KAMBALDA OPERATIONS

Reconnaissance Flora/Vegetation and Basic Fauna Assessment

Prepared for BHP Nickel West Pty Ltd
February 2024

Prepared by
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Cover Photo: Native Vegetation (shrublands on sand dune) within the survey area, October 2023

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EXECUTIVE SUMMARY

Botanica Consulting Pty Ltd (Botanica) was commissioned by BHP Nickel West Pty Ltd (BHP NiW) to undertake a reconnaissance flora/vegetation and basic vertebrate fauna survey at the Kambalda Operations, consisting of the Kambalda Nickel Concentrator (KNC) and tailings storage facility (TSF). The two survey areas encompassed an area of approximately 596 ha and are located approximately 54 km south of Kalgoorlie-Boulder in the Shire of Coolgardie and the City of Kalgoorlie-Boulder (just northeast of Kambalda) in the Eastern Goldfields region of Western Australia.

Botanica conducted a reconnaissance flora/vegetation and basic vertebrate fauna survey of the survey areas from the 22nd to 24th October 2023. The area was traversed with a four wheel drive and on foot by Jim Williams (Director/Principal Botanist) and Greg Harewood (Principal Zoologist).

The purpose of the survey was to provide information on the environmental values of BHP tenure surrounding the Kambalda Operations to inform the current baseline status of the area to support future operations.

The KNC survey area is located within the Shire of Coolgardie, whilst the TSF survey area is located within the City of Kalgoorlie-Boulder. Both survey areas lie within the Great Western Woodlands and within the Coolgardie bioregion as defined by the Interim Biogeographic Regionalisation of Australia (IBRA). Three pre-European Beard vegetation associations occur within the survey areas, all of which retain at least 97% of their pre-European extent and are therefore not considered threatened.

Prior to the field survey, desktop assessments were undertaken for flora and fauna to identify any potential significant flora, vegetation, fauna and communities that may occur within the survey areas. The desktop assessment consisted of a literature review of previous flora and fauna assessments conducted within the local region, searches of the Department of Biodiversity, Conservation and Attractions' (DBCA) Threatened and Priority databases for conservation significant flora, fauna and ecological communities, a search of the NatureMap database, and a search for Matters of National Environmental Significance occurring within 40 km of the survey areas.

Results of the desktop assessment identified a total of 578 vascular flora taxa (dominant genera included *Acacia*, *Eucalyptus* and *Eremophila*) and 215 terrestrial vertebrate fauna taxa (consisting of two amphibians, 124 bird species, 12 mammals and 77 reptiles) as having been previously recorded within 40 km of the survey areas.

The desktop assessment identified the potential for 28 introduced flora (weed) species and three introduced vertebrate fauna (feral) species as potentially occurring within 40 km of the survey areas. Three of the introduced flora (weed) species are listed as Declared Pests and/or Weeds of National Significance (WoNS).

The desktop assessment identified 42 significant flora species previously recorded within 40 km of the survey areas; six of which were previously recorded within 10 km of the survey areas. Nil species were previously recorded within the survey areas. Of the 42 significant flora species previously recorded within 40 km of the survey areas, five were assessed as being likely to occur within the survey areas, 30 were assessed as possibly occurring within the survey areas, and the remaining seven were assessed as being unlikely to occur within the survey areas due to unsuitable habitat or being outside the known range of the species.

The desktop assessment did not identify any Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the survey area. There is one PEC located approximately 46 km east of the survey areas: Mount Belches *Acacia quadrimarginea* / *Ptilotus obovatus* banded ironstone community (Priority 3).

The desktop assessment identified 16 significant fauna species (15 terrestrial vertebrate and one invertebrate) previously recorded within 40 km of the survey areas. Of these, the Malleefowl (*Leipoa ocellata*), Grey Falcon (*Falco hypoleucos*), the Southern Whiteface (*Aphelocephala leucopsis*), and the Arid bronze azure butterfly (*Ogyris subterrestris petrina*) could possibly occur within the survey areas. The remaining 12 species were assessed as unlikely to occur or would not occur within the survey areas.

The field survey identified 150 vascular flora taxa within the survey areas. These taxa represented 79 genera across 29 families, with the most diverse families being Chenopodiaceae, Fabaceae, Myrtaceae and Scrophulariaceae. Dominant genera include *Eremophila*, *Eucalyptus* and *Maireana*.

A total of 11 broad-scale vegetation types were identified within the survey areas; plus areas defined as disturbed which were predominately cleared of native vegetation and contained numerous weed species. These vegetation types were located within five different landform types (not including the disturbed areas).

Based on the vegetation condition rating scale specified in the Environmental Protection Authority (EPA) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a), vegetation was rated as ‘Degraded’ to ‘Good’. Disturbances within the survey areas were a result of clearing for infrastructure (e.g. roads, powerlines, and buildings) and mining (e.g., KNC and TSF).

Twenty introduced flora (weed) species were identified within the survey areas during the field assessment. No species are listed as a WoNS or as a Declared Pest in Western Australia.

No Threatened Flora listed under the Western Australian *Biodiversity Conservation Act 2016* (BC Act) or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act),

or Priority flora as listed by DBCA were identified in the survey areas. No TECs as listed under the BC Act or EPBC Act, or PECs as listed by DBCA were identified within the survey areas.

There are no wetlands of international importance (Ramsar Wetlands) or national importance (Australian Nature Conservation Agency Wetlands) within the survey areas nor any proposed or gazetted conservation reserves.

The field survey identified eight broad-scale terrestrial fauna habitats occurring within the survey areas (including areas defined as salt lake and cleared/disturbed). A total of 50 vertebrate fauna taxa were identified within the survey areas. These taxa represented 28 families across three classes, including Reptilia (3 families, 3 species), Aves (20 families, 38 species), and Mammalia (6 families, 9 species).

No Threatened fauna listed under the EPBC Act or BC Act, or Priority fauna as listed by DBCA were identified within the survey areas.

The field survey identified one historical inactive Malleefowl nest mound within the KNC survey area. The surrounding vegetation is described as Low Open Woodlands on Clay-Loam Plains. No other evidence of Malleefowl was observed during the survey (i.e., no scats, feathers or tracks were seen). The habitat observed within the survey area was considered low potential for Malleefowl habitat, as it consisted of an open canopy cover in most areas.

