360 environmental

Murchison SKA Road Upgrade

Flora and Vegetation Assessment

Prepared for:

Main Roads Western Australia

February 2017

people • planet • professional

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Executive Summary

360 Environmental Pty Ltd (360 Environmental) was commissioned by Main Roads Western Australia (Main Roads) to undertake a flora and vegetation survey for road works associated with the Murchison Square Kilometre Array (SKA) project.

The proposed works includes the upgrade of a number of existing Local Government Roads (City of Greater Geraldton and Shire of Murchison) to the SKA and eight areas of potential material sources (the Survey Area).

A total of 454 taxa (including species, subspecies, varieties and forms) from 166 genera and 51 families were identified. The most commonly occurring families were Fabaceae (63 taxa), Chenopodiaceae (56 taxa) and Asteraceae (41 taxa). The most frequently recorded genera were; *Acacia* (36 taxa), *Eremophila* (*32* taxa) and *Maireana* (19 taxa).

No Threatened flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or gazetted as Threatened pursuant to the *Wildlife Conservation Act 1950* were recorded during the survey.

Fifteen Priority listed flora were recorded during the survey comprising two Priority 1 taxa, one Priority 2 taxa, eleven Priority 3 taxa and one Priority 4 taxa.

The review of the Department of Parks and Wildlife (DPaW) threatened flora database and EPBC Protected Matters Search Tool (PMST) identified 13 Threatened/EPBC listed species and a further 76 taxa listed as Priority flora as potentially occurring in the Survey Area (Appendix E). Of these 87 conservation significant flora, five are considered Likely to occur, *Acacia ampliata* (P1), *Dicrastylis linearifolia* (P3), *Eremophila physocalyx* (P3), *Gunniopsis divisa* (P3) and *Prostanthera petrophila* (P3).

Twenty-one introduced species were recorded during the survey. No introduced species recorded are listed as Weeds of National Significance (WONS) or Declared under the *Biosecurity and Agriculture Management Act 2007* (BAM Act).

Thirty-three vegetation associations were identified in the Survey Area with the vegetation condition ranging from Excellent to Completely Degraded, with the majority of the Survey Area considered to in be Very Good condition.

None of the vegetation associations recorded is considered to represent any Federal or State listed Threatened Ecological Communities or Priority Listed Communities.

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1 Introduction

1.1 The Project

360 Environmental Pty Ltd (360 Environmental) was commissioned by Main Road Western Australia (Main Roads) to undertake a flora and vegetation assessment for road works associated with the Murchison Square Kilometre Array (SKA) project.

The proposed works include the upgrade of a number of existing Local Government Roads (City of Greater Geraldton and Shire of Murchison) for the SKA and eight areas of potential material sources (borrow pits) to upgrade the roads (the Survey Area). Detailed design of the road upgrade is yet to be finalised, however, it is anticipated to involve the widening of the road, minor realignments and a single lane seal.

The purpose of the flora and vegetation survey was to delineate the key flora and vegetation values along a number of roads and borrow pits.

1.1.1 Objectives

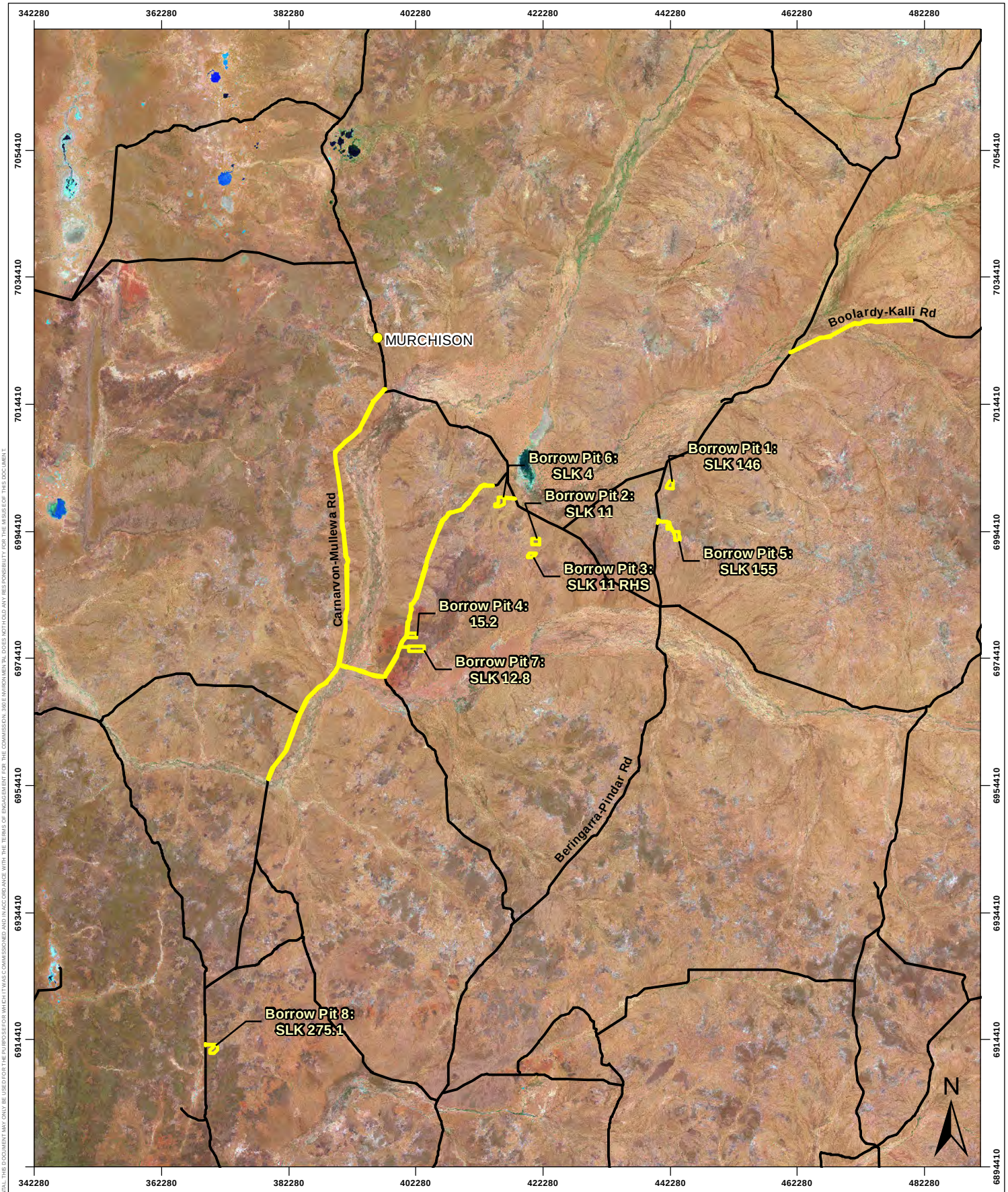
The objectives of the flora and vegetation assessment were to:

- Conduct a desktop assessment of the Survey Area prior to the field survey work to identify all floristic constraints, which may be in, or nearby the Survey Area;
- Identify and review any existing and relevant environmental reports;
- Identify broad vegetation types using Beard (1976);
- Undertake a field survey to verify the desktop assessment findings;
- Undertake vegetation condition mapping using the Keighery condition scale and ecological community mapping (EPA 2016);
- Undertake relevant environmental constraints mapping with GIS software; and
- Asses the Survey Areas plant species diversity, density, composition, structure and weed cover, recording the percentage of each in nominated quadrats.

1.1.2 Location

The Survey Area is split into three continuous road sections, and eight borrow pits (Figure 1). The Boolardy to Kalli Road is approximately 23 kilometers (km)in length; the Twin Peaks to Wooleen Road section is approximately 51 km in length; and the Carnavon to Mullewa Road section is approximately 78 km in length.

The Survey Area extends 100 metres (m) either side of the road sections along with eight burrow pits. The total combined size of the Survey Area including the borrow pits is 37,18.02 hectares (ha). The location of the two sections and the borrow pits are presented in Figure 1.



Legend

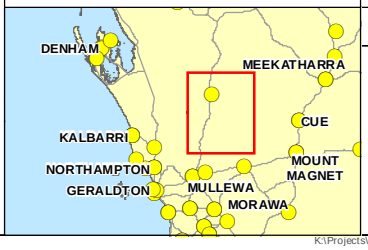
- Towns Australia
- Survey Area
- Roads

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- ROADS SOURCED MRWA 2012
- AERIAL PHOTOGRAPHY SOURCED LANDSAT7
(© Western Australian Land Information Authority 2015)

Kilometers
1:800,000 @ A4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



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PROJECT ID	DATE
1803	23/01/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads, WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 1
Site Location

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K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 1 - Site Location.mxd

1.2 Background to the Protection of Flora and Vegetation

Flora is protected formally and informally by various legislative and non-legislative measures, which are as follows:

Legislative measures:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Biodiversity Conservation Act 2016* (BC Act);
- WA *Environmental Protection Act 1986* (EP Act); and
- *Biosecurity and Agriculture Management Act 2007* (BAM Act).

Non-legislative measures:

- WA Department of Parks and Wildlife (DPaW) Priority lists for flora and ecological communities;
- Weeds of National Significance (WONS); and
- Recognition of locally significant populations by the DPaW.

A short description of each is given below. Other definitions, including species conservation categories, are provided in Appendix A. Conservation categories for ecological communities are provided in Appendix B.

1.2.1 EPBC Act

The EPBC Act aims to protect matters of national environmental significance (MNES). Under the EPBC Act, the Commonwealth Department of the Environment and Energy (DEE) lists threatened species and communities in categories determined by criteria set out in the EPBC Act (Appendix A and B).

Projects likely to cause a significant impact on MNES should be referred to the DEE for assessment under the EPBC Act.

1.2.2 WC Act

The WA DPaW lists flora under the provisions of the WC Act as protected according to their need for protection (Appendix A).

Flora is given Declared Rare status when populations are geographically restricted or are threatened by local processes. In addition, under the WC Act, by Notice in the WA Government Gazette of 9 October 1987, all native flora (spermatophytes, pteridophytes, bryophytes and thallophytes) is protected throughout the State.

1.2.3 EP Act

Threatened Flora and Threatened Ecological Communities (TECs) are given special consideration in environmental impact assessments, and have special status as

Environmentally Sensitive Areas (ESAs) under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. Exemptions for a clearing permit do not apply in an ESA. In addition, habitat necessary for the maintenance of indigenous fauna is considered in the clearing principles and assessed during consideration of applications for a clearing permit.

1.2.4 BAM Act

Plants may be 'Declared' by the Minister for Agriculture and Food under the BAM Act. The Western Australian Organism List contains information on the area(s) in which a plant is declared and the control and keeping categories to which it has been assigned in Western Australia. Details of the definitions of these categories are provided in Appendix C. A declaration may apply to the whole State, to districts, individual properties or even to single paddocks. If a plant is 'Declared', landholders are obliged to control that plant on their properties (Department of Agriculture and Food Western Australia [DAFWA] 2016).

1.2.5 Weeds of National Significance

The Australian Government along with the State and Territory Governments have endorsed 32 WONS. Four major criteria were used in determining WONS:

- The invasiveness of a weed species;
- A weed's impact(s);
- The potential for spread of a weed; and
- Socio-economic and environmental values.

Each WONS has a national strategy and a national coordinator, responsible for implementing the strategy. WONS are regarded as priority weeds in Australia because of their invasiveness, potential for spread, and economic and environmental impacts (Thorp and Lynch 2000).

1.2.6 DPaW Priority Lists

The DPaW lists 'Priority' flora that have not been assigned statutory protection as Declared Rare or 'Scheduled' under the WC Act, and are under consideration for declaration as Threatened. Flora assessed as Priority 1-3 are considered to be in urgent need of further survey. Priority 4 flora requires monitoring every 5 -10 years and Priority 5 flora is subject to a specific conservation program (Appendix A).

The DPaW maintains a list of PECs which identifies ecological communities that require further investigation before possible nomination for TEC status. Once listed, a community is a PEC, and when endorsed by the WA Minister of Environment becomes a TEC, and protected as an ESA under *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Appendix B).

1.2.7 Informal Recognition of Flora

Certain populations or communities of flora may be of local significance or interest because of their patterns of distribution and abundance. For example, specific locations of flora may be locally significant because they are range extensions to the previously known distribution, or are newly discovered taxa (and have the potential to be of more than local significance). In addition, many species are in decline as a result of threatening processes (land clearing, grazing, changed fire regimes), and relict populations of such species assume local importance for the DPaW. It is not uncommon for the DPaW to make comment on these species of interest.

2 Biophysical Environment

2.1 Climate

The most relevant and reliable Bureau of Meteorology (BoM) weather station for the Carnavan to Mullewa Road section, is the Mullewa Station, located approximately 80 km to the south of the Survey Area.

The Mullewa mean minima temperature ranges from 7.0°C to 20.2°C and mean maxima ranges from 18.8°C to 36.9°C. The annual average rainfall is 337.2 mm (BoM 2016).

Mullewa station recorded 287.1 mm of rain in the 12 months prior to survey (October 2015 – September 2016) which is 48.6 mm below the long term average rainfall for the same period (Figure 2). In the three months prior to the survey (July 2016 – September 2016) 128.2 mm of rainfall was recorded which is below the 164.6 mm average rainfall for the same period (BoM 2016).

The most relevant and reliable BoM weather station for the Boolardy to Kalli Road and the Twin Peaks to Wooleen Road section, is the Murchison Station, located approximately 3 km South of the Survey Area.

The Murchison mean minima temperature ranges from 6.3°C to 23.3°C and mean maxima ranges from 21.0°C to 39.4°C. The annual average rainfall is 232.8 mm (BoM 2016).

Murchison station recorded 215 mm of rain in the 12 months prior to survey (September 2015 – August 2016) which is 16.7 mm above the long term average rainfall for the same period (Figure 3). The three months prior to survey (July 2016 – September 2016) 78 mm of rainfall was recorded which is above the 75.0 mm average rainfall for the same period (BoM 2016).

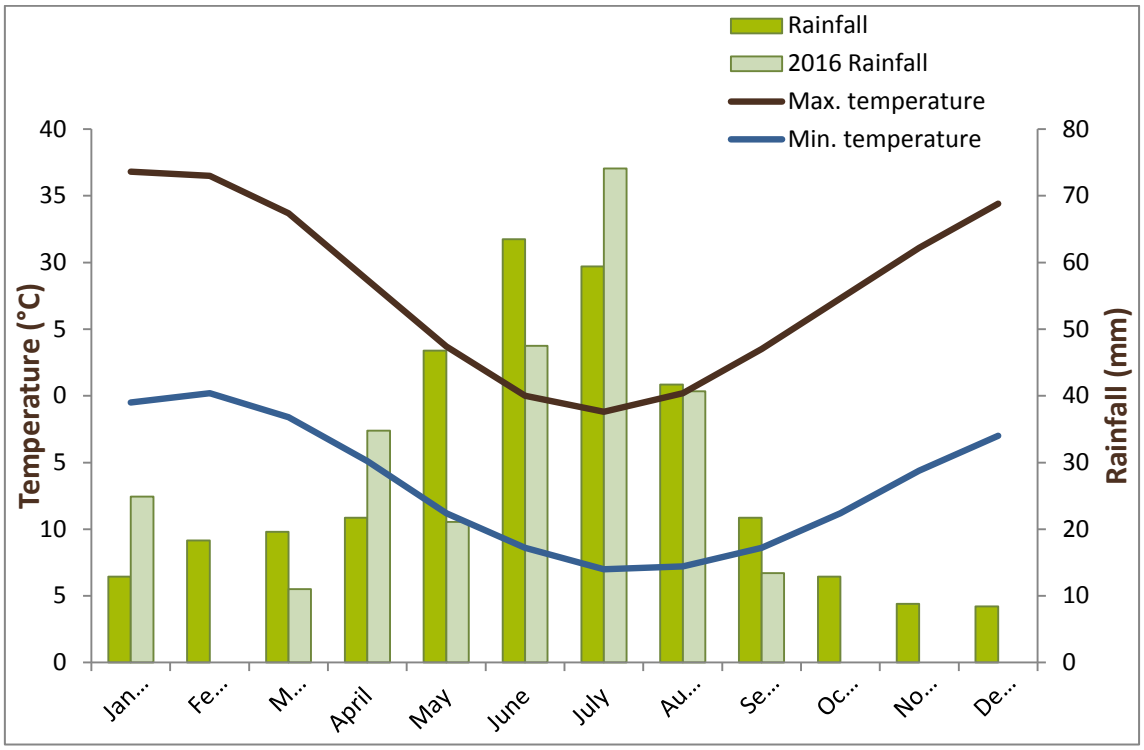

Figure 2: 2016 rainfall and mean rainfall for Mullewa Station from 1896 to 2016 (BoM 2016).

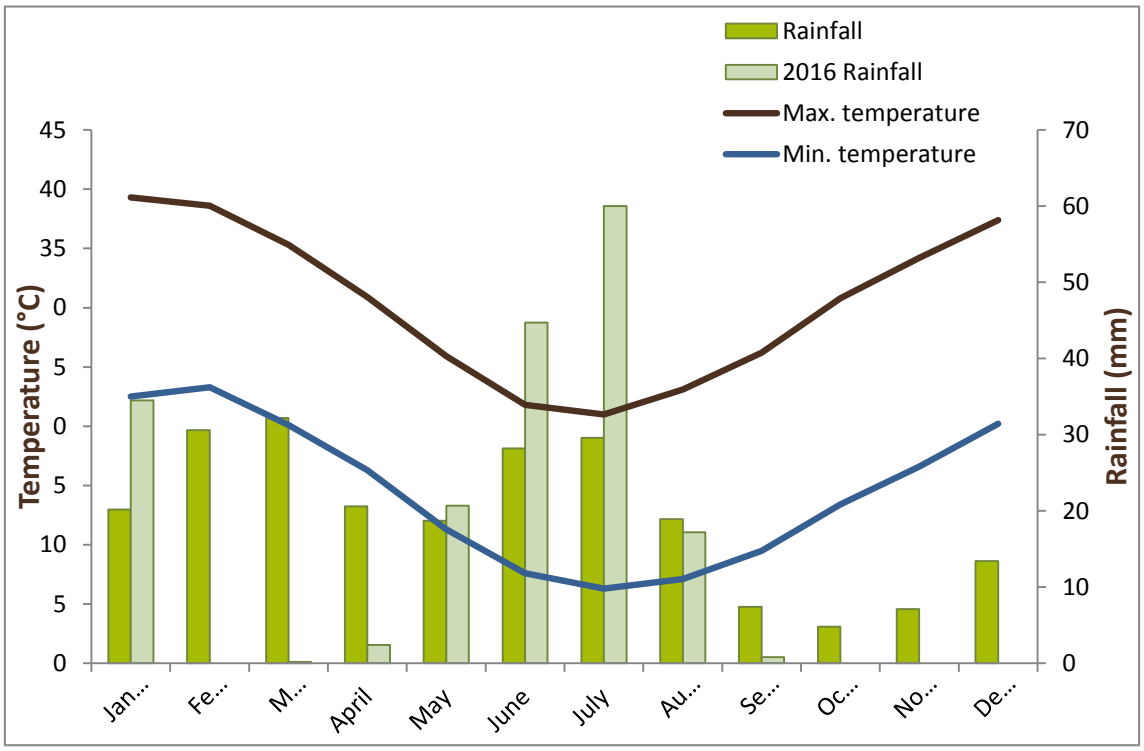

Figure 3: 2016 rainfall and mean rainfall for Murchison Station from 1987 to 2016 (BoM 2016).

2.2 Soils

The Survey Area lies in the Murchison Province of the Western Region as described by Tille (2006). The Murchison Province has further been divided into seven soil-landscape zones, the following three of which occur in the Survey Area:

Irwin River Zone (271) Dissected plateau (with shallow valleys, stony ridges and sandplain remnants) on deeply weathered mantle, colluvium and alluvium over granite and gneiss of the Yilgarn Craton. Yellow and red deep sands with red shallow sands, red-brown hardpan shallow loams and red loamy earths and some red shallow loams. Located in the southern Murchison and Northern Wheatbelt, between Three Springs, Wubin Yalgoo and Lake Nerramyne.

Upper Murchison Zone (272) Hardpan wash plains (with stony plains, sandplains, hills and mesas) on granite and gneiss of the Yilgarn Craton (Narryer Terrane and Murchison Domain). Red-brown hardpan shallow loams, red shallow loams with red loamy earths and red deep and some red shallow sands, and red deep sandy duplexes. Located in the north-western Murchison, between Lake Nerramyne, Meekatharra, Cue and the Gascoyne River.

Yalgoo Plains Zone (273) Hardpan wash plains (with some sandplains, stony plains, mesas and granite outcrops) on granitic rocks (with some greenstone) of the Yilgarn Craton (Murchison Domain). Red loamy earths and red shallow loams (often with hardpans) with red deep sands and red shallow sands. There are also some red shallow sandy duplexes. Located in the south-western Murchison from Paynes Find to Cue and Twin Peaks Station

2.3 Biogeographic Regionalisation for Australia

The Biogeographic Regionalisation of Australia (IBRA7) divides Australia into 89 bioregions based on major biological and geographical/geological attributes. These bioregions are subdivided into 419 subregions, as part of a refinement of the IBRA framework (DEE 2016a). The Survey area extends across two subregions from two Bioregions (Figure 4).

Pit 8 is located in the Tallering subregion of the Yalgoo Bioregion. The Yalgoo Bioregion has been extended westwards to the boundary of the South-West Botanical Province so that it now includes the Toolonga Plateau of the southern Carnarvon Basin. This region is an interzone between South-western Bioregions and the Murchison (Environment Australia 2000). It is characterised by low woodlands to open woodlands of *Eucalyptus*, *Acacia* and *Callitris* on red sandy plains of the Western Yilgarn Craton and southern Carnarvon Basin. The latter has a basement of Phanerozoic sediments with Mulga (*Acacia* spp.), *Callitris-E. salubris*, and Bowgada (*Acacia ramulosa*) open woodlands and

scrubs on earth to sandy-earth plains in the western Yilgarn Craton. The subregion is particularly rich in ephemeral species (Desmond and Chant 2001).

The remaining Survey Area including the borrow pits (pits 1-8) are located in the West Murchison subregion of the Murchison Bioregion. The West Murchison subregion is described as the northern part of the 'Murchison' Terrains of the Yilgarn Craton. The vegetation consists of Mulga (Acacia spp.) low woodlands that are often rich in ephemeral species (usually with bunch grasses) on outcrop and fine textured Quaternary alluvial and eluvial surfaces (extensive hardpan wash plains that dominate and characterise the subregion) mantling granitic and greenstone strata of the northern part of the Yilgarn Craton. Surfaces associated with the occluded drainage occur throughout with hummock grasslands on Quaternary sandplains, saltbush shrublands on calcareous soils and Halosarcia low shrublands on saline alluvia. The subregion contains the headwaters of the Murchison and Wooramel Rivers and these drain the subregion westwards to the coast. The region has an arid climate with bimodal rainfall that usually falls in winter (Desmond *et al*. 2001).

2.4 Land System Mapping

The DAFWA and WA Department of Lands undertook a regional survey of approximately 88,360 km^2 of arid zone rangelands between Mt Magnet and Meekatharra in the east and the catchment of the Greenough and Wooramel Rivers in the west. This area included most of the catchment of the Murchison River and its tributaries the Sanford, Roderick and Yalgar rivers; as well as most of the catchment of Lake Austin (Curry *et al*. 1994).

The purpose of the survey undertaken by Curry *et al*. (1994) was to provide a comprehensive description and mapping of the pastoral resources of the region, together with an evaluation of pastoral potential and the condition of the soils and vegetation throughout. From this survey, Curry *et al*. (1994) described and mapped a total 74 land systems for the region.

The current Survey Area contains 15 mapped land systems which are listed and described in Table 1 and presented in Figure 5a-c.

Table 1: Land Systems and their occurrence in the Survey Area.

LAND SYSTEM	DESCRIPTION	EXTENT IN SURVEY AREA (HA)
Bayou System	Saline alluvial meander plains and river floodplains with anatomising river channels supporting halophytic shrublands with overstorey shrubs and *Eucalyptus* trees.	240.78 (6.5%)
Beringarra System	Riverine plains with floodplains and channels, supporting halophytic shrublands, mixed acacia shrublands and low woodlands with minor perennial grasses.	138.86 (3.7%)

LAND SYSTEM	DESCRIPTION	EXTENT IN SURVEY AREA (HA)
Challenge System	Gently undulating gritty and sandy surfaced plains, occasional granite hills, tors and low breakaways, supporting acacia shrublands and occasional halophytic shrublands	392.51 (10.6%)
Gabanintha System	Greenstone ridges, hills and footslopes supporting sparse acacia and other mainly non-halophytic shrublands.	80.16 (2.2%)
Jundee System	Hardpan plains with variable gravelly mantles and minor sandy banks supporting weakly groved mulga shrublands.	62.32 (1.7%)
Kalli System	Elevated gently undulating red sandplains edged by stripped surfaces on laterite and granite, supporting acacia tall shrublands with wanderrie grass understoreys.	266.26 (7.2%)
Narryer System	Low hills and lateritised breakaways above very gently undulating stony slopes and plains on gneiss and granite with sparse acacia shrublands.	397.42 (10.7%)
Nerramyne System	Undulating plains of sandy-surfaced laterite and weathered granite with low remnant plateaux, breakaways and rises supporting acacia shrublands.	116.97 (3.14%)
Norie System	Granite hills with exfoliating domes and extensive tor fields, supporting acacia shrublands.	0.79 (0.2%)
Roderick System	Broad, saline riverine plains, mainly supporting chenopod shrublands; also numerous grassy drainage foci, claypans and non-saline marginal hardpan plains with acacia shrublands.	60.51 (1.6%)
Sherwood System	Breakaways, kaolinised footslopes and extensive gently sloping plains on granite supporting mulga shrublands and minor halophytic shrublands.	90.37 (2.43%)
Tindalarra System	Near level hardpan wash plains, narrow drainage lines and moderately saline drainage floors; supporting tall mixed acacia shrublands with wanderrie grasses, also minor saltbush/bluebush low shrublands.	14.44 (0.4%)
Violet System	Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands.	390.47 (10.5%)
Waguin	Sandplains and stripped granite or laterite surfaces with	70.52 (1.9%)

LAND SYSTEM	DESCRIPTION	EXTENT IN SURVEY AREA (HA)
System	low fringing breakaways and lower plains; supports bowgada and Mulga shrublands with wanderrie grasses and minor halophytic shrublands.	
Yanganoo System	Almost flat hardpan wash plains, with or without small wanderrie banks and weak grooving; supporting Mulga shrublands and wanderrie grasses on banks	1394.20 (37.5%)

2.5 Broad Vegetation Types

Mapping of the vegetation of the Murchison region of WA was completed on a broad scale (1:1,000,000) by Beard (1976). These vegetation types were later re-assessed by Shepherd *et al.* (2001) to account for clearing in the intensive land use zone, dividing some larger vegetation units into smaller units. The current pre european vegetation asscoaiottn mapping The pre-European vegetation mapping of Western Australia dataset is an output of a joint project between DAFWA and DEC. it was published as Beard, J. S., Beeston, G.R., Harvey, J.M., Hopkins, A. J. M. and Shepherd, D. P. 2013. *The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. Conservation Science Western Australia 9: 1-152*. This mapping forms the basis of the vegetation extents statistics released annually by DPaW

Twelve Shepherd vegetation associations occur in the Survey Area, the Shepherd *et al.* (2001) vegetation types are described, along with their representation in the Survey Area (Table 2).

Table 2: Broad vegetation types in the Survey Area.

SHEPHERD VEGETATION UNIT	DESCRIPTION	EXTENT IN THE SURVEY AREA (HA)
18-Upper Murchison	Low woodland; Mulga (*Acacia aneura*)	804.17 (21.7%)
29-Upper Murchison	Sparse low woodland; Mulga, discontinuous in scattered groups	1210.44 (32.6%)
39-Upper Murchison	Shrublands; Mulga scrub	94.24 (2.5%)
40-Yalgoo	Shrublands; Acacia scrub, various species	43.00 (1.2%)
160-Upper Murchison	Shrublands; Snakewood (Acacia spp.) & *Acacia victoriae* scrub	241.25 (6.5%)
183-Upper Murchison	Low woodland; Mulga, *Acacia victoriae* & snakewood	71.93 (1.9%)
184-Upper Murchison	Shrublands; Mulga and Bowgada scrub	8.87(0.2%)

SHEPHERD VEGETATION UNIT	DESCRIPTION	EXTENT IN THE SURVEY AREA (HA)
204-Upper Murchison	Succulent steppe with open scrub; scattered Mulga & *Acacia sclerosperma* over saltbush (*Atriplex*) & bluebush (*Maireana)*	60.87 (1.6%)
326-Upper Murchison	Low woodland over scrub; Mulga over Bowgada (*Acacia ramulosa*) & Minnieritchie (Acacia spp.) scrub	837.13
404-Yalgoo	Shrublands; Bowgada & *Acacia murrayana* scrub	88.41 (2.4%)
1125-Upper Murchison	Succulent steppe with scrub; Acacia victoriae and snakewood over saltbush and bluebush	8.87 (0.2%)
2081-Upper Murchison	Shrublands; bowgada and associated spp. scrub	151.06 (4.1%)

2.6 Environmentally Sensitive Areas (ESAs)

No mapped ESAs occur in the Survey Area (DEC 2013). The nearest ESA is located 1.8 km to the west of the Survey Area and is associated with Lake Wooleen which is a wetland of National Importance (Environment Australia 2001). There are no further mapped ESAs occurring within 20 km of the Survey Area.

3 Methods

3.1 Background

The flora survey was consistent with a single season survey as per the Environmental Protection Agency EPA requirements for environmental surveying and reporting for flora and vegetation in Western Australia, where practical and relevant, as set out in the following documents:

- Environmental Protection of Native Vegetation in Western Australia: Clearing of Native Vegetation with Particular Reference to Agricultural Areas. Position Statement No.2 (EPA 2000);
- EPA Guidance for the Assessment of Environmental Factors: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia No. 51 (EPA 2004); and
- Technical Guide – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment (EPA-DPaW 2015).

3.1.1 Permits

This flora survey was conducted under the following licences issued by DPaW; Licence to take flora for scientific or other prescribed purposes SL010733 issued to Brian Morgan and SL011917 issued to Andrew Mitchell.

3.2 Flora and Vegetation Survey Methods

3.2.1 Flora and Vegetation Database Review

The desktop study provided background information on the flora and vegetation of the Survey Area. This included information from database searches and previous surveys in the surrounding area.

Database searches of the DPaW Threatened and Priority flora databases (20 km buffer around the Survey Area) were undertaken to identify the potential for Threatened, Priority species, TECs or PECs to occur within the Survey Area (DPaW 2016a and 2016b). An additional EPBC Protected Matters Search (10 km buffer around the Survey Area) was undertaken to identify the potential for MNES (DEE 2016b).

A limited number of publically available flora and vegetation surveys occur for the Murchison and Yalgoo regions. Additionally the majority of these surveys focus exclusively on geological significant areas such as Banded Ironstone formations which are absent from Survey Area. As such only a small number of relevant botanical surveys were considered suitable for the desktop assessment. These relevant botanical surveys include:

- Flora and Vegetation Assessment. Murchsion SKA Road Upgrades (Main Roads 2016);
- Flora and vegetation of banded iron formations of the Yilgarn Craton: Barloweerie and Twin Peaks Greenstone Belts (Meissner & Wright 2010);
- OPR Rail Development – Flora and Vegetation Assessment (Ecologia 2010);
- Flora and Vegetation of Burnerbinmah Station (Patrick 2002);
- Technical Bulletin No. 84 – An inventory and condition survey of the Murchison River catchment and surrounds, Western Australia (Curry *et al.* 1994);
- A list of plants and animals found at Mileura, Western Australia (Davies (1970); and
- An annotated list of Angiosperms of Lakeside Station, Cue, Western Australia (Kenneally 1968).

All of these sources were used to compile a list of expected Threatened or Priority species and TECs or PECs that may occur in the Survey Area. The results of which are presented in sections 4.2.1.

3.2.2 Flora and Vegetation Field Survey

The field survey was undertaken by Brian Morgan and Andrew Mitchell from 30 September – 17 October 2016 with a total field survey effort of 36 person days. The field survey included an assessment of 34 quadrats, 129 relevés, mapping notes, targeted searches and opportunistic collections.

Quadrats are vegetation survey plots were accurately measured out with each corner demarcated with a steel stake with the northwest (NW) stake a permanent marker. The NW corners of each plot were recorded using a handheld Garmin GPS unit. The quadrat size was 20 x 20 m (or an area equivalent to 400 m^2) and is considered the standard for the Yalgoo and Murchison regions (EPA-DPaW 2015).

Each species of plant at each quadrat was recorded, including information on height and percentage cover. Additional information recorded at each quadrat included landscape features, surface soil colour and texture, bare ground, litter cover, disturbance, fire age, aspect and vegetation condition.

Relevés are unbounded vegetation survey plots with each species of dominant plant at each relevé being recorded. Additional information recorded included landscape features, surface soil colour and texture and vegetation condition.

3.2.3 Systematic Searches

In addition to the information collected from the quadrat and relevés, traverses on foot targeting suitable habitat likely to support significant flora were undertaken. Known populations of conservation significant flora in the Survey Area identified during the

desktop assessment were also visited to confirm their occurrence. For each population of conservation significant flora identified during the field survey, the following were recorded:

- Co-ordinate locations (using handheld GPS units);
- Abundance/population size :
- Date, time, and name of botanist (including flora licence details);
- Reproductive condition and any interesting features (i.e. health); and
- Brief vegetation association description.

For each new population of significant flora recorded during the survey a suitable reference specimen was taken and lodged at the Western Australian Herbarium (WAH) and Threatened (Declared Rare) Flora Report forms were completed.

3.2.4 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected systematically for later identification utilising resources of the WAH. The majority of the taxonomy was completed by experienced taxonomist Brian Morgan.

The species list was checked against FloraBase (WAH 2016) to determine the species' conservation status. Threatened and Priority flora were verified against the EPBC Act listing of threatened species to determine Commonwealth listing.

Introduced species were checked against the BAM Act Declared Plants list to determine if any are Declared Plants, as with the WONS list (Thorp and Lynch 2000).

3.2.5 Vegetation Mapping and Statistical Analysis

The vegetation communities were described based on a combination of their structure and species composition, as defined by quadrat, relevé data and field observations. Vegetation boundaries were mapped in the field using handheld GPS (Garmin) units and high-resolution aerial photographs, which in the office were then digitised using GIS software.

Vegetation condition was mapped in the field using handheld GPS (Garmin) units and high-resolution aerial photographs (at a scale of 1:10,000),

All statistics were carried out using Primer-E version 6.1.5 (Clarke and Gorley 2006). Quadrats were classified on the basis of similarity in species composition. Quadrat cover data was pre-treated with square root transformation and a Dendrogram was then computed using hierarchical agglomerative cluster analysis. Using the results of the observations made in the field, boundaries of the vegetation communities were finalised on aerial photographs, at a scale of 1:20,000, with the aid of GPS coordinates taken during the field survey. The vegetation communities were digitised and produced as electronic mapping data using GIS software.

In order to assess the adequacy of the field survey, a species accumulation curve was generated (note that this was undertaken using only systematic site data [quadrat data]). The species accumulation curve analyses accumulation rates of new species added during the survey period. That is, as the number of quadrats increases, the number of newly recorded species should increase until the accumulation of new species declines (the graph reaches an asymptote). This indicates that the majority of species have been recorded and that the area has been adequately surveyed (species accumulation curves can be useful in estimating total species richness). The accumulation curve generated was based on presence absence data and the sample order being random with a maximum 999 permutations. Four estimator curves (Chao2, Jacknife 1, Jacknife 2 and Bootstrap) were also generated using Primer-E version 6.1.5 (Clarke and Gorley 2006). These estimator curves help predict the true total number of species that would be observed as the number of sites tends to infinity.

4 Results

4.1 Flora and Vegetation Survey Limitations and Constraints

Survey constraints are often difficult to predict, as is the extent to which they influence survey effort. Survey limitations and constraints of the flora and vegetation survey are detailed in Table 3.

Table 3: Limitations and constraints associated with the survey

VARIABLE	IMPACT ON SURVEY OUTCOMES
Access	The majority of the site was accessible and surveyed.
Experience	The personnel who executed these surveys were practitioners suitably qualified in their respective fields: • Coordinating Botanist: Brian Morgan and Amy Dalton; • Field Staff: Brian Morgan (Senior Botanist) and Andrew Mitchell (Senior Botanist); • Taxonomy: Brian Morgan (with assistance from other taxonomic specialists for certain families); • Data Interpretation and Reporting: Amy Dalton; • Report Review: Dr Ron Firth (Principal Zoologist) and Michelle Rhodes (Principal Environmental Scientist).
Timing, weather, season	The survey was undertaken during spring 2016 (30/9 – 17/10) which is the recommended survey period for the South-Western Interzone. However, the Northern section of the Survey Area occurs in the Eremaean zone, where the primary survey is recommended from March to June (6-8 weeks post wet season). However, a supplementary survey in the dry season or after winter rainfall is also recommended (EPA-DPaW 2015). The survey was conducted after three months of below average rainfall in the the Boolardy to Kalli Road and the Twin Peaks to Wooleen Road section while the Carnavan to Mullewa Road section had above average rainfall prior to the survey (refer to Section 2.1). Flora composition changes with time, particularly across the seasons and with seasonal conditions. Fire history also

VARIABLE	IMPACT ON SURVEY OUTCOMES
	affects the composition of flora. Therefore, botanical surveys completed at different times of the year will have varying results.
Scope: Life forms sampled	The survey was consistent with a flora and vegetation assessment and included low level sampling of vascular flora and vegetation.
Sources of information	Relevant DPaW and EPBC searches were undertaken for the Survey Area. Relevant publically available reports from the region were also reviewed.
Completeness	All broad vegetation communities were sufficiently surveyed; with 163 sites surveyed comprising of 34 quadrats and 129 relevés. The number of sites is considered more than adequate for a flora andvegetation assessment (primarily a low intensity or reconnaissance survey).
Current land use and disturbances	Pre-existing disturbance in the Survey Area was considered to range from low to high. Major disturbance included infrastructure associated with the existing roads (including disruption to sheet flows) that runs the entire length of the Survey Area. The majority of the Survey Area also occurs on current or former pastoral stations with evidence of livestock grazing. Several of the proposed borrow pits contain cleared areas.

4.2 Flora Results

4.2.1 Database Results

The review of the DPaW TPFL database and EPBC searches identified thirteen Threatened/EPBC listed species and a further 76 taxa listed as Priority flora as potentially occurring in the Survey Area (Appendix E). A likelihood assessment based on preferred habitat and distance to records was undertaken for these 76 conservation significant flora with five taxa being considered Likely to occur, 11 as possible and 51 as Unlikely. While a further 12 were recorded during the current survey. The remaining taxa are lacking habitat information and their likelihood is unknown.

The likelihood assessment of these 89 conservation significant flora occurring in the Survey Area is presented Appendix E.

A DPaW TEC and PEC database search identified the following three PECs occurring in or adjacent to the Survey Area (Figure 6):

- Meeberrie calcrete groundwater assemblage type on Murchison palaeodrainage on Meeberrie Station (Priority 1). This community is mapped as occurring adjacent to the Survey Area;
- Mount Narryer calcrete groundwater assemblage type on Murchison palaeodrainage on Mt Narryer Station (Priority 1). This community is mapped as occurring in the Survey Area;
- New Forest (Including Twin Peaks and Barloweerie Range) vegetation complexes (banded ironstone formation) (Priority 1). This community is mapped as occurring within the Survey Area; and
- Tallering Peak Banded Ironstone Formation (BIF) (Priority 1). This community is mapped as occurring adjacent to the Survey Area.

Vegetation associations recorded during the survey were compared against the PEC and TEC lists for WA with none of the vegetation associations matching any communities on these lists.

4.2.2 Desktop Survey Results

There have been few detailed botanical studies of specific area in the Murchison and Yalgoo Regions. Davies (1970) published a list of 200 taxa for Mileura Station located approximately 70 km from the Northern section of the Survey Area and Kenneally (1968) identified 80 taxa in an annotated list of the angiosperms of Lakeside Station (approximately 125 km from the Northern section of the Survey Area). A regional inventory of the Murchison River Catchment and its surrounds was undertaken by Curry *et al.* (1994) to document the land systems present and the condition of each (see section 2.4).

More recent and comprehensive botanical surveys have been undertaken in the Murchison and Yalgoo regions by DPaW (formerly DEC) and biological consulting companies. This includes a flora and vegetation study of Burnerbinmah Station (Patrick 2002) and a flora and vegetation assessment for the OPR rail development (Ecologia 2010). The results of these surveys area summarised below.

Flora and Vegetation of Burnerbinmah Station (Patrick 2002)

Burnerbinmah Station is located at the head of the Mongers Lake system, approximately 170 km south east of the Southern section of the Survey Area. The Station covers about 59,908 ha and includes calcrete valley fills and platforms, alluvial plains, sandplains, granite exposures and breakaways.

The survey included 34 quadrats which were used to define nine community types that were correlated with soil types and topography. A total of 551 taxa were recorded of which 494 were native and 57 introduced. Of these taxa five are currently listed as Priority flora.

Flora and Vegetation Assessment for the OPR Rail Development (Ecologia 2010)

Ecologia undertook a series of surveys as a part of a Level 2 survey of a proposed 560 km rail development extending from Oakajee located 24 km north of Geraldton to Jack hills mine in the north east. The project crossed three IBRA regions, the Geraldton Sandplains, Yalgoo and Murchison.

The survey included 614 quadrats which were used to identify 72 vegetation communities including 48 subunits. A total of 1015 taxa were recorded, including two Threatened and 55 Priority flora.

Flora and vegetation of banded iron formations of the Yilgarn Craton: Barloweerie and Twin Peaks Greenstone Belts (DEC 2010)

The Twin Peaks and Barloweerie Greenstone Belts are located within the Youanmi Terrane and are represented by two ranges, separated by 24 km. The objective of the study was to describe the flora and plant communities of the banded ironstone ranges on the Twin Peaks and Barloweerie Greenstone Belts and their relationships with environmental variables, and to provide baseline information for future management.

A total of 199 taxa, including 91 genera from 36 families, were recorded from the Twin Peaks and Mount Barloweerie Greenstone Belt. Seven Priority flora were recorded during the survey including two new Priority species for the area. Three plant communities were described for the Twin Peaks and Barloweerie Ranges using floristic analysis.

4.2.3 Overview of Flora Survey Results

A total of 454 taxa (including species, subspecies, varieties and forms) from 166 genera and 51 families were identified from quadrats, relevés and opportunistic collections in the Survey Area, the site data sheets are presented in Appendix G. The most commonly occurring families were Fabaceae (63 taxa), Chenopodiaceae (56 taxa) and Asteraceae (41 taxa). The most frequently recorded genera were; *Acacia* (36 taxa), *Eremophila* (32 taxa) *and Mairena* (19 taxa). The flora inventory is provided in Appendix F.

Due to poor material, 23 specimens could only be identified to the genus level. None are considered to represent conservation significant species. A small number of outstanding specimens still require identification and will be included in the final report once taxonomy is completed.

A species accumulation curve was generated using quadrat data and is illustrated below in Figure 7. The species accumulation routine plots (and lists) the increasing total number of different species oberserved, as sites are successively pooled (Sobs curve in Figure 7). Four extrapolators were plotted to help predict the true total number of species that would be observed, as the number of sites tends to infinity (the asymptote of the species accumulation curve). A total of 298 taxa were recorded from the quadrat sites (S curve) while the four species extrapolator curves gave an estimated range of 370 to 500 taxa.

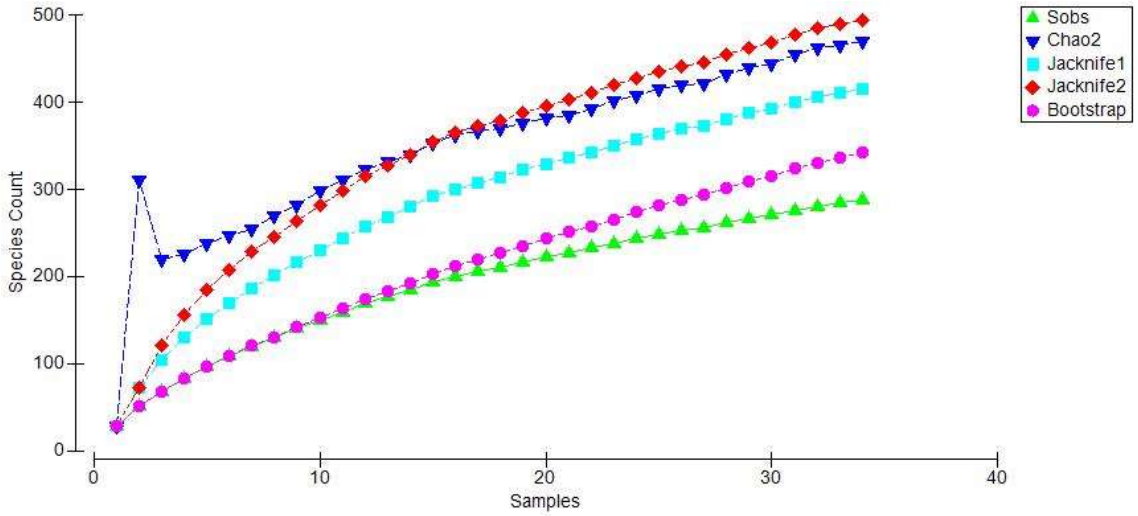

Figure 7: Species Accumulation Curve and Extrapolator Curves based on quadrat data.

4.2.4 Flora of Conservation Significance

No Threatened species listed under the EPBC Act and/or gazetted as Threatened under the WC Act were recorded during the survey.

Fifteen priority listed flora were recorded during the survey, these taxa and their corresponding priority status are listed in Table 4 and their locations are presented in Figure 8a-e.

Table 4: Conservation Significant Taxa Recorded During the Survey.

CONSERVATION STATUS	TAXON
Priority 1	*Calandrinia butcherensis*
	Indigofera eriophylla
Priority 2	*Bergia auriculata*
Priority 3	*Calocephalus aervoides*
	Eremophila muelleriana
	Eremophila simulans subsp. *megacalyx*
	Gunniopsis propinqua
	Hemigenia tysonii
	Hibiscus krichauffianus
	Lepidium scandens
	Lepidium xylodes
	Petrophile pauciflora
	Ptilotus lazaridis
	Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94)
Priority 4	*Frankenia confusa*

Calandrinia butcherensis (P1)

Calandrinia butcherensis is a poorly recorded small herb known from six records at the WAH. WAH collections include specimens collected on red sands and loams on undulating plains and old dune systems (WAH 2016). *Calandrinia butcherensis* was recorded from five locations in vegetation associations 30, 37 and 51 (Figure 8a & d).

Indigofera eriophylla (P1)

Indigofera eriophylla is a spreading shrub reaching 0.2 to 0.3 m. It is known from three records at the WAH. WAH collections include specimens collected on red sands and rises (WAH 2016). *Indigofera eriophylla* was recorded from one location (Figure 8a).

Bergia auriculata (P2)

Bergia auriculata is a perennial, prostate herb known from two collections at the WAH (WAH 2016). *Bergia auriculata* was recorded from one location (Figure 8c).

Calocephalus aervoides (P3)

Calocephalus aervoidesis is a spreading herb to 0.15 m high, with yellow flowers and known from seven collections at the WAH (WAH 2016). *Calocephalus aervoidesis* was recorded from two locations in vegetation association 10 (Figure 8b).

Eremophila muelleriana (P3)

Eremophila muelleriana is a shrub or tree upto 0.3 m to 4 m high with purple, purple-red or purple-black flowers. *Eremophila muelleriana* is known from 12 collections at the WAH. WAH collections include specimens found on granitic soils (WAH 2016). *Eremophila muelleriana* was recorded from one location (Figure 8d).

Eremophila simulans subsp. *megacalyx* (P3)

Eremophila simulans subsp. *megacalyx* is a shrub between 0.9 - 2.0 m high with violet flowers. *Eremophila simulans* subsp. *megacalyx* is known from 11 collections at the WAH (WAH 2016). *Eremophila simulans* subsp. *megacalyx* was recorded from 17 locations in vegetation associations 28F, 30, 31, 36, 40, 41 and 51(Figure 8a, b, d & e).

Gunniopsis propinqua (P3)

Gunniopsis propinqua is a herb up to 0.03 to 0.1 m high with white or pink flowers. Suitable habitat includes stony sandy loam, lateritic outcrops and winter-wet sites. *Gunniopsis propinqua* is currently known from 17 records at the WAH (WAH 2016). *Gunniopsis propinqua* was recorded from three locations in vegetation association 37 (Figure 8a & b).

Hemigenia tysonii (P3)

Hemigenia tysonii is an upright shrub to 0.5 m high with purple-blue-pink or white flowers. Suitable habitat includes red sand, sandy clay or lateritic sand on flats, sand dunes and hills. *Hemigenia tysonii* is currently known from 18 records at the WAH (WAH 2016). *Hemigenia tysonii* was recorded from seven locations in vegetation assocations 30, 36 and 40 (Figure 8a & c).

Hibiscus krichauffianus (P3)

Hibiscus krichauffianus is a low or ascending shrub to 0.2 m to 0.7 m high with purple-pink flowers. Suitable habitat includes red sandy soils. *Hibiscus krichauffianus* is currently known from four records at the WAH (WAH 2016). *Hibiscus krichauffianus* was recorded from five locations in vegetation associations 28F, 30, 47 and 53 (Figure 8a & d).

Lepidium scandens (P3)

Lepidium scandens is an ascending or twining shrub to 0.4 to 2 m high with white flowers. Suitable habitat includes red sand or clay. *Lepidium scandens* is currently known from five records at the WAH (WAH 2016). *Lepidium scandens* was recorded from one location in vegetation associations 10 (Figure 8b).

Lepidium xylodes (P3)

Lepidium xylodes is an erect shrub to 0.4 to 1.5 m high with white or cream flowers. Suitable habitat includes gravelly loam or clayey sand. *Lepidium xylodes* is currently known from six records at the WAH (WAH 2016). *Lepidium xylodes* was recorded from one location (Figure 8b).

Petrophile pauciflora (P3)

Petrophile pauciflora is a small shrub to 1.0 m high with yellow flowers. Suitable habitat includes decaying and dissected granite breakaways. *Petrophile pauciflora* is currently known from 20 records at the WAH (WAH 2016). *Petrophile pauciflora* was recorded from two locations in vegetation association 41(Figure 8d).

Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94) (P3)

Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94) is a small shrub between 0.3 -1.0 m high with yellow flowers. Suitable habitat includes red sand on plains. *Sauropus* sp. Woolgorong (M. Officer s.n. 10/8/94) is currently known from 14 records at the WAH (WAH 2016). *Sauropus* sp. Woolgorong (M. Officer s.n. 10/8/94) was recorded from five locations in vegetation associations 27 and 28 (Figure 8a, d & e).

Frankenia confusa (P4)

Frankenia confusa is a low, diffuse shrub to 0.75 m high with pink flowers. Suitable habitat includes wet pale brown sand, brown clay or grey soil on banks of rivers, waterholes and river floodplains. *Frankenia confusa* is currently known from 21 records at the WAH (WAH 2016). *Frankenia confusa* was recorded from two locations in vegetation association 10 (Figure 8b).

4.2.5 Flora of Interest

Several flora of interest were recorded during the survey and are discussed below:

- *Ptilotus lazaridis* - considered to be poorly collected and was submitted to the WAH at the request of Rob Davis (Technical officer at the WAH);
- *Ptilotus obovatus* - considered to be poorly collected and was submitted to the WAH at the request of Rob Davis (Technical officer at the WAH);
- *Tecticornia tenuis* - considered to be poorly collected and was submitted to the WAH at the request of Kelly Shepherd (Technical officer at the WAH);

4.2.6 Introduced Flora

Twenty-one introduced species representing 5% of the total taxa were recorded during the survey and are listed in Table 5. No introduced species recorded are listed as WONS or Declared under the BAM Act.

Of the 21 introduced taxa, 14 taxa were only recorded once. The most frequently recorded weeds were **Spergula pentandra* (29 sites), **Rostraria pumila* (10 sites), and **Sonchus oleraceus* (9 sites).

Ruby Dock (**Rumex vesicaria*) is a common widespread weed found along road sides and in disturbed areas in the arid zone from the Pilbara to the Nullarbor (Hussey et al. 2007). Common Sowthistle (**Sonchus oleraceus*) is another common widespread weed on roadsides, market gardens and wastelands in all parts of the state but most common in the southwest (Hussey et al. 2007).

Table 5: Introduced flora recorded during the survey.

TAXON	COMMON NAME
**Asphodelus fistulosus*	Onion Weed
**Avellinia michelii*	Avellinia
**Cenchrus ciliaris*	Buffel Grass
**Citrullus lanatus*	Pie Melon
**Cenchrus setiger*	Birdwood Grass
**Cleretum papulosum*	Cleretum
**Cynodon dactylon*	Couch
**Emex australis*	Doublegee
**Hypochaeris glabra*	Smooth Cats-ear
**Lolium multiflorum*	Italian Ryegrass
**Lupinus cosentinii*	Sandplain Lupin
**Mesembryanthemum nodiflorum*	Slender Iceplant
**Pentameris airoides subsp. airoides*	Pentameris
**Polycarpon tetraphyllum*	Fourleaf Allseed
**Polypogon monspeliensis*	Annual Beardgrass
**Portulaca oleracea*	Purslane
**Rostraria pumila*	Rostraria
**Rumex acetosella*	Sorrel
**Rumex vesicarius*	Ruby Dock
**Sonchus oleraceus*	Common Sowthistle
**Spergula pentandra*	Five Anther Spurry

4.2.7 Vegetation Communities

Thirty-three vegetation assocations from 13 landforms were identified in the Survey Area (Figure 9a-y). The vegetation associations are summarised in Table 6 and the results of the multivariate analysis are presented in Appendix H.

