> sp.	0.2	0.1
<i>Ptilotus obovatus</i>	0.8	2
<i>Rhagodia drummondii</i>	0.5	0.1
<i>Scaevola spinescens</i>	0.35	0.1
<i>Sclerolaena ? costata</i>	0.15	0.1
<i>Senna? artemisioides</i> subsp Meekatharra	0.3	0.1
<i>Solanum lasiophyllum</i> ,	0.25	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
35	1	45

Veg Condition: Very Good

Disturbance fauna: Cattle, rabbit

Weeds: -

Disturbance Type: Tracks

Fire Age: 3-5 years.

Fire Notes: N/A

SITE PHOTOGRAPH



Er02

Site Details:

Described by: Alice Bott
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 451171 mE 6809221 mN

Environmental Variables:

Landform: Plain
Aspect: Southeast
Slope: Level (0-3°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Clayey loam
Soil Colour: Red brown
Rock Type: Ironstone

Coarse Surface Particles:

Site coverage: 2-10
Size: 6-20
Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia craspedocarpa and *Hakea preissii* tall shrubland over *Ptilotus obovatus* and *Eremophila platycalyx* mid open shrubland over *Rhagodia drummondii* and *Maireana pyramidata* low isolated shrubs

Species List

Species	Height	Cover
<i>Acacia tetragonophylla</i>	1.1	0.1
<i>Acacia craspedocarpa</i>	3.4	50
<i>Eremophila platycalyx</i>	0.8	3
<i>Hakea preissii</i>	3.2	10
<i>Maireana pyramidata</i>	0.4	1
<i>Ptilotus obovatus</i>	0.5	35
<i>Rhagodia drummondii</i>	0.5	0.1
<i>Santalum spicatum</i>	3.7	0.1
<i>Senna artemisioides</i> subsp. <i>fillifolia</i>	0.8	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
35	1	45

Veg Condition: Good

Disturbance fauna: Cattle

Weeds: -

Disturbance Type: Feral trampling,
Grazing, Tracks

Fire Age: 3-5 years.

Fire Notes: N/A

SITE PHOTOGRAPH



Er03

Site Details:

Described by: Alice Bott
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 451088 mE 6809647 mN

Environmental Variables:

Landform: Plain
Aspect: Southeast
Slope: Level (0-3°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Clay loam
Soil Colour: Orange
Rock Type: N/A

Coarse Surface Particles:

Site coverage: <2
Size: 2-6
Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Hakea preissii tall isolated shrubs over *Eremophila platycalyx*, *Maireana pyramidata* and *Hakea pyramidata* mid open shrubland

Species List

Species	Height	Cover
<i>Acacia ? aptaneura</i>	0.8	0.1
<i>Acacia tetragonophylla</i>	0.3	0.1
<i>Atriplex semilunaris</i>	0.15	0.1
<i>Enneapogon sp</i>	0.1	0.1
<i>Eremophila platycalyx</i>	0.8	7
<i>Hakea preissii</i>	1.1	2
<i>Hakea preissii</i>	2.2	4
<i>Maireana pyramidata</i>	0.5	9
<i>Maireana tomentosa</i>	0.2	0.1
<i>Ptilotus obovatus</i>	0.3	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
60	2	33

Veg Condition: Good

Disturbance fauna: Cattle

Weeds: -

Disturbance Type: Clearing, Feral trampling, Grazing, Tracks

Fire Age: Unknown

Fire Notes: N/A

SITE PHOTOGRAPH



Er04

Site Details:

Described by: Alice Bott
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 451116 mE 6810286 mN

Environmental Variables:

Landform: Plain
Aspect: Southeast
Slope: Level (0-3°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Clay loam
Soil Colour: Orange brown
Rock Type: Quartzite

Coarse Surface Particles:

Site coverage: 2-10
Size: 20-60
Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia ayersiana and *Acacia aptaneura* tall open shrubland over *Eremophila platycalyx* and *Acacia tetragonophylla* mid isolated shrubs over *Ptilotus obovatus* and *Rhagodia drummondii* low isolated shrubs

Species List

Species	Height	Cover
<i>Acacia tetragonophylla</i>	1.6	5
<i>Acacia aptaneura</i>	5	10
<i>Acacia ayersiana</i>	5	25
<i>Acacia craspedocarpa</i>	1.7	0.1
<i>Aristida contorta</i>	0.2	0.1
<i>Eremophila platycalyx</i>	1.1	3
<i>Eremophila tetraptera</i>	0.5	0.1
<i>Hakea preissii</i>	0.5	0.1
<i>Maireana</i> sp.	0.25	0.1
<i>Ptilotus obovatus</i>	0.4	12
<i>Ptilotus</i> sp.	0.4	0.1
<i>Rhagodia drummondii</i>	0.4	12
<i>Santalum spicatum</i>	2.1	1
<i>Senna artemisioides</i> subsp. <i>filifolia</i>	0.4	0.1
<i>Sida ectogama</i>	0.9	0.1

Species	Height	Cover
<i>Solanum lasiophyllum</i>	0.1	0.1
<i>Spartothamnella teucriflora</i>	0.6	0.1
<i>Themeda triandra</i>	0.4	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
40	5	40

Veg Condition: Very Good

Disturbance fauna: Cattle

Weeds: -

Disturbance Type: Feral trampling, Grazing

Fire Age: 3-5 years.

Fire Notes: N/A

SITE PHOTOGRAPH



Er05

Site Details:

Described by: Crystal Heydenrych
Date: 26-09-2018
Type: Relevé
MGA Zone: 51J 450509 mE 6810073 mN

Environmental Variables:

Landform: Plain
Aspect: Northeast
Slope: Gently inclined (3-5°)
Water Presence: No - never

Land Surface/Soils:

Soil Type: Sandy loam
Soil Colour: Orange
Rock Type: Ironstone

Coarse Surface Particles:

Site coverage: 50
Size: 2-6,20-60,6-20,60-200
Outcropping: N/A

FLORA AND VEGETATION DATA

Description:

Acacia caesaneura and *Acacia quadrimarginea* tall open shrubland over *Ptilotus schwartzii* and *Ptilotus obovatus* mid to low open shrubs over *Rhagodia drummondii* low chenopod shrubs.

Species List

Species	Height	Cover
<i>Acacia quadrimarginea</i>	2.3	2
<i>Acacia ramulosa</i> var. <i>ramulosa</i>	2	0.1
<i>Acacia tetragonophylla</i>	1.5	0.1
<i>Acacia ayersiana</i>	3.1	20
<i>Acacia craspedocarpa</i>	2.1	0.1
<i>Cheilanthes sieberi</i>	0.1	0.1
<i>Maireana</i> sp.	0.25	0.1
<i>Maireana triptera</i>	0.4	0.1
<i>Psydrax rigidula</i>	0.1	0.1
<i>Ptilotus obovatus</i>	0.1	0.1
<i>Ptilotus schwartzii</i>	0.4	8
<i>Santalum spicatum</i>	3.2	0.1
<i>Sclerolaena eriacantha</i>	0.1	0.1

Ground Cover (percent)

Bare soil	Litter	Perennial ground cover
20	2	30

Veg Condition: Very Good

Disturbance fauna: Cattle

Weeds: -

Disturbance Type: Tracks

Fire Age: 3-5 years.

Fire Notes: N/A

SITE PHOTOGRAPH



Mount Weld – MW01

Site Details:

Described by: Neal Henshaw
Date: 15/09/2014
Type: Relevé
MGA Zone: 50 452767 mE 6808104 mN

Environmental Variables:

Landform: Flat
Slope: 2 degrees

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: Fine quartz gravel

Coarse Surface Particles:

Site coverage: 1%
Size: 0.1-0.5cm
Outcropping: none

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura*, *A. aptaneura* and *A. caesaneura* over a Tall Sparse Shrubland of *Acacia tetragonophylla* and *Santalum lanceolatum* over scattered Low Shrubs of *Eremophila granitica* over a Tussock Grassland of *Eragrostis pergracilis* over an Open Herbland of *Rhodanthe charsleyae*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aptaneura</i>	5	10
<i>Acacia aneura</i>	5	40
<i>Acacia caesaneura</i>	4	15
<i>Acacia burkittii</i>	1.5	<1
<i>Acacia tetragonophylla</i>	2	3
<i>Rhodanthe charsleyae</i>	0.2	15
<i>Eragrostis pergracilis</i>	0.2	20
<i>Ptilotus divaricatus</i>	1	1
<i>Santalum lanceolatum</i>	2.5	1
<i>Rhodanthe propinqua</i>	0.2	<1
<i>Aristida holathera</i>	0.4	<1
<i>Marsdenia australis</i>	cr	<1
<i>Ptilotus obovatus</i>	0.4	<1
<i>Wahlenbergia tumidifruca</i>	0.4	<1
<i>Rhagodia eremaea</i>	1.5	<1
<i>Senna charlesiana</i>	1.5	<1
<i>Acacia craspedocarpa</i>	2	<1
<i>Eremophila granitica</i>	1	1

Veg Condition: Good Fire Age: > 10 years
Weeds: Nill

SITE PHOTOGRAPH



Mount Weld – MW02

Site Details:

Described by: Neal Henshaw
Date: 16/09/2014
Type: Relevé
MGA Zone: 50 452484 mE 6807860 mN

Environmental Variables:

Landform: Drainage Line - seasonally inundated
Slope: 2 degrees

Soils:

Soil Texture: Sandy clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage: 1
Size: 0.1-0.5 cm
Outcropping: None

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura*, *A. aptaneura* and *A. caesaneura* over a Tall Shrubland of *Acacia tetragonophylla* and *Santalum spicatum* over scattered Low Shrubs of *Eremophila granitica* over a Tussock Grassland of *Eragrostis lacunaria* over a Herbland of *Rhodanthe charsleyae* and *Calandrinia ptychosperma*.