1 INTRODUCTION

Botanica Consulting Pty Ltd (Botanica) was commissioned by BHP Nickel West Pty Ltd (BHP NiW) to undertake a reconnaissance flora/vegetation and basic vertebrate fauna survey at the Kambalda Operations, consisting of the Kambalda Nickel Concentrator (KNC) and tailings storage facility (TSF). The two survey areas encompassed a total area of approximately 596 ha and are located approximately 54 km south of Kalgoorlie-Boulder in the Shire of Coolgardie and the City of Kalgoorlie-Boulder (just northeast of Kambalda) in the Eastern Goldfields region of Western Australia (Figure 1-1).

Botanica conducted a reconnaissance flora/vegetation and basic vertebrate fauna survey of the survey areas from the 22nd to 24th October 2023. The area was traversed with a four wheel drive and on foot by Jim Williams (Director/Principal Botanist) and Greg Harewood (Principal Zoologist).

The purpose of the survey was to provide information on the environmental values of BHP tenure surrounding the Kambalda Operations to inform the current baseline status of the area and be used to support future operations.

The KNC survey area is located within the Shire of Coolgardie, whilst the TSF survey area is located within the City of Kalgoorlie-Boulder. Both survey areas lie within the Great Western Woodlands and within the Coolgardie Bioregion as defined by the Interim Biogeographic Regionalisation of Australia (IBRA).

1.1 Objectives

The purpose of the survey was to provide information on the environmental values surrounding the Kambalda Operations. The objectives of the flora/vegetation and fauna assessment were to:

- Undertake a desktop assessment (including a literature review and database searches) to gather background information, and identify any previously recorded occurrences of or potentially occurring Threatened and Priority listed flora/vegetation or fauna within the survey areas;
- Conduct a reconnaissance flora and vegetation field survey (including targeted searches) to compile an inventory of flora species and vegetation communities occurring within the survey areas;
- Assess the plant species diversity, density, composition, structure and weed cover across the survey areas;
- Assess and map the vegetation communities within the survey areas to a scale appropriate for the bioregion and described the vegetation communities according to the National Vegetation Information System (NVIS) structure and floristics;
- Assess and map the condition of vegetation within the survey areas;

- Conduct a basic vertebrate fauna field survey (including targeted searches) to compile an inventory of fauna species occurring within the survey areas;
- Assess and map the fauna habitats within the survey areas and identify habitat types which are suitable for each significant fauna considered likely or possible to occur, or fauna recorded in the survey areas; and
- Report on the conservation status of flora and fauna species identified during the field survey, for presence of Threatened and/or Priority listed species or ecological communities within the survey areas.

1.2 Regulatory Guidance and BHP Procedures

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

The vertebrate fauna assessment was conducted in accordance with the requirements of a basic terrestrial vertebrate fauna survey as defined in *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020).

Targeted surveys for significant species of flora and vertebrate fauna was also undertaken in suitable landforms/habitats in accordance with the requirements of the relevant Technical Guidance (EPA, 2016a; 2020).

The following EPA guidelines were also applied:

- Statement of Environmental Principles, Factors, Objectives and Aims of EIA (EPA, 2023);
- Environmental Factor Guideline: Flora and Vegetation (EPA, 2016b); and
- Environmental Factor Guideline: Terrestrial Fauna (EPA, 2016c).

1.3 BHP NiW Procedures

The following BHP NiW procedures were applied:

- Vegetation and Flora Survey Procedure (0124627);
- Vertebrate Fauna Surveys in Western Australia Procedure (SPR-IEN-EMS-012); and
- Biodiversity Survey Spatial Data Requirements Procedure (SPR-IEN-EMS-015).