Table 6: Vegetation associations and their extent in the Survey Area

LANDFORM	BROAD FLORISTIC FORMATION	VEGETATION ASSOCIATION	VEGETATION DESCRIPTION	SITES	EXTENT IN THE SURVEY AREA (HA)
Salt lake, salt pan and salt lake dunes	*Tecticornia* open Samphire	43	*Tecticornia indica subsp. leiostachya, Tecticornia indica subsp. bidens, Tecticornia sp. low samphire shrubland*	SQ01	61.01
	Atriplex shrubland	44	*(Acacia kalgoorliensis, Eremophila pterocarpa subsp. pterocarpa scattered shrubs) over Atriplex vesicaria low shrubland*	SQ31	22.58
	Acacia kalgoorliensis tall shrublands	45	*Acacia kalgoorliensis, Acacia microcalyx tall shrubland over Eremophila pterocarpa subsp. pterocarpa open shrubland over Atriplex amnicola, Atriplex vesicaria, Maireana pyramidata, Enchylaena tomentosa var. tomentosa low shrubland*	SQ30	15.37
Clay pans	*Eriachne flaccida grasslands*	46	*Eriachne flaccida, (Eragrostis leptocarpa, Eragrostis pergracilis, Eragrostis dielsii) grassland with Marsilea exarata very open fernland*	SR7, SR25	3.03
Major rivers; minor creeks and rivers	*Eucalyptus* open woodland	10	*Eucalyptus victrix open woodland over Acacia sclerosperma subsp. sclerosperma* over *Eremophila laanii* and *Atriplex* spp. open shrubland over *Eriochloa pseudoacrotricha* and *Eragrostis dielsii* open grassland	SQ2	1.73
Minor broad drainage	*Acacia* tall shrubland	47	*Acacia burkittii, Acacia tetragonophylla, Acacia grasbyi tall open shrubland over Aristida contorta very open grassland*	SQ17, SR108	65.28
Floodplain	*Acacia* tall open shrubland	16	*Acacia synchronicia tall open shrubland over Eremophila laanii*, *Eremophila longifolia* and *Scaevola spinescens* open shrubland over *Setaria dielsii* open grassland over *Ptilotus divaricatus, Ptilotus macrocephalus* and *Tetragonia cristata* open herbland	SQ1, SQ15, SQ19, SR9, SR31, SR107	78.79
Plain	Open shrublands	48	*Eremophila fraseri subsp. fraseri open shrubland over Ptilotus obovatus scattered low shrubs with sparsely scattered to scattered Acacia pteraneura and scattered Acacia grasbyi*	SR57, SR68, SR124	89.87
Plain (base of hills)	*Maireana* chenopod low shrubland	55	*Maireana convexa, Maireana glomerifolia* chenopod low shrubland	SR51	47.87

LANDFORM	BROAD FLORISTIC FORMATION	VEGETATION ASSOCIATION	VEGETATION DESCRIPTION	SITES	EXTENT IN THE SURVEY AREA (HA)
Plain	*Acacia* tall shrubland	19	*Acacia ramulosa* var. *linophylla, A. burkittii* and *A. tetragonophylla* tall shrubland over *Aristida contorta* and *Austrostipa nitida* open grassland over mixed annual herbs	SR17, SR22, SR128	29.67
		22	*Acacia synchronicia* and *Eremophila pterocarpa* subsp. *pterocarpa* tall shrubland over mixed *Senna* spp. shrubland over *Sclerolaena* spp. open herbland over *Eragrostis dielsii* and *Aristida contorta* open grassland	SQ14, SQ33	90.11
		23	*Acacia sclerosperma* subsp. *sclerosperma* and *A. synchronicia* tall open shrubland over mixed *Senna* spp. sparse shrubs over *Salsola australis* sparse herbs	SR12	11.15
	Acacia tall open shrubland	25	*Acacia eremaea* and *Eremophila oppositifolia* subsp. *angustifolia* tall open shrubland over mixed Chenopodiaceae spp. low shrubs and herbs	SQ18, SR38, SR123, SR131	112.28
		49	*Acacia grasbyi*, *Acacia tetragonophylla* high open shrubland over scattered low shrubs	SQ11, SQ16, SR36, SR77, SR84	262.77
	Acacia low open woodland: hardpan plain/plain	28H	*Acacia pteraneura* low open woodland to low woodland over *Acacia grasbyi, Acacia tetragonophylla* scattered tall shrubs over *Senna* spp., *Eremophila forrestii* subsp. *forrestii* scattered shrubs.	SQ3, SQ8, SQ28, SQ32, SR1, SR6, SR8, SR26, SR50, SR54, SR64, SR66, SR71, SR94, SR102, SR104, SR105, SR106, SR111, SR118, SR126, SR127, SR129	1036.20
	Acacia low woodland: flow lines and flow areas	28F	*Acacia pteraneura* low woodland over *Acacia craspedocarpa, Acacia tetragonophylla, Eremophila platycalyx subsp. platycalyx* tall open shrubland to tall shrubland over *Abutilon cryptopetalum* scattered low shrubs and mixed open herbland	SQ7, SQ9, SQ12, SQ27, SR4, SR10, SR28, SR42, SR56, SR59, SR69, SR86, SR91, SR100, SR101, SR113, SR121	350.77
	Acacia low woodland: 'wanderrie' banks	28W	*Acacia pteraneura* low open woodland over *Acacia tetragonophylla, (Acacia ramulosa var. linophylla)* scattered tall shrubs over *Eremophila forrestii* subsp. *forrestii* scattered shrubs over *(Eremophila spuria* low open shrubland*)* with *Monachather parodoxus, Eriachne helmsii* scattered grasses to very open grassland and *Ptilotus polystachyus* scattered herbs	SR2, SR3, SR5, SR23, SR61, SR93, SR109, SR110	132.45
		27	*Acacia fuscaneura* low woodland over *Acacia tetragonophylla* tall open shrubland over mixed *Eremophila* spp. and *Senna* spp. sparse shrubs	SQ6	19.85

LANDFORM	BROAD FLORISTIC FORMATION	VEGETATION ASSOCIATION	VEGETATION DESCRIPTION	SITES	EXTENT IN THE SURVEY AREA (HA)
Outwash Plain	Scattered *Acacia* trees and shrubs	50	*Acacia pteraneura* scattered low trees over scattered shrubs and very open herbland	SR33, SR44	8.87
Sand plain	*Acacia* tall shrubland	30	*Acacia ramulosa* var. *linophylla*, (*Acacia murrayana*) tall open shrubland over *Eremophila simulans* subsp. *magecalyx*, (*Eremophila forrestii* subsp. *forrestii*) open shrubland over *Monachather paradoxus* scattered grasses	SR13, SR20, SR27, SR32, SR37, SR40, SR49, SR60, SR62, SR63, SR83, SR97, SR122	262.72
		31	*Acacia ramulosa* var. *linophylla* and *Thryptomene decussata* tall shrubland over mixed *Eremophila* spp. and *Grevillea* spp. open shrubland over *Ptilotus polystachyus* very open herbland over *Thyridolepis multiculmis* sparse grasses.	SR30, SR34, SR35, SR72, SR80, SR89, SR92	55.58
		51	*Acacia ramulosa* var. *linophylla*, *Acacia longispinea* tall open shrubland to tall shrubland over *Eremophila forrestii* subsp. *forrestii*, *Eremophila simulans* subsp. *megacalyx* open shrubland over *Thyridolepis multiculmis*, *Monachather paradoxus*, *Eragrostis lanipes* very open grassland	SQ20, SQ23	47.87
Low rise	Open shrublands (granites)	53	*Eremophila fraseri* subsp. *fraseri*, *Senna artemisioides* subsp. *helmsii* open shrublands	SQ5, SQ10, SR74, SR103, SR116, SR120, SR125	132.25
	Acacia tall shrublands	52	*Acacia umbraculiformis, Acacia ramulosa var. linophylla* tall shrubland over *Ptilotus obovatus, Eremophila lachnocalyx* low open shrubland	SR16, SR18, SR21	19.82
	Acacia low open woodland	36	*Acacia pteraneura* low open woodland over *Thryptomene decussata*, *Acacia umbraculiformis* tall open shrubland	SR24, SR46, SR52, SR53, SR65, SR67, SR99	112.72
Low hills	Shrublands	54	(*Acacia tetragonophylla* scattered tall shrubs) over *Eremophila exilifolia* shrubland	SQ13	20.00
Low hills	*Acacia* tall shrubland	37	*Acacia pteraneura scattered low trees* over *A grasbyi, A. cuthbertsonii subsp. cuthbertsonii*, *A. tetragonophylla* scattered tall shrubs to tall open shrubland *Ptilotus obovatus* and mixed *Senna* spp. low sparse shrubs (quartz plains, low rises and hill slopes)	SQ4, SQ22, SR112, SR114, SR115	242.20
		56	*Acacia ramulosa* var. *linophylla, Thryptomene decussata* tall shrubland over *Eremophila latrobei* subsp. *latrobei* scattered shrubs over *Aluta aspera* subsp.	SR14, SR15, SR19	12.31

LANDFORM	BROAD FLORISTIC FORMATION	VEGETATION ASSOCIATION	VEGETATION DESCRIPTION	SITES	EXTENT IN THE SURVEY AREA (HA)
			Hesperia, Philotheca sericea scattered low shrubs over *Monachather paradoxus* open grassland. (Associated with some exposed decomposing granites)		
		57	*Grevillea nematophylla* subsp. *supraplana, Acacia pruinocarpa* scattered low trees (low open woodland on parts of lower slopes) over *Acacia ramulosa var. linophylla* tall open shrubland to tall shrubland over *Eremophila glutinosa, Eremophila forrestii* subsp. *forrestii, Trachymene decussata* scattered shrubs over *Aluta aspera* subsp. *hesperia* scattered low shrubs	SQ26, SR76, SR79, SR81, SR82, SR85, SR87	34.60
Rock outcropping	*Acacia* open shrubland	40	*Thryptomene decussate,* (*Acacia aulacophylla*) open shrubland over *Micromyrtus sulphurea*, Aluta aspera subsp. Hesperia, Calytrix divergens, Philotheca brucei subsp. brucei low open shrubland with Neurachne minor, Eriachne mucronata, Stylidium longibracteatum scattered grasses and herbs. (On laterite outcropping).	SQ21, SR29, SR39, SR48, SR58, SR70, SR73, SR75, SR88, SR90, SR98, SR117	44.53
		41	*Acacia aulacophylla, A. coolgardiensis* and *A. umbraculiformis* open shrubland over *Micromyrtus prochytes* and *Calytrix uncinata sparse* low shrubs over *Eriachne pulchella* subsp. *pulchella* sparse grasses.	SR43, SR45, SR47, SR55, SR78	12.83
	Acacia low woodland	42	Acacia pteraneura low woodland over Acacia scleroclada, Hibiscus sp. Gardneri (A.L. Payne PRP 1435) open shrubland over Indigofera monophylla scattered low shrubs over Tetragonia cristata, Trachymene pilbarensis very open herbland and Monachather paradoxus, Aristida contorta grassland. (Recorded on granite outcrop).	SQ24, SQ25, SR96	20.14
Rock piles	*Acacia* tall shrublands	58	*Acacia ramulosa var. linophylla*, *Thryptomene decussata* tall shrubland over *Prostanthera campbellii*, *Eremophila latrobei* subsp. *latrobei* open shrubland. (Recorded on chert rockpiles)	SQ29	0.27

4.2.8 Vegetation Condition

Vegetation condition ranged from Completely Degraded to Excellent. The majority of the Survey Area is generally considered to be in a Very Good condition (83.54%). The extent of each vegetation condition unit is listed in Table 7 and presented in Figure 10a-y.

Major disturbances affecting vegetation condition included impacts from the existing roads and grazing from livestock. While more minor impacts included weeds, rubbish, dust and off road vehicle tracks.

The average fire age of the vegetation was considered old (8-12 years since last fire).

Table 7: Vegetation condition and extent in the Survey Area.

CONDITION	EXTENT (HA)
Excellent	110 (2.9 %)
Very Good	3106 (83.54%)
Good	403 (10.83%)
Degraded	85 (2.29%)
Completely Degraded	15 (0.39%)

4.2.9 Threatened and Priority Ecological Communities

None of the vegetation associations recorded are considered to represent any Federal or State listed TECs or DPaW listed PECs.

4.2.10 Regional Representation

There are 13 pre-European, broad vegetation types mapped for the Survey Area, with Low to High reservation priorities (CALM 2002). Twenty-one vegetation associations described during the field survey were correlated with the Shepherd et al. (2001) broad vegetation types as much as possible (Table 8). These combined 21 vegetation associations represent 80% of the vegetation in the Survey Area (2938.67 ha).

Differences exist with the terminology used in the descriptions, as they are based on different methods of classifying vegetation types and spatial scale of the mapping and analysis (i.e. regional vs. local scale).

The remaining 13 vegetation associations are not captured by broad scale mapping, including vegetation typical of minor creeks, clays pans and small unique landform features such as rock piles. These vegetation associations represent 14% (538.61 ha) of the vegetation in the Survey Area.

Table 8: Representation of Broad Vegetation Types and Corresponding Vegetation Associations in the IBRA Subregion Context.

Shepherd vegetation Unit	Corresponding Vegetation Associationss	Corresponding Vegetation associations (ha)	% pre-european extent remaining[1]	Reservation priority[2] MUR02	Reservation priority[2] YAL
18-Upper Murchison	37,48, 40, 53	508.85	99.76%	M	M
29-Upper Murchison	28, 27, 46, 47	1587.73	99.97%	H	-
39-Upper Murchison	55	47.87	99.74%	H	M
160-Upper Murchison	52	19.82	100%	M	-
183-Upper Murchison	-	-	100%	H	-
184-Upper Murchison	-	-	100%	-	-
204-Upper Murchison	23, 22	101.26	100%	H	H
1125 –Upper Murchison	44, 45, 43	98.96	100%	-	-
2081-Upper Murchison	36, 49, 50	384.36	99.63%	L	L
40-Yalgoo	19, 25	141.95	93.88%	-	H
404-Yalgoo	51	47.87	97.15%	H	H

[1]Extent remaining based on Government of Western Australia (2015).

[2]according to their reservation status (IUCN I-IV, V-VI, CALM leasehold or other) and priority for acquisition in a Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (CALM 2002).

5 Discussion

5.1 Flora

5.1.1 General flora

A total of 454 taxa (including species, subspecies, varieties and forms) from 166 genera and 51 families were identified from quadrats, relevés and opportunistic collections in the Survey Area. Whilst 298 taxa were recorded from the quadrat sites, the species extrapolator curves estimated that between 370 to 500 species should be recorded for the Survey Area. The extraplator curves indicate that extra quadrats may have yielded additonal taxa which is to be expected of a single season survey (relatively low sampling effort).

It is diffcult to compare these results directly with the Ecologia (2010) survey due to differences in the level of survey, Level 2 survey vs a flora and vegetation assessment for the current survey and 560 km vs 152 km for the currrent survey. Similarly the DEC survey of Burnerbinmah Station was undertaken over multiple season and more intesively than a Level 1 survey, however, depsite these diference some comparsions can be made (Patrick 2002).

The species compostion was simlilar between this survey and Burnerbinmah survey. The most commonly occurring families from the Burnerbinmah Station were Asteraceae (78 taxa), Chenopodiaceae (49 taxa) and Mimosaceae (32 taxa) and this is comparable to the current survey, Fabaceae (63 taxa), Chenopodiaceae (56 taxa) and Asteraceae (41 taxa). Likewise the two most frequent genera were also the same between the two surveys, *Acacia* (36 taxa vs 36 from the current survey) and *Eremophila* (33 taxa vs 32 from the current survey).

The timing of the survey was considered appropriate with a high number of annual species being record during the survey.

5.1.2 Recorded Flora of Conservation Significance

No Threatened species listed under the EPBC Act and/or gazetted as Threatened under the WC Act were recorded during the survey, however, 15 Priority listed flora were recorded during the survey.

The Priority 1, 3 and 4 flora represent taxa that are known from several existing locations or from few but widespread locations. All but one, *Petrophila pauciflora,* were recorded multiple times during the survey.

If targeted searches are undertaken that focus on suitable habitat further populations in and adjacent to the Survey Area are likely to be recorded.

5.1.3 Potential Occurrences of Conservation Significance Flora

The review of the DPaW flora database and EPBC searches identified thirteen Threatened/EPBC listed species and a further 76 taxa listed as Priority flora as potentially occurring in the Survey Area (Table 3). Of these 76 conservation significant flora, five are considered Likely to occur, *Acacia ampliata* (P1), *Dicrastylis linearifolia* (P3), *Eremophila physocalyx* (P3), *Gunniopsis divisa* (P3), *Prostanthera petrophila* (P3).

The Survey Area contains suitable habitat for these taxa as well as having nearby records. Targeted searches in suitable habitat may yield new records for these taxa in and adjacent to the Survey Area.

5.2 Vegetation

5.2.1 Vegetation Communities

A total of 33 vegetation associations represented by 18 broad floristic communities from 13 landforms were identified in the Survey Area.

The most species rich sites were the rivers (Vegetation association 10) and granite outcrops (Vegetation association 42). The most broad communities were the Acacia woodland and shrublands that occurred on the plains. These communities represented 80% of the total Survey Area with one community; Vegetation association 28H (Acacia low woodland) represented 28% of the total Survey Area.

The most restricted communities were generally limited to unique land forms such as water courses, clays pans, rock piles and laterite outcropping. Due to these unique land forms, these communities were the most floristically distinct communities.

5.2.2 Vegetation of Conservation Significance

Vegetation associations recorded during the survey were compared against the PEC and TEC lists for WA with none of the vegetation associations matching any communities on these lists.

The DPaW TEC and PEC database search identified one Priority 1 PEC, the Meeberrie calcrete groundwater assemblage type on Murchison palaeodrainage on Meeberrie Station and another Priority 1 PEC, the New Forest BIF as occurring within the Survey Area.

The Meeberrie Calcrete community is based on unique assemblages of invertebrates that have been identified in the groundwater calcretes. As invertebrate fauna is outside the scope of this survey, this community is not discussed further. The New Forest vegetation complex is restricted to banded ironstone formations (BIF). No BIF necessary to support this community was observed in the Survey Area.

A further two Priority 1 PEC's were identified as occurring in the vicinity of the Survey area:

- Mount Narryer calcrete groundwater assemblage type on Murchison palaeodrainage on Mount Narryer Station; and
- Tallering Peaks Banded Ironstone Formation.

The Mount Narryer calcrete groundwater assemblage type on Murchison palaeodrainage on Mount Narryer Station is also based on unique assemblages of invertebrates that have been identified in the groundwater calcretes. Like the Meeberrie calcrete groundwater assemblages, this PEC is outside the scope of this survey and this community is not discussed further. The Tallering Peaks Banded Ironstone Formation vegetation complex is restricted to ironstone and jaspilite formations, however no ironstone or jaspilite necessary to support this community was found in the Survey Area.

5.3 Vegetation Condition and Introduced Flora

The vegetation condition ranged from Completely Degraded to Excellent with the majority of the Survey Area generally considered to be in a Very Good condition.

Major impacts on the vegetation condition included existing roads and grazing from livestock. There were minor impacts that included weeds, rubbish, dust and off road vehicle tracks.

The majority of the Survey Area occurs on active pastoral land with grazing evident throughout the majority Survey Area. The most impacted areas included the rivers, creeks, freshwater clay pans and plains, while the hillslopes and rocky areas were considered the least impacted by grazing.

Introduced species represented approximately 5% of the total flora taxa recorded. The majority of weeds recorded only formed a minor component of the vegetation cover, with higher levels of weed diversity and cover being generally restricted to localised areas of disturbance.

None of the weeds recorded during the survey represent a Declared species or WONs. All are considered to be relatively common and widespread taxa (WAH 2016, Hussey et al. 2007).

5.4 Regional Representation

To encompass current recognised levels of remnant native vegetation retention the EPA uses a standard level of native vegetation retention of at least 30% of the pre-clearing extent of the ecological communities. These levels have been most recently recognised in the National Objectives and Targets for Biodiversity Conservation 2001-2005 which recognised that the retention of 30%, or more, of the pre-clearing extent of each ecological community was necessary if Australia's biological diversity was to be protected (EPA 2002).

Vegetation complexes which have 10%-30% remaining may be considered regionally significant while proposals that would affect a vegetation complex with 10% or less remaining are likely to be formally assessed by the EPA (EPA 2000).

The proposed development of the Survey Area would not result any vegetation associations extent remaining falling below the 30% threshold.

6 Conclusion

In summary, the following conclusions on the existing flora and vegetation are made:

- No Threatened flora species pursuant to the EPBC Act and/or gazetted as Declared Rare Flora pursuant to the *WC Act* were recorded during the survey or are considered likely to occur in the Survey Area;
- 15 Priority listed flora were recorded during the survey comprising two Priority 1 taxa, one Priority 2 taxa, eleven Priority 3 taxa and one Priority 4 taxa;
- five Priority flora taxa are considered Likely to occur in the Survey Area;
- 21 introduced species were recorded during the survey, none of whichare listed as Weeds of National Significance or Declared species for that region;
- None of the 33 vegetation associations recorded are considered to represent any Federal or State listed TEC or PECs;
- The majority of the Survey Area is generally considered to be in a Very Good condition; and
- The proposed development of the Survey Area would not result in any of the Shepherd *et al.* (2001) vegetation associations current extent remaining, falling below the 30% threshold.

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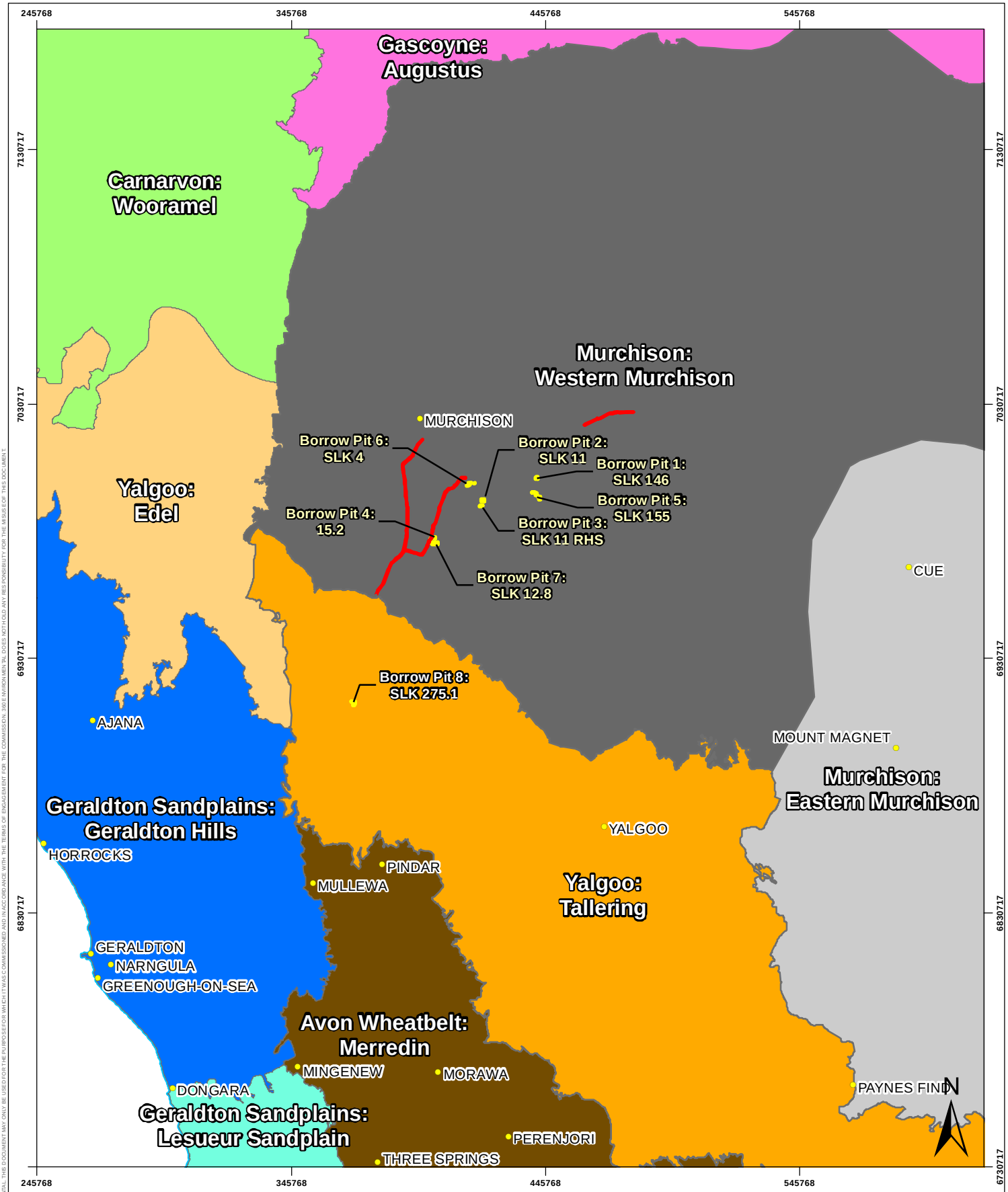
FIGURES



Legend

- Towns Australia
- Road Clearing Corridor
- Pit Locations

IBRA Regions

- Avon Wheatbelt
- Carnarvon
- Gascoyne
- Geraldton Sandplains
- Murchison
- Yalgoo

IBRA Subregions

- Augustus
- Eastern Murchison
- Edel
- Geraldton Hills
- Lesueur Sandplain
- Merredin
- Tallering
- Western Murchison
- Wooramel

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Kilometers
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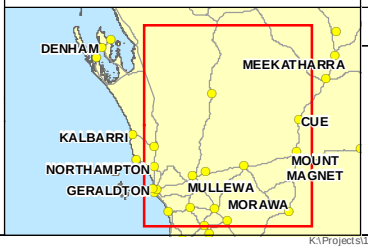
NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

LOCALITY MAP



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PROJECT ID	DATE
1803	23/01/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads, WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 4
IBRA Regions

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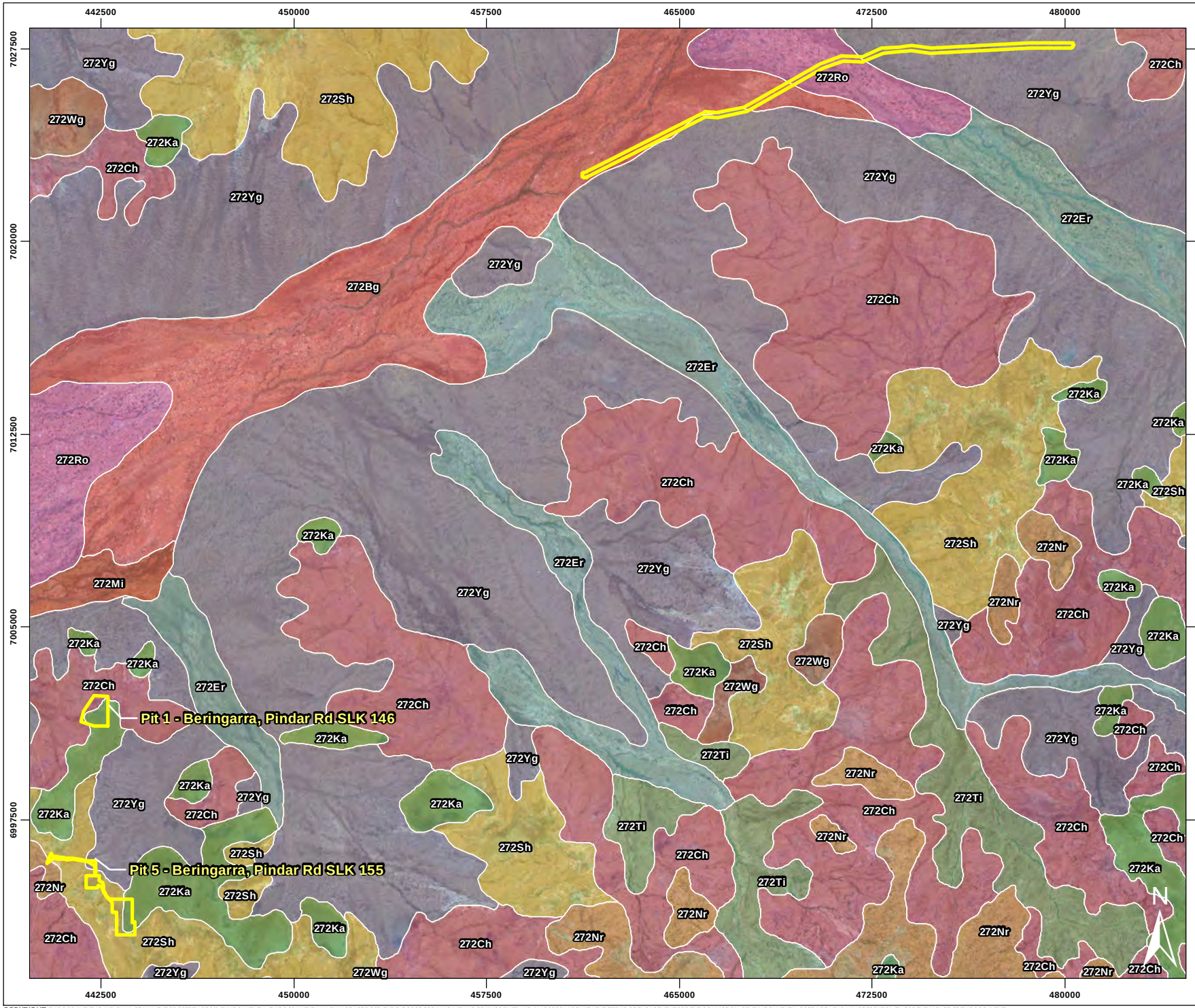

Legend

Survey Area

Land Systems

- 272Bg: Beringarra System
- 272Ch: Challenge System
- 272Er: Ero System
- 272Ka: Kalli System
- 272Ko: Koonmarra System
- 272Mi: Mileura System
- 272Ml: Millrose System
- 272Nr: Norie System
- 272Ro: Roderick System
- 272Sh: Sherwood System
- 272Ti: Tindalarra System
- 272Wg: Waguin System
- 272Yg: Yanganoo System

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- LAND SYSTEMS SOURCED DAFWA 2012
- AERIAL PHOTOGRAPHY SOURCED LANDSAT 7
(© Western Australian Land Information Authority 2015)

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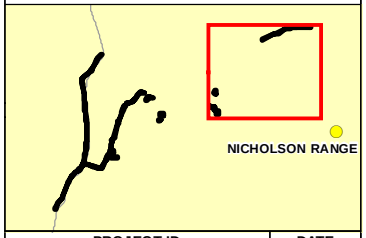
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 5a
Land Systems (North East)

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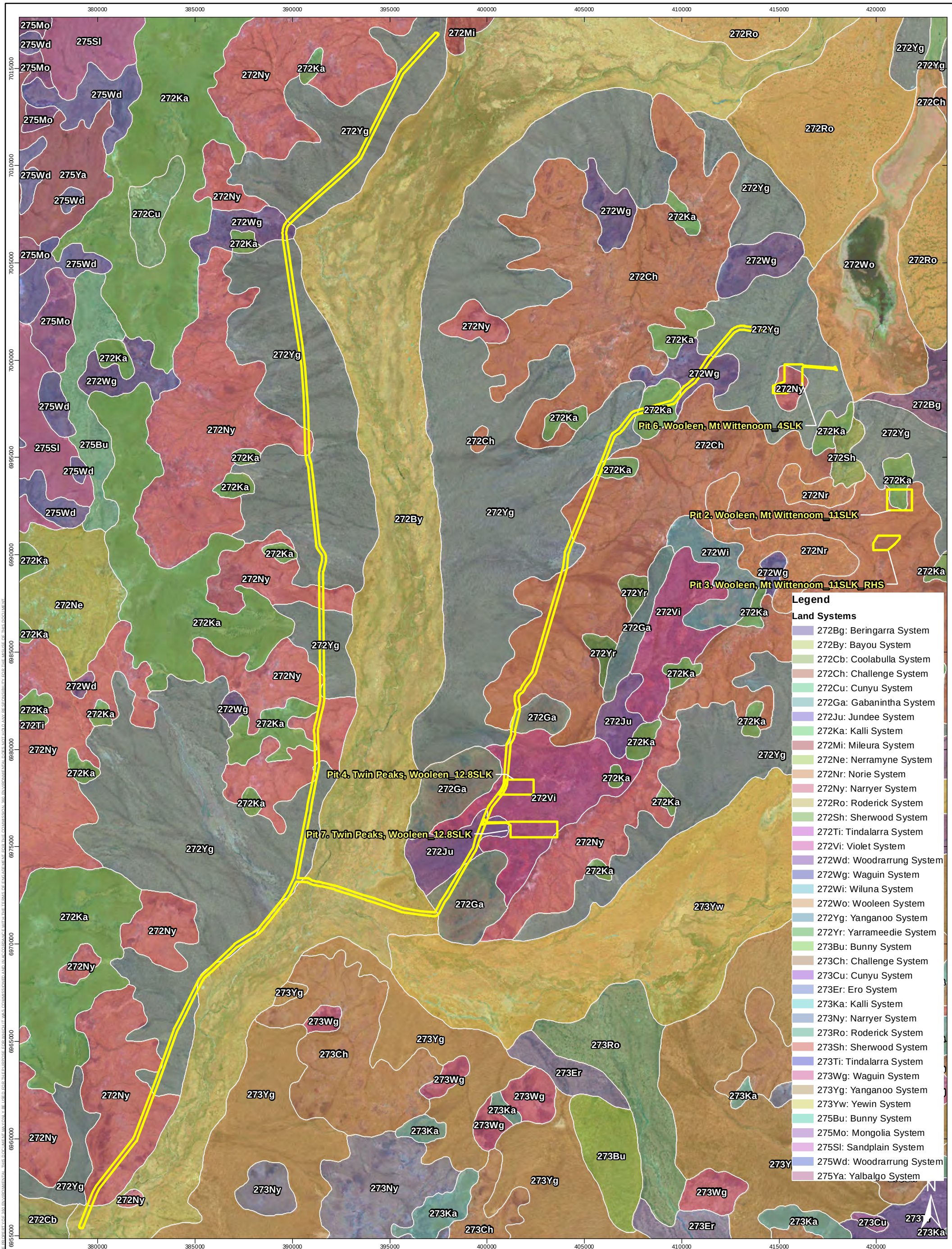
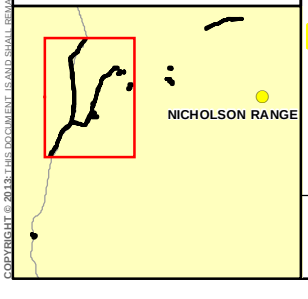


LOCALITY MAP



Legend

Survey Area

DATA SOURCES

- CADASTRAL BOUNDARY SOURCED FROM LANDGATE 2009
- LOCALITY MAP SOURCED LANDGATE 2006
- LAND SYSTEMS SOURCED DAFWA 2012
- AERIAL PHOTOGRAPHY SOURCED LANDSAT 7 (© Western Australian Land Information Authority 2015)

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HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 1,000 2,000 4,000 6,000 8,000
Meters
1:175,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 5b
Land Systems (Central)

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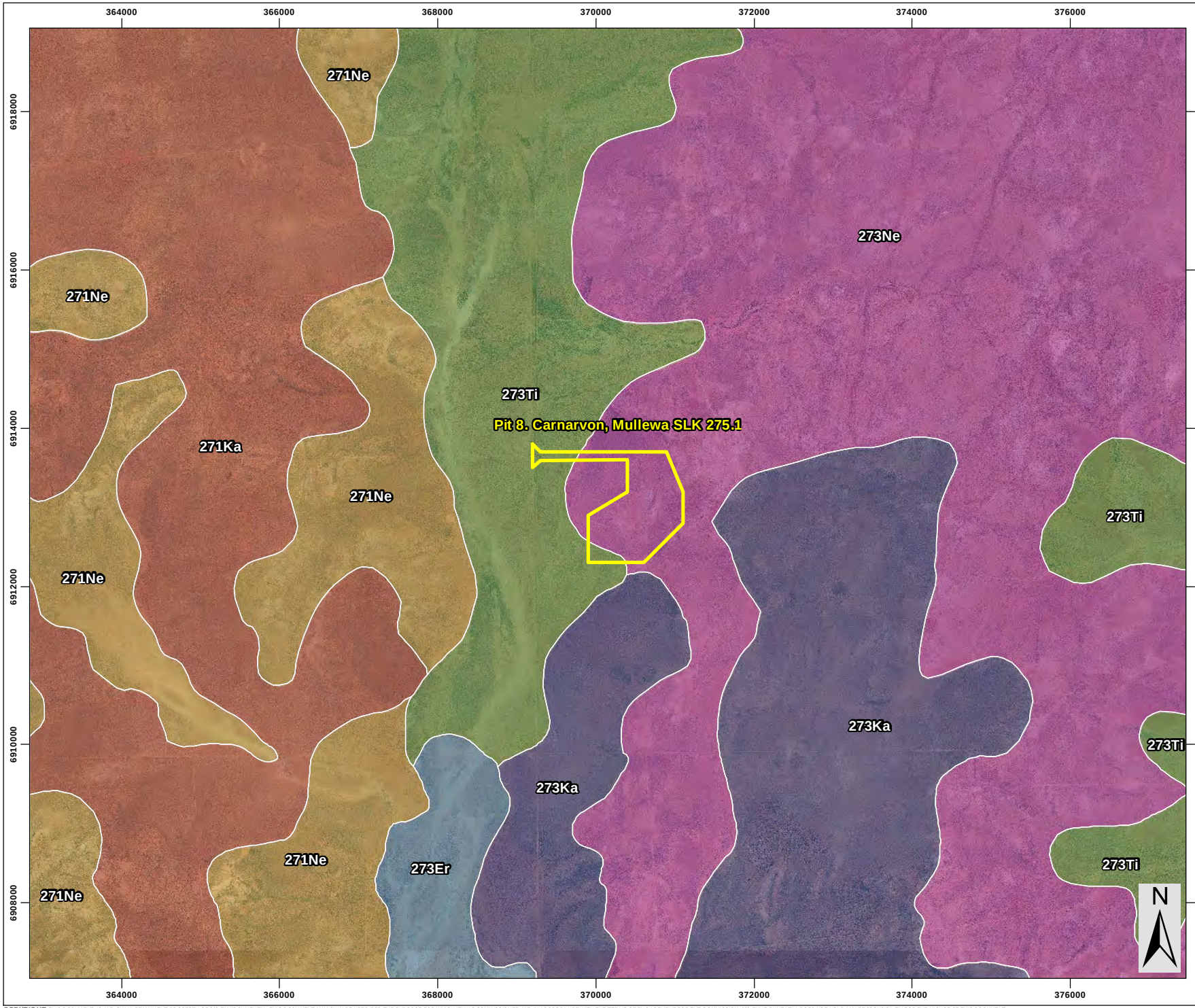
K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 5b - Land Systems (central).mxd



Legend

- Road Clearing Corridor
- Pit Locations

Land Systems

- 271Ka: Kalli System
- 271Ne: Nerramyne System
- 273Er: Ero System
- 273Ka: Kalli System
- 273Ne: Nerramyne System
- 273Ti: Tindalarra System

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- LAND SYSTEMS SOURCED DAFWA 2012
- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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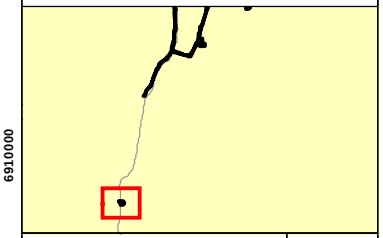
LOCALITY MAP



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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 5c
Land Systems (South)

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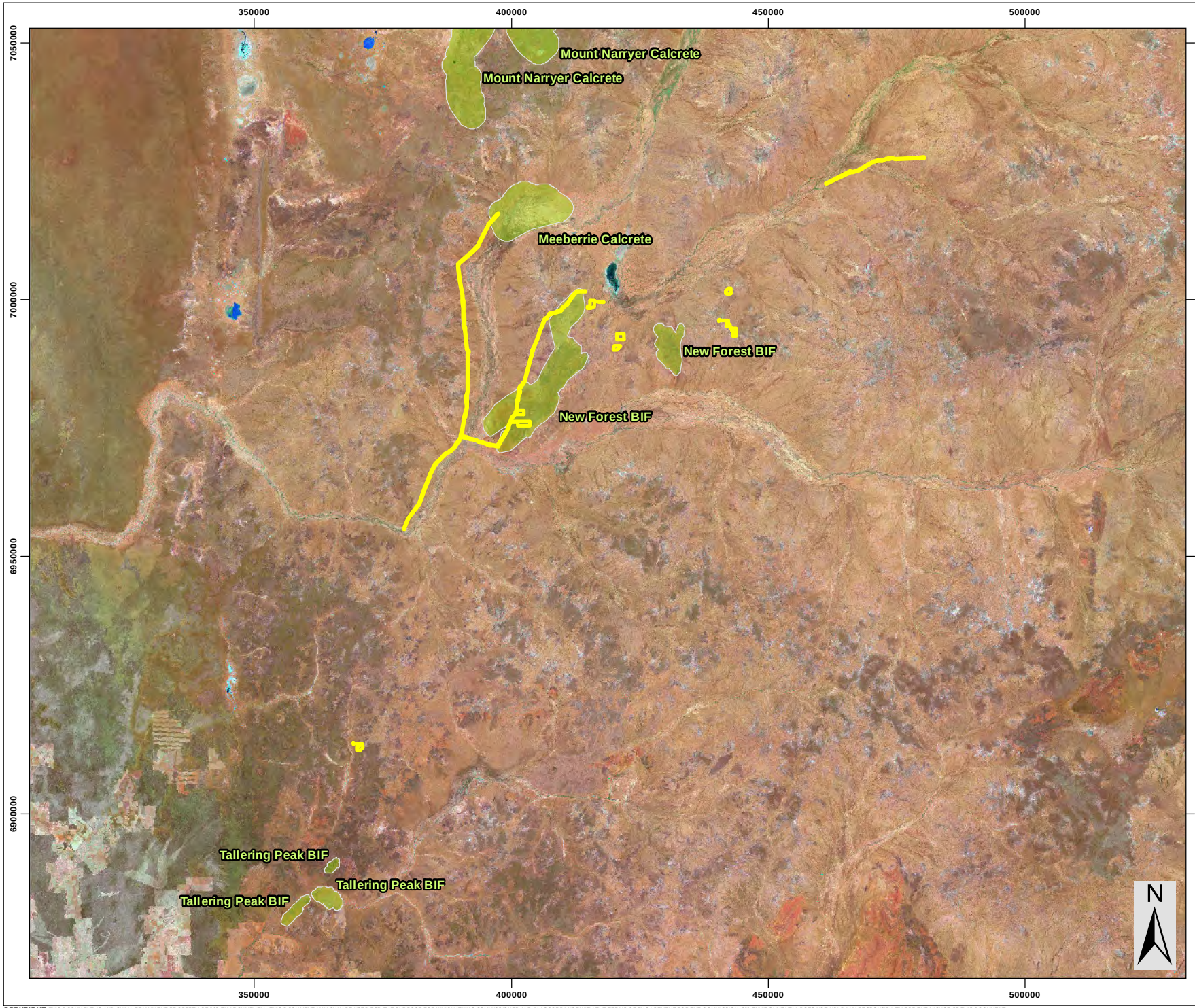
K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 5c - Land Systems (south).mxd



Legend

Survey Area

Priority Ecological Communities

Priority 1

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- PEC MAPPING PURCHASED FROM DPAW 9 SEPT 2015
A SEARCH BUFFER OF 20 KM WAS USED - PECS/TECS BEYOND THIS DISTANCE MAY NOT BE REPRESENTED
- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDSAT7
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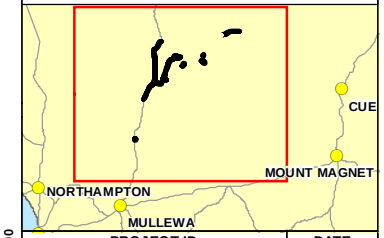
0 10 20 30 40
Kilometers

1:1,000,000 @ A4

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 6
Priority Ecological Communities

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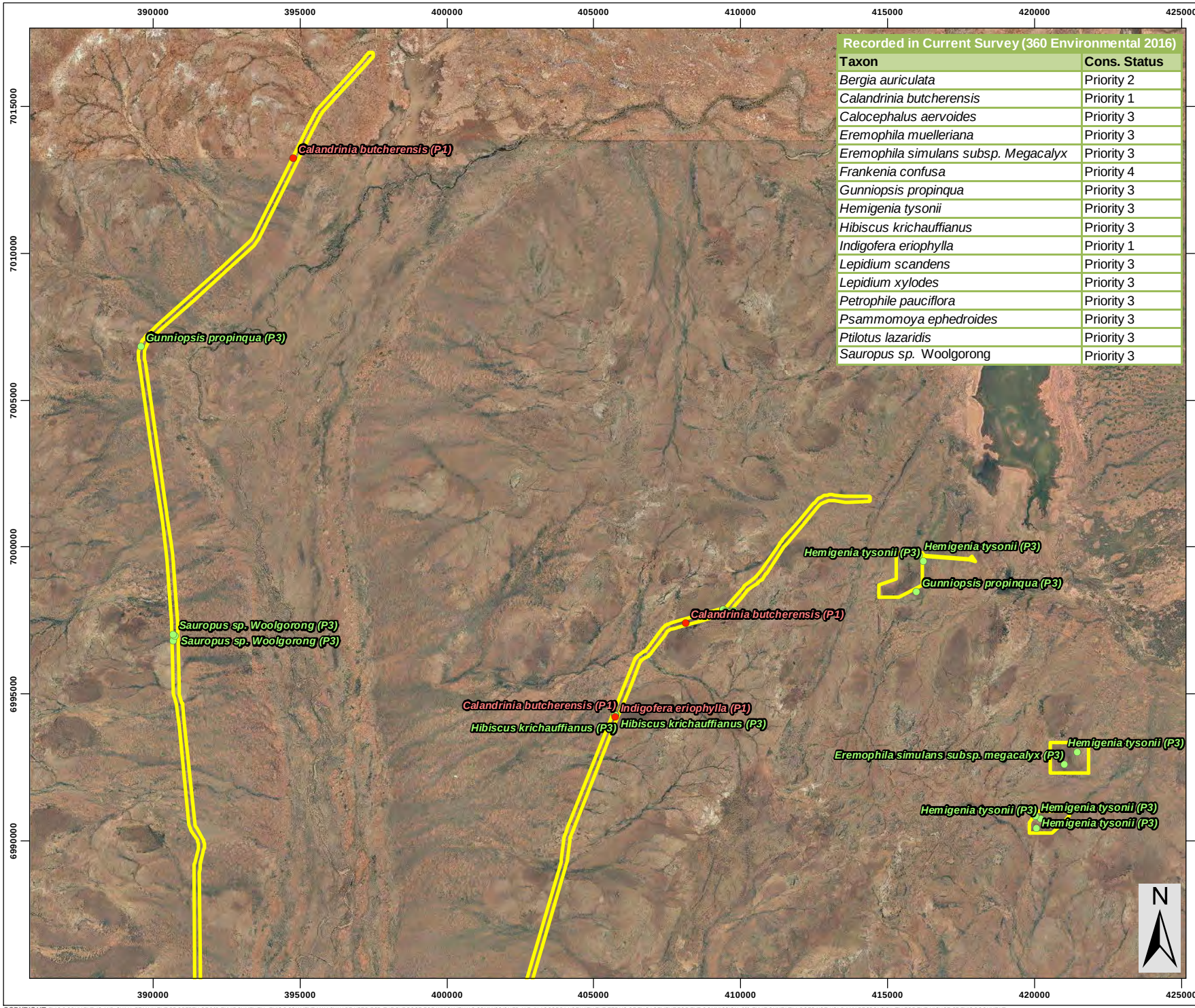
K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 6 - PECs.mxd



Recorded in Current Survey (360 Environmental 2016)	
Taxon	**Cons. Status**
Bergia auriculata	Priority 2
Calandrinia butcherensis	Priority 1
Calocephalus aervoides	Priority 3
Eremophila muelleriana	Priority 3
Eremophila simulans subsp. Megacalyx	Priority 3
Frankenia confusa	Priority 4
Gunniopsis propinqua	Priority 3
Hemigenia tysonii	Priority 3
Hibiscus krichauffianus	Priority 3
Indigofera eriophylla	Priority 1
Lepidium scandens	Priority 3
Lepidium xylodes	Priority 3
Petrophile pauciflora	Priority 3
Psammomoya ephedroides	Priority 3
Ptilotus lazaridis	Priority 3
Sauropus sp. Woolgorong	Priority 3

Legend

Survey Area

Priority Flora Records

- Priority 1
- Priority 2
- Priority 3
- Priority 4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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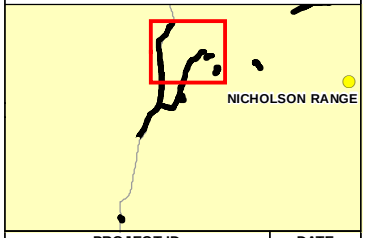
LOCALITY MAP



PROJECT ID	DATE
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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 8a
Priority Flora

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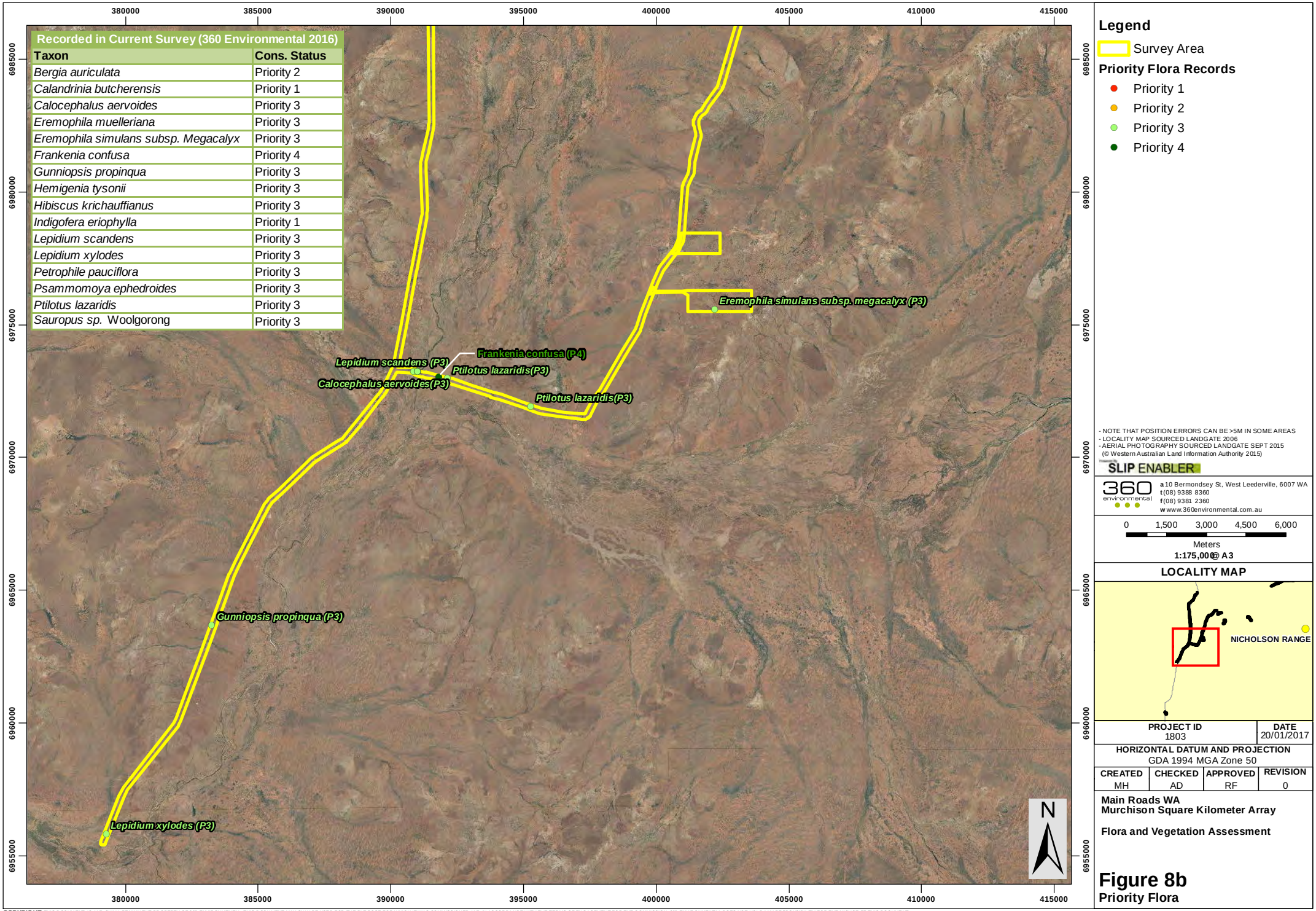

Recorded in Current Survey (360 Environmental 2016)	
Taxon	**Cons. Status**
Bergia auriculata	Priority 2
Calandrinia butcherensis	Priority 1
Calocephalus aervoides	Priority 3
Eremophila muelleriana	Priority 3
Eremophila simulans subsp. Megacalyx	Priority 3
Frankenia confusa	Priority 4
Gunniopsis propinqua	Priority 3
Hemigenia tysonii	Priority 3
Hibiscus krichauffianus	Priority 3
Indigofera eriophylla	Priority 1
Lepidium scandens	Priority 3
Lepidium xylodes	Priority 3
Petrophile pauciflora	Priority 3
Psammomoya ephedroides	Priority 3
Ptilotus lazaridis	Priority 3
Sauropus sp. Woolgorong	Priority 3

Legend

Survey Area

Priority Flora Records

- Priority 1
- Priority 2
- Priority 3
- Priority 4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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LOCALITY MAP

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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 8b
Priority Flora

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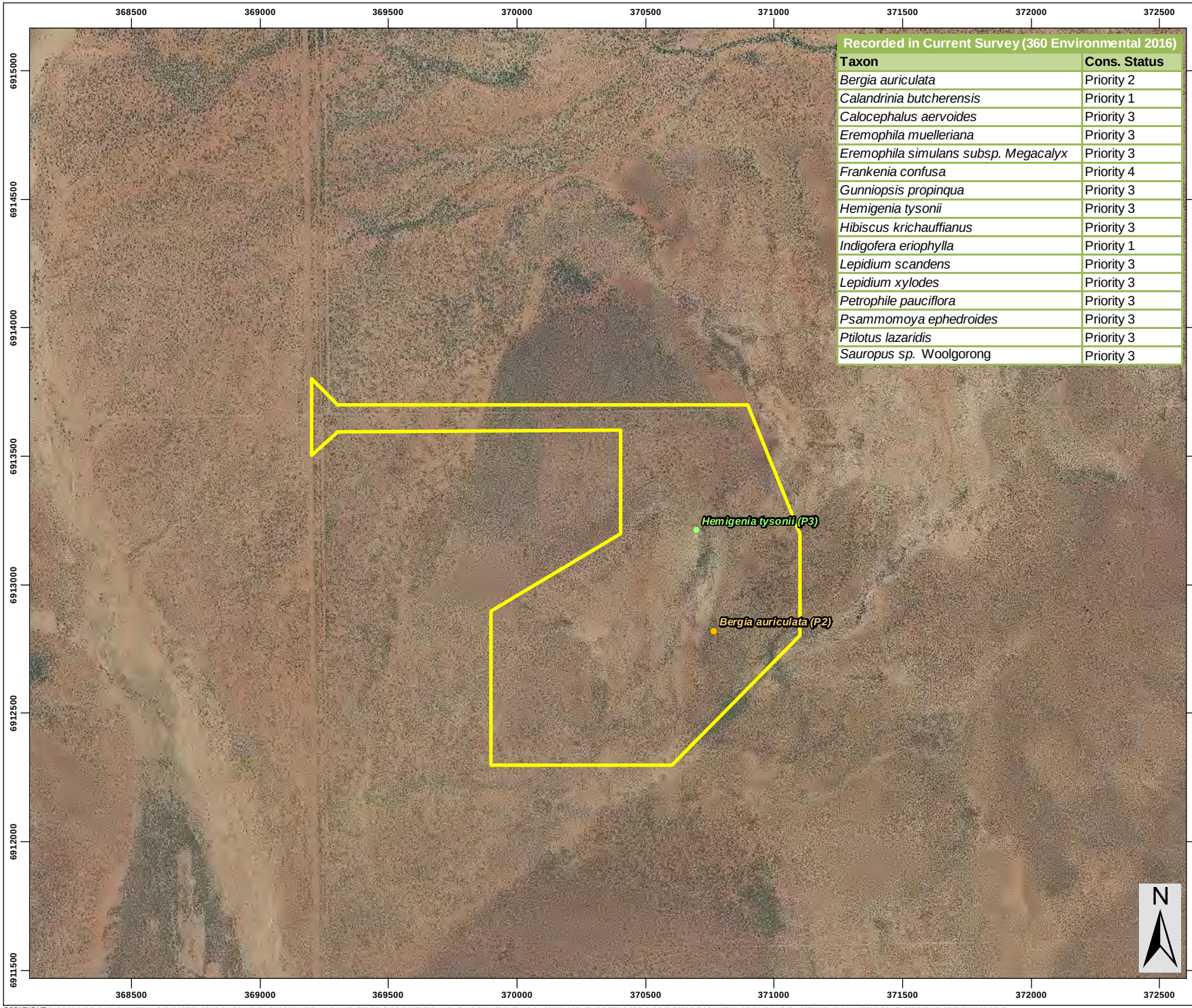

