Reconnaissance Flora/ Vegetation Survey & Targeted Flora Survey of the Bullabulling Project

Prepared for Norton Gold Fields Pty. Ltd.



November 2021
Final

Prepared by:
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Glossary

Acronym	Description
BAM Act	*Biosecurity and Agriculture Management Act 2007*, WA Government.
BC Act	*Biodiversity Conservation Act 2016*, WA Government.
Botanica	Botanica Consulting Pty Ltd.
BoM	Bureau of Meteorology.
DAFWA	Department of Agriculture and Food (now DPIRD), WA Government.
DAWE	Department of the Agriculture, Water and Environment (formerly known as DotEE), Australian Government.
DBCA	Department of Biodiversity, Conservation and Attractions (formerly DPaW), WA Government.
DEC	Department of Environment and Conservation (now DBCA), WA Government.
DER	Department of Environment Regulation (now DWER), WA Government.
DMIRS	Department of Mines, Industry Regulation and Safety (formerly DMP), WA Government
DotEE	Department of the Environment and Energy (now known as DAWE), Australian Government.
DoW	Department of Water (now DWER), WA Government.
DPaW	Department of Parks and Wildlife (now DBCA), WA Government.
DPIRD	Department of Primary Industries and Regional Development, WA Government
DWER	Department of Water and Environmental Regulation (formerly EPA, DER and DoW), WA Government
EP Act	*Environmental Protection Act 1986*, WA Government.
EP Regulations	Environmental Protection (Clearing of Native Vegetation) Regulations 2004, WA Government.
EPA	Environmental Protection Authority, WA Government.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*, Australian Government.
ESA	Environmentally Sensitive Area.
Ha	Hectare (10,000 square meters).
IBRA	Interim Biogeographic Regionalization for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union.
JAMBA	*Japan Australia Migratory Bird Agreement 1981.*
Km	Kilometer (1,000 meters).
LGA	Local Government Area
NVIS	National Vegetation Information System.
PEC	Priority Ecological Community.
TEC	Threatened Ecological Community.
UCL	Unallocated Crown Land
WA	Western Australia.
WAHERB	Western Australian Herbarium.
WAM	Western Australian Museum, WA Government.

Executive Summary

Botanica Consulting Pty Ltd (Botanica) was commissioned by Norton Gold Fields Ltd. (Norton) on behalf of Bullabulling Operations Pty Ltd to undertake a reconnaissance flora/vegetation survey and targeted flora survey of the Bullabulling project area (collectively referred to as 'survey area'). The survey area is approximately 2,528 ha in extent and is located approximately 58 km south-west of Kalgoorlie in Western Australia. The survey is required to support Mining Proposal, Works Approval and Native Vegetation Clearing Permit applications.

The survey area lies within the Eastern Goldfield (COO3) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA).

The Eastern Goldfield subregion (5,102,428 ha) lies on the Yilgarn Craton's Eastern Goldfields Terrain, which is described as gently undulating plains with a subdued relief, interrupted in the west with low hills and ridges of Archaean greenstones and in the east by a horst of Proterozoic basic granulite. The underlying geology is of gneisses and granites eroded into a flat plane covered with tertiary soils and with scattered exposures of bedrock. Calcareous earths are the dominant soil group and cover much of the plains and greenstone areas. A series of large playa lakes in the western half are the remnants of an ancient major drainage line (Cowan 2001).

The vegetation consists of Mallees, Acacia thickets and shrub-heaths on sandplains, with diverse *Eucalyptus* woodlands occurring around salt lakes, on ranges, and in valleys. Salt lake support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on basic granulite of the Fraser Range, and the area is rich in endemic Acacias.

In accordance with Beard (1990) the survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes. Soils are principally brown calcareous earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block. Vegetation is predominately *Eucalyptus* woodlands, with slopes and flats containing *E*. *longicornis* alongside *E. salubris* and *E*. *salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A*. *nummularia*. Some hill slopes contain mallees of *E*. *livida* or *E*. *loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and *A*. *campestris*. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

The dominant land uses of the Eastern Goldfield subregion includes Unallocated Crown Land (UCL) and Crown reserves and pastoral grazing, with conservation areas and mining leases also present (Cowan, 2001). The survey area is located within the Bullabulling Station pastoral lease.

Prior to the field assessment a literature review was undertaken of previous flora and fauna assessments conducted within the local region. Documents reviewed included:

- Botanica (2021). *Reconnaissance Flora/ Vegetation Survey and Basic Fauna Survey of the Brilliant North and Rosehill Project Areas*. Prepared for Horizon Minerals Ltd., February 2021
- Phoenix Environmental Services (2014). *Level 2 flora and vegetation survey and Level 1 fauna survey for the Bullabulling Gold Project*. Prepared for Bullabulling Gold Ltd., January 2014
- RPS (2012). *Spring Level 2 Flora and Vegetation and Level 1 Fauna Assessment: Bullabulling Gold Project*. Prepared for Bullabulling Gold Ltd., June 2012

In addition to the literature review, searches of the following databases were undertaken to aid in the compilation of a list of significant flora within the survey area:

- DBCA Threatened/ Priority Flora spatial data (DBCA, 2019a);
- DBCA NatureMap database (DBCA, 2021b); and
- EPBC Protected Matters search tool (DAWE, 2021a).

The NatureMap species search and Protected Matters search were conducted with a 40 km buffer from the survey area.

The desktop review identified 768 vascular flora species as occurring within 40 km of the survey area, representing 287 genera from 76 families. The most diverse families were Fabaceae (102 species), Myrtaceae (113 species) and Asteraceae (79 species). Significant genera were *Acacia* (57 species), Eucalyptus (59 species) and *Eremophila* (29 species).

This total includes 34 introduced (weed) species (4.4%). Of these, three are listed as both a Declared Pest on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management* (BAM) *Act 2007* and as a Weed of National Significance (WONS)

The assessment of the DBCA Threatened/Priority flora data (DBCA, 2019a), NatureMap search (DBCA, 2021b), Protected Matters searches (DAWE, 2021a) and previous relevant literature identified 43 significant flora species recorded within a 40 km radius of the survey area. These are comprised of two Threatened, 14 Priority 1, five Priority 2, 20 Priority 3 and two Priority 4 taxa.

These taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the survey area. The assessment identified five significant flora taxa as previously recorded or likely to occur in the survey area, consisting of one Priority 2 and four Priority 3 taxa. In addition, 11 significant taxa were identified as possibly occurring in the survey area, consisting of one Threatened, seven Priority 1 and three Priority 3 taxa.

The Protected Matters search (DAWE, 2021a) did not identify any Threatened Ecological Communities recorded within 40 km of the survey area. Analysis of the Priority Ecological Communities within the Goldfields region (DBCA, 2021a) did not identify any significant vegetation assemblages as likely or possibly occurring within the survey area.

All vegetation associations retain >97% of their pre-European extent.

There are no vested Conservation Reserves located within the survey area.

There are no DBCA managed or DBCA lands of interest located within the survey area.

There are no Environmentally Sensitive Areas located within the survey area.

There are no Nationally Important or RAMSAR wetlands located within the survey area.

The closest significant environmental feature is the Kangaroo Hills Timber Reserve, which is DBCA-managed land located approximately 8 km east of the survey area. Disturbances within the survey area are unlikely to impact this area.

Botanica conducted a reconnaissance flora/ vegetation and targeted flora survey from the 6th to 9th September 2021, with the area traversed on foot and 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management).

The field survey identified 251 vascular flora taxa within the survey area. These taxa represented 140 genera across 53 families, with the most diverse families being Asteraceae (48 species), Myrtaceae (27 species) and Chenopodiaceae (21 species). Dominant genera include *Eucalyptus* (17 species), *Eremophila* (16 species) and *Acacia* (11 species).

Of this total, 12 taxa (4.9%) were introduced (weed) species. None of these species are listed as a Weed of National Significance or a Declared Pest in Western Australia.

No Threatened flora species were recorded within the survey area.

A total of two priority flora species were recorded within the survey area; *Notisia intonsa* (P3) and *Acacia crenulata* (P3).

No other priority or otherwise significant flora were recorded within the survey area.

A total of 12 broad-scale vegetation communities were identified within the survey area. Vegetation community descriptions and extents were determined from field survey results, aerial imagery interpretation and extrapolation of the communities.

The survey found CLP-EW1 was the most widespread community in the survey area, occupying 861.4 ha (34.1%), while QRH-EOW1 was the most restricted with 1.9 ha (0.1%). The most diverse vegetation type was CLP-EW1 with 150 species (59.8%), while the least diverse was RP-EOW1 with 32 species (12.7%).

No Threatened or Priority Ecological Communities or otherwise significant vegetation were identified within the survey area.

Native vegetation condition within the survey area ranged from ‘excellent’ to ‘completely degraded’. Impacts to native vegetation within the survey area include current and historical mining operations, including mining pits and waste dumps, access roads and tracks and low levels of introduced plant species.

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the EP Act. The assessment found that the proposed vegetation clearing activities may be at variance with clearing principle (f).

1 INTRODUCTION

1.1 Project Description

Botanica Consulting Pty Ltd (Botanica) was commissioned by Norton Gold Fields Ltd. (Norton) on behalf of Bullabulling Operations Pty Ltd to undertake a reconnaissance flora/ vegetation survey and targeted flora survey of the Bullabulling project area (collectively referred to as 'survey area') (Figure 1-1). The survey area is approximately 2,528 ha in extent and is located approximately 58 km south-west of Kalgoorlie in Western Australia. The survey is required to support Mining Proposal, Works Approval and Native Vegetation Clearing Permit applications.

1.2 Objectives

The flora assessment was conducted in accordance with the requirements of a targeted flora survey as defined in *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016a). The objectives of the assessment were to:

- gather background information on flora and vegetation in the target area (literature review, database and map-based searches);
- identify significant flora, vegetation and ecological communities and assess the potential sensitivity to impact;
- conduct a field survey to verify/ground truth the desktop assessment findings;
- undertake a targeted search for significant flora species identified in the desktop assessment;
- undertake floristic community mapping to a scale appropriate for the bioregion and described according to the National Vegetation Information System (NVIS) structure and floristics;
- undertake vegetation condition mapping;
- assess the project area's plant species diversity, density, composition, structure and weed cover, using NVIS classification system for vegetation description;
- assess Matters of National Environmental Significance (MNES) and indicate whether potential impacts on MNES as protected under the EPBC Act are likely to require referral of the project to the Commonwealth DAWE; and
- determine the State legislative context of environmental aspects required for the assessment.

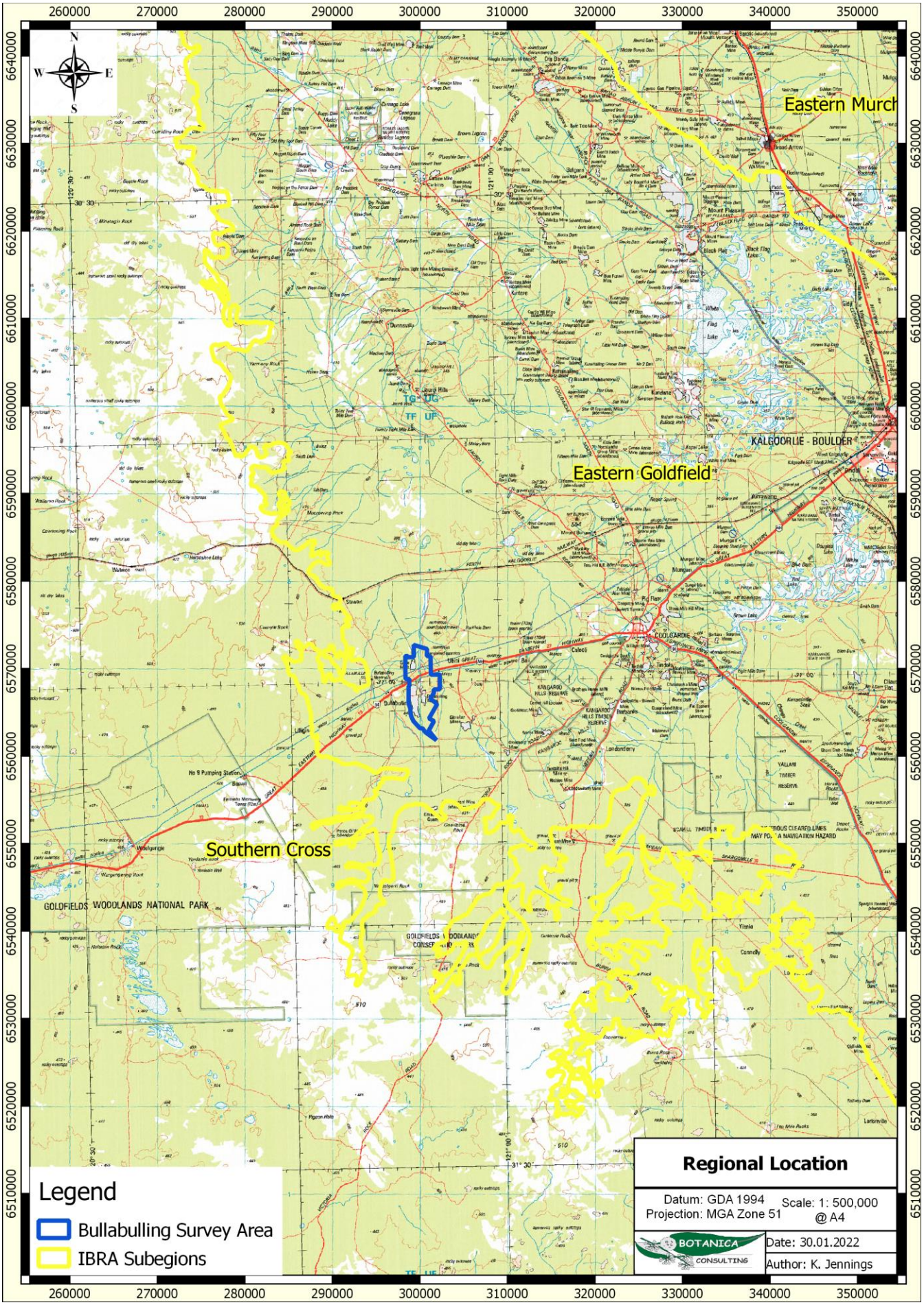


Figure 1-1: Regional map of the survey area

2 BIOPHYSICAL ENVIRONMENT

2.1 Regional Environment

The survey area lies within the Eastern Goldfield (COO3) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA).

The Eastern Goldfield subregion (5,102,428 ha) lies on the Yilgarn Craton's Eastern Goldfields Terrain, which is described as gently undulating plains with a subdued relief, interrupted in the west with low hills and ridges of Archaean greenstones and in the east by a horst of Proterozoic basic granulite. The underlying geology is of gneisses and granites eroded into a flat plane covered with tertiary soils and with scattered exposures of bedrock. Calcareous earths are the dominant soil group and cover much of the plains and greenstone areas. A series of large playa lakes in the western half are the remnants of an ancient major drainage line (Cowan 2001).

The vegetation consists of Mallees, Acacia thickets and shrub-heaths on sandplains, with diverse *Eucalyptus* woodlands occurring around salt lakes, on ranges, and in valleys. Salt lake support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on basic granulite of the Fraser Range, and the area is rich in endemic Acacias.

In accordance with Beard (1990) the survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes. Soils are principally brown calcareous earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block. Vegetation is predominately *Eucalyptus* woodlands, with slopes and flats containing *E*. *longicornis* alongside *E. salubris* and *E*. *salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A*. *nummularia*. Some hill slopes contain mallees of *E*. *livida* or *E*. *loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and *A*. *campestris*. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

2.2 Land Use

The dominant land uses of the Eastern Goldfield subregion includes Unallocated Crown Land (UCL) and Crown reserves and pastoral grazing, with conservation areas and mining leases also present (Cowan, 2001). The survey area is located within the Bullabulling Station pastoral lease.

2.3 Soils and Landscape Systems

The survey area lies within the Kalgoorlie Province, located in the southern Goldfields between Paynes Find, Menzies, Southern Cross and Balladonia. The landscape consists of undulating plains (with some sandplains, hills and salt lakes) on the granitic rocks and greenstone of the Yilgarn Craton. Soils range from calcareous loamy earths and red loamy earths with some salt lake soils to red deep sands, yellow sandy earths, shallow loams and loamy duplexes. Vegetation communities are predominately Eucalypt woodlands with some acacia-casuarina thickets, mulga shrublands, halophytic shrublands and spinifex grasslands (Tille, 2006).

The Kalgoorlie Province is further divided into six soil-landscape zones, with the survey area located in the Norseman Zone.

The Norseman Zone is located in the southern Goldfields between Koolyanobbing, Menzies, Zanthus (Trans-Australian Railway), Norseman and Lake Hope. The landscape consists of undulating plains and uplands (with some sandplains and salt lakes) on granitic rocks of the Yilgarn Craton. Soils include calcareous loamy earths, yellow sandy and loamy earths, red loamy earths, red deep sands and salt lake soils. Vegetation consists of salmon gum-redwood-merrit-red mallee-gimlet woodland with acacia/casuarina thickets (and some mulga shrublands and spinifex grasslands)(Tille, 2006).

The Norseman Zone is further divided into soil landscape systems, with the survey area located within four soil landscape systems, as described in Table 2-1 and shown in Figure 2-1.

Table 2-1: Soil Landscape Systems within the survey area

Soil Landscape System	Description	Extent within Survey Area ha (%)
AC1	Gently sloping to gently undulating plateau areas, or uplands, on granites, gneisses, and allied rocks, with long gentle slopes and, in places, abrupt erosional scarps	16 ha (0.6%)
BB5	Rocky ranges and hills of greenstones-basic igneous rocks	1050 ha (41.5%)
Mx41	Flat to undulating pediments marginal to unit AC1; granitic rock outcrop; some low escarpments	555 ha (21.9%)
Mx43	Gently undulating valley plains and pediments; some outcrop of basic rock	907 ha (35.9%)

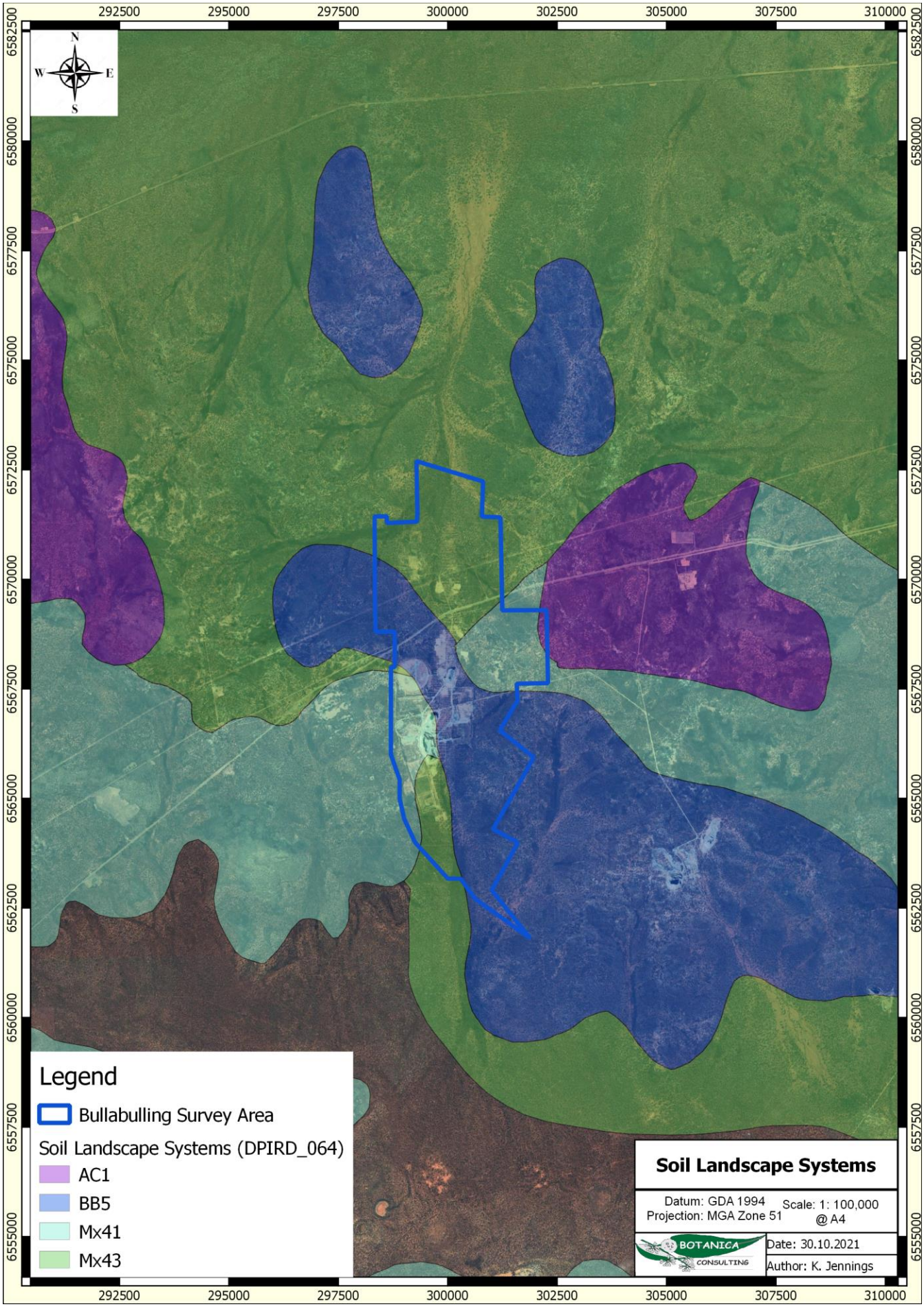


Figure 2-1: Soil Landscape Systems within the survey area

2.4 Regional Vegetation

In accordance with Tille (2006), the vegetation of the Norseman zone is differentiated from the Kambalda Zone by the presence of sandplains and occasional dunes with spinifex grasslands. The Kambalda Zone is typified by the preponderance of stony plains with acacia shrublands and halophytic shrublands, low hills with eucalypt or acacia woodlands with halophytic undershrubs, stony plains with acacia shrublands and alluvial plains with eucalypt woodlands and halophytic undershrubs rangeland.

More broadly, the vegetation of the Kalgoorlie Province is described by Tille (2006) as woodlands of redwood (*Eucalyptus transcontinentalis*), red mallee (*E. oleosa*), Dundas blackbutt (*E. dundasii*), merrit (*E. flocktoniae*) and salmon gum (*E. salmonophloia*), found on undulating plains over granite. There are also some hummock grasslands with red mallee over spinifex (*Triodia scariosa*) and thickets of *Acacia*, *Casuarina* and *Melaleuca* spp. Plains on greenstone have woodlands of York gum (*E. loxophleba*), salmon gum and gimlet (*E. salubris*). The valley plains have woodlands of salmon gum, red mallee, Goldfields blackbutt (*E. lesouefii*), gimlet, York gum and morrel (*E. longicornis*). These sometimes have an understorey of saltbush (*Atriplex* spp.), pearl bluebush (*Maireana sedifolia*), sago bluebush (*M. pyramidata*) and *Eremophila* spp. Low woodlands of mulga (*Acacia aneura*) and black sheoak (*Casuarina pauper*) over bluebush and saltbush are also present. Apart from the bare salt lake surfaces, saline valley floors have shrublands of samphire (*Tecticornia* spp.) and *Frankenia* spp. in lower areas, shrublands of saltbush and bluebush on red deep sandy duplexes, and woodlands of salmon gum, merrit, red mallee, gimlet and York gum. *Acacia neurophylla*, *A. beauverdiana* and *A. resinimarginea* thickets grow on gently sloping uplands on granite, with thickets of acacia, casuarina and melaleuca. There are also scrub-heaths and York gum-salmon gum-gimlet woodlands on these uplands. The hilly terrain on greenstone supports woodlands of salmon gum, Goldfields blackbutt, coral gum (*E. torquata*), York gum, gimlet, morrel, Dundas blackbutt and black sheoak. Thickets of granite wattle (*Acacia quadrimarginea*) are also present. The stony plains support scattered woodlands of Goldfields blackbutt, gimlet and salmon gum, along with shrublands of saltbush and bluebush. Sandplains in the west have acacia (*A. coolgardiensis, A. ramulosa, A. aneura, A. burkittii* and *A. tetragonophylla*) shrublands, commonly with patchy native pine (*Callitris glaucophylla, C. preissii*) and mallees (*E. leptopoda, E. longicornis* and *E. loxophleba*). Native box (*Bursaria occidentalis*), *Melaleuca uncinata* and *Hakea recurva* may also be present. Hard spinifex (*T. basedowii*) grasslands with mulga, marble gum and mallees (e.g. *E. kingsmillii*) are found on sandplains to the east. The sandy-surfaced plains support acacia, casuarina and melaleuca thickets; woodlands of York gum, cypress pine (*Callitris columellaris*), salmon gum, gimlet and mulga; and shrublands of bowgada (*A. ramulosa*).