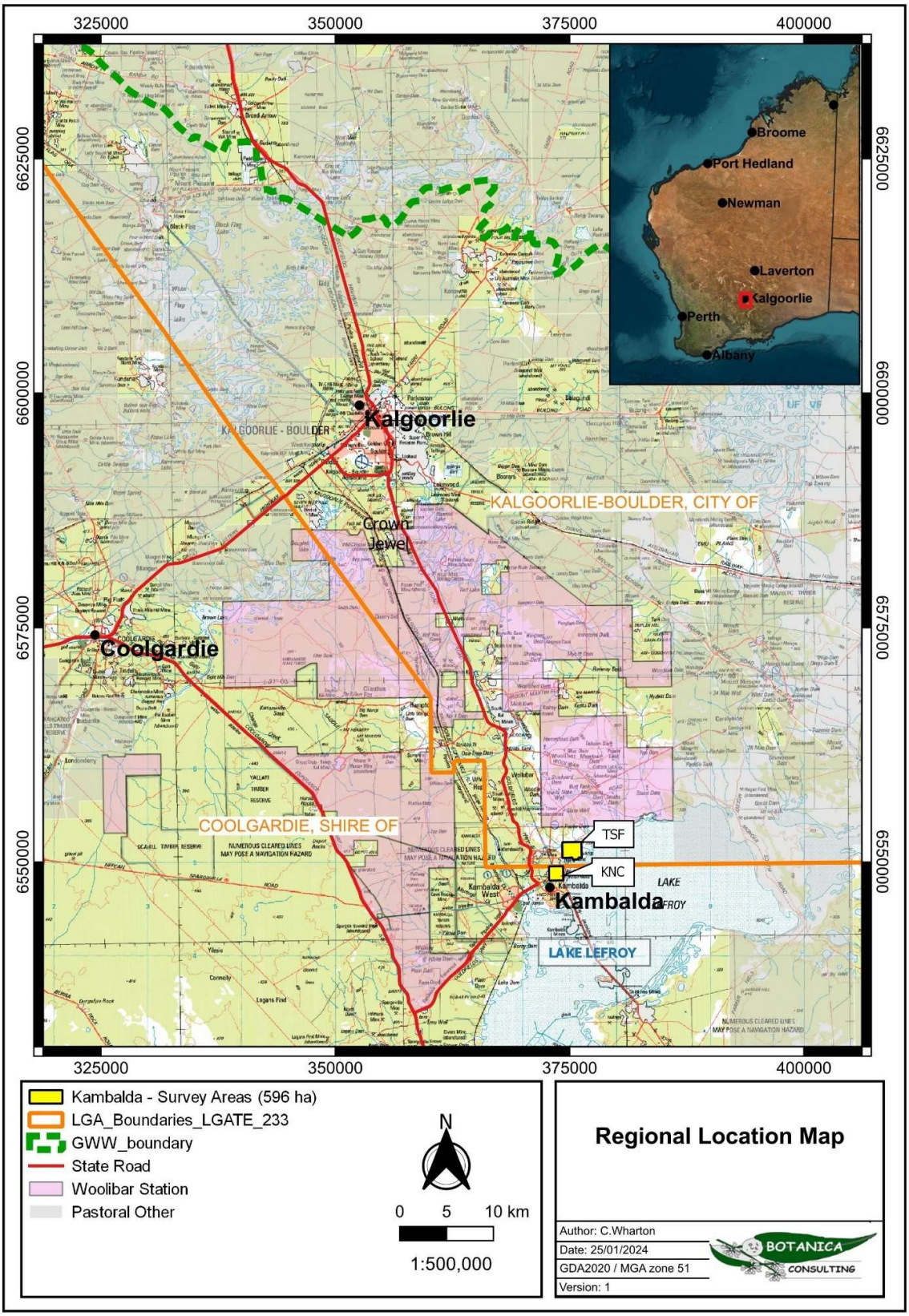


Figure 1-1: Regional location of the Kambalda Operations

2 BIOPHYSICAL ENVIRONMENT

2.1 Regional Environment

The survey areas lie within the Eastern Goldfields (COO3) subregion of the Coolgardie bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA) (Figure 2-1).

The Coolgardie bioregion covers the interzone between mulga and spinifex country, and eucalypt environments. The vegetation consists of Mallees, *Acacia* thickets and shrub heaths on sandplains. Diverse *Eucalyptus* woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire. Woodlands and *Dodonaea* shrubland occur on basic graninulites of the Fraser Range. The area is rich in endemic *Acacia* species.

The Eastern Goldfields subregion (5,102,428 ha) lies on the 'Eastern Goldfields Terrains' of the Yilgarn Craton, 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 of the Eastern Goldfields subregion are the remnants of an ancient major drainage line (Cowan, 2001). Ephemeral streams drain the low rises north and east into salt lakes and clay plans. Generally, these drainage lines are poorly defined wash or sheet zones, except where they enter the major salt lakes.

Woodland in the Coolgardie bioregion has been logged in the past for mining, timber and firewood, therefore much of the existing vegetation is of secondary growth (Beard, 1972).

2.2 Land Use

The dominant land uses of the Eastern Goldfields subregion are unallocated Crown Land and Crown reserves, grazing-native pastures-leasehold (37.8%), freehold (7.15%), conservation and mining leases (Cowan, 2001).

The KNC survey area comprises two mining tenements (M15/149 and M15/150) covering the concentrator and operational area and is located within the Shire of Coolgardie. Whist the TSF survey area is comprised of a freehold/ leasehold area covering the southern portion of the TSF, and a mining tenement (M26/317) covering the northern portion of the TSF and is located within the City of Kalgoorlie-Boulder (Figure 2-2).

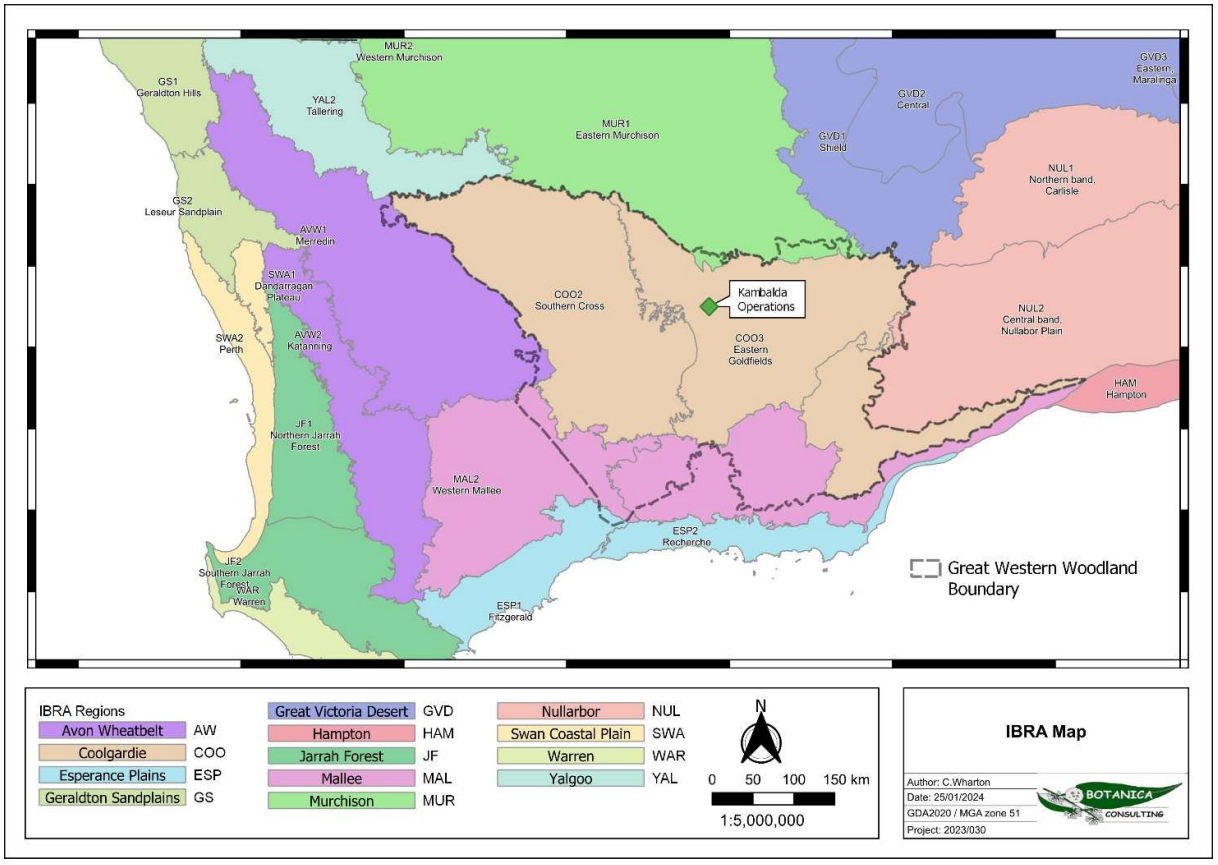


Figure 2-1: Map of the IBRA subregions and boundary of the Great Western Woodlands in relation to the survey areas