Recorded in Current Survey (360 Environmental 2016)	
Taxon	**Cons. Status**
Bergia auriculata	Priority 2
Calandrinia butcherensis	Priority 1
Calocephalus aervoides	Priority 3
Eremophila muelleriana	Priority 3
Eremophila simulans subsp. Megacalyx	Priority 3
Frankenia confusa	Priority 4
Gunniopsis propinqua	Priority 3
Hemigenia tysonii	Priority 3
Hibiscus krichauffianus	Priority 3
Indigofera eriophylla	Priority 1
Lepidium scandens	Priority 3
Lepidium xylodes	Priority 3
Petrophile pauciflora	Priority 3
Psammomoya ephedroides	Priority 3
Ptilotus lazaridis	Priority 3
Sauropus sp. Woolgorong	Priority 3

Legend

Survey Area

Priority Flora Records

- Priority 1
- Priority 2
- Priority 3
- Priority 4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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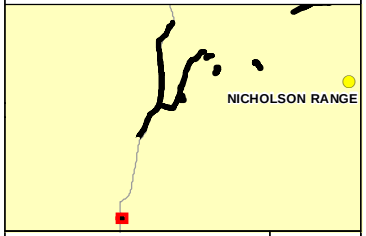
LOCALITY MAP



PROJECT ID	DATE
1803	20/01/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 8c
Priority Flora

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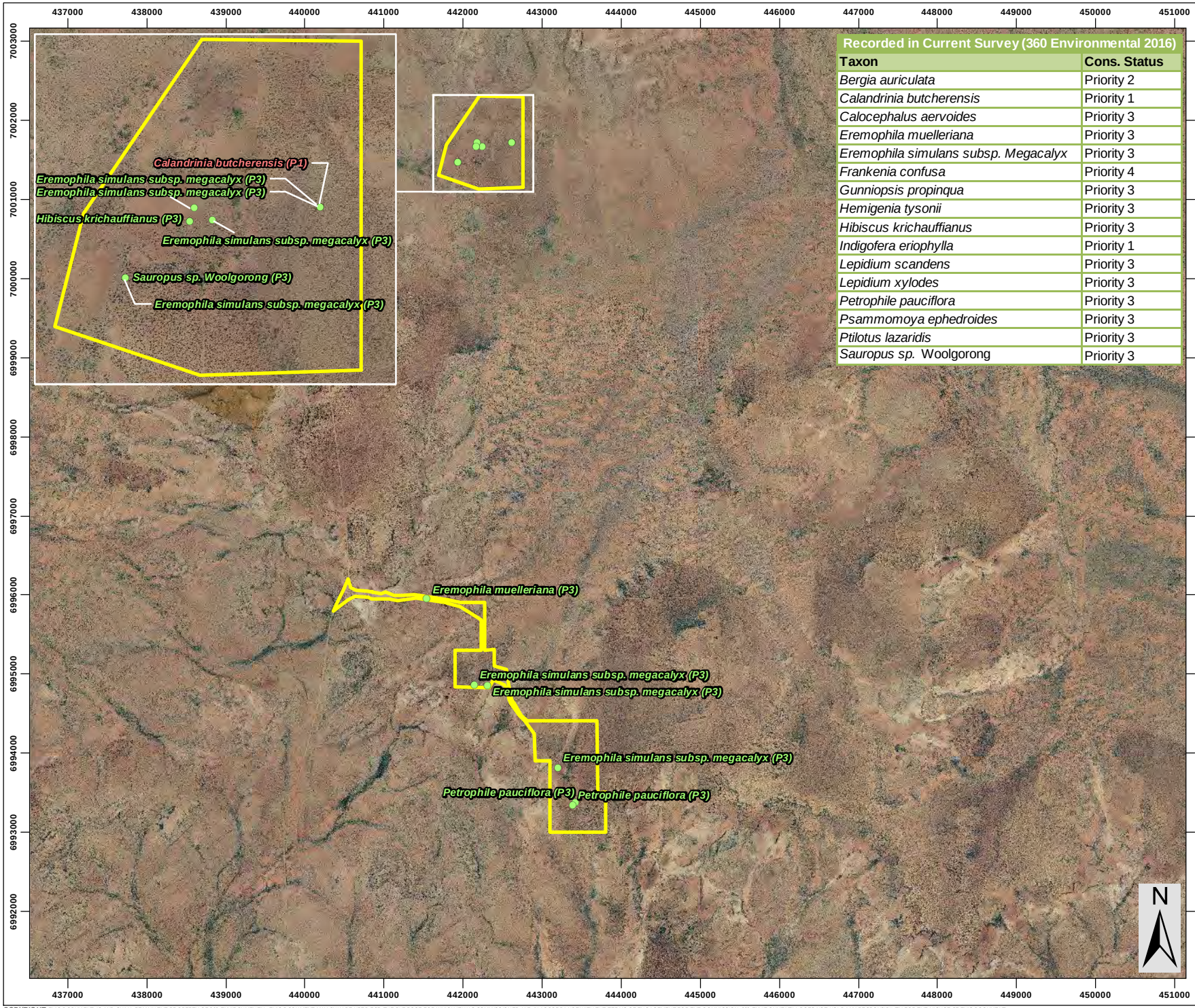

Recorded in Current Survey (360 Environmental 2016)	
Taxon	**Cons. Status**
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Calocephalus aervoides	Priority 3
Eremophila muelleriana	Priority 3
Eremophila simulans subsp. Megacalyx	Priority 3
Frankenia confusa	Priority 4
Gunniopsis propinqua	Priority 3
Hemigenia tysonii	Priority 3
Hibiscus krichauffianus	Priority 3
Indigofera eriophylla	Priority 1
Lepidium scandens	Priority 3
Lepidium xylodes	Priority 3
Petrophile pauciflora	Priority 3
Psammomoya ephedroides	Priority 3
Ptilotus lazaridis	Priority 3
Sauropus sp. Woolgorong	Priority 3

Legend

Survey Area

Priority Flora Records

- Priority 1
- Priority 2
- Priority 3
- Priority 4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
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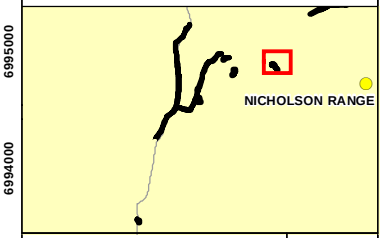
LOCALITY MAP



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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 8d
Priority Flora

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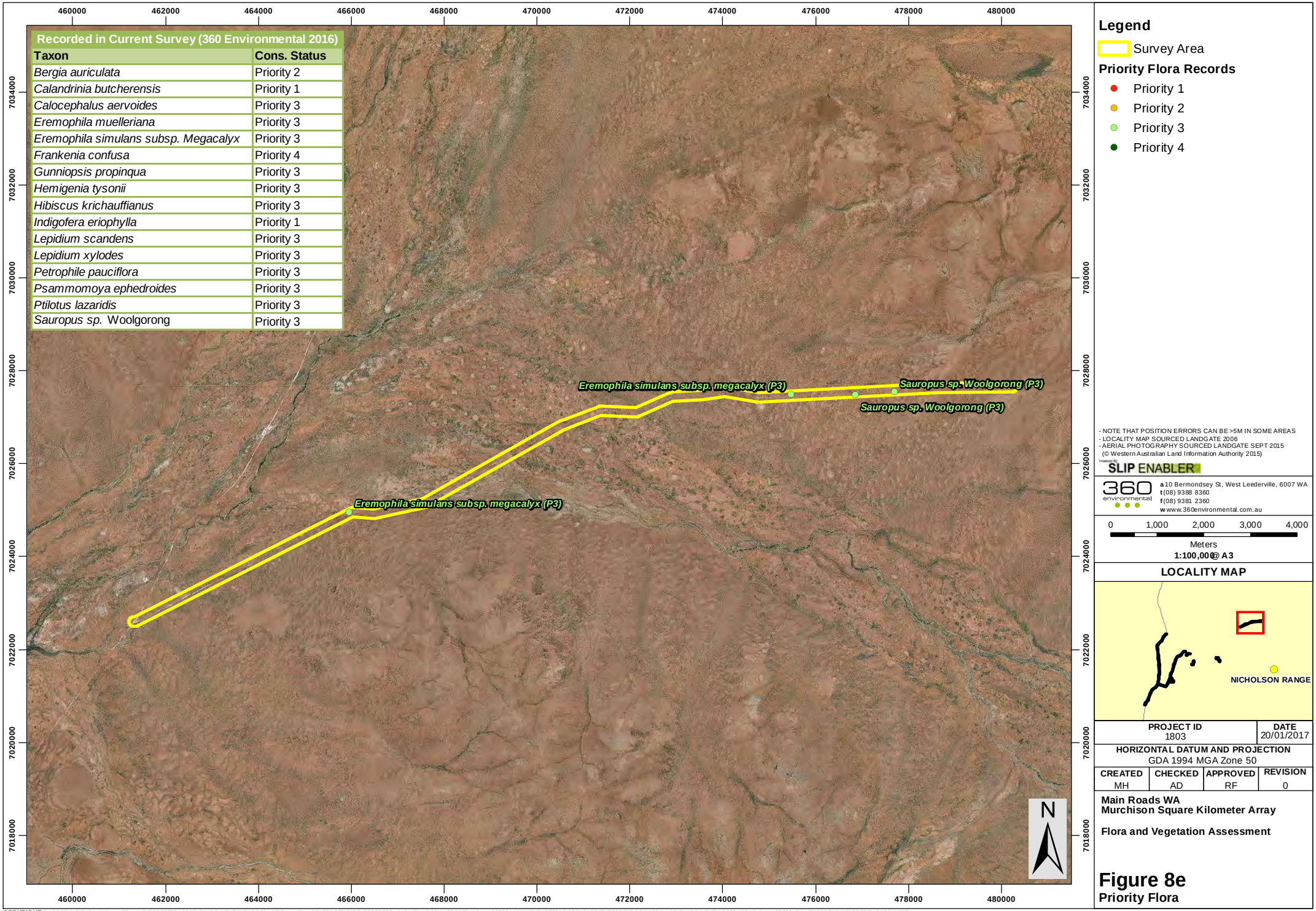

Recorded in Current Survey (360 Environmental 2016)	
Taxon	**Cons. Status**
Bergia auriculata	Priority 2
Calandrinia butcherensis	Priority 1
Calocephalus aervoides	Priority 3
Eremophila muelleriana	Priority 3
Eremophila simulans subsp. Megacalyx	Priority 3
Frankenia confusa	Priority 4
Gunniopsis propinqua	Priority 3
Hemigenia tysonii	Priority 3
Hibiscus krichauffianus	Priority 3
Indigofera eriophylla	Priority 1
Lepidium scandens	Priority 3
Lepidium xylodes	Priority 3
Petrophile pauciflora	Priority 3
Psammomoya ephedroides	Priority 3
Ptilotus lazaridis	Priority 3
Sauropus sp. Woolgorong	Priority 3

Legend

Survey Area

Priority Flora Records

- Priority 1
- Priority 2
- Priority 3
- Priority 4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
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GDA 1994 MGA Zone 50

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 8e
Priority Flora

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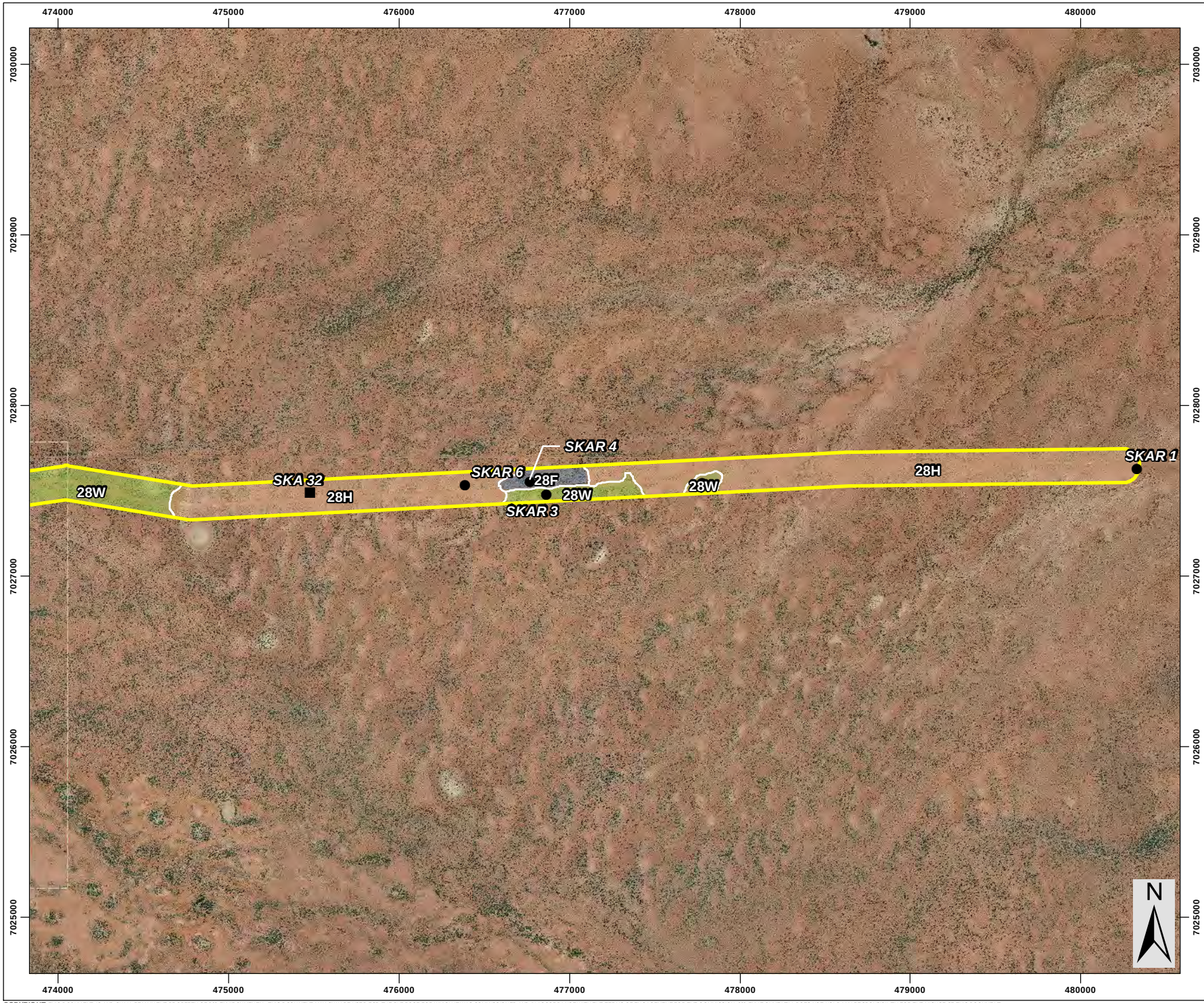

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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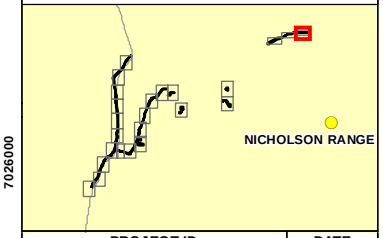
LOCALITY MAP



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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9a
Vegetation Associations

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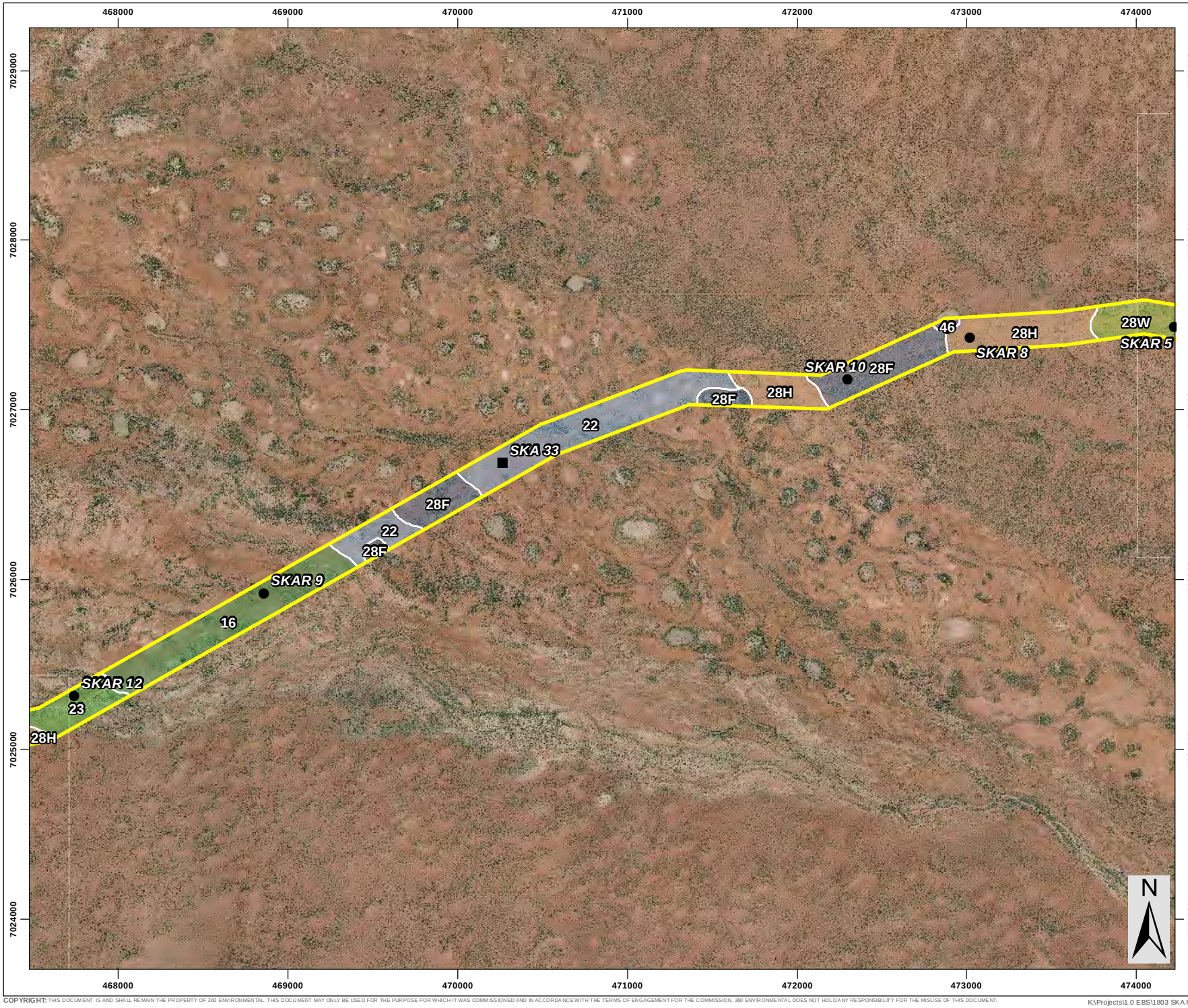
K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Landscape).mxd



Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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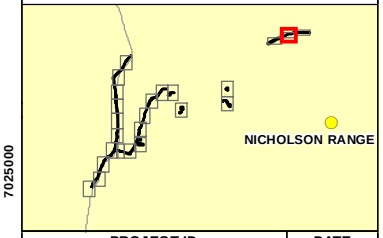
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9b
Vegetation Associations

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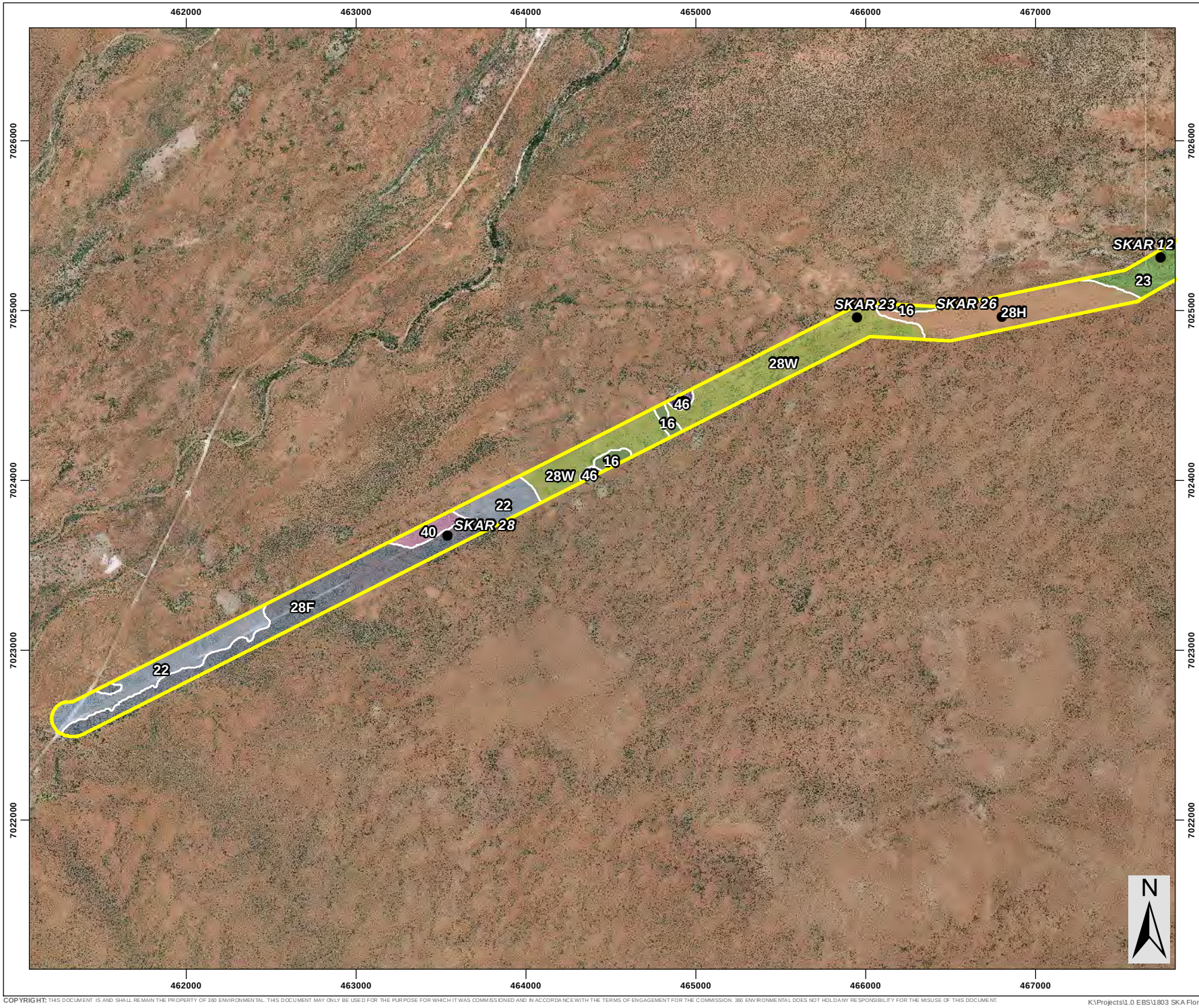

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
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27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2006
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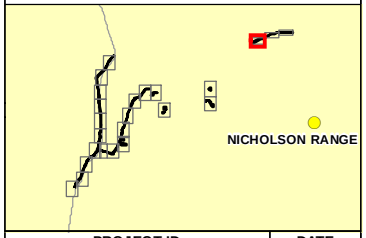
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9c
Vegetation Associations

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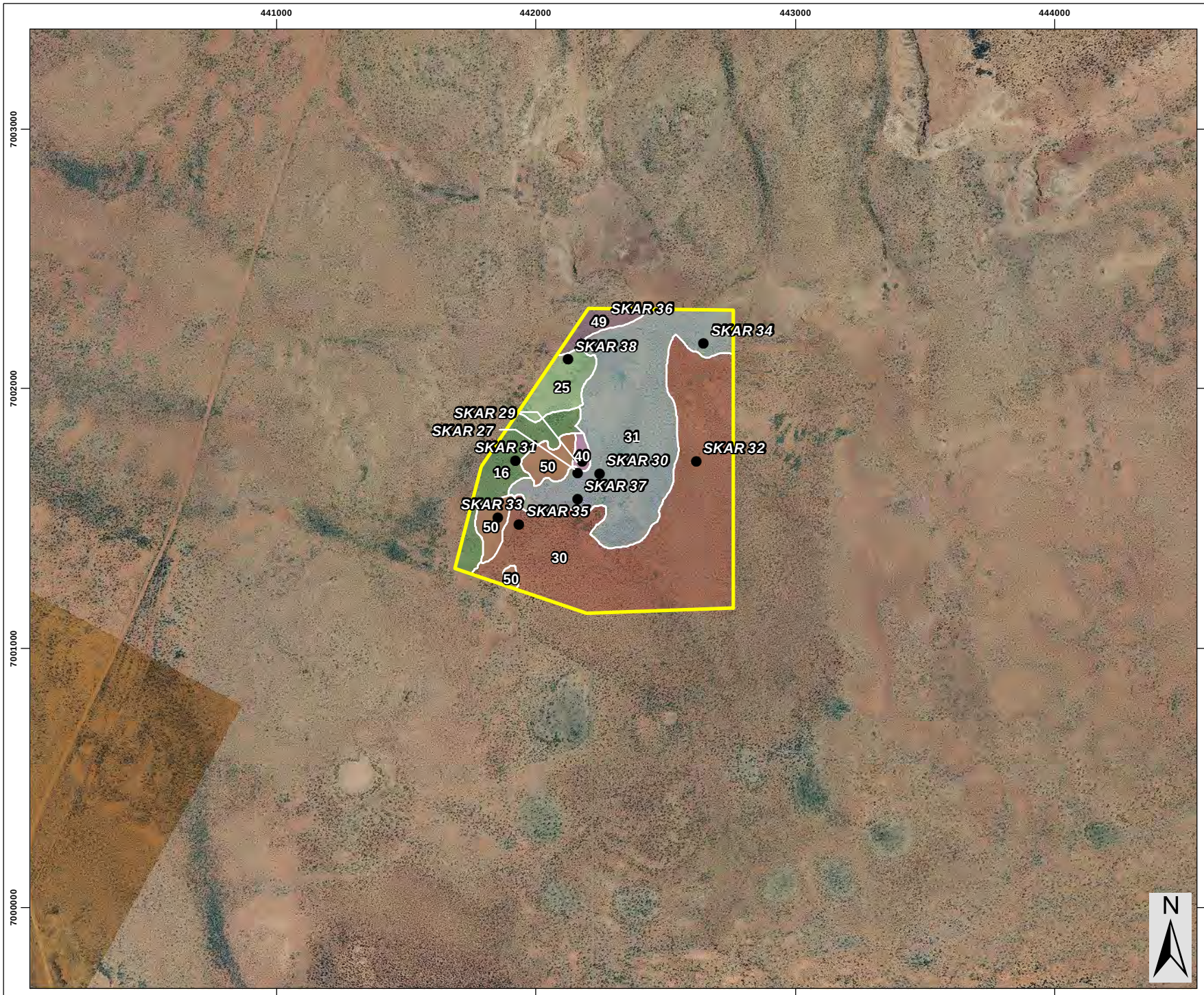

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51	15	37	52
16	40	53	19	41	54
22	42	55	23	43	56
25	44	57	27	45	58
28F	46	28W/28H	28H	47	31/57
28W	48	Bare Rock	30	49	D
31	50	CD			

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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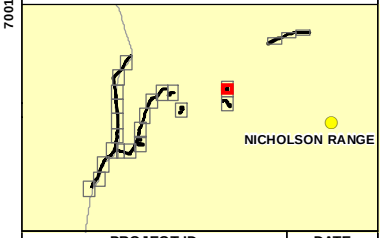
0 200 400 600 800
Meters
1:20,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9d
Vegetation Associations

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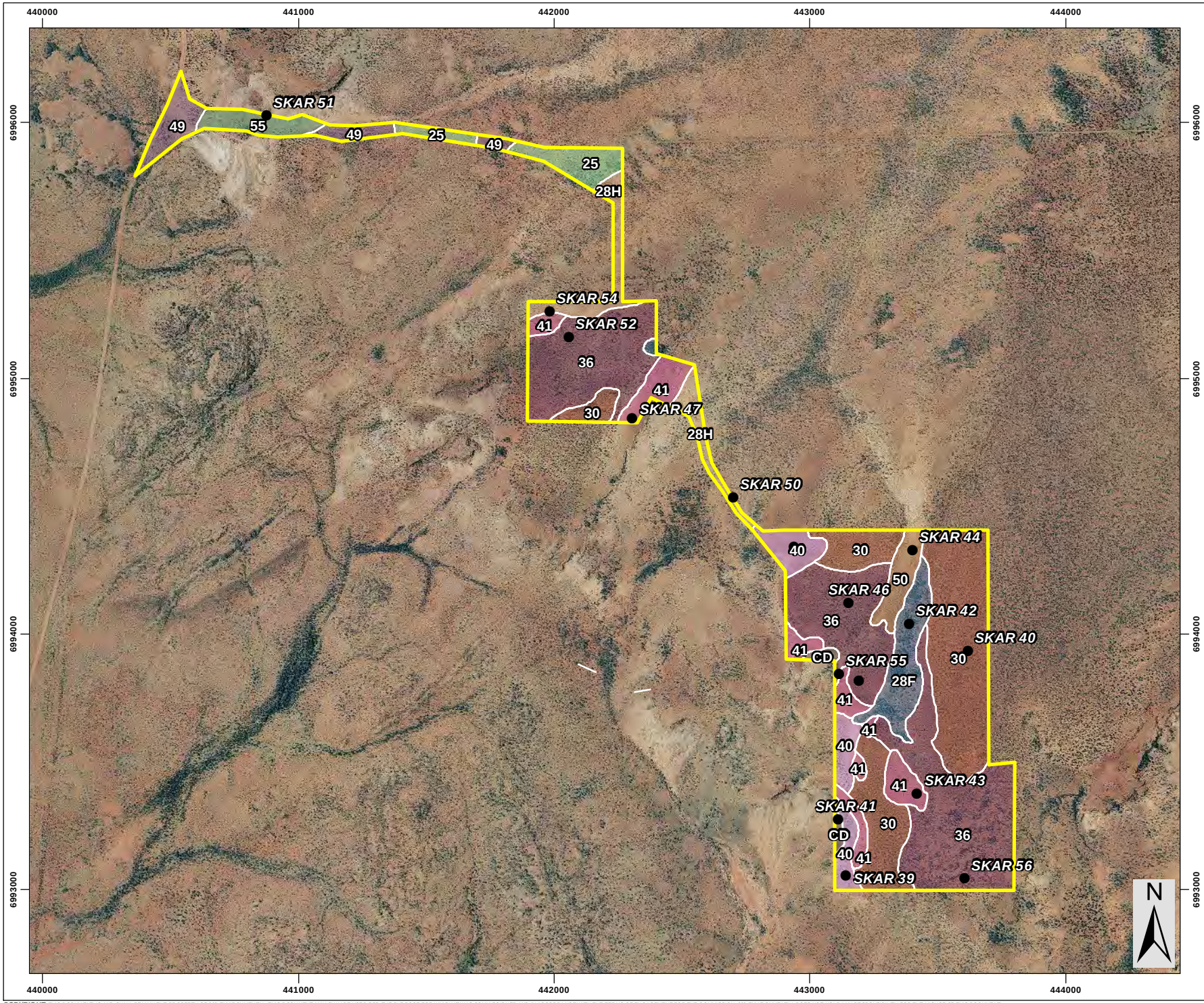

Legend

- Survey Area
- Map Layout
- Releve Locations
- Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

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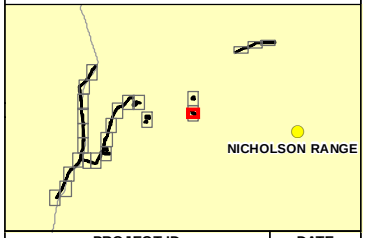
0 200 400 600 800
Meters
1:20,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9e
Vegetation Associations

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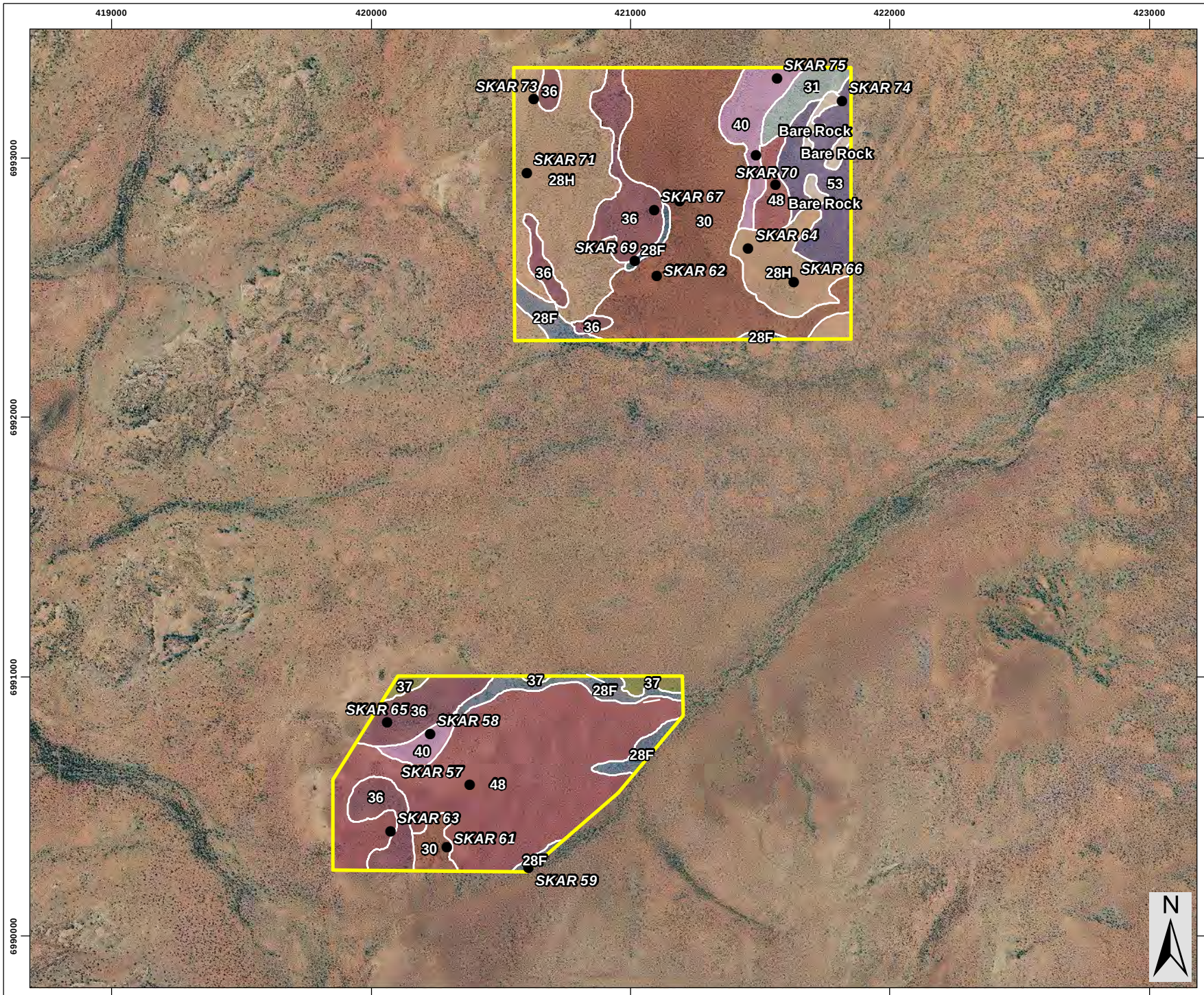

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

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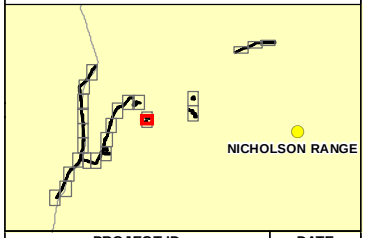
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9f
Vegetation Associations

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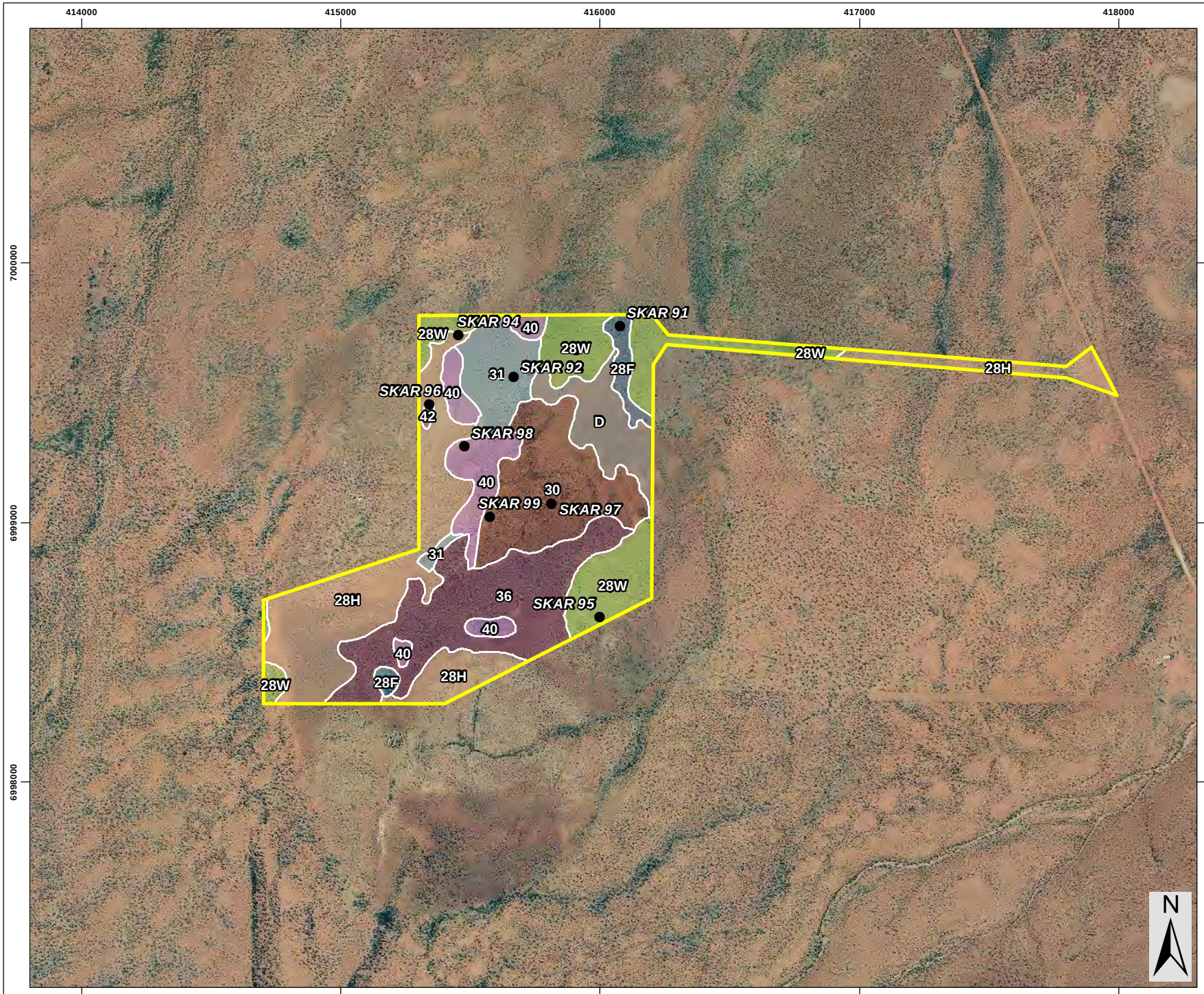

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

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15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

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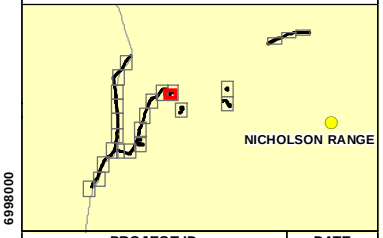
0 200 400 600 800
Meters
1:20,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9g
Vegetation Associations

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410000 411000 412000 413000 414000

7003000 7002000 7001000 7000000 6999000 6998000 6997000

28W
28H
SKAR 118
28F
49
53
SKAR 120
37
51
40
SKA 21

28W
28H
28W

N

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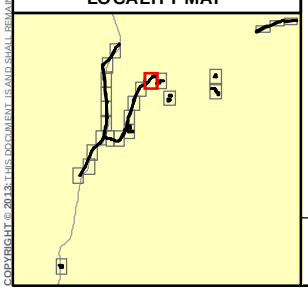
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

DATA SOURCES

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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9h
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

405000 406000 407000 408000 409000 410000

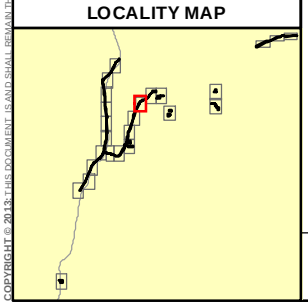
6997000 6998000 6999000

6996000 6995000 6994000 6993000

SKA 20
SKA 21
SKA 23
SKAR 122
37
28H
28F
40
51
30
53

405000 406000 407000 408000 409000 410000

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

DATA SOURCES

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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9i
Vegetation Association

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402000 403000 404000 405000 406000

6992669 6991669 6990669 6989669 6988669 6987000 6986000

28H
28F
SKA 22
37
28F
40
CD
25
42
SKA 25
SKAR 123
25
40
28F
28H
28F
28H
49

N

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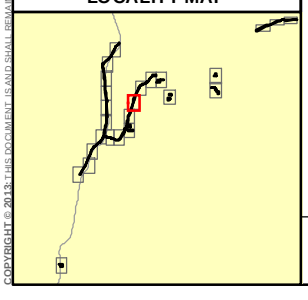
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

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15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

DATA SOURCES

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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9j
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

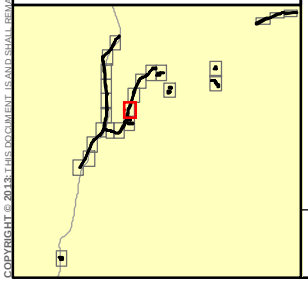
400000 401000 402000 403000 404000

6986000 6985000 6984000 6983000 6982000 6981000 6980000 6979000

28H
49
53
25
D
28F
53
SKAR 125
42
SKA 24
SKAR 127
28H
42
SKA 27
28F
28H
49
D
48
40

N

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

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DATA SOURCES

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HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9k
Vegetation Association

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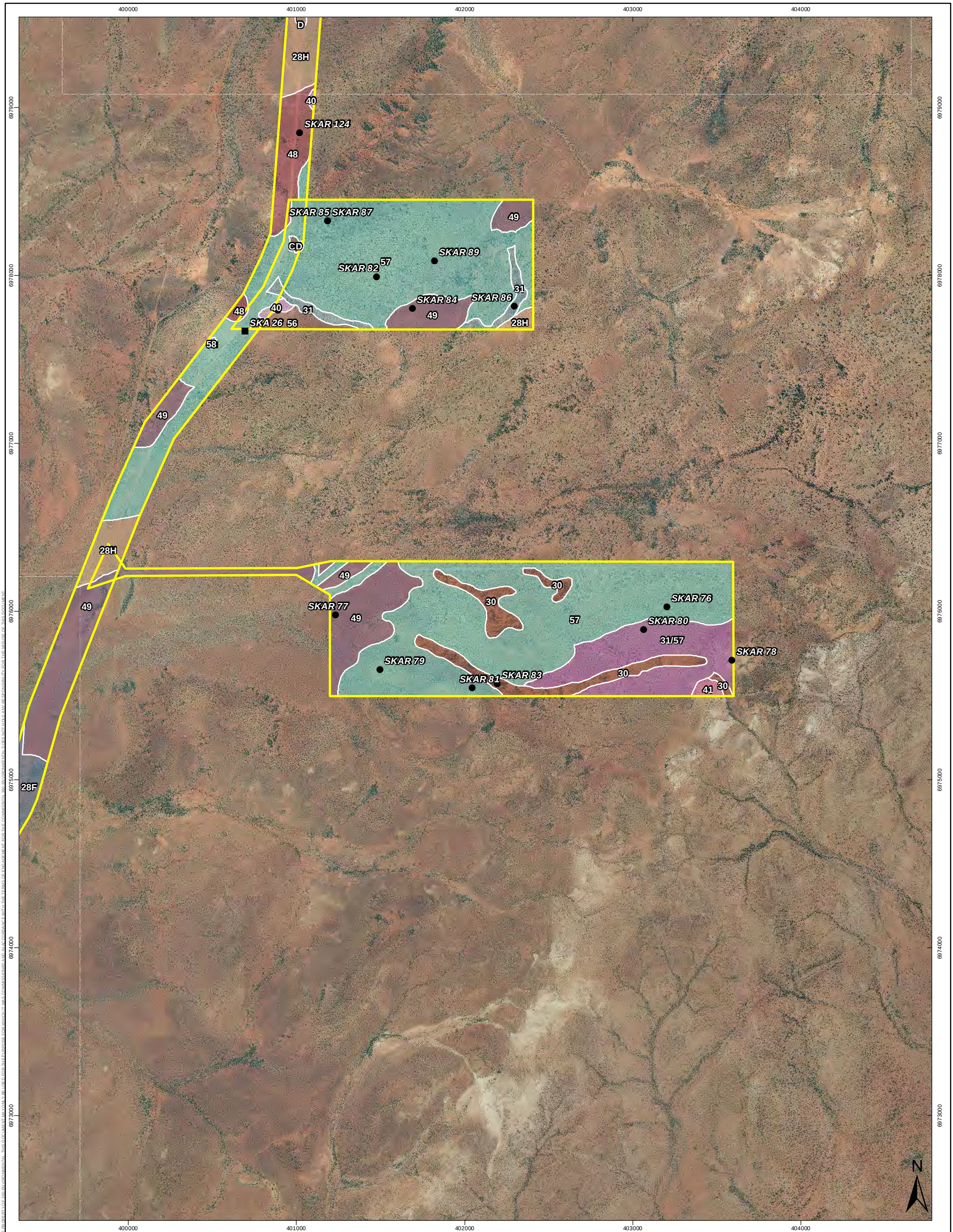
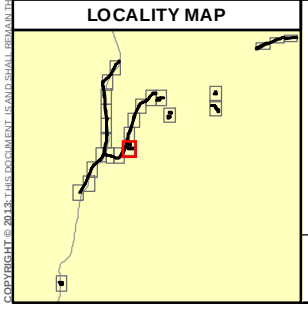


LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10, 15, 16, 19, 22, 23, 25, 27, 28F, 28H, 28W, 30, 31, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 28W/28H, 31/57, Bare Rock, D, CD

DATA SOURCES

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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9I
Vegetation Association

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395000 396000 397000 398000 399000

6976000 6975000 6974000 6973000 6972000 6971000 6970000

49
28F
49
28F
SKAR 128
28H
SKAR 129
28F
SKA 28
28H
45
44
45
SKAR 30
SKA 31
45
45
25
SKAR 126
46

N

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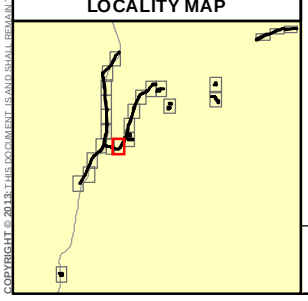
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

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15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

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HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9m
Vegetation Association

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391000 392000 393000 394000 395000

6976000 6975000 6974000 6973000 6972000 6971000 6970000

28H

25 SKA 1 16 SKA 2 10 16 SKA 34 SKAR 119 45 43 45 43 45 44 45 SKA 31 45 SKAR 30 45 45

N

391000 392000 393000 394000 395000

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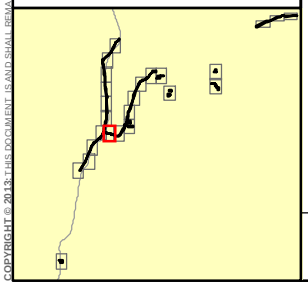
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

DATA SOURCES

- CADASTRAL BOUNDARY SOURCED FROM LANDGATE 2009
- LOCALITY MAP SOURCED LANDGATE 2006
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CREATED	CHECKED	APPROVED	REVISION	DATE
MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9n
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

393000 394000 395000 396000 397000 398000

7017000 7016000 7015000 7014000 7013000 7012000 7011000

28H
49
SKA 3
28H
28F
28H
28H
49
SKAR 101
28F
SKA 4
37
28F
28H
SKAR 102
SKAR 100
28F
SKAR 103
53

N

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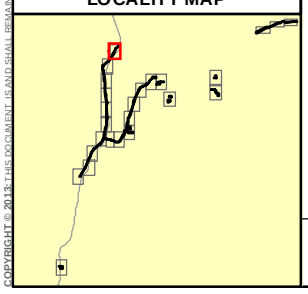
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57		
15	23	31	44	51	58		
16	25	36	45	52	28W/28H		
19	27	37	46	53	31/57		
	28F	40	47	54	Bare Rock		
	28H	41	48	55	D		
	28W	42	49	56	CD		

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0 100 200 400 600 800 1,000
Meters
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9o
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

390000 391000 392000 393000 394000

7010000 7009000 7008000 7007000 7006000 7005000 7004000

SKAR 103
53
SKAR 104
SKA 6
28H
28F
28H
SKAR 108
SKAR 106
47
SKA 5
53
28H

N

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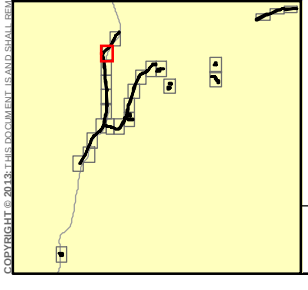
LOCALITY MAP



Legend

Survey Area	22	30	43	50	57	
Map Layout	23	31	44	51	58	
Vegetation Association	25	36	45	52	28W/28H	
10	27	37	46	53	31/57	
15	28F	40	47	54	Bare Rock	
16	28H	41	48	55	D	
19	28W	42	49	56	CD	

DATA SOURCES

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0 100 200 400 600 800 1,000
Meters
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9p
Vegetation Association

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389000 390000 391000 392000 393000 394000

7003000 7002000 7001000 7000000 6999000 6998669 6997669

28H
28F
27
16
SKAR 107
SKAR 105
28H
28F
SKAR 110
28W
SKA 7
28F

N

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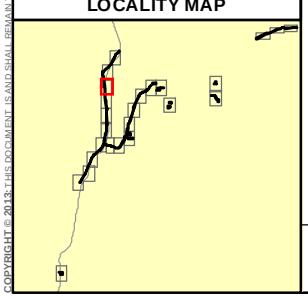

Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

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0 100 200 400 600 800 1,000
Meters
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9q
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

389000 390000 391000 392000 393000 394000

6996000 6995000 6994000 6993000 6992000 6991000 6990000

SKA 7
28F
28W
28H
SKA 9
28F
SKAR 112
37
28F
28H
28W/H
28F
28H
SKA 8
47
D
28H

N

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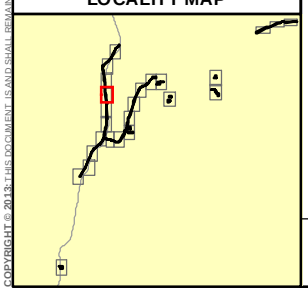

Legend

Survey Area
Map Layout

Vegetation Association

10, 15, 16, 19, 22, 23, 25, 27, 28F, 28H, 28W, 30, 31, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 28W/28H, 31/57, Bare Rock, D, CD

DATA SOURCES

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Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9r
Vegetation Association

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 10 - Vegetation Association (Portrait).mxd

389000 390000 391000 392000 393000 394000

6990000 6989000 6988000 6987000 6986000 6985000 6984000

D
28H
47
SKA 10
53
37
28F
28H
47
28H
CD
49
SKA 11
37
28H

N

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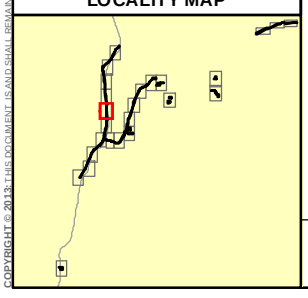

Legend

Survey Area
Map Layout

Vegetation Association

10, 15, 16, 19, 22, 23, 25, 27, 28F, 28H, 28W, 30, 31, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 28W/28H, 31/57, Bare Rock, D, CD

DATA SOURCES

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0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9s
Vegetation Association

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389000 390000 391000 392000 393000 394000

6983000 6982000 6981000 6980000 6979000 6978000 6977000

37 28H 28F 28H 28W SKA 13 54 28F 37 28H SKAR 109 28F 53 28W 28H 28F 28H SKA 12 28F 28H

N

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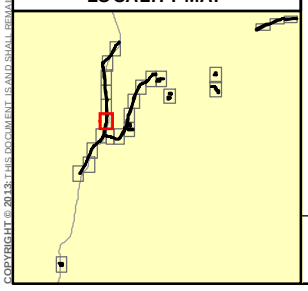

Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

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HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1803

0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9t
Vegetation Association

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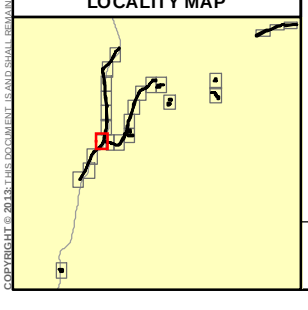
LOCALITY MAP



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Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
	28F	40	47	54	Bare Rock	
	28H	41	48	55	D	
	28W	42	49	56	CD	

DATA SOURCES

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0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9u
Vegetation Association

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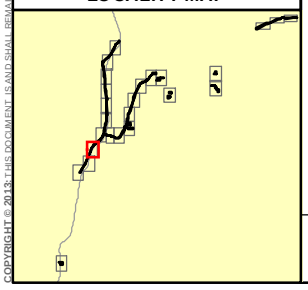
383000 384000 385000 386000 387000

6969000 6968000 6967000 6966000 6965000 6964000 6963000

49 SKA 16 28F 49 28F 49 37 49 28F 49 28W 28F SKAR 115 37 SKA 17 47 37

N

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10, 15, 16, 19, 22, 23, 25, 27, 28F, 28H, 28W, 30, 31, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 28W/28H, 31/57, Bare Rock, D, CD

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0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9v
Vegetation Association

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381000 382000 383000 384000 385000

6963000 6962000 6961000 6960000 6959000 6958000 6957000

SKA 17

SKAR 114

SKAR 116

47 37 47 37 53 28F 37 47 37 53

N

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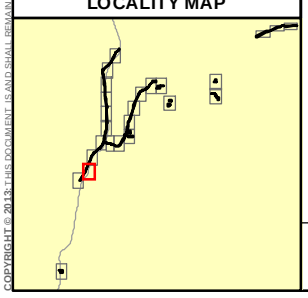

Legend

Survey Area
Map Layout

Vegetation Association

10	22	30	43	50	57	
15	23	31	44	51	58	
16	25	36	45	52	28W/28H	
19	27	37	46	53	31/57	
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	28H	41	48	55	D	
	28W	42	49	56	CD	

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0 100 200 400 600 800 1,000
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9w
Vegetation Association

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376000 377000 378000 379000 380000

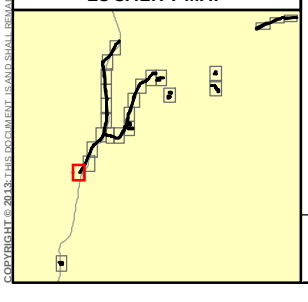
6958000 6957000 6956000 6955000 6954000 6953000 6952000