2.5 Conservation Values

The Eastern Goldfield subregion contains 16 vegetation associations, predominately open *Eucalyptus* woodlands, that have at least 85 per cent of their total extent in the bioregion (Cowan, 2001). The subregion is considered a centre of endemism for Eucalypts in the Goldfields Woodlands region and is also noted for the diversity of *Acacia* spp. and ephemeral flora communities of the tertiary sandplain shrublands and the valley floors of woodland areas.

The subregion contains one wetland of national importance: Rowles Lagoon System, located approximately 65km north-west of the survey area. In addition, there are seven wetlands of subregional importance (Cowan, 2001). None of these wetlands occur within or proximate to the survey area. Other significant assemblages in the region include plant assemblages of the Fraser Range and the Woodline Hills.

No ecosystems listed as threatened under WA State legislation occur within the subregion, but 18 communities and vegetation associations are thought to be at risk for a variety of reasons. Grazing from livestock, goats and rabbits and impacts from mining are the main threatening processes in the region, with changed fire regimes, erosion and sedimentation also causing significant impacts.

2.5.1 Great Western Woodlands

The survey area lies within the Great Western Woodlands, considered by The Wilderness Society of WA to be of global biological and conservation importance as one of the largest and healthiest temperate woodlands on Earth, containing many endemic taxa. The region covers almost 16 million hectares (160,000 square kilometres), from the southern edge of the Western Australian Wheatbelt to the pastoral lands of the Mulga country in the north, the inland deserts to the northeast, and the treeless Nullarbor Plain to the east.

The Great Western Woodlands provides a connection between southwest forests and inland deserts (Gondwana Link) as well as linking the north-west passage to Shark Bay. The majority of the Great Western Woodlands is unallocated crown land (61.1%) with other interests including pastoral leases (20.4%), conservation reserves (15.4%), ex pastoral (2%) managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and private land (approximately 1%).

No specific management strategy or formal conservation status applies to the Great Western Woodlands. The Great Western Woodlands currently includes towns, highways, roads, railways, private property, Crown Reserves, agricultural activities and mining tenements.

2.6 Climate

The climate of the Eastern Goldfield subregion is characterised as arid to semi-arid with 200-300 mm of rainfall per annum, sometimes in summer but usually in winter (Cowan 2001). Rainfall data for the Kalgoorlie-Boulder Airport (#12038) weather station, located approximately 55 km north-east of the survey area, is shown in Figure 2-2. Mean monthly rainfall ranges from 32.4 mm in February to 13.5 mm in September, with a mean annual rainfall of 264.9 mm. The survey was conducted in September 2021, with the preceding months (June-August) being characterised by average rainfall, with significant rain in June and July offset by below-average rainfall in August (BOM, 2021a). Climate conditions are not likely to represent a survey constraint, with flowering material and ephemeral species expected to be present within the survey area.

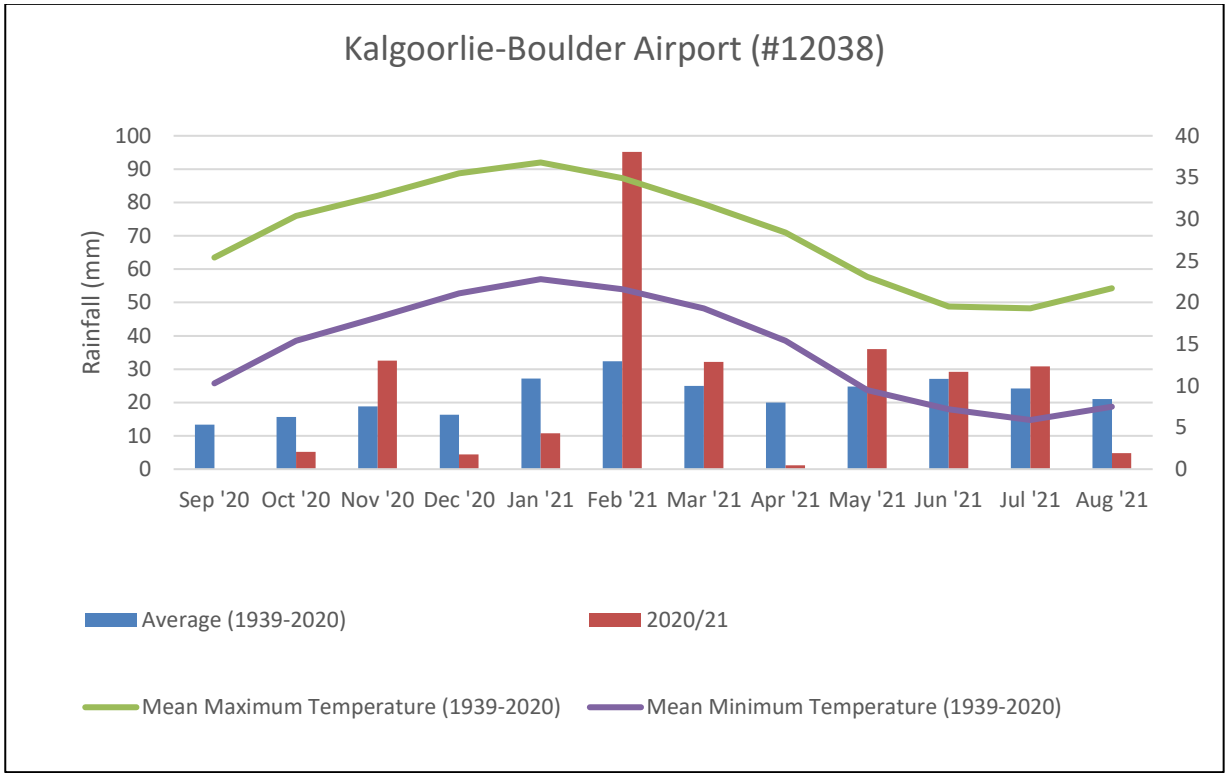


Figure 2-2: Rainfall and temperature data of Kalgoorlie-Boulder Airport (#12038)

2.7 Hydrology

According to the Geoscience Australia database (2015), there are no surface water bodies within the survey area. However, there are multiple ephemeral drainage lines that occur throughout the survey area (Figure 2-3).

Groundwater Dependent Ecosystems (GDE) includes biological assemblages of species such as wetlands or woodlands that use groundwater either opportunistically or as their primary water source. For the purposes of this report, a GDE is defined as any vegetation community that derives part of its water budget from groundwater and must be assumed to have some degree of groundwater dependency. In accordance with the BoM *Atlas of Groundwater Dependent Ecosystems* (BoM, 2021b) database, there are no known terrestrial nor aquatic GDE's within the survey area. A low-potential terrestrial GDE is mapped in the southern portion of the survey area (Figure 2-3). This GDE occupies 398 ha (15.7%) of the survey area and is described as 'Medium woodland; salmon gum'.

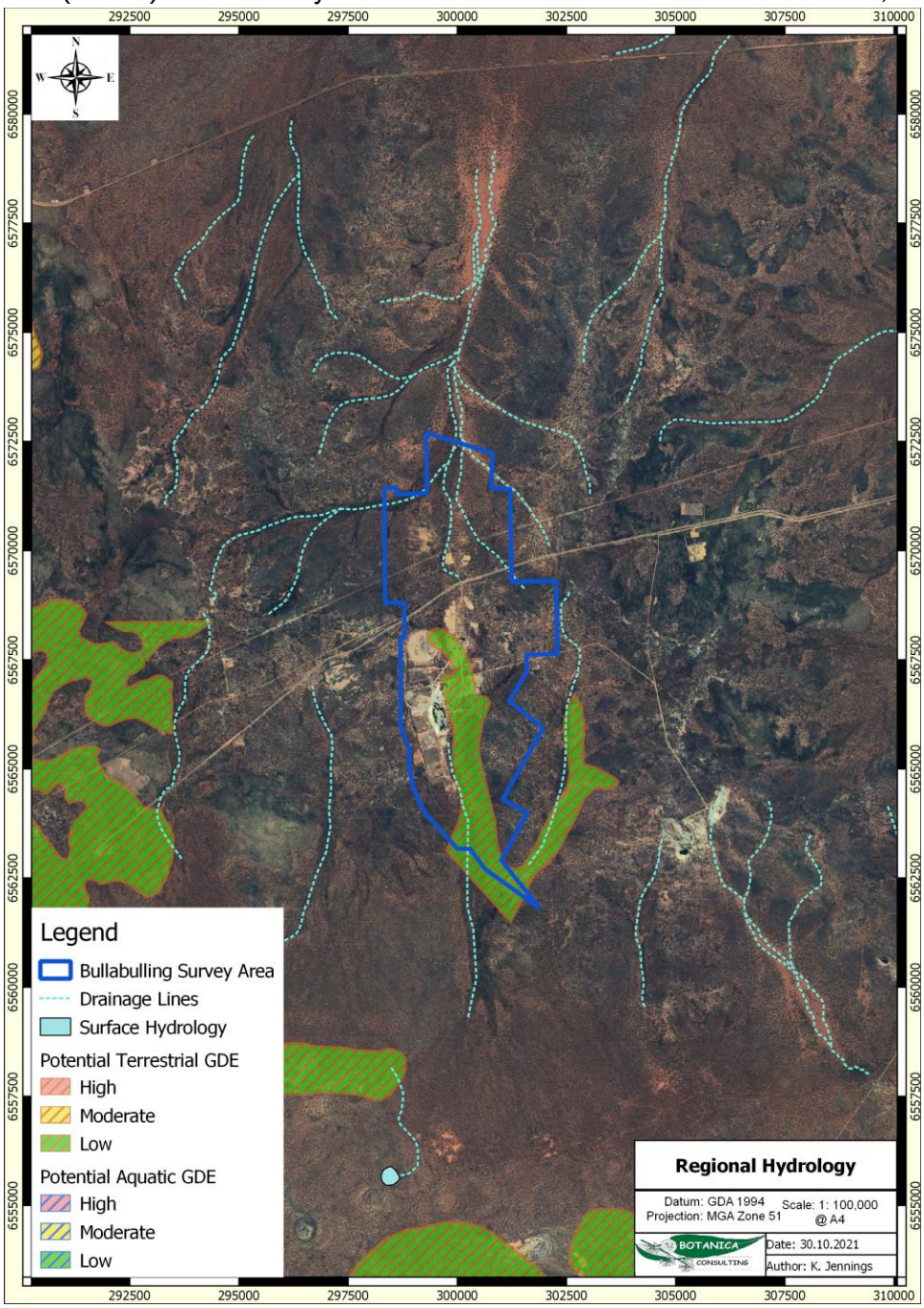


Figure 2-3: Hydrology of the survey area

3 SURVEY METHODOLOGY

3.1 Desktop Assessment

Prior to the field assessment a literature review was undertaken of previous flora and fauna assessments conducted within the local region. Documents reviewed included:

- Botanica (2021). *Reconnaissance Flora/Vegetation Survey and Basic Fauna Survey of the Brilliant North and Rosehill Project Areas*. Prepared for Horizon Minerals Ltd., February 2021
- Phoenix Environmental Services (2014). *Level 2 flora and vegetation survey and Level 1 fauna survey for the Bullabulling Gold Project*. Prepared for Bullabulling Gold Ltd., January 2014
- RPS (2012). *Spring Level 2 Flora and Vegetation and Level 1 Fauna Assessment: Bullabulling Gold Project*. Prepared for Bullabulling Gold Ltd., June 2012

In addition to the literature review, searches of the following databases were undertaken to aid in the compilation of a list of significant flora within the survey area:

- DBCA Threatened/ Priority Flora spatial data (DBCA, 2019a);
- DBCA NatureMap database (DBCA, 2021b); and
- EPBC Protected Matters search tool (DAWE, 2021a).

The NatureMap species search and Protected Matters search were conducted with a 40 km buffer from the survey area.

Significant flora species identified by the desktop review were assessed with regards to their population extent and distribution and preferred habitat to determine their likelihood of occurrence within the survey area.

The assessment categorised flora species as follows:

- Unlikely- Suitable habitat is not expected to occur and/or the survey area is outside the known range of the species.
- Possible- Suitable habitat may be present, and the area is within the known range of the species. This option is also used when there is insufficient information to determine the preferred habitat of a species.
- Likely- Suitable habitat is expected to occur and there are records within 10 km of the survey area.
- Previously Recorded- A record for this species is located within the survey area. Field survey will ground-truth currently occurring individuals and populations.

It should be noted that these lists are based on observations from a broader area than the assessment area (40 km radius) and therefore may include taxa not present. The databases also often include very old records that may be incorrect or in some cases the taxa in question have become locally or regionally extinct. Information from these sources should therefore be taken as indicative only and local knowledge and information also needs to be taken into consideration when determining what actual species may be present within the specific area being investigated.

The conservation significance of flora taxa was assessed using data from the following sources:

- *Environment Protection and Biodiversity and Conservation* (EPBC) *Act 1999*. Administered by the Australian Government (DAWE);
- *Biodiversity Conservation* (BC) *Act 2016*. Administered by the WA Government (DBCA);

- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List – the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- Priority Flora list. A non-legislative list maintained by DBCA for management purposes (released December 2018).

Descriptions of conservation significant species and communities are provided in Appendix 1.

3.2 Field Assessment

Botanica conducted a reconnaissance flora/ vegetation and targeted flora survey from the 6th to 9th September 2021, with the area traversed on foot and 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management). The survey effort, including vegetation sampling locations and the GPS track log, are shown below in Figure 3-1.

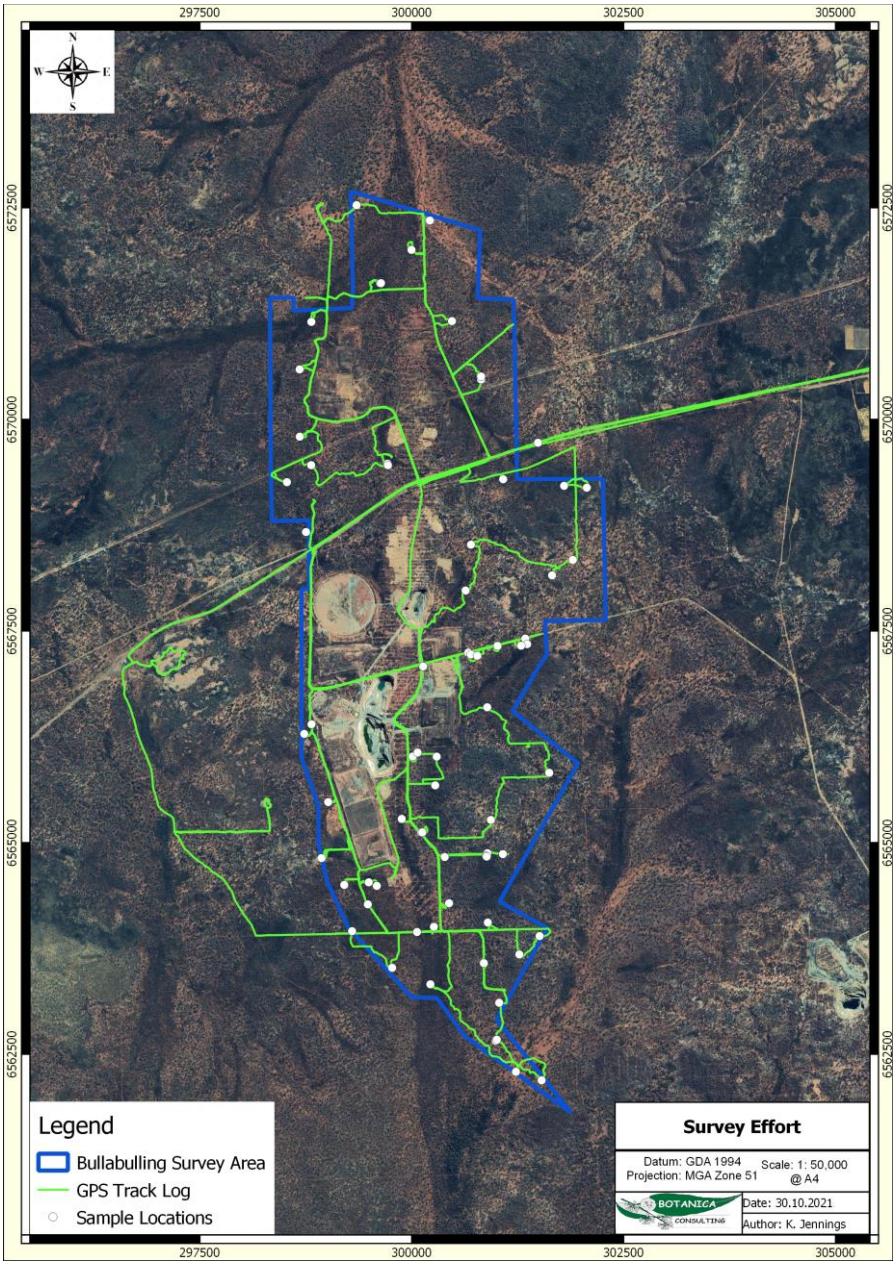


Figure 3-1: Bullabulling survey effort

3.2.1 Flora Assessment

Prior to the commencement of field work, aerial photography was inspected and obvious differences in the vegetation assemblages were identified. The different vegetation communities identified were then inspected during the field survey to assess their validity. A handheld GPS unit was used to record the coordinates of the boundaries between existing vegetation communities. At each sample point, the following information was recorded:

- GPS location;
- Photograph of vegetation;
- Dominant taxa for each stratum;
- All vascular taxa (including annual taxa);
- Landform classification;
- Vegetation condition rating;
- Collection and documentation of unknown plant specimens; and
- GPS location, photograph and collection of flora of conservation significance if encountered.

Unknown specimens collected during the survey were identified with the aid of samples housed at the Botanica Herbarium and Western Australian Herbarium. Vegetation was classified in accordance with NVIS classifications.

3.2.2 Targeted Flora Survey

A targeted search for Threatened and Priority flora was conducted, including assessing the location of any DBCA records of Priority flora within the survey area. Potential habitats for Threatened and Priority Flora were searched on foot by two Botanica staff members to identify and record the locations of Threatened and Priority flora. Any locations of Threatened and Priority flora were recorded using a hand-held GPS and a simple plant count (not differentiated between juvenile/mature plants, flowering or non-flowering plants) was conducted for each record.

3.2.3 Scientific Licences

Table 3-1: Scientific Licences of Botanica staff coordinating the flora survey

Licensed staff	Permit Number	Valid Until
Jim Williams	FB62000108 (Licence to take flora for scientific purposes)	27/05/2022
Jennifer Jackson	FB62000309 (Licence to take flora for scientific purposes)	11/01/2024

3.3 Survey Limitations and Constraints

It is important to note that flora surveys will entail limitations notwithstanding careful planning and design. Potential limitations are listed in Table 3-2.

The conclusions presented in this report are based upon field data and environmental assessments and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. Also, it should be recognised that site conditions can change with time. Information not available at the time of this assessment which may subsequently become available may alter the conclusions presented.

Some species are reported as potentially occurring based on there being suitable habitat (quality and extent) within the survey area or immediately adjacent. The habitat requirements and ecology of many of the species known to occur in the wider area are however often not well understood or

documented. It can therefore be difficult to exclude species from the potential list based on a lack of a specific habitats or microhabitats within the survey area. As a consequence of this limitation, the potential species list produced is most likely an overestimation of those species that actually utilise the survey area for some purpose.

In recognition of survey limitations, a precautionary approach has been adopted for this assessment. Any flora species that would possibly occur within the survey area (or immediately adjacent), as identified through ecological databases, publications, discussions with local experts/residents and the habitat knowledge of the author, has been listed as having the potential to occur.

Table 3-2: Limitations and constraints associated with the survey

Variable	Potential Impact on Survey	Details
Access problems	Not a constraint	The survey was conducted via 4WD and on foot. Numerous tracks were located within the survey area, providing ease of access.
Competency/ Experience	Not a constraint	The BC personnel that conducted the survey were regarded as suitably qualified and experienced. **Coordinating Botanist:** Jim Williams and Jennifer Jackson **Data Interpretation:** Jennifer Jackson and Kelby Jennings.
Timing of survey, weather & season	Not a constraint	Fieldwork was undertaken within the EPA's recommended survey period (September - November) for the South-West and Interzone Province. There were numerous ephemeral flora species and flowering material present within the survey area.
Area disturbance	Not a constraint	A significant portion of the survey area has been disturbed from mining and exploration operations. Areas of native vegetation showed evidence of livestock grazing and other human impacts; however, vegetation was mostly intact and comprised of native species.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/significance of the area with a targeted survey completed to identify vegetation types and conservation significant species/communities.
Availability of contextual information at a regional and local scale	Not a constraint	Threatened flora database searches provided by the DBCA were used to identify any potential locations of Threatened/Priority taxa. BoM, DWER, DPIRD, DBCA and DAWE databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Previous flora surveys within the local area have been assessed for pertinent information and environmental context of the regional area.
Completeness	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify vegetation assemblages. All observed flora individuals were able to be identified to species level. The vegetation types for this study were based on visual descriptions of locations in the field. The distribution of these vegetation communities outside the study area is not known, however vegetation types identified were categorised via comparison to vegetation distributions throughout WA specified in the NVIS Major Vegetation Groups (DotEE, 2017b).

4 RESULTS

4.1 Desktop Assessment

4.1.1 Flora

The desktop review identified 768 vascular flora species as occurring within 40 km of the survey area, representing 287 genera from 76 families. The most diverse families were Fabaceae (102 species), Myrtaceae (113 species) and Asteraceae (79 species). Significant genera were *Acacia* (57 species), Eucalyptus (59 species) and *Eremophila* (29 species). This total includes 34 introduced (weed) species (4.4%).

4.1.1.1 Introduced Flora

The desktop review identified 34 introduced flora (weed) species, representing 18 families, as potentially occurring in the vicinity of the survey area. Of these, three are listed as both a Declared Pest on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management* (BAM) *Act 2007* and as a Weed of National Significance (WONS) (Table 4-1). The full list of potential weed species is contained in Appendix 2.

Table 4-1: Significant introduced flora (weed) species

Family	Taxon	Common Name	WAOL Status	Control Category	WONS
Boraginaceae	*Echium plantagineum*	Paterson's Curse	Declared Pest - s22(2)	No Control Category, Whole of State	No
Cactaceae	*Cylindropuntia tunicata*	Prickly Pear	Declared Pest - s22(2)	C3 Management, Whole of State	Yes
	Opuntia elata	-	Declared Pest - s22(2)	C3 Management, Whole of State	Yes

4.1.1.2 Significant Flora

The assessment of the DBCA Threatened/Priority flora data (DBCA, 2019a), NatureMap search (DBCA, 2021b), Protected Matters searches (DAWE, 2021a) and previous relevant literature identified 43 significant flora species recorded within a 40 km radius of the survey area. These are comprised of two Threatened, 14 Priority 1, five Priority 2, 20 Priority 3 and two Priority 4 taxa (Appendix 3).

These taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the survey area. The assessment identified five significant flora taxa as previously recorded or likely to occur in the survey area, consisting of one Priority 2 and four Priority 3 taxa. In addition, ten significant taxa were identified as possibly occurring in the survey area, consisting of seven Priority 1 and three Priority 3 taxa (Table 4-2). The full flora likelihood assessment is listed in Appendix 3. The locations of the DBCA database records are illustrated spatially in Figure 4-1.