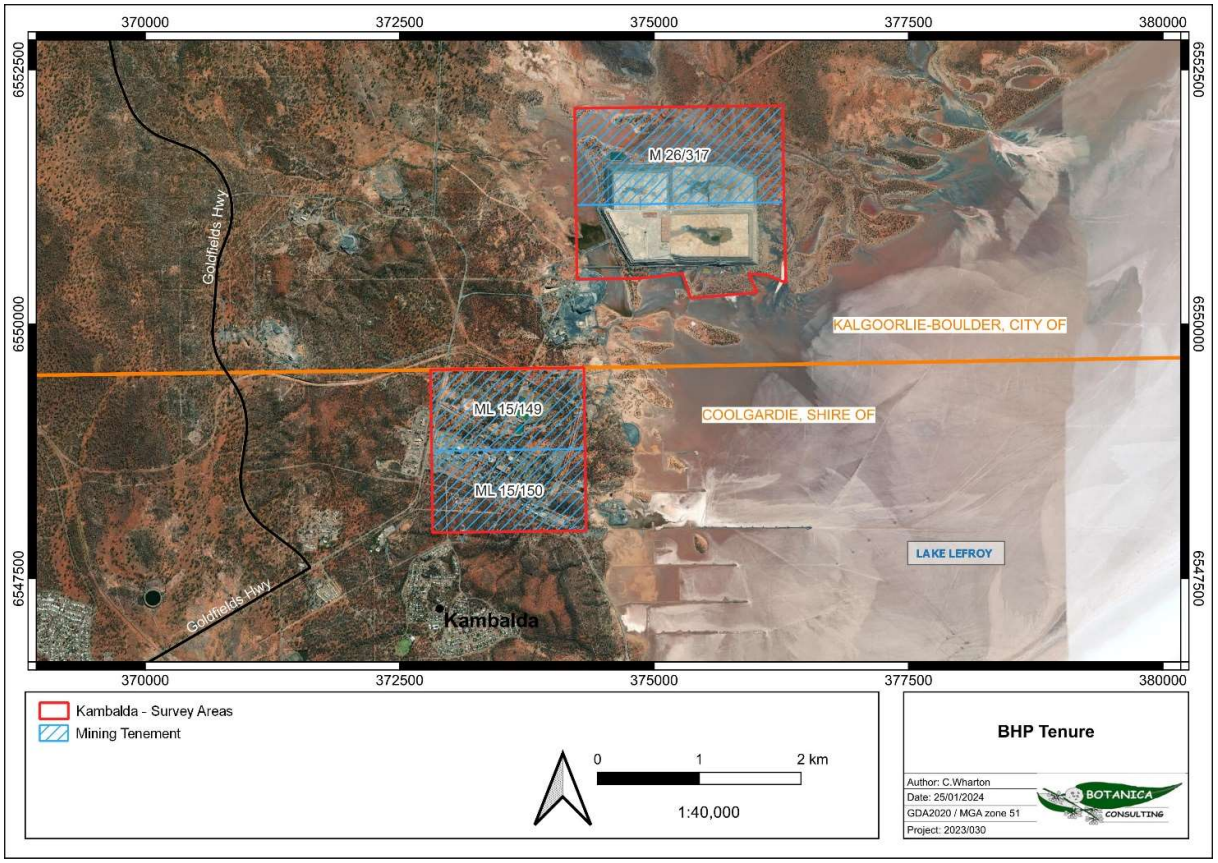


Figure 2-2: Land Tenure

2.3 Soils and Landscape Systems

The survey areas lie within the Kalgoorlie Province soil-landscape of the Western Region, which consists of an extensive plateau of low relief. Flat to undulating plains with small valleys (occasionally broken by low narrow rocky hills, ridges, tors and bosses) are most commonly found on granitic terrain (Tille, 2006). On these plains may be found some silcrete duricrust, claypans, salt lakes with dunes and lunettes, gilgai areas, small remnants of sand plain, and small dune tracts (Tille, 2006).

The Kalgoorlie Province is further divided into six soil-landscape zones, with the survey areas located within the Kambalda Zone (265) in the south-eastern Goldfields between Menzies and Norseman.

The Kambalda Zone contains flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton. Soils consist of calcareous loamy earths and red loamy earths with salt lakes soils and some red brown hardpan shallow loams and red sandy duplexes. Vegetation includes red mallee, blackbutt-salmon gum-gimlet woodlands with mulga and halophytic shrublands and some spinifex grasslands (Tille, 2006).

In accordance with soil landscape system mapping data (Government of Western Australia, 2019a), the soil landscape zones are divided into soil landscape systems, with the survey areas located within two landscape systems as described in Table 2-1 and shown in Figure 2-3.

Table 2-1: Soil landscape systems within the survey areas

Zone	Soil Landscape System	Description	Extent within Survey Areas
Kambalda Zone (265)	265Lf – Lefroy	Salt lakes and fringing saline plains, sandy plains and dunes with chenopod low shrublands.	354.5 ha (59%) 100% of TSF survey area
	265Rh – Red Hill	Basalt hills and ridges supporting acacia shrublands and patchy eucalypt woodlands with mainly non-halophytic undershrubs.	241.5 ha (41%) 100% of KNC survey area