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	5	40
<i>Acacia tetragonophylla</i>	2	10
<i>Eremophila granitica</i>	0.8	1
<i>Rhodanthe charsleyae</i>	0.3	60
<i>Eragrostis lacunaria</i>	0.2	40
<i>Ptilotus macrocephalus</i>	0.2	<1
<i>Rhodanthe propinqua</i>	0.1	<1
<i>Convolvulus angustissimus</i>	cr	<1
<i>Senna stowardii</i>	1.5	<1
<i>Santalum spicatum</i>	2.5	1
<i>Acacia caesaneura</i>	5	5
<i>Acacia aptaneura</i>	5	5
<i>Eremophila serrulata</i>	1.2	1
<i>Ptilotus divaricatus</i>	1	<1
<i>Austrostipa elegantissima</i>	0.8	<1
<i>Santalum spicatum</i>	2.5	1
<i>Sonchus oleraceus</i>		OPP
<i>Abutilon oxycarpum</i>	0.4	<1
<i>Eremophila longifolia</i>	2.5	<1
<i>Lysiana murrayi</i>	epiphyte	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Calandrinia ptychosperma</i>	0.1	<1
<i>Amyema fitzgeraldii</i>	epiphyte	<1
<i>Grevillea berryana</i>		OPP
<i>Dysphania kalpari</i>		OPP

Veg Condition: Good Fire Age: > 10 years
Weeds: Yes

SITE PHOTOGRAPH



Mount Weld – MW03

Site Details:

Described by: Neal Henshaw
Date: 16/09/2014
Type: Relevé
MGA Zone: 50 452286 mE 6807703 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope:

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5cm

Coarse Surface Particles:

Site coverage: 1
Size: 0.1-0.5cm
Outcropping: none

FLORA AND VEGETATION DATA

Description: Low Open Woodland of *Acacia aneura* over a Tall Open Shrubland of *A. tetragonophylla* over a Low Open Shrubland of *Eremophila granitica* and *E. serrulata* over scattered low shrubs of *Ptilotus obovatus* over an Open Tussock Grassland of *Eragrostis pergracilis* and *Eragrostis lacunaria*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	5	30
<i>Eragrostis pergracilis</i>	0.1	15
<i>Acacia tetragonophylla</i>	2	5
<i>Ptilotus obovatus</i>	0.5	1
<i>Ptilotus aevoides</i>	0.1	<1
<i>Rhodanthe charsleyae</i>	0.1	5
<i>Rhagodia eremaea</i>	1	<1
<i>Calandrinia Ptychosperma</i>	0.1	<1
<i>Eremophila longifolia</i>	2	<1
<i>Eremophila granitica</i>	0.7	<1
<i>Abutilon oxycarpum</i>	0.3	<1
<i>Rhodanthe propinqua</i>	0.1	<1
<i>Eremophila serrulata</i>	1	1
<i>Ptilotus macrocephalus</i>	0.2	<1
<i>Eragrostis lacunaria</i>	0.2	2
<i>Ptilotus divaricatus</i>	0.7	<1
<i>Amyema fitzgeraldii</i>	epiphyte	<1
<i>Acacia aptaneura</i>		OPP
<i>Sida fibulifera</i>		OPP
<i>Marsdenia australis</i>		OPP
<i>Acacia burkittii</i>		OPP
<i>Solanum terraneum</i>		OPP
<i>Acacia craspedocarpa</i>		OPP
<i>Eucalyptus lucasii</i>		OPP

Veg Condition: Good Fire Age:
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW04

Site Details:

Described by: Neal Henshaw
Date: 16/09/2014
Type: Relevé
MGA Zone: 50 452239 mE 6807083 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope: 2 degrees

Soils:

Soil Texture: clay loam
Soil Colour: red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage: 1
Size: 0.1-0.5 cm
Outcropping: No

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura*, *A. aptaneura* and *A. caesaneura* over a Tall Open Shrubland of *A. tetragonophylla* over a Low Open Shrubland of *Eremophila granitica*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	5	35
<i>Acacia caesaneura</i>	3	10
<i>Acacia tetragonophylla</i>	2	3
<i>Eremophila granitica</i>	1	2
<i>Marsdenia australis</i>	cr	<1
<i>Sida calyxhymenia</i>	0.5	<1
<i>Ptilotus obovatus</i>	0.4	<1
<i>Acacia ramulosa</i>	0.6	<1
<i>Rhagodia eremaea</i>	1	<1
<i>Eremophila latrobei</i>	1	<1
<i>Eriachne flaccida</i>	0.3	<1
<i>Solanum lasiophyllum</i>	0.1	<1
<i>Spartothamnella teucrifflorea</i>	0.5	<1
<i>Santalum spicatum</i>	3	<1
<i>Acacia craspedocarpa</i>	2.5	<1
<i>Acacia aptaneura</i>	4	10
<i>Psydrax suaveolens</i>	0.7	<1
<i>Maireana georgei</i>		OPP
<i>Calandrinia</i> sp.		OPP
<i>Maireana triptera</i>		OPP

Veg Condition: Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW05

Site Details:

Described by: Neal Henshaw
Date: 16/09/2014
Type: Relevé
MGA Zone: 50 452313 mE 6806107 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope: 1 degree

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5 cm
Outcropping: No

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura* and *A. caesaneura* over *A. ramulosa* over a Shrubland of *Eremophila margarethae*.

Species List

Species Name	Height (m)	Cover (%)
<i>Calandrinia</i> sp.	5	35
<i>Acacia aneura</i>	5	10
<i>Acacia caesaneura</i>	2.5	7
<i>Acacia ramulosa</i>	0.7	10
<i>Eremophila margarethae</i>	0.2	<1
<i>Solanum lasiophyllum</i>	2	<1
<i>Psydrax suaveolens</i>	0.6	<1
<i>Spartothamnella teucriflora</i>	0.3	<1
<i>Eragrostis eriopoda</i>	0.3	<1
<i>Eriachne flaccida</i>	0.1	<1
<i>Helipterum craspedioides</i>	0.4	<1
<i>Maireana suaedifolia</i>	2	<1
<i>Acacia tetragonophylla</i>	0.4	<1
<i>Cryptandra pungens</i>	0.3	<1
<i>Maireana georgei</i>	1.2	<1
<i>Acacia craspedocarpa</i>		<1
<i>Grevillea berryana</i>		<1
<i>Solanum ferocissimum</i>		<1
<i>Dysphania kalpari</i>		OPP
<i>Maireana tomentosa</i>		OPP
<i>Rhagodia eremaea</i>		OPP
<i>Solanum lasiophyllum</i>		OPP
<i>Eremophila longifolia</i>		OPP

Veg Condition: Good Fire Age: > 10 years

Weeds:

SITE PHOTOGRAPH



Mount Weld – MW06

Site Details:

Described by: Neal Henshaw
Date: 16/09/2014
Type: Relevé
MGA Zone: 50 452440 mE 6806122 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope: 0

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type:

Coarse Surface Particles:

Site coverage:
Size:
Outcropping: No

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura*, *A. caesaneura* and *A. aptaneura* over a Tall Open Shrubland of *A. ramulosa* and *A. tetragonophylla* over a Low Open Shrubland of *Eremophila margarethae*

Species List

Species Name	Height (m)	Cover (%)
<i>Eragrostis eriopoda</i>	4	30
<i>Acacia aneura</i>	5	20
<i>Acacia caesaneura</i>	4	10
<i>Acacia aptaneura</i>	2	2
<i>Acacia tetragonophylla</i>	1.7	2
<i>Acacia ramulosa</i>	0.7	5
<i>Eremophila margarethae</i>	0.4	<1
<i>Eriachne flaccida</i>	0.5	<1
<i>Eremophila latrobei</i>	0.3	<1
<i>Solanum lasiophyllum</i>	1.2	<1
<i>Sida calyxhymenia</i>	0.5	<1
<i>Spartothamnella teucriflora</i>	0.1	<1
<i>Solanum terraneum</i>	0.4	<1
<i>Ptilotus obovatus</i>	0.3	<1
<i>Maireana triptera</i>	0.3	<1
<i>Hakea preissii</i>	3	<1
<i>Acacia craspedocarpa</i>	2	<1
<i>Convolvulus angustissimus</i>	cr	<1
<i>Grevillea berryana</i>		OPP
<i>Rhagodia eremaea</i>		OPP
<i>Psydrax suaveolens</i>		OPP
<i>Santalum lanceolatum</i>		OPP
<i>Eragrostis pergracilis</i>		OPP
<i>Calandrinia</i> sp.		OPP
<i>Eremophila serrulata</i>		OPP
<i>Marsdenia australis</i>		OPP

Veg Condition: Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW07

Site Details:

Described by: Neal Henshaw
Date: 17/09/2004
Type: Relevé
MGA Zone: 50 452454 mE 6804320 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope: 1 degree

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5
Outcropping: None

FLORA AND VEGETATION DATA

Description: Low Open Woodland of *Acacia aneura*, *A. aptaneura* and *A. caesaneura* over a Shrubland to Tall Shrubland of *A. ramulosa* and *A. tetragonophylla* over a Low Open Shrubland of *Eremophila granitica*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	3.5	10
<i>Acacia ramulosa</i>	3.5	10
<i>Eremophila granitica</i>	0.8	5
<i>Ptilotus obovatus</i>	0.5	2
<i>Eragrostis pergracilis</i>	0.2	5
<i>Eriachne flaccida</i>	0.4	<1
<i>Rhagodia eremaea</i>	1	<1
<i>Acacia aptaneura</i>	3.5	10
<i>Acacia tetragonophylla</i>	1.6	1
<i>Santalum spicatum</i>	2	<1
<i>Solanum terraneum</i>	0.2	<1
<i>Maireana triptera</i>	0.3	<1
<i>Eremophila latrobei</i>	1	<1
<i>Solanum lasiophyllum</i>	0.4	<1
<i>Eremophila margarethae</i>	0.4	<1
<i>Spartothamnella teucriflora</i>	0.5	<1
<i>Sida calyxhymenia</i>	0.6	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Rhodanthe charsleyae</i>	0.1	<1

Veg Condition: Good Fire Age: > 10 years
Weeds:

SITE PHOTOGRAPH



Mount Weld – MW08

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 452828 mE 6804445 mN

Environmental Variables:

Landform: Alluvial plain/plain
Slope: 1 degree

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5 cm
Outcropping: None

FLORA AND VEGETATION DATA

Description: Low Open Woodland of *Acacia aneura* and *A. caesaneura* over *A. ramulosa* over patchy Open Shrubland of *Eremophila margarethae* over a Very Open Tussock Grassland of *Eriachne pulchella* subsp. *pulchella*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	4	15
<i>Acacia caesaneura</i>	4	7
<i>Acacia ramulosa</i>	2.5	15
<i>Eremophila margarethae</i>	1	10
<i>Eriachne pulchella</i> subsp. <i>pulchella</i>	0.1	2
<i>Eremophila latrobei</i>	1	<1
<i>Ptilotus obovatus</i>	0.7	<1
<i>Marsdenia australis</i>	cr	<1
<i>Eriachne flaccida</i>	0.4	<1
<i>Eragrostis eriopoda</i>	0.3	<1
<i>Acacia tetragonophylla</i>	2.5	<1
<i>Santalum spicatum</i>	2.5	<1
<i>Solanum lasiophyllum</i>	0.3	<1
<i>Spartothamnella teucriflora</i>	1	<1
<i>Solanum terraneum</i>	0.1	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Dodonaea rigida</i>	0.8	<1
<i>Grevillea berryana</i>	3	<1
<i>Erodiophyllum acanthocephalum</i>	0.1	<1
<i>Psydrax suaveolens</i>	0.5	<1
<i>Sida calyxhymenia</i>	0.7	<1
<i>Acacia aptaneura</i>	4	<1
<i>Eremophila serrulata</i>	0.7	<1

Veg Condition: Very Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW09

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 452777 mE 6804828 mN

Environmental Variables:

Landform: Alluvial Plain/Plain
Slope:

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type:

Coarse Surface Particles:

Site coverage:
Size:
Outcropping: No

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura* and *A. caesaneura* over *A. ramulosa* with scattered *A. tetragonophylla* over an Open Shrubland of *Eremophila forrestii* subsp. *forrestii* and *E. margarethae*.