Table 4-2: Potentially occurring significant flora species

Status	Taxon	Habitat	Assessment	Likelihood
P1	*Acacia coatesii*	Eucalyptus woodland, Low rocky hill on skeletal red loam.	Recorded within 15 km of survey area, habitat may be present	Possible
	Acacia epedunculata	Yellow sand. Sandplains.	Recorded within 20 km of survey area, habitat may be present	Possible
	Acacia websteri	Red sand, clay or loam. Low-lying areas, flats.	Recorded within 20 km of survey area, habitat may be present	Possible
	Dampiera plumosa	Red sandy soils.	Recorded within 20 km of survey area, habitat may be present	Possible
	Eucalyptus websteriana subsp. *norsemanica*	Rocky rises.	Recorded within 20 km of survey area, habitat may be present	Possible
	Melichrus sp. Coolgardie (K.R. Newbey 8698)	Yellow sand. Sandplains.	Recorded within 20 km of survey area	Possible
	Philotheca pachyphylla	Sand, red loam, clay loam. Sandplains, hill tops.	Recorded within 20 km of survey area, habitat may be present	Possible
P2	*Lepidium merrallii*	Clay loam.	Previously recorded within survey area (Phoenix, 2014)	Likely
P3	*Acacia crenulata*	Clay, sandy clay, yellow sand. Rocky rises, granite outcrops, breakaways.	Previously recorded within survey area (Phoenix, 2014)	Likely
	Allocasuarina eriochlamys subsp. *grossa*	Stony loam, laterite clay. Granite outcrops.	Recorded within 10 km of survey area, habitat may be present	Possible
	Austrostipa blackii	-	Previously recorded within survey area (Phoenix, 2014)	Likely
	Eremophila veronica	Stony clay, clay loam. Lateritic breakaways.	Recorded within 20 km of survey area, habitat may be present	Possible
	Notisia intonsa	Flat plain. Soil red cracking clay. Shallow depression in Eucalyptus salubris dominated woodland	Previously recorded within survey area (Phoenix, 2014)	Likely
	Rinzia triplex	Flat/plain. Yellow coarse grained sand. Open Eucalyptus woodland over shrubs.	Recorded within 5 km of survey area	Possible
	Styphelia saxicola	Red brown loamy clay. Granite rocks with occasional quartz ground cover, Mixed shrubland.	Previously recorded within survey area (Phoenix, 2014)	Likely

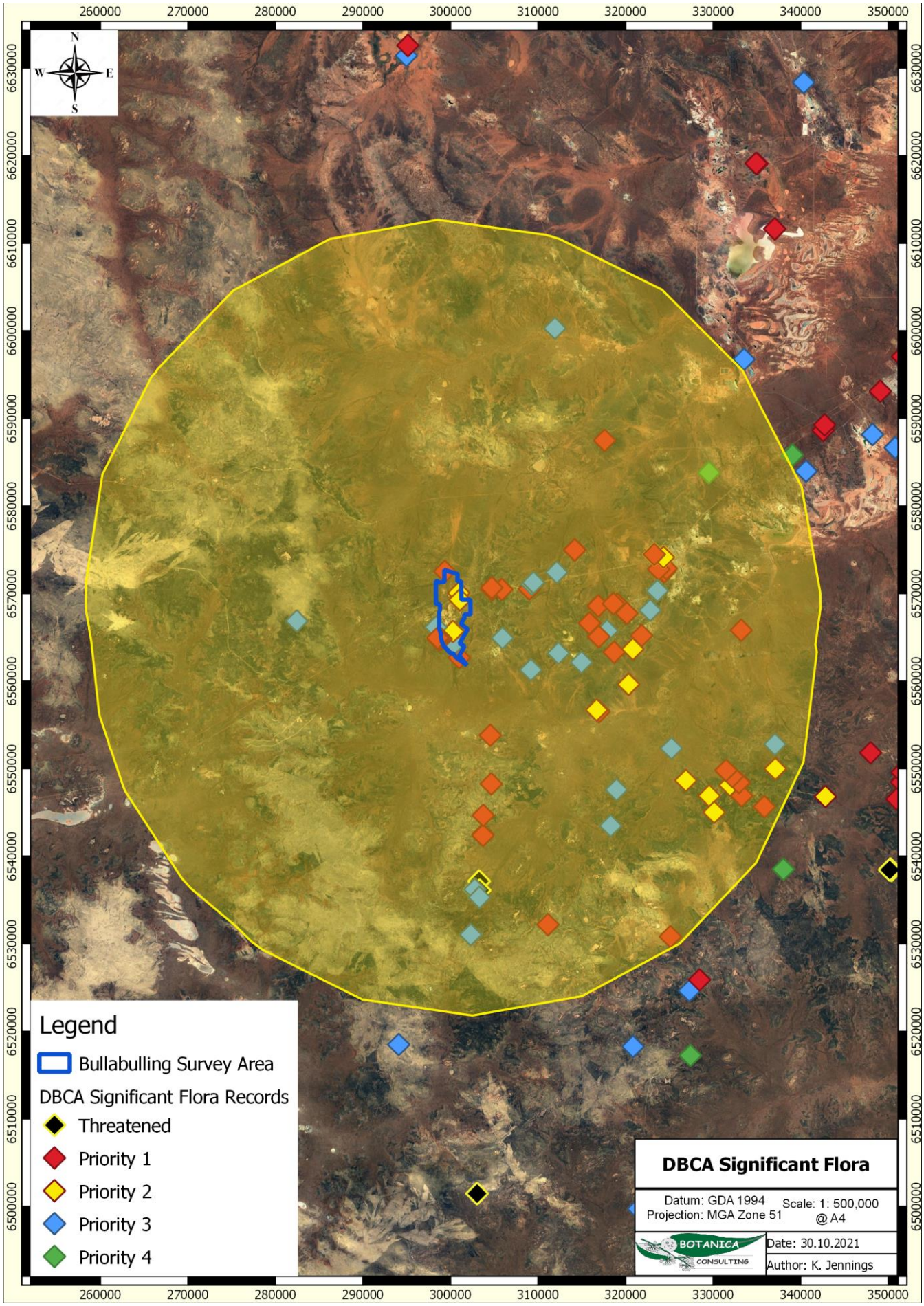


Figure 4-1: DBCA significant flora

4.1.2 Vegetation and Ecological Communities

4.1.2.1 Vegetation Associations

The Pre-European vegetation association spatial mapping dataset (DPIRD, 2019) identified six vegetation association as occurring within the survey area (Figure 4-2). The association descriptions and their remaining extents, as specified in the 2018 Statewide Vegetation Statistics (DBCA, 2019b) are provided in Table 4-3. Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated species loss, while areas with less than 10% are considered "endangered" (EPA, 2000). All vegetation associations retain >97% of their pre-European extent, and development within the survey area will not significantly reduce the current extent of these vegetation associations.

Table 4-3: Pre-European Vegetation Associations within the survey area

Vegetation Association	Current Extent (ha)	Pre-European extent remaining (%)	% Protected for Conservation	Floristic Description	Extent within Survey Area ha (%)
Boorabbin 8	81,727	99.85	-	Shrublands; bowgada and associated spp. scrub	868 ha (34.3%)
Coolgardie 128	4,619	99.61	-	Shrublands; bowgada & minnieritchie scrub	50 ha (2.0%)
Coolgardie 1413	8,260	99.04	-	Shrublands; Acacia quadrimarginea & jam scrub on greenstone	75 ha (3.0%)
Coolgardie 2009	5,975	97.07	-	Shrublands; bowgada scrub with scattered eucalypts & cypress pine	716 ha (28.3%)
Coolgardie 522	14,903	98.39	-	Shrublands; bowgada, jam and *Melaleuca uncinata* thicket	387 ha (15.3%)
Coolgardie 936	57,179	99.35	-	Succulent steppe with open scrub; scattered Acacia sclerosperma & snakewood over samphire	432 ha (17.1%)

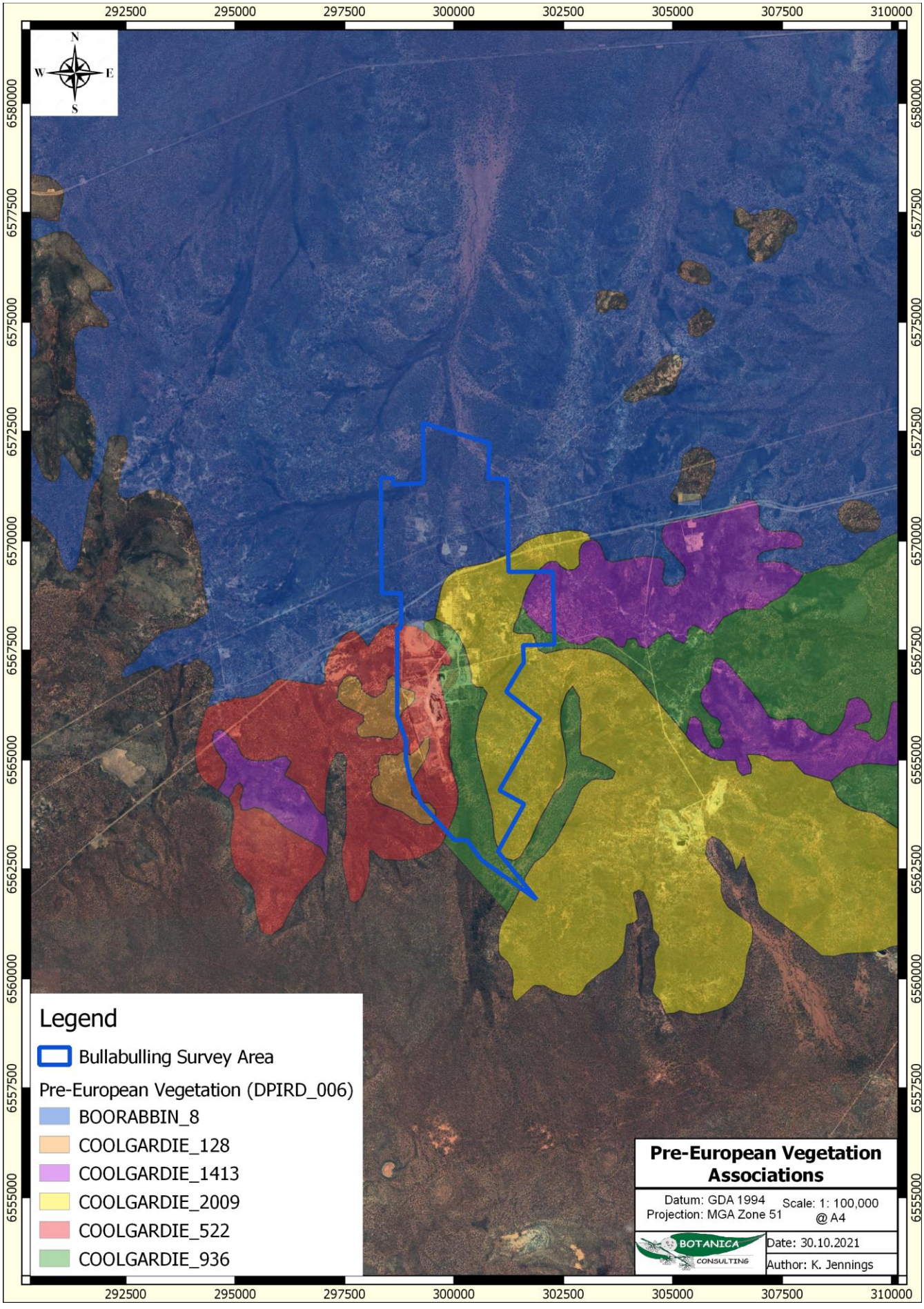


Figure 4-2: Pre-European Vegetation Associations within the survey area

4.1.2.2 Significant Ecological Communities

The Protected Matters search (DAWE, 2021a) did not identify any Threatened Ecological Communities recorded within 40 km of the survey area. Analysis of the Priority Ecological Communities within the Goldfields region (DBCA, 2021a) did not identify any significant vegetation assemblages as likely or possibly occurring within the survey area.

4.1.3 Conservation Areas

There are no vested Conservation Reserves located within the survey area.

There are no DBCA managed or DBCA lands of interest located within the survey area.

There are no Environmentally Sensitive Areas located within the survey area.

There are no Nationally Important or RAMSAR wetlands located within the survey area.

The closest significant environmental feature is the Kangaroo Hills Timber Reserve, which is DBCA-managed land located approximately 8 km east of the survey area. Disturbances within the survey area are unlikely to impact this area. The location of proposed and vested Conservation Reserves, ESA's and Nationally Important Wetlands in relation to the survey area is provided in Figure 4-3.

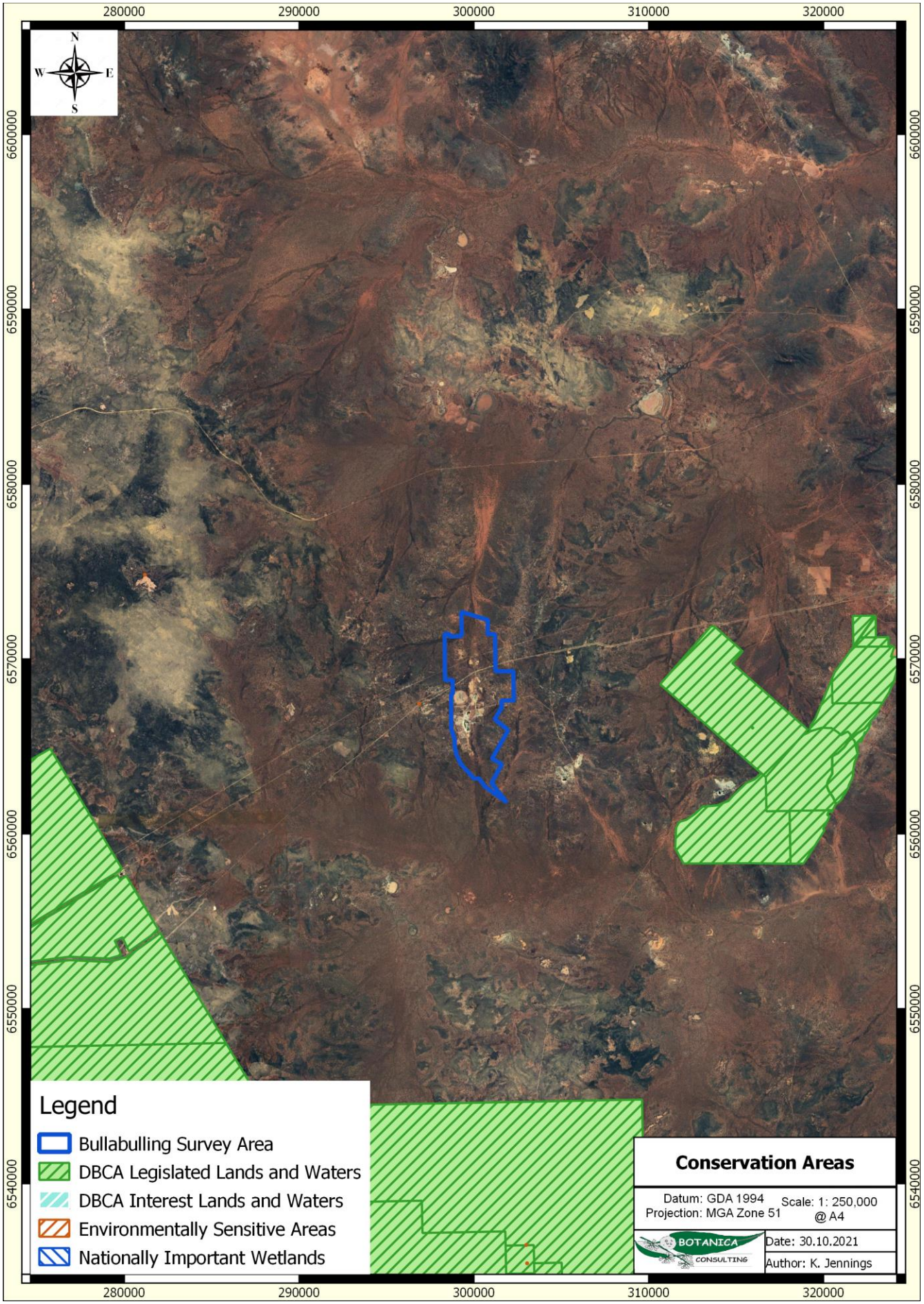


Figure 4-3: Conservation Areas

4.2 Field Assessment

4.2.1 Flora

The field survey identified 251 vascular flora taxa within the survey area. These taxa represented 140 genera across 53 families, with the most diverse families being Asteraceae (48 species), Myrtaceae (27 species) and Chenopodiaceae (21 species). Dominant genera include *Eucalyptus* (17 species), *Eremophila* (16 species) and *Acacia* (11 species). Of this total, 12 taxa (4.9%) were introduced (weed) species. The full field species inventory is listed in Appendix 4.

4.2.1.1 Introduced Flora

A total of 12 species of introduced flora, representing eight families, were recorded within the survey area (Table 4-4). None of these species are listed as a Weed of National Significance or a Declared Pest in Western Australia.

Table 4-4: Introduced flora species within the survey area

Family	Taxon	Common Name
Aizoaceae	*Cleretum papulosum*	-
Asphodelaceae	*Asphodelus fistulosus*	Onion Weed
Asteraceae	*Centaurea melitensis*	Maltese Cockspur
	Hypochaeris glabra	Smooth Cats-ear
	Monoculus monstrosus	Stinking Roger
	Sonchus oleraceus	Common Sowthistle
Brassicaceae	*Carrichtera annua*	Ward's Weed
Poaceae	*Pentameris airoides* subsp. *airoides*	-
	Rostraria pumila	-
Polygalaceae	*Acetosa vesicaria*	-
Portulacaceae	*Portulaca oleracea*	Purslane
Primulaceae	*Lysimachia arvensis*	Pimpernel

4.2.1.2 Significant Flora

According to the EPA *Environmental Factor Guideline for Flora and Vegetation* (EPA, 2016b) significant flora includes:

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

No Threatened flora species were recorded within the survey area.

A total of two priority flora species were recorded within the survey area; *Notisia intonsa* (P3) and *Acacia crenulata* (P3).

No other priority or otherwise significant flora were recorded within the survey area. The P2 *Lepidium merrallii*, which was recorded in the Phoenix (2014) survey, was not observed despite searches in the vicinity of the previous record and in analogous habitats. However, there were significant populations of *Lepidium rotundum*, a similar species which may have been mis-identified in the Phoenix (2014) survey. Specimens of *Lepidium rotundum* were collected in the field and their taxonomic status were confirmed by WA Herbarium staff.

4.2.1.2.1 Notisia intonsa (P3)

Notisia intonsa, from the Asteraceae family, is an annual herb growing to 1–4 cm high and flowering from September–October (Phoenix, 2014). It predominately occurs in the Coolgardie and Murchison bioregions, with its range including the Eastern Goldfield, Eastern Mallee, Eastern Murchison, Fitzgerald, Merredin, Southern Cross and Western Mallee IBRA subregions.

Notisia intonsa populations were recorded at eight locations within the survey area, with a total recorded population of approximately 1,545 individuals (Figure 4-6). Two populations contained <5 individuals, four locations contained between 20 and 50 individuals each, two contained 100-300 each and one contained over 1000 individuals. This species occurred in a variety of vegetation communities and was often associated with low-lying areas and drainage lines (Figure 4-4).



Figure 4-4: *Notisia intonsa* (P3) within the survey area

4.2.1.2.2 Acacia crenulata (P3)

Acacia crenulata, from the Fabaceae family, is a bushy shrub or tree growing to 0.7–3 m high (Florabase, 2021). It occurs in clay, sandy clay and yellow sand soils and is associated with rocky rises, granite outcrops and breakaways. Its range includes the Eastern Goldfield, Merredin and Southern Cross IBRA subregions.

Acacia crenulata was recorded in Q45, associated with a rocky breakaway within the SP-AOW1 vegetation community (Figure 4-6). A total of six individuals were recorded at this location (Figure 4-5).



Figure 4-5: *Acacia crenulata* (P3) within the survey area

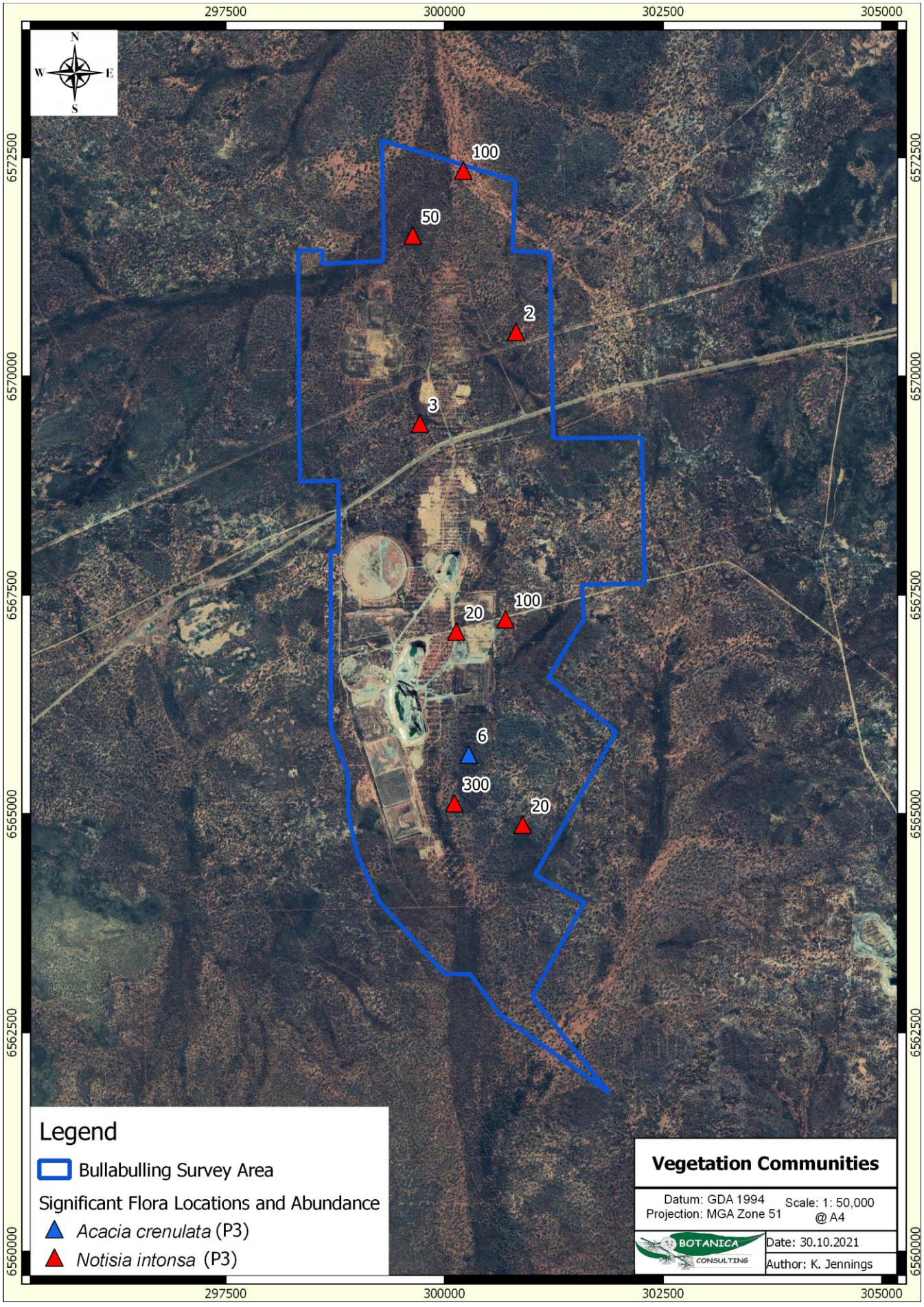


Figure 4-6: Significant flora species and abundance within the survey area

4.2.2 Vegetation Communities

A total of 12 broad-scale vegetation communities were identified within the survey area. Vegetation community descriptions and extent are listed below in Table 4-5 and illustrated spatially in Figure 4-7. Vegetation community descriptions and extents were determined from field survey results, aerial imagery interpretation and extrapolation of the communities.

The survey found CLP-EW1 was the most widespread community in the survey area, occupying 861.4 ha (34.1%), while QRH-EOW1 was the most restricted with 1.9 ha (0.1%). The most diverse vegetation type was CLP-EW1 with 150 species (59.8%), while the least diverse was RP-EOW1 with 32 species (12.7%).