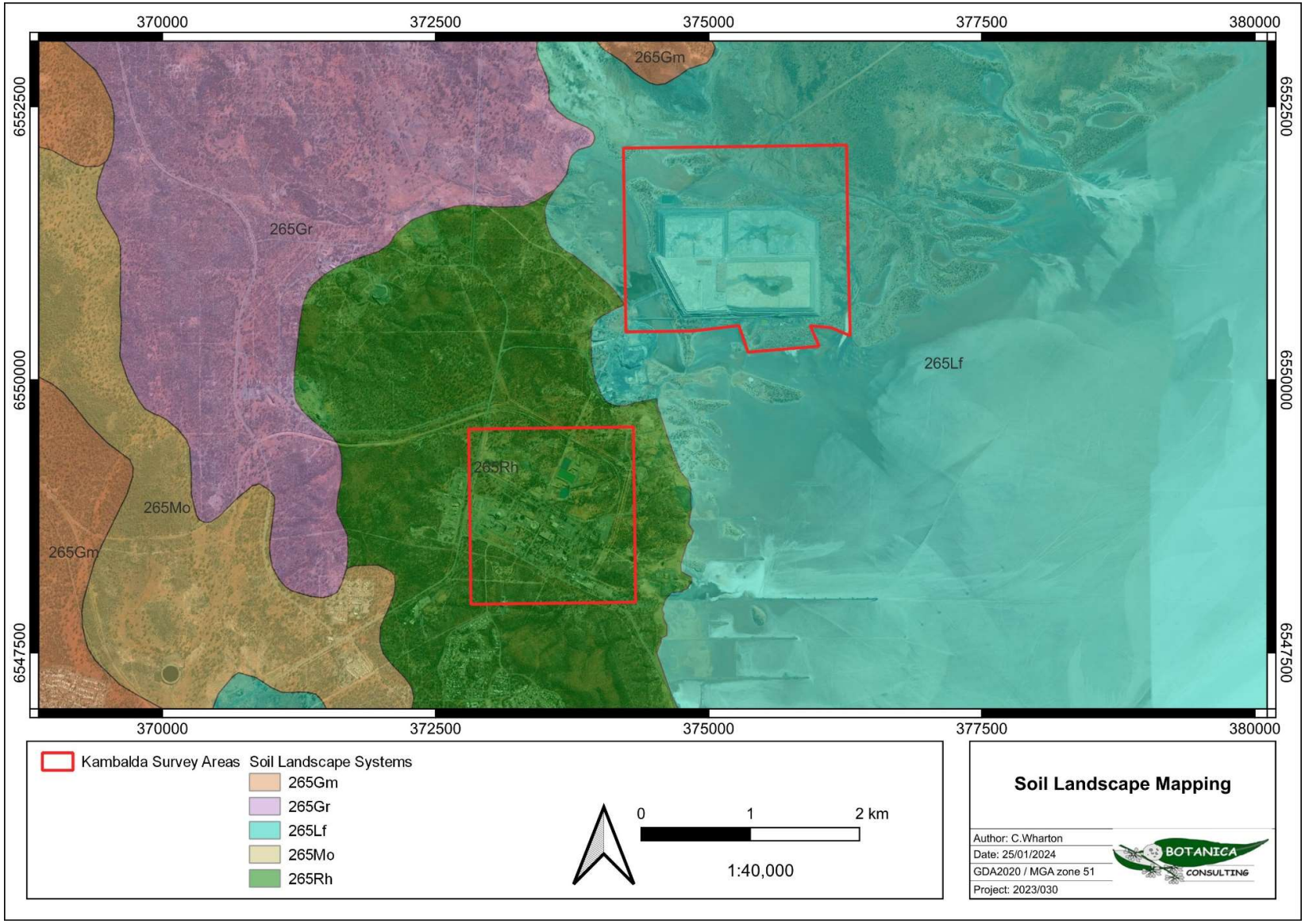


Figure 2-3: Map of soil landscape systems within the survey areas

2.4 Pre-European Vegetation

In accordance with Beard (1990) the survey areas are located in the Coolgardie Botanical District of the Southwestern Interzone Province. 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 survey areas occur entirely within the Binneringe System on the edge of the Coolgardie System. The pre-European vegetation association dataset (DPIRD, 2018) identifies three vegetation associations occurring within the survey areas (Figure 2-4). The system association descriptions and their remaining extent in the Eastern Goldfields subregion, as specified in Report 3b of the 2018 Statewide Vegetation Statistics (Government of Western Australia, 2019b), are provided in Table 2-2.

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). The vegetation associations within the survey areas retain at least 97% of their pre-European extent and are not considered to be representative of remnant vegetation.

Table 2-2: Pre-European vegetation associations within the survey areas

Pre-European Vegetation		Pre-European Extent Remaining (%)	Current Extent Reserved for Conservation (%)	Extent within Survey Area(s)
System / Vegetation Association	Description			
Binneringe / 9	Woodland other: Wheatbelt; York gum, salmon gum etc. *Eucalyptus loxophleba, E. salmonophloia*. Goldfields; gimlet, redwood etc. *E. salubris, E. oleosa*. Riverine; rivergum *E. camaldulensis*. Tropical; messmate, woolybush	98.82	4.02	239 ha 40% of total survey areas 99% of KNC survey area 0% of TSF survey area
Binneringe / 125	Salt lake, lagoon, clay pan	98.59	-	120.5 ha 20% of total survey areas <1% of KNC survey area 34% of TSF survey area
Binneringe / 221	Saltbush & bluebush: *Atriplex* spp. *Maireana* spp. communities on alkaline soils.	97.77	-	236.5 ha 40% of total survey areas 1% of KNC survey area 66% of TSF survey area