37
53
SKAR 116
SKAR 117
48
CD
25
SKA 14
22
SKA 15
16

N

376000 377000 378000 379000 380000

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Association

10, 15, 16, 19, 22, 23, 25, 27, 28F, 28H, 28W, 30, 31, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 28W/28H, 31/57, Bare Rock, D, CD

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0 100 200 400 600 800 1,000
Meters
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9x
Vegetation Association

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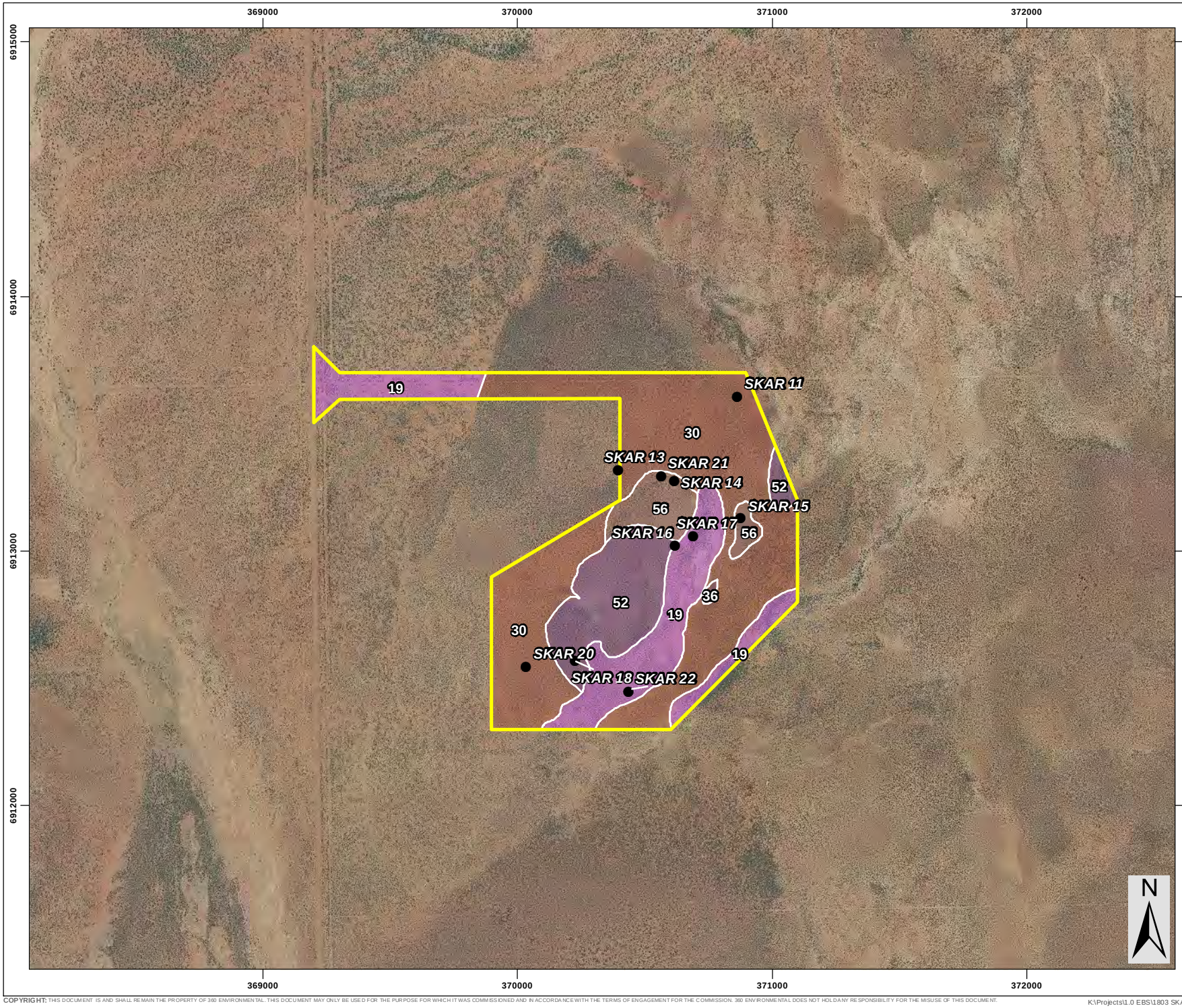

Legend

Survey Area
Map Layout
Releve Locations
Quadrat Locations

Vegetation Associations

10	36	51
15	37	52
16	40	53
19	41	54
22	42	55
23	43	56
25	44	57
27	45	58
28F	46	28W/28H
28H	47	31/57
28W	48	Bare Rock
30	49	D
31	50	CD

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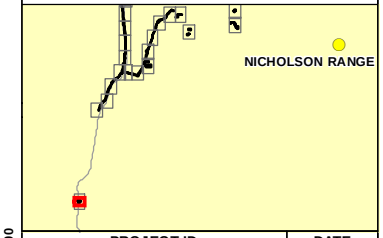
0 200 400 600 800
Meters
1:20,000 @ A3

LOCALITY MAP



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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 9y
Vegetation Associations

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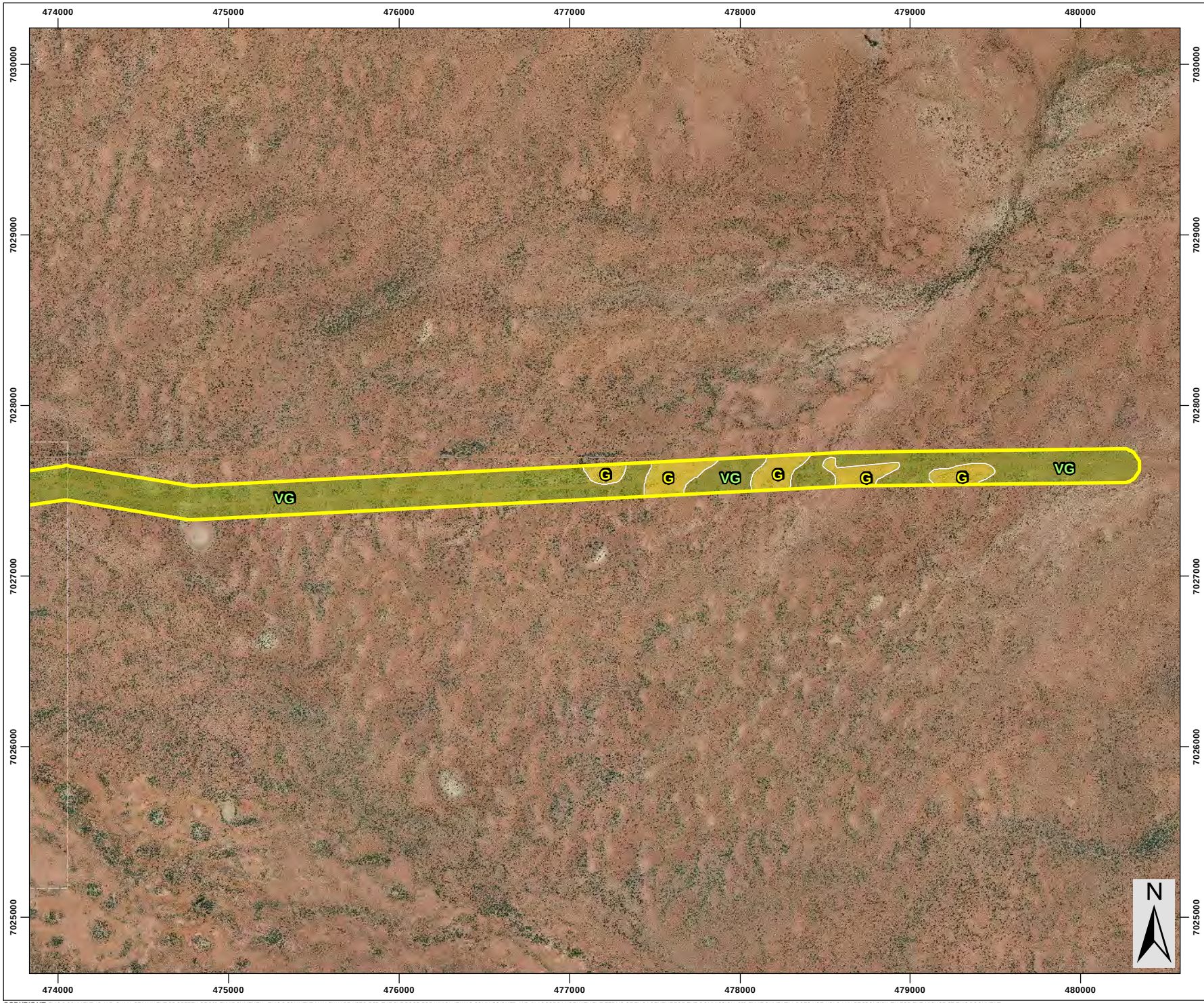

Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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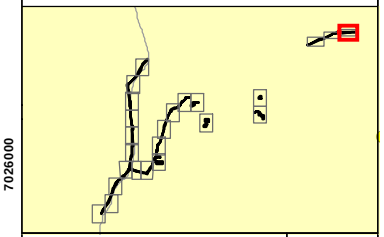
0 250 500 750 1,000
Meters

1:30,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10a
Vegetation Condition

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Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
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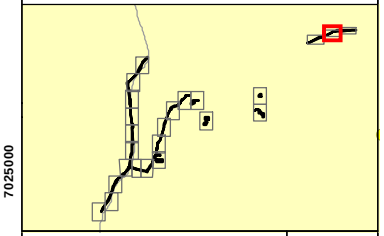
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10b
Vegetation Condition

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Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
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Meters
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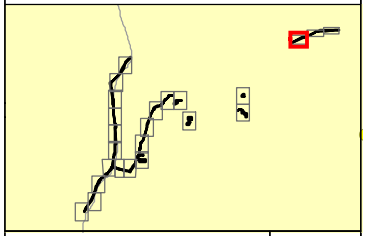
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10c
Vegetation Condition

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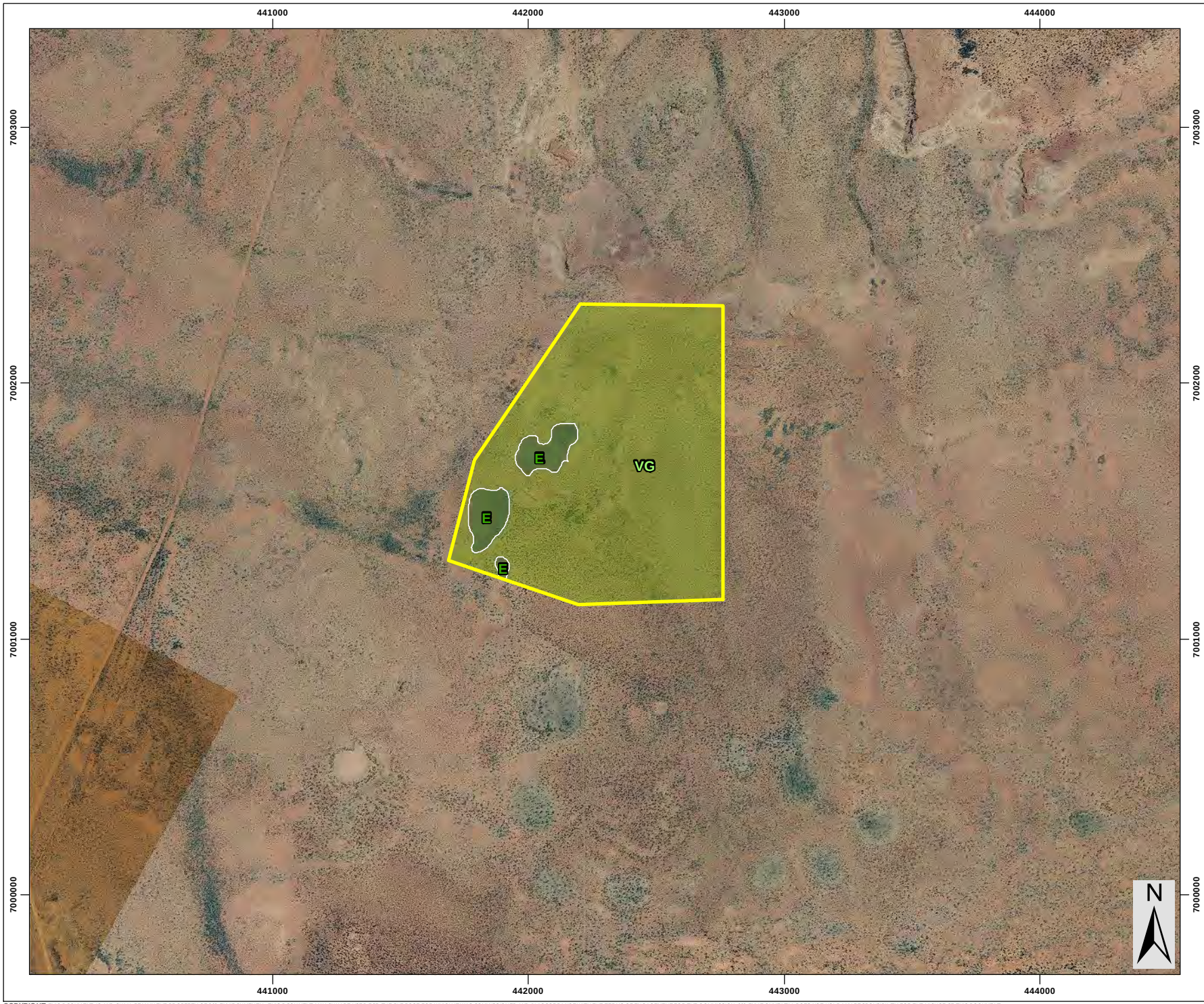

Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

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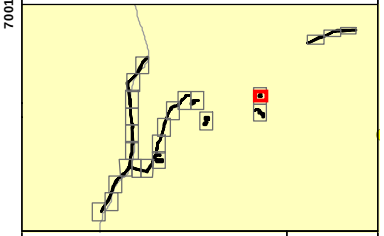
LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10d
Vegetation Condition

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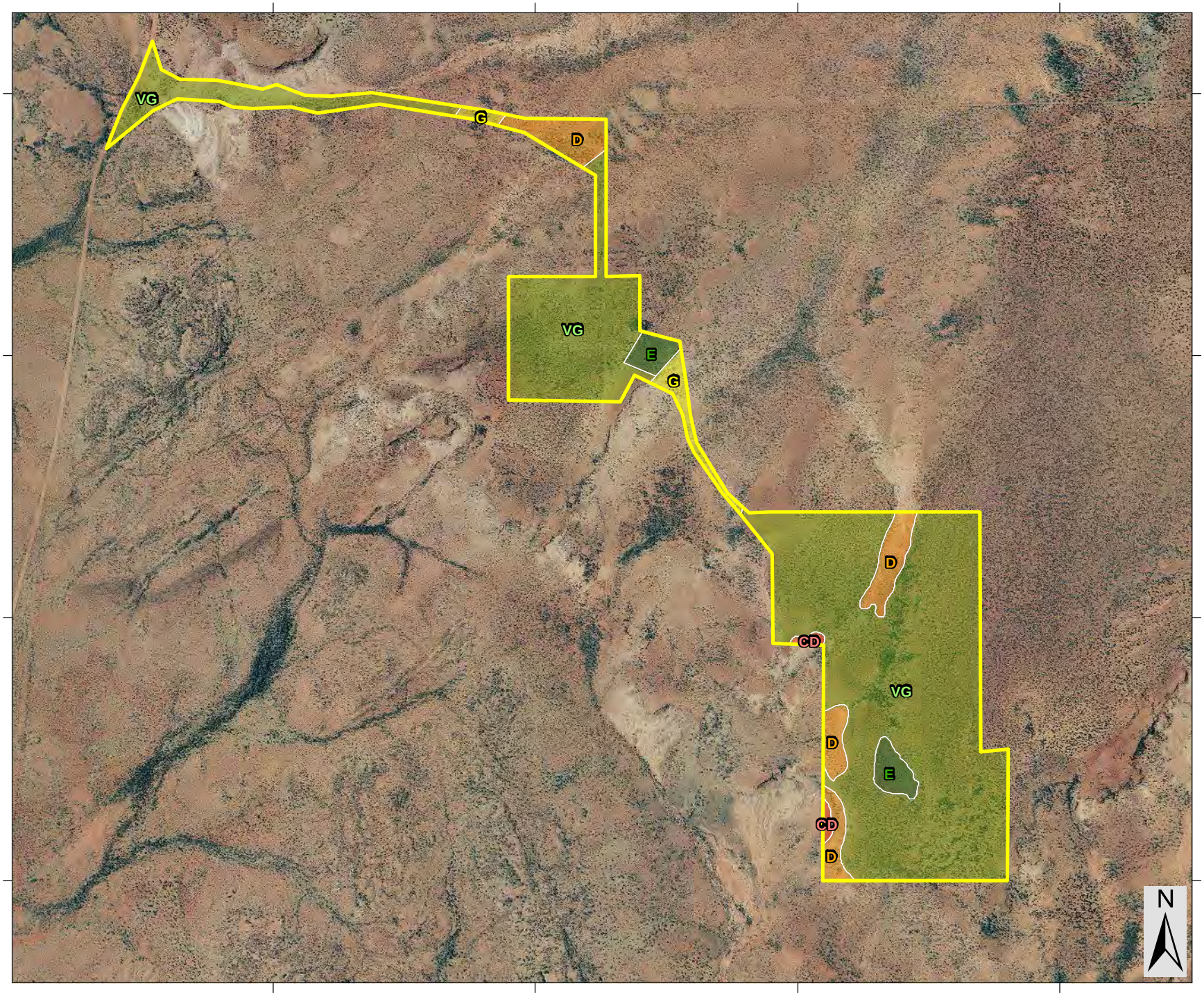

Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

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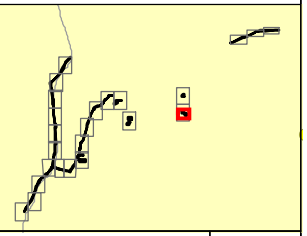
LOCALITY MAP



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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10e
Vegetation Condition

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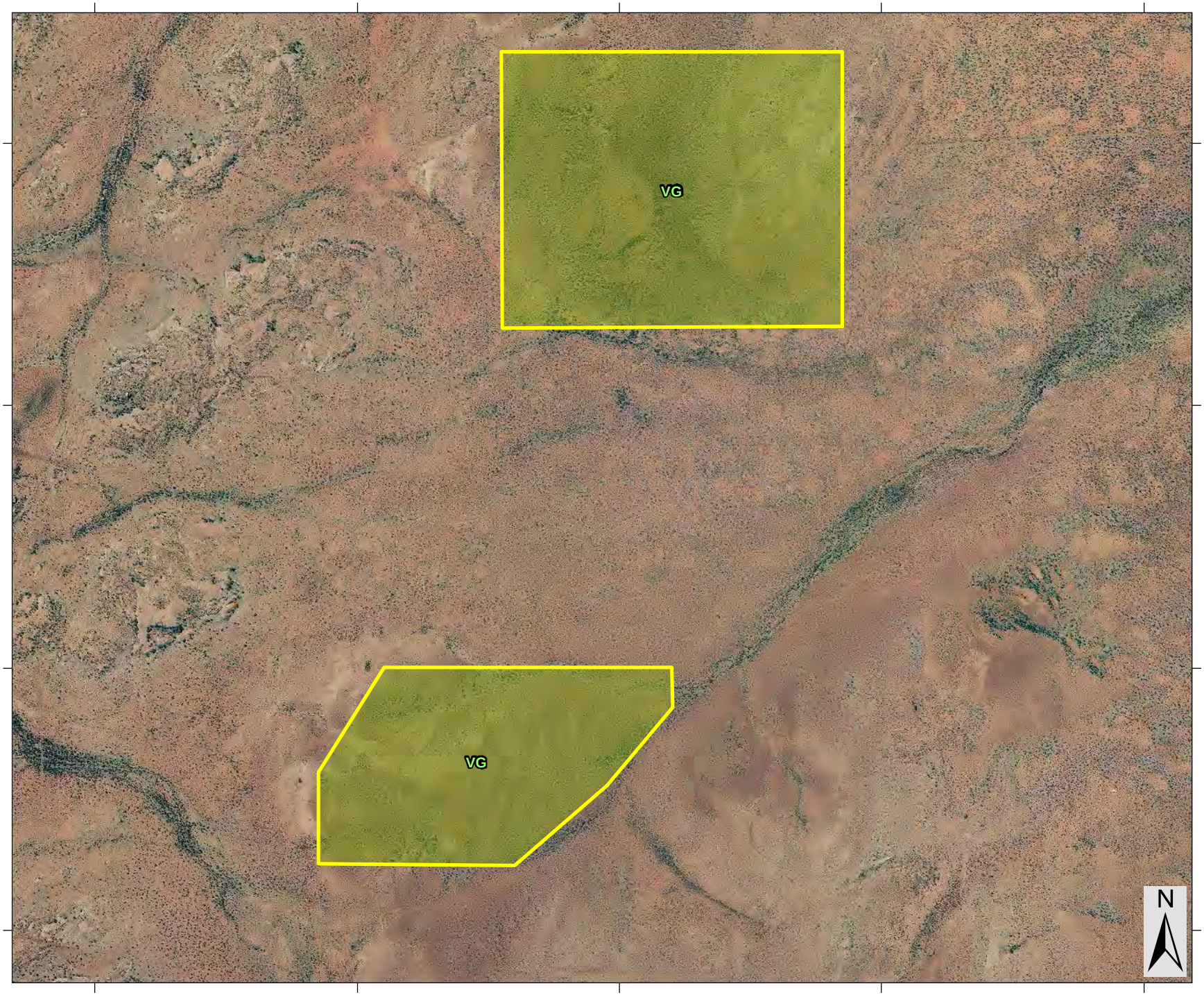

Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
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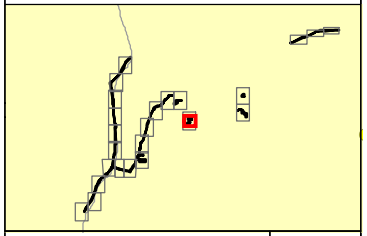

PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10f
Vegetation Condition

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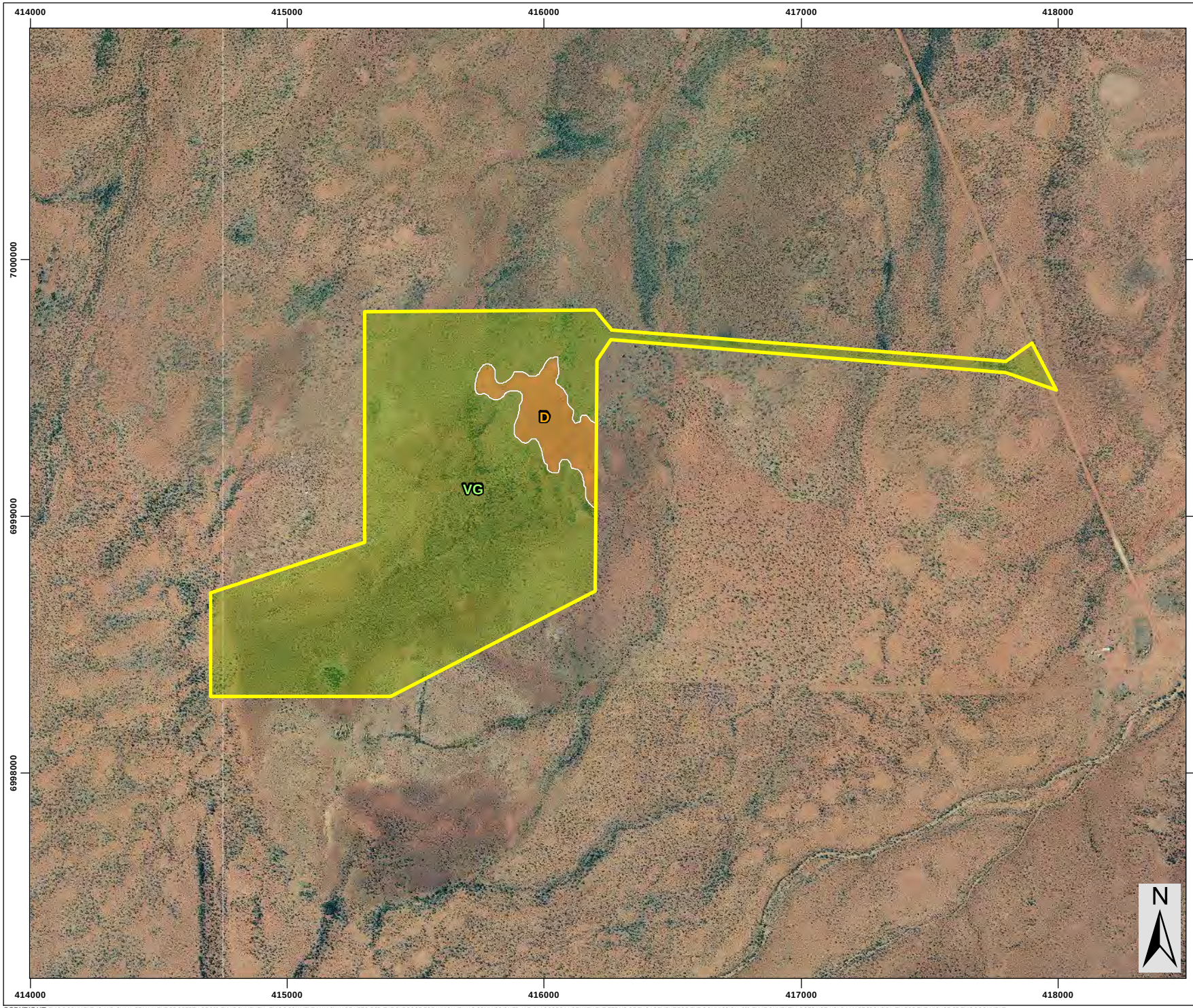

Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

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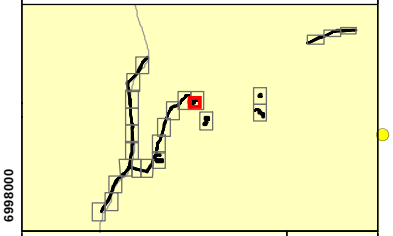
Meters
1:20,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10g
Vegetation Condition

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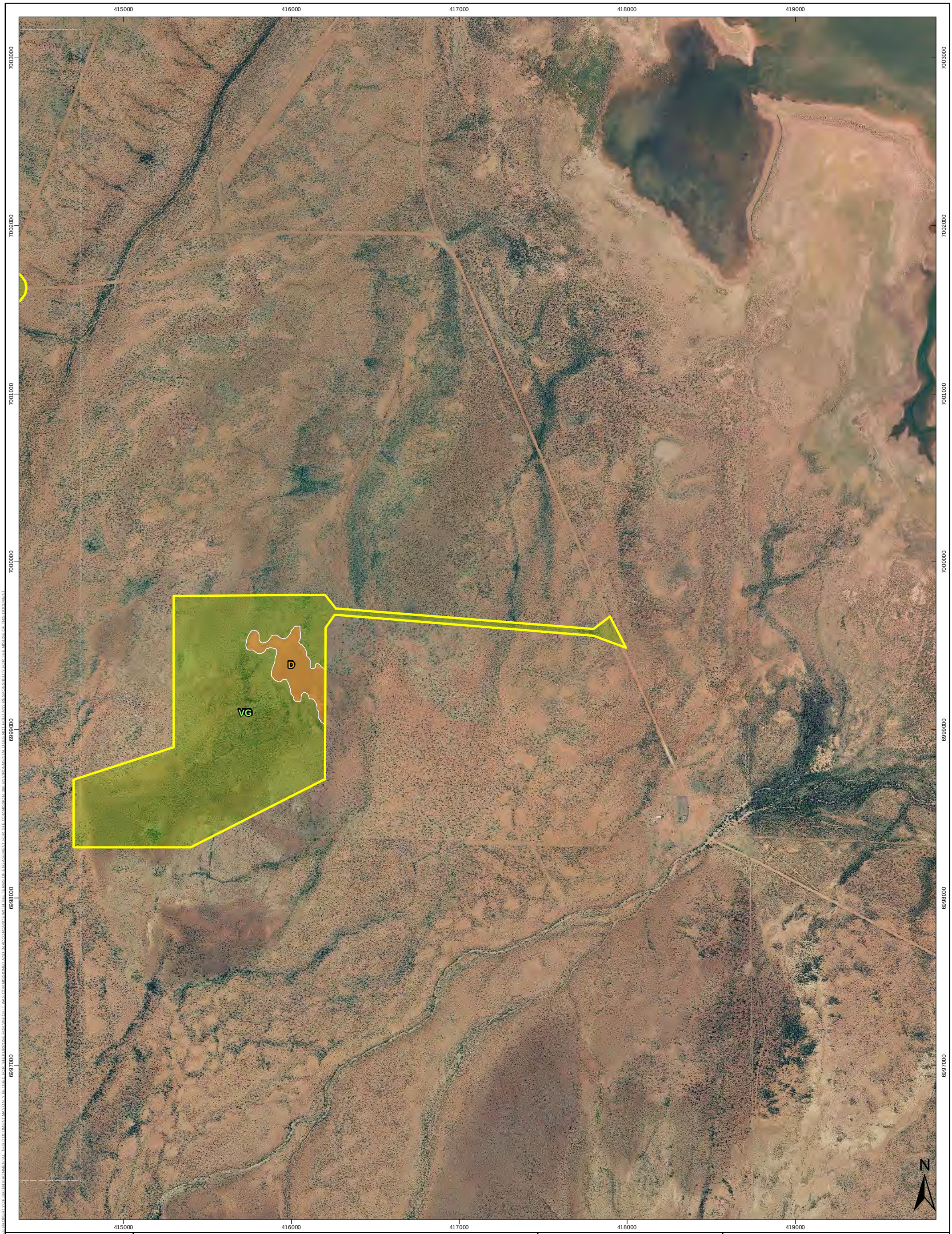

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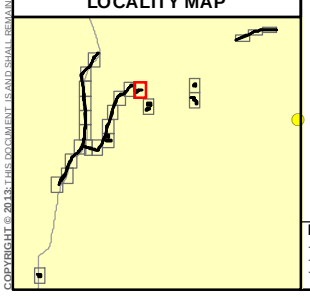
LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
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DATA SOURCES

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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10h
Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

410000 411000 412000 413000 414000

7003000 7002000 7001000 7000000 6999000 6998000 6997000

G G G G G G G G VG VG

N

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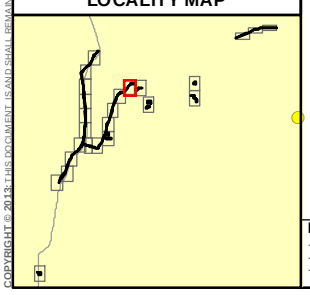
LOCALITY MAP



Legend

Survey Area

Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800

Meters

1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10i

Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

405000 406000 407000 408000 409000 410000

6997000 6996000 6995000 6994000

VG G G G G G G G G G VG G VG G VG

N

405000 406000 407000 408000 409000 410000

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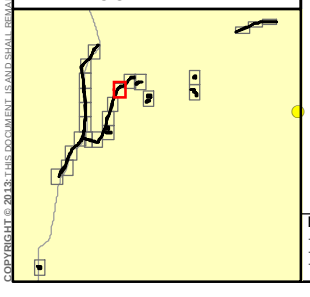
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Condition

E: Excellent
VG: Very Good
G: Good
D: Degraded
CD: Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10j
Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

402000 403000 404000 405000 406000

6992669 6991669 6990669

6989000 6988000 6987000 6986000

VG

D

CD

VG

G

G

N

402000 403000 404000 405000 406000

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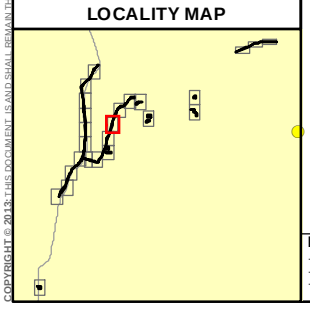
LOCALITY MAP



Legend

Survey Area

Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
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- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
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- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2014
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MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800

Meters

1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10k

Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

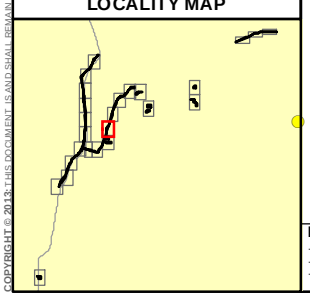
400000 401000 402000 403000 404000

6986000 6985000 6984000 6983000 6982000 6981000 6980000 6979000

G VG D G D G

N

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

DATA SOURCES

- CADASTRAL BOUNDARY SOURCED FROM LANDGATE 2009
- LOCALITY MAP SOURCED LANDGATE 2006
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CREATED	CHECKED	APPROVED	REVISION	DATE
MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10l
Vegetation Condition

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K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

395000 396000 397000 398000 399000

6976000 6975000 6974000 6973000 6972000 6971000 6970000

E
VG
G
VG
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VG
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VG
G
G

N

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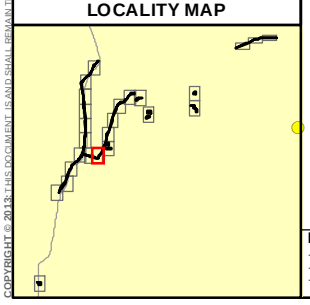
LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

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HORIZONTAL DATUM	PROJECT NO
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0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10m
Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

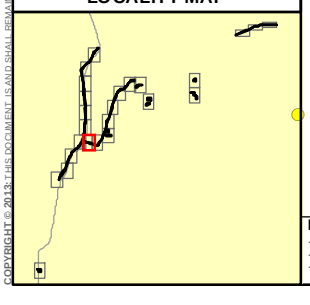
391000 392000 393000 394000 395000

6976000 6975000 6974000 6973000 6972000 6971000 6970000

G VG G D G G E VG VG

N

LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Condition

E: Excellent
VG: Very Good
G: Good
D: Degraded
CD: Completely Degraded

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HORIZONTAL DATUM: GDA 1994 MGA Zone 50
PROJECT NO: 1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10n
Vegetation Condition

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393000 394000 395000 396000 397000 398000

7017000 7016000 7015000 7014000 7013000 7012000 7011000

VG

G

N

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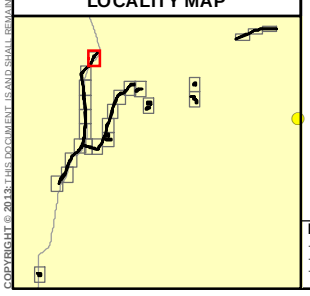

Legend

Survey Area

Map Layout

Vegetation Condition

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Meters

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10o

Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

390000 391000 392000 393000 394000

7010000 7009000 7008000 7007000 7006000 7005000 7004000

VG

G

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390000 391000 392000 393000 394000

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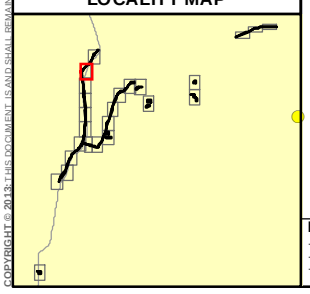
LOCALITY MAP



Legend

Survey Area

Map Layout

Vegetation Condition

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0 100 200 400 600 800

Meters

1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10p

Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

389000 390000 391000 392000 393000 394000

7003000 7002000 7001000 7000000 6999000 6998000 6997000

G

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VG

N

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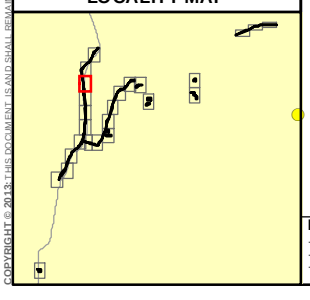
LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

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0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10q
Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

389000 390000 391000 392000 393000 394000

6996000 6995000 6994000 6993000 6992000 6991000 6990000

VG
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CD
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D

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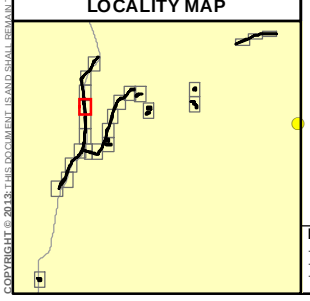
LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

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HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10r
Vegetation Condition

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389000 390000 391000 392000 393000 394000

6989000 6988000 6987000 6986000 6985000 6984000

D

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VG G

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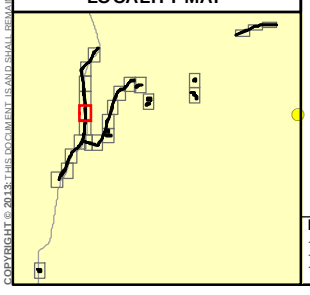
LOCALITY MAP



Legend

Survey Area
Map Layout

Vegetation Condition

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0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10s
Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

389000 390000 391000 392000 393000 394000

6983000 6982000 6981000 6980000 6979000 6978000 6977000

VG

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389000 390000 391000 392000 393000 394000

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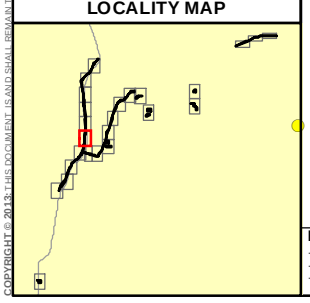
LOCALITY MAP



Legend

Survey Area

Map Layout

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0 100 200 400 600 800

Meters

1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

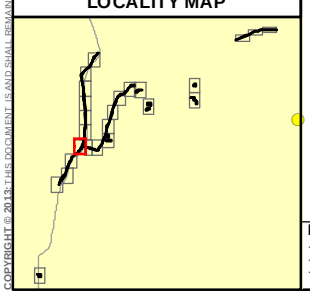
Flora and Vegetation Assessment

Figure 10t

Vegetation Condition

K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd

LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

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Meters
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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10u
Vegetation Condition

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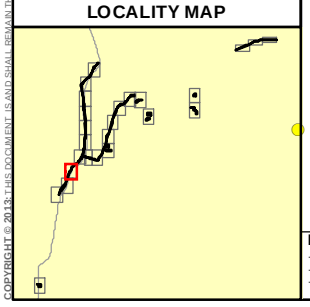

Legend

Survey Area

Map Layout

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Meters

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10v

Vegetation Condition

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381000 382000 383000 384000 385000

6963000 6962000 6961000 6960000 6959000 6958000 6957000

G

VG

N

381000 382000 383000 384000 385000

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LOCALITY MAP

Legend

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Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10w
Vegetation Condition

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6958000 6957000 6956000 6955000 6954000 6953000 6952000

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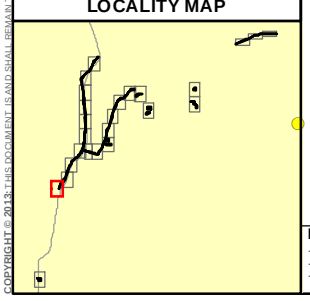
LOCALITY MAP



Legend

- Survey Area
- Map Layout

Vegetation Condition

- **E:** Excellent
- **VG:** Very Good
- **G:** Good
- **D:** Degraded
- **CD:** Completely Degraded

Condition	Area (ha)
Excellent	109.67
Very Good	3105.99
Good	402.615
Degraded	85.155
Completely Degraded	14.5945

DATA SOURCES

- CADASTRAL BOUNDARY SOURCED FROM LANDGATE 2009
- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2014 (© Western Australian Land Information Authority 2015)

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NOTE THAT POSITIONAL ERRORS MAY BE >5M IN SOME AREAS

CREATED	CHECKED	APPROVED	REVISION	DATE
MH	AD	RF	01	13/02/2017

HORIZONTAL DATUM	PROJECT NO
GDA 1994 MGA Zone 50	1810

0 100 200 400 600 800
Meters
1:20,000 @ A3

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10x
Vegetation Condition

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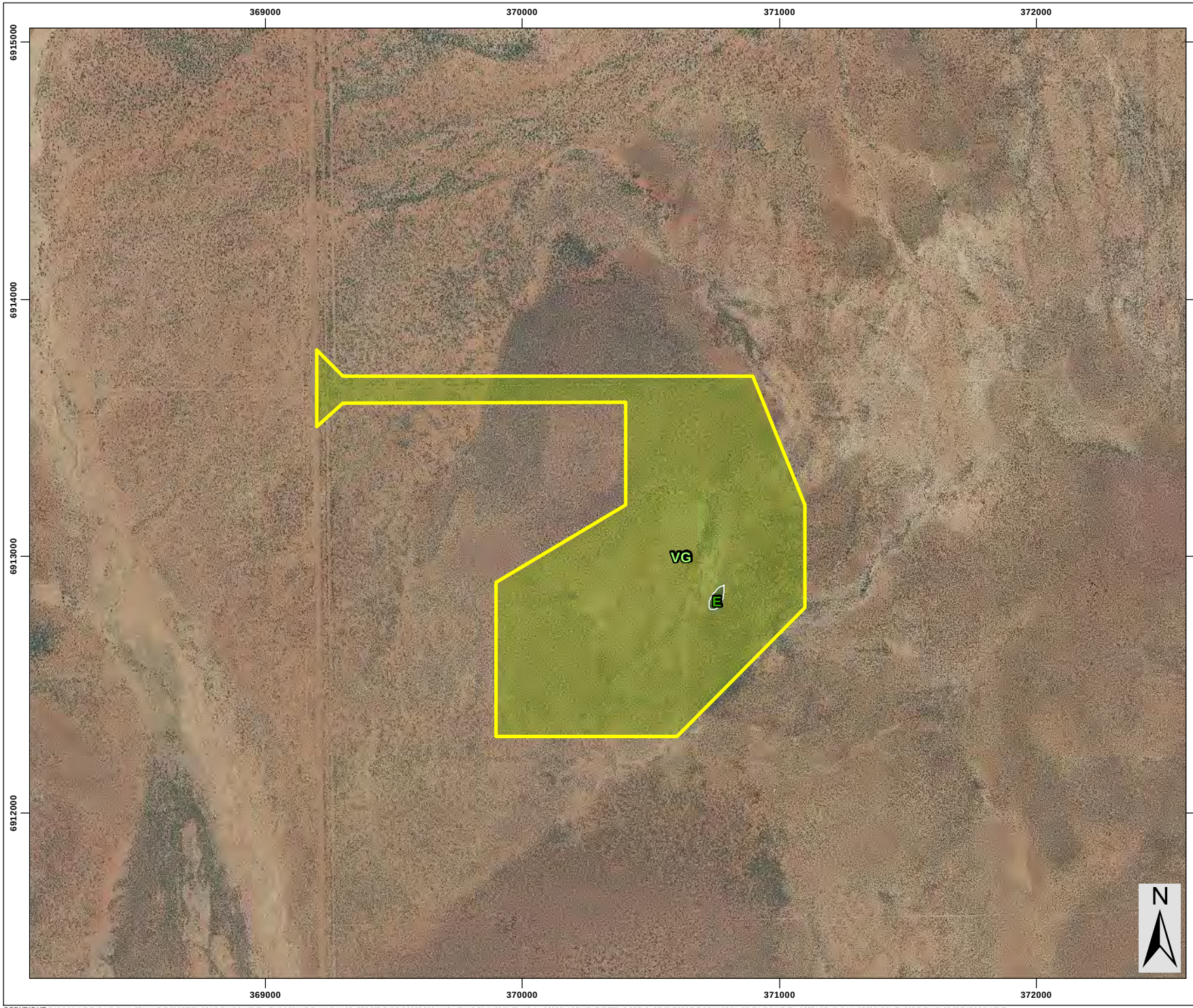
K:\Projects\1.0 EBS\1803 SKA Flora Survey\Figures\1803 Figure 9 - Vegetation Condition (Portrait).mxd



Legend

- Survey Area
- Map Layout

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- LOCALITY MAP SOURCED LANDGATE 2006
- AERIAL PHOTOGRAPHY SOURCED LANDGATE SEPT 2015
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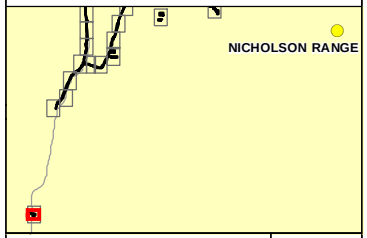
0 200 400 600 800
Meters
1:20,000 @ A3

LOCALITY MAP



PROJECT ID	DATE
1803	13/02/2017

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
MH	AD	RF	0

Main Roads WA
Murchison Square Kilometer Array

Flora and Vegetation Assessment

Figure 10y
Vegetation Condition

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APPENDIX A Definition of Declared Rare / Priority / Threatened Flora Species

Categories of Declared Rare Flora (WC act) and Priority listings (DPaW)

Conservation Code	Description
X	**Presumed Extinct Flora (Declared Rare Flora – Extinct)** "Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such (Schedule 2 under the *Wildlife Conservation Act 1950*)."
T	**Threatened Flora (Declared Rare Flora – Extant)** "Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedule 1 under the *Wildlife Conservation Act 1950*)." "Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria: CR: Critically Endangered – considered to be facing an extremely high risk of extinction in the wild; EN: Endangered – considered to be facing a very high risk of extinction in the wild; VU: Vulnerable – considered to be facing a high risk of extinction in the wild."
P1	**Priority One: Poorly-known taxa** "Taxa which are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes."
P2	**Priority Two: Poorly-known taxa** "Taxa which are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown Land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes."

Conservation Code	Description
P3	**Priority Three: Poorly-known taxa** "Taxa which are known from collections or sight records from several localities not under imminent threat, or few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them."
P4	**Priority Four: Rare, Near Threatened and other taxa in need of monitoring** a. Rare. "Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands." b. Near Threatened. "Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable." c. "Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy."
P5	**Priority Five: Conservation Dependent taxa** "Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxon becoming threatened within five years."

Source: Department of Parks and Wildlife (2013). Online: http://florabase.dpaw.wa.gov.au.

Categories of Threatened Flora Species under the EPBC Act

Conservation Code	Description
Ex	**Extinct** Taxa which at a particular time if, at the time, there is no reasonable doubt that the last member of the species has died.
ExW	**Extinct in the Wild** Taxa which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CE	**Critically Endangered** Taxa which at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

CONSERVATION CODE	DESCRIPTION
E	**Endangered** Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
V	**Vulnerable** Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	**Conservation Dependent** Taxa which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

Source: *Environment Protection and Biodiversity Conservation Act 1999*

APPENDIX B Definition of Threatened and Priority Ecological Communities

Definitions of Threatened Ecological Communities as Endorsed by the Western Australian Minister for the Environment

Presumed Totally Destroyed (PD)

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

A) Records within the last 50 years have not been confirmed despite thorough searches or known or likely habitats or

B) All occurrences recorded within the last 50 years have since been destroyed.

Critically Endangered (CR)

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

A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% and either or both of the following apply (i or ii)

i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 5 years)

ii) modification throughout its range is continuing such that in the immediate future (within approximately 5 years) the community is unlikely to be capable of being substantially rehabilitated.

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

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 5 years)

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

iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes

C) The ecological community exists only as highly modified occurrences which may be capable of being rehabilitated if such work begins in the immediate future (within approximately 5 years)

Endangered (EN)

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

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

i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term (within approximately 10 years)

ii) modification throughout its range is continuing such that in the short term future (within approximately 10 years) the community is unlikely to be capable of being substantially restored or rehabilitated.

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

i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 10 years)

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

iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes

C) The ecological community exists only as highly modified occurrences which may be capable of being rehabilitated if such work begins in the short term future (within approximately 10 years).

Vulnerable (VU)

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 in the medium to long term future. This will be determined on the basis of the best available information, by it meeting any one or more of the following criteria (A, B or C):

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

B) The ecological community can be modified or destroyed 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 still be 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.

Source: Department of Environment and Conservation (2010). Definitions, Categories and Criteria for Threatened and Priority Ecological Communities. Department of Environment and Conservation, Perth, Western Australia. Online: www.naturebase.net/

Definitions of Priority Ecological Communities as listed DPaW

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community Lists under Priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as threatened ecological communities. Ecological Communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

Priority One: Poorly known ecological communities

Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly known ecological communities

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

Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:

(ii) Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;

(iii) Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened or that have been recently removed from the threatened list.

These communities require regular monitoring.

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

(b) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.

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

Priority Five: Conservation Dependent ecological communities.

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

Source: Department of Parks and Wildlife (2013). Definitions, Categories and Criteria for Threatened and Priority Ecological Communities. Department of Environment and Conservation, Perth, Western Australia. Online: www.naturebase.net/

APPENDIX C Environmental Weeds and Declared Plant Categories

Criteria used for Ranking Environmental Weeds

The Weed Prioritisation Process for DPaW contains criteria for the assessment and ranking of weeds in terms of their environmental impact on biodiversity. These criteria are as follows:

Potential Distribution – Area of potential habitat in the Region that could be occupied or the area at risk of invasion by the weed.

Current Distribution - Area of habitat in the Region currently occupied by the weed, in relation to the habitat that it could invade.

Ecological Impact - Impact of species within the Region, from low impact (causes minimal disruption to ecological processes or loss of biodiversity) to high (causes acute disruption of ecological processes, dominates and/or significantly alters vegetation structure, composition and function of ecosystems).

Invasiveness – rate of spread of a weed in native vegetative, encompassing factors of establishment, reproduction and long distance dispersal (>100m).

Feasibility of Control - The longer a coordinated control program takes to achieve its desired goal, the more expensive and less feasible it becomes. Is it feasible to eradicate or at least contain the infestation?

Source: DPaW (2013). Weed Prioritisation Process for DPaW (formerly DEC) – "An integrated approach to Weed Management on DPaW-managed lands in WA"

Standard Meanings of Declared Plant Categories

Under the Biosecurity and Agriculture Management Act 2007 (the BAM Act), all declared pests are placed in one of three categories, namely C1 (exclusion), C2 (eradication) or C3 (management).

C1 category (Exclusion) - Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.

C2 category (Eradication) – Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.

C3 category (Management) – Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Source: Department of Agriculture and Food, Western Australia. Online: http://www.biosecurity.wa.gov.au/western-australian-organism-list-waol

APPENDIX D Vegetation Condition Scale

Condition Scale Code	Condition Scale
P	**Pristine (1)** Pristine or nearly so, no obvious signs of disturbance
E	**Excellent (2)** Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
VG	**Very Good (3)** Vegetation structure altered obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
G	**Good (4)** Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
D	**Degraded (5)** Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
CD	**Completely Degraded (6)** The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Source: Bush Forever Vegetation Condition Scale as developed by Keighery (1994).

APPENDIX E Likelihood Assessment

Appendix E: Assessment of the Likely Occurrence of DRF and Priority Flora (as per DPaW and EPBC Database Searches) in the Survey Area

[1]Closest record to Survey Area based on DPaW 2016.Likely = Suitable habitat present and records less than 5 km from the Survey Area, Possible = Suitable habitat present and records between 5 km and 10 km from the Survey Area, and Unlikely = No suitable habitat present and/or records greater than 10 km from the Survey Area. En = Listed as Endangered under the EBPC Act, Vu = Listed as Vulnerable under the EBPC, Ce= Critically Endangered under the EBPC Act, P = Listed as Priority by the DPaW DRF = Declared Rare Flora as listed by the State.