Table 4-5: Vegetation Community Descriptions and Extent

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
CLP-AOS1 29.9 ha (1.2%)	*Acacia* tall open shrubland	*Acacia acuminata, Melaleuca hamata* and *Alyxia buxifolia* tall open shrubland over *Prostanthera grylloana*, *Olearia pimeleoides* and *Leucopogon* sp. Clyde Hill (M.A. Burgman 1207) low open shrubland	Clay-loam plain	
CLP-AOS2 2.6 ha (0.1%)	*Acacia* tall open shrubland	*Allocasuarina acutivalvis* subsp. *acutivalvis* and *Acacia resinimarginea* tall open shrubland over *Leucopogon sp. Clyde Hill (M.A. Burgman 1207)* and *Thryptomene kochii* low open shrubland	Clay-loam plain	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
CLP-EOW1 7.3 ha (0.3%)	*Eucalyptus* open woodland	*Eucalyptus salubris* low open woodland over *Eremophila caerulea* subsp. *caerulea*, *E. ternata* and *E. microphylla* over mixed chenopod low sparse shrubland	Clay-loam plain	
CLP-EW1 861.4 ha (34.1%)	*Eucalyptus* open woodland	*Eucalyptus salmonophloia*, *E. transcontinentalis* and *Eucalyptus salubris* open woodland over *Eremophila interstans* subsp. *interstans* and *Santalum spicatum* tall open shrubland over *Eremophila interstans* subsp. *virgata, E. ionantha* and *E. scoparia* shrubland over *Austrostipa scabra, Maireana triptera* and *Ptilotus obovatus* open tussock grassland/ low open shrubland	Clay-loam plain	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
DD-EOW1 142.4 ha (5.6%)	*Eucalyptus* open woodland	*Eucalyptus loxophleba* low open woodland over *Acacia acuminata*, *Acacia gibbosa* and *Eremophila alternifolia* tall open shrubland over *Senna artemisioides* subsp. *filifolia*, *Eremophila ionantha* and *E interstans* subsp. *virgata* open shrubland over *Austrostipa elegantissima*, *Schoenia cassiniana* and *Waitzia acuminata* sparse tussock grassland/sparse forbs	Drainage Depression	
OD-AOW1 45.1 ha (1.8%)	*Acacia* open woodland	*Eucalyptus salubris* and *E. salmonophloia* open woodland over *Acacia acuminata, Eremophila alternifolia* and *Santalum spicatum* tall shrubland over and *Acacia hemiteles*, *Eremophila decipiens* subsp. *decipiens* and *Lycium australe* shrubland over *Maireana pyramidata*, *Ptilotus obovatus* and *Sclerolaena diacantha* low open shrubland over *Goodenia mimuloides* and *Cephalipterum drummondii* open forbs	Open depression	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
OD-AOW2 37.4 ha (1.5%)	*Acacia* open woodland	*Eucalyptus salmonophloia* and *Eucalyptus salubris* woodland over *Eremophila interstans* subsp. *virgata* and *Santalum acuminatum* tall open shrubland over *Eremophila ionantha, Exocarpos aphyllus* and *Acacia hemiteles* open shrubland over *Austrostipa scabra* sparse tussock grassland	Open depression	
QRH-EOW1 1.9 ha (0.1%)	*Eucalyptus* low open woodland	*Eucalyptus celastroides* subsp. *celastroides* low open woodland over *Melaleuca pauperiflora* subsp. *fastigiata* tall shrubland over *Eremophila oppositifolia* subsp. *angustifolia, E. ternata* and *Dodonaea adenophora* shrubland over *Pogonolepis muelleriana* sparse forbs	Rocky Quartz Hillslope	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
RH-EOW1 12.9 ha (0.5%)	*Eucalyptus* open woodland	Mixed *Eucalyptus* open woodland over *Acacia crenulata*, *Alyxia buxifolia* and *Melaleuca leiocarpa* tall open shrubland over *Exocarpos aphyllus* open shrubland over mixed forbs	Rocky Hillslope	
RP-EOW1 553.8 ha (21.9%)	*Eucalyptus* open woodland	*Eucalyptus clelandii, E. griffithsii* and *E. loxophleba* subsp. *lissophloia* open woodland over *Acacia acuminata, Eremophila oppositifolia* subsp. *angustifolia* and *Alyxia buxifolia* tall open shrubland over *Scaevola spinescens, Acacia erinacea* and *Eremophila glabra* subsp. *glabra* shrubland over *Olearia muelleri* low sparse shrubland	Rocky Plain	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
RP-EOW2 25.2 ha (1.0%)	*Eucalyptus* low open woodland	*Eucalyptus loxophleba* subsp. *lissophloia, E. griffithsii* and *E. capillosa* subsp. *capillosa* low open woodland over *Acacia crenulata, A. acuminata* and *A. tetragonophylla* tall open shrubland over *Dodonaea adenophora, Eremophila granitica* and *E. oppositifolia subsp. angustifolia* open shrubland over *Prostanthera grylloana* and *Olearia pimeleoides* low sparse shrubland	Rocky Plain	
SP-AOW1 8.5 ha (0.3%)	*Eucalyptus* low open woodland	*Eucalyptus griffithsii* and *Eucalyptus oleosa* subsp. *oleosa* low open woodland over *Allocasuarina acutivalvis subsp. acutivalvis, Acacia resinimarginea,* and *Melaleuca hamata* tall open shrubland over *Olearia pimeleoides, Westringia cephalantha* and *Beyeria sulcata* var. *brevipes* low open shrubland over *Triodia tomentosa* sparse tussock grassland	Sandy Plain	

Vegetation Community	Broad Floristic Formation (NVIS III)	Vegetation Description (NVIS V)	Landform	Image
Cleared 564.8 ha (22.3%)	N/A	N/A	N/A	N/A
Mosaic of CLP-AOS2 and RH-EOW1 234.4 ha (9.3%)	N/A	N/A	N/A	N/A

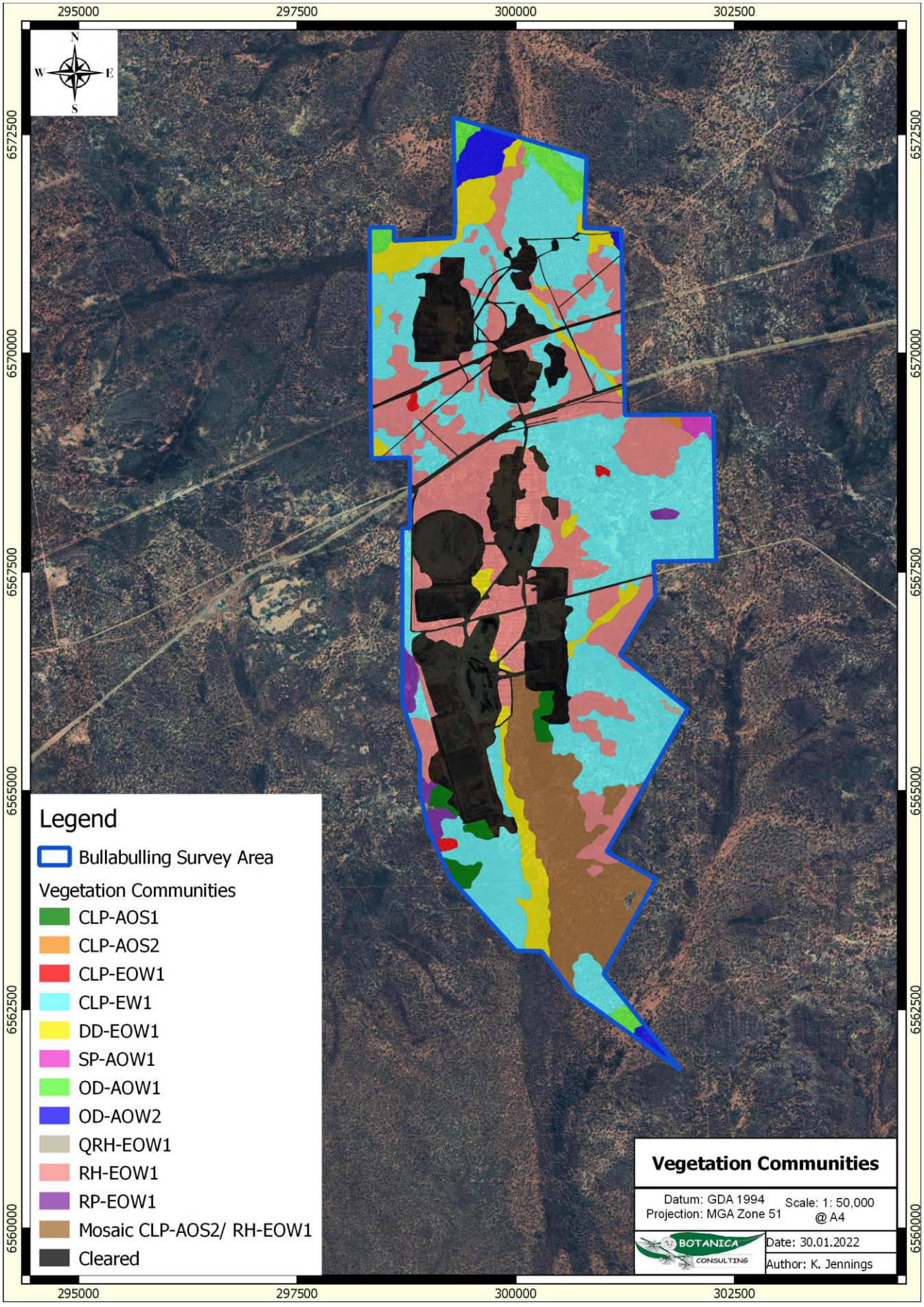


Figure 4-7: Vegetation communities within the survey area

4.2.3 Vegetation Condition

Based on the vegetation condition rating scale adapted from Keighery (1994), native vegetation within the survey area ranged from 'excellent' to 'completely degraded'. (Table 4-6, Figure 4-8). Vegetation condition rating descriptions are listed in Appendix 6. Impacts to native vegetation within the survey area include current and historical mining operations, including mining pits and waste dumps, access roads and tracks and low levels of introduced plant species.

Table 4-6: Vegetation Condition within the survey area

Condition Rating	Area (ha)	Area (%)
Excellent	179	7.1
Very Good	827	32.7
Good	791	31.3
Degraded	160	6.3
Completely Degraded	329	13.0
Cleared (Rehabilitated)	242	9.6
Total	**2528**	**100**

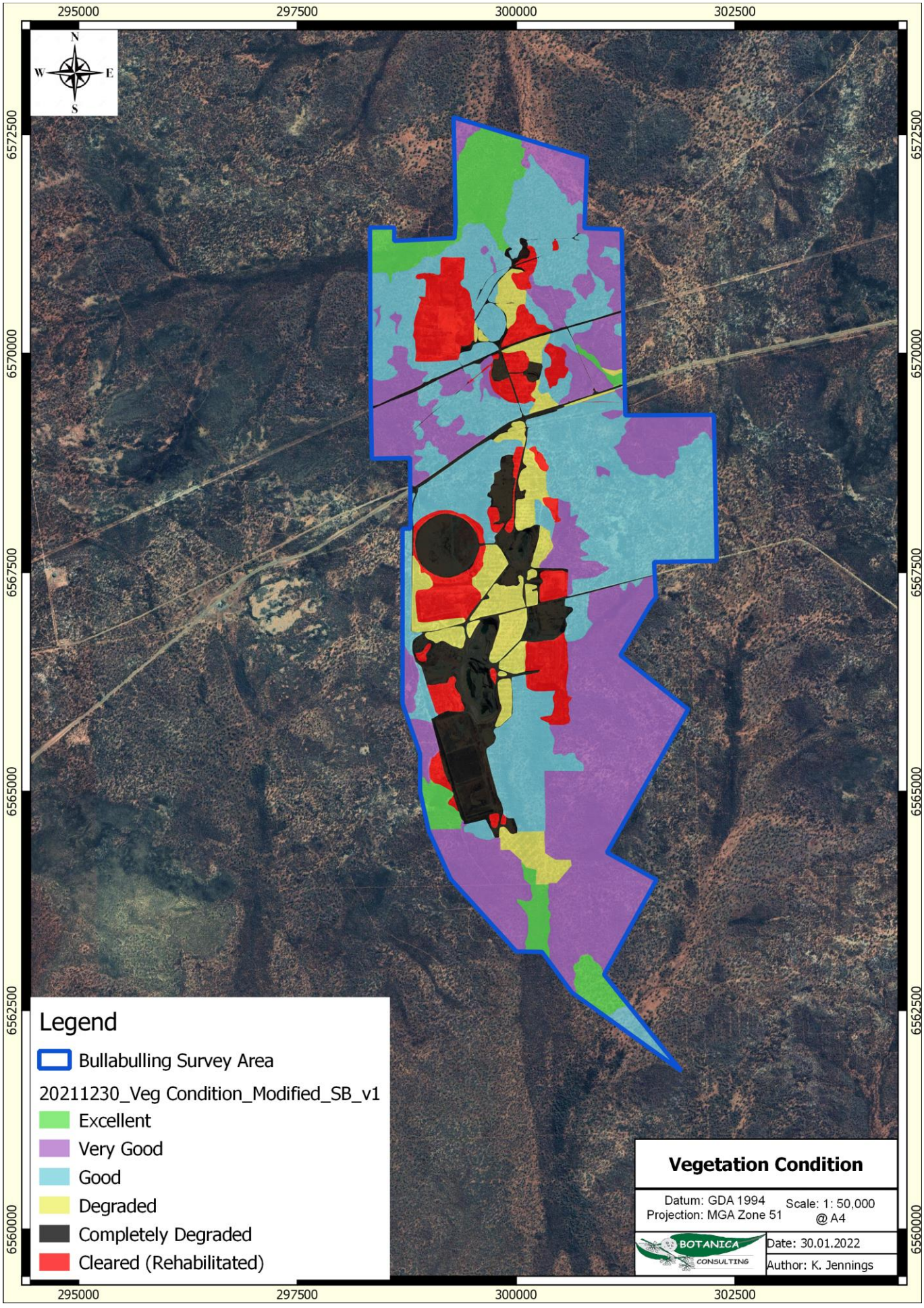


Figure 4-8: Vegetation condition within the survey area

4.2.4 Significant Vegetation

According to the EPA *Environmental Factor Guideline for Flora and Vegetation* (EPA, 2016b) significant vegetation includes:

- vegetation being identified as threatened or priority ecological communities;
- vegetation with restricted distribution;
- vegetation subject to a high degree of historical impact from threatening processes;
- vegetation which provides a role as a refuge; and
- vegetation providing an important function required to maintain ecological integrity of a significant ecosystem.

No Threatened, Priority or otherwise significant ecological communities were identified within the survey area.

4.3 Matters of National Environmental Significance

4.3.1 *Environment Protection and Biodiversity Conservation Act 1999*

The EPBC Act protects matters of national environmental significance and is used by the Commonwealth DAWE to list threatened taxa and ecological communities into categories based on the criteria set out in the Act (www.environment.gov.au/epbc/index.html). The Act provides a national environmental assessment and approval system for proposed developments and enforces strict penalties for unauthorised actions that may affect matters of national environmental significance. Matters of national environmental significance as defined by the Commonwealth EPBC Act include:

- Nationally threatened flora and fauna species;
- World heritage properties;
- National heritage places;
- Wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- Nationally threatened ecological communities;
- Commonwealth marine area;
- The Great Barrier Reef Marine Park; and
- Nuclear actions (including uranium mining) a water resource, in relation to coal seam gas development and large coal mining development.

No matters of national environmental significance as defined by the Commonwealth EPBC Act were identified within the survey area.

4.4 Matters of State Environmental Significance

4.4.1 Environmental Protection Act WA 1986

The EP Act provides for the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment. The Act is administered by The Department of Water and Environment Regulation (DWER), which is the State Government's environmental regulatory agency.

Under Section 51C of the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations (Regulations) WA 2004* any clearing of native vegetation in Western Australia that is not eligible for exemption under Schedule 6 of the *EP Act 1986* or under the Regulations 2004 requires a clearing permit from the DWER or DMIRS. Under Section 51A of the *EP Act 1986* native vegetation includes aquatic and terrestrial vegetation indigenous to Western Australia, and intentionally planted vegetation declared by regulation to be native vegetation, but not vegetation planted in a plantation or planted with commercial intent. Section 51A of the *EP Act 1986* defines clearing as "the killing or destruction of; the removal of; the severing or ringbarking of trunks or stems of; or the doing of substantial damage to some or all of the native vegetation in an area, including the flooding of land, the burning of vegetation, the grazing of stock or an act or activity that results in the above". Exemptions under Schedule 6 of the EP Act and the EP Regulations do not apply in ESAs as declared under Section 51B of the EP Act or TEC listed under State and Commonwealth legislation.

No evidence of the survey area containing any TEC or Threatened flora was found during the survey period. The survey area is not located within an ESA.

4.4.2 Biodiversity Conservation Act 2016

This Act is used by the Western Australian DBCA for the conservation and protection of biodiversity and biodiversity components in Western Australia and to promote the ecologically sustainable use of biodiversity components in the State. Taxa are classified as 'Threatened" when their populations are geographically restricted or are threatened by local processes (see following sections for Threatened definitions). Under this Act all native flora and fauna are protected throughout the State. Financial penalties are enforced under this Act if threatened species are collected without an appropriate license.

Under Section 54(1) of the BC Act, habitat is eligible for listing as critical habitat if:

a) it is critical to the survival of a threatened species or a threatened ecological community; and
b) its listing is otherwise in accordance with the ministerial guidelines.

No threatened species or critical habitat listed under the BC Act were recorded within the survey area.

4.5 Native Vegetation Clearing Principles

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the EP Act (Table 4-7). The assessment found that the proposed vegetation clearing activities may be at variance with clearing principle (f).

Table 4-7: Assessment against native vegetation clearing principles

Letter	Principle	Assessment	Outcome
Native vegetation should not be cleared if it:			
(a)	comprises a high level of biological diversity.	Vegetation identified within the survey area is not considered to be of high biological diversity and is well represented outside of the survey area. There are no Threatened or Priority Ecological Communities within the survey area.	Clearing is unlikely to be at variance with this principle
(c)	includes, or is necessary for the continued existence of rare flora.	No Threatened Flora taxa, pursuant to the BC Act and the EPBC Act were identified within the survey area.	Clearing is unlikely to be at variance with this principle
(d)	comprises the whole or part of or is necessary for the maintenance of a threatened ecological community (TEC).	No TEC listed under the EPBC Act or by the BC Act occur within the survey area or the Eastern Goldfields subregion.	Clearing is not at variance with this principle
(e)	is significant as a remnant of native vegetation in an area that has been extensively cleared	All vegetation associations retain >97% of their original pre-European vegetation extent.	Clearing is unlikely to be at variance with this principle
(f)	is growing, in, or in association with, an environment associated with a watercourse or wetland	Multiple ephemeral drainage lines are located within the survey area which were represented by three vegetation types: DD-EOW1, OD-AOW1 and OD-AOW2. These vegetation types accounted for 225 ha (8.9%) of the survey area.	Clearing may be at variance with this principle
(g)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The survey area and surrounding region has not been extensively cleared. Clearing within the survey area is not considered likely to lead to land degradation issues such as salinity, water logging or acidic soils.	Clearing is unlikely to be at variance with this principle
(h)	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	The survey area is not located within or adjacent to conservation areas, Environmentally Sensitive Areas or Nationally Important Wetlands.	Clearing is unlikely to be at variance with this principle

Letter	Principle	Assessment	Outcome
Native vegetation should not be cleared if it:			
(i)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	Multiple ephemeral drainage lines are located within the survey area which were represented by three vegetation types; DD-EOW1, OD-AOW1 and OD-AOW2. These vegetation types accounted for 225 ha (8.9%) of the survey area. Disturbances within the survey area are not expected to significantly affect water quality.	Clearing is unlikely to be at variance with this principle
(j)	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	Rainfall in the Eastern Goldfields subregion has an average annual rainfall of 200-300mm and an evaporation rate of 2400 mm. Rainfall data for Kalgoorlie-Boulder indicates that rainfall is spread throughout the year and rainfall events are unlikely to result in localised flooding. Clearing within the survey area is not likely to increase the incidence or intensity of flooding within the survey area or surrounds.	Clearing is unlikely to be at variance with this principle

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Appendix 1: Conservation Ratings BC Act and EPBC Act

Definitions of Conservation Significant Species

Code	Category
State categories of threatened and priority species	
Threatened Species (T) Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act).	
CR	**Critically Endangered** Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for critically endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for critically endangered flora.
EN	**Endangered** Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for endangered fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for endangered flora.
VU	**Vulnerable** Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for vulnerable fauna or the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.	
EX	**Extinct** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.
EW	**Extinct in the Wild** Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
IA	**International Agreement/ Migratory** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Code	Category
	Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
CD	**Species of special conservation interest** Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act). Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act). Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
Priority species Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.	
P1	**Priority 1: Poorly-known species** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
P2	**Priority 2: Poorly-known species** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
P3	**Priority 3: Poorly-known species** Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
P4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Commonwealth categories of threatened species	
EX	**Extinct** Taxa where there is no reasonable doubt that the last member of the species has died.
EW	**Extinct in the Wild** Taxa where it 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.
CR	**Critically Endangered** Taxa that are facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
EN	**Endangered**

Code	Category
	Taxa which are not critically endangered and is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
VU	**Vulnerable** Taxa which are 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 are the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Definitions of Conservation Significant Communities

Category Code	Category
State categories of Threatened Ecological Communities (TEC)	
PD	**Presumed Totally Destroyed**
	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:
	• records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or;
	• all occurrences recorded within the last 50 years have since been destroyed.
CR	**Critically Endangered**
	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, meeting any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	**Endangered**
	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. The ecological community must meet any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short-term future, or is unlikely to be substantially rehabilitated in the short-term future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the short-term future.
VU	**Vulnerable**
	An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria:
	The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated;
	The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution;

Category Code	Category
	The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.
Commonwealth categories of Threatened Ecological Communities (TEC)	
CE	**Critically Endangered** If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).
EN	**Endangered** If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
VU	**Vulnerable** If, at that time, an ecological community is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).
Priority Ecological Communities (PEC)	
P1	**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.
P2	**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, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	**Poorly known ecological communities**
	Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:
	Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
	Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	**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.
P5	**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.