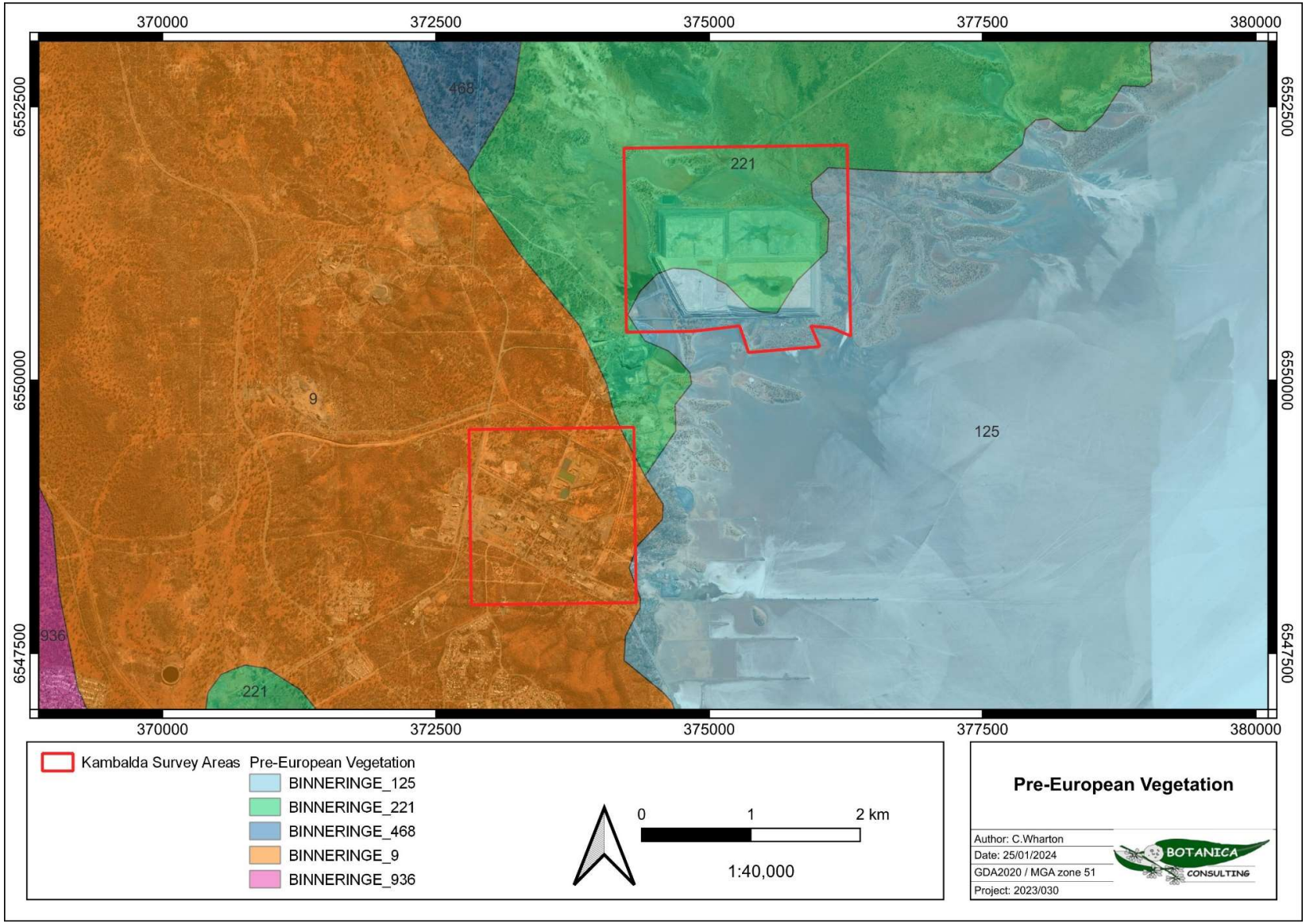


Figure 2-4: Pre-European vegetation associations within the survey areas

2.5 Climate

The Coolgardie bioregion experiences an arid to semi-arid climate, with an average rainfall between 200-300 mm, sometimes in summer but usually in winter (Cowan, 2001). The nearest Bureau of Meteorology (BoM) weather station is at Kambalda West (#12117); located approximately 7 km southwest of the survey areas centroid; however data is inconsistently recorded at this weather station. For the purposes of this report, data recorded at the Kalgoorlie-Boulder Airport weather station (#12038) has been used, which is located approximately 48 km to the north.

Kalgoorlie-Boulder Airport receives an average annual rainfall of about 264 mm, with a bimodal rainfall pattern with peak falls in summer (February) and winter (June) (Figure 2-5). Summer rainfall originates from deteriorating tropical cyclones that cross the coast of northern Western Australia and dissipate to the south-east. Winter rainfall results from cold fronts crossing the southern coastline and moving inland.

The highest temperatures are recorded between November and March, when mean minimum and maximum temperatures are 18.3°C and 33.6°C, respectively. The lowest temperatures are recorded between June and August, when mean minimum and maximum temperatures are 5.1°C and 16.8°C, respectively.

The survey was conducted in October 2023, with the preceding months of April, June and August receiving above average rainfall whilst May, July and September received well below average rainfall (Figure 2-6). In general, annual rainfall has been below average since 2019 with the exception of 2021 (Figure 2-7).