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>		4
<i>Acacia caesaneura</i>		5
<i>Acacia ramulosa</i>		2.5
<i>Acacia tetragonophylla</i>		2
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>		1
<i>Eremophila margarethae</i>		0.7
<i>Acacia aptaneura</i>		3
<i>Eriachne flaccida</i>		0.4
<i>Ptilotus obovatus</i>		0.4
<i>Eremophila serrulata</i>		0.5
<i>Spartothamnella teucriflora</i>		0.4

Veg Condition: Very Good Fire Age: > 10 years
Weeds:

SITE PHOTOGRAPH



Mount Weld – MW10

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 452373 mE 6804955 mN

Environmental Variables:

Landform: Alluvial Plain/Plain
Slope:

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5 cm
Outcropping: Nil

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura* and *A. caesaneura* over *A. ramulosa* with scattered *A. tetragonophylla* over an Open Shrubland of *Eremophila margarethae*.

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	5	30
<i>Acacia caesaneura</i>	5	15
<i>Acacia ramulosa</i>	2.5	15
<i>Eremophila margarethae</i>	0.5	10
<i>Eriachne flaccida</i>	0.4	<1
<i>Marsdenia australis</i>	cr	<1
<i>Acacia tetragonophylla</i>	2	<1
<i>Eragrostis eriopoda</i>	0.4	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Psydrax suaveolens</i>	1.5	<1
<i>Erodiophyllum acanthocephalum</i>	0.2	<1
<i>Solanum lasiophyllum</i>	0.1	<1
<i>Santalum lanceolatum</i>	1.5	<1
<i>Aristida contorta</i>		<1
<i>Maireana carnososa</i>	1.5	<1
<i>Maireana suaedifolia</i>	1.5	<1
<i>Eragrostis pergracilis</i>	0.1	<1
<i>Eremophila latrobei</i>	1	<1
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	0.3	<1
<i>Austrostipa scabra</i>	0.4	<1
<i>Waitzia acuminata</i>		<1
<i>Spartothamnella teucriflora</i>	0.4	<1
<i>Gnephosis arachnoidea</i>	0.2	<1
<i>Brachychiton gregorii</i>		OPP
<i>Dianella revoluta</i>		OPP

Veg Condition: Good Fire Age: > 10 years

Weeds:

SITE PHOTOGRAPH



Mount Weld – MW11

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 452299 mE 6804562 mN

Environmental Variables:

Landform: Floodout
Slope: 2 degrees

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type:

Coarse Surface Particles:

Site coverage: 0.1-0.5 cm
Size:
Outcropping: Nil

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura*, *A. aptaneura* and *A. caesaneura* over *A. tetragonophylla* over an Open Shrubland of *Eremophila margarethae*

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	4	30
<i>Acacia aptaneura</i>	4	10
<i>Acacia caesaneura</i>	4	10
<i>Acacia tetragonophylla</i>	2.5	5
<i>Ptilotus obovatus</i>	0.5	<1
<i>Santalum spicatum</i>	4	<1
<i>Rhagodia eremaea</i>	1.5	<1
<i>Spartothamnella teucriflora</i>	0.5	<1
<i>Eriachne flaccida</i>	0.4	<1
<i>Eremophila longifolia</i>	2.5	<1
<i>Eriachne pulchella</i> subsp. <i>pulchella</i>	0.1	<1
<i>Eremophila serrulata</i>	1	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Acacia craspedocarpa</i>	2.5	<1

Veg Condition: Very Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW12

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 454230 mE 6805014 mN

Environmental Variables:

Landform: Plain
Slope: 1 degree

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5 cm
Outcropping: nil

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura* and *A. caesaneura* over *A. ramulosa* and *A. tetragonophylla* over a Shrubland of *Eremophila margarethae*.

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>	5	30
<i>Acacia caesaneura</i>	5	20
<i>Acacia ramulosa</i>	2	15
<i>Eremophila margarethae</i>	0.8	15
<i>Psydrax suaveolens</i>	1.5	<1
<i>Eragrostis eriopoda</i>	0.4	<1
<i>Eriachne flaccida</i>	0.4	<1
<i>Eremophila latrobei</i>	1.2	<1
<i>Spartothamnella teucriflora</i>	0.5	<1
<i>Solanum lasiophyllum</i>	0.3	<1
<i>Acacia tetragonophylla</i>	3	2
<i>Marsdenia australis</i>	cr	<1
<i>Ptilotus obovatus</i>	0.4	<1
<i>Eremophila serrulata</i>	0.8	<1
<i>Santalum lanceolatum</i>	2	<1
<i>Sida calyxhymenia</i>	1	<1
<i>Acacia craspedocarpa</i>	1.8	<1
<i>Calandrinia</i> sp.	0.1	<1
<i>Tribulus astrocarpus</i>	0.1	<1
<i>Eragrostis pergracilis</i>	0.4	<1
<i>Brachychiton gregorii</i>		OPP
<i>Hakea preissii</i>		OPP
<i>Ptilotus gaudichaudii</i>		OPP

Veg Condition: Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Mount Weld – MW13

Site Details:

Described by: Neal Henshaw
Date: 17/09/2014
Type: Relevé
MGA Zone: 50 454322 mE 6804508 mN

Environmental Variables:

Landform: Plain
Slope: 2 degrees

Soils:

Soil Texture: Clay loam
Soil Colour: Red
Rock Type: 0.1-0.5 cm

Coarse Surface Particles:

Site coverage:
Size: 0.1-0.5 cm
Outcropping: Nil

FLORA AND VEGETATION DATA

Description: Low Woodland of *Acacia aneura* and *A. caesaneura* over *A. tetragonophylla* and *A. ramulosa* over a Low Open Shrubland of *Eremophila granitica* over a Sparse Tussock Grassland of *Eragrostis pergracilis*.

Species List

Species Name	Height (m)	Cover (%)
<i>Acacia aneura</i>		5
<i>Acacia caesaneura</i>		5
<i>Acacia tetragonophylla</i>		2.5
<i>Acacia ramulosa</i>		2
<i>Eremophila granitica</i>		0.5
<i>Ptilotus gaudichaudii</i>		0.4
<i>Ptilotus obovatus</i>		0.4
<i>Tribulus astrocarpus</i>		0.1
<i>Eriachne flaccida</i>		0.3
<i>Maireana villosa</i>		0.3
<i>Sida calyxhymenia</i>		0.5
<i>Rhagodia eremaea</i>		0.8
<i>Acacia craspedocarpa</i>		2
<i>Sida fibulifera</i>		0.1
<i>Marsdenia australis</i>		cr
<i>Psydrax suaveolens</i>		0.5
<i>Santalum spicatum</i>		1.8
<i>Acacia aptaneura</i>		4
<i>Gnephosis arachnoidea</i>		0.2
<i>Aristida contorta</i>		0.3
<i>Calandrinia</i> sp.		0.1
<i>Erodiophyllum acanthocephalum</i>		0.1
<i>Senna charlesiana</i>		OPP

Veg Condition: Very Good Fire Age: > 10 years
Weeds: Nil

SITE PHOTOGRAPH



Quadrat & Relevé Site Information and Photopoint Photos

Project: MWEL-VS-11004a **Site:** MWQ01

Described by: AC & RD **Date:** 25/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

Location: Proposed extension to evaporation ponds

MGA Zone & Coordinates: 51J; 454033 E; 6806258 N

Habitat: Plain

Soil: Pale orange clay loam with fine quartzite gravel

Vegetation: *Acacia aneura* Low Open Woodland over *Acacia* sp. Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Eragrostis pergracilis* Open Grassland and *Calandrinia creethiae* Open Herbland

Veg. Condition: Excellent

Fire Age: Estimated last burnt 10+ years ago

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	6	3-6	RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	3-6	RD002
<i>Acacia aneura</i> var. <i>major</i>	2	3-5	RD001
<i>Acacia ramulosa</i>	1-2	1-3	RD004
<i>Acacia tetragonophylla</i>	<1	3-4	RD005
<i>Brachyscome ciliocarpa</i>	<1	0.1	RD017
<i>Calandrinia creethiae</i>	8	0.05	RD014
<i>Calocephalus multiflorus</i>	<1	0.03	RD025
<i>Calotis hispidula</i>	<1	0.03	RD013
<i>Cheilanthes sieberi</i>	<1	0.1	RD015
<i>Chthonocephalus pseudevax</i>	<1	0.01	RD026
<i>Dysphania kalpari</i>	<1	0.05	RD012
<i>Eragrostis eriopoda</i>	<1	0.4	RD023
<i>Eragrostis pergracilis</i>	<1	0.03	RD020
<i>Eremophila georgei</i>	<1	0.8	RD009
<i>Eremophila margarethae</i>	8	1-2	RD006
<i>Eriachne helmsii</i>	<1	0.3	RD024
<i>Erodiophyllum acanthocephalum</i>	<1	0.15	RD022
<i>Erodium cygnorum</i>	<1	0.1	RD011
<i>Marsdenia australis</i>	<1	0.4	RD027
<i>Nicotiana rosulata</i>	7	0.1	RD019
<i>Ptilotus obovatus</i>	<1	0.6	RD010
<i>Rhagodia eremaea</i>	<1	0.5	RD007
<i>Rhodanthe charsleyae</i>	<1	0.2	RD018
<i>Santalum acuminatum</i>	<1	0.15	RD021
<i>Spartothamnella teucriflora</i>	<1	1.2	RD008
<i>Waitzia acuminata</i>	<1	0.05	RD016



Photopoint photo for quadrat MWQ01, 25/08/2011

Project: MWEL-VS-11004a **Site:** MWQ02

Described by: AC & RD **Date:** 25/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

Location: Proposed extension to evaporation ponds

MGA Zone & Coordinates: 51J; 454020 E; 6805983 N

Habitat: Plain **Soil:** Pale orange clay loam with fine quartzite gravel

Vegetation: *Acacia aneura* Low Open Woodland over *Acacia ramulosa* Scattered Shrubs over *Eremophila margarethae* Low Shrubland over *Eragrostis pergracilis* Open Grassland and *Calandrinia creethiae* Open Herbland

Vegetation Condition: Excellent **Fire Age:** Estimated last burnt 10+ years ago

Notes: Minimal disturbance although to browsed shrubs observed.