Appendix 2: Potentially Occurring Introduced (Weed) Flora Species

Family	Taxon	Common Name	WAOL Status	Control Category	WONS
Anacardiaceae	*Schinus molle* var. *areira*	-	Permitted - s11	No Control Category	No
Asteraceae	*Centaurea melitensis*	Maltese Cockspur, Malta Thistle	Permitted - s11	No Control Category	No
	Conyza bonariensis	Flaxleaf Fleabane	Permitted - s11	No Control Category	No
	Conyza sumatrensis	-	Permitted - s11	No Control Category	No
	Helianthus annuus	Sunflower, Common Sunflower	Permitted - s11	No Control Category	No
	Monoculus monstrosus	-	Permitted - s11	No Control Category	No
Boraginaceae	*Echium plantagineum*	Paterson's Curse	Declared Pest - s22(2)	No Control Category, Whole of State	No
	Heliotropium europaeum	Common Heliotrope	Permitted - s11	No Control Category	No
Brassicaceae	*Brassica tournefortii*	Mediterranean Turnip	Permitted - s11	No Control Category	No
	Carrichtera annua	Ward's Weed	Permitted - s11	No Control Category	No
	Sisymbrium orientale	Indian Hedge Mustard	Permitted - s11	No Control Category	No
Cactaceae	*Cylindropuntia tunicata*	-	Declared Pest - s22(2)	C3 Management, Whole of State	Yes
	Opuntia elata	-	Declared Pest - s22(2)	C3 Management, Whole of State	Yes
Caryophyllaceae	*Spergularia diandra*	Lesser Sand Spurry	Permitted - s11	No Control Category	No
Fabaceae	*Medicago minima*	Small Burr Medic	Permitted - s11	No Control Category	No
	Vicia monantha subsp. triflora	-	Permitted - s11	No Control Category	No
Geraniaceae	*Erodium botrys*	Long Storksbill	Permitted - s11	No Control Category	No
	Erodium cicutarium	Common Storksbill	Permitted - s11	No Control Category	No
Juncaceae	*Juncus capitatus*	Capitate Rush	Permitted - s11	No Control Category	No
Lamiaceae	*Marrubium vulgare*	Horehound	Permitted - s11	No Control Category	No
	Salvia reflexa	Mintweed	Permitted - s11	No Control Category	No
	Salvia verbenaca	Wild Sage	Permitted - s11	No Control Category	No
Lythraceae	*Lythrum hyssopifolia*	Lesser Loosestrife	Permitted - s11	No Control Category	No
Malvaceae	*Malva parviflora*	Marshmallow	Permitted - s11	No Control Category	No
Papaveraceae	*Papaver hybridum*	Rough Poppy	Permitted - s11	No Control Category	No
Plumbaginaceae	*Limonium sinuatum*	Perennial Sea Lavender	Permitted - s11	No Control Category	No
Poaceae	*Eragrostis curvula*	African Lovegrass	Permitted - s11	No Control Category	No

Family	Taxon	Common Name	WAOL Status	Control Category	WONS
	Pentameris airoides subsp. airoides	-	Permitted - s11	No Control Category	No
	Phalaris paradoxa	Paradoxa Grass	Permitted - s11	No Control Category	No
	Poa annua	Winter Grass	Permitted - s11	No Control Category	No
	Urochloa panicoides	-	Permitted - s11	No Control Category	No
Polygonaceae	*Rumex vesicarius*	Ruby Dock	Permitted - s11	No Control Category	No
Primulaceae	*Lysimachia arvensis*	Pimpernel	Permitted - s11	No Control Category	No
Verbenaceae	*Glandularia aristigera*	-	Permitted - s11	No Control Category	No

Appendix 3: Significant Flora Likelihood Assessment

Status	Taxon	Habitat	Assessment	Likelihood
T	*Gastrolobium graniticum*	Sand, sandy loam, granite. Margins of rock outcrops, along drainage lines.	Recorded within 5 km of survey area, habitat unlikely to occur	Unlikely
	Thelymitra stellata	Sand, gravel, lateritic loam.	Outside known range	Unlikely
P1	*Acacia coatesii*	Eucalyptus woodland, Low rocky hill on skeletal red loam.	Recorded within 15 km of survey area, habitat may be present	Possible
	Acacia epedunculata	Yellow sand. Sandplains.	Recorded within 20 km of survey area, habitat may be present	Possible
	Acacia pycnantha	-	Outside known range	Unlikely
	Acacia sclerophylla var. teretiuscula	Clay & loamy soils.	Outside known range	Unlikely
	Acacia websteri	Red sand, clay or loam. Low-lying areas, flats.	Recorded within 20 km of survey area, habitat may be present	Possible
	Austrostipa sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	-	Widespread but scarce records	Unlikely
	Dampiera plumosa	Red sandy soils.	Recorded within 20 km of survey area, habitat may be present	Possible
	Eucalyptus websteriana ***subsp****. norsemanica*	Rocky rises.	Recorded within 20 km of survey area, habitat may be present	Possible
	Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)	-	Widespread but scarce records	Unlikely
	Melichrus sp. Coolgardie (K.R. Newbey 8698)	Yellow sand. Sandplains.	Recorded within 20 km of survey area	Possible
	Phebalium appressum	Yellow sandplain.	Outside known range	Unlikely
	Philotheca pachyphylla	Sand, red loam, clay loam. Sandplains, hill tops.	Recorded within 20 km of survey area, habitat may be present	Possible
	Thryptomene planiflora	-	Outside known range	Unlikely
	Thryptomene sp. Coolgardie (E. Kelso s.n. 1902)	-	Outside known range	Unlikely
P2	*Austrostipa* sp. Dowerin (G. Wiehl F 8004)	-	Widespread but scarce records	Unlikely
	Eucalyptus educta	Shallow soils. Granite rocks.	Outside known range	Unlikely
	Hakea rigida	Sandy soils, yellow sand.	Outside known range	Unlikely
	Lepidium merrallii	Clay loam.	Previously recorded within survey area (Phoenix, 2014)	Likely
	Phebalium clavatum	Sandy soils. Sandplains.	At extreme of known range, habitat may be present	Unlikely
P3	*Acacia crenulata*	Clay, sandy clay, yellow sand. Rocky rises, granite outcrops, breakaways.	Previously recorded within survey area (Phoenix, 2014)	Likely
	Allocasuarina eriochlamys subsp. grossa	Stony loam, laterite clay. Granite outcrops.	Recorded within 10 km of survey area, habitat may be present	Possible

Status	Taxon	Habitat	Assessment	Likelihood
	Austrostipa blackii	-	Previously recorded within survey area (Phoenix, 2014)	Likely
	Bossiaea concinna	White or red sand, gravel.	Outside known range	Unlikely
	Chrysocephalum apiculatum subsp. *norsemanense*	-	Outside known range	Unlikely
	Cryptandra crispula	Brown sandy clay, yellow loamy sand, red soil, pebbles. Dune ridges, hills, near salt lakes.	Habitat unlikely to be present	Unlikely
	Cyathostemon verrucosus	-	Outside known range	Unlikely
	Eremophila veronica	Stony clay, clay loam. Lateritic breakaways.	Recorded within 20 km of survey area, habitat may be present	Possible
	Eucalyptus exigua	Sandy loam, white sand. Sandplains.	Outside known range	Unlikely
	Eucalyptus frenchiana	-	Outside known range	Unlikely
	Gompholobium cinereum	Yellow sand, clayey sand, brown loam, sandy gravel, laterite. Well-drained open sites, slopes, plains, roadsides.	Outside known range	Unlikely
	Grevillea georgeana	Stony loam/clay. Ironstone hilltops & slopes.	Outside known range	Unlikely
	Hibbertia pachyphylla	Undulating plains, low rises, valley floors.	Outside known range	Unlikely
	Isoetes brevicula	Submerged in rock pools on granitic outcrops.	Habitat unlikely to be present	Unlikely
	Melaleuca macronychia subsp. *trygonoides*	Sandy soils. Granite outcrops.	Outside known range	Unlikely
	Notisia intonsa	Flat plain. Soil red cracking clay. Shallow depression in *Eucalyptus salubris* dominated woodland	Previously recorded within survey area (Phoenix, 2014)	Likely
	Phlegmatospermum eremaeum	Stony loam.	Widespread but scarce records	Unlikely
	Rinzia triplex	Flat/plain. Yellow coarse grained sand. Open *Eucalyptus* woodland over shrubs. -	Recorded within 5 km of survey area	Possible
	Stylidium choreanthum	White/yellow or red sand. Plains.	Outside known range	Unlikely
	Styphelia saxicola	Red brown loamy clay. Granite rocks with occasional quartz	Previously recorded within survey area (Phoenix, 2014)	Likely
P4	*Eremophila caerulea* subsp. *merrallii*	Sand, clay or loam. Undulating plains.	Outside known range, habitat may be present	Unlikely
	Myriophyllum petraeum	Strictly confined to ephemeral rock pools on granite outcrops.	Habitat unlikely to be present	Unlikely

Appendix 4: List of species identified within the survey area

(W) denotes introduced (weed) species; (A) denotes ephemeral (annual) species; (P) denotes Priority species

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
Aizoaceae	*Cleretum papulosum (W)*			*	*										
	Disphyma crassifolium subsp. clavellatum		*			*	*	*							
Amaranthaceae	*Ptilotus aervoides*		*		*	*	*								
	Ptilotus carlsonii			*	*										
	Ptilotus exaltatus			*	*							*			
	Ptilotus gaudichaudii var. *gaudichaudii*											*	*		
	Ptilotus holosericeus									*			*	*	
	Ptilotus obovatus			*					*	*	*	*	*		
Apiaceae	*Daucus glochidiatus*	*	*	*	*	*	*	*							
Apocynaceae	*Alyxia buxifolia*	*	*	*	*	*		*	*		*	*	*		*
	Marsdenia australis	*	*		*	*			*			*	*	*	
Araliaceae	*Hydrocotyle intertexta*		*	*	*										
	Hydrocotyle rugulosa								*						
	Trachymene cyanopetala								*						
	Trachymene ornata			*	*					*	*		*		
Asclepiadaceae	*Vincetoxicum lineare*							*		*	*		*	*	
Asparagaceae	*Chamaexeros macranthera*								*						*
	Thysanotus manglesianus	*			*			*		*	*				*
Asphodelaceae	*Asphodelus fistulosus (W)*		*		*		*								
Asteraceae	*Actinobole uliginosum*		*	*	*	*	*	*							
	Angianthus tomentosus	*	*	*	*	*	*	*							
	Asteridea athrixioides		*	*	*		*		*						
	Blennospora drummondii	*								*	*	*	*	*	
	Brachyscome ciliaris var. *ciliaris*		*	*	*			*							
	Brachyscome perpusilla var. *tenella*	*		*	*	*				*			*		
	Brachyscome pusilla	*	*		*		*		*		*				
	Calotis hispidula	*	*	*	*	*	*	*							
	Calotis multicaulis			*			*						*		

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Centaurea melitensis (W)			*	*	*		*							
	Cephalipterum drummondii		*	*	*		*	*							
	Chrysocephalum puteale								*		*		*		
	Cratystylis conocephala		*	*	*				*	*					
	Cratystylis microphylla		*	*	*		*	*							
	Gnephosis brevifolia			*	*										
	Gnephosis intonsa (P3)				*										
	Gnephosis tenuissima			*		*	*	*							
	Hyalosperma glutinosum subsp. *glutinosum*				*			*							
	Hypochaeris glabra (W)			*	*										
	Isoetopsis graminifolia			*					*			*	*		
	Lemooria burkittii	*	*	*	*	*		*							
	Leucochrysum fitzgibbonii									*	*		*	*	
	Millotia myosotidifolia (A)								*						
	Millotia tenuifolia var. *tenuifolia*				*	*									
	Monoculus monstrosus (W)			*	*	*	*								
	Olearia exiguifolia			*	*	*			*		*	*			*
	Olearia muelleri			*	*	*			*		*	*			
	Olearia pimeleoides										*		*		*
	Ozothamnus cassiope				*			*							
	Podolepis capillaris	*		*	*			*							
	Podolepis lessonii		*	*	*	*	*	*							
	Pogonolepis muelleriana				*										
	Rhodanthe chlorocephala subsp. *rosea*	*		*	*	*	*								
	Rhodanthe floribunda	*		*		*		*							
	Rhodanthe heterantha				*		*	*							
	Rhodanthe laevis			*	*	*		*							
	Rhodanthe rubella	*	*									*	*		
	Rhodanthe stricta	*		*	*	*					*				
	Schoenia cassiniana	*	*		*	*	*	*							
	Schoenia filifolia subsp. *filifolia*	*	*	*	*	*	*	*							

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Senecio glossanthus		*		*	*									
	Senecio lacustrinus		*		*	*		*		*		*			
	Sonchus oleraceus (W)														
	Streptoglossa liatroides			*	*	*	*								
	Trichanthodium skirrophorum		*	*	*		*								
	Triptilodiscus pygmaeus								*		*	*		*	
	Vittadinia sulcata			*	*		*								
	Waitzia acuminata	*		*	*		*			*	*	*	*		
Boraginaceae	*Halgania integerrima*														*
	Omphalolappula concava (A)				*	*									
Boryaceae	*Borya constricta*								*						*
Brassicaceae	*Arabidella chrysodema (A)*								*						
	Carrichtera annua (W)		*	*	*	*	*	*		*			*		
	Lepidium rotundum			*		*									
	Stenopetalum filifolium	*		*	*	*	*								
Campanulaceae	*Wahlenbergia gracilenta (A)*					*	*		*						
Caryophyllaceae	*Stellaria filiformis*				*		*								
Casuarinaceae	*Allocasuarina acutivalvis* subsp. *acutivalvis*		*												
Celastraceae	*Stackhousia* sp. Mt Keith (G. Cockerton & G. O'Keefe 11017)								*		*				
Chenopodiaceae	*Atriplex codonocarpa*	*	*	*	*		*								
	Atriplex nummularia subsp. *spathulata*		*	*	*	*	*	*	*	*	*		*		
	Atriplex stipitata		*	*	*	*	*								
	Atriplex vesicaria		*	*	*	*	*								
	Chenopodium curvispicatum			*	*										
	Dissocarpus paradoxus		*	*	*		*								
	Enchylaena tomentosa var. *tomentosa*		*		*	*	*		*						
	Eriochiton sclerolaenoides				*	*	*	*							
	Maireana carnosa	*		*	*		*								
	Maireana georgei			*	*	*									

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Maireana marginata			*	*	*			*						
	Maireana pyramidata				*		*								
	Maireana tomentosa subsp. *tomentosa*		*		*		*		*						
	Maireana trichoptera		*	*	*		*								
	Maireana triptera	*	*	*	*	*		*		*		*			
	Maireana turbinata		*	*	*	*	*		*						
	Maireana villosa			*	*										
	Rhagodia eremaea			*	*					*		*			
	Sclerolaena cuneata		*	*	*	*	*	*							
	Sclerolaena diacantha	*	*	*	*	*	*	*	*						
	Sclerolaena fusiformis			*			*				*		*		
Colchicaceae	*Wurmbea tenella*	*		*	*				*	*					
Crassulaceae	*Crassula colorata* var. *acuminata*		*	*	*						*			*	
Cyperaceae	*Lepidosperma* sanguinolentum								*						*
Dilleniaceae	*Hibbertia eatoniae*								*		*		*		
Droseraceae	*Drosera moorei*								*						*
Ericaceae	*Leucopogon* sp. Clyde Hill (M.A. Burgman 1207)	*							*						*
Euphorbiaceae	*Beyeria sulcata* var. *brevipes*			*	*										
	Beyeria sulcata var. *sulcata*			*	*	*									
Fabaceae	*Acacia acuminata*	*				*			*	*	*				
	Acacia assimilis S.Moore subsp. assimilis	*					*				*				*
	Acacia colletioides	*	*	*		*	*	*	*	*	*	*	*	*	
	Acacia crenulata (P3)											*			
	Acacia erinacea		*	*	*				*	*		*	*		
	Acacia gibbosa		*												*
	Acacia hemiteles	*	*	*	*		*	*		*	*		*	*	
	Acacia merrallii		*	*	*	*	*	*							
	Acacia resinimarginea		*												
	Acacia steedmanii subsp. *steedmanii*														
	Acacia tetragonophylla			*	*				*	*	*			*	

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Dillwynia acerosa												*	*	*
	Glycyrrhiza acanthocarpa			*	*	*		*							
	Medicago minima			*	*	*	*	*							*
	Mirbelia microphylla														
	Senna artemisioides subsp. *filifolia*			*	*	*			*			*	*		
	Senna stowardii		*	*	*	*	*								
	Swainsona canescens			*	*		*								
	Templetonia ceracea		*	*	*	*									
Frankeniaceae	*Frankenia desertorum*					*	*								
Geraniaceae	*Erodium cygnorum*			*	*	*	*	*							
Goodeniaceae	*Brunonia australis*		*	*	*			*	*					*	
	Goodenia havilandii	*		*	*	*		*							
	Goodenia mimuloides		*	*	*	*		*							
	Goodenia pinnatifida		*	*	*	*		*							
	Scaevola spinescens	*		*	*			*	*	*		*	*		
Haloragaceae	*Haloragis trigonocarpa*	*									*				*
Hemerocallidaceae	*Dianella revoluta*	*		*	*	*			*			*			
Lamiaceae	*Prostanthera grylloana*								*						*
	Teucrium disjunctum								*		*	*		*	
	Westringia cephalantha								*	*	*		*		
	Westringia rigida	*		*	*					*	*				
Lauraceae	*Cassytha nodiflora*								*						*
Loranthaceae	*Amyema gibberula* var. *gibberula*		*	*	*		*	*	*				*		*
	Lysiana casuarinae			*	*						*				
Malvaceae	*Abutilon cryptopetalum*	*	*			*									*
	Brachychiton gregorii			*	*	*			*					*	
	Lawrencia repens		*		*		*								
	Seringia velutina														*
	Sida fibulifera	*	*		*	*	*		*		*				
	Sida sp. dark green fruits (S.van Leeuwen 2260)								*			*		*	
Myrtaceae	*Aluta appressa*		*						*						*

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Eucalyptus longissima								*		*	*	*	*	
	Eucalyptus campaspe			*	*	*		*							
	Eucalyptus celastroides subsp. *celastroides*					*				*	*	*	*	*	
	Eucalyptus clelandiorum								*	*		*	*	*	
	Eucalyptus griffithsii			*	*					*	*	*	*	*	
	Eucalyptus livida		*	*	*				*	*			*		
	Eucalyptus loxophleba subsp. *supralaevis*					*	*	*							
	Eucalyptus oleosa subsp. *oleosa*			*	*										
	Eucalyptus prolixa			*	*										
	Eucalyptus ravida			*	*	*									
	Eucalyptus rigidula														*
	Eucalyptus salmonophloia			*	*	*				*					
	Eucalyptus salubris			*	*										
	Eucalyptus tenera														*
	Eucalyptus transcontinentalis			*	*										
	Eucalyptus urna			*	*										
	Eucalyptus vittata			*	*										
	Hysterobaeckea ochropetala subsp. reliqua (D.J.E. Whibley 4648)														*
	Malleostemon tuberculatus														*
	Melaleuca acuminata subsp. *acuminata*								*					*	*
	Melaleuca hamata								*				*		*
	Melaleuca lateriflora								*				*		*
	Melaleuca leiocarpa			*	*				*						*
	Melaleuca pauperiflora subsp. *fastigiata*			*	*										
	Rinzia carnosa														*
	Thryptomene kochii												*		*
Pittosporaceae	*Pittosporum angustifolium*			*	*		*								
Plantaginaceae	*Plantago debilis*		*	*	*	*	*								

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Plantago drummondii		*		*	*	*	*							
Poaceae	*Amphipogon caricinus var. caricinus*		*	*			*								
	Aristida contorta	*	*		*			*	*		*	*	*		
	Austrostipa elegantissima	*				*									
	Austrostipa nitida		*	*	*										
	Austrostipa puberula					*	*	*	*						
	Austrostipa scabra		*	*	*				*	*			*		
	Eragrostis dielsii	*				*	*	*							
	Eriachne ovata				*			*				*		*	
	Monachather paradoxus	*	*			*									
	Paspalidium constrictum			*	*		*								
	Pentameris airoides subsp. airoides (W)			*	*		*				*	*			
	Rostraria pumila (W)			*	*	*	*								
	Rytidosperma acerosum	*		*	*	*									
	Rytidosperma caespitosum	*			*						*				
	Rytidosperma setaceum	*					*				*		*		
	Triodia tomentosa											*			*
Polygalaceae	*Acetosa vesicaria (W)*			*	*										
	Comesperma integerrimum								*						*
Portulacaceae	*Calandrinia baccata*		*			*	*	*							
	Calandrinia eremaea	*		*	*	*									
	Portulaca oleracea (W)				*	*	*								
Primulaceae	*Lysimachia arvensis (W)*					*	*	*							
Proteaceae	*Grevillea acuaria*		*	*	*			*							
	Grevillea haplantha subsp. *haplantha*								*	*		*	*		
	Grevillea nematophylla subsp. *nematophylla*			*											
	Hakea minyma														*
	Hakea preissii							*					*		
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*		*		*			*			*	*	*	*	
Rhamnaceae	*Cryptandra aridicola*								*						*

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Stenanthemum stipulosum													*	
	Trymalium myrtillus subsp. *myrtillus*							*		*	*	*	*		
Rutaceae	*Phebalium lepidotum*														*
	Phebalium megaphyllum								*					*	*
	Phebalium tuberculosum								*						*
	Philotheca brucei subsp. *brucei*								*					*	*
Santalaceae	*Exocarpos aphyllus*		*		*			*		*	*	*	*	*	
	Santalum acuminatum		*	*	*	*						*			*
	Santalum spicatum		*	*		*		*	*	*		*	*	*	
Sapindaceae	*Dodonaea adenophora*	*							*	*	*				
	Dodonaea lobulata								*	*	*		*	*	
	Dodonaea stenozyga									*	*	*	*	*	
Scrophulariaceae	*Eremophila alternifolia*	*	*		*		*	*							
	Eremophila caerulea subsp. *caerulea*			*	*		*								
	Eremophila decipiens subsp. *decipiens*	*		*		*	*	*							
	Eremophila gibbosa								*			*	*		
	Eremophila glabra subsp. *glabra*	*		*	*	*									
	Eremophila granitica								*		*	*		*	
	Eremophila interstans subsp. *interstans*		*		*										
	Eremophila interstans subsp. *virgata*			*	*		*								
	Eremophila ionantha			*	*										
	Eremophila maculata subsp. brevifolia				*	*									
	Eremophila oldfieldii subsp. *angustifolia*		*						*	*	*				
	Eremophila oppositifolia subsp. *angustifolia*			*		*			*		*	*	*	*	
	Eremophila saligna			*											
	Eremophila scoparia		*	*	*	*			*						
	Eremophila serrulata				*	*	*	*							
	Eremophila ternata			*	*	*		*							

Family	Species	CLP-AOS1	CLP-AOS2	CLP-EOW1	CLP-EW1	DD-EOW1	OD-AOW1	OD-AOW2	QRH-EOW1	RH-EOW1	RH-EOW2	RP-EOW1	RP-EOW2	RP-EOW3	SP-AOW1
	Myoporum platycarpum subsp. *platycarpum*			*	*										
Solanaceae	*Lycium australe*				*										
	Nicotiana rotundifolia	*		*	*		*								
	Solanum hoplopetalum			*	*	*	*				*	*			
	Solanum lasiophyllum	*	*	*			*			*		*	*		
	Solanum nummularium		*	*	*		*				*				
	Solanum plicatile	*	*	*		*	*		*		*				
Stylidiaceae	*Stylidium dielsianum*								*						*
Thymelaeaceae	*Pimelea microcephala* subsp. *microcephala*			*	*	*									
	Pimelea spiculigera var. *thesioides*														*
Violaceae	*Hybanthus floribundus* subsp. *curvifolius*								*				*		
Zygophyllaceae	*Roepera apiculata*								*	*		*	*		
	Roepera compressa			*	*						*				
	Roepera eremaea			*	*					*		*		*	
	Roepera glauca		*	*	*		*								
	Roepera ovata		*		*	*	*								

Appendix 5: Significant Flora Locations (GDA 94, Zone 51)

Rank	Taxon Name	Easting	Northing	Abundance
P3	*Notisia intonsa*	300698	6567224	1000
P3	*Notisia intonsa*	300136	6567082	20
P3	*Notisia intonsa*	300819	6570507	2
P3	*Notisia intonsa*	299637	6571610	50
P3	*Notisia intonsa*	300215	6572350	100
P3	*Notisia intonsa*	300894	6564875	20
P3	*Notisia intonsa*	299719	6569459	3
P3	*Notisia intonsa*	300112	6565121	300
P3	*Notisia intonsa*	299951	6565854	50
P3	*Acacia crenulata*	300278	6565676	6

Appendix 6: Vegetation Condition Rating

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

Appendix 7: NatureMap Species List (40km buffer)

NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 09/10/2021

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 120° 54' 09" E,30° 59' 58" S
Buffer 40km
Group By Family

Family	Species	Records
Acanthizidae	9	293
Accipitridae	8	25
Aegothelidae	1	8
Agamidae	12	80
Aizoaceae	3	3
Amaranthaceae	11	62
Anacardiaceae	1	3
Anatidae	10	99
Anhingidae	1	1
Apiaceae	1	6
Apocynaceae	3	33
Araliaceae	2	4
Araneidae	3	3
Ardeidae	3	14
Artamidae	3	15
Asparagaceae	10	31
Aspleniaceae	1	3
Asteraceae	79	285
Aytoniaceae	1	1
Barychelidae	1	1
Boidae	1	2
Boraginaceae	7	33
Boryaceae	1	5
Brassicaceae	11	42
Bryaceae	1	1
Burramyidae	1	7
Buthidae	1	2
Cacatuidae	2	6
Cactaceae	2	2
Campanulaceae	2	16
Campephagidae	1	42
Caryophyllaceae	2	2
Casuariidae	1	30
Casuarinaceae	9	44
Celastraceae	5	8
Centrolepidaceae	3	6
Charadriidae	3	9
Chenopodiaceae	41	156
Cladoniaceae	2	5
Colchicaceae	1	4
Columbidae	4	63
Convolvulaceae	2	2
Corvidae	3	111
Cracticidae	4	226
Crassulaceae	5	13
Cuculidae	2	14
Cupressaceae	1	11
Cyperaceae	10	15
Cyzicidae	1	1
Dasyuridae	3	10
Dicaeidae	1	11
Dicranaceae	2	3
Dicruridae	3	104
Dilleniaceae	3	5
Diplodactylidae	9	48
Droseraceae	4	11
Dytiscidae	1	1
Elaeocarpaceae	1	2
Elapidae	7	14
Ericaceae	8	30
Estrildidae	1	4
Euphorbiaceae	9	17
Fabaceae	102	542
Falconidae	5	34
Fissidentaceae	1	1
Frankeniaceae	3	6
Geastraceae	1	1
Gekkonidae	4	59
Gentianaceae	1	1
Geraniaceae	4	11
Goodeniaceae	25	94
Graphidaceae	1	4
Grimmiaceae	1	1
Gyrostemonaceae	3	13
Halcyonidae	2	2
Haloragaceae	7	32
Hersiliidae	1	1