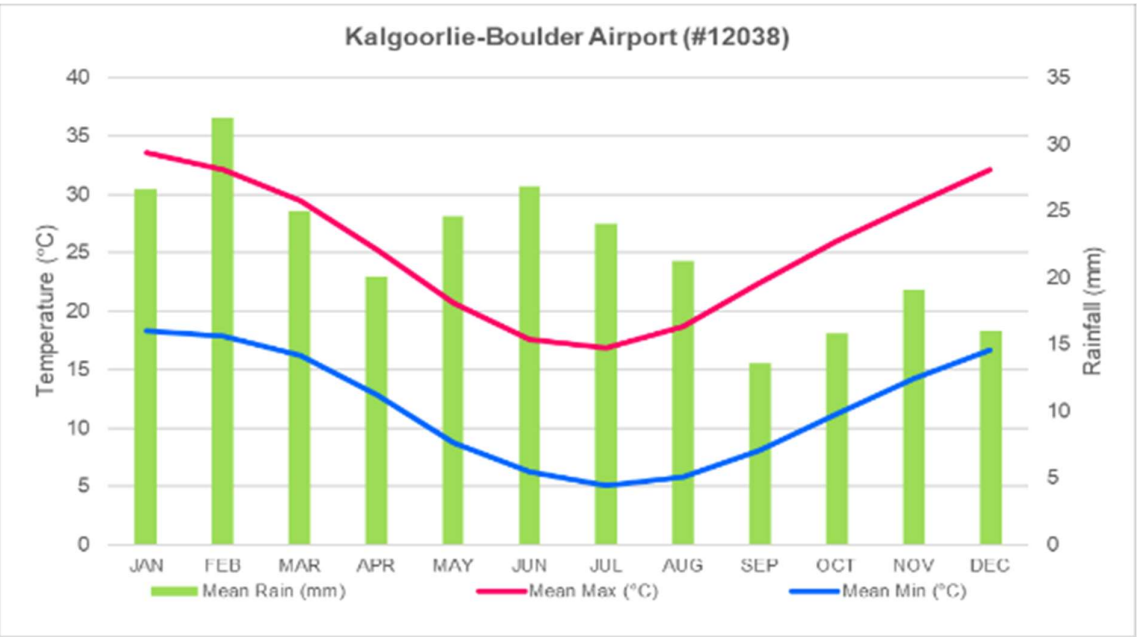
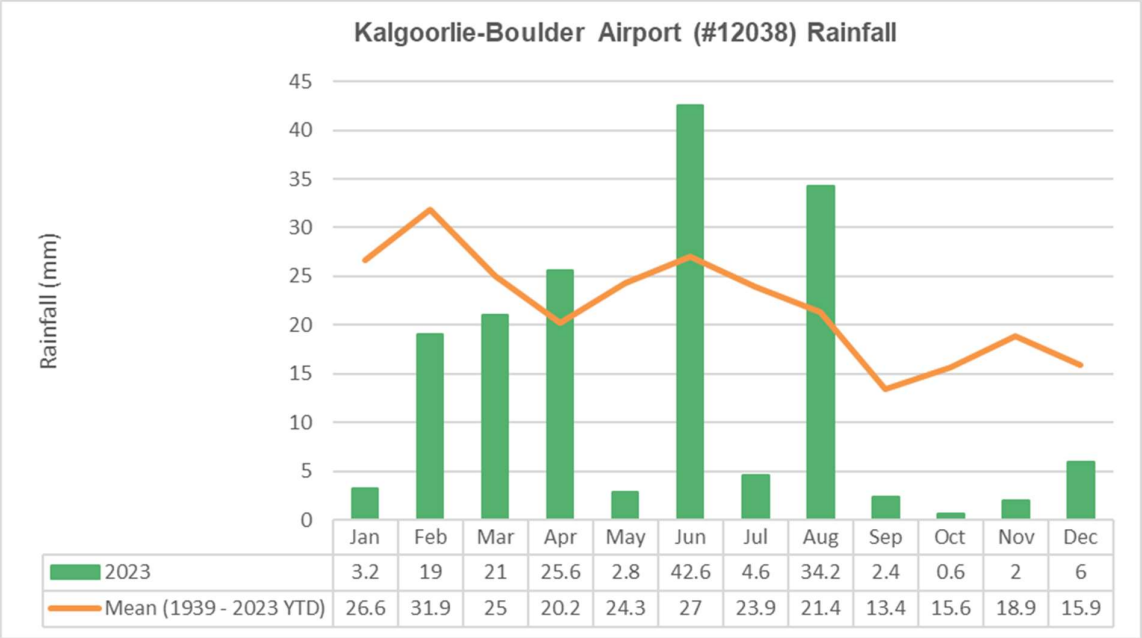


Figure 2-5: Climate data for Kalgoorlie-Boulder Airport (#12038) (BoM, 2024)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	3.2	19	21	25.6	2.8	42.6	4.6	34.2	2.4	0.6	2	6
Mean (1939 - 2023 YTD)	26.6	31.9	25	20.2	24.3	27	23.9	21.4	13.4	15.6	18.9	15.9

Figure 2-6: Monthly rainfall data for Kalgoorlie-Boulder Airport (#12038) (BoM, 2024)

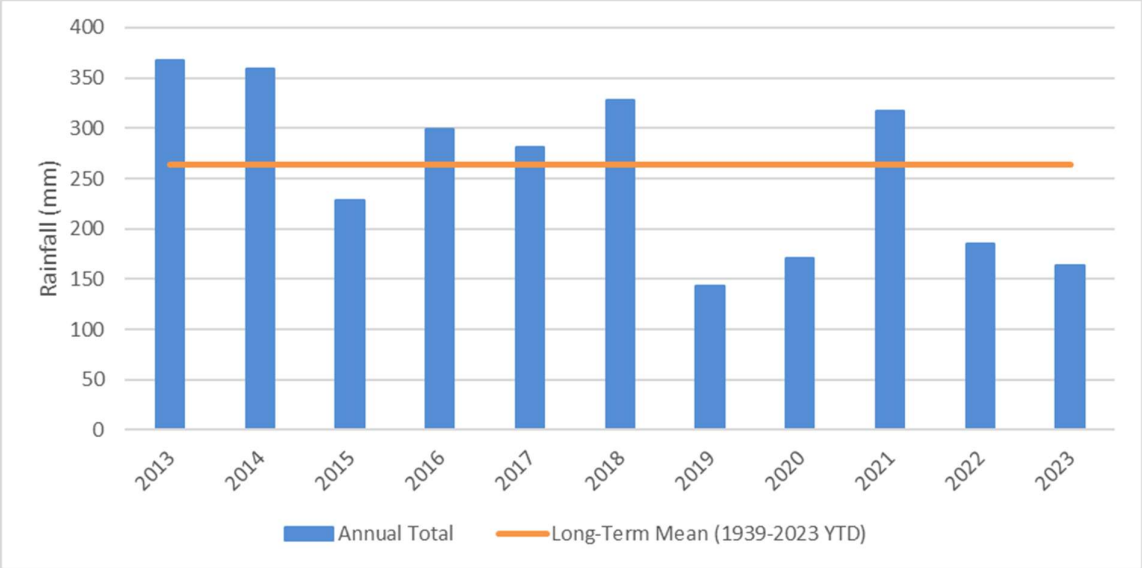


Figure 2-7: Annual rainfall data for Kalgoorlie-Boulder Airport (#12038) (BoM, 2024)

2.6 Conservation Values

No Threatened Ecological Communities (TECs) listed under the EPBC Act or the BC Act are known to occur within, or within 40 km of, the survey areas. The nearest known TEC is located more than 200 km west of the survey areas in the Avon Wheatbelt bioregion.

No Priority Ecological Communities (PECs) as listed by DBCA occur within, or within 40 km of, the survey areas. The nearest PEC, Mount Belches *Acacia quadrimarginea* / *Ptilotus obovatus* banded ironstone community (Priority 3), is located approximately 46 km east of the survey areas.