Species List:

Taxon	Cover (%)	Height (m)	Collection No.
<i>Acacia aneura</i> var. <i>aneura</i>	20	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	4-6	=RD002
<i>Acacia minyura</i>	<1	4	RD030
<i>Acacia ramulosa</i>	1	2	=RD004
<i>Acacia tetragonophylla</i>	1	3	=RD005
<i>Aristida contorta</i>	<1	0.1	RD033
<i>Brachyscome ciliocarpa</i>	<1	0.05	=RD017
<i>Brunonia</i> sp. Goldfields (K.R. Newbey 6044)	<1	0.1	RD034
<i>Calandrinia creethiae</i>	15	0.05	=RD014
<i>Calandrinia polyandra</i>	<1	0.05	RD048
<i>Calocephalus multiflorus</i>	<1	0.05	=RD025
<i>Calotis hispidula</i>	<1	0.05	=RD013
<i>Chthonocephalus pseudevax</i>	<1	0.05	=RD026
<i>Digitaria brownii</i>	<1	0.2	RD040
<i>Dysphania kalpari</i>	<1	0.1	=RD012
<i>Eragrostis eriopoda</i>	<1	0.4	=RD023
<i>Eragrostis pergracilis</i>	<1	0.05	RD032
<i>Eremophila georgei</i>	<1	0.7	=RD009
<i>Eremophila margarethae</i>	15	0.5-1.5	=RD006
<i>Eremophila serrulata</i>	<1	0.8	RD031
<i>Eriachne flaccida</i>	<1	0.6	RD047
<i>Erodiophyllum acanthocephalum</i>	25	0.05	=RD022
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Goodenia havilandii</i>	<1	0.1	RD042
<i>Maireana atkinsiana</i>	<1	0.3	RD039
<i>Marsdenia australis</i>	<1	0.03	=RD027
<i>Monachather paradoxus</i>	<1	0.1	=RD024
<i>Nicotiana rosulata</i>	<1	0.05	=RD019
<i>Plantago debilis</i>	<1	0.05	RD041
<i>Podolepis lessonii</i>	<1	0.05	RD036
<i>Psydrax suaveolens</i>	<1	0.9	=RD159
<i>Rhodanthe charsleyae</i>	<1	0.05	=RD018
<i>Rhodanthe maryonii</i>	<1	0.1	RD043
<i>Rhyncharrhena linearis</i>	<1	0.25	RD035
<i>Santalum acuminatum</i>	<1	0.7	=RD021
<i>Sida ectogama</i>	25	0.3	RD045
<i>Solanum lasiophyllum</i>	<1	0.2	RD046
<i>Solanum ferocissimum</i>	<1	0.15	RD037
<i>Spartothamnella teucriflora</i>	<1	0.6	=RD008
<i>Tripogon loliiformis</i>	<1	0.1	RD038
<i>Wahlenbergia tumidifructa</i>	<1	0.1	RD044
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photopoint photo for quadrat MWQ02, 25/08/2011

Project: MWEL-VS-11004a **Site:** MWQ03

Described by: AC & RD **Date:** 27/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 455969 E; 6804783 N

Habitat: Floodout area

Soil: Orange red heavy clay

Vegetation: *Acacia aneura* var. *aneura*, *A. aptaneura* Scattered Trees over *Acacia tetragonophylla* Scattered Shrubs over *Sclerolaena obliquicuspis* and *Ptilotus macrocephalus* Low Open Shrubland over *Rhodanthe charsleyae* Open Herbland

Veg. Condition: Excellent **Fire Age:** Unknown

Notes: Adjacent scalds and goat horn suggest previous stock grazing but still high native species richness

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Abutilon cryptopetalum</i>	<1	0.3	RD101
<i>Abutilon oxycarpum</i>	<1	0.1	RD109
<i>Acacia aneura</i> var. <i>aneura</i>	<1	1	RD130
<i>Acacia aptaneura</i>	2	2.5	RD135; RD139
<i>Acacia burkittii</i>	<1	3	RD131
<i>Acacia craspedocarpa</i>	<1	3	RD129
<i>Acacia minyura</i>	1	4-5	RD138
<i>Acacia tetragonophylla</i>	2	1-3	=RD005
<i>Alternanthera denticulata</i>	<1	0.05	RD104
<i>Atriplex ?vesicaria</i>	<1	0.5	RD126
<i>Atriplex semilunaris</i>	<1	0.2	RD119
<i>Brachyscome ciliaris</i>	<1	0.15	RD128
<i>Brachyscome ciliocarpa</i>	<1	0.1	RD113
<i>Bulbine semibarbata</i>	<1	0.15	RD108
<i>Calandrinia creethiae</i>	<1	0.05	=RD014
<i>Calandrinia eremaea</i>	<1	0.2	=RD073
<i>Calandrinia ptychosperma</i>	<1	0.05	RD115
<i>Calotis multicaulis</i>	<1	0.1	RD144
<i>Centipeda thespidioides</i>	<1	0.05	RD106
<i>Dactyloctenium radulans</i>	<1	0.1	RD111
<i>Dysphania kalpari</i>	<1	0.05	RD103
<i>Enchylaena tomentosa</i>	<1	0.4	RD118
<i>Eragrostis dielsii</i>	<1	0.15	RD114
<i>Eragrostis leptocarpa</i>	<1	0.1	RD100
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Grevillea nematophylla</i>	<1	2	RD134
<i>Isoetopsis graminifolia</i>	<1	0.05	RD102
<i>Maireana georgei</i>	<1	0.5	RD124
<i>Maireana integra</i>	<1	0.3	RD123
* <i>Malvastrum americanum</i>	<1	0.3	RD112
<i>Plantago debilis</i>	<1	0.05	RD095
* <i>Portulaca oleracea</i>	<1	0.05	RD116
<i>Ptilotus aervoides</i>	<1	prostrate	RD121
<i>Ptilotus divaricatus</i>	<1	0.5	RD098
<i>Ptilotus macrocephalus</i>	10	0.3	RD122
<i>Ptilotus obovatus</i>	1	0.4-0.6	RD125
<i>Rhagodia drummondii</i>	<1	0.4	RD140
<i>Rhodanthe charsleyae</i>	10	0.1	RD105

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Salsola</i> sp.	<1	0.2	RD120
<i>Santalum lanceolatum</i>	<1	1.8	RD136
<i>Sclerolaena cuneata</i>	<1	0.3	RD117; RD133
<i>Sclerolaena lanicuspis</i>	<1	0.1	RD127
<i>Sclerolaena obliquicuspis</i>	10	0.3	RD132
<i>Senna charlesiana</i>	<1	1.7	RD137
<i>Solanum lasiophyllum</i>	<1	0.6	RD097
<i>Swainsona phacoides</i>	<1	0.1	RD110
<i>Tetragonia eremaea</i>	<1	0.1	RD145
<i>Tripogon loliiformis</i>	<1	0.1	RD107
<i>Wahlenbergia gracilentia</i>	<1	0.07	RD096
<i>Zygophyllum iodocarpum</i>	<1	0.1	RD099



Photopoint photo for quadrat MWQ03, 27/08/2011

Project: MWEL-VS-11004a **Site:** MWQ04

Described by: AC & RD **Date:** 28/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 453258 E; 6805142 N

Habitat: Plain

Soil: Pale orange clayey loam with fine quartzite gravel

Vegetation: *Acacia aneura* var. *aneura* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* very Open Herbland

Veg. Condition: Excellent

Fire Age: Estimated last burnt 10+ years ago

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	4	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	1	5	=RD002
<i>Acacia aneura</i> var. <i>major</i>	4	4-6	=RD001
<i>Acacia ramulosa</i>	2	1-2	=RD004
<i>Acacia tetragonophylla</i>	1	1-3	=RD005
<i>Aristida contorta</i>	<1	0.05	=RD033
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia</i> aff. <i>eremaea</i>	<1	0.05	RD148
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Calocephalus knappii</i>	<1	0.05	RD153
<i>Calocephalus multiflorus</i>	<1	0.05	RD152
<i>Calotis hispidula</i>	<1	0.1	=RD013
<i>Chthonocephalus pseudevax</i>	<1	0.05	RD149
<i>Dysphania kalpari</i>	<1	0.05	=RD012
<i>Eragrostis eriopoda</i>	<1	0.2	=RD023
<i>Eragrostis pergracilis</i>	<1	0.07	=RD020
<i>Eremophila georgei</i>	<1	0.6	=RD009
<i>Eremophila margarethae</i>	4	0.3-0.5	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.1	=RD022
<i>Erodium cygnorum</i>	<1	0.05	=RD011
<i>Gilruthia osbornei</i>	<1	0.05	=RD083
<i>Lemooria burkittii</i>	<1	0.01	=RD146
<i>Maireana atkinsiana</i>	<1	0.3	=RD039
<i>Monachather paradoxus</i>	<1	0.05	=RD024
<i>Nicotiana rosulata</i>	<1	0.1	=RD019
<i>Podolepis lessonii</i>	<1	0.05	RD151
<i>Psydrax suaveolens</i>	<1	1	=RD159
<i>Rhodanthe charsleyae</i>	<1	0.15	=RD053
<i>Solanum ferocissimum</i>	<1	0.2	=RD037
<i>Solanum lasiophyllum</i>	<1	0.3	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.4	RD150
<i>Tripogon loliiformis</i>	<1	0.1	=RD038
<i>Velleia rosea</i>	<1	0.1	=RD029
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photopoint photo for quadrat MWQ04, 28/08/2011

Project: MWEL-VS-11004a **Site:** MWQ05

Described by: AC & RD **Date:** 28/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 453258 E; 6805142 N

Habitat: Plain

Soil: Pale orange sandy clay loam with fine quartzite gravel

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* Open Herbland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: A few shrubs of *Spartothamnella* with browsing damage; scats present

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Abutilon cryptopetalum</i>	<1	0.3	RD165
<i>Acacia aneura</i> var. <i>aneura</i>	4	5-7	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	4-7	=RD002
<i>Acacia aneura</i> var. <i>major</i>	2	3-7	=RD001
<i>Acacia ramulosa</i>	2	2	=RD004
<i>Acacia tetragonophylla</i>	1	2-3	=RD005
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	15	0.05	=RD014
<i>Calocephalus multiflorus</i>	<1	0.05	=RD152
<i>Calotis hispidula</i>	<1	0.1	=RD013
<i>Dianella revoluta</i>	<1	0.5	RD164
<i>Eragrostis eriopoda</i>	<1	0.3	=RD023
<i>Eragrostis pergracilis</i>	<1	0.1	=RD020
<i>Eremophila forrestii</i>	<1	0.5	=RD082
<i>Eremophila georgei</i>	<1	0.7	=RD009
<i>Eremophila margarethae</i>	4	0.3-0.6	=RD006
<i>Erodium cygnorum</i>	<1	0.05	=RD011
<i>Gilruthia osbornei</i>	<1	0.05	=RD083
<i>Goodenia havilandii</i>	<1	0.1	=RD077
<i>Helipterum craspedioides</i>	<1	0.1	RD161
<i>Maireana atkinsiana</i>	<1	0.2	=RD039
<i>Marsdenia australis</i>	<1	0.3	=RD027
<i>Monachather paradoxus</i>	<1	0.05	=RD024
<i>Nicotiana rosulata</i>	<1	0.1	=RD019
<i>Podolepis lessonii</i>	<1	0.05	=RD036
<i>Psydrax suaveolens</i>	<1	0.7	RD159
<i>Ptilotus helipteroides</i>	<1	0.07	RD166
<i>Rhagodia eremaea</i>	<1	0.5	=RD007
<i>Rhodanthe charsleyae</i>	<1	0.15	=RD053
<i>Rhodanthe maryonii</i>	<1	0.15	RD167
<i>Sida</i> sp. dark green fruit (S. van Leeuwen 2260)	<1	0.3	RD162
<i>Solanum lasiophyllum</i>	<1	0.4	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.3	RD163
<i>Tripogon loliformis</i>	<1	0.1	=RD038
<i>Velleia rosea</i>	<1	0.1	RD160
<i>Wahlenbergia tumidifruca</i>	<1	0.1	=RD044
<i>Waitzia acuminata</i>	<1	0.15	=RD016



Photopoint photo for quadrat MWQ05, 28/08/2011

Project: MWEL-VS-11004a **Site:** MWQ06

Described by: AC, RD **Date:** 28/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

Location: Near SW corner of Tenement E38/2558

MGA Zone & Coordinates: 51J; 454599 E; 6804855 N

Habitat: Plain

Soil: Orange heavy clay

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia tetragonophylla* Tall Scattered Shrubs over *Eremophila granitica* Low Scattered Shrubs over *Eragrostis pergracilis* Grassland

Veg. Condition: Excellent

Fire Age: Estimated last burnt 10+ years ago

Notes: Minimal disturbance although horse droppings observed.