Hirundinidae	4	55
Hydrophilidae	2	2
Hypericaceae	1	3
Icmadophilaceae	1	4
Idiopidae	1	2
Isoetaceae	3	6
Juncaceae	2	2
Juncaginaceae	3	4
Lamiaceae	20	130
Lamponidae	1	1
Lauraceae	2	3
Lecideaceae	2	4
Limnodynastidae	3	22
Loganiaceae	2	3
Loranthaceae	5	17
Lycosidae	1	2
Lythraceae	1	1
Macropodidae	2	3
Maluridae	3	25
Malvaceae	15	71
Megalosporaceae	1	1
Megapodiidae	1	29
Meliphagidae	10	502
Meropidae	1	10
Montiaceae	3	15
Muridae	4	11
Myobatrachidae	1	21
Myrtaceae	113	758
Nemesiidae	2	2
Neosittidae	2	5
Nicodamidae	1	3
Ophioglossaceae	2	2
Orchidaceae	17	34
Ostracoda	1	1
Otididae	1	1
Oxalidaceae	1	1
Pachycephalidae	4	162
Papaveraceae	1	1
Pardalotidae	2	118
Parmeliaceae	12	23
Petroicidae	4	42
Phalacrocoracidae	1	10
Phasianidae	1	1
Phrymaceae	1	3
Pileolariaceae	1	2
Pittosporaceae	3	8
Plantaginaceae	3	6
Plumbaginaceae	1	1
Poaceae	38	106
Podargidae	1	8
Podicipedidae	2	30
Polygalaceae	2	3
Polygonaceae	2	2
Pomatostomidae	1	27
Portulacaceae	1	1
Pottiaceae	3	3
Primulaceae	1	1
Proteaceae	41	157
Psittacidae	6	41
Psoraceae	3	6
Pteridaceae	2	4
Pygopodidae	1	3
Rallidae	3	12
Recurvirostridae	2	5
Restionaceae	2	2
Rhamnaceae	7	33
Rubiaceae	2	2
Rutaceae	17	96
Santalaceae	3	50
Sapindaceae	7	74
Scincidae	16	59
Scolopacidae	5	8
Scolopendridae	4	8
Scrophulariaceae	32	263
Solanaceae	9	55
Sparassidae	1	1
Stylidiaceae	7	14
Theridiidae	1	2
Threskiornithidae	2	7
Thymelaeaceae	5	13
Trochanteriidae	1	1
Turnicidae	1	1
Varanidae	2	3
Verbenaceae	1	1
Vespertilionidae	3	7
Violaceae	2	9
Xanthorrhoeaceae	1	1
Zosteropidae	1	3
Zygophyllaceae	5	6
TOTAL	**1020**	**6171**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Acanthizidae					
1.	24260	*Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)*			
2.	24261	*Acanthiza chrysorrhoa (Yellow-rumped Thornbill)*			
3.	24265	*Acanthiza uropygialis (Chestnut-rumped Thornbill)*			
4.	25528	*Aphelocephala leucopsis (Southern Whiteface)*			
5.	24266	*Aphelocephala leucopsis subsp. castaneiventris (Southern Whiteface)*			
6.	25530	*Gerygone fusca (Western Gerygone)*			
7.	24278	*Pyrrholaemus brunneus (Redthroat)*			
8.	25534	*Sericornis frontalis (White-browed Scrubwren)*			
9.	30948	*Smicrornis brevirostris (Weebill)*			
Accipitridae					
10.	25535	*Accipiter cirrocephalus (Collared Sparrowhawk)*			
11.	25536	*Accipiter fasciatus (Brown Goshawk)*			
12.	24285	*Aquila audax (Wedge-tailed Eagle)*			
13.	24289	*Circus assimilis (Spotted Harrier)*			
14.		*Elanus axillaris*			
15.	24295	*Haliastur sphenurus (Whistling Kite)*			
16.	24297	*Hamirostra melanosternon (Black-breasted Buzzard)*			
17.	47965	*Hieraaetus morphnoides (Little Eagle)*			
Aegothelidae					
18.	25544	*Aegotheles cristatus (Australian Owlet-nightjar)*			
Agamidae					
19.	24871	*Ctenophorus cristatus (Bicycle Dragon)*			
20.	24873	*Ctenophorus fordi (Mallee Sand Dragon)*			
21.	24874	*Ctenophorus isolepis subsp. citrinus (Yellowy Military Dragon)*			
22.	24882	*Ctenophorus nuchalis (Central Netted Dragon)*			
23.	24883	*Ctenophorus ornatus (Ornate Crevice-Dragon)*			
24.	24886	*Ctenophorus reticulatus (Western Netted Dragon)*			
25.	24888	*Ctenophorus salinarum (Salt Pan Dragon)*			
26.	24889	*Ctenophorus scutulatus (Lozenge-marked Dragon)*			
27.	24904	*Moloch horridus (Thorny Devil)*			
28.	24907	*Pogona minor subsp. minor (Dwarf Bearded Dragon)*			
29.	30814	*Tympanocryptis cephalus (Pebble Dragon)*			
30.	39408	*Tympanocryptis lineata (Lined Earless Dragon)*			
Aizoaceae					
31.	2807	*Gunniopsis quadrifida (Sturts Pigface)*			
32.	2817	*Sarcozona praecox (Sarcozona)*			
33.	2822	*Tetragonia eremaea*			
Amaranthaceae					
34.	2652	*Alternanthera nodiflora (Common Joyweed)*			
35.	2707	*Ptilotus carlsonii*			
36.	2718	*Ptilotus drummondii (Narrowleaf Mulla Mulla)*			
37.	48602	*Ptilotus eremita*			
38.	2721	*Ptilotus exaltatus (Tall Mulla Mulla)*			
39.	2727	*Ptilotus gaudichaudii*			
40.	2729	*Ptilotus grandiflorus*			
41.	2732	*Ptilotus holosericeus*			
42.	2733	*Ptilotus humilis*			
43.	2747	*Ptilotus obovatus (Cotton Bush)*			
44.	2760	*Ptilotus spathulatus*			
Anacardiaceae					
45.	17056	*Schinus molle var. areira*	Y		
Anatidae					
46.	24312	*Anas gracilis (Grey Teal)*			
47.	24313	*Anas platyrhynchos (Mallard)*			
48.	24315	*Anas rhynchotis (Australasian Shoveler)*			
49.	24316	*Anas superciliosa (Pacific Black Duck)*			
50.	24318	*Aythya australis (Hardhead)*			
51.	24319	*Biziura lobata (Musk Duck)*			
52.	24321	*Chenonetta jubata (Australian Wood Duck, Wood Duck)*			
53.	24322	*Cygnus atratus (Black Swan)*			
54.	24326	*Malacorhynchus membranaceus (Pink-eared Duck)*			
55.	24331	*Tadorna tadornoides (Australian Shelduck, Mountain Duck)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Anhingidae					
56.	47414	*Anhinga novaehollandiae (Australasian Darter)*			
Apiaceae					
57.	6218	*Daucus glochidiatus (Australian Carrot)*			
Apocynaceae					
58.	6565	*Alyxia buxifolia (Dysentery Bush)*			
59.	12949	*Marsdenia australis*			
60.	48986	*Vincetoxicum lineare*			
Araliaceae					
61.	11546	*Hydrocotyle pilifera var. glabrata*			
62.	6279	*Trachymene ornata (Spongefruit)*			
Araneidae					
63.		*Austracantha minax*			
64.		*Backobourkia heroine*			
65.		*Eriophora biapicata*			
Ardeidae					
66.	41324	*Ardea modesta (great egret, white egret)*			
67.	24341	*Ardea pacifica (White-necked Heron)*			
68.		*Egretta novaehollandiae*			
Artamidae					
69.	25566	*Artamus cinereus (Black-faced Woodswallow)*			
70.	24353	*Artamus cyanopterus (Dusky Woodswallow)*			
71.	24356	*Artamus personatus (Masked Woodswallow)*			
Asparagaceae					
72.	1265	*Arthropodium curvipes*			
73.	1215	*Chamaexeros fimbriata*			
74.	1216	*Chamaexeros macranthera*			
75.	1224	*Lomandra collina (Pale Mat Rush)*			
76.	1226	*Lomandra effusa (Scented Matrush)*			
77.	1338	*Thysanotus manglesianus (Fringed Lily)*			
78.	1343	*Thysanotus patersonii*			
79.		*Thysanotus sp.*			
80.	29456	*Thysanotus sp. Twining Wheatbelt (N.H. Brittan 81/29)*			
81.	1352	*Thysanotus speckii*			
Aspleniaceae					
82.	65	*Pleurosorus rutifolius (Blanket Fern)*			
Asteraceae					
83.	7817	*Actinobole uliginosum (Flannel Cudweed)*			
84.	7836	*Angianthus tomentosus (Camel-grass)*			
85.	7846	*Asteridea athrixioides*			
86.	7856	*Blennospora drummondii*			
87.	7871	*Brachyscome ciliaris*			
88.	7880	*Brachyscome lineariloba*			
89.	7882	*Brachyscome perpusilla*			
90.	7895	*Calocephalus multiflorus (Yellow-top)*			
91.	7903	*Calotis hispidula (Bindy Eye)*			
92.	7916	*Centaurea melitensis (Maltese Cockspur, Malta Thistle)*	Y		
93.	19759	*Centipeda crateriformis subsp. crateriformis*			
94.	7922	*Cephalipterum drummondii (Pompom Head)*			
95.	7924	*Ceratogyne obionoides (Wingwort)*			
96.	47074	*Chrysocephalum apiculatum subsp. norsemanense*		P3	
97.	13138	*Chrysocephalum puteale*			
98.	7939	*Conyza bonariensis (Flaxleaf Fleabane)*	Y		
99.	20074	*Conyza sumatrensis*	Y		
100.	7950	*Cratystylis microphylla (Small-leaved Grey Bush)*			
101.	14377	*Erymophyllum ramosum subsp. ramosum*			
102.	12780	*Gilberta tenuifolia*			
103.	8002	*Gnephosis tenuissima*			
104.	8008	*Helianthus annuus (Sunflower, Common Sunflower)*	Y		
105.	8085	*Hyalochlamys globifera*			
106.	12742	*Hyalosperma demissum*			
107.	15447	*Hyalosperma glutinosum subsp. glutinosum*			
108.	12756	*Hyalosperma zacchaeus*			
109.	8087	*Isoetopsis graminifolia (Cushion Grass)*			
110.	19727	*Leiocarpa semicalva subsp. semicalva*			
111.	19237	*Leiocarpa websteri*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
112.	12628	*Lemooria burkittii*			
113.	14336	*Millotia eichleri*			
114.	8105	*Millotia myosotidifolia*			
115.	12631	*Millotia perpusilla*			
116.	29418	*Monoculus monstrosus*	Y		
117.	14186	*Myriocephalus pygmaeus*			
118.	48227	*Notisia intonsa*		P3	
119.	8131	*Olearia ciliata (Fringed Daisy Bush)*			
120.	8134	*Olearia exiguifolia (Small-leaved Daisy Bush)*			
121.	8136	*Olearia homolepis*			
122.	19023	*Olearia incana*			
123.	8140	*Olearia muelleri (Goldfields Daisy)*			
124.	8145	*Olearia pimeleoides (Pimelea Daisybush, Burrobunga)*			
125.	8149	*Olearia rudis (Rough Daisybush)*			
126.		*Olearia sp.*			
127.	44401	*Olearia sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)*			
128.	8152	*Olearia subspicata (Spiked Daisy Bush)*			
129.	12642	*Ozothamnus cassiope*			
130.	45238	*Podolepis aristata subsp. affinis*			
131.	8173	*Podolepis capillaris (Wiry Podolepis)*			
132.	8177	*Podolepis lessonii*			
133.	8180	*Podolepis rugata (Pleated Podolepis)*			
134.	8181	*Podolepis tepperi*			
135.	8182	*Podotheca angustifolia (Sticky Longheads)*			
136.	8187	*Pogonolepis muelleriana*			
137.	8195	*Quinetia urvillei*			
138.	13306	*Rhodanthe battii*			
139.	13241	*Rhodanthe chlorocephala subsp. rosea*			
140.	13301	*Rhodanthe floribunda*			
141.	13293	*Rhodanthe haigii*			
142.	13234	*Rhodanthe manglesii*			
143.	13249	*Rhodanthe oppositifolia subsp. oppositifolia*			
144.	13252	*Rhodanthe pygmaea*			
145.	13253	*Rhodanthe rubella*			
146.	13254	*Rhodanthe stricta*			
147.	8200	*Schoenia cassiniana (Schoenia)*			
148.	13287	*Schoenia filifolia subsp. filifolia*			
149.	8207	*Senecio glossanthus (Slender Groundsel)*			
150.	25881	*Senecio lacustrinus*			
151.	25889	*Senecio spanomerus*			
152.	14583	*Siloxerus multiflorus*			
153.	8238	*Streptoglossa liatroides*			
154.	12652	*Trichanthodium skirrophorum*			
155.	8253	*Triptilodiscus pygmaeus*			
156.	11387	*Vittadinia cervicularis var. cervicularis*			
157.	8263	*Vittadinia cuneata (Woolly Vittadinia)*			
158.	8268	*Vittadinia humerata*			
159.	8273	*Vittadinia sulcata*			
160.	13331	*Waitzia acuminata var. acuminata*			
161.	46093	*Waitzia fitzgibbonii*			
Aytoniaceae					
162.		*Asterella drummondii*			
Barychelidae					
163.		*Idiommata blackwalli*			
Boidae					
164.	25240	*Morelia spilota subsp. imbricata (Carpet Python)*			
Boraginaceae					
165.	6681	*Echium plantagineum (Paterson's Curse)*	Y		
166.	6684	*Halgania andromedifolia*			
167.	29840	*Halgania cyanea var. Allambi Stn (B.W. Strong 676)*			
168.	31117	*Halgania cyanea var. Charleville (R.W. Purdie +111)*			
169.	6691	*Halgania integerrima*			
170.	6710	*Heliotropium europaeum (Common Heliotrope)*	Y		
171.	6724	*Plagiobothrys australasicus*			
Boryaceae					
172.	1267	*Borya constricta*			
Brassicaceae					

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
173.	31876	*Arabidella chrysodema*			
174.	2992	*Arabidella trisecta*			
175.	3000	*Brassica tournefortii (Mediterranean Turnip)*	Y		
176.	3008	*Carrichtera annua (Ward's Weed)*	Y		
177.	3031	*Lepidium merrallii*		P2	
178.	3034	*Lepidium papillosum (Warty Peppercress)*			Y
179.	3050	*Menkea australis (Fairy Spectacles)*			
180.	3059	*Phlegmatospermum eremaeum*		P3	
181.	3072	*Sisymbrium orientale (Indian Hedge Mustard)*	Y		
182.	3076	*Stenopetalum filifolium*			
183.	3077	*Stenopetalum lineare (Narrow Thread Petal)*			
Bryaceae					
184.	32426	*Rosulabryum campylothecium*			
Burramyidae					
185.	24086	*Cercartetus concinnus (Western Pygmy-possum, Mundarda)*			
Buthidae					
186.		*Isometroides vescus*			
Cacatuidae					
187.		*Eolophus roseicapillus*			
188.		*Lophochroa leadbeateri*			
Cactaceae					
189.	20281	*Cylindropuntia tunicata*	Y		Y
190.	31799	*Opuntia elata*	Y		
Campanulaceae					
191.	7397	*Isotoma petraea (Rock Isotome, Tundiwari)*			
192.	7386	*Wahlenbergia gracilenta (Annual Bluebell)*			
Campephagidae					
193.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
Caryophyllaceae					
194.	2914	*Spergularia diandra (Lesser Sand Spurry)*	Y		
195.	2917	*Stellaria filiformis (Thread Spurry)*			
Casuariidae					
196.	24470	*Dromaius novaehollandiae (Emu)*			
Casuarinaceae					
197.	13904	*Allocasuarina acutivalvis subsp. acutivalvis*			
198.	1721	*Allocasuarina campestris*			
199.	1722	*Allocasuarina corniculata*			
200.	13906	*Allocasuarina eriochlamys subsp. eriochlamys*			
201.	13897	*Allocasuarina eriochlamys subsp. grossa*		P3	
202.	1730	*Allocasuarina helmsii*			
203.	1731	*Allocasuarina huegeliana (Rock Sheoak, Kwowl)*			
204.	12655	*Allocasuarina spinosissima*			
205.	12658	*Casuarina pauper (Black Oak)*			
Celastraceae					
206.	4725	*Psammomoya choretroides*			
207.	4733	*Stackhousia monogyna*			
208.	4734	*Stackhousia muricata*			
209.	29813	*Stackhousia sp. Mt Keith (G. Cockerton & G. O'Keefe 11017)*			
210.	4737	*Tripterococcus brunonis (Winged Stackhousia)*			
Centrolepidaceae					
211.	1134	*Centrolepis polygyna (Wiry Centrolepis)*			
212.	43642	*Centrolepis sp. Kalannie (B.J. Lepschi et al. BJL 3517)*			
213.	13124	*Centrolepis strigosa subsp. rupestris*			
Charadriidae					
214.	24377	*Charadrius ruficapillus (Red-capped Plover)*			
215.	47937	*Elseyornis melanops (Black-fronted Dotterel)*			
216.	24386	*Vanellus tricolor (Banded Lapwing)*			
Chenopodiaceae					
217.	2449	*Atriplex acutibractea (Toothed Saltbush)*			
218.	11489	*Atriplex acutibractea subsp. karoniensis*			
219.	2453	*Atriplex codonocarpa (Flat-topped Saltbush)*			
220.	2455	*Atriplex eardleyae*			
221.	2459	*Atriplex holocarpa (Pop Saltbush)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
222.	12042	*Atriplex lindleyi subsp. inflata*			
223.	11516	*Atriplex nummularia subsp. spathulata (Old Man Saltbush)*			
224.	11791	*Atriplex quadrivalvata var. quadrivalvata*			
225.	2478	*Atriplex spongiosa (Pop Saltbush)*			
226.	2479	*Atriplex stipitata (Mallee Saltbush)*			
227.	2481	*Atriplex vesicaria (Bladder Saltbush)*			
228.	2487	*Chenopodium curvispicatum*			
229.	2499	*Dissocarpus paradoxus (Curious Saltbush)*			
230.	33501	*Dysphania cristata (Crested Goosefoot)*			
231.	33480	*Dysphania pumilio (Clammy Goosefoot)*			
232.	2510	*Enchylaena lanata*			
233.	2511	*Enchylaena tomentosa (Barrier Saltbush)*			
234.	12064	*Enchylaena tomentosa var. tomentosa (Barrier Saltbush)*			
235.	2514	*Eriochiton sclerolaenoides (Woolly Bindii)*			
236.	2535	*Maireana appressa*			
237.	2542	*Maireana erioclada*			
238.	2544	*Maireana georgei (Satiny Bluebush)*			
239.	2545	*Maireana glomerifolia (Ball Leaf Bluebush)*			
240.	2554	*Maireana pentagona (Hairy Bluebush)*			
241.	2555	*Maireana pentatropis*			
242.	2560	*Maireana pyramidata (Sago Bush)*			
243.	2561	*Maireana radiata*			
244.	2565	*Maireana suaedifolia*			
245.	2567	*Maireana tomentosa (Felty Bluebush)*			
246.	11662	*Maireana tomentosa subsp. tomentosa*			
247.	2568	*Maireana trichoptera (Downy Bluebush)*			
248.	2569	*Maireana triptera (Threewinged Bluebush)*			
249.	2581	*Rhagodia drummondii*			
250.	11254	*Rhagodia preissii subsp. preissii*			
251.	30434	*Salsola australis*			
252.	2606	*Sclerolaena cuneata (Yellow Bindii)*			
253.	2609	*Sclerolaena diacantha (Grey Copperburr)*			
254.	2610	*Sclerolaena drummondii*			
255.	2615	*Sclerolaena fusiformis*			
256.	2625	*Sclerolaena obliquicuspis (Limestone Bindii)*			
257.	31492	*Tecticornia disarticulata*			
Cladoniaceae					
258.	48177	*Cladia muelleri*			
259.	28208	*Cladonia cervicornis subsp. verticillata*			
Colchicaceae					
260.	1403	*Wurmbea tenella (Eight Nancy)*			
Columbidae					
261.	24399	*Columba livia (Domestic Pigeon)*	Y		
262.	24407	*Ocyphaps lophotes (Crested Pigeon)*			
263.	24409	*Phaps chalcoptera (Common Bronzewing)*			
264.	25590	*Streptopelia senegalensis (Laughing Turtle-Dove)*	Y		
Convolvulaceae					
265.	6612	*Convolvulus clementii*			
266.	6659	*Wilsonia humilis (Silky Wilsonia)*			
Corvidae					
267.	24416	*Corvus bennetti (Little Crow)*			
268.	25592	*Corvus coronoides (Australian Raven)*			
269.	25593	*Corvus orru (Torresian Crow)*			
Cracticidae					
270.	24420	*Cracticus nigrogularis (Pied Butcherbird)*			
271.	25595	*Cracticus tibicen (Australian Magpie)*			
272.	25596	*Cracticus torquatus (Grey Butcherbird)*			
273.	25597	*Strepera versicolor (Grey Currawong)*			
Crassulaceae					
274.	11709	*Crassula colorata var. acuminata*			
275.	11563	*Crassula colorata var. colorata*			
276.	11349	*Crassula decumbens var. decumbens*			
277.	3144	*Crassula peduncularis (Purple Stonecrop)*			
278.	20268	*Crassula tetramera*			
Cuculidae					
279.	25598	*Cacomantis flabelliformis (Fan-tailed Cuckoo)*			

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280.	42307	*Cacomantis pallidus (Pallid Cuckoo)*			
Cupressaceae					
281.	96	*Callitris preissii (Rottnest Island Pine, Maro)*			
Cyperaceae					
282.	765	*Chrysitrix distigmatosa*			
283.	911	*Isolepis congrua*			
284.	917	*Isolepis marginata (Coarse Club-rush)*			
285.	931	*Lepidosperma drummondii*			
286.	41649	*Lepidosperma rigidulum*			
287.		*Lepidosperma sp.*			
288.	30438	*Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)*		P1	
289.	954	*Mesomelaena preissii*			
290.	14626	*Schoenus sp. A1 Boorabbin (K.L. Wilson 2581)*			
291.	1015	*Schoenus subaphyllus*			
Cyzicidae					
292.		*Ozestheria packardi*			
Dasyuridae					
293.	24096	*Ningaui yvonneae (Southern Ningaui)*			
294.	24108	*Sminthopsis crassicaudata (Fat-tailed Dunnart)*			
295.	24109	*Sminthopsis dolichura (Little long-tailed Dunnart)*			
Dicaeidae					
296.	25607	*Dicaeum hirundinaceum (Mistletoebird)*			
Dicranaceae					
297.	32461	*Campylopus bicolor var. bicolor*			
298.	32338	*Campylopus introflexus*	Y		
Dicruridae					
299.	24443	*Grallina cyanoleuca (Magpie-lark)*			
300.	48096	*Rhipidura albiscapa (Grey Fantail)*			
301.	25614	*Rhipidura leucophrys (Willie Wagtail)*			
Dilleniaceae					
302.	19692	*Hibbertia ancistrophylla*			
303.	5122	*Hibbertia eatoniae*			
304.	20416	*Hibbertia pachyphylla*		P3	
Diplodactylidae					
305.	24918	*Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko)*			
306.	25469	*Diplodactylus granariensis*			
307.	24929	*Diplodactylus granariensis subsp. granariensis*			
308.	24940	*Diplodactylus pulcher*			
309.	42408	*Hesperoedura reticulata*			
310.	30935	*Lucasium maini*			
311.	24982	*Rhynchoedura ornata (Western Beaked Gecko)*			
312.	24923	*Strophurus assimilis (Goldfields Spiny-tailed Gecko)*			
313.	24927	*Strophurus elderi*			
Droseraceae					
314.	19255	*Drosera moorei*			
315.	49090	*Drosera sp. Branched styles (S.C. Coffey 193)*			
316.	3133	*Drosera subhirtella (Sunny Rainbow)*			
317.	41202	*Drosera yilgarnensis*			
Dytiscidae					
318.		*Allodessus bistrigatus*			
Elaeocarpaceae					
319.	4530	*Tetratheca efoliata*			
Elapidae					
320.	42381	*Brachyurophis semifasciatus (Southern Shovel-nosed Snake)*			
321.	25247	*Demansia psammophis subsp. psammophis (Yellow-faced Whipsnake)*			
322.	25253	*Parasuta gouldii*			
323.	25254	*Parasuta monachus*			
324.	25263	*Pseudonaja modesta (Ringed Brown Snake)*			
325.	25266	*Simoselaps bertholdi (Jan's Banded Snake)*			
326.	25269	*Suta fasciata (Rosen's Snake)*			
Ericaceae					
327.	6336	*Astroloma serratifolium (Kondrung)*			
328.	6343	*Coleanthera myrtoides*			