Source	Conservation Status		Species	Habitat Information	Distance to nearest Record	Suitable Habitat present	Likelihood of occurrence in the Survey Area
	EPBC	DPaW					
DPaW	Vulnerable	DRF/T	*Beyeria lepidopetala*	Yellow sand over limestone. Gully	1.7 km	No	Unlikely
EPBC PMST	Endangered	DRF/T	*Caladenia hoffmanii*	Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies.	90 km	Yes	Unlikely
EPBC PMST	Vulnerable	DRF/T	*Caladenia wanosa*	Sand. Sandstone outcrops, top edges of gorges.	36 km	No	Unlikely
DPaW	Endangered	DRF/T	*Drakaea concolor*	Moist, sandy sites.	60 km	No	Unlikely
EPBC PMST	Endangered	DRF/T	*Eremophila nivea*	Sandy clay, clay loam. Undulating plains, roadverges.	80 km	No	Unlikely
EPBC PMST	Endangered	DRF/T	*Eremophila viscida*	Granitic soils, sandy loam. Stony gullies, sandplains.	11 km	Yes	Possible

EPBC PMST	Vulnerable	DRF/T	*Eucalyptus beardiana*	Red or yellow sand. Sand dunes and ridges.	4 km	Yes	Possible
DPaW	Critically Endangered	DRF/T	*Eucalyptus cuprea*	Shallow soils over granite.	80 km	No	Unlikely
DPaW	Critically Endangered	DRF/T	*Stylidium wilroyense*	Sand or clayey sand. Plains and gentle slopes. Acacia, Allocasuarina shrubland.	20 km	No	Unlikely
DPaW NatureMap	-	P1	*Acacia ampliata*	Red/orange sand, sandy loam, loam. Sandplains, hillsides.	2 km	Yes	Likely
DPaW NatureMap	-	P1	*Anacampseros* sp. *Eremaean*	Sand patches inside rocks, brown sandy clay, and granite. Depressions in rock outcrops, breakaways, flats.	Unknown	No	Unknown
DPaW	-	P1	*Baeckea* sp. Mount Barloweerie	Brown loam. Breakaway.	3.9 km	No	Unlikely
DPaW	-	P1	*Calandrinia butcherensis*	Red sand.	2.3 km	Yes	Recorded
DPaW NatureMap	-	P1	*Calandrinia umbelliformis*	Brown sand, clay.	100 km	No	Unlikely

DPaW	-	P1	*Chamelaucium sp. Coolcalalaya*	Sand.	Unknown	No	Unlikely
DPaW	-	P1	*Dithyrostegia gracilis*	Information not available.	60 km	Unknown	Unknown
DPaW	-	P1	*Eremophila graciliflora*	Information not available.	Unknown	Unknown	Unknown
DPaW	-	P1	*Eremophila sp. Ballythunna*	Brown sandy clay.	Unknown	No	Unlikely
NatureMap	-	P1	*Eremophila* sp. Tallering	Red brown, clay loam.	Unknown	No	Unlikely
DPaW	-	P1	*Indigofera eriophylla*	Sand. Rises.	3 km	Yes	Recorded
DPaW	-	P1	*Labichea obtrullata*	Information not available.	70 km	Unknown	Unlikely
DPaW NatureMap	-	P1	*Malleostemon sp. Woolgorong Station*	Deep red sand.	Unknown	Yes	Unknown
DPaW	-	P1	*Neotysonia phyllostegia*	Information not available.	86 km	Unknown	Unlikely
DPaW	-	P1	*Verticordia lepidophylla var. quantula*	Red sand over limestone, yellow sand.	>100 km	No	Unlikely
DPaW	-	P2	*Acacia leptospermoides subsp. obovata*	Yellow/brown sand. Sandplains, sand ridges.	67 km	No	Unlikely

DPaW	-	P2	*Acacia* sp. Muggon Station	Red-brown loam, brown clay loam, sandstone, quartz. High rocky ridges.	3.8 km	Yes	Possible
DPaW	-	P2	*Amanita lesueurii*	Sand, sandplain.	>100 km	Yes	Unlikely
DPaW	-	P2	*Angianthus microcephalus*	Sandy or clayey soils. Salt swamps and pans.	10.4 km	Yes	Possible
DPaW	-	P2	*Calytrix harvestiana*	White or yellow sand, flats.	28 km	No	Unlikely
NatureMap	-	P2	*Chthonocephalus muellerianus*	Red sand.	80 km	Yes	Unlikely
NatureMap	-	P2	*Drosera bulbosa subsp. coronota*	Red clay loam.	Unknown	No	Unknown
DPaW NatureMap	-	P2	*Eremophila mirabilis*	Clay sand, stony clayey loam. Granite country.	15 km	Yes	Possible
DPaW	-	P2	*Persoonia kararae*	Sandplains.	100 km	Yes	Unlikely
DPaW	-	P2	*Persoonia papillosa*	Sand.	36 km	Yes	Possible
DPaW	-	P2	*Philotheca kalbarriensis*	Yellow sandy clay. Acacia acuminata scrub.	14 km	No	Unlikely

DPaW	-	P2	*Scholtzia sp. East Yuna*	Clay. Breakaway screes.	70 km	No	Unlikely
DPaW	-	P2	*Scholtzia sp. Eradu*	Yellow sand.	80 km	No	Unlikely
DPaW	-	P2	*Scholtzia sp. Eurardy*	Sandy clay or loam.	>100 km	Yes	Unlikely
DPaW	-	P2	*Scholtzia sp. Murchison River*	In sand over sandstone.	90 km	No	Unlikely
DPaW	-	P2	*Solanum pycnotrichum*	Hills, clay/loam/silt soils.	9.7 km	No	Unlikely
DPaW	-	P3	*Acacia isoneura subsp. nimia*	Yellow/brown or red sand, stony soils. Sandplains and sand ridges.	>100 km	Yes	Unlikely
DPaW	-	P3	*Acacia plautella*	Yellow sand. Sandplains.	>100 km	No	Unlikely
DPaW	-	P3	*Acacia ridleyana*	Grey or yellow/brown sand, gravelly clay, granitic loam.	97 km	No	Unlikely
DPaW	-	P3	*Acacia subsessilis*	Red sand or stony gravel over ironstone. Rocky hills.	75 km	No	Unlikely
DPaW	-	P3	*Beyeria cinerea subsp. cinerea*	Loam & sand over limestone. Undulating plains.	>100 km	No	Unlikely

DPaW	-	P3	*Beyeria gardneri*	Yellow sand.	27 km	Yes	Possible
DPaW	-	P3	*Blackallia nudiflora*	Clay or sandy clay with granite. On hills or breakaways, plains.	84 km	Yes	Unlikely
DPaW NatureMap	-	P3	*Calocephalus aervoides*	Loam & sand over limestone. Undulating plains.	10.5 km	Yes	Recorded
DPaW	-	P3	*Dicrastylis linearifolia*	Red sand. Sandplain.	7.6 km	Yes	Likely
DPaW	-	P3	*Eremophila muelleriana*	Granitic soils.	1.3 km	Yes	Recorded
DPaW NatureMap	-	P3	*Eremophila physocalyx*	Red/brown sand. Sandplains.	< 1 km	Yes	Likely
DPaW	-	P3	*Eremophila simulans subsp. megacalyx*	Sandy, loamy soils.	1.8 km	Yes	Recorded
DPaW NatureMap	-	P3	*Gnephosis cassiniana*	Sand, clay loam. Saline depression, low wet areas.	12 km	No	Unlikely
DPaW	-	P3	*Goodenia sericostachya*	Red sand. Sandplains.	31 km	Yes	Possible
DPaW NatureMap	-	P3	*Gunniopsis divisa*	Loam, quartz. Roadsides.	<1 km	Yes	Likely

DPaW	-	P3	*Hemigenia saligna*	Lateritic & sandy soils.	42 km	No	Unlikely
DPaW	-	P3	*Hemigenia tysonii*	Red sand, sandy clay, lateritic sand. Flats, sand dunes, hills.	9.1 km	Yes	Recorded
DPaW	-	P3	*Lasiopetalum oppositifolium*	Sandy soils over sandstone or limestone. Sandstone cliffs & crevices.	>100 km	No	Unlikely
DPaW	-	P3	*Lepidium scandens*	Red sand, clay.	19.6 km	Yes	Recorded
DPaW	-	P3	*Maireana murrayana*	Red clayey sand, dissected sandstone.	>100 km	No	Unlikely
DPaW NatureMap	-	P3	*Micromyrtus placoides*	Red-orange sandy clay, orange-yellow sandy clay to clayey loam, coarse gravel, banded ironstone, laterite, quartz, basalt. Gently undulating plains, dry creek beds, hillcrests, ridges.	7.5 km	Yes	Possible
DPaW	-	P3	*Micromyrtus trudgenii*	Red-brown loamy clay, yellow-brown soils, gravel, siltstone, quartz, basalt, banded ironstone, dolerite. Tops and slopes of hills and ridges.	>100 km	Yes	Unlikely
DPaW	-	P3	*Mirbelia coralline*	Flat, yellow, brown sand, sandy loam.	> 100 km	Yes	Unlikely
DPaW NatureMap	-	P3	*Petrophile pauciflora*	Decaying & dissected granite breakaways.	16.2 km	Yes	Recorded

DPaW	-	P3	*Polianthion collinum*	Red clay loam between blocks of banded ironstone. Low hills and slopes.	>100 km	No	Unlikely
DPaW NatureMap	-	P3	*Prostanthera petrophila*	Lateritic soils.	4 km	Yes	Likely
DPaW	-	P3	*Prostanthera tysoniana*	Red sandy soils.	>100 km	Yes	Unlikely
DPaW NatureMap	-	P3	*Psammomoya ephedroides*	Deep yellow or red sandy loams.	6.7 km	Yes	Recorded
DPaW NatureMap	-	P3	*Ptilotus beardii*	Clayey soils. Saline flats, low breakaways.	3.8 km	Yes	Recorded
DPaW	-	P3	*Rodanthe colliana*	Loam. Rocky hills.	Unknown	Yes	Unknown
DPaW NatureMap	-	P3	*Sauropus sp. Woolgorong*	Red sand, plains.	Unknown	Yes	Recorded
DPaW	-	P3	*Scaevola oldfieldii*	Sand, loam, clay. Near rivers.	60 km	No	Unlikely
DPaW	-	P3	*Stackhousia clementii*	Skeletal soils. Sandstone hills.	6.3 km	No	Unlikely
DPaW	-	P3	*Tecticornia cymbiformis*	Saline soils. Along the edge of creeklines.	40 km	No	Unlikely

DPaW	-	P3	*Triglochin protuberans*	Red loam, grey mud over clay. Winter-wet sites, claypans, near salt lakes, margins of pools.	43 km	No	Unlikely
DPaW	-	P3	*Verticordia cooloomia*	Yellow sand. Undulating terrain, ridges.	>100 km	No	Unlikely
DPaW NatureMap	-	P3	*Verticordia jamiesonii*	Sandy clay soils. Lateritic breakaways.	10.6 km	Yes	Possible
DPaW	-	P3	*Verticordia serrata var. linearis*	White sand, gravel. Open woodland.	11 km	No	Unlikely
DPaW	-	P4	*Acacia speckii*	Rocky soils over granite, basalt or dolerite. Rocky hills or rises.	>100 km	Yes	Unlikely
DPaW NatureMap	-	P4	*Frankenia confusa*	Wet pale brown sand, brown clay, grey soil. Banks of rivers & waterholes, river floodplains.	2.7 km	Yes	Recorded
DPaW	-	P4	*Goodenia berringbinensis*	Red sandy loam. Along watercourses.	95 km	Yes	Unlikely
DPaW NatureMap	-	P4	*Goodenia neogoodenia*	Red loam or clay. Near water.	13.6 km	Yes	Possible
DPaW	-	P4	*Stachystemon nematophorus*	Dry sand, sandy gravel over laterite, sandstone. Exposed rocky sites, disturbed ground.	>100 km	Yes	Unlikely
DPaW	-	P4	*Triodia bromoides*	Red, grey & calcareous sand. Dunes, sandplains, stony rises.	87 km	Yes	Unlikely

DPaW NatureMap	-	P4	*Wurmbea murchisoniana*	Clay, sandy clay, loam. Seasonally inundated clay hollows, rock pools.	94 km	Yes	Unlikely

APPENDIX F Taxa Inventory

Family	Name
Aizoaceae	**Cleretum papulosum*
	Disphyma crassifolium subsp. clavellatum
	Gunniopsis calcarea
	Gunniopsis propinqua (P3)
	Gunniopsis quadrifida
	Gunniopsis rodwayi
	Gunniopsis septifraga
	**Mesembryanthemum nodiflorum*
	Tetragonia cristata
	Trianthema triquetra
Amaranthaceae	*Alternanthera angustifolia*
	Hemichroa diandra
	Ptilotus aervoides
	Ptilotus chamaecladus
	Ptilotus divaricatus
	Ptilotus gardneri
	Ptilotus gaudichaudii
	Ptilotus gaudichaudii var. gaudichaudii
	Ptilotus gomphrenoides
	Ptilotus grandiflorus
	Ptilotus helichrysoides
	Ptilotus helipteroides
	Ptilotus lazaridis (P3)
	Ptilotus macrocephalus
	Ptilotus nobilis
	Ptilotus obovatus
	Ptilotus obovatus (Typical Goldfields form)
	Ptilotus obovatus var. obovatus
	Ptilotus polakii
	Ptilotus polystachyus
	Ptilotus schwartzii
Apiaceae	*Apium annuum*
	Daucus glochidiatus
Apocynaceae	*Cynanchum floribundum*
	Marsdenia australis
	Rhyncharrhena linearis
Araliaceae	*Trachymene ornata*
	Trachymene pilbarensis
Asparagaceae	*Arthropodium dyeri*
	**Asphodelus fistulosus*
	Thysanotus manglesianus

	Thysanotus manglesianus/patersonii
Asteraceae	*Actinobole drummondianum*
	Actinobole oldfieldianum
	Actinobole uliginosum
	Brachyscome ciliaris
	Brachyscome iberidifolia
	Calocephalus aervoides (P3)
	Calotis hispidula
	Calotis multicaulis
	Centipeda thespidioides
	Cephalipterum drummondii
	Chthonocephalus pseudevax
	Chthonocephalus viscosus
	Cratystylis subspinescens
	Erymophyllum ramosum subsp. involucratum
	Helichrysum luteoalbum
	Helipterum craspedioides
	**Hypochaeris glabra*
	Isoetopsis graminifolia
	Lemooria burkittii
	Myriocephalus guerinae
	Myriocephalus oldfieldii
	Myriocephalus pygmaeus
	Pluchea dunlopii
	Pluchea rubelliflora
	Podolepis capillaris
	Podolepis kendallii
	Podolepis lessonii
	Podotheca gnaphalioides
	Rhodanthe charsleyae
	Rhodanthe chlorocephala subsp. splendida
	Rhodanthe citrina
	Rhodanthe floribunda
	Rhodanthe maryonii
	Rhodanthe stricta
	Roebuckiella oncocarpa
	Schoenia cassiniana
	Senecio glomeratus
	Senecio glossanthus
	**Sonchus oleraceus*
	Streptoglossa cylindriceps

	Waitzia acuminata var. acuminata
Boraginaceae	*Heliotropium curassavicum*
	Trichodesma zeylanicum var. grandiflorum
Boryaceae	*Borya sphaerocephala*
Brassicaceae	*Lepidium muelleri-ferdinandii*
	Lepidium oxytrichum
	Lepidium scandens (P3)
	Lepidium xylodes
	Menkea australis
	Menkea villosula
	**Sisymbrium erysimoides*
	**Sisymbrium orientale*
	Stenopetalum anfractum
	Stenopetalum filifolium
Campanulaceae	*Lobelia heterophylla*
	Lobelia winfridae
	Wahlenbergia queenslandica
	Wahlenbergia sp.
Caryophyllaceae	**Polycarpon tetraphyllum*
	**Spergula pentandra*
Celastraceae	*Psammomoya ephedroides*
	Stackhousia muricata subsp. annual (W.R. Barker 2172)
	Stackhousia sp.
Chenopodiaceae	*Atriplex amnicola*
	Atriplex bunburyana
	Atriplex codonocarpa
	Atriplex semibaccata
	Atriplex semilunaris
	Atriplex sp.
	Atriplex vesicaria
	Chenopodium gaudichaudianum
	Dysphania glandulosa
	Dysphania melanocarpa forma leucocarpa
	Dysphania melanocarpa forma melanocarpa
	Dysphania rhadinostachya
	Dysphania rhadinostachya subsp. rhadinostachya
	Dysphania saxatilis
	Enchylaena tomentosa
	Enchylaena tomentosa var. tomentosa
	Maireana aff. carnosa

	Maireana amoena
	Maireana appressa
	Maireana atkinsiana
	Maireana carnosa
	Maireana convexa
	Maireana georgei
	Maireana glomerifolia
	Maireana integra
	Maireana luehmannii
	Maireana pentatropis
	Maireana planifolia
	Maireana platycarpa
	Maireana pyramidata
	Maireana radiata
	Maireana thesioides
	Maireana tomentosa
	Maireana triptera
	Maireana villosa
	Rhagodia drummondii
	Rhagodia eremaea
	Chenopodium gaudichaudianum
	Salsola australis
	Sclerolaena costata
	Sclerolaena cuneata
	Sclerolaena densiflora
	Sclerolaena diacantha
	Sclerolaena eriacantha
	Sclerolaena eurotioides
	Sclerolaena gardneri
	Sclerolaena glabra
	Sclerolaena recurvicuspis
	Sclerolaena sp.
	Sclerolaena tridens
	Tecticornia doleiformis
	Tecticornia halocnemoides
	Tecticornia indica subsp. bidens
	Tecticornia indica subsp. leiostachya
	Tecticornia sp.
	Tecticornia tenuis
Convolvulaceae	*Convolvulus clementii*
	Cuscuta sp.
	Duperreya sericea
Crassulaceae	*Crassula colorata*

	Crassula colorata var. acuminata
Cucurbitaceae	**Citrullus lanatus*
Cyperaceae	*Cyperus bifax*
	Cyperus concinnus
	Cyperus gymnocaulos
	Schoenoplectus dissachanthus
	Schoenus nanus
Elatinaceae	*Bergia perennis subsp. exigua*
Euphorbiaceae	*Euphorbia aff. boophthona (large seed form)*
	Euphorbia boophthona
	Euphorbia tannensis subsp. eremophila
	Stachystemon intricatus
Fabaceae	*Acacia acuminata*
	Acacia aneura
	Acacia aptaneura
	Acacia aptaneura
	Acacia aulacophylla
	Acacia burkittii
	Acacia caesaneura
	Acacia craspedocarpa
	Acacia crassistipula
	Acacia cuthbertsonii
	Acacia cuthbertsonii subsp. cuthbertsonii
	Acacia eremaea
	Acacia exocarpoides
	Acacia fuscaneura
	Acacia grasbyi
	Acacia incurvaneura
	Acacia kalgoorliensis
	Acacia kempeana
	Acacia longispinea
	Acacia macraneura
	Acacia microcalyx
	Acacia murrayana
	Acacia pruinocarpa
	Acacia pteraneura
	Acacia ramulosa
	Acacia ramulosa var. linophylla
	Acacia ramulosa var. ramulosa
	Acacia rhodophloia
	Acacia scleroclada

	Acacia sclerosperma
	Acacia sclerosperma subsp. sclerosperma
	Acacia sp.
	Acacia synchronicia
	Acacia tetragonophylla
	Acacia umbraculiformis
	Acacia victoriae
	Chorizema racemosum
	Chorizema sp.
	Cullen cinereum
	Cullen leucanthum
	Glycine canescens
	Indigofera australis
	Indigofera chamaeclada
	Indigofera monophylla
	Jacksonia arida
	Lotus cruentus
	**Lupinus cosentinii*
	Mirbelia rhagodioides
	Muelleranthus trifoliolatus
	Senna artemisioides subsp. x artemisioides
	Senna artemisioides subsp. helmsii
	Senna artemisioides subsp. petiolaris
	Senna artemisioides subsp. x sturtii
	Senna charlesiana
	Senna glaucifolia
	Senna glaucifolia
	Senna glutinosa subsp. chatelainiana
	Senna helmsii
	Senna sp.
	Senna sp. Austin (A. Strid 20210)
	Senna sp. Meekatharra (E. Bailey 1-26)
	Senna stowardii
	Swainsona paucifoliolata
Frankeniaceae	*Frankenia confusa (P2)*
	Frankenia pauciflora
	Frankenia setosa
Gentianaceae	*Schenkia australis*
Geraniaceae	*Erodium crinitum*
Goodeniaceae	*Brunonia australis*

	Goodenia berardiana
	Goodenia corynocarpa
	Goodenia havilandii
	Goodenia kingiana
	Goodenia micrantha
	Goodenia mimuloides
	Goodenia occidentalis
	Goodenia pinifolia
	Scaevola spinescens
	Scaevola tomentosa
	Velleia rosea
Haloragaceae	*Haloragis odontocarpa forma octoforma*
Hemerocallidaceae	*Dianella revoluta*
	Dianella revoluta var. divaricata
	Dianella sp.
Juncaginaceae	*Triglochin mucronata*
	Triglochin nana
	Triglochin sp. A Flora of Australia (G.J. Keighery 2477)
Lamiaceae	*Hemigenia botryphylla*
	Hemigenia tomentosa
	Hemigenia tysonii (P3)
	Prostanthera campbellii
	Prostanthera wilkieana
	Spartothamnella teucriiflora
Loranthaceae	*Amyema fitzgeraldii*
	Amyema sp.
	Lysiana murrayi
Malvaceae	*Abutilon cryptopetalum*
	Abutilon oxycarpum
	Abutilon oxycarpum subsp. prostratum
	Androcalva luteiflora
	Hibiscus burtonii
	Hibiscus gardneri
	Hibiscus krichauffianus
	Hibiscus sp.
	Hibiscus sturtii var. grandiflorus
	Lawrencia squamata
	Sida ?fibulifera
	Sida calyxhymenia
	Sida ectogama
	Sida ectogama

	Sida fibulifera
	Sida kingii
	Sida sp. dark green fruits (S. van Leeuwen 2260)
	Sida sp. dark green fruits (S. van Leeuwen 2260)
	Sida sp. Golden calyces (G.J. Leach 1966)
	Sida sp. Pindar (A. Mitchell 3585)
Marsileaceae	*Marsilea exarata*
Myrtaceae	*Aluta aspera subsp. hesperia*
	Calytrix desolata
	Calytrix divergens
	Calytrix sp. Paynes Find
	Calytrix sp. Paynes Find (F. & J. Hort 1188)
	Eucalyptus victrix
	Melaleuca acutifolia
	Micromyrtus prochytes
	Micromyrtus sulphurea
	Pileanthus peduncularis subsp. pilifer
	Thryptomene decussata
	Thryptomene sp.
	Verticordia interioris
Nyctaginaceae	*Boerhavia coccinea*
Phrymaceae	*Peplidium sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A. Kanis 8*
Phyllanthaceae	*Phyllanthus erwinii*
	Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94) (P1)
Pittosporaceae	*Bursaria occidentalis*
	Cheiranthera simplicifolia
Plantaginaceae	*Plantago drummondii*
	Stemodia florulenta
Poaceae	*Aristida contorta*
	Austrostipa elegantissima
	Austrostipa eremophila
	Austrostipa scabra
	Austrostipa variabilis
	**Avellinia michelii*
	**Cenchrus ciliaris*
	**Cenchrus setiger*
	Cymbopogon ambiguus
	**Cynodon dactylon*

	Dichanthium sericeum subsp. humilius
	Digitaria brownii
	Eragrostis dielsii
	Eragrostis eriopoda
	Eragrostis falcata
	Eragrostis kennedyae
	Eragrostis laniflora
	Eragrostis lanipes
	Eragrostis pergracilis
	Eragrostis sp.
	Eragrostis sp. Erect spikelets (P.K. Latz 2122)
	Eriachne flaccida
	Eriachne helmsii
	Eriachne mucronata
	Eriachne pulchella
	Eriachne pulchella subsp. pulchella
	Lachnagrostis filiformis
	Lachnagrostis plebeia
	**Lolium multiflorum*
	Monachather paradoxus
	Neurachne minor
	Paspalidium basicladium
	Paspalidium clementii
	Paspalidium constrictum
	**Pentameris airoides subsp. airoides*
	**Polypogon monspeliensis*
	**Rostraria pumila*
	Thyridolepis multiculmis
	Thyridolepis sp.
	Tripogon loliiformis
Polygonaceae	**Emex australis*
	**Rumex acetosella*
	**Rumex vesicarius*
Portulacaceae	*Calandrinia baccata*
	Calandrinia butcherensis
	Calandrinia creethiae
	Calandrinia eremaea
	Calandrinia eremaea sens. Lat.
	Calandrinia hortiorum
	Calandrinia papillata
	Calandrinia polyandra
	Calandrinia primuliflora

	Calandrinia ptychosperma
	Calandrinia pumila
	Calandrinia remota
	Calandrinia sp.
	Calandrinia sp. Black angular seeds (A.A. Mitchell PRP 1661)
	Calandrinia translucens
	**Portulaca oleracea*
Primulaceae	*Samolus repens var. floribundus*
Proteaceae	*Grevillea berryana*
	Grevillea deflexa
	Grevillea nematophylla subsp. supraplana
	Grevillea obliquistigma subsp. obliquistigma
	Grevillea striata
	Hakea preissii
	Hakea recurva subsp. arida
	Hakea sp.
	Persoonia bowgada
	Petrophile pauciflora (P3)
	Petrophile sp.
Pteridaceae	*Cheilanthes sieberi subsp. sieberi*
Rubiaceae	*Psydrax latifolia*
	Psydrax rigidula
	Psydrax suaveolens
Rutaceae	*Drummondita sp.*
	Philotheca tomentella
	Philotheca brucei
	Philotheca brucei subsp. brucei
	Philotheca sericea
	Philotheca sp.
Sapindaceae	*Dodonaea adenophora*
	Dodonaea lanceolata
	Dodonaea pachyneura
	Dodonaea petiolaris
	Dodonaea rigida
	Dodonaea viscosa subsp. angustissima
Scrophulariaceae	*Eremophila clarkei*
	Eremophila compacta subsp. compacta
	Eremophila compacta subsp. fecunda
	Eremophila platycalyx

	Eremophila exilifolia
	Eremophila forrestii
	Eremophila forrestii subsp. forrestii
	Eremophila fraseri
	Eremophila fraseri subsp. fraseri
	Eremophila gilesii subsp. gilesii
	Eremophila glutinosa
	Eremophila granitica
	Eremophila jucunda subsp. jucunda
	Eremophila laanii
	Eremophila lachnocalyx
	Eremophila latrobei
	Eremophila latrobei subsp. latrobei
	Eremophila latrobei subsp. latrobei
	Eremophila mackinlayi subsp. spathulata
	Eremophila macmillaniana
	Eremophila maculata subsp. brevifolia
	Eremophila muelleriana (P3)
	Eremophila oldfieldii subsp. ? oldfieldii
	Eremophila oldfieldii subsp. oldfieldii
	Eremophila pantonii
	Eremophila platycalyx
	Eremophila platycalyx subsp. platycalyx
	Eremophila pterocarpa
	Eremophila pterocarpa subsp. pterocarpa
	Eremophila simulans
	Eremophila simulans subsp. megacalyx (P3)
	Eremophila sp.
	Eremophila sp. Murgoo (S.J.J. Davies s.n. 15/8/1960)
	Eremophila spuria
	Eremophila youngii subsp. youngii
Solanaceae	*Nicotiana rosulata subsp. rosulata*
	Nicotiana sp.
	Solanum cleistogamum
	Solanum hoplopetalum

	Solanum lachnophyllum
	Solanum lasiophyllum
	Solanum nummularium
	Solanum sp.
Stylidiaceae	*Levenhookia leptantha*
	Stylidium longibracteatum
Thymelaeaceae	*Pimelea microcephala subsp. microcephala*
Zygophyllaceae	*Tribulus astrocarpus*
	Tribulus forrestii
	Tribulus suberosus
	Zygophyllum billardierei
	Zygophyllum fruticulosum
	Zygophyllum iodocarpum

APPENDIX G Flora Site Data Sheets

Site SKAQ1

Described by AM **Date** 30/09/2016 **Type** Q 20 x 20
Location Near crossing of Murchison River
MGA Zone 51 390546 **mE** 6973235 **mN** 121.893300 **E** -27.359631 **S**
Habitat Flood plain
Soil Red-brown loam
Vegetation *Acacia tetragonophylla* tall herbland? With a sparse overstorey of *Eucalyptus victrix* and a sparse shrubland understorey of *Atriplex amnicola* and *Scaevola spinescens*
Veg Condition Poor
Fire Age >12
Notes Disturbance:
Aspect: N/A
Disturbance: N/A
Ground Cover: 50% Bareground, 10 Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia tetragonophylla	10		300	
Atriplex amnicola	2		100	SQ1-02
Atriplex codonocarpa	+		20	SQ1-23
Atriplex semilunaris	+		30	SQ1-22
Calandrinia polyandra	+		10	SQ1-24
Eragrostis falcata	+		1	SQ1-21
Eucalyptus victrix	5		600	
Goodenia corynocarpa	+		10	SQ1-18
Gunniopsis rodwayi	+		5	SQ1-20
Lepidium oxytrichum	+		20	SQ1-16
Maireana thesioides	+		30	SQ1-17
Salsola australis	+		30	SQ1-13
Scaevola spinescens				
Schoenia cassiniana	2		20	SQ1-09
Sclerolaena cuneata	+		40	SQ1-19
Sclerolaena diacantha	+		20	SQ1-15
Sclerolaena glabra	+		10	SQ1-14
Sida fibulifera	+		20	SQ1-25
Sisymbrium orientale	+		40	SQ1-26
Tetragonia cristata	+		10	
Zygophyllum billardierei	+		10	SQ1-10

Site SKAQ2

Described by BRM **Date** 30/09/2016 **Type** Q 80 x 5
MGA Zone 391007 **mE** 6973244 **mN** 121.897961 **E** -27.359586 **S**
Habitat Banks of Murchison River
Soil Brown sandy loam
Vegetation *Eucalyptus victrix* SLT *Acacia sp, Hakea preissii, Melaleuca acutifolia, Acacia tetragonophylla* TS over
Scaeovola spinescens, Atriplex amnicola shrubland over *Tecticonia doleiformis, Astriplex semilunaris*LS
over *Cyperus gymnocaulos* open sedgeland with *Rhodanthe stricta, Pluchea rubelliflora* open herbland.**Veg Condition** Good
Fire Age >12
Notes Disturbance:
Aspect: N/A
Disturbance: Weeds present; erosion of river banks
Ground Cover: 5% Bareground, % Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia sclerosperma subsp. sclerosperma	4		230	SQ2-12
Acacia tetragonophylla	3-4		400	
Apium annuum	+		20	SQ2-3
Atriplex amnicola	+		30	SQ2-23
Atriplex codonocarpa	+		20	SQ2-24
Atriplex semilunaris	1-2		30	SQ2-38
Calocephalus aervoides	+		20	SQ2-26
Calotis multicaulis	+		20	SQ2-6
Cullen cinereum	+		60	SQ2-5
Cynodon dactylon	+		35	SQ2-31
Cyperus gymnocaulos	2		35	SQ2-9
Eragrostis falcata	+		5	SQ2-30
Eremophila laanii	3-5		180-280	SQ2-14
Eucalyptus victrix	+		430	
Euphorbia tannensis subsp. eremophila	+		35	SQ2-34
Euphorbia tannensis subsp. eremophila	3		120	SQ2-34
Frankenia confusa	+		20	SQ2-22
Goodenia corynocarpa	+		35	SQ2-36
Hakea preissii	3-4		300	SQ2-15
Helichrysum luteoalbum	+		15	SQ2-20
Heliotropium curassavicum	+		2	SQ2-2
Lepidium scandens	+		30-40	SQ2-39
Lotus cruentus	+		15	SQ2-10
Melaleuca acutifolia	10-12		380	SQ2-18
Nicotiana rosulata subsp. rosulata	1-2		40	SQ2-17

Paspalidium constrictum	2-3	10	SQ2-37
Pluchea rubelliflora	3-4	40	SQ2-11
Polypogon monspeliensis	+	30	SQ2-4
Rhodanthe stricta	7-10	30	SQ2-7
Samolus repens var. floribundus	+	45	SQ2-28
Scaevola spinescens	10-12	110	
Sonchus oleraceus	1-2	80	SQ2-8
Spergula pentandra	+	20	SQ2-13
Stemodia florulenta	+	40	SBGC5
Streptoglossa cylindriceps	+		SQ2-40
Tecticornia doleiformis	+	30	SQ2-19
Tetragonia cristata	+	5	SQ2-33

Site SKAQ4

Described by BRM **Date** 1/10/2016 **Type** Q 20 x 20
Location Carnavan-Mullewa Road
MGA Zone 51 394763 **mE** 7013242 **mN** 121.939352 **E** -26.998828 **S**
Habitat Flat plain
Soil Red brown? Loam
Vegetation *Acacia pteraneura* scattered low trees over *Acacia tetragonophylla* tall open shrubland over *Eremophilla fraseri, Senna sp.* scattered shrubs
Veg Condition Good
Fire Age >12
Notes Disturbance:
Aspect: N/A
Disturbance: Part grazing, low weed cover
Ground Cover: 90% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		180	SQ4-10
Acacia grasbyi	4		320	SQ4-02
Acacia pteraneura	1.5		350	SQ4-01
Acacia tetragonophylla	1		210	
Calandrinia butcherensis	+		10	SQ4-30
Calandrinia sp.	+		1	SQ4-36
Calandrinia translucens	+		3	SQ4-21
Calotis hispidula	+		4	SQ4-33
Cenchrus ciliaris				SQ9-X4
Cephalipterum drummondii	+		30	SQ4-16
Crassula colorata var. acuminata	+		25	SQ4-38
Dysphania rhadinostachya subsp. rhadinostachya	+		15	SQ4-23
Dysphania rhadinostachya subsp. rhadinostachya				SQ4-23
Emex australis				SQ9-X3
Eremophila fraseri	+		90	
Eremophila jucunda subsp. jucunda	+		70	SQ4-40
Eremophila latrobei subsp. latrobei	+		45	SQ4-11
Eremophila platycalyx subsp. platycalyx	+		180	SQ4-03
Erodium crinitum	+		6	SQ4-18
Gunniopsis rodwayi	+		6	SQ4-20
Gunniopsis rodwayi				SQ4-20
Lemooria burkittii	+		3	SQ4-42
Lepidium oxytrichum	+		12	SQ4-46
Lotus cruentus				SQ9-X5
Maireana planifolia				SQ4-29
Maireana planifolia	+		30	SQ4-29

Marsdenia australis	+	250	SQ4-43
Marsdenia australis	+	45	SQ4-39
Menkea villosula	+	4	SQ4-32
Menkea villosula	+	10	SQ4-34
Podolepis lessonii	+	5	SQ4-27
Podolepis lessonii			SQ4-26
Psydrax rigidula	+	60	SQ4-41
Ptilotus aervoides			SQ9-X2
Ptilotus helipteroides	+	15	
Ptilotus obovatus	+	30	
Rhagodia eremaea	+	180	SQ4-12
Scaevola spinescens	+	190	
Sclerolaena costata	+	15	SQ4-31
Sclerolaena densiflora	+	12	SQ4-24
Sclerolaena densiflora			SQ4-24
Sclerolaena densiflora	+	3	SQ4-25
Spergula pentandra	+	20	SQ4-22
Spergula pentandra			SQ4-22
Stenopetalum anfractum	+	25	SQ4-13
Tetragonia cristata			SQ4-26
Tetragonia cristata	+	5	SQ4-26
Zygophyllum iodocarpum	+	15	SQ4-19

Site SKAQ5

Described by AM **Date** 1/10/2016 **Type** Q 20 x 20
Location Murchison Mullewa Road
MGA Zone 50 389576 **mE** 7006836 **mN** 115.886512 **E** -27.056251 **S**
Habitat Low rise
Soil Orange loam with hard pan and 30 rock cover. Some decomposing granite outcropping
Veg Condition Good
Fire Age Very Old (<12)
Notes Disturbance: Borrow pit and machinery and grazing
Ground Cover: 20% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii	+		100	
Acacia tetragonophylla	+		30	
Calandrinia sp. Black angular seeds (A.A. Mitchell PRP 1661)	+		1	SQ5-4
Cephalipterum drummondii	+		20	SQ5-2
Eremophila fraseri	+		100	
Eremophila platycalyx subsp. platycalyx	+		5	SQ5-7
Erodium crinitum	+		10	
Grevillea deflexa	+		50	SAGC17
Gunniopsis rodwayi	+		1	SQ1-20
Isoetopsis graminifolia	+		10	SQ3-11
Lobelia winfridae	+		5	SAGC6
Maireana carnosa	+		10	SQ5-5
Maireana thesioides	+		80	
Ptilotus helipteroides	+		10	SQ5-6
Ptilotus obovatus	+		40	
Scaevola spinescens	+		1.3	
Sclerolaena densiflora	+		20	
Senna artemisioides subsp. helmsii	5		130	
Sida ectogama	+		30	SQ5-1
Solanum lasiophyllum	+		20	
Stenopetalum anfractum	+		30	SQ3-14

Site SKAQ6

Described by BRM **Date** 1/10/2016 **Type** Q 20 x 20
MGA Zone 50 390339 **mE** 7009371 **mN** 115.894429 **E** -27.033428 **S**
Habitat Flat plain - flow area
Soil Red browny sand clay loam
Vegetation *Acacia fuscaneura* tall shrubland over *Acacia tetragonophylla* over *Eremoph platycalyx subsp. platycalyx* scattered shrubs over *Tetragonia cristata, Spergula pentandra* very open herbland.
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Quite a lot of tree deaths - road impact of outer flows?
Ground Cover: 95% Bareground, 2-3% Logs, 0% Twigs, 3% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		350	SQ6-20
Acacia fuscaneura	5		450	SQ6-1
Acacia pteraneura	1-3		400	SQ6-4
Acacia tetragonophylla	1-2		260	SQ6-3
Arthropodium dyeri	+		40	SQ6-19
Atriplex semilunaris	+		20	SQ6-18
Atriplex semilunaris	+		25	SQ6-15
Calandrinia baccata				SQ6-5
Cephalipterum drummondii	+		30	SQ4-16
Eremophila platycalyx subsp. platycalyx	1		160	SQ4-3
Erodium crinitum	+		15	SQ4-18
Gunniopsis rodwayi	+		4	SQ4-20
Lepidium oxytrichum	+		12	SQ4-46
Menkea villosula	+		5	SQ6-10
Rhagodia eremaea	+		40	
Rhodanthe maryonii	+		10-15	SQ6-11
Rhodanthe stricta	+		30	SQ6-12
Rhodanthe stricta	+		30	SQ6-14
Roebuckiella oncocarpa	+		15	SQ6-13
Roebuckiella oncocarpa	+		15	SQ6-6
Sclerolaena densiflora	+		10-15	SQ4-24
Sclerolaena eriacantha	+		3	SQ6-16
Senna artemisioides subsp. helmsii	+		50	
Solanum lachnophyllum	+		10	
Spergula pentandra	1-2		20	SQ4-22
Tetragonia cristata	3-4		15	SQ4-26

Site SKAQ7

Described by AM **Date** 1/10/2016 **Type** QSeason **Uniformity**
Location Murchison
MGA Zone 51 390661 **mE** 6996818 **mN** 121.896565 **E** -27.146767 **S**
Habitat Flow line underlain by red brown hard pan
Soil Red brown loam
Veg Condition Good
Fire Age Very Old (12)
Notes Disturbance:
Ground Cover: 50% Bareground, 20% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		70	
Acacia pteraneura	20		600	
Acacia tetragonophylla	+		100	
Arthropodium dyeri	+		70	
Brachyscome ciliaris	+		20	
Calotis multicaulis	+		1	SQ7-11
Calotis multicaulis	+		40	SQ7-10
Crassula colorata	+		5	
Cuscuta sp.	+		30	
Dysphania glandulosa	+			SQ7-16
Eremophila forrestii	+		60	
Eremophila latrobei	+		200	
Eremophila platycalyx	5		200	
Erodium crinitum	+		20	
Euphorbia aff. boophthona (large seed form)	+		5	
Hakea sp.	+		200	SQ7-14
Hibiscus krichauffianus	+		100	SQ7-15
Isoetopsis graminifolia	3		5	SQ3-11
Lepidium oxytrichum	+		10	
Maireana planifolia	+		70	
Podolepis capillaris	+		20	
Ptilotus gardneri	+		30	
Ptilotus helipteroides	+		30	
Ptilotus macrocephalus	+		30	SQ7-7
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		50	
Rhodanthe charsleyae	+		60	SQ7-4
Rhodanthe chlorocephala subsp. splendida	+		70	SQ7-3
Rhodanthe maryonii	+		60	SQ7-8
Rhyncharrhena linearis	+		1	SAGC7
Senna artemisioides subsp. petiolaris	+		40	SQ3-20
Senna sp. Meekatharra (E. Bailey 1-26)	+		30	
Sida calyxhymenia	+		100	
Solanum lasiophyllum	+		30	
Spartothamnella teucriiflora	+		100	

Spergula pentandra	+	30	SQ1-8
Tetragonia cristata	1	15	

Site SKAQ8

Described by BRM **Date** 1/10/2016 **Type** Q 20 x 20
Location Carnavan-Mullewa Road
MGA Zone 51 391297 **mE** 6991284 **mN** 121.902494 **E** -27.196771 **S**
Habitat Flat plain
Soil Red brown sandy loam (?)
Vegetation *Acacia pteraneura* tall open shrubland over Acacia tall open shrubland over scattered herbland.
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Impacts of grazing
Ground Cover: 95% Bareground, 1% Logs, 2% Twigs, 1% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	5		200-300	SQ8-2
Acacia pteraneura	5-6		400	SQ8-1
Acacia tetragonophylla	1		160	
Actinobole oldfieldiana	+		1	SQ8-18
Calandrinia creethae	+		3	SQ8-29
Calandrinia eremaea	+		15	SQ8-24
Calandrinia polyandra	+		12	SQ8-8
Calandrinia translucens	+		3	SQ4-21
Calotis multicaulis	+		15	SQ8-16
Cephalipterum drummondii	+		30	SQ8-7
Dianella revoluta	+		45	
Eremophila clarkei	+		25	SQ8-28
Eremophila jucunda subsp. jucunda	+		35	SQ4-40
Erodium crinitum	+		15	SQ4-18
Euphorbia boophthona	+		15	SQ8-27
Goodenia berardiana	+		20	SQ8-12
Goodenia mimuloides	+		15	SQ8-26
Hakea sp.	+		45	SQ8-35
Helipterum craspedioides	+		15	SQ8-30
Maireana planifolia	+		30	SQ8-19
Maireana thesioides	+		35	SQ8-21
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus helipteroides	+		12	SQ8-15
Rhodanthe charsleyae	+		10	SQ8-17
Sclerolaena densiflora	+		10	SQ4-24
Sclerolaena sp.	+		3	SQ8-5
Senna artemisioides subsp. helmsii	+		60	
Senna sp. Austin (A. Strid 20210)	+		90	SQ8-3
Spergula pentandra	+		30	SQ4-22
Stenopetalum anfractum	+		30	SQ4-13
Tetragonia cristata	+		12	SQ4-26

Site SKAQ9

Described by AM **Date** 2/10/2016 **Type** Q 20 x 20
Location Near mill on Mullewa/ Murchison Road
MGA Zone 51 390707 **mE** 6995316 **mN** 121.896896 **E** -27.160328 **S**
Habitat Flow line - unincised/ Plain , flat
Soil Orange/Brown
Veg Condition Good
Fire Age Very Old (>12)
Notes Distrubance: near water mount?

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		50	
Acacia aneura	10		800	
Acacia caesaneura	+		30	SQ9-11
Acacia caesaneura	+		20	SQ9-11
Acacia tetragonophylla	+		100	
Actinobole uliginosum	+		1	
Atriplex semibaccata	+		30	
Brachyscome ciliaris	+		10	
Calotis hispidula	+		10	SQ9-4
Calotis multicaulis	+		20	SQ7-10
Convolvulus clementii	+		1	SQ9-10
Crassula colorata	+		10	
Cuscuta sp.	+		10	
Enchylaena tomentosa var. tomentosa	+		70	SQ9-2
Eremophila forrestii	+		0.3	
Eremophila platycalyx	2		300	
Erodium crinitum	+		30	
Grevillea deflexa	+		100	
Isoetopsis graminifolia	+		1	SQ3-11
Lepidium oxytrichum	+			
Maireana convexa	+		50	
Maireana planifolia				
Myriocephalus oldfieldii	+		10	SQ9-5
Plantago drummondii	+		10	SQ9-8
Podolepis capillaris	+		40	
Podolepis kendallii	+		20	SQ9-7
Ptilotus helipteroides	+		10	
Ptilotus macrocephalus	+		20	SQ7-7
Senna artemisioides subsp. petiolaris	+		30	SQ3-20
Senna sp. Meekatharra (E. Bailey 1-26)	+		40	SQ9-1
Solanum lasiophyllum	1		80	
Sonchus oleraceus	+		120	
Spergula pentandra	1		30	SQ1-8
Swainsona paucifoliolata	+		10	SQ9-13
Tetragonia cristata	+		10	
Wahlenbergia sp.	+		20	

Site SKAQ10

Described by BRM **Date** 2/10/2016 **Type** Q 20 x 20
Location Carnavon - Mullewa Road
MGA Zone 391514 **mE** 6987961 **mN** 121.904391 **E** -27.226783 **S**
Habitat Crest of low rise on broad plain
Soil Red brown sandy loam
Rock Type
Vegetation *Acacia pteraneura* scattered low trees over *Eremophila fraseri subsp. fraseri* scattered shrubs over
Tetragonia cristata very open herbland
Veg Condition Good
Fire Age Very Old (>12)
Notes Distrubance: Grazing; part road - between road and old track
Ground Cover: 99% Bareground, 0% Logs, 1% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Atriplex semilunaris	+		15	SQ10-29
Calandrinia baccata	+		15	SQ10-20
Calotis hispidula	+		3	SQ10-17
Calotis multicaulis	+		20	SQ10-24
Cephalipterum drummondii	+		30	SBGC20
Eremophila fraseri subsp. fraseri	+		60	SQ10-1
Eremophila fraseri subsp. fraseri	1-2		140	SQ10-7
Erodium crinitum	+		20	SQ4-18
Euphorbia tannensis subsp. eremophila	+		30	SQ10-14
Grevillea deflexa	+		50	SQ10-3
Lemooria burkittii	+		1	SQ10-8
Lepidium oxytrichum	+		12	SQ4-46
Maireana planifolia	+		30	SQ10-32
Menkea australis	+		6	SQ10-11
Podolepis capillaris	+		30	SQ10-22
Ptilotus gaudichaudii var. gaudichaudii	+		20	SQ8-36
Ptilotus helipteroides	+		15	
Ptilotus obovatus	+		35	
Rhodanthe citrina	+		12	SQ10-28
Rostraria pumila	+		15	SQ10-10
Rostraria pumila	+		10	SQ10-19
Schoenia cassiniana	+		20	SQ10-4
Sclerolaena densiflora	+		15	SQ4-24
Sclerolaena eriacantha	+		3	SQ10-9
Senna artemisioides subsp. helmsii	1-2		70-90	SQ10-2
Senna artemisioides subsp. x sturtii	+		70	SQ10-5
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		20	SQ10-21

Solanum sp.	+	35	
Spergula pentandra	+	25	SQ4-22
Stenopetalum anfractum	+	30	SQ4-13
Tetragonia cristata	1	20	SQ4-26
Triglochin sp. A Flora of Australia (G.J. Keighery 2477)	+	4	SQ10-13
Tripogon loliiformis	+	3	SQ10-31

Site SKAQ11

Described by AM **Date** 2/10/2016 **Type** Q 20 x 20
Location Mullewa/Gascoyne J Rd
MGA Zone 391461 **mE** 6984244 **mN** 121.903527 **E** -27.260331 **S**
Habitat Flat hardpan plain
Soil Orange/ red sandy surfaces
Veg Condition Poor
Fire Age Very Old (>12)

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		70	
Acacia aptaneura	+		130	
Acacia eremaea	+		50	
Acacia grasbyi	5		300	
Acacia tetragonophylla	+		100	
Aristida contorta	+		15	
Austrostipa elegantissima	+		50	
Calandrinia eremaea	+		15	SQ11-1
Calandrinia polyandra	+		10	SQ1-24
Calandrinia translucens	+		1	SQ3-16
Calotis multicaulis	+		30	SQ7-10
Cephalipterum drummondii	+		30	
Crassula colorata	1		<1	
Eremophila forrestii	+		50	
Erodium crinitum	+		15	
Euphorbia boophthona	+		30	
Gunniopsis rodwayi	+		1	SQ1-20
Isoetopsis graminifolia	+		1	SQ3-11
Lobelia winfridae	+		5	SAGC6
Maireana aff. carnosa	+		10	
Maireana platycarpa	+		30	
Menkea australis	+		10	SQ11-2
Ptilotus gomphrenoides	+		1	
Ptilotus grandiflorus	+		20	
Ptilotus obovatus	+		30	
Ptilotus polystachyus	+		5	
Scaevola spinescens	+		120	
Sclerolaena densiflora	2		30	
Senna sp. Meekatharra (E. Bailey 1-26)	+		100	
Sida calyxhymenia	+		100	
Solanum lasiophyllum	+		50	
Stenopetalum anfractum	+		30	SQ3-14
Tetragonia cristata	+		1	
Zygophyllum iodocarpum	+		20	SQ3-7

Site SKAQ12

Described by BRM **Date** 2/10/2016 **Type** Q 20 x 20
MGA Zone 390779 **mE** 6976837 **mN** 121.895977 **E** -27.327136 **S**
Habitat Flora area on broad plain (Plain/flat)
Soil Red brown loamy clay?
Vegetation *Acacia craspedocarpa* low woodland over *Acacia tetragonophylla* tall open shrubland over *Eremophila fraseri subsp. fraseri* scattered shrubland.
Veg Condition Good
Notes Disturbance: Cow pads present in quadrat/grazing?

SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Abutilon cryptopetalum	+		35	SQ12-7
Acacia craspedocarpa	12		380	SQ12-1
Acacia pteraneura	11		500	SQ4-1
Acacia tetragonophylla	4-5		350	
Atriplex semilunaris	+		6	SQ12-22
Calandrinia baccata	+		12	SQ12-16
Calandrinia polyandra	+		15	SQ12-4
Calotis hispidula	+		3	SQ12-11
Calotis multicaulis	+		20	SQ12-19
Cephalipterum drummondii	+		10	SQ12-6
Eremophila fraseri subsp. fraseri	1		60	SQ12-2
Erodium crinitum	+		10	SQ4-18
Euphorbia tannensis subsp. eremophila	+		20	SQ12-21
Lepidium oxytrichum	+		5-15	SQ4-46
Maireana carnosa	+		12	SQ12-17
Maireana radiata	+		50	SQ12-8
Ptilotus aervoides	+		4	SQ12-10
Ptilotus gaudichaudii var. gaudichaudii	+		40	SQ8-36
Ptilotus helipteroides	+		20	SQ12-20
Ptilotus helipteroides	+		30	
Ptilotus macrocephalus	5		30-40	SQ12-3
Ptilotus obovatus	+		70	
Rhagodia eremaea	1-2		160-250	
Roebuckiella oncocarpa	+		15	SQ12-12
Rostraria pumila	+		15	SQ12-15
Sclerolaena densiflora	+		15	SQ4-24
Senecio glossanthus	+		30	SQ12-14
Sida ectogama	+		80	SQ4-4
Solanum lasiophyllum	+		20	
Spergula pentandra	+		20	SQ4-22
Stenopetalum anfractum	+		30	SQ4-13
Tetragonia cristata	1		20	SQ2-33

Site SKAQ13

Described by AM **Date** 2/10/2016 **Type** Q 20 x 20
Location Mullewa/Gascoyne J Road
MGA Zone 391371 **mE** 6981602 **mN** 121.902384 **E** -27.284172 **S**
Habitat Low granite rise
Soil Orange stony gritty soil with 30 % strew quartz and granite
Veg Condition Poor
Fire Age Very Old (>12)

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	1		300	
Acacia tetragonophylla	2		2	
Aristida contorta	+		1	
Arthropodium dyeri	+		50	
Calandrinia polyandra				SQ1-24
Calandrinia translucens	+		<1	SQ3-16
Cephalipterum drummondii	+		20	
Eremophila exilifolia	10		150	
Goodenia berardiana	+		15	SQ13-3
Grevillea deflexa	+		100	
Gunniopsis rodwayi	+		1	SQ1-20
Lepidium oxytrichum	+		1	
Levenhookia leptantha	+		1	SQ13-1
Lobelia winfridae	+		10	SAGC6
Ptilotus grandiflorus	+		20	
Ptilotus helipteroides	+		10	
Rhodanthe chlorocephala subsp. splendida	+		30	
Senna artemisioides subsp. helmsii	1		130	
Tetragonia cristata	+		10	

Site SKAQ14

Described by BRM **Date** 3/10/2016 **Type** Q 20 x 20
Location Carnavon-Mullewa Road
MGA Zone 51 379481 **mE** 6956216 **mN** 121.779751 **E** -27.512312 **S**
Habitat Murchison river flood plain
Soil Red brown sandy loam
Vegetation *Eremophila sp, Acacia tetragonophylla, Eremophila youngii subsp. youngii* tall shrubland over *Rhagodia eremaea* scattered shrubs over *Calandrinia baccata* very open herbland.
Veg Condition Good to Poor
Fire Age Very Old (>12)
Notes Distrubance:
Ground Cover: % Bareground, 0% Logs, 10% Twigs, 15% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	7-8		260	SQ8-2
Acacia synchronicia	+		180	SQ14-7
Acacia tetragonophylla	2-3		210	
Atriplex amnicola	+		40	SQ14-21
Atriplex codonocarpa	+		20	SQ2-24
Atriplex semilunaris	+		20	SQ14-10
Calandrinia baccata	2-3		10	SQ14-11
Calandrinia eremaea	2-3		15	SQ8-24
Calandrinia eremaea sens. Lat.	+		3	SQ14-17
Calotis multicaulis	+		10	SQ14-9
Eremophila sp.	16-18		280	SQ14-2
Eremophila youngii subsp. youngii	1-2		180-300	SQ14-1
Euphorbia tannensis subsp. eremophila	+		40	SQ14-22
Goodenia mimuloides	+		12	SQ14-14
Hakea preissii	1		190	SQ14-20
Lepidium oxytrichum	+		10	SQ4-46
Pimelea microcephala subsp. microcephala	+		160	SQ14-3
Ptilotus divaricatus	+		40	SQ14-6
Rhagodia drummondii	+		30	SQ14-5
Rhagodia drummondii	+		100	SQ14-5
Rhagodia eremaea	1		150	SQ14-23
Salsola australis	+		30	SQ14-19
Scaevola spinescens	+		80	
Schoenia cassiniana	+		25	SQ14-15
Sclerolaena densiflora	+		12	SQ4-24
Sclerolaena eriacantha	+		3	SQ10-9
Senna charlesiana	+		70	SQ14-8
Senna sp. Austin (A. Strid 20210)	+		120	SQ14-4
Spergula pentandra	+		10	SQ4-22

Site SKAQ15

Described by AM **Date** 3/10/2016 **Type** Q 20 x 20
Location Billabong station near Murchison bridge
MGA Zone 379287 **mE** 6955758 **mN** 121.777742 **E** -27.516428 **S**
Habitat Flood plain
Soil Orange brown
Vegetation Tall shrubland, high open shrubland
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: historic and present grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia exocarpoides	2		200	SQ15-2
Acacia victoriae	2		200	
Aristida contorta	+		10	
Atriplex amnicola	1		150	
Atriplex codonocarpa	+		10	
Atriplex semibaccata	+		20	
Crassula colorata	+		1	
Cuscuta sp.	+		30	
Eremophila dielsiana	+		1	
Eremophila maculata subsp. brevifolia	+		30	SQ15-3
Eremophila pterocarpa subsp. pterocarpa	+		200	SQ15-1
Eriachne helmsii				SQ16-XI
Frankenia pauciflora	+		30	SQ15-5
Goodenia pinifolia	+		1	
Hakea preissii	10		400	
Ptilotus divaricatus	+		40	SQ15-4
Ptilotus gardneri	+		10	
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ16-9
Ptilotus grandiflorus	+		10	
Ptilotus macrocephalus	+		15	
Ptilotus nobilis	+		10	SQ15-8
Rhagodia eremaea	+		80	
Scaevola spinescens	+		100	
Sclerolaena cuneata				SQ15-6
Sclerolaena cuneata	+		40	
Sida fibulifera	+		20	
Spergula pentandra	+		20	SQ1-8
Trianthema triquetra	+		<1	SQ15-10

Site SKAQ16

Described by BRM **Date** 3/10/2016 **Type** Q 20 x 20
Location Carnavan - Mullewa Road - South end
MGA Zone 51 386456 **mE** 6969375 **mN** 121.851592 **E** -27.394138 **S**
Habitat Broad flat plain
Soil Red brown loam
Vegetation *Acacia pteraneura* SLT over *Acacia grasbyi*, *Acacia tetragonophylla* tall shrubland over *Senna sp.*
Meekatharra low open shrubland over herbland/grassland
Veg Condition Good to Poor
Fire Age Very Old (>12)
Notes Disturbance: Grazing - cow pads next to quadrat?
Ground Cover: 80% Bareground, 20% Logs, 0% Twigs, 20% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	1-2		500	
Acacia tetragonophylla	10-11		280-320	
Atriplex semilunaris	+		15	SQ6-15
Brachyscome iberidifolia	+		10	SQ16-14
Calandrinia butcherensis	+		20	SQ4-30
Calandrinia sp.	+		12	SQ16-24
Calotis hispidula	+			SQ16-16
Chenopodium gaudichaudianum	+		100	SQ16-5
Duperreya sericea	+		300	SQ16-4
Enchylaena tomentosa	+		45	SQ16-21
Eragrostis dielsii	3-5			SQ16-15
Erodium crinitum	2		12	SQ4-18
Goodenia berardiana	+		15	SQ16-13
Lepidium oxytrichum	+		10-15	SQ4-46
Menkea australis	+		10	SQ10-11
Ptilotus gaudichaudii var. gaudichaudii	+		15	SQ16-9
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Rhagodia eremaea	+		190	SQ16-23
Rhodanthe chlorocephala subsp. splendida	+		25	SQ16-10
Rhodanthe maryonii	+		15	SQ16-11
Rostraria pumila	+		5	SQ10-10
Salsola australis	+		30	SQ14-19
Schoenia cassiniana	+		15	SQ10-4
Sclerolaena eriacantha	+		2-3	SQ10-9
Senna artemisioides subsp. helmsii	+		30	
Senna charlesiana	+		100	SQ4-6
Senna glutinosa subsp. chatelainiana	+		130-160	SQ16-3
Senna sp. Meekatharra (E. Bailey 1-26)	1		70-80	SQ4-5

Sida ectogama	+	40	SQ16-2
Solanum lasiophyllum	+	25	
Spartothamnella teucriiflora	+	20	SQ16-22
Spergula pentandra	+	20	SQ4-22
Tetragonia cristata	1	10	SQ4-26
Tribulus astrocarpus	+	5	SQ16-7

Site SKAQ17

Described by AM **Date** 3/10/2016 **Type**
Location Billabong, Murchison to Mullewa Rd
MGA Zone 51 383116 **mE** 6963116 **mN** 121.817215 **E** -27.450350 **S**
Habitat Major flow line with channelised flow
Soil Yellow/orange sandy surface
Vegetation Open Acacia shrubland
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Main road run off, lots of weeds and historical grazing
Ground Cover: 10% Bareground, 20% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		50	
Abutilon oxycarpum subsp. prostratum	+		50	SQ17-6
Acacia burkittii	5		600	SQ17-1
Acacia eremaea	+		50	
Acacia grasbyi	1		400	
Acacia tetragonophylla	1		400	
Aristida contorta	5		30	
Asphodelus fistulosus	+		20	SQ17-4
Atriplex semibaccata	+		20	
Atriplex semibaccata	+		20	
Austrostipa scabra	+		40	SQ17-9
Calandrinia eremaea	+		20	SQ15-9
Calotis hispidula	+		10	
Calotis multicaulis	+		30	SQ7-10
Cenchrus setiger	+		30	SQ17-3
Cephalipterum drummondii	+		30	
Cuscuta sp.	+		30	
Daucus glochidiatus	+		30	SQ17-11
Emex australis	+		20	
Enchylaena tomentosa				
Eremophila forrestii	+		80	
Eremophila platycalyx	+		110	
Goodenia mimuloides	+		20	SQ17-11
Lepidium oxytrichum	+		20	
Maireana thesioides	+		100	
Mesembryanthemum nodiflorum	+		<1	
Ptilotus grandiflorus	+		30	
Ptilotus obovatus	1		40	
Rhodanthe maryonii	+		30	SQ7-8
Rostraria pumila	+		20	SQ17-7
Rumex acetosa	+		30	
Salsola australis	+		20	
Scaevola spinescens	+		100	
Sclerolaena densiflora				