Species List

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	10	3-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	3-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	5	3-6	=RD001
<i>Acacia minyura</i>	1	2	=RD030
<i>Acacia ramulosa</i>	1	2	=RD004
<i>Acacia tetragonophylla</i>	3	2-5	=RD005
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Bulbostylis barbata</i>	<1	0.1	RD178
<i>Calandrinia creethiae</i>	1	0.05	=RD014
<i>Calandrinia eremaea</i>	<1	0.15	RD176
<i>Calocephalus knappii</i>	<1	0.05	=RD153
<i>Calotis hispidula</i>	<1	0.05	=RD013
<i>Cephalopterum drummondii</i>	<1	0.1	=RD088
<i>Crassula colorata</i> var. <i>acuminata</i>	<1	0.02	=RD142
<i>Digitaria brownii</i>	<1	0.05	RD180
<i>Dysphania glomulifera</i> subsp. <i>eremaea</i>	<1	0.05	RD179
<i>Eragrostis leptocarpa</i>	<1	0.1	=RD100
<i>Eragrostis pergracilis</i>	35	0.1	=RD020
<i>Eremophila granitica</i>	2	0.4-0.7	RD168
<i>Eremophila margarethae</i>	<1	0.3	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.1	=RD022
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Gnephosis arachnoidea</i>	<1	0.1	RD172
<i>Goodenia havilandii</i>	<1	0.15	=RD077
<i>Isoetopsis graminifolia</i>	<1	0.04	=RD102
<i>Lemnoora burkittii</i>	<1	0.02	=RD146
<i>Maireana planifolia</i>	<1	0.4	RD170
<i>Maireana thesioides</i>	<1	0.2	RD174
* <i>Malvastrum americanum</i>	<1	0.07	=RD112
<i>Marsdenia australis</i>	<1	0.3	=RD027
<i>Plantago debilis</i>	<1	0.1	RD177
<i>Podolepis kendallii</i>	<1	0.1	RD182
<i>Podolepis lessonii</i>	<1	0.05	=RD036
<i>Psydrax suaveolens</i>	<1	0.6	=RD159
<i>Ptilotus aervoides</i>	<1	0.05	=RD121
<i>Ptilotus gaudichaudii</i>	<1	0.25	RD175

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Ptilotus obovatus</i>	<1	0.2-0.4	=RD010
<i>Rhagodia eremaea</i>	<1	0.4	=RD007
<i>Rhodanthe charsleyae</i>	1	0.1	=RD053
<i>Rhodanthe propinqua</i>	<1	0.1	RD171
<i>Santalum lanceolatum</i>	<1	4	=RD136
<i>Sclerolaena gardneri</i>	<1	0.2	RD181
<i>Solanum lasiophyllum</i>	<1	0.3	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.5	=RD163
<i>Tribulus astrocarpus</i>	<1	0.05	=RD155



Photopoint photo for quadrat MWQ06, 28/08/2011

Project: MWEL-VS-11004a **Site:** MWQ07

Described by: AC, RD **Date:** 28/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 455594 E; 6804359 N

Habitat: Plain **Soil:** Red brown clay loam with fine quartz gravel

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. major Low Open Woodland over *Acacia tetragonophylla* Tall Scattered Shrubs over *Eremophila granitica* and *Ptilotus obovatus* Low Open Shrubland over *Rhodanthe charsleyae* Open Herbland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: Minimal disturbance although horse droppings observed

Species List

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	2	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	4	4-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	2	4-6	=RD001
<i>Acacia tetragonophylla</i>	2	2-4	=RD005
<i>Aristida contorta</i>	<1	0.1	=RD033
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	<1	0.05	=RD014
<i>Calandrinia ptychosperma</i>	<1	0.05	=RD115
<i>Calocephalus knappii</i>	<1	0.05	=RD153
<i>Cephalopterum drummondii</i>	<1	0.1	=RD088
<i>Chthonocephalus pseudevax</i>	<1	0.2	=RD149
<i>Dysphania kalpari</i>	<1	0.1	=RD103
<i>Enchylaena tomentosa</i>	<1	0.2	
<i>Eragrostis leptocarpa</i>	<1	0.1	=RD100
<i>Eragrostis pergracilis</i>	<1	0.1	=RD032
<i>Eremophila granitica</i>	2	0.5-0.9	=RD168
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Gnephosis arachnoidea</i>	<1	0.05	=RD172
<i>Isoetopsis graminifolia</i>	<1	0.05	=RD102
<i>Lemooria burkittii</i>	<1	0.05	=RD146
<i>Lepidium oxytrichum</i>	<1	0.05	=RD143
<i>Maireana carnosa</i>	<1	0.15-0.25	=RD086
* <i>Portulaca oleracea</i>	<1	0.05	=RD116
<i>Ptilotus aevoides</i>	<1	0.05	=RD121
<i>Ptilotus exaltatus</i>	<1	0.25	=RD157
<i>Ptilotus gaudichaudii</i>	<1	0.3	=RD175
<i>Ptilotus macrocephalus</i>	<1	0.3	=RD122
<i>Ptilotus obovatus</i>	2	0.2-0.5	=RD010
<i>Rhagodia eremaea</i>	<1	0.9	=RD007
<i>Rhodanthe charsleyae</i>	20	0.1	=RD053
<i>Rhodanthe propinqua</i>	<1	0.05	=RD171
<i>Santalum acuminatum</i>	<1	1.7	=RD021
<i>Sclerolaena densiflora</i>	<1	0.2-0.3	RD185
<i>Sclerolaena lanicuspis</i>	<1	0.2	=RD127
<i>Senna charlesiana</i>	<1	0.8	=RD028
<i>Sida fibulifera</i>	<1	0.1	RD186

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Spartothamnella teucriflora</i>	<1	0.4	=RD008
<i>Tribulus astrocarpus</i>	<1	0.05	=RD155
<i>Zygophyllum iodocarpum</i>	<1	0.1	=RD099



Photopoint photo for quadrat MWQ07, 28/08/2011

Project: MWEL-VS-11004a **Site:** MWQ08

Described by: AC, RD **Date:** 29/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 456026 E; 6804508 N

Habitat: Plain

Soil: Orange red heavy clay

Vegetation: *Acacia aneura* var. *intermedia* Low Open Woodland and *Acacia tetragonophylla* Tall Open Shrubland over *Ptilotus obovatus* and *Sclerolaena lanicuspis* Low Open Shrubland over *Rhodanthe charsleyae* Open Herbland and *Tripogon loliiformis* Open Grassland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: Minimal disturbance but cow pat observed

Species List

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Abutilon oxycarpum</i>	<1	0.07	RD190
<i>Acacia aneura</i> var. <i>aneura</i>	1	2-4	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	2-4	=RD002
<i>Acacia minyura</i>	<1	2.5	=RD030
<i>Acacia tetragonophylla</i>	3	2-4	=RD005
<i>Austrostipa elegantissima</i>	<1	0.5	RD191
<i>Brachyscome ciliaris</i>	<1	0.15	=RD128
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Bulbine semibarbata</i>	<1	0.1	=RD108
<i>Calandrinia creethiae</i>	<1	0.05	=RD014
<i>Calandrinia eremaea</i>	<1	0.2	=RD073
<i>Calandrinia ptychosperma</i>	<1	0.05	=RD115
<i>Calotis hispidula</i>	<1	0.05	=RD013
<i>Calotis multicaulis</i>	<1	0.1	=RD144
<i>Centipeda thespidioides</i>	<1	0.05	=RD106
<i>Chloris truncata</i>	<1	0.1	RD197
<i>Convolvulus angustissimus</i>	<1	0.2	RD195
<i>Crassula colorata</i> var. <i>acuminata</i>	<1	0.05	RD194
<i>Cuscuta australis</i>	<1	0.4	RD192
<i>Dactyloctenium radulans</i>	<1	0.1	=RD111
<i>Duperreya commixta</i>	<1	2	RD196
<i>Dysphania kalpari</i>	<1	0.05	=RD103
<i>Enneapogon cylindricus</i>	<1	0.1	RD187
<i>Eragrostis leptocarpa</i>	<1	0.1	=RD100
<i>Eragrostis pergracilis</i>	<1	0.1	=RD032
<i>Eremophila ?alternifolia</i>	<1	1.1	RD198
<i>Eremophila serrulata</i>	1	0.5-0.7	RD188
<i>Goodenia havilandii</i>	<1	0.1	=RD042
<i>Goodenia mimuloides</i>	<1	0.1	RD199
<i>Maireana carnosa</i>	<1	0.15	=RD086
<i>Maireana georgei</i>	<1	0.4	=RD124
<i>Maireana triptera</i>	<1	0.3	RD200
* <i>Malvastrum americanum</i>	<1	0.3	=RD112
<i>Plantago debilis</i>	<1	0.05	RD193
* <i>Portulaca oleracea</i>	<1	0.05	=RD116
<i>Ptilotus aevroides</i>	<1	0.05	=RD121
<i>Ptilotus divaricatus</i>	<1	0.2	=RD098
<i>Ptilotus macrocephalus</i>	<1	0.2	=RD122
<i>Ptilotus obovatus</i>	5	0.3-0.5	=RD010

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Rhagodia eremaea</i>	<1	0.6	=RD007
<i>Rhodanthe charsleyae</i>	15	0.1	=RD053
<i>Salsola</i> sp.	<1	0.2	=RD120
<i>Sclerolaena cuneata</i>	<1	0.2	=RD133
<i>Sclerolaena gardneri</i>	<1	0.1	RD189
<i>Sclerolaena lanicuspis</i>	4	0.3	=RD127
<i>Senna charlesiana</i>	<1	0.7	=RD028
<i>Sida fibulifera</i>	<1	0.15	=RD186
<i>Solanum lasiophyllum</i>	<1	0.3	=RD046
<i>Swainsona phacoides</i>	<1	0.1	=RD110
<i>Tetragonia eremaea</i>	<1	0.15	=RD145
<i>Tripogon loliiformis</i>	15	0.1	=RD038
<i>Zygophyllum iodocarpum</i>	<1	0.1	=RD099