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329.	6401	*Leucopogon hamulosus*			
330.	41770	*Leucopogon sp. Boorabbin (K.R. Newbey 8374)*			
331.	16049	*Leucopogon sp. Clyde Hill (M.A. Burgman 1207)*			
332.	34736	*Lysinema pentapetalum*			
333.	41784	*Melichrus sp. Coolgardie (K.R. Newbey 8698)*		P1	
334.	33018	*Styphelia sp. Bullfinch (M. Hislop 3574)*		P3	
Estrilidae					
335.	30870	*Taeniopygia guttata (Zebra Finch)*			
Euphorbiaceae					
336.	4591	*Bertya dimerostigma*			
337.	4598	*Beyeria lechenaultii (Pale Turpentine Bush)*			
338.	34276	*Beyeria sulcata var. brevipes*			
339.	34257	*Beyeria sulcata var. sulcata*			
340.	42867	*Euphorbia multifaria*			
341.	19587	*Monotaxis grandiflora var. obtusifolia*			
342.	4664	*Monotaxis luteiflora*			
343.	4701	*Ricinocarpos stylosus*			
344.	4704	*Ricinocarpos velutinus*			
Fabaceae					
345.	16159	*Acacia acanthoclada subsp. acanthoclada*			
346.	16107	*Acacia acoma*			
347.	3200	*Acacia acuminata (Jam, Mangard)*			
348.	14584	*Acacia ancistrophylla var. ancistrophylla*			
349.	3216	*Acacia andrewsii*			
350.	3236	*Acacia beauverdiana (Pukkati)*			
351.	3249	*Acacia calcarata*			
352.	3251	*Acacia camptoclada*			
353.	3256	*Acacia chrysella*			
354.	44469	*Acacia coatesii*		P1	Y
355.	44514	*Acacia collegialis*			
356.	3264	*Acacia colletioides (Wait-a-while)*			
357.	16117	*Acacia consanguinea*			
358.	3269	*Acacia coolgardiensis (Spinifex Wattle)*			
359.	14623	*Acacia crenulata*		P3	
360.	16169	*Acacia deficiens*			
361.	3292	*Acacia densiflora*			
362.	15281	*Acacia desertorum var. desertorum*			
363.	3315	*Acacia duriuscula*			
364.	32118	*Acacia effusifolia*			
365.	3318	*Acacia enervia*			
366.	16168	*Acacia enervia subsp. enervia*			
367.	12257	*Acacia enervia subsp. explicata*			
368.	14074	*Acacia epedunculata*		P1	
369.	16020	*Acacia eremophila var. eremophila*			
370.	3324	*Acacia erinacea*			
371.	15282	*Acacia gibbosa*			
372.	3366	*Acacia hemiteles*			
373.	15285	*Acacia heteroneura var. jutsonii*			
374.	3378	*Acacia inaequiloba*			
375.	16164	*Acacia inceana subsp. inceana*			
376.	3393	*Acacia jennerae*			
377.	3395	*Acacia jibberdingensis*			
378.	3408	*Acacia lasiocalyx (Silver Wattle, Wilyurwur)*			
379.	3416	*Acacia leptopetala*			
380.	3426	*Acacia longispinea*			
381.	3440	*Acacia merrallii*			
382.	3451	*Acacia multispicata*			
383.	3452	*Acacia murrayana (Sandplain Wattle)*			
384.	15290	*Acacia neurophylla subsp. erugata*			
385.	3463	*Acacia nyssophylla*			
386.	3478	*Acacia pachypoda*			
387.	3495	*Acacia prainii (Prain's Wattle)*			
388.	3504	*Acacia pycnantha (Golden Wattle)*	Y		
389.	3512	*Acacia rendlei*			
390.	3513	*Acacia resinimarginea*			
391.	3514	*Acacia resinistipulea*			
392.	16145	*Acacia resinosa*			
393.	3524	*Acacia rossei*			
394.	11765	*Acacia sclerophylla var. teretiuscula*			

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				P1	
395.	3539	*Acacia sericocarpa*			
396.		*Acacia sp.*			
397.	23525	*Acacia steedmanii subsp. steedmanii*			
398.	3577	*Acacia tetragonophylla (Kurara, Wakalpuka)*			
399.	3589	*Acacia uncinella*			
400.	3600	*Acacia websteri*		P1	
401.	15292	*Acacia yorkrakinensis subsp. acrita*			
402.	41993	*Aotus sp. Tortile (G.J. Keighery 3767)*			
403.	3722	*Bossiaea walkeri*			
404.	17417	*Cullen discolor*			
405.	8977	*Daviesia aphylla*			
406.	3797	*Daviesia cardiophylla*			
407.	19746	*Daviesia decurrens subsp. hamata*			
408.	3813	*Daviesia grahamii*			
409.	12326	*Daviesia hakeoides subsp. subnuda*			
410.	3823	*Daviesia nematophylla*			
411.	3836	*Daviesia purpurascens (Purple-leaved Daviesia)*			
412.	19854	*Dillwynia sp. Coolgardie (V.E. Sands 637.3.1)*			
413.	11034	*Gastrolobium graniticum*		T	
414.	3943	*Glycyrrhiza acanthocarpa (Native Liquorice)*			
415.	29285	*Gompholobium cinereum*		P3	
416.	10777	*Gompholobium gompholobioides*			
417.	14884	*Indigofera occidentalis*			
418.	4021	*Jacksonia nematoclada*			
419.	4043	*Kennedia prorepens*			
420.	4056	*Leptosema daviesioides*			
421.	4061	*Lotus cruentus (Redflower Lotus)*			
422.	4077	*Medicago minima (Small Burr Medic)*	Y		
423.	4089	*Mirbelia depressa*			
424.	4094	*Mirbelia microphylla*			
425.	4097	*Mirbelia ramulosa*			
426.	4099	*Mirbelia seorsifolia*			
427.	3674	*Petalostylis cassioides*			
428.	17645	*Senna artemisioides*			
429.	12276	*Senna artemisioides subsp. filifolia*			
430.	17558	*Senna artemisioides subsp. x artemisioides*			
431.	18430	*Senna cardiosperma*			
432.	16378	*Senna pleurocarpa*			
433.	12315	*Senna pleurocarpa var. angustifolia*			
434.	12314	*Senna pleurocarpa var. pleurocarpa*			
435.	14579	*Senna sp. Austin (A. Strid 20210)*			
436.	18446	*Senna stowardii*			
437.		*Swainsona burkittii*			
438.	4220	*Swainsona canescens (Grey Swainsona)*			
439.	4221	*Swainsona colutoides (Bladder Vetch)*			
440.	4230	*Swainsona incei*			
441.	4231	*Swainsona kingii*			
442.	4235	*Swainsona microphylla (Small-leaf Swainsona)*			
443.	4248	*Templetonia aculeata*			
444.	35840	*Templetonia ceracea*			
445.	9008	*Urodon dasyphyllus (Mop Bushpea)*			
446.	17261	*Vicia monantha subsp. triflora*	Y		
Falconidae					
447.	25621	*Falco berigora (Brown Falcon)*			
448.	24471	*Falco berigora subsp. berigora (Brown Falcon)*			
449.	25622	*Falco cenchroides (Australian Kestrel, Nankeen Kestrel)*			
450.	25623	*Falco longipennis (Australian Hobby)*			
451.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
Fissidentaceae					
452.		*Fissidens oblongifolius*			
Frankeniaceae					
453.	5197	*Frankenia desertorum*			
454.	5204	*Frankenia interioris*			
455.	5209	*Frankenia pauciflora (Seaheath)*			
Geastraceae					
456.		*Geastrum sp.*			

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Gekkonidae					
457.	24957	*Gehyra purpurascens*			
458.	24959	*Gehyra variegata*			
459.	24961	*Heteronotia binoei (Bynoe's Gecko)*			
460.	24983	*Underwoodisaurus milii (Barking Gecko)*			
Gentianaceae					
461.	41660	*Schenkia australis*			
Geraniaceae					
462.	4332	*Erodium botrys (Long Storksbill)*	Y		
463.	4333	*Erodium cicutarium (Common Storksbill)*	Y		
464.	4334	*Erodium crinitum (Corkscrew)*			
465.	4335	*Erodium cygnorum (Blue Heronsbill)*			
Goodeniaceae					
466.	7413	*Brunonia australis (Native Cornflower)*			
467.	19069	*Brunonia sp. Goldfields (K.R. Newbey 6044)*			
468.	7419	*Coopernookia strophiolata*			
469.	7438	*Dampiera eriocephala (Woolly-headed Dampiera)*			
470.	7451	*Dampiera lavandulacea*			
471.	7456	*Dampiera luteiflora (Yellow Dampiera)*			
472.	7463	*Dampiera plumosa*		P1	
473.	7477	*Dampiera stenostachya (Narrow-spiked Dampiera)*			
474.	7480	*Dampiera tenuicaulis (Slender-stemmed Dampiera)*			
475.	13158	*Dampiera tenuicaulis var. curvula*			
476.	13159	*Dampiera tenuicaulis var. tenuicaulis*			
477.	7499	*Goodenia concinna (Elegant Goodenia)*			
478.	7506	*Goodenia elderi*			
479.	7514	*Goodenia havilandii*			
480.	12523	*Goodenia helmsii*			
481.	7527	*Goodenia mimuloides*			
482.	19051	*Goodenia scapigera subsp. scapigera*			
483.	7565	*Goodenia xanthosperma (Yellow-seeded Goodenia)*			
484.	7569	*Lechenaultia brevifolia*			
485.	7644	*Scaevola spinescens (Currant Bush, Maroon)*			
486.	13151	*Scaevola thesioides subsp. filifolia*			
487.	7658	*Velleia discophora (Cabbage Poison)*			
488.	7664	*Velleia rosea (Pink Velleia)*			
489.	7665	*Velleia trinervis*			
490.	38061	*Verreauxia dyeri (Hairy Verreauxia)*			
Graphidaceae					
491.	27725	*Diploschistes thunbergianus*			
Grimmiaceae					
492.	32386	*Grimmia laevigata*			
Gyrostemonaceae					
493.	2778	*Codonocarpus cotinifolius (Native Poplar, Kundurangu)*			
494.	2780	*Gyrostemon brownii*			
495.	2783	*Gyrostemon racemiger*			
Halcyonidae					
496.	42351	*Todiramphus pyrrhopygius (Red-backed Kingfisher)*			
497.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
Haloragaceae					
498.	33620	*Glischrocaryon angustifolium*			
499.	6143	*Glischrocaryon aureum (Common Popflower)*			
500.	11584	*Gonocarpus confertifolius var. confertifolius*			
501.	11801	*Gonocarpus confertifolius var. helmsii*			
502.	6159	*Gonocarpus nodulosus*			
503.	6180	*Haloragis trigonocarpa*			
504.	6197	*Myriophyllum petraeum (Granite Myriophyllum)*		P4	
Hersiliidae					
505.		*Tamopsis circumvidens*			
Hirundinidae					
506.	47909	*Cheramoeca leucosterna (White-backed Swallow)*			
507.	24491	*Hirundo neoxena (Welcome Swallow)*			
508.	48060	*Petrochelidon ariel (Fairy Martin)*			
509.	48061	*Petrochelidon nigricans (Tree Martin)*			

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Hydrophilidae					
510.		*Berosus nutans*			
511.		*Enochrus elongatulus*			
Hypericaceae					
512.	5180	*Hypericum gramineum (Small St John's Wort)*			
Icmadophilaceae					
513.	28060	*Siphula coriacea*			
Idiopidae					
514.		*Anidiops villosus*			
Isoetaceae					
515.	7	*Isoetes australis*			
516.	8	*Isoetes brevicula*		P3	
517.	9	*Isoetes caroli*			
Juncaceae					
518.	1180	*Juncus capitatus (Capitate Rush)*	Y		
519.	1195	*Juncus subsecundus (Finger Rush)*			
Juncaginaceae					
520.	33276	*Triglochin isingiana*			
521.	33221	*Triglochin longicarpa*			
522.	19174	*Triglochin sp. A Flora of Australia (G.J. Keighery 2477)*			
Lamiaceae					
523.	19437	*Brachysola coerulea*			
524.	6747	*Cyanostegia angustifolia (Tinsel-flower)*			
525.	6751	*Cyanostegia microphylla (Tinsel Flower)*			
526.	41025	*Dasymalla terminalis (Native Foxglove)*			
527.	6771	*Dicrastylis parvifolia*			
528.	6872	*Hemigenia teretiuscula*			
529.	6875	*Hemigenia westringioides (Open Hemigenia)*			
530.	6776	*Hemiphora elderi (Red Velvet)*			
531.	6779	*Lachnostachys coolgardiensis*			
532.	6881	*Marrubium vulgare (Horehound)*	Y		
533.	6812	*Pityrodia lepidota*			
534.	15822	*Prostanthera althoferi subsp. althoferi*			
535.	6912	*Prostanthera campbellii*			
536.	6916	*Prostanthera grylloana*			
537.	6917	*Prostanthera incurvata*			
538.	6928	*Salvia reflexa (Mintweed)*	Y		
539.	6929	*Salvia verbenaca (Wild Sage)*	Y		
540.	6938	*Westringia cephalantha*			
541.	34603	*Westringia cephalantha var. caterva*			
542.	9247	*Westringia rigida (Stiff Westringia)*			
Lamponidae					
543.		*Lampona cylindrata*			
Lauraceae					
544.	11211	*Cassytha glabella forma dispar*			
545.	2953	*Cassytha melantha (Large Dodder-laurel)*			
Lecideaceae					
546.	27825	*Lecidea ochroleuca*			
547.		*Lecidea sp.*			
Limnodynastidae					
548.	25425	*Neobatrachus kunapalari (Kunapalari Frog)*			
549.	25426	*Neobatrachus pelobatoides (Humming Frog)*			
550.	25427	*Neobatrachus sutor (Shoemaker Frog)*			
Loganiaceae					
551.	46313	*Orianthera flaviflora*			
552.	46253	*Orianthera tortuosa*			
Loranthaceae					
553.	2369	*Amyema benthamii*			
554.	11614	*Amyema gibberula var. gibberula*			
555.	2380	*Amyema miquelii (Stalked Mistletoe)*			
556.	2383	*Amyema preissii (Wireleaf Mistletoe)*			
557.	2396	*Lysiana casuarinae*			
Lycosidae					

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558.		*Tasmanicosa leuckartii*			
Lythraceae					
559.	5281	*Lythrum hyssopifolia (Lesser Loosestrife)*	Y		
Macropodidae					
560.	24132	*Macropus fuliginosus (Western Grey Kangaroo)*			
561.	24135	*Macropus robustus subsp. erubescens (Euro, Biggada)*			
Maluridae					
562.	25652	*Malurus leucopterus (White-winged Fairy-wren)*			
563.	24551	*Malurus pulcherrimus (Blue-breasted Fairy-wren)*			
564.	25654	*Malurus splendens (Splendid Fairy-wren)*			
Malvaceae					
565.	40903	*Androcalva aphrix*			
566.	40910	*Androcalva luteiflora (Yellow-flowered Rulingia)*			
567.	4999	*Brachychiton gregorii (Desert Kurrajong, Ngalta)*			
568.	40923	*Commersonia craurophylla (Brittle Leaved Rulingia)*			
569.	40927	*Commersonia magniflora subsp. oblongifolia*			
570.	17725	*Hannafordia bissillii subsp. latifolia*			
571.	4941	*Hibiscus solanifolius*			
572.	4957	*Lawrencia repens*			
573.	4961	*Malva parviflora (Marshmallow)*	Y		
574.	41544	*Malva weinmanniana*			
575.	4964	*Radyera farragei (Knobby Hibiscus)*			
576.	46815	*Seringia cacaobrunnea (Chocolate fire-bush)*			
577.	46824	*Seringia velutina (Velvet firebush)*			
578.	4970	*Sida calyxhymenia (Tall Sida)*			
579.	16924	*Sida spodochroma*			
Megalosporaceae					
580.	27587	*Aspicilia calcarea*			
Megapodiidae					
581.	24557	*Leipoa ocellata (Malleefowl)*		T	
Meliphagidae					
582.	24559	*Acanthagenys rufogularis (Spiny-cheeked Honeyeater)*			
583.	24561	*Anthochaera carunculata (Red Wattlebird)*			
584.	24564	*Certhionyx variegatus (Pied Honeyeater)*			
585.	24567	*Epthianura albifrons (White-fronted Chat)*			
586.	25659	*Lichenostomus leucotis (White-eared Honeyeater)*			
587.	25661	*Lichmera indistincta (Brown Honeyeater)*			
588.	24583	*Manorina flavigula (Yellow-throated Miner)*			
589.	25663	*Melithreptus brevirostris (Brown-headed Honeyeater)*			
590.	48071	*Phylidonyris niger (White-cheeked Honeyeater)*			
591.	42344	*Purnella albifrons (White-fronted Honeyeater)*			
Meropidae					
592.	24598	*Merops ornatus (Rainbow Bee-eater)*			
Montiaceae					
593.	2853	*Calandrinia eremaea (Twining Purslane)*			
594.	2854	*Calandrinia granulifera (Pygmy Purslane)*			
595.	2862	*Calandrinia porifera*			
Muridae					
596.	24223	*Mus musculus (House Mouse)*	Y		
597.	24229	*Notomys mitchellii (Mitchell's Hopping-mouse)*			
598.	24232	*Pseudomys bolami (Bolam's Mouse)*			
599.	24237	*Pseudomys hermannsburgensis (Sandy Inland Mouse)*			
Myobatrachidae					
600.	25434	*Pseudophryne occidentalis (Western Toadlet)*			
Myrtaceae					
601.	19467	*Aluta appressa*			
602.	19466	*Aluta aspera subsp. aspera*			
603.	20726	*Astus subroseus*			
604.	5344	*Baeckea elderiana*			
605.	36038	*Baeckea sp. Koonadgin (B.L. Rye & M.E. Trudgen BLR 241137)*			
606.	5375	*Balaustion pulcherrimum (Native Pomegranate)*			
607.	5408	*Calothamnus gilesii*			
608.	5442	*Calytrix birdii*			
609.	13654	*Calytrix breviseta subsp. stipulosa*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
610.	5491	*Chamelaucium ciliatum*			
611.	44081	*Cyathostemon verrucosus*		P3	
612.	45244	*Ericomyrtus serpyllifolia*			
613.	13516	*Eucalyptus aequioperta*			
614.	13035	*Eucalyptus aspratilis*			
615.	5581	*Eucalyptus campaspe (Silver Gimlet)*			
616.	12904	*Eucalyptus capillosa*			
617.	14300	*Eucalyptus celastroides subsp. celastroides (Mirret)*			
618.	11978	*Eucalyptus celastroides subsp. virella*			
619.	5588	*Eucalyptus ceratocorys*			
620.	48436	*Eucalyptus clelandiorum*			
621.	5595	*Eucalyptus comitae-vallis (Comet Vale Mallee)*			
622.	5607	*Eucalyptus corrugata (Rough-fruited Mallee)*			
623.	5611	*Eucalyptus cylindriflora (White Mallee)*			
624.	5612	*Eucalyptus cylindrocarpa (Woodline Mallee)*			
625.	20296	*Eucalyptus distuberosa*			
626.	34811	*Eucalyptus distuberosa subsp. distuberosa*			
627.	13097	*Eucalyptus educta*		P2	
628.	5637	*Eucalyptus eremophila (Tall Sand Mallee)*			
629.	15667	*Eucalyptus eremophila subsp. eremophila (Sand Mallee)*			
630.	5641	*Eucalyptus ewartiana (Ewart's Mallee)*			
631.	13515	*Eucalyptus exigua*		P3	
632.	5648	*Eucalyptus flocktoniae (Merrit, Merid)*			
633.	18521	*Eucalyptus flocktoniae subsp. flocktoniae*			
634.	14277	*Eucalyptus fraseri subsp. fraseri*			
635.	34756	*Eucalyptus frenchiana*		P3	
636.	5662	*Eucalyptus gracilis (Yorrell)*			
637.	5665	*Eucalyptus griffithsii (Griffith's Grey Gum)*			
638.	5673	*Eucalyptus horistes*			
639.	5675	*Eucalyptus incrassata (Lerp Mallee)*			
640.	15682	*Eucalyptus leptophylla (Narrow-leaved Red Mallee)*			
641.	13056	*Eucalyptus leptopoda subsp. subluta*			
642.	5697	*Eucalyptus lesouefii (Goldfields Blackbutt)*			
643.	12901	*Eucalyptus livida (Mallee Wandoo)*			
644.	13037	*Eucalyptus loxophleba subsp. lissophloia*			
645.	5711	*Eucalyptus melanoxylon (Black Morrel)*			
646.	19323	*Eucalyptus moderata*			
647.	5726	*Eucalyptus oleosa (Giant Mallee)*			
648.	20091	*Eucalyptus oleosa subsp. oleosa*			
649.	5742	*Eucalyptus petraea (Granite Rock Box)*			
650.	5745	*Eucalyptus pileata (Capped Mallee)*			
651.	18580	*Eucalyptus planipes*			
652.	5747	*Eucalyptus platycorys (Boorabbin Mallee)*			
653.	19064	*Eucalyptus prolixa*			
654.	12380	*Eucalyptus ravida (Silver-topped Gimlet)*			
655.	5761	*Eucalyptus rigidula (Stiff-leaved Mallee)*			
656.	12693	*Eucalyptus salicola (Salt Gum)*			
657.	5766	*Eucalyptus salmonophloia (Salmon Gum, Wurak)*			
658.	5767	*Eucalyptus salubris (Gimlet)*			
659.	5773	*Eucalyptus socialis (Red Mallee, Altarpa)*			
660.	29735	*Eucalyptus sp. Great Victoria Desert (D. Nicolle & M. French DN 3877)*			
661.	46828	*Eucalyptus sp. Southern smooth-bark (D. Nicolle & M. French DN 6916)*			
662.	12883	*Eucalyptus subangusta subsp. subangusta*			
663.	13027	*Eucalyptus tenera*			
664.	5792	*Eucalyptus torquata (Coral Gum)*			
665.	5793	*Eucalyptus transcontinentalis (Redwood, Pungul)*			
666.	18293	*Eucalyptus urna*			
667.	34775	*Eucalyptus vittata*			
668.	5798	*Eucalyptus websteriana (Webster's Mallee)*			
669.	13053	*Eucalyptus websteriana subsp. norsemanica*		P1	
670.	13054	*Eucalyptus websteriana subsp. websteriana*			
671.	5802	*Eucalyptus yilgarnensis (Yorrell)*			
672.	16722	*Euryomyrtus maidenii*			
673.	19723	*Euryomyrtus patrickiae*			
674.	5815	*Homalocalyx thryptomenoides*			
675.	48651	*Hysterobaeckea ochropetala subsp. reliqua*			
676.	5840	*Kunzea pulchella (Granite Kunzea, Silky Kunzea)*			
677.	5847	*Leptospermum erubescens (Roadside Teatree)*			
678.	5848	*Leptospermum fastigiatum*			
679.	5852	*Leptospermum nitens*			