Senna artemisioides subsp. artemisioides	1	180	SQ17-2
Senna charlesiana	+	60	
Sida calyxhymenia	+	50	SQ17-8
Sisymbrium erysimoides	+	50	SQ17-5
Sisymbrium orientale	+	70	SQ1-26
Solanum lasiophyllum	+	30	
Sonchus oleraceus	+	60	
Spergula pentandra	+	30	SQ1-8

Site SKAQ18

Described by BRM **Date** 3/10/2016 **Type** Q 20 x 20
MGA Zone 50 389937 **mE** 6973080 **mN** 115.887129 **E** -27.360981 **S**
Habitat Edge of floodplain (Plaing/Flat)
Soil Red brown sandy clayey loam
Vegetation *Acacia tetragonophylla* tall open shrubland to tall shrubland
Veg Condition Poor
Fire Age Very Old (>12)
Notes Distrubance: Grazing
Ground Cover: 95% Bareground, 0% Logs, 1% Twigs, 4% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	3-4		250	SQ8-2
Acacia tetragonophylla	4-5		280	
Aristida contorta	+		20	
Austrostipa scabra	+		25	SQ18-3
Calotis hispidula	+		10	SQ4-33
Cephalipterum drummondii	+		30	SQ18-2
Cephalipterum drummondii	+		30	SQ18-8
Enchylaena tomentosa var. tomentosa	+		30	SQ18-13
Eragrostis dielsii	+		5-10	SQ16-15
Erodium crinitum	+		15	SQ4-18
Goodenia berardiana	+		15	SQ18-6
Goodenia mimuloides	+		30	SQ18-7
Lepidium oxytrichum	+		10-15	SQ4-46
Maireana carnosa	+		10	SQ12-17
Maireana planifolia	+		45	SQ18-1
Maireana planifolia	+		35	SQ18-5
Maireana thesioides	+		30	SQ8-21
Menkea australis	+		12	SQ10-11
Menkea australis	+		15	SQ8-11
Menkea villosula	+		15	SQ4-34
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus helipteroides	+		15	
Ptilotus macrocephalus	+		30	SQ12-3
Rhagodia eremaea	+		80	
Roebuckiella oncocarpa	+		20	SQ18-9
Salsola australis	+		12	SQ14-19
Scaevola spinescens	+		70	
Sclerolaena densiflora	+		12	SQ4-24
Sclerolaena eriacantha	+		3	SQ10-9
Sclerolaena glabra				SQ18-11
Senna sp. Meekatharra (E. Bailey 1-26)	+		30	SQ4-5
Solanum lasiophyllum	+		15	
Spergula pentandra	+		20	SQ4-22

Stenopetalum anfractum	+	30	SQ4-13
Zygophyllum iodocarpum	+	10	SQ18-4

Site SKAQ19

Described by AM **Date** 3/10/2016 **Type** Q 20 x 20
Location Twinn Peaks on Murchison Mullewa Rd
MGA Zone 50 389487 **mE** 6972086 **mN** 115.882489 **E** -27.369917 **S**
Habitat Claypan wih margin fringing tall shrubland, woodland
Soil Orange clay
Veg Condition Poor
Fire Age Very Old (>12)
Notes Disturbance: Present and historic grazing
Ground Cover: 99% Bareground, 0% Logs, 1% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		40	
Abutilon oxycarpum subsp. prostratum	+		10	SQ17-6
Acacia tetragonophylla	20		400	
Atriplex codonocarpa	+		20	
Atriplex semibaccata	1		30	
Calotis multicaulis	+		20	SQ7-10
Centipeda thespidioides	+		10	SQ19-3
Crassula colorata	+		10	
Cuscuta sp.	+		20	
Cyperus concinnus	+		20	SQ19-5
Eremophila forrestii	+		50	
Eremophila laanii	+		200	
Eriachne flaccida	+		10	
Eriostemon tomentellus	+		20	
Eucalyptus victrix	1		600	
Goodenia mimuloides	+		20	SQ9-6
Hakea preissii				
Lachnagrostis plebeia	+		15	SQ19-2
Lepidium oxytrichum	+		10	
Myriocephalus oldfieldii	3		10	SQ19-4
Podolepis lessonii	1		20	
Ptilotus helichrysoides	+		10	
Rhodanthe maryonii	+		20	SQ7-8
Salsola australis	+		20	
Sclerolaena densiflora	+		20	
Sisymbrium erysimoides	1		50	SQ17-5
Sonchus oleraceus	+		30	
Spergula pentandra	+		15	SQ1-8
Tetragonia cristata	+		10	

Site SKAQ20

Described by BRM **Date** 4/10/2016 **Type** Q 20 x 20
Location Western track
MGA Zone 409401 **mE** 6997882 **mN** 116.085743 **E** -27.138521 **S**
Habitat Crest of low hill
Soil Red-brown sand
Vegetation *Acacia ramulosa var. linophylla,Acacia longispinea* tall open shrubland to tall shrubland over
Eremophila simulans subsp. megacalyx.
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Grazing - cow pads in quadrats
Ground Cover: 90% Bareground, 0% Logs, 1-2% Twigs, 7-8% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia longispinea	3-4		320	SQ20-7
Acacia murrayana	+		90	SQ20-3
Acacia ramulosa var. linophylla	6-7		250-300	SQ20-1
Calandrinia butcherensis	+		20	SQ20-22
Eragrostis lanipes	+		20	SQ20-13
Eremophila forrestii subsp. forrestii	4		180	SQ20-5
Eremophila latrobei subsp. latrobei	+		130	SQ20-14
Eremophila simulans subsp. megacalyx	2-3		80-180	SQ20-2
Erodium crinitum	1		15	SQ20-12
Euphorbia tannensis subsp. eremophila	+		35	SQ20-19
Goodenia occidentalis	1-2		15	SQ20-16
Lobelia heterophylla	+		15-20	SQ20-24
Maireana radiata	+		50	SQ20-26
Monachather paradoxus	1		40	SQ20-8
Myriocephalus guerinae	+		25	SQ20-10
Prostanthera wilkieana	+		35	SQ20-21
Prostanthera wilkieana	+		30	SQ20-18
Ptilotus polystachyus	+		20	
Ptilotus schwartzii	+		35	SQ20-4
Rhodanthe citrina	+		10	SQ20-23
Roebuckiella oncocarpa	+		20	SQ20-27
Senna artemisioides subsp. petiolaris	+		60	SQ4-7
Sida fibulifera	+		5	SQ20-25
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		60	SQ20-6
Solanum lasiophyllum	+		30	
Stenopetalum anfractum				SQ20-20
Thyridolepis multiculmis	1-2		35	SQ20-9
Thysanotus manglesianus	+		50	SQ20-17

Site SKAQ21

Described by AM **Date** 4/10/2016 **Type** Q 20 x 20
Location Wooleen to Twin Peaks Road
MGA Zone 50 409665 **mE** 6997906 **mN** 116.088409 **E** -27.138322 **S**
Habitat Part of a low break away and its erosion
Soil Brown gravel shallow loam
Vegetation High open shrubland dominated by *Thryptomene decussata*
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: long term grazing
Ground Cover: 80% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	5		400	SQ21-1
Actinobole uliginosum	+		<1	
Aristida contorta	+		10	
Calandrinia hortiorum	+		<1	SAGC42
Calandrinia polyandra	+		30	SQ21-8
Chthonocephalus pseudevax	+		<1	SQ13-2
Dysphania rhadinostachya	+		10	
Eremophila clarkei	+		30	SQ21-5
Eremophila forrestii	+		70	
Eremophila latrobei subsp. latrobei	+		130	SQ21-3
Euphorbia boophthona	+		20	
Maireana planifolia	+		50	SQ21-6
Ptilotus polakii	+		30	
Ptilotus schwartzii	+		40	SQ21-4
Sida ?fibulifera	+		10	SQ21-9
Stenopetalum anfractum	+		30	SQ3-14
Thryptomene decussata	7		180	SQ21-2

Site SKAQ22

Described by BRM **Date** 4/10/2016 **Type** Q 20 x 20
Location Broad plain
MGA Zone 50 404654 **mE** 6991431 **mN** 116.037346 **E** -27.196435 **S**
Habitat Broad plain
Soil Red brown loam
Rock Type Quartz (pebbles, cobbles)
Vegetation Mulga SLT over *Acacia eremaea* tall open shrubland over *Senna sp. Austin* scattered shrubs to open shrubland
Veg Condition Good to Poor
Fire Age Very Old (>12)
Notes Disturbance: Grazing
Ground Cover: 99% Bareground, 0% Logs, 0% Twigs, 1% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		10	SQ22-1
Acacia eremaea	3-4		280	SQ8-2
Acacia pteraneura	5		330	SQ4-1
Calandrinia translucens	+		4	SQ4-21
Cephalipterum drummondii	+		15-20	SQ22-2
Erodium crinitum	+		5	SQ4-18
Gunniopsis rodwayi	+		4	SQ4-20
Lemooria burkittii	+		1	SQ4-42
Maireana planifolia	+		25	SQ22-6
Ptilotus helipteroides	+		15	
Ptilotus obovatus	+		30	
Ptilotus schwartzii	+		30	
Scaevola spinescens	+		45	
Sclerolaena densiflora	+		12	SQ4-24
Sclerolaena eriacantha	+		10	SQ22-4
Sclerolaena eriacantha	+		3	SQ22-4
Sclerolaena gardneri	+		25	SQ22-3
Senna sp. Austin (A. Strid 20210)	2-3		140	SQ8-3
Senna sp. Meekatharra (E. Bailey 1-26)	+		35	SQ4-5
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		15	SQ20-6
Spergula pentandra	+		20	SQ4-22
Stenopetalum anfractum	+		20	SQ22-5
Tetragonia cristata	+		4	SQ22-7
Zygophyllum iodocarpum	+		10	SQ4-19

Site SKAQ23

Described by AM **Date** 4/10/2016 **Type** Q 20 x 20
Location Wooleen to Twin Peaks Rd
MGA Zone 50 408136 **mE** 6997407 **mN** 116.072944 **E** -27.142725 **S**
Habitat Sandy (wandarrie) plain
Soil Orange sandy loam
Vegetation High shrubland of *Acacia ramulosa var. linophylla*
Veg Condition Good
Fire Age Very Old (>12)
Notes Distrubance: Long term grazing
Ground Cover: 50% Bareground, 10% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa var. linophylla	12		400	SQ23-1
Calandrinia butcherensis	+		30	SQ23-6
Calandrinia polyandra	+		15	SQ23-7
Calandrinia polyandra	+		20	SQ1-24
Calandrinia translucens	+		1	SQ3-16
Crassula colorata	+		<1	
Eremophila forrestii	1		200	
Eremophila simulans subsp. megacalyx	+		100	
Isoetopsis graminifolia	+		<1	SQ3-11
Maireana villosa	+		80	
Monachather paradoxus	+		40	
Ptilotus obovatus	+		30	
Ptilotus polystachyus	2		40	
Stenopetalum anfractum	+		30	SQ3-14
Thyridolepis multiculmis	+		30	SQ23-2

Site SKAQ24

Described by BRM **Date** 4/10/2016 **Type**
Location Wooleen track
MGA Zone 50 401863 **mE** 6982855 **mN** 116.008485 **E** -27.273653 **S**
Habitat Sloping south facing, of low hill (granite outcropping)
Soil Red brown loamy sand
Rock Type Granite
Vegetation *Acacia pteraneura* low woodland over Acacia open shrubland over *Indigofera monophylla* scattered low shrubs over *Trachymene pilbarensis, Aristida contorta* very open grassland.
Veg Condition Very Good - Good
Fire Age Very Old (>12)
Notes Disturbance: ? Grazing
Ground Cover: 75% Bareground, 0% Logs, 2% Twigs, 3% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon oxycarpum subsp. prostratum	1		15	SQ24-12
Acacia pteraneura	3-4		500	SQ24-39
Acacia pteraneura	10-12		450-550	SQ4-1
Acacia scleroclada	3-4		80-180	SQ24-2
Acacia tetragonophylla	+		150	
Actinobole oldfieldiana	+		3	SQ24-11
Aristida contorta	1-2		30	
Calandrinia sp.	+		20	SQ24-33
Calotis hispidula	+		15	SQ10-17
Calotis multicaulis	+		15	SQ24-38
Chthonocephalus pseudevax	+		1	SQ24-29
Crassula colorata var. acuminata	+		3	SQ24-9
Digitaria brownii	+		40	SQ24-34
Eragrostis dielsii				SQ24-26
Eremophila clarkei	+		80	SQ24-8
Eriachne pulchella subsp. pulchella	+		10	SQ24-23
Euphorbia boophthona	+		20	SQ24-20
Glycine canescens	+		190	SQ24-6
Goodenia havilandii				SQ24-25
Helipterum craspedioides	+		30	SQ24-21
Helipterum craspedioides	+		30	SQ24-21
Hibiscus gardneri	+		180	SQ24-5
Indigofera monophylla	1-2		50	SQ24-1
Lemooria burkittii	+			SQ4-42
Lepidium oxytrichum	+		10-15	SQ4-46
Lobelia heterophylla	+		20	SQ20-24
Maireana planifolia	+		35	SQ4-29
Paspalidium clementii	+		25	SQ24-35

Phyllanthus erwinii	+	12	SQ24-14
Portulaca oleracea	+	5	
Prostanthera wilkieana	+	15	SQ20-18
Ptilotus aervoides	+	3	SQ24-36
Ptilotus helipteroides	+	40	SQ24-3
Ptilotus macrocephalus	+	35	SQ12-3
Ptilotus polystachyus	+	50	
Rumex vesicarius	+	60	
Salsola australis	+	30	SQ14-19
Schoenia cassiniana	+	25	SQ10-4
Sclerolaena costata	+	15	SQ24-22
Sclerolaena eriacantha	+	3	SQ10-9
Sclerolaena eriacantha	+	12	SQ24-28
Senecio glomeratus	1	15-25	SQ24-24
Senecio glomeratus	+	15	SQ24-24
Senna artemisioides subsp. helmsii	+	10	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+	50	SQ20-6
Solanum cleistogamum	+	30	SQ24-10
Solanum lasiophyllum	+	60	
Spergula pentandra	+	25	SQ4-22
Tetragonia cristata	3	10-30	SQ24-4
Trachymene pilbarensis	1	30-60	SQ24-7
Trichodesma zeylanicum var. grandiflorum	+	20	SQ24-37

Site SKAQ25

Described by AM **Date** 4/10/2016 **Type** Q
Location Wooleen - Twin Peaks Rd
MGA Zone 50 403830 **mE** 6988471 **mN** 116.028796 **E** -27.223097 **S**
Habitat Granite hill with basalt dyke
Soil Course gritty loam orange
Rock Type Granite/Dolerite
Veg Condition Poor
Fire Age Very Old (>12)
Notes Disturbance: Historic and present grazing
Ground Cover: 80% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon oxycarpum	+		<1	
Acacia pteraneura	1		200	SQ25-1
Acacia tetragonophylla	2		200	
Aristida contorta	1		5	
Arthropodium dyeri	+		60	
Cephalipterum drummondii	+		30	
Chthonocephalus pseudevax				SQ13-2
Crassula colorata	+		10	
Cuscuta sp.	+		30	
Erodium crinitum	+		30	
Euphorbia boophthona	+		50	
Grevillea deflexa	+		80	
Indigofera monophylla	+		40	SQ25-2
Lepidium oxytrichum	+		10	
Lobelia heterophylla	+		40	SQ25-3
Maireana planifolia	+		40	
Podolepis lessonii	+		30	
Ptilotus aervoides	+		5	
Ptilotus gardneri	+		30	
Ptilotus obovatus	+		40	
Salsola australis	+		10	
Sclerolaena costata	+		15	SQ25-4
Sclerolaena densiflora	+		20	
Senna artemisioides subsp. helmsii	1		200	
Stackhousia muricata subsp. annual (W.R. Barker 2172)	+		30	SAGC56
Tetragonia cristata				
Tripogon loliiformis	+		<1	

Site SKAQ26

Described by BRM **Date** 5/10/2016 **Type** Q 20 x20
Location Wooleen track
MGA Zone 50 400695 **mE** 6977669 **mN** 115.996264 **E** -27.320382 **S**
Habitat Crest of low rise
Soil red brown loam
Vegetation *Acacia pruinicarpa* sparsely scattered over rise, over *Acacia incurvaneura*, *Thryptomene decussata*
scattered shrubs over *Aluta aspera subsp. hesperia* scattered low shrubland.
Veg Condition Very Good
Fire Age Very Old (>12)
Notes Disturbance: Grazing - probably low intensity
Ground Cover: 95% Bareground, 0% Logs, 2% Twigs, 3% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		10	SQ26-11
Acacia incurvaneura	3		320	SQ26-1
Acacia pruinocarpa	6		800	
Acacia ramulosa var. linophylla	1-2		200	SQ26-3
Acacia scleroclada	+		50	SQ24-2
Acacia tetragonophylla	1		280	
Aluta aspera subsp. hesperia	1-2		60	SQ26-2
Aristida contorta	+		15	
Brunonia australis	+		20	SBGC60
Calandrinia baccata	+		6	SQ4-34
Eremophila forrestii subsp. forrestii	+		120	
Eremophila jucunda subsp. jucunda	+		70	SQ26-12
Eremophila latrobei subsp. latrobei	+		150	SQ4-11
Euphorbia tannensis subsp. eremophila	+		15	SQ26-7
Goodenia berardiana	+		15	SQ26-9
Goodenia micrantha	+		20	SQ26-8
Lobelia winfridae	+		10	SBGC10
Monachather paradoxus	+		30	SQ20-8
Myriocephalus guerinae	+		20	SQ20-10
Ptilotus gaudichaudii var. gaudichaudii	+		20	SQ8-36
Ptilotus helipteroides	+		12	
Ptilotus obovatus	+		40pt	
Ptilotus polystachyus	+		15	
Rhagodia eremaea	+		35	
Rhodanthe citrina	+		12	SQ26-6
Rhodanthe maryonii	+		10	SQ26-10
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		15	SQ20-6
Solanum lasiophyllum	+		30	
Stenopetalum anfractum	+		25	SQ4-13
Thryptomene decussata	1-2		130	SBGC8

Site SKAQ27

Described by AM **Date** 5/10/2016 **Type** Q 20 x 20
Location Near twin peaks on road to Wooleen
MGA Zone 50 401363 **mE** 6980870 **mN** 116.003274 **E** -27.291535 **S**
Habitat Flow line in hardpan - no channelised flow (drainage line)
Soil Brown loam
Veg Condition Good
Notes Disturbance:
Ground Cover: 5% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		60	
Acacia aneura	20		600	SQ27-1
Acacia caesaneura	2		30	SQ9-11
Acacia tetragonophylla	3		300	
Aristida contorta	10		20	
Calandrinia polyandra	+		15	SQ1-24
Calandrinia ptychosperma	+		15	SAGC35
Cephalipterum drummondii	+		20	
Crassula colorata	+		1	
Cuscuta sp.	+		30	
Eremophila fraseri	+		150	
Erodium crinitum	+		30	
Euphorbia boophthona	+		10	
Goodenia corynocarpa	+		20	SQ27-5
Lachnagrostis plebeia	+		30	SQ19-2
Lobelia heterophylla	+		20	SQ25-3
Podolepis kendallii	1		20	SQ9-7
Podolepis lessonii	+		20	SQ27-4
Podolepis lessonii	+		30	
Ptilotus aervoides	+		10	
Ptilotus helipteroides	+		50	
Ptilotus macrocephalus	2		50	
Rhodanthe maryonii	+		20	SQ7-8
Rhyncharrhena linearis	+		120	
Rostraria pumila	+		10	SQ17-7
Sclerolaena densiflora	+		15	
Sida kingii	+		30	
Solanum lasiophyllum	+		60	
Sonchus oleraceus	+		120	
Stackhousia muricata subsp. annual (W.R. Barker 2172)	+		30	SAGC56
Tripogon loliiformis	+		10	
Wahlenbergia sp.	1		20	

Site SKAQ28

Described by BRM **Date** 5/10/2016 **Type** Q 20 x 20
Location Wooleen track
MGA Zone 50 397961 **mE** 6972468 **mN** 115.968199 **E** -27.367128 **S**
Habitat Broad flat plain
Soil Red brown - loamy sand
Vegetation *Acacia pteraneura* scattered low trees over *Senna sp*. small scattered shrubland over *Maireana triptera*
and *Austrostipa scabra*
Veg Condition Good to Poor
Fire Age Very Old (>12)
Notes Disturbance: Grazing
Ground Cover: 99% Bareground, 0% Logs, 1% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	1-2		320	SQ28-1
Aristida contorta	+		10	
Austrostipa scabra	1-2		25-35	SQ28-6
Calandrinia eremaea	+		15	SQ8-24
Calandrinia polyandra	+		20	SQ28-13
Calandrinia sp. Black angular seeds (A.A. Mitchell PRP 1661)	+		2	SQ28-11
Cephalipterum drummondii	+		25	SBGC20
Eremophila glutinosa	+		12	SB28-9
Eremophila oldfieldii subsp. ? oldfieldii	+		80	SQ28-4
Eremophila oldfieldii subsp. oldfieldii				SQ28-4
Erodium crinitum	+		10	SQ4-18
Goodenia berardiana	+		15	SQ28-16
Gunniopsis rodwayi	+		3	SQ4-20
Lobelia winfridae	+		10	SBGC10
Maireana triptera	1		35	SQ28-3
Maireana triptera	+		12	SQ28-7
Pentameris airoides subsp. airoides	+		10	SQ28-12
Ptilotus aervoides	+		5	SQ12-10
Ptilotus aervoides	+		2	SQ28-14
Ptilotus helipteroides	+		10-20	
Rhodanthe maryonii	+		25	SQ24-27
Sclerolaena densiflora	+			SQ4-24
Sclerolaena eriacantha	+		30	SQ22-4
Senna sp.	+		90-170	SQ28-2
Spergula pentandra	+		25	SQ4-22
Stenopetalum anfractum	+		30	SQ4-13
Tetragonia cristata	+		20	SQ22-7
Zygophyllum iodocarpum	+		15	SQ28-8

Site SKAQ29

Described by AM **Date** 5/10/2016 **Type** Q 20 x 20
Location Near twin peaks on road to Wooleen
MGA Zone 50 400514 **mE** 6977588 **mN** 115.994429 **E** -27.321100 **S**
Habitat Hill
Soil Sandy at base, no soil at crest between boulders
Vegetation Shrubland dominated by *Acacia ramulosa* and *Thryptomene decussata*
Veg Condition Very Good
Fire Age Very Old (>12)
Notes Disturbance: Long
Ground Cover: 5% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		400	SQ29-5
Acacia ramulosa	5		300	
Arthropodium dyeri	+		60	
Brunonia australis	+		30	SQ29-4
Calandrinia remota	+		10	
Calandrinia translucens	+		10	SQ3-16
Crassula colorata	+		10	
Eremophila glutinosa	+		200	SQ29-2
Eremophila latrobei subsp. latrobei	1		120	
Erodium crinitum	+		30	
Euphorbia boophthona	+		30	
Goodenia micrantha	+		<1	SQ29-3
Goodenia mimuloides	+		30	SQ9-6
Isoetopsis graminifolia	+		<1	SQ3-11
Lemooria burkittii	+		1	SQ13-XI
Lobelia heterophylla	+		10	SQ25-3
Maireana planifolia	+		30	
Maireana villosa	+		30	
Monachather paradoxus	+		40	
Philotheca sericea	+		130	SAGC47
Prostanthera campbellii	1		100	SQ29-1
Ptilotus grandiflorus	+		30	
Ptilotus helipteroides	+		1	
Ptilotus obovatus	+		30	
Ptilotus polakii	+		40	
Ptilotus schwartzii	+		50	
Rhyncharrhena linearis	+		200	
Sclerolaena densiflora	+		10	
Stenopetalum anfractum	+		30	SQ3-14
Tetragonia cristata	+		10	
Thryptomene decussata	5		300	SQ21-2
Trachymene pilbarensis	+		30	SQ29-6

Site SKAQ3

Described by AM **Date** 1/10/2016 **Type** Q 20 x 20
Location 1 Km south of Meeberrie T/O on Gas/Mullawa Road
MGA Zone 51 395564 **mE** 7014800 **mN** 121.947555 **E** -26.984824 **S**
Habitat Flat hardpan plain
Soil Red loam
Notes Disturbance:
Aspect: N/A
Disturbance: Stock?
Ground Cover: 90% Bareground, 5% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii				
Acacia pteraneura				SQ3-01
Acacia tetragonophylla				
Atriplex semilunaris				
Calandrinia polyandra				SQ1-24
Calandrinia translucens				SQ3-16
Crassula colorata var. acuminata				SQ3-10
Eremophila forrestii subsp. forrestii				SQ3-05
Euphorbia boophthona				SQ3-21
Frankenia pauciflora				SQ3-09
Gunniopsis rodwayi				SQ1-20
Helipterum craspedioides				SQ3-20
Isoetopsis graminifolia				SQ3-11
Lepidium oxytrichum				
Lobelia winfridae				SAGC6
Ptilotus gaudichaudii				SQ3-08
Ptilotus polystachyus				SQ3-15
Sclerolaena densiflora				
Senna artemisioides subsp. petiolaris				SQ3-02
Stenopetalum anfractum				SQ3-14
Tetragonia cristata				
Zygophyllum iodocarpum				SQ3-07

Site SKAQ30

Described by BRM **Date** 5/10/2016 **Type** Q 20 x 20
Location Wooleen track
MGA Zone 50 395281 **mE** 6971910 **mN** 115.941055 **E** -27.371962 **S**
Habitat Sandy banks on flood plain
Soil Red - brown sand
Vegetation *Acacia kalgoorliensis*, *Acacia microcalyx*, *Hakea preissii* tall shrubland over open shrubland over
Maireana pyramidata, Atriplex vesicaria, Enchylaena tomentosa var. tomentosa low shrubland.
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Grazing - cow pads present
Ground Cover: 80% Bareground, 0% Logs, 5% Twigs, 15% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Acacia eremaea	+		50	SQ8-2
Acacia kalgoorliensis	15		300	SQ30-3
Acacia microcalyx	3		280	SQ30-6
Acacia tetragonophylla	+		140	
Atriplex semilunaris	+		25	SQ30-25
Atriplex sp.	+		130	SQ30-26
Atriplex vesicaria	2		35	SQ30-14
Atriplex vesicaria	+		30	SQ30-11
Atriplex vesicaria	2		40	SQ30-32
Atriplex vesicaria	+		5	SQ30-22
Chenopodium gaudichaudianum	1-2		110	SQ30-23
Enchylaena tomentosa var. tomentosa	1-2		40	SQ18-13
Eragrostis dielsii	+		3	SQ30-1
Eremophila pantonii	+		120	SQ30-2
Euphorbia boophthona	7-8		70	SQ30-21
Frankenia pauciflora	+		20	SQ30-9
Frankenia pauciflora	+		300	SQ30-8
Gunniopsis quadrifida	+		40	SQ30-4
Hakea preissii	1		230	SQ30-7
Lepidium oxytrichum	+		10-15	SQ4-46
Maireana appressa	+		45	SQ30-27
Maireana atkinsiana	+		35	SQ30-31
Maireana platycarpa	+		30	SQ30-30
Maireana pyramidata	1-2		90	SQ30-10
Ptilotus lazaridis	+		80	SQ30-5
Rhagodia drummondii	+		90	SQ30-28
Rostraria pumila	+		20	SQ30-17
Rostraria pumila	+		18	SQ30-19
Sclerolaena cuneata	+		25-30	SQ30-12
Sclerolaena densiflora	+		10	SQ4-24
Sclerolaena diacantha	+		35	SQ30-29

Senecio glossanthus	+	25	SQ30-15
Spergula pentandra	+	15-20	SQ4-22

Site SKAQ31

Described by AM **Date** 5/10/2016 **Type** Q 20 x 20
Location Road west of Twin Peaks to Mullewa- Gas Junet Rd
MGA Zone 50 394833 **mE** 6971983 **mN** 115.936532 **E** -27.371269 **S**
Habitat Margins of lakes
Soil Orane brown clay
Vegetation Low shrubland of *Atriplex vesicaria*
Veg Condition Very Good
Fire Age Very Old (>12)
Notes Disturbance: stock grazing
SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Atriplex codonocarpa	+		20	
Atriplex vesicaria	15		40	SQ31-1
Calandrinia eremaea				SQ31-10
Calandrinia translucens				SQ31-6
Chenopodium gaudichaudianum				SQ31-12
Crassula colorata	+		10	
Enchylaena tomentosa	+		50	
Eremophila pterocarpa				
Gunniopsis quadrifida	+		50	
Lolium multiflorum				SQ31-8
Maireana amoena	+		30	SQ31-4
Maireana atkinsiana				SQ31-11
Rhodanthe maryonii				SQ7-8
Rostraria pumila				SQ17-7
Sclerolaena tridens	+		30	SQ31-3

Site SKAQ32

Described by BRM **Date** 6/10/2016 **Type** Q 20 x 20
Location NE track
MGA Zone 50 475475 **mE** 7027485 **mN** 116.753085 **E** -26.874010 **S**
Habitat Broad plain
Soil Red brown loamy sand
Vegetation Mulga over *Eremophila forestii subsp. forestii*, *Senna artemoides subsp. helmoides* open shrubland over *Ptilotus obovatus, Eremophila forrestii* low open shrubland over *Eriachne helmsii* and *Eragrostis* scattered tall grasses.
Veg Condition Good
Fire Age Very Old (>12)
Notes Disturbance: Grazing - cow pads present
Ground Cover: 80% Bareground, 0% Logs, 3-4% Twigs, 10-15% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Actinobole oldfieldiana	+		2	SQ24-11
Aristida contorta	+		10	
Calandrinia creethae	+		3	SQ32-18
Chthonocephalus viscosus	+		2-3	SQ32-4
Eragrostis lanipes	+		30	SQ32-9
Eremophila compacta subsp. fecunda	1		70-90	SQ32-20
Eremophila forrestii	2		130	
Erodium crinitum	+		15-30	SQ4-18
Euphorbia tannensis subsp. eremophila	+		30	SQ32-13
Goodenia berardiana	+		15-20	SQ32-5
Helipterum craspedioides	+		20-35	SQ32-12
Maireana planifolia	+		35	SQ32-17
Menkea australis	+		5	SQ32-19
Mirbelia rhagodioides	+		20-30	SQ32-6
Monachather paradoxus	1-2		50	SQ32-3
Ptilotus obovatus	1		35	
Ptilotus polystachyus	+		30	
Roebuckiella oncocarpa	+		20	SQ32-10
Sclerolaena densiflora	+		12	SQ4-24
Senna artemisioides subsp. helmsii	1-2		130	
Senna glaucifolia	+		35	SQ32-14
Sida fibulifera	+		20	SQ32-11
Solanum lasiophyllum	+		25-35	
Stenopetalum anfractum	+		35	SQ4-13
Tetragonia cristata	+		15	SQ22-7
Velleia rosea	+		30	SQ32-15

Site SKAQ33

Described by AM **Date** 6/10/2016 **Type** Q 10 x 10
Location Boobardy to Kalli Rd
MGA Zone 50 470266 **mE** 7026688 **mN** 116.700623 **E** -26.881105 **S**
Habitat Outer flood plain
Soil Orange brown sandy surfaced clay
Veg Condition Very Poor
Fire Age Very Old (>12)
Notes Disturbance: Grazing and flooding
Ground Cover: 80% Bareground, 10% Logs, 0% Twigs, 0% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		80	SQ3-2
Acacia victoriae	1		300	
Aristida contorta	+		<1	
Atriplex codonocarpa	+		10	
Atriplex semibaccata				
Calandrinia eremaea	+		10	SQ31-10
Calotis multicaulis	+		20	SQ7-10
Crassula colorata	+		10	
Eremophila platycalyx	+		5	
Eremophila pterocarpa	5		200	
Hakea preissii	1		300	
Maireana carnosa	+		10	
Maireana planifolia	+		10	
Maireana platycarpa	+		10	SQ31-XI
Ptilotus nobilis	+		20	
Ptilotus polakii	+		5	
Salsola australis	+		20	
Sclerolaena cuneata	+			SQ33-1
Sclerolaena densiflora	+		10	
Sclerolaena recurvicuspis	+		20	SQ15-7
Sclerolaena tridens	+		20	SQ31-3
Senna charlesiana				SQ11-XII
Senna sp. Meekatharra (E. Bailey 1-26)	2		130	
Tetragonia cristata	+		10	

Site SKAQ34

Described by BRM **Date** 14/10/2016 **Type** Q 20 x 20
Location Wooleen track
MGA Zone 50 391787 **mE** 6973031 **mN** 115.905827 **E** -27.361571 **S**
Habitat Plain
Soil Red sand
Vegetation *Atriplex amnicola,Tecticornia indica subsp. leiostachya* low shrubland
Veg Condition Very Good
Fire Age Very Old (>12)
Notes Ground Cover: 70% Bareground, 0% Logs, 1% Twigs, 1% Leaves

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Atriplex amnicola	+		60	SQ34-1
Atriplex codonocarpa	+		15	
Calandrinia eremaea	+		12	SQ34-20
Cephalipterum drummondii	+		15	SQ34-16
Cratystylis subspinescens	+		50	SQ34-9
Eragrostis dielsii	+		3	
Frankenia confusa	+		20	SQ34-15
Goodenia corynocarpa	+		30	SQ34-2
Lawrencia squamata	+		15	SQ34-3
Ptilotus polystachyus	+		30	
Sonchus oleraceus	+		30	SQ34-18
Spergula pentandra	+		20	SQ4-22
Tecticornia halocnemoides	+		20	SQ34-10
Tecticornia indica subsp. bidens	1		30-40	SQ34-8
Tecticornia indica subsp. leiostachya	2		35	SQ34-7
Tecticornia sp.	3		30	SQ34-11
Triglochin nana	+		5	SQ34-14

Site SKAR02

Described by BRM **Date** 6/10/2016 **Type** R
Location NE track
MGA Zone 50 477781 **mE** 7027544 **mN** 116.776303 **E** -26.873516 **S**
Habitat Bank on plain
Soil Red-brown sand
Vegetation Mulga low woodland over Eremophila spuria over scattered tall grasses
Veg Condition
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		160	SBGC66
Eremophila compacta subsp. fecunda	+		60	SQ32-20
Eremophila spuria	22-3		100	SR2-1
Goodenia berardiana	+		20	SQ32-5
Helipterum craspedioides	+		30	SQ32-12
Monachather paradoxus	1		45	SQ32-3
Ptilotus obovatus	+		30	
Ptilotus polystachyus	+		30	
Senna glaucifolia	+		110	SQ32-14
Solanum lasiophyllum	+		40	

Site SKAR04

Described by BRM **Date** 6/10/2016 **Type** R
MGA Zone 50 476768 **mE** 7027553 **mN** 116.766104 **E** -26.873418 **S**
Habitat Plain (? Flow area bendi road)
Soil Red brown clay loam
Vegetation Mulga low woodland over *Acacia tetragonophylla* scattered tall shrubs over daisy *Rodanthe*
chlorocephala subsp. splendida open herbland
Veg Condition Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia tetragonophylla	+		250	
Aristida contorta	+		30	SR4-1
Eremophila forrestii subsp. forrestii	+		40	
Rhodanthe chlorocephala subsp. splendida	+		30-35	SBGC65

Site SKAR06

Described by BRM **Date** 6/10/2016 **Type**
MGA Zone 50 476386 **mE** 7027535 **mN** 116.762258 **E** -26.873574 **S**
Habitat Plain (Mulga 'enterbank')
Soil Reddish brown sandy loam
Vegetation Mulga
Veg Condition Good
Fire Age >12 years
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		130	SBGC66
Acacia tetragonophylla	2-4		280	
Acacia victoriae	+		120	
Aristida contorta	+		20	
Cephalipterum drummondii	+		30	SBGC20
Dysphania rhadinostachya	+		20	
Eremophila fraseri	+		180	
Maireana planifolia	+		40	
Ptilotus aervoides				SQ12-10
Ptilotus macrocephalus	+		40	
Ptilotus obovatus	+		40	
Scaevola spinescens	+		130	
Sclerolaena densiflora	+		15	SQ4-24
Senna artemisioides subsp. helmsii	+		70	
Solanum lasiophyllum	+		40	
Tetragonia cristata	+		15-30	SQ22-7

Site SKAR01

Described by BRM **Date** 6/10/2016 **Type** R
MGA Zone 50 480333 **mE** 7027631 **mN** 116.801997 **E** -26.872769 **S**
Habitat Hard pan plain
Soil Orange
Vegetation Low open *Acacia aneura* woodland with a low open shrubland of *Ptilotus obovatus*
Veg Condition Good
Fire Age 8 - 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	2		400	
Acacia tetragonophylla	+		200	
Cephalipterum drummondii	+		30	
Eragrostis lanipes	+		20	SR1-2
Eremophila forrestii	+		1	
Eremophila fraseri	+		100	
Eremophila platycalyx	+		300	
Maireana platycarpa	+		30	
Menkea villosula	+		10	SR1-3
Ptilotus obovatus	1		40	
Senna artemisioides subsp. helmsii	+		100	
Solanum lasiophyllum	+		1	
Waitzia acuminata var. acuminata	+		30	SR1-1

Site SKAR10

Described by BRM **Date** 6/10/2016 **Type** R
Location North-east of track
MGA Zone 50 472298 **mE** 7027179 **mN** 116.721093 **E** -26.876713 **S**
Habitat Plain flow area
Soil Red brown sandy clay loam
Vegetation Mulga, *Acacia craspedocarpa* low open woodland over *Acacia tetragonophylla* tall open shrubland over
Senna arterimioides subsp. helmsii, *Scaevola spinescens* scattered shrubs over open herbland
Veg Condition Poor
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia craspedocarpa	+		400	
Acacia tetragonophylla	2-4		280	
Aristida contorta	+		20	SR4-1
Austrostipa elegantissima	+		45	
Cephalipterum drummondii				SBGC20
Eremophila forrestii subsp. forrestii				
Eremophila fraseri	+		140	
Eremophila gilesii subsp. gilesii	+		30	SR10-1
Grevillea deflexa	+		45	SQ10-3
Ptilotus macrocephalus	+		40	SQ12-3
Ptilotus obovatus	+		40	
Scaevola spinescens	+		60-200	
Senna artemisioides subsp. helmsii	+		140	

Site SKAR100

Described by BRM **Date** 12/10/2016 **Type** R
MGA Zone 50 393640 **mE** 7010902 **mN** 115.927835 **E** -27.019865 **S**
Habitat Depression on plain
Soil Red clayey loam
Vegetation *Acacia aptaneura*, *Psydrax latifolia* low woodland over *Acacia tetragonophylla* scattered tall shrubs
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		60	SQ12-7
Acacia aptaneura	15		600-800	SR100-1
Acacia tetragonophylla	2-3		320	
Psydrax latifolia	3-4		500	SR100-2
Sida ectogama	+		80	SQ4-4
Solanum lasiophyllum	+		30	

Site SKAR101

Described by AM **Date** 13/10/2016 **Type** R
Location Meeberrie - Main Road
MGA Zone 50 395166 **mE** 7013946 **mN** 115.943473 **E** -26.992503 **S**
Habitat Flow line
Soil Brown loam shallow over sandplain
Vegetation Scattered low mulga trees over a high open woodland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	1		800	
Acacia grasbyi	1		400	
Acacia tetragonophylla	5		300	
Atriplex semibaccata	+		30	
Eremophila clarkei	+		140	SQ21-5
Eremophila forrestii	1		120	
Eremophila platycalyx	+		130	
Grevillea deflexa	+		130	
Ptilotus gardneri	+		20	
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		150	
Senna helmsii	+		100	
Senna helmsii	+		130	
Sisymbrium erysimoides	+		90	SQ17-5
Solanum lasiophyllum	+		30	

Site SKAR102

Described by BRM **Date** 13/10/2016 **Type** R

Habitat Hard pan plain

Soil Red-brown loam

Rock Type na (semi quartz cobbles/pebbles)

Vegetation Acacia aptaneura low open woodland over Acacia tall open shrubland

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	3-6		400	SR102-1
Acacia cuthbertsonii subsp. cuthbertsonii	4-6		90	SBGC3
Acacia tetragonophylla	1		230	
Cullen leucanthum	+		170	SBGC21
Eremophila forrestii subsp. forrestii	+		110	
Eremophila latrobei subsp. latrobei	+		50	SR79-6
Eremophila platycalyx	3-4		160-190	
Grevillea deflexa	+		60	SQ10-3
Maireana planifolia	+		35	SR102-2
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		70	
Scaevola spinescens	+		70	
Senna artemisioides subsp. helmsii	+		90	
Senna charlesiana	+		90	SQ4-6
Senna sp. Austin (A. Strid 20210)	+		140	SQ4-8
Tetragonia cristata	4		20	SQ4-26

Site SKAR103

Described by AM **Date** 13/10/2016 **Type** R
MGA Zone 50 393335 **mE** 7010407 **mN** 115.924719 **E** -27.024310 **S**
Habitat Low quartz covered rise, decompised granite
Soil Red with white rocks
Vegetation Scattered tall shrubland mulga with a mixed *Senna* spp. understorey
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		300	
Acacia cuthbertsonii	+		150	
Acacia grasbyi	+		200	
Acacia tetragonophylla	+		100	
Aristida contorta	+		10	
Calandrinia translucens	+		10	SQ3-16
Cephalipterum drummondii	+		30	
Eremophila forrestii	+		50	
Eremophila fraseri	+		40	
Eremophila latrobei	+		100	
Gunniopsis rodwayi	+		10	
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		150	
Sclerolaena densiflora	+		20	
Sclerolaena eriacantha	+		20	SR103-1
Senna artemisioides subsp. helmsii	3		130	
Senna sp. Meekatharra (E. Bailey 1-26)	1		130	
Solanum lasiophyllum	+		30	

Site SKAR104

Described by BRM **Date** 13/10/2016 **Type** R

MGA Zone 50 392456 **mE** 7009575 **mN** 115.915787 **E** -27.031753 **S**

Habitat Hard pan plain

Soil Red brown loam

Vegetation *Acacia pteraneura* low open woodland over *Acacia grasbyi* tall open shrubland over *Senna sp.*

Meekatharra scattered low shrubs

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		250	SBGC3
Acacia grasbyi	4-6		210	
Acacia pteraneura	3-4		550	SQ4-1
Acacia tetragonophylla	1		110	
Arthropodium dyeri	+		70	SR56-5
Cephalipterum drummondii	30		+	SR104-2
Eremophila compacta subsp. compacta	+		30	SBGC217
Eremophila forrestii subsp. forrestii	+		60	
Eremophila fraseri	+		160	
Eremophila latrobei subsp. latrobei	+		70	SR104-1
Eremophila latrobei subsp. latrobei	+		170	SR104-1
Eremophila platycalyx	+		80	
Hakea sp.	+		120-190	SR104-3
Maireana planifolia	1		35	SR102-2
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		60	
Senna charlesiana	1		60	SQ4-6
Senna sp. Meekatharra (E. Bailey 1-26)	+		120	SQ4-5
Sida ectogama	+		50	SR42-3

Site SKAR105

Described by AM **Date** 13/10/2016 **Type** R
Location Main Grase Jet to Mullewa Road
MGA Zone 50 390465 **mE** 7000187 **mN** 115.894886 **E** -27.116340 **S**
Habitat A wash with channelised flow
Soil Brown
Vegetation Mulga trees above a high open shrubland of *Acacia aneura* and *Acacia tetragonphylla*
Veg Condition Poor
Notes Disturbance: Part-grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		30	
Acacia aneura	1		400	
Acacia caesaneura	+		50	SQ9-11
Acacia tetragonophylla	3		400	
Acacia victoriae	2		400	
Aristida contorta	+		20	
Atriplex semibaccata	+		30	
Chenopodium gaudichaudianum	+		100	
Crassula colorata	+		10	
Digitaria brownii	+		60	
Digitaria brownii	+		50	SR107-2
Enchylaena tomentosa	+		60	
Eragrostis dielsii	+		10	
Eremophila platycalyx	5		180	
Goodenia pinifolia	+		20	
Ptilotus gardneri	+		30	
Sclerolaena densiflora	+		20	
Sclerolaena diacantha	+		20	SR107-1
Senna artemisioides subsp. helmsii	+		130	
Sida fibulifera	+		10	
Solanum lasiophyllum	+		50	
Sonchus oleraceus	+		80	

Site SKAR106

Described by BRM **Date** 13/10/2016 **Type** R
MGA Zone 50 390516 **mE** 7007748 **mN** 115.896070 **E** -27.048093 **S**
Habitat Hardpan plain
Soil Red brown loam
Vegetation *Acacia pteraneura* low open woodland over Acacia scattered tall shrubs over *Senna artemisioides*
subsp. helmsii, *Eremophila platycalyx*, *Senna sp. Meekatharra* open shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	1		170	SBGC3
Acacia pteraneura	3		600	SQ4-1
Acacia tetragonophylla	+		210	
Calandrinia polyandra	+		25	SR106-2
Cephalipterum drummondii	+		30	SR104-2
Eremophila compacta subsp. compacta	+		20-60	SBGC217
Eremophila forrestii subsp. forrestii	+		60	
Eremophila gilesii subsp. gilesii	+		30	SR106-1
Eremophila platycalyx	1		150	
Maireana carnosa	+		15	
Rhagodia eremaea	+		30	
Sclerolaena densiflora	+		12	SQ4-24
Senna artemisioides subsp. helmsii	2		80-140	
Senna sp. Meekatharra (E. Bailey 1-26)	+		90	SQ4-5
Spergula pentandra	+		12	SQ4-22

Site SKAR107

Described by AM **Date** 13/10/2016 **Type** R
Location to Mullewa Road
MGA Zone 50 390465 **mE** 7000187 **mN** 115.894886 **E** -27.116340 **S**
Habitat A wash with channelised flow
Soil Brown Loam
Vegetation High shrubland dominated by *Acacia tetragonophylla* and *Acacia victoriae* with a midstorey of
Eremophila platycalyx
Veg Condition Poor
Notes Disturbance: Part-grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum				
Acacia aneura	1		400	
Acacia caesaneura	+		50	SQ9-11
Acacia tetragonophylla	3		400	
Acacia victoriae	2		400	
Aristida contorta	+		20	
Atriplex semibaccata	+		30	
Crassula colorata				
Digitaria brownii	+		50	SR107-2
Eragrostis dielsii	+		10	
Eremophila platycalyx	5		180	
Goodenia pinifolia	+		20	
Ptilotus gardneri	+		30	
Rhagodia gaudichaudiana	+		100	
Sclerolaena densiflora				
Sclerolaena diacantha	+		20	SR107-1
Senna artemisioides subsp. helmsii	+		130	
Sida fibulifera				
Solanum lasiophyllum	+		50	
Sonchus oleraceus	+		80	

Site SKAR108

Described by BRM **Date** 13/10/2016 **Type** R

Habitat Depression on plain

Soil Red brown clayey loam

Vegetation *Acacia burkittii*, *Acacia tetragonophylla* tall shrubland over *Senna sp. Austin*, *Eremophila platycalyx*
open shrubland over very open herbland

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia burkittii	2-3		280	SR108-1
Acacia cuthbertsonii subsp. cuthbertsonii	+		230	SBGC3
Acacia tetragonophylla	10-11		240	
Calotis multicaulis	+		60	SR12-7
Eremophila compacta subsp. compacta	+		40	SGBC217
Eremophila forrestii subsp. forrestii	+		40	
Eremophila maculata subsp. brevifolia	+		30	SR108-8
Eremophila platycalyx	1		180	
Eremophila pterocarpa subsp. pterocarpa	+		80	SR108-3
Frankenia setosa	+		25	SR108-7
Hibiscus krichauffianus	+		15	SR108-6
Ptilotus obovatus	+		40	
Rhagodia eremaea	+		120	SR108-4
Rhagodia eremaea	+		180	
Scaevola spinescens	+		90	
Sclerolaena recurvicuspis	+		20	SR108-10
Senna sp. Austin (A. Strid 20210)	1-2		80-140	SR108-2
Solanum lasiophyllum	+		60	

Site SKAR109

Described by AM **Date** 14/10/2016 **Type** R
Location Grase Jet to Mullewa Rd Billabong
MGA Zone 50 391198 **mE** 6980055 **mN** 115.900499 **E** -27.298122 **S**
Habitat Wanderrie Break running parallel to road
Soil Sandy loam
Rock Type Hardpan at depth
Vegetation Scattered low mulga over an open shrubland and very open grassland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		400	
Acacia murrayana	+		300	SR109-3
Acacia pteraneura	1		600	SR109-1
Acacia tetragonophylla	+		300	
Aristida contorta	+		20	
Calandrinia polyandra	+		30	
Dianella sp.	+		80	
Eragrostis lanipes	1		30	
Euphorbia boophthona	+		60	
Helipterum craspedioides	+		30	SAGC31
Maireana convexa	+		100	
Maireana platycarpa	+		60	
Monachather paradoxus	2		60	
Ptilotus chamaecladus	+		20	SR109-2
Ptilotus polakii	2		60	
Rhagodia eremaea	+		100	
Senna helmsii	+		100	
Solanum lasiophyllum	2		60	
Solanum nummularium	+		80	SR109-4
Tetragonia cristata	+		20	
Thyridolepis sp.	1		40	

Site SKAR11

Described by AM **Date** 7/10/2016 **Type** R
Location Bullardoo
MGA Zone 50 370863 **mE** 6913607 **mN** 115.687920 **E** -27.896078 **S**
Habitat Laterite rise
Vegetation High shrubland
Veg Condition Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	10		800	
Acacia rhodophloia	+		200	SR11-3
Acacia rhodophloia	1		300	SR11-3
Acacia tetragonophylla	+		300	
Schoenia cassiniana	3		100	SR11-1
Thryptomene decussata	+		120	SR11-2

Site SKAR12

Described by BRM **Date** 6/10/2016 **Type** R
MGA Zone 50 467741 **mE** 7025314 **mN** 116.675165 **E** -26.893454 **S**
Habitat Flood plain
Soil Red brown clay loam
Vegetation *Acacia victoriae*, *Acacia tetragonophylla* tall open shrubland to tall shrubland over *Aristida contorta* very open grassland.
Veg Condition Poor
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia sclerosperma	+		250	
Acacia tetragonophylla	1-2		110-250	
Acacia victoriae	5-10		280	
Aristida contorta	5-8		20	
Calotis multicaulis	+		15	SR12-7
Grevillea striata				SR12-4
Ptilotus aervoides	1		5	SR12-1
Ptilotus divaricatus	+		50	SQ14-6
Ptilotus macrocephalus	+		40	
Ptilotus obovatus var. obovatus	+		40	
Rhodanthe floribunda	+		5	SR12-5
Sclerolaena diacantha	+		20	SR12-6
Senna artemisioides subsp. artemisioides	+		50	
Senna glaucifolia	+		15	SR12-2

Site SKAR110

Described by BRM **Date** 13/10/2016 **Type** R

MGA Zone 50 390747 **mE** 6997505 **mN** 115.897494 **E** -27.140572 **S**

Habitat Plain

Soil Red brown sandy loam

Vegetation *Acacia pteraneura*, *Acacia ramulosa*, *Acacia tetragonophylla* tall open shrubland over *Senna sp.*

Austin, *Senna artemisioides subsp. helmsii* scattered shrubs

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1		310	
Acacia pteraneura	4-6		450	SQ4-1
Acacia ramulosa	1-2		2-10	
Acacia tetragonophylla	+		160	
Eremophila forrestii subsp. forrestii	+		140	
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus polystachyus	1		40	
Schoenia cassiniana	+		30	SR110-1
Sclerolaena densiflora	+		15	SQ4-24
Senna artemisioides subsp. helmsii	+		40-130	
Senna sp. Austin (A. Strid 20210)	+		70	SQ4-8

Site SKAR111

Described by AM **Date** 14/10/2016 **Type** R

Location Near t/o to Twin Peaks on Gase and J, Mullewa Road
MGA Zone 50 390333 **mE** 6974413 **mN** 115.891252 **E** -27.348981 **S**
Habitat Flat hardpan plain
Soil Sandy surfaced loam
Vegetation Scattered mulga trees above a high open shrubland of *Acacia grasbyi* and *Acacia tetragonophylla*
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	1		600	
Acacia crassistipula	+		200	
Acacia grasbyi	5		400	
Acacia tetragonophylla	1		300	
Calandrinia polyandra	1		30	SQ1-24
Cephalipterum drummondii	+		30	
Chorizema sp.	+		50	
Grevillea deflexa	+		80	
Hakea preissii	+		180	
Isoetopsis graminifolia	+		10	SQ3-11
Lepidium oxytrichum	+		10	
Maireana platycarpa	+		60	
Menkea australis	+		10	SQ11-2
Ptilotus obovatus	+		30	
Salsola australis	+		20	
Schoenia cassiniana	+		150	SR11-1
Sclerolaena densiflora	+		15	
Senna artemisioides subsp. helmsii	1		120	
Senna sp. Meekatharra (E. Bailey 1-26)				
Sida calyxhymenia	+		130	
Spartothamnella teucriiflora	+		80	
Stenopetalum anfractum	+		10	SQ3-14
Tetragonia cristata	5		10	

Site SKAR112

Described by BRM **Date** 13/10/2016 **Type** R
MGA Zone 50 390791 **mE** 6995107 **mN** 115.897725 **E** -27.162222 **S**
Habitat Low rise
Soil Red sandy loam
Rock Type Quartz cobbles
Vegetation *Acacia sp*. over *Senna sp. Austin* low open shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Acacia cuthbertsonii subsp. cuthbertsonii	+		90	SBGC3
Aristida contorta	+		20	
Eremophila oldfieldii subsp. oldfieldii			300	SR112-3
Eremophila platycalyx	+		50	
Ptilotus obovatus	+		30	
Sclerolaena densiflora	+		12	SQ4-24
Sclerolaena eriacantha	+		15	SQ22-4
Senna sp. Austin (A. Strid 20210)	7		50	SQ4-8
Senna sp. Meekatharra (E. Bailey 1-26)	+			SQ4-5
Tripogon loliiformis	+		3	SR112-1

Site SKAR113

Described by AM **Date** 14/10/2016 **Type** R
Location S of Twin Peaks T/o on Gase Jet/Mullewa Rd
MGA Zone 50 388651 **mE** 6971182 **mN** 115.873954 **E** -27.378009 **S**
Habitat Flow line
Soil Hard brown/clay
Vegetation Very scattered low trees of *Acacia aneura* above a high shrubland of *Acacia tetragonophylla*
Veg Condition Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		40	
Acacia aneura	1		600	
Acacia tetragonophylla	9		300	
Amyema sp.	+		200	
Atriplex codonocarpa	+		20	
Austrostipa elegantissima	+		30	
Calotis hispidula	+		40	SQ9-4
Crassula colorata	+		10	
Enchylaena tomentosa	+		100	
Eremophila fraseri	+		200	
Eremophila laanii	+		130	
Eremophila platycalyx	+		130	
Erodium crinitum	+		20	
Hakea preissii	+		200	
Ptilotus divaricatus	+		150	
Ptilotus obovatus	+		30	
Rhagodia eremaea	+		200	
Scaevola spinescens	+		100	
Senna artemisioides subsp. helmsii	+		130	
Sida calyxhymenia	+		100	
Sisymbrium erysimoides	+		30	SQ17-5
Solanum lasiophyllum	+		40	
Spergula pentandra	+		20	SQ1-8