Photopoint photo for quadrat MWQ08, 29/08/2011

Project: MWEL-VS-11004a **Site:** MWQ09**Described by:** AC, RD **Date:** 29/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent**MGA Zone & Coordinates:** 51J; 458287 E; 6809226 N**Habitat:** Plain**Soil:** Pale orange heavy clay**Vegetation:** *Acacia aneura* var. *aneura* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia minyura* and *Acacia tetragonophylla* Tall Scattered Shrubs over *Eremophila granitica* Low Open Shrubland over *Eragrostis pergracilis* Open Grassland *Rhodanthe charsleyae* and *Calandrinia creethiae* Open Herbland**Veg. Condition:** Excellent**Fire Age:** Unknown**Notes:** Minimal disturbance**Species List:**

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Abutilon oxycarpum</i>	<1	0.4	=RD190
<i>Acacia aneura</i> var. <i>aneura</i>	4	5-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	1	5	=RD002
<i>Acacia aneura</i> var. <i>major</i>	4	5-7	=RD001
<i>Acacia minyura</i>	2	3-3.5	=RD030
<i>Acacia tetragonophylla</i>	2	2-4	=RD005
<i>Aristida contorta</i>	<1	0.1	=RD033
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	10	0.05	=RD014
<i>Cephalopterum drummondii</i>	1	0.15	=RD088
<i>Digitaria brownii</i>	<1	0.1	=RD180
<i>Eragrostis pergracilis</i>	10	0.1	=RD020
<i>Eremophila forrestii</i>	<1	0.4-0.7	=RD082
<i>Eremophila granitica</i>	5	0.3-0.6	=RD168
<i>Gnephosis arachnoidea</i>	1	0.1	=RD172
<i>Goodenia havilandii</i>	<1	0.1	=RD042
<i>Lemooria burkittii</i>	<1	0.05	=RD146
<i>Maireana carnosa</i>	<1	0.1	=RD086
<i>Marsdenia australis</i>	<1	0.3	=RD027
<i>Podolepis kendallii</i>	1	0.1	=RD182
<i>Podolepis lessonii</i>	<1	0.1	=RD036
<i>Ptilotus gaudichaudii</i>	<1	0.25	=RD175
<i>Ptilotus obovatus</i>	1	0.3-0.5	=RD010
<i>Rhagodia eremaea</i>	<1	0.6	=RD007
<i>Rhodanthe charsleyae</i>	10	0.1	=RD053
<i>Rhyncharhena linearis</i>	out	0.4	RD203
<i>Santalum lanceolatum</i>	<1	1.2	=RD136
<i>Sclerolaena densiflora</i>	<1	0.3	=RD185
<i>Senna charlesiana</i>	<1	1-2.5	RD201
<i>Sida ectogama</i>	<1	0.5	RD202
<i>Spartothamnella teucriflora</i>	<1	0.35	=RD008
<i>Tripogon loliiformis</i>	<1	0.1	=RD038



Photopoint photo for quadrat MWQ09, 29/08/2011

Project: MWEL-VS-11004a **Site:** MWQ10

Described by: AC, RD **Date:** 29/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 455475 E; 6809202 N

Habitat: Plain

Soil: Red brown sandy clay loam with fine quartzite gravel

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* Open Herbland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: Minimal disturbance; kangaroo scat observed

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	5	3-4	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	3-4	=RD002
<i>Acacia aneura</i> var. <i>major</i>	10	3-6	=RD001
<i>Acacia ramulosa</i>	2	2	=RD004
<i>Acacia tetragonophylla</i>	<1	2-3	=RD005
<i>Aristida contorta</i>	<1	0.1	=RD033
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	20	0.05	=RD014
<i>Calocephalus multiflorus</i>	<1	0.05	=RD152
<i>Cephalopterum drummondii</i>	<1	0.2	=RD088
<i>Cheilanthes sieberi</i>	<1	0.05	=RD015
<i>Eragrostis dielsii</i>	<1	0.1	=RD114
<i>Eragrostis eriopoda</i>	<1	0.2	=RD023
<i>Eragrostis pergracilis</i>	<1	0.1	=RD020
<i>Eremophila ?alternifolia</i>	<1	0.8	=RD198
<i>Eremophila georgei</i>	<1	0.7	=RD009
<i>Eremophila margarethae</i>	5	0.4-0.6	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.1	=RD022
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Gilruthia osbornei</i>	<1	0.05	=RD083
<i>Lemooria burkittii</i>	<1	0.03	=RD146
<i>Maireana atkinsiana</i>	<1	0.4	=RD039
<i>Maireana carnosia</i>	<1	0.1	=RD086
<i>Marsdenia australis</i>	<1	0.3	=RD027
<i>Monachather paradoxus</i>	<1	0.1	=RD024
<i>Psydrax suaveolens</i>	<1	0.5	=RD159
<i>Rhodanthe charsleyae</i>	<1	0.15	=RD053
<i>Rhodanthe maryonii</i>	<1	0.1	=RD043
<i>Santalum lanceolatum</i>	<1	0.9	=RD136
<i>Sida ectogama</i>	<1	0.4	=RD045
<i>Solanum lasiophyllum</i>	<1	0.3	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.4	=RD008
<i>Tripogon loliiformis</i>	<1	0.1	=RD038
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photopoint photo for quadrat MWQ10, 29/08/2011

Project: MWEL-VS-11004a **Site:** MWQ11

Described by: AC, RD **Date:** 30/08/2011 **Type:** Quadrat (50 x 50 m) **Season:** Excellent

MGA Zone & Coordinates: 51J; 453645 E; 6808634 N

Habitat: Plain

Soil: Red brown heavy loam clay

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila granitica* and *Acacia aneura* var. *major* Low Open Shrubland over *Calandrinia creethiae*, *Gnephosis arachnoidea* and *Rhodanthe charsleyae* Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Excellent **Fire Age:** Estimated last burnt 10+ years ago

Notes: Minimal disturbance; many *Acacia aneura* juveniles despite rabbit droppings being present

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	3	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	3	4-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	3	1-6	=RD001
<i>Acacia ramulosa</i>	2	1.5	=RD004
<i>Acacia tetragonophylla</i>	2	2-3	=RD005
<i>Aristida contorta</i>	<1	0.07	=RD033
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Cephalopterum drummondii</i>	<1	0.15	=RD088
<i>Crassula colorata</i> var. <i>acuminata</i>	<1	0.1	=RD142
<i>Digitaria brownii</i>	<1	0.1	=RD180
<i>Eragrostis pergracilis</i>	10	0.05	=RD020
<i>Eremophila foliosissima</i>	<1	0.3	=RD079
<i>Eremophila granitica</i>	2	0.3-0.6	=RD168
<i>Erodiophyllum acanthocephalum</i>	<1	0.1	=RD022
<i>Gnephosis arachnoidea</i>	5	0.1	=RD172
<i>Lemooria burkittii</i>	<1	0.03	=RD146
<i>Maireana carnosa</i>	<1	0.2	=RD086
<i>Marsdenia australis</i>	<1	0.6	=RD027
<i>Podolepis kendallii</i>	<1	0.1	=RD182
<i>Podolepis lessonii</i>	<1	0.05	=RD036
<i>Ptilotus gaudichaudii</i>	<1	0.15	=RD175
<i>Ptilotus helipteroides</i>	<1	0.2	=RD166
<i>Ptilotus obovatus</i>	<1	0.3	=RD010
<i>Rhodanthe charsleyae</i>	5	0.1	=RD053
<i>Rhodanthe propinqua</i>	<1	0.05	=RD171
<i>Spartothamnella teucriflora</i>	<1	0.4	=RD008
<i>Tetragonia eremaea</i>	<1	0.2	=RD145
<i>Tripogon loliiformis</i>	<1	0.9	=RD038



Photopoint photo for quadrat MWQ11, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR01

Described by: AC, RD **Date:** 29/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 454400 E; 6808376 N

Habitat: Plain

Soil: Red brown heavy clay

Vegetation: *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia tetragonophylla* Tall Scattered Shrubs over *Eremophila granitica* Low Open Shrubland over *Calandrinia creethiae* and *Rhodanthe charsleyae* Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>intermedia</i>	3	4-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	3	4-6	=RD001
<i>Acacia tetragonophylla</i>	1	3	=RD005
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Cephalopterum drummondii</i>	1	0.1	=RD088
<i>Eragrostis pergracilis</i>	10	0.1	=RD020
<i>Eremophila granitica</i>	4	0.5	=RD168
<i>Maireana carnososa</i>	<1	0.1	=RD086
<i>Rhodanthe charsleyae</i>	5	0.1	=RD053
<i>Santalum lanceolatum</i>	<1	3	=RD136



Photo of relevé MWR01, 29/08/2011

Project: MWEL-VS-11004a **Site:** MWR02
Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent
MGA Zone & Coordinates: 51J; 454386 E; 6808888 N

Habitat: Plain

Soil: Pale orange sandy loam clay

Vegetation: *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* Open Herbland and *Eragrostis pergracilis* very Open Grassland

Veg. Condition: Excellent

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>intermedia</i>	2	5	=RD002
<i>Acacia aneura</i> var. <i>major</i>	3	5	=RD001
<i>Acacia ramulosa</i>	2	2	=RD004
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Calocephalus multiflorus</i>	<1	0.1	=RD025
<i>Cephalopterum drummondii</i>	<1	0.1	=RD088
<i>Eragrostis pergracilis</i>	1	0.1	=RD020
<i>Eremophila margarethae</i>	3	0.3-0.6	=RD006
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photo of relevé MWR02, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR03

Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone and Coordinates: 51J; 455638 E; 6807739 N

Habitat: Plain

Vegetation: Mixed Herbland

Veg. Condition: Degraded

Fire Age: Unknown

Notes: Highly disturbed; indigenous species regenerating from seed on stockpiled soil

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>intermedia</i>	<1	0.2	=RD002
<i>Brachyscome ciliocarpa</i>	10	0.3	=RD017
<i>Calandrinia creethiae</i>	2	0.05	=RD014
<i>Dysphania kalpari</i>	5	0.2	=RD012
<i>Enchylaena tomentosa</i>	<1	0.3	
<i>Eremophila foliosissima</i>	<1	0.2	=RD079
<i>Erodiophyllum acanthocephalum</i>	20	0.6	=RD022
<i>Erodium cygnorum</i>	20	0.5	=RD011
<i>Maireana georgei</i>	<1	0.4	=RD124
<i>Monachather paradoxus</i>	<	0.3	=RD024
<i>Ptilotus obovatus</i>	<1	0.3	=RD010
<i>Rhodanthe charsleyae</i>	10	0.4	=RD053
<i>Solanum lasiophyllum</i>	1	0.4	=RD046
<i>Waitzia acuminata</i>	2	0.3	=RD016