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680.	12692	*Leptospermum subtenue*			
681.	5864	*Malleostemon peltiger*			
682.	5865	*Malleostemon roseus*			
683.	5866	*Malleostemon tuberculatus*			
684.	15063	*Melaleuca acuminata subsp. acuminata*			
685.	19380	*Melaleuca calyptroides*			
686.	5896	*Melaleuca cordata*			
687.	5908	*Melaleuca eleuterostachya*			
688.	5909	*Melaleuca elliptica (Granite Bottlebrush, Ngow)*			
689.	5913	*Melaleuca glaberrima*			
690.	19486	*Melaleuca hamata*			
691.	5922	*Melaleuca lanceolata (Rottnest Teatree, Moonah)*			
692.	5925	*Melaleuca lateriflora (Gorada)*			
693.	5929	*Melaleuca leiocarpa*			
694.	14700	*Melaleuca macronychia subsp. macronychia*			
695.	14701	*Melaleuca macronychia subsp. trygonoides*		P3	
696.	15663	*Melaleuca pauperiflora subsp. fastigiata*			
697.	18598	*Melaleuca systena*			
698.	20287	*Melaleuca zeteticorum*			
699.	9187	*Micromyrtus erichsenii*			
700.	19787	*Micromyrtus monotaxis*			
701.	5999	*Micromyrtus obovata*			
702.	6018	*Rinzia carnosa (Fleshy-leaved Rinzia)*			
703.	48267	*Rinzia triplex (Triad Rinzia)*		P3	
704.	19698	*Thryptomene australis subsp. australis*			
705.	19699	*Thryptomene australis subsp. brachyandra*			
706.	6058	*Thryptomene kochii*			
707.	20680	*Thryptomene sp. Coolgardie (E. Kelso s.n. 1902)*		P1	Y
708.	36017	*Thryptomene sp. Londonderry (R.H. Kuchel 1763)*		P1	
709.	6068	*Thryptomene urceolaris*			
710.	6073	*Verticordia chrysantha*			
711.	12432	*Verticordia inclusa*			
712.	6109	*Verticordia picta (Painted Featherflower)*			
713.	6113	*Verticordia pritzelii (Pritzel's Featherflower)*			
Nemesiidae					
714.		*Aname armigera*			
715.		*Aname mainae*			
Neosittidae					
716.	25673	*Daphoenositta chrysoptera (Varied Sittella)*			
717.	24606	*Daphoenositta chrysoptera subsp. pileata (Varied Sittella, Black-capped Sitella)*			
Nicodamidae					
718.		*Nicodamus mainae*			
Ophioglossaceae					
719.	12782	*Ophioglossum gramineum*			
720.	18	*Ophioglossum polyphyllum*			
Orchidaceae					
721.	15348	*Caladenia flava subsp. flava*			
722.	19280	*Caladenia paradoxa*			
723.	1614	*Caladenia roei (Ant Orchid)*			
724.	30797	*Caladenia saxicola*			
725.	44161	*Diuris hazeliae*			
726.	20718	*Ericksonella saccharata*			
727.	14382	*Microtis eremaea*			
728.	33741	*Microtis eremicola*			
729.	16688	*Prasophyllum gracile*			
730.	12216	*Pterostylis roensis*			
731.		*Pterostylis sp.*			
732.	18657	*Pterostylis sp. inland (A.C. Beauglehole 11880)*			
733.	41981	*Pterostylis timothyi*			
734.	48481	*Pterostylis tryphera*			
735.	1700	*Spiculaea ciliata (Elbow Orchid)*			
736.	1701	*Thelymitra antennifera (Vanilla Orchid)*			
737.	20732	*Thelymitra petrophila*			
Ostracoda					
738.		*Ostracoda (unident.)*			
Otididae					
739.	24610	*Ardeotis australis (Australian Bustard)*			

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Oxalidaceae					
740.	4355	*Oxalis perennans*			
Pachycephalidae					
741.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
742.	24618	*Oreoica gutturalis (Crested Bellbird)*			
743.	24619	*Pachycephala inornata (Gilbert's Whistler)*			
744.	25680	*Pachycephala rufiventris (Rufous Whistler)*			
Papaveraceae					
745.	2964	*Papaver hybridum (Rough Poppy)*	Y		
Pardalotidae					
746.	25681	*Pardalotus punctatus (Spotted Pardalote)*			
747.	25682	*Pardalotus striatus (Striated Pardalote)*			
Parmeliaceae					
748.	27743	*Flavoparmelia diffractaica*			
749.	27748	*Flavoparmelia rutidota*			
750.	30660	*Xanthoparmelia auricampa*			Y
751.	32980	*Xanthoparmelia bullabullensis*			Y
752.	18001	*Xanthoparmelia dayiana*		P3	
753.	28162	*Xanthoparmelia notata*			
754.	28172	*Xanthoparmelia reptans*			
755.	28327	*Xanthoparmelia semiviridis*			
756.		*Xanthoparmelia sp.*			
757.	28181	*Xanthoparmelia taractica*			
758.	28182	*Xanthoparmelia tasmanica*			
759.	28186	*Xanthoparmelia versicolor*			
Petroicidae					
760.	24650	*Drymodes brunneopygia (Southern Scrub-robin)*			
761.	24651	*Eopsaltria australis subsp. griseogularis (Western Yellow Robin)*			
762.	25693	*Microeca fascinans (Jacky Winter)*			
763.	24659	*Petroica goodenovii (Red-capped Robin)*			
Phalacrocoracidae					
764.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
Phasianidae					
765.	24671	*Coturnix pectoralis (Stubble Quail)*			
Phrymaceae					
766.	7061	*Glossostigma drummondii (Mudmat)*			
Pileolariaceae					
767.		*Uromycladium tepperianum*			
Pittosporaceae					
768.	25798	*Billardiera fusiformis (Australian Bluebell)*			
769.	19421	*Marianthus bicolor (Painted Marianthus)*			
770.	19744	*Pittosporum angustifolium*			
Plantaginaceae					
771.	7299	*Plantago debilis*			
772.	7300	*Plantago drummondii (Sago Weed)*			
773.	14198	*Plantago sp. Mt Magnet (A.S. George 6793)*			
Plumbaginaceae					
774.	6489	*Limonium sinuatum (Perennial Sea Lavender)*	Y		
Poaceae					
775.	12025	*Amphipogon caricinus var. caricinus*			
776.	207	*Aristida contorta (Bunched Kerosene Grass)*			
777.	12063	*Aristida holathera var. holathera*			
778.	17232	*Austrostipa blackii*		P3	
779.	17237	*Austrostipa elegantissima*			
780.	17238	*Austrostipa eremophila*			
781.	17241	*Austrostipa hemipogon*			
782.	17246	*Austrostipa nitida*			
783.	19588	*Austrostipa nodosa*			
784.	17247	*Austrostipa platychaeta*			
785.	17251	*Austrostipa scabra*			
786.	36283	*Austrostipa sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)*		P1	
787.	34556	*Austrostipa sp. Dowerin (G. Wiehl F 8004)*		P2	
788.	44509	*Austrostipa sp. Mt Burgess (A.A. Mitchell & P.J. Waddell 10499)*			Y

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789.	17255	*Austrostipa trichophylla*			
790.	271	*Chloris truncata (Windmill Grass)*			
791.	281	*Cymbopogon obtectus (Silkyheads)*			
792.	290	*Dactyloctenium radulans (Button Grass)*			
793.	356	*Enneapogon avenaceus (Bottle Washers)*			
794.	376	*Eragrostis curvula (African Lovegrass)*	Y		
795.	378	*Eragrostis dielsii (Mallee Lovegrass)*			
796.	399	*Eragrostis xerophila (Knotty-butt Neverfail)*			
797.	415	*Eriachne ovata*			
798.	417	*Eriachne pulchella (Pretty Wanderrie)*			
799.	471	*Leptochloa digitata (Whorled Cane Grass)*			
800.	490	*Monachather paradoxus*			
801.	494	*Neurachne minor*			
802.	40424	*Pentameris airoides subsp. airoides*	Y		
803.	552	*Phalaris paradoxa (Paradoxa Grass)*	Y		
804.	571	*Poa annua (Winter Grass)*	Y		
805.	573	*Poa drummondiana (Knotted Poa)*			
806.	40425	*Rytidosperma caespitosum*			
807.	40427	*Rytidosperma setaceum*			
808.	623	*Spartochloa scirpoidea*			
809.	17881	*Triodia desertorum*			
810.	699	*Triodia scariosa*			
811.	13041	*Triodia tomentosa*			
812.	18326	*Urochloa panicoides*	Y		
Podargidae					
813.	25703	*Podargus strigoides (Tawny Frogmouth)*			
Podicipedidae					
814.	24681	*Poliocephalus poliocephalus (Hoary-headed Grebe)*			
815.	25705	*Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
Polygalaceae					
816.	4553	*Comesperma drummondii (Drummond's Milkwort)*			
817.	4561	*Comesperma scoparium (Broom Milkwort)*			
Polygonaceae					
818.	2412	*Muehlenbeckia adpressa (Climbing Lignum)*			
819.	2443	*Rumex vesicarius (Ruby Dock)*	Y		
Pomatostomidae					
820.	24683	*Pomatostomus superciliosus (White-browed Babbler)*			
Portulacaceae					
821.	2884	*Portulaca oleracea (Purslane, Wakati)*			
Pottiaceae					
822.	32346	*Didymodon torquatus*			
823.	32444	*Tortula atrovirens*			
824.	32445	*Tortula muralis*			
Primulaceae					
825.	36375	*Lysimachia arvensis (Pimpernel)*	Y		
Proteaceae					
826.	1815	*Banksia elderiana (Swordfish Banksia)*			
827.	15611	*Conospermum stoechadis subsp. stoechadis (Common Smokebush)*			
828.	1946	*Grevillea acacioides*			
829.	1949	*Grevillea acuaria*			
830.	1962	*Grevillea beardiana (Red Combs)*			
831.	1971	*Grevillea cagiana (Red Toothbrushes)*			
832.	13453	*Grevillea didymobotrya subsp. didymobotrya*			
833.	15769	*Grevillea eremophila*			
834.	8832	*Grevillea excelsior (Flame Grevillea)*			
835.	2009	*Grevillea georgeana*		P3	
836.	2015	*Grevillea haplantha*			
837.	14413	*Grevillea haplantha subsp. haplantha*			
838.	19314	*Grevillea hookeriana subsp. apiciloba*			
839.	2018	*Grevillea huegelii*			
840.	19541	*Grevillea nematophylla subsp. nematophylla*			
841.	15981	*Grevillea obliquistigma subsp. obliquistigma*			
842.	15978	*Grevillea oligomera*			
843.	2056	*Grevillea paniculata*			
844.	2057	*Grevillea paradoxa (Bottlebrush Grevillea)*			
845.	2077	*Grevillea pterosperma*			

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846.	13461	*Grevillea sarissa subsp. anfractifolia*			
847.	13458	*Grevillea sarissa subsp. sarissa*			
848.	2104	*Grevillea teretifolia (Round Leaf Grevillea)*			
849.	2116	*Grevillea uncinulata (Hook-leaf Grevillea)*			
850.	2163	*Hakea francisiana (Emu Tree)*			
851.	2182	*Hakea minyma*			
852.	2184	*Hakea multilineata (Grass Leaf Hakea)*			
853.	16047	*Hakea rigida*		P2	
854.	19131	*Hakea scoparia subsp. scoparia*			
855.	16812	*Isopogon scabriusculus subsp. pubifloris*			
856.	14436	*Isopogon scabriusculus subsp. stenophyllus*			
857.	2259	*Persoonia coriacea (Leathery-leaf Persoonia)*			
858.	15628	*Persoonia helix*			
859.	15630	*Persoonia inconspicua*			
860.	2274	*Persoonia saundersiana*			
861.	14446	*Petrophile arcuata*			
862.	2289	*Petrophile circinata*			
863.	14445	*Petrophile merrallii*			
864.	2308	*Petrophile seminuda*			
865.	12237	*Petrophile stricta*			
866.	15534	*Synaphea spinulosa subsp. major*			
Psittacidae					
867.		*Barnardius zonarius*			
868.	25716	*Cacatua sanguinea (Little Corella)*			
869.	24736	*Melopsittacus undulatus (Budgerigar)*			
870.	25720	*Platycercus icterotis (Western Rosella)*			
871.	25722	*Polytelis anthopeplus (Regent Parrot)*			
872.	30854	*Polytelis anthopeplus subsp. westralis (Regent Parrot)*			
Psoraceae					
873.	27998	*Psora crenata*			
874.	27999	*Psora crystallifera*			
875.	28000	*Psora decipiens*			
Pteridaceae					
876.	37	*Cheilanthes lasiophylla (Woolly Cloak Fern)*			
877.	12818	*Cheilanthes sieberi subsp. sieberi*			
Pygopodidae					
878.	24995	*Delma australis*			
Rallidae					
879.	25727	*Fulica atra (Eurasian Coot)*			
880.	24769	*Porzana fluminea (Australian Spotted Crake)*			
881.	48141	*Tribonyx ventralis (Black-tailed Native-hen)*			
Recurvirostridae					
882.	24774	*Cladorhynchus leucocephalus (Banded Stilt)*			
883.	25734	*Himantopus himantopus (Black-winged Stilt)*			
Restionaceae					
884.	1073	*Lepidobolus chaetocephalus (Bristle-headed Chaff Rush)*			
885.	1074	*Lepidobolus deserti*			
Rhamnaceae					
886.	16183	*Cryptandra aridicola*			
887.	31591	*Cryptandra crispula*		P3	
888.	16184	*Cryptandra distigma*			
889.	16188	*Cryptandra minutifolia subsp. brevistyla*			
890.	4809	*Cryptandra pungens*			
891.	4815	*Pomaderris forrestiana*			
892.	16986	*Trymalium myrtillus subsp. myrtillus*			
Rubiaceae					
893.	18256	*Opercularia spermacocea*			
894.	13339	*Synaptantha tillaeacea var. tillaeacea*			
Rutaceae					
895.	4409	*Boronia coerulescens*			
896.	11498	*Boronia coerulescens subsp. spicata*			
897.	4445	*Boronia ternata*			
898.	11201	*Boronia ternata var. ternata*			
899.	18046	*Microcybe multiflora subsp. multiflora*			
900.	16621	*Phebalium appressum*		P1	

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901.	4497	*Phebalium canaliculatum*			
902.	4498	*Phebalium clavatum*		P2	
903.	4500	*Phebalium filifolium (Slender Phebalium)*			
904.	14883	*Phebalium laevigatum*			
905.	4501	*Phebalium lepidotum*			
906.	16556	*Phebalium megaphyllum*			
907.	4502	*Phebalium microphyllum*			
908.	4504	*Phebalium tuberculosum*			
909.	18537	*Philotheca brucei subsp. brucei*			
910.	18510	*Philotheca pachyphylla*		P1	
911.	18506	*Philotheca tomentella*			
Santalaceae					
912.	10977	*Exocarpos aphyllus (Leafless Ballart)*			
913.	2356	*Santalum acuminatum (Quandong, Warnga)*			
914.	2359	*Santalum spicatum (Sandalwood, Wilarak)*			
Sapindaceae					
915.	4752	*Dodonaea adenophora*			
916.	4753	*Dodonaea amblyophylla*			
917.	4769	*Dodonaea lobulata (Bead Hopbush)*			
918.	4770	*Dodonaea microzyga*			
919.	12034	*Dodonaea microzyga var. acrolobata*			
920.	4780	*Dodonaea stenozyga*			
921.	11247	*Dodonaea viscosa subsp. angustissima*			
Scincidae					
922.	25026	*Ctenotus atlas*			
923.	25074	*Ctenotus schomburgkii*			
924.	25080	*Ctenotus uber subsp. uber (Spotted Ctenotus)*			
925.	25089	*Cyclodomorphus melanops subsp. elongatus (Slender Blue-tongue)*			
926.	25094	*Egernia formosa*			
927.	25104	*Egernia richardi*			
928.	25109	*Eremiascincus richardsonii (Broad-banded Sand Swimmer)*			
929.	25115	*Hemiergis initialis subsp. initialis*			
930.		*Lerista kingi*			
931.	25155	*Lerista muelleri*			
932.	25162	*Lerista picturata*			
933.	42411	*Lerista timida*			
934.	41411	*Liopholis inornata (Desert Skink)*			
935.	25184	*Menetia greyii*			
936.	25190	*Morethia butleri*			
937.	25207	*Tiliqua rugosa subsp. rugosa*			
Scolopacidae					
938.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
939.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
940.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
941.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
942.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
Scolopendridae					
943.		*Cormocephalus bungalbinensis*			
944.		*Ethmostigmus rubripes*			
945.		*Scolopendra laeta*			
946.		*Scolopendra morsitans*			
Scrophulariaceae					
947.	14887	*Diocirea acutifolia*		P3	
948.	14888	*Diocirea microphylla*		P3	
949.	7180	*Eremophila alternifolia (Poverty Bush)*			
950.	16377	*Eremophila caerulea subsp. caerulea*			
951.	13641	*Eremophila caerulea subsp. merrallii*		P4	
952.	13807	*Eremophila caperata*			
953.	7189	*Eremophila clarkei (Turpentine Bush)*			
954.	17156	*Eremophila clavata*			
955.	14895	*Eremophila decipiens subsp. decipiens*			
956.	7195	*Eremophila dempsteri*			
957.	7198	*Eremophila deserti*			
958.	7200	*Eremophila drummondii*			
959.	7212	*Eremophila gibbosa*			
960.	7215	*Eremophila glabra (Tar Bush)*			
961.	14340	*Eremophila glabra subsp. glabra*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
962.	7219	*Eremophila granitica (Thin-leaved Poverty Bush)*			
963.	15112	*Eremophila interstans subsp. interstans*			
964.	15111	*Eremophila interstans subsp. virgata*			
965.	7226	*Eremophila ionantha (Violet-flowered Eremophila)*			
966.	16363	*Eremophila maculata subsp. brevifolia (Native Fuchsia)*			
967.	14632	*Eremophila oblonga*			
968.	15003	*Eremophila oldfieldii subsp. angustifolia*			
969.	17168	*Eremophila oldfieldii subsp. oldfieldii*			
970.	18570	*Eremophila oppositifolia subsp. angustifolia*			
971.	14594	*Eremophila parvifolia subsp. auricampa*			
972.	10780	*Eremophila psilocalyx*			
973.	15172	*Eremophila rugosa*			
974.	7264	*Eremophila saligna (Willowy Eremophila)*			
975.	7267	*Eremophila scoparia (Broom Bush ()*			
976.	17162	*Eremophila subfloccosa subsp. lanata*			
977.	7278	*Eremophila veronica*		P3	
978.	18259	*Myoporum platycarpum subsp. platycarpum*			
Solanaceae					
979.	6966	*Duboisia hopwoodii (Pituri, Kundugu)*			
980.	6967	*Lycium australe (Australian Boxthorn)*			
981.	6978	*Nicotiana rotundifolia (Round-leaved Tobacco)*			
982.	6998	*Solanum cleistogamum*			
983.	7013	*Solanum hoplopetalum (Thorny Solanum)*			
984.	7018	*Solanum lasiophyllum (Flannel Bush, Mindjulu)*			
985.	7023	*Solanum nummularium (Money-leaved Solanum)*			
986.	7030	*Solanum plicatile*			
987.	7034	*Solanum simile (Oondoroo)*			
Sparassidae					
988.		*Isopedella saundersi*			
Stylidiaceae					
989.	7671	*Levenhookia leptantha (Trumpet Stylewort)*			
990.	7677	*Levenhookia stipitata (Common Stylewort)*			
991.	7685	*Stylidium arenicola*			
992.	7701	*Stylidium choreanthum (Dancing Triggerplant)*		P3	
993.	7714	*Stylidium dielsianum (Tangle Triggerplant)*			
994.	7751	*Stylidium limbatum (Fringed-leaved Triggerplant)*			
995.	46894	*Stylidium sp. Mt Bayly (J.A. Wege & C. Wilkins JAW 1986)*			
Theridiidae					
996.		*Latrodectus hasseltii*			
Threskiornithidae					
997.	24841	*Platalea flavipes (Yellow-billed Spoonbill)*			
998.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			
Thymelaeaceae					
999.	5231	*Pimelea angustifolia (Narrow-leaved Pimelea)*			
1000.	11227	*Pimelea brevifolia subsp. modesta*			
1001.	11185	*Pimelea microcephala subsp. microcephala*			
1002.	12104	*Pimelea spiculigera var. thesioides*			
1003.	11910	*Pimelea suaveolens subsp. flava*			
Trochanteriidae					
1004.		*Fissarena castanea*			
Turnicidae					
1005.	24851	*Turnix velox (Little Button-quail)*			
Varanidae					
1006.	25218	*Varanus gouldii (Bungarra or Sand Monitor)*			
1007.	25526	*Varanus tristis (Racehorse Monitor)*			
Verbenaceae					
1008.	29836	*Glandularia aristigera*	Y		
Vespertilionidae					
1009.	24186	*Chalinolobus gouldii (Gould's Wattled Bat)*			
1010.	24194	*Nyctophilus geoffroyi (Lesser Long-eared Bat)*			
1011.	24206	*Vespadelus regulus (Southern Forest Bat)*			
Violaceae					
1012.	5220	*Hybanthus epacroides (Spiny Hybanthus)*			
1013.	11973	*Hybanthus floribundus subsp. curvifolius*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Xanthorrhoeaceae					
1014.	1257	*Xanthorrhoea thorntonii (Grass Tree)*			
Zosteropidae					
1015.	25765	*Zosterops lateralis (Grey-breasted White-eye, Silvereye)*			
Zygophyllaceae					
1016.	48882	*Roepera apiculata*			
1017.	48888	*Roepera compressa*			
1018.	48892	*Roepera glauca (Pale Twinleaf, Pale Twin-leaf)*			
1019.	48898	*Roepera ovata*			
1020.	48899	*Roepera reticulata*			

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

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

Appendix 8: EPBC Protected Matters Search (40km buffer)

Australian Government

Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

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

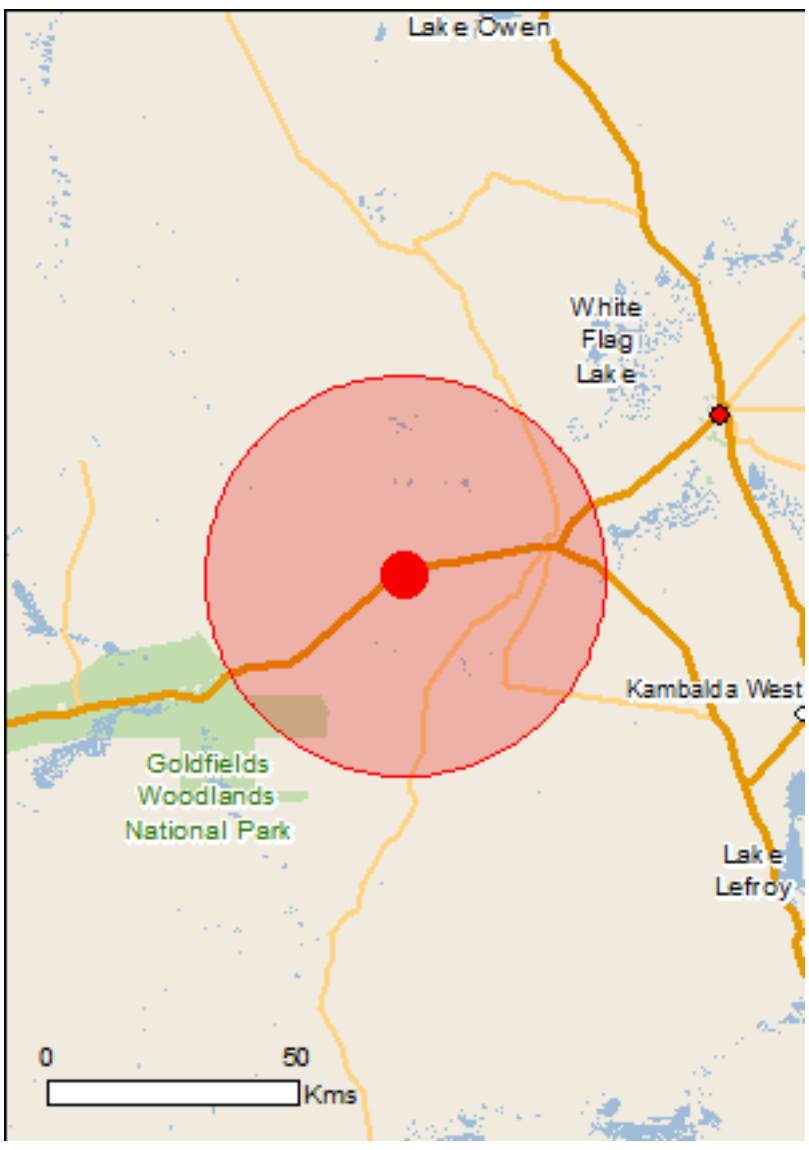
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 09/10/21 10:51:32

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

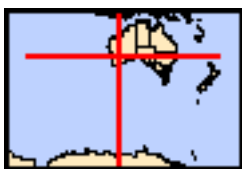
Caveat
Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates

Buffer: 40.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	7
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	5
Regional Forest Agreements:	None
Invasive Species:	14
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Historic		
Goldfields Water Supply Scheme, Western Australia	WA	Listed place

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Plants		
Gastrolobium graniticum Granite Poison [14872]	Endangered	Species or species habitat known to occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land -

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Goldfields Woodlands	WA
Goldfields Woodlands	WA
Kangaroo Hills Timber Reserve	WA
Scahill Timber Reserve	WA
Victoria Rock	WA

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Carrichtera annua Ward's Weed [9511]		Species or species habitat likely to occur within area
Cylindropuntia spp. Prickly Pears [85131]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-30.99947 120.90495

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

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