Site SKAR114

Described by BRM **Date** 13/10/2016 **Type** R

Habitat Plain

Soil Red brown

Vegetation *Acacia pteraneura* scattered low trees over *Acacia grasbyi*, *Acacia eremaea* tall open shrubland

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		210	SBGC3
Acacia eremaea	2-3		250	SQ8-2
Acacia grasbyi	3		260	
Acacia pteraneura	1		350	SQ4-1
Acacia tetragonophylla	+		170	
Aristida contorta	+		15	
Calandrinia translucens	+		6	SR114-2
Gunniopsis rodwayi	+		6	SQ4-20
Isoetopsis graminifolia	+		5	SR114-1
Lepidium oxytrichum	+		10	SQ4-46
Maireana carnosa	+		12	SQ12-17
Ptilotus aervoides	+		3	SR114-3
Ptilotus obovatus	+		35	
Scaevola spinescens	+		140	
Sclerolaena densiflora	+		12	SQ4-24
Senna sp. Austin (A. Strid 20210)	+		80	SQ8-3
Sida kingii	+		30	SGBC20
Spergula pentandra	+		20	SQ4-22

Site SKAR115

Described by AM **Date** 14/10/2016 **Type** R
MGA Zone 50 383241 **mE** 6963669 **mN** 115.818532 **E** -27.445370 **S**
Habitat Mulga hardpan plain with quartz and *Acacia burkittii*
Soil Brown with lateritc gravel quartz
Vegetation Low open mulga woodland
Veg Condition Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	4		800	
Acacia burkittii	+		200	
Acacia cuthbertsonii	+		300	
Acacia eremaea	+		150	
Acacia grasbyi	+		300	
Acacia tetragonophylla	+		150	
Aristida contorta	+		30	
Calandrinia translucens	+		5	SQ3-16
Cephalipterum drummondii	1		30	
Crassula colorata	+		1	
Erodium crinitum	+		10	
Gunniopsis calcarea	+		5	
Gunniopsis propinqua	+		1	SAGC26
Isoetopsis graminifolia	+		10	SQ3-11
Lobelia winfridae	+		1	SAGC6
Maireana planifolia	+		40	
Maireana thesioides	+		100	
Menkea australis	+		10	SQ11-2
Ptilotus obovatus	+		50	
Rhagodia eremaea	+		100	
Sida calyxhymenia	+		100	
Sisymbrium erysimoides	+		50	SQ17-5
Stenopetalum anfractum	+		30	SQ3-14
Tetragonia cristata	+		20	

Site SKAR116

Described by BRM **Date** 14/10/2016 **Type** R

Habitat Gentle, north east facing upper slope of hill

Soil Red sandy loam

Rock Type Granite

Vegetation *Acacia pteraneura* scattered low trees over *Acacia sp* scattered tall shrubs

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii	+		70	
Acacia eremaea	1-2		240	SQ8-2
Acacia pteraneura	1-2		400	SQ4-1
Acacia tetragonophylla	+		110	
Aristida contorta	+		20	
Cephalipterum drummondii	1-2		30	SBGC20
Disphyma crassifolium subsp. clavellatum	+		5	SBGC234
Grevillea deflexa	+		40	SQ10-3
Hakea preissii	+		60	
Maireana thesioides	+		40	SQ8-21
Ptilotus obovatus (Typical Goldfields form)	+		40	
Ptilotus schwartzii	+		35	
Scaevola spinescens	+		70	
Senna helmsii	+		40-70	
Senna sp. Austin (A. Strid 20210)	+		45	SQ8-3

Site SKAR117

Described by AM **Date** 14/10/2016 **Type** R
Location T/O to Yallalang from Mullewa/Gras J TRd
MGA Zone 50 380263 **mE** 6957792 **mN** 115.787823 **E** -27.498156 **S**
Habitat Lateritic remnant above floodplain
Soil Loam with black lateritic strew
Veg Condition Very Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		400	
Dysphania rhadinostachya	+		20	
Eremophila fraseri	+		70	
Hibiscus gardneri	+		100	SAGC51
Maireana planifolia	+		50	
Monachather paradoxus	+		20	
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Solanum lasiophyllum	+		40	
Thryptomene decussata	5		200	SR117-1

Site SKAR118

Described by BRM **Date** 15/10/2016 **Type** R

MGA Zone 50 412141 **mE** 7000955 **mN** 116.113609 **E** -27.110957 **S**

Habitat Plain (hard pan)

Soil Red-brown loam

Vegetation *Acacia pteraneura* low open woodland over *Acacia grasbyi* and *Acacia tetragonopylla* scattered tall shrubland to tall open shrubland

Veg Condition Good

Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1-2		280	
Acacia pteraneura	8-12		600	SQ4-1
Acacia tetragonophylla	1		250	
Calandrinia baccata	+		80	SQ14-11
Eremophila clarkei	+		120	SR14-4
Eremophila forrestii subsp. forrestii	+		50	
Eremophila fraseri	+		150	
Grevillea deflexa	+		40	SQ10-3
Maireana carnosa	+		12	
Ptilotus obovatus	+		50	
Rhagodia eremaea	+		60	
Sclerolaena densiflora	+		12	
Senna charlesiana	+		130	SQ4-6

Site SKAR119

Described by AM **Date** 14/10/2016 **Type** R
Location Between Mullewa Road and Twin peaks
MGA Zone 50 392136 **mE** 6972965 **mN** 115.909350 **E** -27.362194 **S**
Habitat Dune in middle of slope
Soil Loose sandy surface brown
Vegetation High shrubland of *Acacia kalgoorliensis* and *Hakea preissii*
Veg Condition Good
Fire Age 8-12
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		200	SR119-3
Acacia kalgoorliensis	3			
Acacia victoriae	+		300	
Atriplex codonocarpa	+		20	
Atriplex semibaccata	+		20	
Atriplex vesicaria	+		50	
Calandrinia remota	+		20	SR119-2
Eragrostis dielsii	+		10	
Eremophila pantonii	+		130	
Eremophila pterocarpa	+		100	
Eremophila youngii subsp. youngii	+		200	SR119-4
Gunniopsis quadrifida	+			
Hakea preissii	3			
Lobelia heterophylla	+		20	SQ25-3
Maireana amoena	+		30	
Maireana platycarpa	+		10	SQ31-XI
Maireana platycarpa	+		10	SQ31-XI
Ptilotus lazaridis	+		80	
Rhodanthe citrina	+		15	SAGC41
Scaevola spinescens	+		100	
Sclerolaena recurvicuspis	1		30	SR119-1

Site SKAR120

Described by BRM **Date** 15/10/2016 **Type** R
MGA Zone 50 405724 **mE** 6994290 **mN** 116.048367 **E** -27.170700 **S**
Habitat Gentle north facing lower slope below granite ridge
Soil Red brown sandy loam
Vegetation *Acacia cuthbertsonii* scattered tall shrubland over *Senna helmsii* open shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii				
Acacia cuthbertsonii subsp. cuthbertsonii	+		210	SBGC3
Acacia grasbyi	+		280	
Acacia pteraneura	+		400	SQ4-1
Acacia tetragonophylla	+		230	
Actinobole oldfieldiana	+		2	SQ8-18
Eremophila forrestii subsp. forrestii	+		60	
Eremophila platycalyx subsp. platycalyx	+		110	SR120-3
Goodenia berardiana	+		12	SR120-2
Hibiscus krichauffianus	+		20	SR120-1
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus helipteroides	+		20	
Ptilotus obovatus	+		30	
Sclerolaena densiflora	+		12	
Senna artemisioides subsp. helmsii	6-7		140	
Tetragonia cristata	+		20	SQ4-26

Site SKAR121

Described by AM **Date** 15/10/2016 **Type** R
Location Wooleen -Twin Peaks Road
MGA Zone 50 411385 **mE** 7000084 **mN** 116.105920 **E** -27.118772 **S**
Habitat Flow line - no dissected
Soil Loam brown
Vegetation Low Mulga woodland
Fire Age 8-12
Notes Disturbance: Looks droughted

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		10	
Acacia aneura	18		600	
Acacia tetragonophylla	+		100	
Cuscuta sp.	+		10	
Enchylaena tomentosa	+		30	
Eremophila compacta subsp. compacta	+		180	SABC109
Eremophila sp. Murgoo (S.J.J. Davies s.n. 15/8/1960)	+		150	SAGC23
Grevillea deflexa	+		100	
Hakea preissii	+		300	
Maireana villosa	+		50	
Ptilotus gardneri	+		30	
Ptilotus obovatus	+		20	
Ptilotus polystachyus	+		20	
Rhagodia eremaea	+		100	
Rhodanthe maryonii	+		30	SQ7-8
Rhyncharrhena linearis	+		150	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		20	
Solanum lasiophyllum	+		60	

Site SKAR122

Described by BRM **Date** 15/10/2016 **Type** R
MGA Zone 50 405724 **mE** 6994290 **mN** 116.048367 **E** -27.170700 **S**
Habitat Broad plain
Soil Red sand
Vegetation *Acacia ramulosa* tall open shrubland over *Eremophila spuria* open shrubland over *Podolepis lessonii* very open grassland and *Calandrinia butcherensis* very open herbland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	3-4		320	
Calandrinia butcherensis	1-2		20	SR32-2
Eragrostis lanipes	1-2		40	SR122-4
Eremophila spuria	4-5		110	SR122-1
Monachather paradoxus	3-5		35	SQ32-3
Podolepis lessonii	+		300	SR22-4
Ptilotus polystachyus	+		40	
Rhagodia eremaea	+		90	SR122-3
Rhodanthe citrina	+		20	SR122-2
Senna helmsii				

Site SKAR123

Described by AM **Date** 15/10/2016 **Type** R
Location Wooleen to Twin Peaks Road
MGA Zone 50 403640 **mE** 6988230 **mN** 116.026859 **E** -27.225259 **S**
Habitat Clay plain with laterite and granite strew
Soil Clay brown
Vegetation High open shrubland of *Aacia eremaea*
No mulga
Veg Condition Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	9		300	
Acacia grasbyi	+		300	
Acacia tetragonophylla	+		100	
Aristida contorta	+		10	
Euphorbia boophthona	+		40	
Maireana platycarpa	+		40	
Maireana thesioides	+		100	
Rhagodia eremaea	+		150	
Rhodanthe maryonii	+		15	SQ7-8
Scaevola spinescens	+		200	
Sclerolaena densiflora	+		20	
Senna sp. Meekatharra (E. Bailey 1-26)	+		130	
Sida calyxhymenia	+		100	
Tetragonia cristata	+		10	

Site SKAR124

Described by BRM **Date** 15/10/2016 **Type** R
MGA Zone 50 401021 **mE** 6978850 **mN** 115.999655 **E** -27.309745 **S**
Habitat Gentle west facing slope of low ridge
Soil Red sandy loam
Rock Type ? Pebbles
Vegetation *Acacia pteraneura* low open woodland over *Acacia grasbyi* scattered tall shrubs over *Eremophila glutinosa* scattered shrubs
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	+		90	SBGC3
Acacia grasbyi	1		320	
Acacia pteraneura	2-4		400	SQ4-1
Acacia ramulosa	+		190	
Acacia sclerosperma	+		250	
Acacia tetragonophylla	+		230	
Eremophila fraseri	+		150	
Eremophila glutinosa	+		140	SR124-1
Ptilotus nobilis	+		30	
Ptilotus obovatus	+		30	
Sclerolaena densiflora	+		15	SQ4-24
Senna sp. Meekatharra (E. Bailey 1-26)	+		45	SQ4-5
Sida ectogama	+		40	SR42-3
Tetragonia cristata	1-2		15	SQ4-26

Site SKAR125

Described by AM **Date** 15/10/2016 **Type** R
Location Wooleen Twin Peaks Road
MGA Zone 50 402175 **mE** 6983332 **mN** 116.011675 **E** -27.269369 **S**
Habitat Stony shallow slope
Soil Stony clay with sandy surface
Rock Type Granite
Vegetation Chenopod scattered tall shrubs over low open shrubland
Veg Condition Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		300	
Acacia eremaea	2		200	
Acacia victoriae	+		400	
Gunniopsis rodwayi	+		10	
Maireana georgei	+		30	
Maireana triptera	2		30	
Menkea australis	+		10	SQ11-2
Rhagodia eremaea	+		100	
Rumex acetosa	+		20	
Sclerolaena densiflora	+		30	
Sclerolaena diacantha	+		20	
Senna artemisioides subsp. helmsii	+		100	
Senna sp. Meekatharra (E. Bailey 1-26)	3		100	
Solanum lasiophyllum	+		40	
Tetragonia cristata	+		20	

Site SKAR126

Described by BRM **Date** 15/10/2016 **Type** R

MGA Zone 50 396758 **mE** 6971591 **mN** 115.955962 **E** -27.374954 **S**

Habitat Broad plain

Soil Red loamy sand

Vegetation Mulga, *Acacia grasbyi* low woodland over *Maireana triptera* scatter low shrubland over *Tetragonia cristata, Sida kingii* very open herbland

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	+		280	
Acacia grasbyi	5-6		330	
Acacia tetragonophylla	+		250	
Aristida contorta	1		400	SR4-1
Cephalipterum drummondii	1-2		30	SBGC20
Maireana georgei	+		30	SR126-4
Maireana triptera	1		25	SQ28-3
Rhagodia eremaea	+		160	SR126-2
Scaevola spinescens	+		50	
Sclerolaena gardneri	+			SR126-3
Senna sp. Austin (A. Strid 20210)	+		35	SQ4-8
Senna sp. Meekatharra (E. Bailey 1-26)	+		60	SR126-1
Sida ectogama	+		40	SR42-3
Tetragonia cristata	1-2		15	SQ4-26

Site SKAR127

Described by AM **Date** 15/12/2016 **Type** R
Location Wooleen, Twin peaks road
MGA Zone 50 401648 **mE** 6982098 **mN** 116.006252 **E** -27.280471 **S**
Habitat Very gentle slope
Soil Shallow clay over hardpan
Rock Type Exposed hardpan
Vegetation High open shrubland of *Acacia eremaea* and *Acacia grasbyi* above *Senna sp*.
Veg Condition Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		400	
Acacia cuthbertsonii	+		150	
Acacia eremaea	1		300	
Acacia grasbyi	1		300	
Aristida contorta	+		20	
Calandrinia translucens	+		10	SQ3-16
Cephalipterum drummondii	+		30	
Chthonocephalus pseudevax	+		10	SQ13-2
Eremophila forrestii	+		100	
Gunniopsis rodwayi	+		10	
Isoetopsis graminifolia	+		10	SQ3-11
Maireana triptera	+		40	
Ptilotus helipteroides	+		30	
Ptilotus nobilis	+		100	
Ptilotus obovatus	+		30	
Scaevola spinescens	+		100	
Sclerolaena densiflora	+		20	
Sclerolaena diacantha	+		20	
Sclerolaena eriacantha	+		30	
Senna helmsii	+		150	
Senna sp. Meekatharra (E. Bailey 1-26)	+		140	
Solanum lasiophyllum	+		100	
Stackhousia sp.	+		30	

Site SKAR128

Described by BRM **Date** 16/10/2016 **Type** R
MGA Zone 50 369353 **mE** 6973663 **mN** 115.679103 **E** -27.353905 **S**
Habitat Very low rise on plain
Soil Red loam
Rock Type Quartz pebbles
Vegetation *Acacia burkittii*, *Acacia ramulosa*, *Acacia tetragonophylla* and *Hakea recurva subsp. arida* tall shrubland
over *Ptilotus obovatus* low open shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia burkittii	2-3		350	SR108-1
Acacia ramulosa	2-3		240	
Acacia tetragonophylla	1-2		250	
Aristida contorta	20-30		20	
Arthropodium dyeri	+		45	SR56-5
Cephalipterum drummondii	+		30	SBGC20
Eremophila lachnocalyx	+		45	
Erodium crinitum	1		15	SQ4-18
Hakea recurva subsp. arida	2-4		210	SR128-1
Maireana carnosa	1		15	
Maireana planifolia	+		40	
Ptilotus obovatus	2-3		40	
Sclerolaena densiflora	+		15	SQ4-24
Sida ectogama	+		45	SR42-3
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		40	SQ20-6
Solanum lasiophyllum	+		40	
Spergula pentandra	+		20	SQ4-22

Site SKAR129

Described by AM **Date** 15/10/2016 **Type** R
Location Wooleen to Twin Peaks on Twin Peaks
MGA Zone 50 398685 **mE** 6973642 **mN** 115.975617 **E** -27.356585 **S**
Habitat Hardpan plain water moderate strew
Soil Red with granite? Black laterite
Vegetation Low open mulga woodland with an open shrubland understorey
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	8		600	
Acacia grasbyi	+		300	
Acacia tetragonophylla	1		300	
Aristida contorta	+		20	
Cephalipterum drummondii	+		30	
Eremophila forrestii	+		100	
Eremophila fraseri	+		200	
Eremophila platycalyx	3		200	
Ptilotus helipteroides	+		30	
Ptilotus macrocephalus	+			
Ptilotus obovatus	+		30	
Rhodanthe maryonii	+		30	SQ7-8
Sclerolaena densiflora	+		20	
Senna artemisioides subsp. helmsii	+		150	

Site SKAR13

Described by AM **Date** 7/10/2016 **Type** R
Location Pit Area 8
MGA Zone 50 370397 **mE** 6913318 **mN** 115.683154 **E** -27.898641 **S**
Habitat Sandy rise and gravel
Soil Brown
Vegetation Acacia ramulosa shrubland
Veg Condition
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	11		300	
Cheiranthera simplicifolia	+		100	SR13-2
Eremophila latrobei subsp. latrobei	+		100	
Maireana convexa	+		100	
Maireana villosa	+		50	
Monachather paradoxus	+		60	
Philotheca brucei subsp. brucei	+		80	SR13-1
Ptilotus obovatus	1		60	
Ptilotus schwartzii	+		30	

Site SKAR131

Described by AM **Date** 15/10/2016 **Type** R
MGA Zone 50 396157 **mE** 6971695 **mN** 115.949894 **E** -27.373970 **S**
Habitat Flat plain with sand on surface, clay at depth
Soil Red
Vegetation High open *Acacia eremaea* shrubland with a Maireana low open shrubland understorey
Veg Condition Poor
Fire Age 8-12
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	3		300	
Atriplex bunburyana	1		100	SR131-1
Atriplex codonocarpa	+		30	
Atriplex semibaccata	+		30	
Cephalipterum drummondii	+		30	
Enchylaena tomentosa	+		60	
Eragrostis dielsii	+		10	
Erodium crinitum	+		20	
Euphorbia boophthona	+		50	
Gunniopsis rodwayi	+		10	
Isoetopsis graminifolia	+		10	SQ3-11
Lepidium oxytrichum	+		10	
Maireana georgei	1		50	SR131-2
Maireana triptera	2		50	
Menkea australis	+		10	SQ11-2
Ptilotus grandiflorus	+		30	
Ptilotus obovatus	+		60	
Rhagodia eremaea	+		120	
Rhodanthe maryonii	+		30	SQ7-8
Scaevola spinescens	+		100	
Spergula pentandra	+		30	SQ1-8

Site SKAR14

Described by BRM **Date** 7/10/2016 **Type** R
Location Pit 8
MGA Zone 50 370615 **mE** 6913274 **mN** 115.685364 **E** -27.899059 **S**
Habitat Gentle west facing slope of low hill
Soil loamy sand
Rock Type Granite (decomposing)
Vegetation *Acacia ramulosa var. linophylla*, *Acacia tetragonophylla*, *Thryptomene decussata*, *Grevillea*

obliquistigma subsp. obliquistigma tall shrubland over *Eremophila clarkei* scattered shrubs over *Eremophila latrobei subsp. latrobei*, *Aristida contorta* very open herbland/grassland

Veg Condition Good
Fire Age >12 years
Notes Disturbance: grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa var. linophylla				SR14-5
Acacia tetragonophylla	2-3		320	
Aristida contorta				
Eremophila clarkei				SR14-4
Eremophila lachnocalyx				SR14-9
Eremophila latrobei subsp. latrobei				SR14-6
Grevillea obliquistigma subsp. obliquistigma	3		400	SBGC71
Maireana convexa				
Micromyrtus prochytes	+		140	SR14-1
Micromyrtus prochytes				SR14-10
Monachather paradoxus				
Myriocephalus guerinae				SQ20-10
Philotheca sericea				SR14-2
Ptilotus helipteroides				
Stenopetalum anfractum				SQ4-13
Thryptomene decussata				SR14-3
Waitzia acuminata var. acuminata				SR14-7

Site SKAR15

Described by AM **Date** 7/10/2016 **Type** R
MGA Zone 50 370878 **mE** 6913130 **mN** 115.688020 **E** -27.900384 **S**
Habitat Gravel slope
Soil Gravel and loam
Vegetation High open shrubland
Veg Condition Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1		200	
Acacia ramulosa	2		300	
Aluta aspera subsp. hesperia	+		30	SR15-1
Monachather paradoxus	+		50	
Schoenia cassiniana	2		200	SR11-1
Thryptomene decussata	+		100	SR11-2

Site SKAR17

Described by **Date** 7/10/2016 **Type** R
MGA Zone 50 370692 **mE** 6913058 **mN** 115.686123 **E** -27.901016 **S**
Habitat Wash?
Soil Orange
Vegetation High shrubland
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia burkittii	10		300	
Acacia tetragonophylla	20		300	
Austrostipa eremophila	1		60	SR17-1
Eremophila latrobei	+		100	

Site SKAR18

Described by BRM **Date** 7/10/2016 **Type** R
MGA Zone 50 370227 **mE** 6922568 **mN** 115.682437 **E** -27.815142 **S**
Habitat Low gravelly rise
Soil Orange loamy sand
Vegetation *Acacia ramulosa*
Fire Age >12 years
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia acuminata	+		220	SR18-3
Acacia ramulosa				
Acacia umbraculiformis	1		400	SBGC77
Aluta aspera subsp. hesperia	+		70	SR18-1
Brunonia australis	+		20	SBGC60
Eremophila forrestii subsp. forrestii	+		80-180	
Eremophila lachnocalyx	+		30	SR14-9
Eremophila latrobei subsp. latrobei	+		130	SR14-6
Eremophila latrobei subsp. latrobei			60	SR14-
Goodenia micrantha	10-15		15	SQ26-8
Grevillea obliquistigma subsp. obliquistigma	+		320	SBGC71
Myriocephalus guerinae	1-2		25	SQ20-10
Persoonia bowgada	+		210	SBGC93
Thryptomene decussata	1		160-350	SR14-3

Site SKAR19

Habitat Sandy plain on top - plateau
Soil Sandy
Rock Type
Vegetation High shrubland over an open grassland
Veg Condition Very Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	11		300	
Eremophila forrestii	+		130	
Grevillea obliquistigma subsp. obliquistigma	+		30	SABGC75
Monachather paradoxus	12		60	
Rostraria pumila	+		20	SABGC70
Schoenia cassiniana			200	SR11-1
Thryptomene decussata	1		120	SR11-2
Thyridolepis sp.	+		40	

Site SKAR20

Described by BRM **Date** 7/10/2016 **Type**
Location Pit 8
MGA Zone 50 370034 **mE** 6912545 **mN** 115.679382 **E** -27.905582 **S**
Habitat plain at banks
Soil Loamy sand
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	+		250	SBGC95
Acacia ramulosa var. linophylla	2-5		220	SR14-5
Acacia rhodophloia	2-3		230	SBGC76
Eremophila forrestii subsp. forrestii	4-5		150	
Goodenia micrantha	1		15	SQ26-8
Monachather paradoxus	1		40	SQ20-8
Myriocephalus guerinae	+		25	SQ20-10
Podotheca gnaphalioides	2		5	SR20-1

Site SKAR21

Described by AM **Date** 7/10/2016 **Type** R
MGA Zone 50 370565 **mE** 6913294 **mN** 115.684858 **E** -27.898874 **S**
Habitat Granite slope
Soil Orange with decomp
Vegetation High shrubland
Veg Condition Very Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	8		300	
Acacia tetragonophylla	+		300	
Acacia umbellata	2		300	
Drummondita sp.	1		100	
Eremophila latrobei	+		100	
Schoenia cassiniana	1		200	SR11-1

Site SKAR22

Described by BRM **Date** 7/10/2016 **Type** R
Location Pit 8
MGA Zone 50 320437 **mE** 6912446 **mN** 115.175579 **E** -27.900725 **S**
Habitat Gentle south facing slope, lower slope of low rise
Soil Brown loam
Vegetation *Acacia ramulosa*, *Acacia burkitii*, *Acacia tetragonia* tall shrubland
Veg Condition Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia burkittii	2-3		350	SR22-1
Acacia ramulosa	5		280	
Acacia tetragonophylla	3		320	
Cheilanthes sieberi subsp. sieberi	+		30	SR22-3
Maireana aff. carnosa	+		12	
Micromyrtus prochytes	+		30	SR14-1
Podolepis lessonii	+		10	SR22-4
Podolepis lessonii	+		20	SR22-4
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus obovatus	1		40	
Rhodanthe maryonii	+		25	SQ24-27

Site SKAR23

Described by AM **Date** 8/10/2016 **Type** R
Location Kalli - Boolardy Road
MGA Zone 50 465954 **mE** 7024960 **mN** 116.657161 **E** -26.896607 **S**
Habitat Wandarrie bnk and small under bank
Soil Sandy
Vegetation High open shrubland of Mulga
Veg Condition Good
Fire Age 1-4

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	+		40	SR23-4
Acacia pteraneura	5			SR23-1
Acacia victoriae	+		300	
Aristida contorta	+			
Calandrinia polyandra	+			SQ1-24
Calotis multicaulis	+		20	SQ7-10
Cephalipterum drummondii	+		20	
Dysphania rhadinostachya	+		10	
Eremophila forrestii	2		100	
Erodium crinitum			30	
Indigofera chamaeclada	+		10	SR23-6
Lepidium oxytrichum	+			
Maireana planifolia	+		50	
Menkea australis	+			SQ11-2
Menkea villosula	+		10	SR1-3
Ptilotus aervoides	+			
Ptilotus gardneri	+			
Ptilotus obovatus	+		40	
Sclerolaena densiflora	+		20	
Senna sp. Meekatharra (E. Bailey 1-26)	1		10	
Sida sp. Pindar (A. Mitchell 3585)				SR23-3
Tetragonia cristata	+		70	

Site SKAR24

Described by BRM **Date** 7/10/2016 **Type** R
Location Pit 8
MGA Zone 50 370766 **mE** 6912819 **mN** 115.686848 **E** -27.903180 **S**
Habitat Low rise
Soil ? Gravelly (lateritic)
Vegetation Acacia caesaneura low woodland to low open forest over Thryptomene decussata scattered shrubs
over Waitzia acuminata var. acuminata low open woodland
Veg Condition Very Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	25		600	SR24-2
Acacia ramulosa var. ramulosa	+		220	SR24-5
Eremophila latrobei subsp. latrobei	+		70	SR14-6
Maireana planifolia	+		25	SR24-1
Philotheca brucei subsp. brucei	+		120	SGBC97
Thryptomene decussata	+		180	SR14-3
Waitzia acuminata var. acuminata	2		20	SR24-4

Site SKAR25

Described by AM **Date** 8/10/2016 **Type** R
Location Kalli - Boolardy Road
MGA Zone 50 464930 **mE** 7024466 **mN** 116.646836 **E** -26.901042 **S**
Habitat Claypan
Soil Clay
Vegetation Herbland
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia tetragonophylla	+			
Calandrinia pumila	+			SR25-6
Centipeda thespidioides				SR25-7
Eragrostis dielsii	+			
Eragrostis pergracilis	+			
Eriachne flaccida	2			SR25-3
Hakea preissii	+			
Indigofera chamaeclada	1			SR25-2
Lachnagrostis filiformis	+			SR25-5
Marsilea exarata	10			SR25-4
Schenkia australis	+			SR25-8
Schoenoplectus dissachanthus	+			SR25-9

Site SKAR26

Described by BRM **Date** 8/10/2016 **Type** R
MGA Zone 50 466808 **mE** 7024964 **mN** 116.665761 **E** -26.896592 **S**
Habitat Plain center bank
Soil Red brown sandy loam
Vegetation *Acacia pteraneura* scattered low trees over *Eremophila fraseri* open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura				SR26-1
Acacia tetragonophylla	+		60	
Aristida contorta	+		20	
Chthonocephalus pseudevax	+		1	SQ24-29
Eremophila fraseri	3		180	
Menkea villosula	+		15	SR26-4
Ptilotus obovatus	1		40	
Senna artemisioides subsp. helmsii	1		80	
Senna sp. Meekatharra (E. Bailey 1-26)	+		60	SR26-2
Solanum lasiophyllum	+		40	

Site SKAR27

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 442162 **mE** 7001675 **mN** 116.416503 **E** -27.106042 **S**
Habitat Top of break away
Soil Gravel
Vegetation High open shrubland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		100	SQ27-1
Acacia ramulosa	3		300	
Aristida contorta	+		10	
Eremophila simulans subsp. megacalyx	+		100	
Erodium crinitum	+		20	
Hibiscus krichauffianus	+		30	SQ7-15
Hibiscus sp.	+		100	SAGC51
Maireana villosa	+		30	
Monachather paradoxus	+		30	
Ptilotus polystachyus	+		20	
Ptilotus schwartzii	2		30	
Solanum lasiophyllum	+		50	
Stenopetalum filifolium	+		20	SR3-3
Stylidium longibracteatum	+		10	SABGC46

Site SKAR28

Described by BRM **Date** 8/10/2016 **Type** R
Location North-east road
MGA Zone 50 463536 **mE** 7023673 **mN** 116.632775 **E** -26.908166 **S**
Habitat Flow area on plain
Soil Red-brown loam
Veg Condition Good
Fire Age >12 years
Notes *Acacia craspedocarpa*, *Acacia pteraneura* tall shrubland over *Eremophila forestii subsp. forestii*
scattered shrubs over very open herbland/grassland

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		40	
Acacia craspedocarpa	12		400	SR28-1
Acacia pteraneura	1		350	SR28-2
Acacia tetragonophylla	1		320	
Aristida contorta	1		30	
Cephalipterum drummondii	+		300	SBGC20
Eremophila forrestii subsp. forrestii	1		110	
Eremophila fraseri				
Eriachne pulchella subsp. pulchella	+		12	SQ24-23
Maireana triptera	+		30	SR28-3
Ptilotus aervoides			5	SQ12-10
Ptilotus helipteroides	+		20	
Ptilotus macrocephalus	+		4	SQ12-3
Ptilotus nobilis	+		50	
Ptilotus obovatus	+		40	
Scaevola spinescens			160	
Senna helmsii	+		30	
Tetragonia cristata	+		20	SQ22-7

Site SKAR29

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 442177 **mE** 7001719 **mN** 116.416656 **E** -27.105645 **S**
Habitat Breakaway 5-10% slope broke laterite
Soil Laterite
Vegetation Low open shrubland
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aulacophylla	+		150	SR11-33
Calytrix divergens	+		30	SR29-2
Eremophila simulans subsp. megacalyx	+		100	
Grevillea deflexa	+		100	
Gunniopsis rodwayi	+		1	
Hibiscus sp.	+		100	SAGC51
Micromyrtus sulphurea	1		50	SABGC48
Neurachne minor	+		10	SR29-3
Ptilotus schwartzii	+		30	
Rhagodia eremaea	+		20	SQ3-3
Stylidium longibracteatum	+		10	SABGC46

Site SKAR3

Described by BRM **Date** 6/10/2016 **Type** R
Location Boolardy - Kali Road
MGA Zone 50 476865 **mE** 7027479 **mN** 116.767079 **E** -26.874088 **S**
Habitat ? Bend (sand) in a hard pan plain
Soil Orange/red sandy surface
Vegetation Very open grassland with an overstorey of low scattered trees and shrubs
Veg Condition Very good
Fire Age 8 - 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		60	SR3-4
Acacia tetragonophylla	1		200	
Actinobole uliginosum	+		1	
Cephalipterum drummondii	1		30	
Eremophila compacta subsp. fecunda	1			SR3-1
Eriachne helmsii	10		50	
Monachather paradoxus	5		50	
Ptilotus obovatus	+		50	
Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94)	+		40	SAGC66
Senna artemisioides subsp. helmsii	+		130	
Stenopetalum filifolium	+		50	SR3-3
Thysanotus manglesianus/patersonii	+		100	SR3-2

Site SKAR30

Described by BRM **Date** 8/10/2016 **Type**
Location Pit 1
MGA Zone 50 442246 **mE** 7001674 **mN** 116.417350 **E** -27.106054 **S**
Habitat Low gravelly rise
Soil Sandy loam
Rock Type Laterite
Vegetation *Acacia incurvaneura* tall shrubland over *Thryptomene decussata* scattered tall shrubs over Eremophila
scattered shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	+		350	SR30-4
Acacia incurvaneura	9		500	SR30-1
Eremophila glutinosa	+		110	SR30-3
Lobelia winfridae	+		150	SBGC10
Monachather paradoxus	+		40	SQ32-3
Ptilotus obovatus	+		30	
Ptilotus schwartzii	+		35	
Sida ectogama	+		45	SR30-5
Stylidium longibracteatum	+		20	SBGC80
Thryptomene decussata	+		170	SBGC8

Site SKAR31

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 441922 **mE** 7001725 **mN** 116.414084 **E** -27.105580 **S**
Habitat Area receiving run on - plain
Soil Sandy surfaced loam
Vegetation High open shrubland
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		300	
Acacia aneura	1		600	
Acacia tetragonophylla	7		300	
Enchylaena tomentosa	+		60	
Eremophila fraseri	+		120	
Eremophila glutinosa	+		200	SR27-1
Eremophila platycalyx	+		120	
Maireana carnosa	+		20	
Maireana platycarpa	+		80	
Maireana thesioides	+		100	
Ptilotus obovatus	+		30	
Rhagodia eremaea	+		150	
Sclerolaena eriacantha	+		20	
Senna artemisioides subsp. helmsii	+		120	
Sida ectogama	+		90	SR31-1

Site SKAR32

Described by BRM **Date** 8/10/2016 **Type** R
Location Pit 1
MGA Zone 50 442618 **mE** 7001722 **mN** 116.421105 **E** -27.105636 **S**
Habitat Low sandy rise
Soil Red brown loamy sand
Vegetation *Acacia ramulosa* tall open shrubland over *Eremophila simulans subsp. magecalyx, Eremophila forrestii subsp. forrestii* open shrubland?
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia murrayana	+		210	SR32-4
Acacia ramulosa var. linophylla	3		300	SQ20-1
Calandrinia butcherensis	+		20	SR32-2
Eragrostis lanipes	+		30	SR32-1
Eremophila forrestii subsp. forrestii	+		140	
Eremophila simulans subsp. megacalyx	2		160	SR32-3
Erodium crinitum	1		25	SQ4-18
Ptilotus polystachyus	+		35	
Ptilotus schwartzii	+		35	

Site SKAR33

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 441853 **mE** 7001504 **mN** 116.413377 **E** -27.107573 **S**
Habitat Out wash plain with dense gravel and hard pan
Soil Very little below breakaways
Vegetation Low scattered shrubs
Veg Condition Very Good
Fire Age
Notes
SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Acacia aneura	+		100	Mulga
Erodium crinitum	+		20	
Gunniopsis rodwayi	+		1	
Hakea preissii	+		100	
Maireana planifolia	+		15	
Ptilotus schwartzii	1		30	
Solanum lasiophyllum	+		30	

Site SKAR34

Described by BRM **Date** 8/10/2016 **Type** R
Location Pit 1
Habitat Granite slopes of low rise
Soil Red brown sand
Vegetation *Acacia ramulosa var. linophylla, Thryptomene decussata* tall open shrubland to tall shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa var. linophylla	3		250	SQ20-1
Calandrinia butcherensis	+		20	SR32-2
Eremophila forrestii subsp. forrestii	1-2		140	
Eremophila latrobei subsp. latrobei	+		150	SR34-1
Eremophila simulans subsp. megacalyx				SR32-3
Myriocephalus guerinae	+		30	SQ20-10
Psydrax rigidula	+		320	SR34-2
Ptilotus polystachyus	+		30	
Ptilotus schwartzii	+		30	
Thryptomene decussata	5-6		320	SBGC8

Site SKAR35

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 441936 **mE** 7001477 **mN** 116.414213 **E** -27.107820 **S**
Habitat Sandy rise
Soil Sand
Vegetation High open shrubland of *Acacia ramulosa*
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	5		300	
Calandrinia polyandra	1		30	
Eragrostis sp.	+		30	SR35-3
Eremophila forrestii	+		130	
Eremophila simulans subsp. megacalyx	1		130	
Eriachne helmsii	4		80	
Erodium crinitum	+		30	
Psydrax rigidula	+		300	SR35-1
Ptilotus polystachyus	2		60	
Rhagodia eremaea	+		200	
Sauropus sp. Woolgorong (M. Officer s.n. 10/8/94)	+		30	SR35-2
Tetragonia cristata	+		20	
Thryptomene decussata	2		300	SQ21-2

Site SKAR36

Described by BRM **Date** 8/10/2016 **Type** R
MGA Zone 50 442264 **mE** 7002259 **mN** 116.417559 **E** -27.100774 **S**
Habitat Granite west facing slope of low rise
Soil Loamy sand
Rock Type Granite
Vegetation *Acacia pteraneura*, *Acacia grasbii* tall shrubland over *Ptilotus obovatus*
Veg Condition *Good*
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1		40	SR36-4
Acacia pteraneura	1		220	SR36-1
Acacia tetragonophylla	+		150	
Acacia umbraculiformis	+		120	SBC77
Eremophila glutinosa	+		140	SR36-3
Eremophila latrobei subsp. latrobei	+		110	SR34-1
Eremophila platycalyx subsp. platycalyx	+		180	SR36-2
Ptilotus obovatus	+		40	
Sida ectogama	+		40	SR30-5

Site SKAR37

Described by AM **Date** 8/10/2016 **Type** R
Location Pit area 1
MGA Zone 50 442160 **mE** 7001576 **mN** 116.416478 **E** -27.106935 **S**
Habitat Depression sand plain flow line
Soil Sand
Vegetation Dense closed scrubs
Veg Condition Very Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa var. linophylla	20			
Eremophila forrestii	5			
Eremophila simulans subsp. megacalyx	20			
Monachather paradoxus	+			
Rhagodia eremaea	10			
Solanum lasiophyllum	5			

Site SKAR38

Described by BRM **Date** 8/10/2016 **Type** R
MGA Zone 50 442124 **mE** 7002115 **mN** 116.416140 **E** -27.102068 **S**
Habitat Gentle, south-west facing facing slope of low rise
Soil Red brown loam
Vegetation Acacia tall open shrubland over *Eremophila sp.* scattered shrubs
Veg Condition Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	2-3		210	SQ8-2
Acacia victoriae	+		500	
Eremophila sp.	1		150	SQ14-2
Gunniopsis rodwayi	+		5	SQ4-20
Maireana carnosa	+		10	
Ptilotus obovatus var. obovatus	+		30	
Sclerolaena densiflora	+		15	SQ4-24
Sclerolaena eriacantha	+		30	SQ22-4
Senna sp. Austin (A. Strid 20210)	+		40	SR38-1

Site SKAR39

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 443143 **mE** 6993053 **mN** 116.426001 **E** -27.183921 **S**
Habitat Break away face and rocky foot slope
Soil Light brown/yellow
Rock Type laterite
Vegetation Low open mulga woodland
Veg Condition Very Poor
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		200	
Aristida contorta	+		10	
Eremophila glutinosa	+		100	SR27-1
Eremophila latrobei	+		100	
Eremophila simulans subsp. megacalyx	+		50	
Goodenia mimuloides	+		1	SABGC26
Lemooria burkittii	+		<1	SQ13-XI
Maireana convexa	+		30	
Maireana thesioides	+		50	
Maireana villosa	+		30	
Ptilotus obovatus	+		30	
Ptilotus schwartzii	+		30	
Sclerolaena diacantha	+		20	
Sida calyxhymenia	+		70	
Solanum lasiophyllum	+		50	
Stenopetalum anfractum	+		30	SQ3-14

Site SKAR40

Described by BRM **Date** 9/10/2016 **Type**
Location Pit 5
MGA Zone 50 443619 **mE** 6993936 **mN** 116.430847 **E** -27.175969 **S**
Habitat Broad flat plain
Soil Red/brown loamy sand
Vegetation *Acacia ramulosa*, *Acacia murrayana* tall shrubland over *Eremophila simulans subsp. megacalyx* open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia murrayana	1-2		280-400	SR40-1
Aristida contorta	+		20	
Calandrinia polyandra	1		15	SR40-2
Eremophila forrestii subsp. forrestii	+		35	
Eremophila simulans subsp. megacalyx	4-5		160	SR32-3
Erodium crinitum	+		15	SQ4-18
Goodenia micrantha	+		20	SQ26-8
Monachather paradoxus	+		30	SQ32-3
Podotheca gnaphalioides	9-10		320	SR20-1
Ptilotus polystachyus	+		30	
Rhagodia eremaea	+		80	
Rhodanthe citrina	+		15	SQ26-6
Solanum lasiophyllum	+		30	
Thyridolepis multiculmis	+		20	SQ20-9
Trachymene ornata	+		12	

Site SKAR41

Described by AM **Date** 9/10/2016 **Type** R
Location Pit Area 5
MGA Zone 50 443112 **mE** 6993273 **mN** 116.425699 **E** -27.181934 **S**
Habitat Lower breakaway slope
Soil Eroded surface
Vegetation Very open herb field
Veg Condition Degraded
Fire Age 8-12
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		100	SR41-2
Atriplex codonocarpa	3		30	
Atriplex semibaccata	+		30	
Calandrinia remota				SR41-5
Chthonocephalus pseudevax				SQ13-2
Eremophila pterocarpa	+		80	
Erodium crinitum	+		20	
Frankenia setosa	+		30	SR41-3
Goodenia mimuloides	+		1	SABGC26
Goodenia pinifolia	+		20	
Lepidium oxytrichum	+		10	
Maireana carnosa	+		20	
Maireana platycarpa	+		10	SQ31-XI
Podolepis capillaris	+		30	
Ptilotus obovatus	+		20	
Sclerolaena densiflora	+		20	
Tetragonia cristata	+		10	

Site SKAR42

Described by BRM **Date** 9/10/2016 **Type** R
MGA Zone 50 443389 **mE** 6994040 **mN** 116.428530 **E** -27.175021 **S**
Habitat Flow area on broad plain
Soil Red brown sandy loam
Vegetation *Acacia incurvaneura* low woodland over *Acacia caesaneura* tall shrubland over *Eremophila forrestii subsp. forrestii*, *Eremophila simulans* scattered shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	1-2		350	SR42-2
Acacia cuthbertsonii subsp. cuthbertsonii	+		20	SBGC3
Acacia incurvaneura	18		500-700	SR42-1
Acacia ramulosa var. linophylla	1-2		320	SQ20-1
Acacia tetragonophylla	1		220	
Eremophila forrestii subsp. forrestii	1-2		150	
Eremophila latrobei	+		40	
Eremophila simulans	+		150-190	
Ptilotus obovatus var. obovatus	+		50	
Sclerolaena densiflora	+		12	
Sida ectogama	+		80	SR42-3
Spergula pentandra	+		170	SQ42-2
Tetragonia cristata	+		15	SQ4-26

Site SKAR43

Described by AM **Date** 9/10/2016 **Type** R
MGA Zone 50 443421 **mE** 6993374 **mN** 116.428823 **E** -27.181035 **S**
Habitat Plain with laterite exposure and skeletal soil
Soil Laterite
Rock Type Laterite
Vegetation High open shrubland
Veg Condition Very Good
Fire Age Never?

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	2		1	SR43-2
Acacia cuthbertsonii	+		200	
Acacia umbraculiformis	2		160	
Eremophila glutinosa	+		100	SR27-1
Eremophila latrobei	+		100	
Gunniopsis rodwayi	+		1	
Maireana convexa	+		40	
Maireana planifolia	+		50	
Maireana thesioides	+		50	
Petrophile pauciflora	+		100	SR43-1
Ptilotus schwartzii	+		30	
Rhyncharrhena linearis	+		100	
Sida calyxhymenia	+		1	
Stylidium longibracteatum	+		10	SAGC46
Thysanotus manglesianus/patersonii	+		100	SR3-2

Site SKAR44

Described by BRM **Date** 9/10/2016 **Type** R
MGA Zone 50 443403 **mE** 6994326 **mN** 116.428685 **E** -27.172439 **S**
Habitat Flow area on plain below low ridge
Soil Red-brown loam
Vegetation *Acacia pteraneura* scattered low trees over *Acacia grasbyi* scattered low shrubs
Veg Condition Very Poor
Fire Age >12 years
Notes Distrubance: Overgrazing and erosion

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia caesaneura	+		90	SR44-2
Acacia cuthbertsonii subsp. cuthbertsonii	+		120	SR44-4
Acacia grasbyi	+		250	SQ4-2
Acacia pteraneura	1-2		400	SR44-1
Acacia ramulosa	+		130	
Atriplex codonocarpa	+		20	SQ2-24
Atriplex semilunaris	2-3		20	SQ6-15
Eremophila glutinosa	+		40	SR44-3
Eremophila macmillaniana	+		90	SR44-5
Ptilotus polystachyus	+		35	
Sclerolaena densiflora	2-3		15	
Sclerolaena diacantha				SR44-8
Sclerolaena glabra	+		15	SR44-7
Senna artemisioides subsp. helmsii	+		90	
Solanum lasiophyllum	+		30	
Spergula pentandra	+		25	SQ4-22
Tetragonia cristata	+		15	SQ22-7

Site SKAR45

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 442432 **mE** 6994955 **mN** 116.418913 **E** -27.166721 **S**
Habitat Slightly stripped laterite laterite breakaway crest
Soil Laterite gravel
Rock Type Laterite
Vegetation High shrubland of *Acacia umbraculiformis*
Veg Condition Good
Fire Age 8-12
Notes Disturbance: Grazing

Name	Cover	C Class	Height	Specimen
Acacia umbraculiformis	8		200	
Aluta aspera subsp. hesperia	+		70	SR45-1
Eremophila latrobei	+		100	
Hemigenia tomentosa	+		50	SR45-2
Monachather paradoxus	+		30	
Neurachne minor	+		10	SR29-3
Ptilotus schwartzii	+		30	
Solanum lasiophyllum	+		30	
Stylidium longibracteatum	+		10	SABGC46
Thryptomene decussata	1		180	SQ21-2

Site SKAR46

Described by BRM **Date** 9/10/2016 **Type**
MGA Zone 50 443154 **mE** 6994120 **mN** 116.426162 **E** -27.174289 **S**
Habitat Gentle north-east facing slope of low rise
Soil Red-brown sandy loam
Rock Type Gravel laterite
Vegetation *Acacia incurvaneura* scattered low trees over *Acacia umbraculiformis*, *Acacia ramulosa* tall open shrubland over *Eremophila forrestii subsp. forrestii*, *Eremophila glutinosa* scattered shrubs
Veg Condition Good
Fire Age >12 years

Name	Cover	C Class	Height	Specimen
Acacia incurvaneura	1-4		400	SR46-1
Acacia ramulosa	2-2		230	
Acacia umbraculiformis	1		350	SR46-3
Calandrinia eremaea	+		45	SBGC12
Eremophila forrestii subsp. forrestii	1		120	
Eremophila glutinosa	+		140	SR46-4
Sida sp. Golden calyces (G.J. Leach 1966)	+		30	SR46-5

Site SKAR47

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 442306 **mE** 6994843 **mN** 116.417636 **E** -27.167727 **S**
Habitat Stripped surface laterite break away
Soil Red laterite
Rock Type Laterite
Vegetation Myrtaceous shrubland
Veg Condition Very Good
Fire Age 8 -12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia umbraculiformis	+		170	
Aristida contorta	+		50	
Eremophila simulans subsp. megacalyx	+		80	
Erodium crinitum	+		20	
Monachather paradoxus	+		30	
Petrophile sp.	+		100	
Pileanthus peduncularis subsp. pilifer	5		80	SR47-1
Ptilotus schwartzii	+		30	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		40	
Solanum lasiophyllum	+		40	
Stylidium longibracteatum	+		10	SABGC46
Thryptomene decussata	+		120	SQ21-2

Site SKAR48

Described by BRM **Date** 9/10/2016 **Type** R
MGA Zone 50 442938 **mE** 6994340 **mN** 116.423992 **E** -27.172294 **S**
Habitat Gentle west facing lower slope of low rise
Soil Red-brown sandy loam
Rock Type Gravel - laterite
Vegetation *Thryptomene decussata* tall open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		130	SR46-2
Aristida contorta	+		20	
Calytrix divergens	+		35	SBGC122
Dysphania rhadinostachya	+		15	
Eremophila forrestii subsp. forrestii	+		45	
Eremophila latrobei subsp. latrobei	+		45	
Eremophila simulans	+		140	
Eriachne mucronata	+		20	SR48-1
Ptilotus schwartzii				
Stenopetalum anfractum	+		30	SQ4-13
Thryptomene decussata	2-3		190	SBGC8

Site SKAR49

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 442140 **mE** 6994858 **mN** 116.415961 **E** -27.167584 **S**
Habitat Sandy rise
Soil Sandy loam
Vegetation *Eremophila simulans subsp. megacalyx* shrubland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	1		200	
Eragrostis eriopoda	+		30	
Eremophila forrestii	+		180	
Eremophila simulans subsp. megacalyx	20		200	
Indigofera chamaeclada	+		30	SR23-6
Maireana convexa	+		400	SR49-1
Ptilotus obovatus	+		30	
Ptilotus polystachyus	+		30	
Rhagodia eremaea	+		130	
Senna charlesiana	+		150	
Solanum lasiophyllum	+		100	

Site SKAR5

Described by AM **Date** 6/10/2016 **Type** R
Location Boolardy to Kalli Road
MGA Zone 50 474225 **mE** 7027492 **mN** 116.740500 **E** -26.873924 **S**
Habitat Sandy bank hard pan plain
Soil Sandy loam
Vegetation Low open woodland over shrubland understorey
Veg Condition Very Good

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Calandrinia polyandra	+			SQ1-24
Eremophila forrestii	11		180	
Eremophila granitica	1		100	
Eriachne helmsii	+		60	
Lemooria burkittii	+		1	SQ13-XI
Maireana planifolia	+		30	
Monachather paradoxus	+		60	
Ptilotus obovatus	+		40	
Ptilotus polystachyus	+		40	
Senna artemisioides subsp. helmsii	+		100	
Senna artemisioides subsp. helmsii	+		100	
Senna charlesiana	+		130	
Senna sp. Meekatharra (E. Bailey 1-26)	+		130	

Site SKAR50

Described by BRM **Date** 9/10/2016 **Type** R
MGA Zone 50 442700 **mE** 6994533 **mN** 116.421598 **E** -27.170542 **S**
Habitat Flat plain
Soil Sandy loam
Vegetation Mulga *Acacia pteraneura* and *Acacia grasbyi* low open woodland
Veg Condition Poor
Fire Age >12 years
Notes Disturbance: Grazing, sheet flow changes

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi			320	SQ4-2
Acacia pteraneura	2-3		400	SR50-1
Acacia tetragonophylla	+		190	
Ptilotus obovatus	+		40	
Sclerolaena densiflora	+		12	

Site SKAR51

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 440875 **mE** 6996030 **mN** 116.403249 **E** -27.156950 **S**
Veg Condition Good
Notes Disturbance: Grazing and area subject to erosion

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Arthropodium dyeri	+		60	
Atriplex codonocarpa	1		20	
Eragrostis dielsii	+		1	
Eremophila pterocarpa	+		100	
Maireana carnosa	+		20	
Maireana convexa	5		40	SR49-1
Maireana glomerifolia	11		40	
Maireana integra	+		30	
Sclerolaena eurotioides	+		40	SR49-2

Site SKAR52

Described by BRM **Date** 9/10/2016 **Type**
MGA Zone 50 442057 **mE** 6995161 **mN** 116.415137 **E** -27.164845 **S**
Habitat Gentle north-east facing slope of low laterite ridge
Soil Sandy loam
Rock Type Laterite
Vegetation *Acacia incurvaneura*, *Acacia umbraculiformis* tall shrubland over low open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia incurvaneura	10-15		280	SR52-1
Acacia umbraculiformis	1-2		220	SR52-3
Dysphania saxatilis	+		15	SBGC120
Eremophila simulans	+		50	
Eremophila spuria	1		80	SR2-1
Philotheca brucei subsp. brucei	+		130	SR52-5
Philotheca sericea	2-3		45	SR14-2
Ptilotus obovatus	+		35	
Stenopetalum filifolium	+		20	SR52-2
Stylidium longibracteatum	+		20	SBGC121

Site SKAR53

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 443193 **mE** 6993817 **mN** 116.426541 **E** -27.177026 **S**
Habitat Laterite back slope
Soil Laterite and no exposure
Vegetation High open mulga shrubland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Dodonaea adenophora	+		100	SR53-2
Eremophila glutinosa	+		100	SR27-1
Eremophila latrobei	+		100	
Eremophila simulans subsp. megacalyx	+		100	
Maireana villosa	+		30	
Ptilotus schwartzii	+		30	
Solanum lasiophyllum	+		40	

Site SKAR54

Described by BRM **Date** 9/10/2016 **Type** R
Location Pit 5
MGA Zone 50 441984 **mE** 6995263 **mN** 116.414405 **E** -27.163921 **S**
Habitat Plain
Vegetation *Acacia incurvaneura*, *Acacia pteraneura* low open woodland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		20	SQ12-7
Acacia incurvaneura	3-4		400	SR54-2
Acacia pteraneura	1-2		350	SR54-1
Acacia tetragonophylla	5-6		240	
Arthropodium dyeri	+		40	SR56-5
Cheilanthes sieberi subsp. sieberi	+		15	SR56-4
Enchylaena tomentosa var. tomentosa	+		35	SR56-1
Eremophila glutinosa	+		70	SR46-4
Eremophila latrobei subsp. latrobei				SQ4-11
Ptilotus obovatus	+		35	
Rhodanthe maryonii	+		15	SQ24-27
Solanum lasiophyllum	+		30	
Spartothamnella teucriiflora	+		60	SR56-2
Triglochin sp. A Flora of Australia (G.J. Keighery 2477)	+		10	SR56-6

Site SKAR55

Described by AM **Date** 9/10/2016 **Type** R
Location Pit area 5
MGA Zone 50 443114 **mE** 6993844 **mN** 116.425745 **E** -27.176779 **S**
Habitat Stripped margin and top of breakaway
Soil Very little exposed laterite
Vegetation Open shrubland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia umbraculiformis	+		90	
Calytrix divergens				SR29-2
Dysphania saxatilis	+		10	SR55-6
Eremophila latrobei			100	
Goodenia kingiana	+		80	SR55-1
Hypochaeris glabra	+		10	SR55-2
Lepidium oxytrichum	+			
Maireana platycarpa	+		10	SQ31-XI
Philotheca brucei	+		50	
Podolepis capillaris	+		30	
Ptilotus schwartzii	+			
Senecio glossanthus	+		20	SR55-4
Solanum lasiophyllum	+		30	
Stylidium longibracteatum			10	SABGC46