Photo of relevé MWR03, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR04

Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 456942 E; 6807528 N

Habitat: Plain; **Soil:** Pale orange sandy loamy clay

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Open Shrubland over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* Open Herbland

Veg. Condition: Excellent **Fire Age:** Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	5	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	4-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	3	4-6	=RD001
<i>Acacia ramulosa</i>	5	2-3	=RD004
<i>Brachyscome ciliocarpa</i>	<1	0.1	=RD017
<i>Calandrinia creethiae</i>	3	0.05	=RD014
<i>Eragrostis eriopoda</i>	<1	0.2	=RD023
<i>Eremophila ?alternifolia</i>	<1	0.7	=RD198
<i>Eremophila forrestii</i>	<1	0.6	=RD082
<i>Eremophila margarethae</i>	5	0.3-0.6	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.1	=RD022
<i>Erodium cygnorum</i>	<1	0.05	=RD011
<i>Maireana georgei</i>	<1	0.3	=RD124
<i>Podolepis kendallii</i>	<1	0.1	=RD182
<i>Rhodanthe maryonii</i>	<1	0.1	=RD043
<i>Solanum lasiophyllum</i>	<1	0.2	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.5	=RD008
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photo of relevé MWR04, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR05

Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 457412 E; 6806954 N

Habitat: Plain

Soil: Pale orange sandy loamy clay

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Very good

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	2	4-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	4	4-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	2	4-6	=RD001
<i>Brachyscome ciliocarpa</i>	<1	0.07	=RD017
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Cephalopterum drummondii</i>	1	0.15	=RD088
<i>Eragrostis pergracilis</i>	2	0.05	=RD020
<i>Eremophila margarethae</i>	2	0.5	=RD006
<i>Erodium cygnorum</i>	<1	0.1	=RD011
<i>Ptilotus obovatus</i>	<1	0.3	=RD010
<i>Rhodanthe charsleyae</i>	<1	0.05	=RD018
<i>Rhodanthe charsleyae</i>	<1	0.15	=RD053
<i>Velleia rosea</i>	<1	0.1	=RD029



Photo of relevé MWR05, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR06

Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 457876 E; 6806430 N

Habitat: Plain

Soil: Red brown heavy clay loam

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* and *Acacia tetragonophylla* Tall Open Shrubland over *Eremophila granitica* Low Scattered Shrubs over *Calandrinia creethiae*, *Gnephosis arachnoidea* and *Rhodanthe charsleyae* Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Very good

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	1	3-4	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	3	4-5	=RD002
<i>Acacia aneura</i> var. <i>major</i>	3	6-7	=RD001
<i>Acacia ramulosa</i>	2	2-3	=RD004
<i>Acacia tetragonophylla</i>	2	3-4	=RD005
<i>Brachychiton gregorii</i>	<1	0.6	=RD158
<i>Calandrinia creethiae</i>	2	0.05	=RD014
<i>Eragrostis pergracilis</i>	10	0.05	=RD020
<i>Eremophila granitica</i>	2	0.4-0.7	=RD168
<i>Gnephosis arachnoidea</i>	2	0.1	=RD172
<i>Podolepis kendallii</i>	<1	0.1	=RD182
<i>Rhodanthe charsleyae</i>	1	0.15	=RD053
<i>Spartothamnella teucriflora</i>	<1	0.4	=RD008



Photo of relevé MWR06, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR07**Described by:** AC, RD**Date:** 30/08/2011**Type:**Relevé **Season:** Excellent**MGA Zone & Coordinates:** 51J; 458137 E; 6806325 N**Habitat:** Plain**Soil:** Red brown heavy clay**Vegetation:** *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila granitica* Low Open Shrubland over *Calandrinia creethiae*, *Gnephosis arachnoidea* and *Rhodanthe charsleyae* Open Herbland and *Eragrostis pergracilis* very Open Grassland**Veg. Condition:** Very Good to Excellent**Fire Age:** Unknown**Notes:** Minimal disturbance**Species List:**

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	3	4-5	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	2	4-5	=RD002
<i>Acacia aneura</i> var. <i>major</i>	2	4-6	=RD001
<i>Acacia ramulosa</i>	2	2-3	=RD004
<i>Calandrinia creethiae</i>	3	0.05	=RD014
<i>Cephalopterum drummondii</i>	<1	0.15	=RD088
<i>Eragrostis pergracilis</i>	1	0.1	=RD020
<i>Eremophila granitica</i>	5	0.3-0.6	=RD168
<i>Erodium cygnorum</i>	<1	0.05	=RD011
<i>Gnephosis arachnoidea</i>	1	0.1	=RD172
<i>Marsdenia australis</i>	<1	0.3	=RD027
<i>Ptilotus gaudichaudii</i>	<1	0.1	=RD175
<i>Rhodanthe charsleyae</i>	1	0.15	=RD053



Photo of relevé MWR07, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR08

Described by: AC, RD **Date:** 30/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 453336 E; 6806580 N

Habitat: Plain

Soil: Pale orange sandy loamy clay

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Open Shrubland over *Calandrinia creethiae* and *Erodiophyllum acanthocephalum* very Open Herbland

Veg. Condition: Very good to Excellent

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	2	2-5	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	2	5-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	4	5-6	=RD001
<i>Acacia ramulosa</i>	1	2	=RD004
<i>Brachyscome ciliocarpa</i>	<1	0.05	=RD017
<i>Calandrinia creethiae</i>	1	0.05	=RD014
<i>Calocephalus multiflorus</i>	<1	0.05	=RD025
<i>Eremophila georgei</i>	1	0.5	=RD009
<i>Eremophila margarethae</i>	3	0.4-0.6	=RD006
<i>Erodiophyllum acanthocephalum</i>	1	0.05	=RD022
<i>Erodium cygnorum</i>	<1	0.05	=RD011
<i>Rhodanthe charsleyae</i>	<1	0.1	=RD018
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photo of relevé MWR08, 30/08/2011

Project: MWEL-VS-11004a **Site:** MWR09

Described by: AC, RD **Date:** 31/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 458359 E; 6807815 N

Habitat: Plain **Soil:** Pale orange

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* and *Acacia tetragonophylla* Tall Scattered Shrubs over *Eremophila margarethae* Low Scattered Shrubs over *Calandrinia creethiae* and *Rhodanthe charsleyae* very Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Very Good; **Fire Age:** Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	4	5-6	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	5-6	=RD002
<i>Acacia aneura</i> var. <i>major</i>	1	5	=RD001
<i>Acacia ramulosa</i>	1	2	=RD004
<i>Acacia tetragonophylla</i>	1	1-2.5	=RD005
<i>Calandrinia creethiae</i>	1	0.05	=RD014
<i>Cephalopterum drummondii</i>	<1	0.3	=RD088
<i>Chthonocephalus pseudevax</i>	<1	0.03	=RD149
<i>Eragrostis pergracilis</i>	10	0.05	=RD020
<i>Eremophila foliosissima</i>	<1	0.3	=RD079
<i>Eremophila margarethae</i>	2	0.3-0.5	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.2	=RD022
<i>Gnephosis arachnoidea</i>	<1	0.1	=RD172
<i>Ptilotus obovatus</i>	<1	0.1	=RD010
<i>Rhodanthe charsleyae</i>	3	0.1	=RD053
<i>Solanum lasiophyllum</i>	<1	0.3-0.4	=RD046
<i>Spartothamnella teucriflora</i>	<1	0.4-0.6	=RD008



Photo of relevé MWR09, 31/08/2011

Project: MWEL-VS-11004a **Site:** MWR10

Described by: AC, RD **Date:** 31/08/2011 **Type:** Relevé **Season:** Excellent

MGA Zone & Coordinates: 51J; 456240 E; 6806400 N

Habitat: Plain

Soil: Pale orange

Vegetation: *Acacia aneura* var. *aneura*, *Acacia aneura* var. *intermedia* and *Acacia aneura* var. *major* Low Open Woodland over *Acacia ramulosa* Tall Scattered Shrubs over *Eremophila margarethae* Low Scattered Shrubs over *Calandrinia creethiae* and *Rhodanthe charsleyae* Open Herbland and *Eragrostis pergracilis* Open Grassland

Veg. Condition: Very Good

Fire Age: Unknown

Notes: Minimal disturbance

Species List:

Taxon	Cover (%)	Height (m)	Voucher No.
<i>Acacia aneura</i> var. <i>aneura</i>	5	2-7	=RD003
<i>Acacia aneura</i> var. <i>intermedia</i>	5	2-7	=RD002
<i>Acacia aneura</i> var. <i>major</i>	2	5-6	=RD001
<i>Acacia ramulosa</i>	1	2	=RD004
<i>Calandrinia creethiae</i>	5	0.05	=RD014
<i>Calocephalus multiflorus</i>	<1	0.05	=RD025
<i>Eragrostis pergracilis</i>	10	0.05	=RD020
<i>Eremophila margarethae</i>	1	0.3-0.4	=RD006
<i>Erodiophyllum acanthocephalum</i>	<1	0.05	=RD022
<i>Gnephosis arachnoidea</i>	<1	0.1	=RD172
<i>Podolepis kendallii</i>	<1	0.15	=RD182
<i>Ptilotus helipteroides</i>	<1	0.15	=RD166
<i>Rhodanthe charsleyae</i>	5	0.1	=RD053
<i>Spartothamnella teucriflora</i>	<1	0.3-0.5	=RD008
<i>Waitzia acuminata</i>	<1	0.1	=RD016



Photo of relevé MWR10, 31/08/2011

Opportunistic Collections & Observations

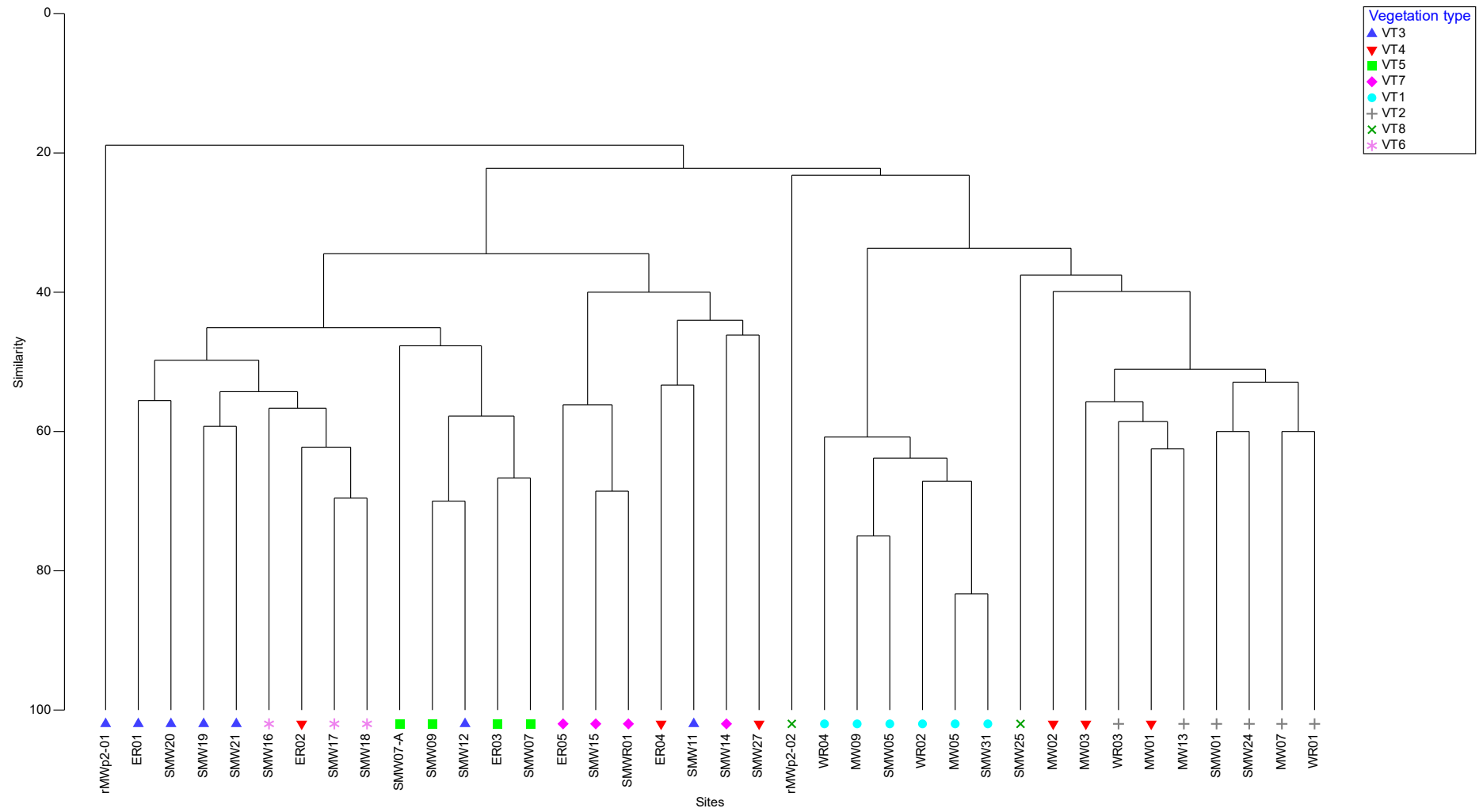
Taxa	Voucher No.	Coordinates
<i>Acacia aneura</i> var. <i>major</i>	RD093	51 J 453669 6807289
* <i>Acetosa vesicaria</i>	RD091	51 J 453648 6807362
* <i>Acetosa vesicaria</i>	Not collected	51 J 453647 6807472
* <i>Acetosa vesicaria</i>	Not collected	51 J 453687 6807483
* <i>Acetosa vesicaria</i>	Not collected	51 J 453378 6807447
* <i>Acetosa vesicaria</i>	Not collected	51 J 453374 6807521
<i>Austrostipa scabra</i>	RD071	51 J 454250 6806112
<i>Brachychiton gregorii</i>	RD158	51 J 454098 6805335
<i>Brachyscome ciliocarpa</i>	RD060	51 J 454282 6806532
<i>Calandrinia eremaea</i>	RD073	51 J 454220 6806015
<i>Calocephalus knappii</i>	RD070	51 J 454250 6806112
<i>Cephalopterum drummondii</i>	RD088	51 J 453651 6807420
<i>Chrysocephalum pterochaetum</i>	RD066	51 J 454288 6806422
<i>Crassula colorata</i> var. <i>acuminata</i>	RD142	51 J 455969 6804783 ¹
<i>Cupaniopsis anacardioides</i>	RD147	51 J 455459 6804807
<i>Dodonaea rigida</i>	RD087	51 J 454373 6807918
<i>Dysphania kalpari</i>	RD183	51 J 454599 6804855 ¹
<i>Dysphania melanocarpa</i>	RD069	51 J 454292 6806278
<i>Enchylaena tomentosa</i>	RD072	51 J 454230 6806054
<i>Eremophila foliosissima</i>	RD079	51 J 454102 6805930
<i>Eremophila forrestii</i>	RD082	51 J 453931 6806680
<i>Eremophila margarethae</i>	RD081	51 J 453936 6806589
<i>Eremophila youngii</i> subsp. <i>youngii</i>	RD141	51 J 455969 6804783 ¹
<i>Euphorbia drummondii</i>	RD056	51 J 454277 6806685
<i>Gilruthia osbornei</i>	RD083	51 J 454016 6806671
<i>Goodenia havilandii</i>	RD077	51 J 454180 6805910
<i>Goodenia lyrata</i> (P3)	RD092	51 J 453676 6807297
<i>Grevillea berryana</i>	RD055	51 J 454277 6806685
<i>Grevillea berryana</i>	RD085	51 J 454234 6806646
<i>Hakea leucoptera</i>	RD156	51 J 453425 6805324
<i>Lemooria burkittii</i>	RD146	51 J 455459 6804807
<i>Lepidium oxytrichum</i>	RD143	51 J 455969 6804783 ¹
<i>Maireana atkinsiana</i>	RD068	51 J 454290 6806381
<i>Maireana carnosae</i>	RD086	51 J 457097 6805328
<i>Maireana planifolia</i>	RD064	51 J 454286 6806459
<i>Peplidium aithocheilum</i>	RD094	51 J 453673 6807199
<i>Podolepis kendallii</i>	RD054	51 J 454277 6806685
<i>Podolepis kendallii</i>	RD063	51 J 454286 6806459
<i>Ptilotus aevoides</i>	RD061	51 J 454282 6806532
<i>Ptilotus exaltatus</i>	RD157	51 J 453259 6805142 ¹
<i>Ptilotus schwartzii</i>	RD074	51 J 454220 6806015
<i>Rhodanthe charsleyae</i>	RD053	51 J 454277 6806685
<i>Rhyncharrhena linearis</i>	RD080	51 J 453922 6806336
<i>Salsola tragus</i> subsp. <i>tragus</i>	RD065	51 J 454288 6806422

¹ Approximate coordinates only

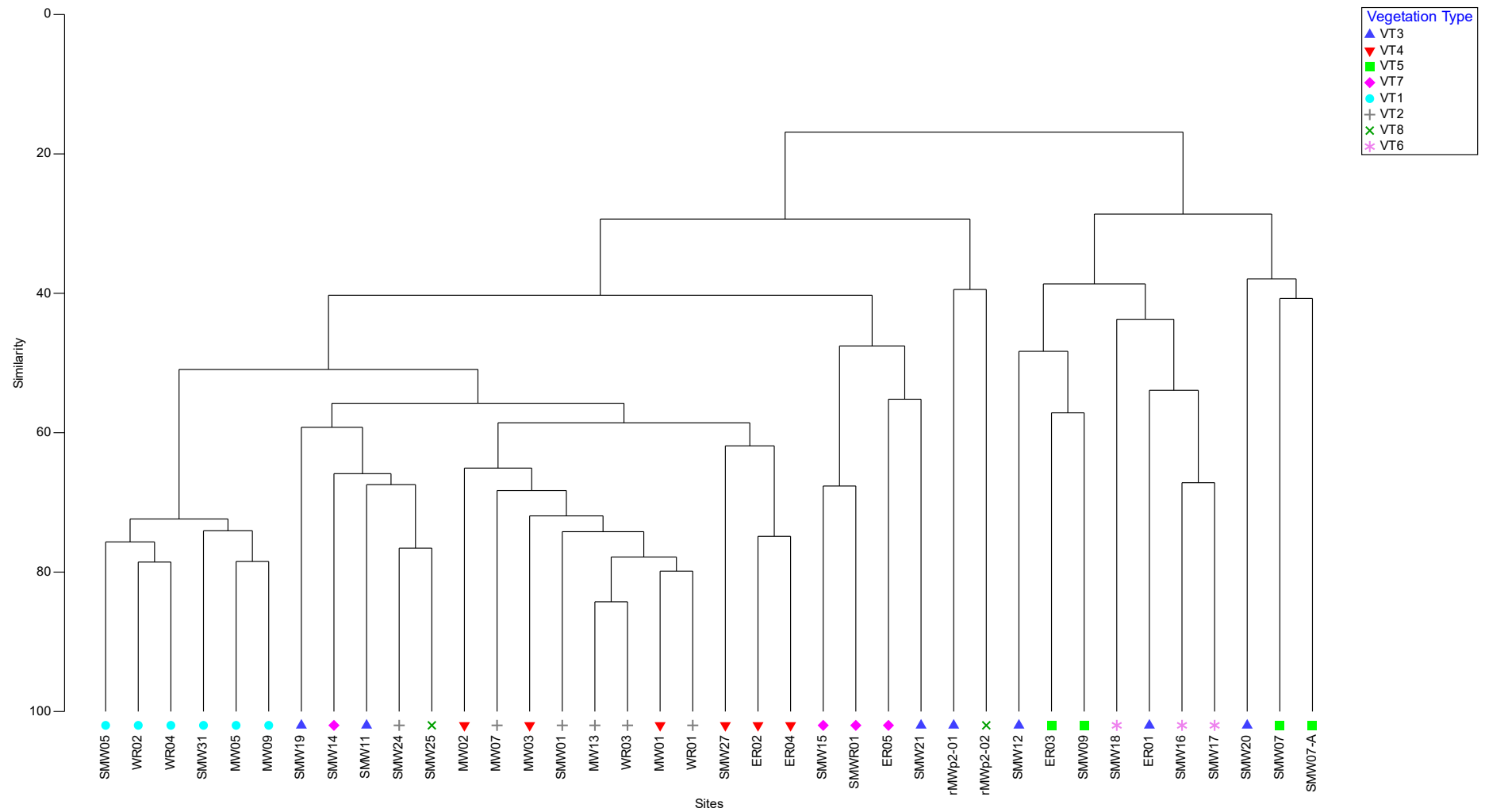
Taxa	Voucher No.	Coordinates
<i>Senecio gregorii</i>	RD078	51 J 454180 6805910
<i>Sida ectogama</i>	RD049	51 J 454020 6805983 ¹
<i>Sida</i> sp.	RD067	51 J 454290 6806381
<i>Solanum terraneum</i>	RD057	51 J 454277 6806685
<i>Spartothamnella teucriflora</i>	RD050	51 J 454020 6805983 ¹
<i>Tribulus astrocarpus</i>	RD155	51 J 453305 6805186
<i>Velleia rosea</i>	RD058	51 J 454282 6806532
<i>Vittadinia eremaea</i>	RD075	51 J 454205 6805986

¹ Approximate coordinates only

Appendix I Dendrograms



Presence absence dendrogram Mt Weld 2020 data only



Percent foliar cover dendrogram – Mt Weld 2020 data only

Perth

Ground Floor, 226 Adelaide Terrace,
PERTH, WA 6000
Tel +61 (08) 6222 7000

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