Site SKAR56

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 3
MGA Zone 50 430590 **mE** 6990970 **mN** 116.299162 **E** -27.202150 **S**
Habitat Flow line on plain
Soil Red brown clay loam
Vegetation *Acacia pteraneura* low woodland over *Acacia tetragonophylla* tall open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum				SQ12-7
Acacia pteraneura				SQ4-1
Acacia tetragonophylla				
Arthropodium dyeri				SR56-5
Cheilanthes sieberi subsp. sieberi				SR56-4
Enchylaena tomentosa var. tomentosa				SR56-1
Eremophila forrestii subsp. forrestii				
Eremophila fraseri				
Eremophila latrobei subsp. latrobei				SQ4-11
Hakea recurva subsp. arida				SR56-3
Lepidium oxytrichum				SQ4-46
Maireana planifolia				SQ4-29
Ptilotus obovatus				
Rhodanthe maryonii				SQ24-27
Sclerolaena densiflora				SQ4-24
Sida ectogama				SR42-3
Solanum lasiophyllum				
Spartothamnella teucriiflora				SR56-2
Triglochin sp. A Flora of Australia (G.J. Keighery 2477)				SR56-6

Site SKAR57

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 3
MGA Zone 50 420380 **mE** 6990581 **mN** 116.196054 **E** -27.205108 **S**
Habitat Hardplain plain shallow soil
Soil Brown laom with 20% gravel
Vegetation Low open shrubland of *Eremophila fraseri* and *Ptilotus obovatus* with sparsely scattered to scattered Mulga and scattered *Acacia grasbyi*

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		80	
Acacia pteraneura	+		200	SR57-3
Eremophila forrestii	+		130	
Eremophila fraseri	2		150	
Erodium crinitum	+		10	
Hakea preissii	+		120	SR57-2
Maireana planifolia	+		50	
Ptilotus obovatus	1		30	
Ptilotus polakii	+		40	
Ptilotus schwartzii	+		30	
Sclerolaena densiflora	+		20	
Senna artemisioides subsp. x sturtii	+		100	SR57-1
Sida calyxhymenia	+		70	
Solanum lasiophyllum	+		40	

Site SKAR58

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 3
MGA Zone 50 420227 **mE** 6990778 **mN** 116.194522 **E** -27.203321 **S**
Habitat plain at base of lateritic rise
Soil Red-brown loam
Vegetation *Acacia pteraneura* scattered low trees over *Thryptomene decussata* open shrubland over *Eremophila platycalyx subsp. platycalyx* scattered low shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		350	SQ4-1
Acacia scleroclada	1-2		60	SBGC149
Eremophila fraseri	+		45	
Eremophila jucunda subsp. jucunda	+		40	SQ26-12
Eremophila platycalyx subsp. platycalyx	+		70	SR58-1
Ptilotus polystachyus	+		30	
Ptilotus schwartzii	+		30	
Stenopetalum anfractum	+		25	SQ4-13
Thryptomene decussata	2-3		180	SBGC8

Site SKAR59

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 3
MGA Zone 50 420607 **mE** 6990263 **mN** 116.198325 **E** -27.207992 **S**
Habitat Mulga flow line
Soil Loam ? Shrew
Vegetation Low mulga woodland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	15		400	SR59-1
Acacia tetragonophylla	1		300	
Cheilanthes sieberi subsp. sieberi	+		10	SR59-2
Eremophila fraseri	1		100	
Eremophila jucunda subsp. jucunda	+		100	SABGC95
Isoetopsis graminifolia	+		10	SQ3-11
Lepidium oxytrichum	+		20	
Maireana planifolia	+		100	
Sclerolaena densiflora	+		10	
Sida calyxhymenia	1		100	
Spartothamnella teucriiflora	+		100	
Spergula pentandra	+		20	SQ1-8
Tetragonia cristata	+		50	

Site SKAR60

Described by BRM **Date** 10/10/2016 **Type**
Location Pit 2
MGA Zone 50 421190 **mE** 6992836 **mN** 116.204376 **E** -27.184798 **S**
Habitat Plain
Soil Red-brown sand
Vegetation *Acacia ramulosa*, *Acacia murrayana*tall shrubland over herbland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia murrayana	+		280	SR40-1
Acacia ramulosa var. linophylla	10-11		400	SQ20-1
Eriachne helmsii	+		40	
Erodium crinitum	+		15	SQ4-18
Monachather paradoxus	+		30	SQ32-3
Ptilotus polystachyus	+		20	
Senna helmsii	+		120	
Solanum lasiophyllum	+		50	
Thyridolepis multiculmis	+		30	SQ20-9
Thysanotus manglesianus/patersonii	+		130	

Site SKAR61

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 3
MGA Zone 50 420291 **mE** 6990340 **mN** 116.195139 **E** -27.207279 **S**
Habitat Sandy bank in hardpan plain
Soil Sandy loam with fine gravel
Vegetation Low mulga woodland with grass and herb understorey
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	15		600	SR61-1
Acacia ramulosa	+		200	
Acacia scleroclada	+		100	SR61-2
Calandrinia polyandra	5		30	SQ1-24
Dysphania rhadinostachya	+		20	
Eremophila fraseri	+		180	
Eriachne helmsii	1		50	
Maireana villosa	+		30	
Ptilotus obovatus	+		30	
Rhagodia eremaea	+		100	
Solanum lasiophyllum	+		50	
Spartothamnella teucriiflora	+		80	
Tetragonia cristata	+		100	

Site SKAR62

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 2
MGA Zone 50 421102 **mE** 6992546 **mN** 116.203469 **E** -27.187411 **S**
Habitat Plain
Soil Red brown loamy sand
Vegetation *Acacia pteraneura* scattered low trees over *Acacia ramulosa* tall open shrubland
Veg Condition Good
Fire Age >12 years
Notes 3 % Cover Leaf Litter, 95 % Cover Bare Ground

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	+		400	SQ4-1
Acacia ramulosa var. linophylla	5-7		350	SQ20-1
Acacia tetragonophylla	+		90	
Maireana villosa	4		20	SR62-1
Ptilotus obovatus	+		45	
Ptilotus polystachyus	+		30	
Ptilotus schwartzii	+		30	
Senna artemisioides subsp. petiolaris	+		80	SQ4-7

Site SKAR63

Described by AM **Date** 10/10/2016 **Type** R
Location Pit Area 3
MGA Zone 50 420074 **mE** 6990402 **mN** 116.192952 **E** -27.206706 **S**
Soil Brown loam
Vegetation Open *Acacia aptaneura* shrubland with an understorey of *Hemigenia tysonii* to the west again with more mulga, *Acacia grasbyi* and *Acacia aptaneura*
Veg Condition Good
Fire Age 8-12
Notes Disturbance: Historic grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	1		300	SR63-2
Acacia ramulosa	+		200	
Dodonaea lanceolata				
Eragrostis eriopoda	+		30	
Eremophila forrestii	+		100	
Eremophila latrobei	+		100	
Erodium crinitum	1		30	
Gunniopsis rodwayi	+		10	
Hemigenia tysonii	5		40	SR63-1
Ptilotus polakii	+		30	
Ptilotus schwartzii	1		300	
Senna charlesiana	+		50	SABC90
Sida calyxhymenia	+		100	
Stenopetalum anfractum	+		30	SQ3-14

Site SKAR64

Described by BRM **Date** 10/10/2016 **Type** R
Location Gentle SE facing sloipe of low lateritic ridge
MGA Zone 50 421455 **mE** 6992653 **mN** 116.207040 **E** -27.186465 **S**
Soil Red-brown sandy loam
Rock Type Gravel and laterite
Vegetation *Acacia pteraneura* low shrubland
Veg Condition Good
Fire Age >12 years
Notes 1 % Cover Twigs, 99 % Cover Bare Ground

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura	2-3			SQ4-1
Eremophila fraseri	+		180	
Hakea recurva subsp. arida	+		140	SR56-3
Maireana planifolia	+		35	
Ptilotus obovatus	+		35	
Ptilotus schwartzii	+		30	
Rhagodia eremaea	+		60	
Sclerolaena densiflora	+		15	
Sclerolaena gardneri	+		20	SQ22-3
Senna sp. Austin (A. Strid 20210)	+		160	SQ8-3
Sida ectogama	+		40	SR42-3

Site SKAR65

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 3
MGA Zone 50 420060 **mE** 6990821 **mN** 116.192838 **E** -27.202923 **S**
Habitat Low 3m high gravel rise gentle
Soil Gravel 90% cover laterite
Rock Type Exposed on north side
Vegetation High open mulga shrubland
Veg Condition Good
Fire Age 8-12
Notes Disturbance: old grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		200	
Acacia incurvaneura	5		600	SR65-1
Acacia ramulosa	1		300	
Eremophila latrobei	1		100	
Hemigenia tysonii	+		30	SABC85
Ptilotus schwartzii	+		30	
Senna charlesiana	1		100	SABC90
Solanum lasiophyllum	+		30	
Thryptomene decussata	2		200	SR65-2

Site SKAR66

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 2
MGA Zone 50 421629 **mE** 6992524 **mN** 116.208788 **E** -27.187640 **S**
Habitat Plain
Soil Gravelly red-brown loam
Rock Type Lateric gravel
Vegetation Mulga low open woodland over *Eremophila fraseri* scattered shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Aristida contorta	+		400	SR4-1
Eremophila forrestii subsp. forrestii	+		90	
Eremophila fraseri	1		180	
Ptilotus obovatus	+		30	
Ptilotus polystachyus	+		30	
Senna artemisioides subsp. helmsii	+		60	
Sida ectogama	+		35	SR42-3

Site SKAR67

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 2
MGA Zone 50 421091 **mE** 6992802 **mN** 116.203375 **E** -27.185099 **S**
Habitat Flat plain with 50% laterite
Soil Brown loam
Rock Type Outcropping hardpan occasionally
Vegetation High open shrubland of Mulga over a low open woodland of *Ptilotus schwartzii*
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	3		600	SR67-1
Acacia ramulosa	1		400	
Eremophila latrobei	+		100	
Eriachne helmsii	+		40	
Maireana planifolia	+			
Maireana thesioides	+		50	
Ptilotus schwartzii	5		30	
Sclerolaena densiflora	+		10	
Senna artemisioides subsp. x sturtii	+		160	SR57-1
Sida calyxhymenia	+		100	
Stenopetalum anfractum	+		30	SQ3-14
Thryptomene decussata	1		130	SQ21-2

Site SKAR68

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 2
MGA Zone 50 421559 **mE** 6992898 **mN** 116.208105 **E** -27.184259 **S**
Habitat Gentle east facing lower slope with granite outcropping
Soil Sandy loam
Rock Type Granite
Vegetation Mulga scattered low trees over *Eremophila fraseri subsp. fraseri* scattered tall shrubs over *Senna artemioides subsp. helmsii* open shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	+		160	
Acacia tetragonophylla	+		90	
Actinobole oldfieldiana	+		2	SQ8-18
Aristida contorta	+		400	SR4-1
Eremophila fraseri subsp. fraseri	1-2		180-220	SR68-1
Ptilotus obovatus	+		40	
Ptilotus polystachyus	+		40	
Senna artemisioides subsp. helmsii	2-3		110	

Site SKAR69

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 2
MGA Zone 50 421018 **mE** 6992605 **mN** 116.202625 **E** -27.186874 **S**
Habitat Grove, received run off from bare plain
Soil Loam with fine lateritic shrew
Vegetation Low open Mallee forest which is very bare underneath
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height
Acacia ramulosa	+		200
Dysphania rhadinostachya	+		30
Enchylaena tomentosa	+		30
Eremophila forrestii	+		200
Eremophila latrobei	1		130
Eremophila simulans subsp. megacalyx	+		160
Maireana villosa	+		30
Psydrax suaveolens	+		400
Ptilotus obovatus	+		20
Ptilotus polystachyus	+		30
Ptilotus schwartzii	+		30
Senna charlesiana	+		100
Sida calyxhymenia	1		130
Solanum lasiophyllum	+		40
Spartothamnella teucriiflora	+		60
Tetragonia cristata	+		10

Site SKAR7

Described by AM **Date** 6/10/2016
Location Boolardy to Kalli Road
Habitat Clay pan
Soil Clay
Vegetation Open grassland of Eriachne flaccida
Veg Condition Very Good
Fire Age 8-12
Notes Disturbance: Grazing

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Cyperus concinnus	+		15	SR7-1
Eriachne flaccida	11		20	
Menkea villosula	+		10	SR1-3
Ptilotus helipteroides	+		20	
Ptilotus obovatus	+		1	

Site SKAR70

Described by BRM **Date** 10/10/2016 **Type**
Location Pit 2
MGA Zone 50 421484 **mE** 6993011 **mN** 116.207355 **E** -27.183235 **S**
Habitat Low laterite ridge breakaway
Soil Sandy loam (gravelly)
Vegetation *Acacia aneura* scattered low trees over *Thryptomene decussata* open shrubland over *Pilotheca sp., Hemigenia tysonii* low open shrubland
Veg Condition Good
Fire Age >12 years
Notes
SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	1		330	SR70-1
Acacia ramulosa var. linophylla	+		180	SR70-2
Acacia umbraculiformis	+		280	SBGC77
Bursaria occidentalis	+		35	SBGC72
Eremophila fraseri subsp. fraseri	4		300	SQ10-1
Eremophila latrobei subsp. latrobei	+		80	
Eremophila simulans	+		110	
Grevillea deflexa	+		50	SQ10-3
Hemigenia tysonii	+		35	SBGC150
Philotheca sp.	+		50	SBGC83
Ptilotus schwartzii	+		30	
Stylidium longibracteatum	+		20	SBGC121
Thryptomene decussata	2-4		180	SBGC8

Site SKAR71

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 2
MGA Zone 50 420600 **mE** 6992942 **mN** 116.198427 **E** -27.183807 **S**
Habitat Gently sloping plain with lateritc, quartz shrew. 40% shrew
Soil Red brown loam
Rock Type Quartz and laterite - no outcrop
Vegetation Scattered low Mulga woodland over a low shrbland of *Ptilotus schwartzii*
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	2		400	SR71-1
Arthropodium dyeri	+		50	
Austrostipa elegantissima	+		40	
Dysphania rhadinostachya	+		20	
Eremophila forrestii	+		20	
Maireana platycarpa	+		60	
Monachather paradoxus	+		30	
Ptilotus obovatus	1		40	
Ptilotus polakii	+		50	
Ptilotus schwartzii	11		30	
Sida calyxhymenia	+		100	
Solanum lasiophyllum	+		80	
Stenopetalum anfractum	2		30	SQ3-14

Site SKAR72

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 2
MGA Zone 50 421700 **mE** 6993283 **mN** 116.209553 **E** -27.180792 **S**
Habitat Plain below laterite ridge
Soil Sandy loam
Vegetation *Acacia pteraneura* low open woodland over *Acacia ramulosa, Acacia cuthbertsonii* tall shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia cuthbertsonii subsp. cuthbertsonii	1-2		280	SR72-1
Acacia pteraneura	2-3		450	SQ4-1
Acacia ramulosa	5-6		350	
Acacia tetragonophylla	+		230	
Eremophila fraseri subsp. fraseri	+		280	SQ10-1
Hakea recurva subsp. arida	+		70	SR56-3
Ptilotus schwartzii	+		35	
Senna artemisioides subsp. helmsii	+		40	SQ10-2
Thryptomene decussata	+		180	SBGC8

Site SKAR73

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 2
MGA Zone 50 420628 **mE** 6993229 **mN** 116.198728 **E** -27.181218 **S**
Habitat Low (5m high laterite ridge)
Soil Rock
Rock Type Laterite 100% shrew and outcrop
Vegetation Scattered low mulga trees over an open shrubland
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		500	
Acacia caesaneura	7		150	SQ21-1
Acacia ramulosa	+		150	
Eremophila latrobei	+		100	
Eremophila latrobei subsp. latrobei	+		100	SR73-1
Hibiscus gardneri	+		150	SAGC51
Maireana villosa	+		30	
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Scaevola spinescens	+		20	
Sida calyxhymenia	+		60	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		50	
Solanum cleistogamum	+		10	
Stenopetalum anfractum	+		30	SQ3-14

Site SKAR74

Described by BRM **Date** 10/10/2016 **Type** R
Location Pit 2
MGA Zone 50 421815 **mE** 6993220 **mN** 116.210710 **E** -27.181367 **S**
Habitat Plain granite outcrop
Rock Type Quartz pebbles/cobbles
Vegetation *Acacia eremaea* scattered tall shrubs over *Senna sp. Austin* scattered shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia eremaea	+		210	
Aristida contorta	+		20	
Maireana carnosa	+		15	SQ12-17
Maireana planifolia	+		30	SR74-1
Ptilotus obovatus	+		40	
Sclerolaena densiflora	+		15	SQ4-24
Senna sp. Austin (A. Strid 20210)	+		150	SQ4-8
Solanum lasiophyllum	+		40	

Site SKAR75

Described by AM **Date** 10/10/2016 **Type** R
Location Pit area 2
Habitat Stripped margin behind breakaway
Soil Lateritic gravel
Rock Type Lateritic exposed
Vegetation Open shrubland of *Thryptomene decussata* with scattered low mulga
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		400	
Calytrix sp. Paynes Find	+		50	SR75-1
Eremophila latrobei	+		100	
Eriachne mucronata	+		20	
Grevillea deflexa	+		80	
Maireana villosa	+		30	
Philotheca brucei	+		100	
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		100	
Solanum lasiophyllum	+		40	
Stachystemon intricatus	+		50	SR75-2
Thryptomene decussata	3		200	SQ21-2

Site SKAR76

Described by BRM **Date** 10/10/2016 **Type**
Location Pit area 9
MGA Zone 50 403204 **mE** 6976028 **mN** 116.021491 **E** -27.335375 **S**
Habitat Gentle north facing slope of low ridge
Soil Red-brown sandy loam
Rock Type Laterite gravel
Vegetation *Grevillea sp.* scattered low shrubland over *Acacia ramulosa* tall open shrubland to tall shrubland over *Eremophila sp, Eremophila forrestii subsp. forrestii* scattered shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa				
Eremophila forrestii subsp. forrestii				
Eremophila glutinosa				SR76-3
Grevillea nematophylla subsp. supraplana				SR76-2

Site SKAR77

Described by AM **Date** 11/10/2016 **Type** R
Location Pit area 7
MGA Zone 50 401234 **mE** 6975981 **mN** 116.001575 **E** -27.335658 **S**
Habitat Flat-floodpan plain with dense fine gravel
Soil Dark red gravel
Vegetation High open shrubland of *Acacia gasbyii* with low scattered shrubs
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	4		300	
Acacia pteraneura	1		300	SR77
Acacia ramulosa	1		300	
Acacia tetragonophylla	1		300	
Calandrinia translucens	+		10	SQ3-16
Cephalipterum drummondii	+		30	
Eremophila forrestii	+		100	
Eremophila fraseri	+		100	
Eremophila latrobei	+		100	
Eremophila platycalyx	+		100	
Erodium crinitum	1		20	
Gunniopsis rodwayi	+		1	
Isoetopsis graminifolia	+		10	SQ3-11
Maireana villosa	+		40	
Ptilotus helipteroides	+		20	
Ptilotus obovatus	+		50	
Ptilotus polakii	+		30	
Sclerolaena densiflora	+		20	
Senna artemisioides subsp. helmsii	+		50	
Sida calyxhymenia	+		100	
Solanum lasiophyllum	+		50	
Stenopetalum anfractum	+		30	SQ3-14

Site SKAR78

Described by BRM **Date** 11/10/2016 **Type** R
Location Pit area 7
MGA Zone 50 403591 **mE** 6975711 **mN** 116.025378 **E** -27.338264 **S**
Habitat Gentle south facing slope of low ridge
Soil Sandy loam
Rock Type Cobbles - quarts and laterite
Vegetation *Acacia macraneura* scattered tall shrubs over *Philotheca* sp. scattered low shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aulacophylla	1-2		250	SR78-2
Acacia macraneura	1		230	SR78-1
Acacia ramulosa var. linophylla	+		160	SQ20-1
Dodonaea petiolaris	+		40	SBGC177
Goodenia occidentalis	+		20	SQ20-16
Lobelia winfridae	+		12	SBGC10
Philotheca sp.	+		40	SR78-3
Ptilotus schwartzii	+		30	
Stylidium longibracteatum	+		25	SBGC121
Thryptomene decussata	1		150	SBGC8

Site SKAR79

Described by AM **Date** 11/10/2016 **Type** R
MGA Zone 50 401498 **mE** 6975658 **mN** 116.004218 **E** -27.338593 **S**
Habitat Ground rise 5m with laterite outcrop
Soil Gravel
Rock Type Laterite
Vegetation High *Acacia ramulosa* shrubland
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1		200	
Acacia incurvaneura	1		400	SR79-3
Acacia pruinocarpa	+		300	SR79-4
Acacia ramulosa	9			
Aluta aspera subsp. hesperia	+		100	SR79-5
Calandrinia translucens	+		10	SQ3-16
Grevillea berryana	+		400	SR79-2
Hemigenia botryphylla	+		50	SR79-1
Lobelia heterophylla	+		30	SQ25-3
Monachather paradoxus	+		300	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		50	
Solanum lasiophyllum	+		40	
Spartothamnella teucriiflora	+		50	
Stenopetalum anfractum	+		30	SQ3-14
Thryptomene decussata	+		200	SQ21-2

Site SKAR80

Described by BRM **Date** 11/10/2016 **Type** R
Location Pit area 7
Habitat Gentle west facing upper slope of low ridge
Soil Red loamy sand
Vegetation *Acacia ramulosa, Acacia umbraculiformistall* open shrubland, *Thryptomene decussata* tall shrubland
Veg Condition Good
Fire Age >12 years

Notes
SPECIES LIST:

Name	Cover	C Class	Height	Specimen Notes
Acacia pteraneura				SQ4-1
Acacia ramulosa var. linophylla	7-8		230	SQ20-1
Acacia umbraculiformis	1		280	SR76-8
Eremophila forrestii subsp. forrestii	+		60	
Eremophila glutinosa	1		180	SR76-3
Eremophila latrobei var. latrobei	+		60	
Myriocephalus guerinae				SQ20-10
Ptilotus schwartzii	+		30	
Thryptomene decussata	1-2		200	SBGC8

Site SKAR8

Described by BRM **Date** 11/10/2016 **Type** R
Location Pit Area 7
MGA Zone 50 403064 **mE** 6975895 **mN** 116.020066 **E** -27.336565 **S**
Habitat Gentle west facing upper slope of low ridge
Soil Red loamy sand
Vegetation *Acacia ramulosa*, *Acacia umbraculiformis* and *Thryptomene decussata* tall shrubland
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pteraneura				SQ4-1
Acacia ramulosa var. linophylla	7-8		230	SQ20-1
Acacia umbraculiformis	1		280	SR76-8
Eremophila forrestii subsp. forrestii	+		60	
Eremophila glutinosa	1		180	SR76-3
Ptilotus schwartzii	+		30	
Thryptomene decussata	1-2		190-210	SBGC8

Site SKAR81

Described by AM **Date** 11/10/2016 **Type** R
Location Pit area 7
MGA Zone 50 402047 **mE** 6975547 **mN** 116.009758 **E** -27.339634 **S**
Habitat Black back slope from laterite ridge
Soil Fine lateritic gravel and red loam
Vegetation High open *Acacia ramulosa* shrubland with little understorey and scattered mulga
Veg Condition Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia incurvaneura	+		500	SR81-1
Acacia pruinocarpa	6		500	
Acacia ramulosa	6		300	
Grevillea berryana	+		300	SR79-2
Hemigenia botryphylla	+		100	SR79-1
Maireana convexa	+		20	
Monachather paradoxus	+		20	
Podotheca gnaphalioides	+		20	SR81-2
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Senna artemisioides subsp. petiolaris	+		30	SQ3-20
Sida calyxhymenia	+		100	
Solanum lasiophyllum	+		50	
Stenopetalum anfractum	+		20	SQ3-14

Site SKAR82

Described by BRM **Date** 11/10/2016 **Type** R
MGA Zone 50 401477 **mE** 6977994 **mN** 116.004194 **E** -27.317505 **S**
Habitat Crest of broad rise
Soil Red-brown sandy loam
Rock Type na (lateritic gravels)
Vegetation Mulga scattered low trees over *Acacia ramulosa* tall open shrubland over *Eremophila glutinosa* scattered shrubs over *Eremophila forrestii subsp. forrestii* scattered low shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aptaneura	1		400	SR82-1
Acacia pruinocarpa	1-2		480	
Acacia ramulosa	7-8		280	
Acacia tetragonophylla	+		140	
Aristida contorta	+		20	
Eremophila forrestii subsp. forrestii	1		70	
Eremophila glutinosa	1		190	SR76-3
Eremophila latrobei	+		40	
Grevillea nematophylla subsp. supraplana	+		650	SR76-2
Monachather paradoxus	+		35	
Ptilotus polystachyus	+		25	
Ptilotus schwartzii	+		30	
Thryptomene sp.	+		180	

Site SKAR83

Described by AM **Date** 11/10/2016 **Type** R
Location Pit area 7
MGA Zone 50 402195 **mE** 6975573 **mN** 116.011256 **E** -27.339410 **S**
Habitat Flow line - no channelised flow
Soil Brown/loam
Vegetation Open *Acacia ramulosa* scrub with shrubland of *Eremophila simulans subsp. megacalyx* understorey and scattered Mulga
Veg Condition Good
Fire Age 8-12
Notes Disturbance: Grazing (hasn't been grazed for a long time)

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia incurvaneura	1		600	SR83-1
Acacia ramulosa	35		4	
Dysphania rhadinostachya	+		10	
Eremophila simulans	20		200	SR83-2
Erodium crinitum	10		20	
Maireana convexa	+		130	
Maireana villosa	+		40	
Monachather paradoxus	+		30	
Ptilotus helipteroides	+		10	
Ptilotus polakii	+		40	
Rhagodia eremaea	+		130	
Senna artemisioides subsp. petiolaris	+		30	SQ3-20
Senna sp. Meekatharra (E. Bailey 1-26)	+		150	
Solanum lasiophyllum	+		20	

Site SKAR84

Described by BRM **Date** 11/10/2016 **Type** R
MGA Zone 50 401689 **mE** 6977805 **mN** 116.006321 **E** -27.319226 **S**
Habitat Broad flat plain
Soil Red brown loam with gravel mantle
Rock Type na (lateric gravel)
Vegetation *Acacia pteraneura* scattered low trees *over Acacia grasbyi*, *Acacia tetragonophylla* tall shrubland, *Eremophila platycalyx* scattered shrubs over *Senna artemisioides subsp. helmsii* scattered low shrubs over *Schoenus nanus* very open grassland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	7-8		230	
Acacia pteraneura	1		350	SQ4-1
Acacia tetragonophylla	2-3		240	
Eremophila forrestii subsp. forrestii	+		80	SBGC188
Eremophila platycalyx	1		120-240	
Eremophila platycalyx subsp. platycalyx	+		80	SR84-2
Lobelia winfridae	+		10	SBGC10
Ptilotus helipteroides	+		20	
Ptilotus obovatus var. obovatus	+		35	
Scaevola spinescens	+		110	
Schoenus nanus	1		5	SR84-1
Senna artemisioides subsp. helmsii	+		80	
Sida ectogama	+		45	SR42-3

Site SKAR85

Described by AM **Date** 11/10/2016 **Type** R
Location Pit 4 Wooleen
MGA Zone 50 401184 **mE** 6978325 **mN** 116.001259 **E** -27.314496 **S**
Habitat Gravel shallow slope
Soil Loam
Rock Type Not seen
Vegetation Low open *Acacia pruinocarpa* woodland with *Acacia ramulosa* understorey
Veg Condition Very good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pruinocarpa	2		10	
Acacia ramulosa	5		4	
Acacia tetragonophylla	+		20	
Austrostipa elegantissima	+		50	
Austrostipa variabilis	+		30	
Calandrinia translucens	+		10	SQ3-16
Eremophila forrestii	+		100	
Lobelia heterophylla	+		20	SQ25-3
Maireana convexa	+		1	
Maireana pentatropis	+			
Monachather paradoxus	+		30	
Ptilotus nobilis	+		20	
Ptilotus obovatus	+		30	
Ptilotus polakii	+		30	
Rhagodia eremaea	+		100	
Scaevola spinescens	+		120	
Sclerolaena densiflora	+		20	
Sida calyxhymenia	+		80	

Site SKAR86

Described by BRM **Date** 11/10/2016 **Type** R

MGA Zone 50 402297 **mE** 6977819 **mN** 116.012467 **E** -27.319143 **S**

Habitat Flow line

Soil Red-brown loam

Vegetation *Acacia pteraneura* low open woodland over *Acacia ramulosa* tall shrubland over *Sida sp.* over *Aristida contorta* grassland

Veg Condition Good

Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		40	SR86-1
Acacia pteraneura	6-7		600	SQ4-1
Acacia ramulosa var. linophylla	12		330	SR76-1
Aristida contorta	70		20	
Cephalipterum drummondii	+		35	SQ18-8
Eremophila forrestii subsp. forrestii	+		60	
Eremophila latrobei var. latrobei	+		60	
Monachather paradoxus	+		40	
Ptilotus macrocephalus	+		40	SQ12-3
Ptilotus polystachyus	+		50	
Rhodanthe maryonii	1		20	SQ24-27?
Sida ectogama	+		140	SR42-3

Site SKAR87

Described by AM **Date** 11/10/2016 **Type** R
Location Pit area Wooleen
MGA Zone 50 401184 **mE** 6978325 **mN** 116.001259 **E** -27.314496 **S**
Habitat Gravel shallow slope
Soil Loam
Vegetation Low open *Acacia preissiana* woodland with *Acacia ramulosa* understorey
Veg Condition Very Good
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia pruinocarpa	2		1000	
Acacia ramulosa	5		400	
Austrostipa variabilis	+		30	
Calandrinia translucens	+		10	SQ3-16
Lobelia heterophylla	+		20	SQ25-3
Maireana convexa	+		100	
Ptilotus nobilis	+		20	
Ptilotus polakii	+		30	
Rhagodia eremaea	+		100	
Scaevola spinescens	+		120	
Sclerolaena densiflora	+		20	
Sida calyxhymenia	+		80	
Solanum lasiophyllum	+		50	

Site SKAR88

Described by BRM **Date** 11/10/2016 **Type** R
Location Pit area 4
MGA Zone 50 400891 **mE** 6977793 **mN** 115.998255 **E** -27.319277 **S**
Habitat Chert outcropping (linear)
Soil Red l oam
Rock Type Chert
Vegetation *Thryptomene decussata* open shrubland over Myrtaceous low shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Aluta aspera subsp. hesperia	10-20		70	SR88-1
Ptilotus polystachyus	+		20	
Thryptomene decussata	2-3		180	SBGC8

Site SKAR89

Described by AM **Date** 11/10/2016 **Type** R
Location Pit area 4
MGA Zone 50 401821 **mE** 6978089 **mN** 116.007678 **E** -27.316672 **S**
Habitat Flat gravelly plain
Soil Loam
Vegetation High open shrubland of *Acacia grasbyi* with *Thryptomene decussata* understorey
Veg Condition Excellent
Fire Age 8-12

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	1		300	
Acacia ramulosa	1		300	
Acacia umbraculiformis	+		150	
Eremophila latrobei	+		100	
Eremophila latrobei subsp. latrobei	7		200	SQ21-3
Hemigenia botryphylla	+		50	SR79-1
Monachather paradoxus	+		50	
Ptilotus schwartzii	+		30	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+		50	
Thryptomene decussata				

Site SKAR9

Described by AM **Date** 6/10/2016 **Type** R
Location Boolardy to Kalli Road
MGA Zone 50 468859 **mE** 7025921 **mN** 116.686438 **E** -26.887999 **S**
Habitat Flood plain
Soil Red/orange hard clay
Vegetation High shrubland of *Acacia victoria* and scattered low mulga trees
Veg Condition Very Poor
Fire Age 8-12
Notes Disturbance: Grazing and floods

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	1		500	Mulga
Acacia tetragonophylla	2		200	
Acacia victoriae	8		300	
Aristida contorta	+		10	
Atriplex semibaccata	+		10	
Calotis multicaulis	+		20	SQ7-10
Dichanthium sericeum subsp. humilius	+		10	SR9-4
Eremophila jucunda subsp. jucunda	+		80	SR9-1
Erodium crinitum	+		10	
Salsola australis	+		10	
Scaevola spinescens	+		130	
Sclerolaena densiflora	+		10	
Sclerolaena diacantha	+		20	
Senna artemisioides subsp. helmsii	3		150	
Senna sp. Meekatharra (E. Bailey 1-26)	1		130	
Streptoglossa cylindriceps	+		10	SR9-2
Tetragonia cristata	+		10	

Site SKAR90

Described by BRM **Date** 12/10/2016 **Type** R
MGA Zone 50 415726 **mE** 6999743 **mN** 116.149692 **E** -27.122122 **S**
Habitat Crest of low lateritie ridge
Soil Red brown sand
Rock Type Laterite
Vegetation *Thryptomene decussata* tall open shrubland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia ramulosa	+		450	
Acacia tetragonophylla	+		110	
Calandrinia polyandra	+		15	SR90-1
Cymbopogon ambiguus	+		30	SR90-4
Dodonaea adenophora	+		30	SBGC199
Duperreya sericea	+		120	SBGC201
Eriachne pulchella	+		5	
Erodium crinitum	+		15	SQ4-18
Grevillea deflexa	+		50	SBGC196
Maireana planifolia	+		30	SR90-3
Maireana radiata	+		30	SR90-2
Philotheca brucei subsp. brucei	+		160	SBGC200
Ptilotus obovatus	+		30	
Ptilotus polystachyus	+		30	
Ptilotus schwartzii	+		35	
Scaevola spinescens	+		80	
Senna helmsii	+		40	
Sida ectogama	+		35	
Solanum lasiophyllum	+		30	
Tetragonia cristata	+		20	SQ22-7
Thryptomene decussata	7-8		240	SBGC8

Site SKAR91

Described by AM **Date** 12/10/2016 **Type** R
Location Pit Area 6
MGA Zone 50 416076 **mE** 6999758 **mN** 116.153224 **E** -27.122008 **S**
Habitat Flow line
Soil Brown loam
Vegetation Low mulga woodland with an understorey of *Acacia tetragonophylla* and *Acacia ramulosa*. Patches along the flowline.

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Abutilon cryptopetalum	+		80	
Acacia pteraneura	12		6	SR91-1
Acacia ramulosa	1		30	
Acacia tetragonophylla	2		4	
Crassula colorata	+		10	
Digitaria brownii	+		50	
Eragrostis lanipes	+		30	
Eremophila fraseri	+		50	
Maireana villosa	+		30	
Ptilotus obovatus	+		40	
Rhodanthe maryonii	+		10	SQ7-8
Rhyncharrhena linearis	+		50	
Sclerolaena densiflora	+		20	
Solanum lasiophyllum	+		30	
Stenopetalum anfractum	+		30	SQ3-14
Tetragonia cristata	+		20	

Site SKAR92

Described by BRM **Date** 12/10/2016 **Type** R
Location Pit area 6
MGA Zone 50 415666 **mE** 6999560 **mN** 116.149074 **E** -27.123771 **S**
Habitat Crest of low laterite ridge
Soil Laterite (>% outcropping) gravel
Vegetation *Acacia pteraneura* scattered low trees to low open woodland over *Senna sp. Austin* scattered shrubs
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		170	
Acacia pteraneura	2-3		450	SR94-1
Aristida contorta	+		20	
Lepidium oxytrichum	+		15	SQ4-46
Maireana thesioides	+		30	SQ8-21
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Rhagodia eremaea	+		170	
Scaevola spinescens	+		50	
Senecio glomeratus	+		15	SQ24-24
Senna artemisioides subsp. helmsii	+		70	
Senna sp. Austin (A. Strid 20210)	1		140	SQ4-8
Tetragonia cristata	+		15	SQ22-7

Site SKAR93

Described by AM **Date** 12/10/2016 **Type** R
Location Pit area 6
MGA Zone 50 415908 **mE** 6999665 **mN** 116.151523 **E** -27.122837 **S**
Habitat Wandarrie sand plain
Soil Sandy surfaced loam
Vegetation High open scattered of *Acacia ramulosa* with scattered mulga and diverse grasses responding to death of *Acacia ramulosa* after fire
Veg Condition Very Poor
Fire Age 4-8
Notes Disturbance: fire

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	+		600	
Acacia ramulosa	+		150	
Acacia tetragonophylla	+		80	
Eragrostis laniflora	+		30	
Eragrostis sp. Erect spikelets (P.K. Latz 2122)	+		30	
Eriachne helmsii	+		40	
Erodium crinitum	+		20	
Lepidium oxytrichum	+		10	
Monachather paradoxus	1		30	
Ptilotus obovatus	+		40	
Ptilotus polakii	11		40	
Rhagodia eremaea	+		100	
Solanum cleistogamum	+		10	
Solanum lasiophyllum	+		30	
Stenopetalum anfractum	+		10	SQ3-14
Tetragonia cristata	+		20	
Thysanotus manglesianus/patersonii	+		10	SR3-2

Site SKAR94

Described by BRM **Date** 12/10/2016 **Type** R
MGA Zone 50 415454 **mE** 6999724 **mN** 116.146946 **E** -27.122277 **S**
Habitat Very low rise over plain
Soil Red brown sand
Rock Type quartz cobles
Vegetation *Acacia pteraneura* scattered low trees to low open woodland over S*enna sp. Austin* scattered shrubs
Veg Condition Good
Fire Age >12 years
Notes 2 % Cover Twigs, 98 % Cover Bare Ground

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		190	
Acacia pteraneura	2-3		450	SR94-1
Aristida contorta	+		20	
Gunniopsis rodwayi	+		4	SQ4-20
Lepidium oxytrichum	+		15	SQ4-46
Maireana thesioides	+		30	SQ8-21
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus obovatus	+		40	
Ptilotus schwartzii	+		30	
Rhagodia eremaea	+		170	
Scaevola spinescens	+		50	
Sclerolaena densiflora	+		15	SQ4-24
Senna artemisioides subsp. helmsii	+		70	
Senna sp. Austin (A. Strid 20210)	1		140	SQ4-8
Tetragonia cristata	+		15	SQ22-7

Site SKAR95

Described by AM **Date** 12/10/2016 **Type** R
MGA Zone 50 416001 **mE** 6998469 **mN** 116.152379 **E** -27.133640 **S**
Habitat Washplain underlain by hardpan
Vegetation Low scattered shrubs *Eremophila fraseri* with many dead mulga and no juveniles
Notes Disturbance: stock in past

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia tetragonophylla	+		200	
Aristida contorta	+		10	
Brachyscome ciliaris	+		20	
Calotis hispidula	+		10	
Cephalipterum drummondii	+		10	
Eremophila fraseri	1		150	
Erodium crinitum	+		10	
Gunniopsis propinqua	+		<1	SAGC26
Gunniopsis rodwayi	+		1	
Maireana carnosa	+		10	
Ptilotus obovatus	+		30	
Rhyncharrhena linearis	+		130	
Sclerolaena densiflora	+		30	
Stenopetalum anfractum	+		20	SQ3-14
Tetragonia cristata	+		10	

Site SKAR96

Described by BRM **Date** 12/10/2016 **Type** R
MGA Zone 50 415342 **mE** 6999457 **mN** 116.145798 **E** -27.124681 **S**
Soil Red brown sandy loam
Rock Type Granite
Vegetation Mulga low woodland over *Rhodanthe maryonii*, *Tetragonia cristata* very open herbland
Veg Condition Good
Fire Age > 12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia tetragonophylla				
Actinobole oldfieldiana	+		3	SQ24-11
Cheilanthes sieberi subsp. sieberi	+		30	SR96-1
Cheilanthes sieberi subsp. sieberi	+		20	SR96-1
Cymbopogon ambiguus	+		50	SR90-4
Hibiscus gardneri	+		60	SBGC204
Lepidium oxytrichum	1-2		12	SQ4-46
Maireana planifolia	+		35	SR96-4
Nicotiana sp.	+		40	SR96-3
Ptilotus gaudichaudii var. gaudichaudii	+		30	SQ8-36
Ptilotus obovatus	+		40	
Ptilotus polystachyus	+		40	
Rhodanthe maryonii	1-2		30	SQ24-27
Rumex vesicarius	+		45	
Solanum cleistogamum	+		20	SR96-2
Solanum lasiophyllum	+		40	
Tetragonia cristata	3-5		15	SQ4-26
Thryptomene decussata	+		70	SBGCS8

Site SKAR97

Described by AM **Date** 12/10/2016 **Type** R
Location Pit area 6
MGA Zone 50 415814 **mE** 6999074 **mN** 116.150534 **E** -27.128167 **S**
Habitat Slope plain laterite gently sloping
Soil Brown with fine laterite
Vegetation High shrubland of *Acacia ramulosa* and *Acacia aneura*
Veg Condition Good
Fire Age 8-12
Notes Disturbance: grazing

SPECIES LIST:

Name	Cover	C Class	Height
Acacia aneura	5		500
Acacia ramulosa	10		400
Dysphania rhadinostachya	+		20
Eremophila forrestii	+		200
Eremophila latrobei	+		100
Erodium crinitum	+		20
Maireana villosa	+		30
Marsdenia australis	+		100
Ptilotus polakii	1		40
Ptilotus schwartzii	+		30
Rhyncharrhena linearis	+		100
Solanum lasiophyllum	+		80
Tetragonia cristata	+		10

Site SKAR98

Described by BRM **Date** 12/10/2016 **Type** R
MGA Zone 50 415476 **mE** 6999292 **mN** 116.147139 **E** -27.126178 **S**
Habitat Very gentle sout-east facing lower slope of laterite ridge
Soil Red brown sandy loam
Rock Type Some laterite outcropping (22%)
Vegetation *Acacia pteraneura* sparsely scattered low trees over *Thryptomene decussata* scattered tall shrubs
Veg Condition Good
Fire Age >12 years

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia grasbyi	+		150	
Acacia pteraneura	+		160	SQ4-1
Duperreya sericea	+		150	SBGC201
Ptilotus obovatus	+		20	
Ptilotus schwartzii	+		30	
Thryptomene decussata	1		170	SBGC8

Site SKAR99

Described by AM **Date** 12/10/2016 **Type** R
Location Pit area 6
MGA Zone 50 415576 **mE** 6999024 **mN** 116.148129 **E** -27.128604 **S**
Habitat Plain above breakaway with lateritic shrew beihind
Soil Brown loam
Vegetation High open shrubland of *Acacia grasbyi* and *Acacia aneura* above a low scattered shrubland of *Ptilotus schwartzii*

SPECIES LIST:

Name	Cover	C Class	Height	Specimen
Acacia aneura	2		300	
Acacia grasbyi	2		250	
Acacia ramulosa	1		300	
Acacia tetragonophylla	+		130	
Calandrinia translucens	+		10	SQ3-16
Eremophila fraseri	+		160	
Maireana thesioides	+		120	
Ptilotus helipteroides	+		10	
Ptilotus schwartzii	+		30	
Senna artemisioides subsp. helmsii	+		130	
Senna stowardii	+		200	
Sida calyxhymenia	+		100	
Stenopetalum anfractum	+		30	SQ3-14
Thryptomene decussata	+		170	SQ21-2

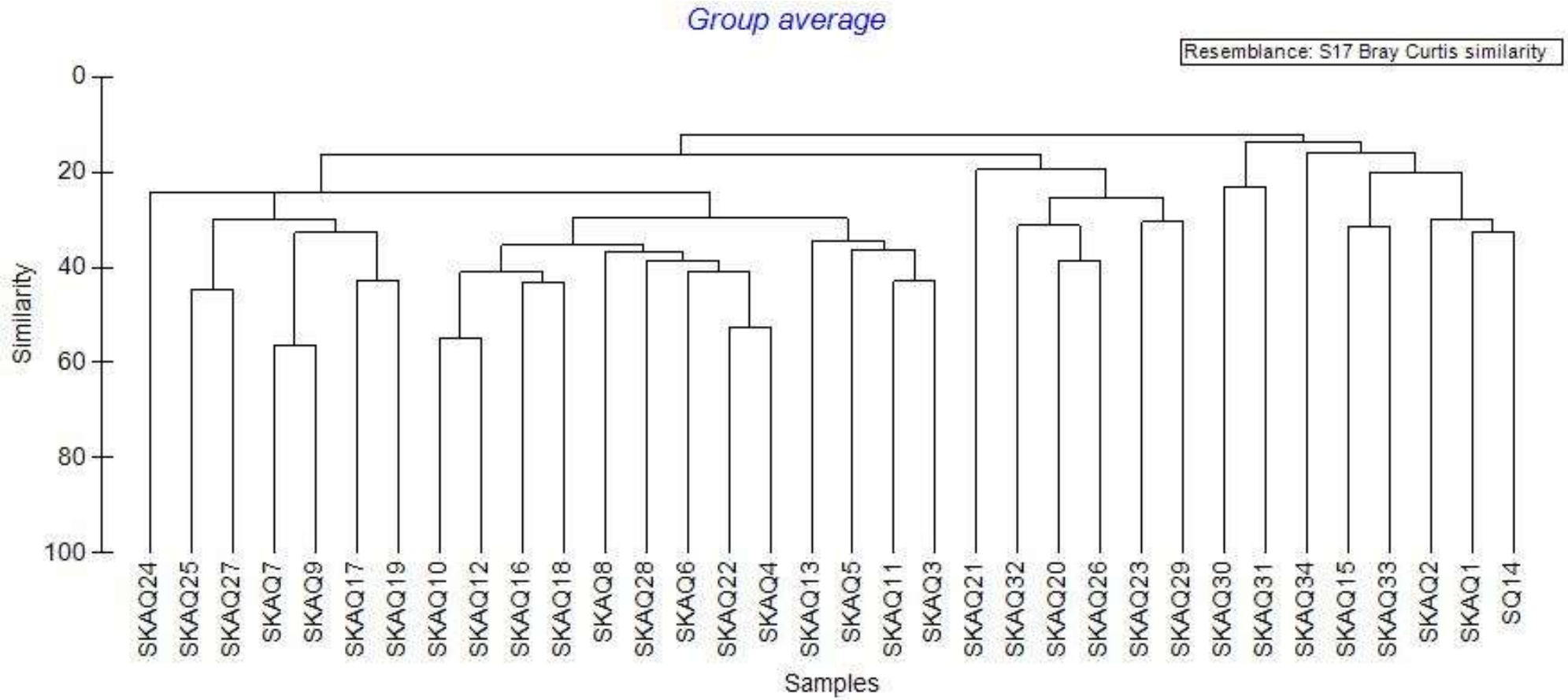
Opportunistic Collections

Name	Specimen
Acacia caesaneura	SBGC230
Acacia craspedocarpa	SAGC16
Acacia incurvaneura	SABC121
Acacia kalgoorliensis	SAGC65
Acacia kempeana	SBGC63
Acacia microcalyx	SBGC36
Acacia ramulosa	
Acacia ramulosa	SABC144
Acacia ramulosa var. linophylla	SAGC1
Acacia scleroclada	SBGC149
Acacia sp.	SBCC38
Acacia umbraculiformis	SQ21-XI
Actinobole drummondianum	SABC100
Actinobole oldfieldiana	SABC117
Alternanthera angustifolia	SBGC231
Aluta aspera subsp. hesperia	SBGC169
Aluta aspera subsp. hesperia	SBGC168
Amyema fitzgeraldii	SBGC100
Androcalva luteiflora	SABC102
Austrostipa scabra	SBGC94
Austrostipa scabra	SBGC202
Avellinia michelii	SBGC30
Bergia perennis subsp. exigua	SABC122
Boerhavia coccinea	SBGC265
Borya sphaerocephala	SBGC89
Brachyscome ciliaris	SBGC208
Brachyscome iberidifolia	SBGC69
Brachyscome iberidifolia	SBGC22
Bursaria occidentalis	
Calandrinia creethae	SABC116
Calandrinia creethae	SBGC261
Calandrinia creethae	SBGC233
Calandrinia papillata	SABC118
Calandrinia polyandra	
Calandrinia primuliflora	SBGC157
Calandrinia pumila	SBGC224
Calandrinia sp. Black angular seeds (A.A. Mitchell PRP 1661)	SBGC232
Calandrinia sp. Black angular seeds (A.A. Mitchell PRP 1661)	
Calandrinia translucens	SBGC152
Calocephalus aervoides	SAGC4
Calotis multicaulis	SBGC15
Calotis multicaulis	SBGC25
Calytrix desolata	SBGC258
Calytrix divergens	SBGC112
Calytrix sp. Paynes Find (F. & J. Hort 1188)	SAGC44
Centipeda thespidioides	SBGC106
Cephalipterum drummondii	
Chorizema racemosum	SBGC229
Chorizema racemosum	SABC112
Citrullus lanatus	SABC145
Cleretum papulosum	BSBGC124
Crassula colorata var. acuminata	
Cratystylis subspinescens	SBGC253
Cullen leucanthum	SABC124
Cullen leucanthum	SBGC4
Cymbopogon ambiguus	SBGC113
Cynanchum floribundum	SAGC59
Cyperus bifax	SABC138
Dianella revoluta var. divaricata	SABC113
Dodonaea pachyneura	SABC103
Dodonaea pachyneura	SBGC213
Dodonaea rigida	SABC98
Dodonaea viscosa subsp. angustissima	SBGC176
Dysphania melanocarpa forma leucocarpa	SABC11
Dysphania melanocarpa forma melanocarpa	SABC111
Eragrostis kennedyae	SBGC109
Eragrostis lanipes	SABC101
Eragrostis pergracilis	SBGC107

Eremophila compacta subsp. compacta	SABC109
Eremophila gilesii subsp. gilesii	SBGC114
Eremophila jucunda subsp. jucunda	SABC95
Eremophila lachnocalyx	SABC9
Eremophila lachnocalyx	SABC95
Eremophila mackinlayi subsp. spathulata	SBGC1
Eremophila macmillaniana	SABC87
Eremophila muelleriana	SABC94
Eremophila oldfieldii subsp. oldfieldii	SAGC71
Eremophila oldfieldii subsp. oldfieldii	SABC150
Eremophila platycalyx subsp. platycalyx	SBGC54
Eremophila sp. Murgoo (S.J.J. Davies s.n. 15/8/1960)	SBGC220
Eremophila spuria	SBGC130
Eriachne flaccida	SBGC105
Erodium crinitum	SBGC29
Erymophyllum ramosum subsp. involucratum	SBGC42
Frankenia setosa	SBGC240
Glycine canescens	SABC133
Goodenia havilandii	SABC123
Goodenia kingiana	SBGC118
Goodenia micrantha	SBGC156
Gunniopsis rodwayi	SBGC7
Gunniopsis septifraga	SABC89
Hakea preissii	SBGC86
Haloragis odontocarpa forma octoforma	SAGC55
Hemichroa diandra	SBGC252
Hemigenia tysonii	SABC104
Hemigenia tysonii	SABC102
Hibiscus burtonii	SBGC165
Hibiscus sp.	SABC61
Hibiscus sp. Gardneri	
Hibiscus sturtii var. grandiflorus	SBGC205
Indigofera australis	SBGC88
Indigofera australis	SBGC236
Indigofera chamaeclada	SBGC104
Isoetopsis graminifolia	SBGC173
Jacksonia arida	SBGC254
Lawrencia squamata	SBGC244
Lepidium muelleri-ferdinandii	SBGC216
Lobelia heterophylla	SBGC190
Lupinus cosentinii	SABC114
Lysiana murrayi	SBGC268
Maireana amoena	SBGC241
Maireana appressa	SAGC52
Maireana carnosa	SABC149
Maireana carnosa	SABC153
Maireana convexa	SAGC25
Maireana glomerifolia	SBGC140
Maireana integra	SBGC55
Maireana luehmannii	SBGC242
Maireana pyramidata	SBGC37
Maireana thesioides	SBGC91
Maireana tomentosa	SBGC221
Maireana triptera	SBGC117
Marsdenia australis	SABC60
Marsdenia australis	
Melaleuca acutifolia	SABC134
Melaleuca acutifolia	SAGC37
Mesembryanthemum nodiflorum	SBGC41
Micromyrtus prochytes	SBGC81
Micromyrtus prochytes	SAGC76
Micromyrtus sulphurea	SBGC175
Micromyrtus sulphurea	SBGC116
Mirbelia rhagodioides	SAGC50
Muelleranthus trifoliolatus	SBGC101
Myriocephalus pygmaeus	SBGC227
Neurachne minor	SBGC135
Paspalidium basicladium	SBGC160
Peplidium sp. C Evol. Fl. Fauna Arid Aust. (N.T. Burbidge & A.	SABC128
Phyllanthus erwinii	SABC80
Pluchea dunlopii	SAGC108
Podotheca gnaphalioides	SAGC21

Polycarpon tetraphyllum	SBGC24
Prostanthera wilkieana	SBGC46
Prostanthera wilkieana	SABC143
Prostanthera wilkieana	SBGC45
Psammomoya ephedroides	SBGC166
Psydrax latifolia	SABC92
Psydrax suaveolens	
Ptilotus divaricatus	SABC86
Ptilotus macrocephalus	SBGC266
Ptilotus macrocephalus	SABC96
Ptilotus obovatus var. obovatus	SAGC14
Ptilotus schwartzii	SBGC33
Rumex vesicarius	
Salsola australis	SBGC269
Scaevola tomentosa	SBGC192
Schoenia cassiniana	SQ34-13
Sclerolaena recurvicuspis	SBGC245
Sclerolaena tridens	SBGC247
Senna artemisioides subsp. petiolaris	SBGC49
Senna artemisioides subsp. x sturtii	SBGC27
Senna artemisioides subsp. x sturtii	SBGC178
Senna charlesiana	SBGC90
Senna glaucifolia	SAGC33
Senna glaucifolia	SBGC56
Senna glutinosa subsp. chatelainiana	SQ16-3
Senna sp. Meekatharra (E. Bailey 1-26)	SBGC222
Senna sp. Meekatharra (E. Bailey 1-26)	SAGC9
Sida fibulifera	SBGC195
Sida kingii	SBGC61
Sida sp. dark green fruits (S. van Leeuwen 2260)	SAGC43
Sisymbrium orientale	SBGC32
Solanum hoplopetalum	SABC132
Sonchus oleraceus	SBGC287
Stachystemon intricatus	SBGC162
Stackhousia muricata subsp. annual (W.R. Barker 2172)	SBGC259
Tecticornia tenuis	SABC136
Tecticornia tenuis	SBGC248
Thryptomene decussata	SBGC212
Thyridolepis multiculmis	SBGC119
Trachymene ornata	SBGC126
Tribulus forrestii	SABC99
Tribulus suberosus	SAGC62
Trichodesma zeylanicum var. grandiflorum	SABC146
Triglochin mucronata	SBGC239
Verticordia interioris	SAGC45
Wahlenbergia queenslandica	SBGC67
Wahlenbergia queenslandica	SBGC17
Waitzia acuminata var. acuminata	SBGC207
Zygophyllum fruticulosum	SABC130

APPENDIX H Vegetation Community Dendrogram


Group average
Resemblance: S17 Bray Curtis similarity
Similarity
0
20
40
60
80
100
SKAQ24
SKAQ25
SKAQ27
SKAQ7
SKAQ9
SKAQ17
SKAQ19
SKAQ10
SKAQ12
SKAQ16
SKAQ18
SKAQ8
SKAQ28
SKAQ6
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SKAQ4
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SKAQ5
SKAQ11
SKAQ3
SKAQ21
SKAQ32
SKAQ20
SKAQ26
SKAQ23
SKAQ29
SKAQ30
SKAQ31
SKAQ34
SKAQ15
SKAQ33
SKAQ2
SKAQ1
SQ14
Samples