There are no Ramsar wetlands of international importance or sites listed in the Directory of Important (DIWA) (i.e., wetlands of national importance) within, or within 40 km of, the survey areas. The Eastern Goldfields (COO3) subregion contains one wetland of national importance: Rowles Lagoon System, located approximately 105 km northwest of the survey areas. The nearest Ramsar wetland: Lake Ballard, is located approximately 185 km north-northwest of the survey areas.

The Rowles Lagoon System is also the nearest Environmentally Sensitive Area (ESA) as listed under the *Environmental Protection Act 1986* (EP Act).

There are no proposed nor gazetted conservation reserves within the survey areas; however, there are several gazetted conservation reserves within 40 km of the survey areas. The closest gazetted conservation reserve is the Kambalda Nature Reserve which is located about 8 km west of the survey areas.

A map showing conservation values in relation to the survey areas is provided in Figure 2-8.

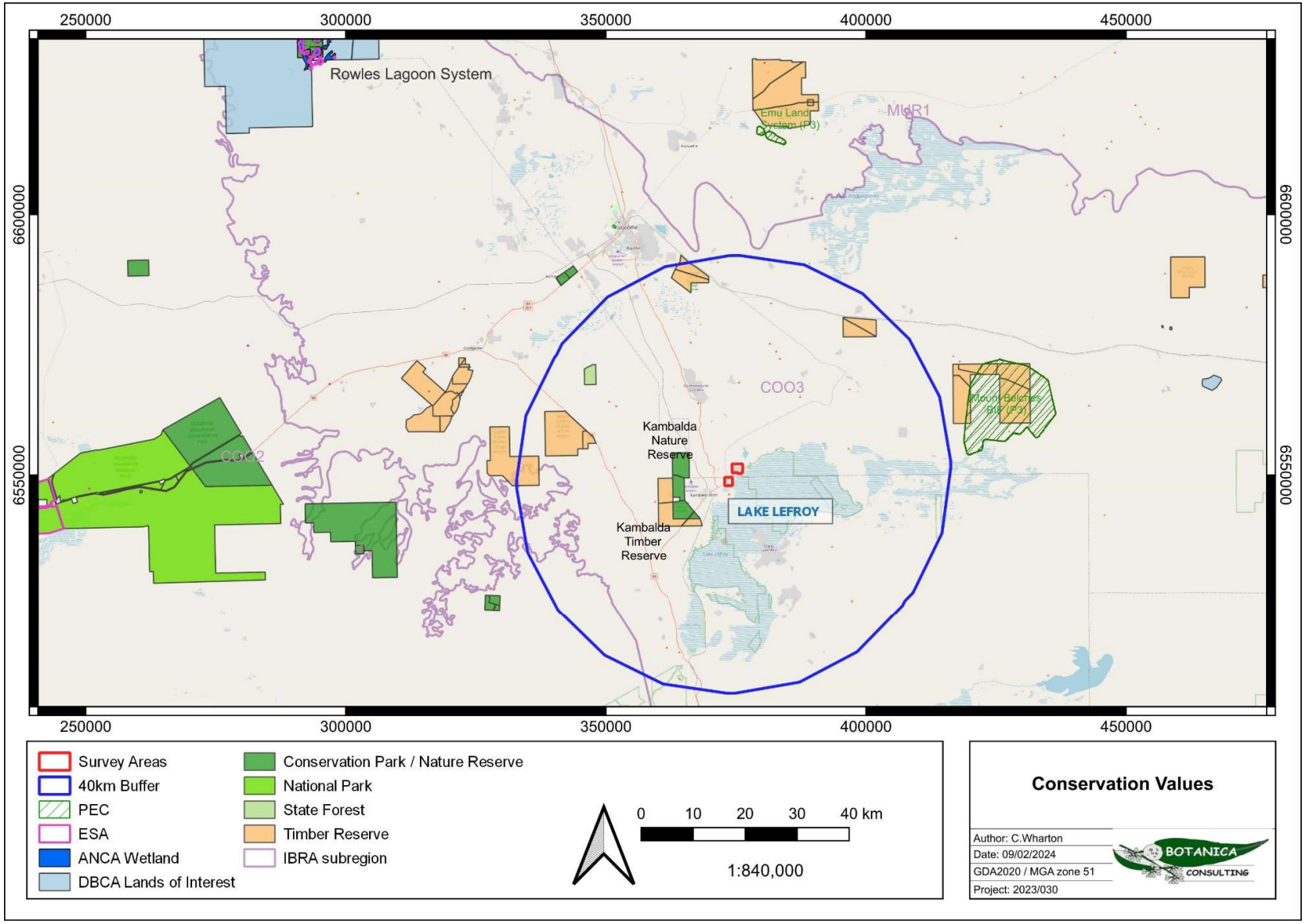


Figure 2-8: Conservation values in relation to the survey areas

2.6.1 Great Western Woodlands

The survey areas lie within the Great Western Woodlands, located approximately 55 km from the northern boundary. The Great Western Woodlands is 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 (Figure 2-1).

The area provides an eastward 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%), unallocated crown land ex-pastoral managed by the DBCA (2%) and private land (approximately 1%) (Watson *et. al.,* 2008).

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.

2.7 Hydrology

The survey areas are located adjacent to the western shore of Lake Lefroy, one of the larger salt lakes in the Coolgardie bioregion.

According to the Geoscience Australia database (2015), there are no permanent/ perennial inland waters or drainage lines within the survey areas. There is one major ephemeral drainage line within the northeast of the TSF survey area which drains east towards Lake Lefroy. The TSF itself is nestled among saline playas which are joined to Lake Lefroy (Figure 2-9).

Groundwater Dependent Ecosystems (GDE) includes biological assemblages of species such as wetlands or vegetation 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. According to the BoM *Atlas of Groundwater Dependent Ecosystems* database (BoM, 2019), there is one medium potential terrestrial GDE[1] located within the KNC survey area and a high potential terrestrial GDE[2] located predominately within the TSF survey area (Figure 2-10).

[1] Medium woodland; coral gum (*Eucalyptus torquata*) and goldfields blackbutt (*Eucalyptus lesoufii*).
[2] Bare areas; salt lakes (i.e., Lake Lefroy).

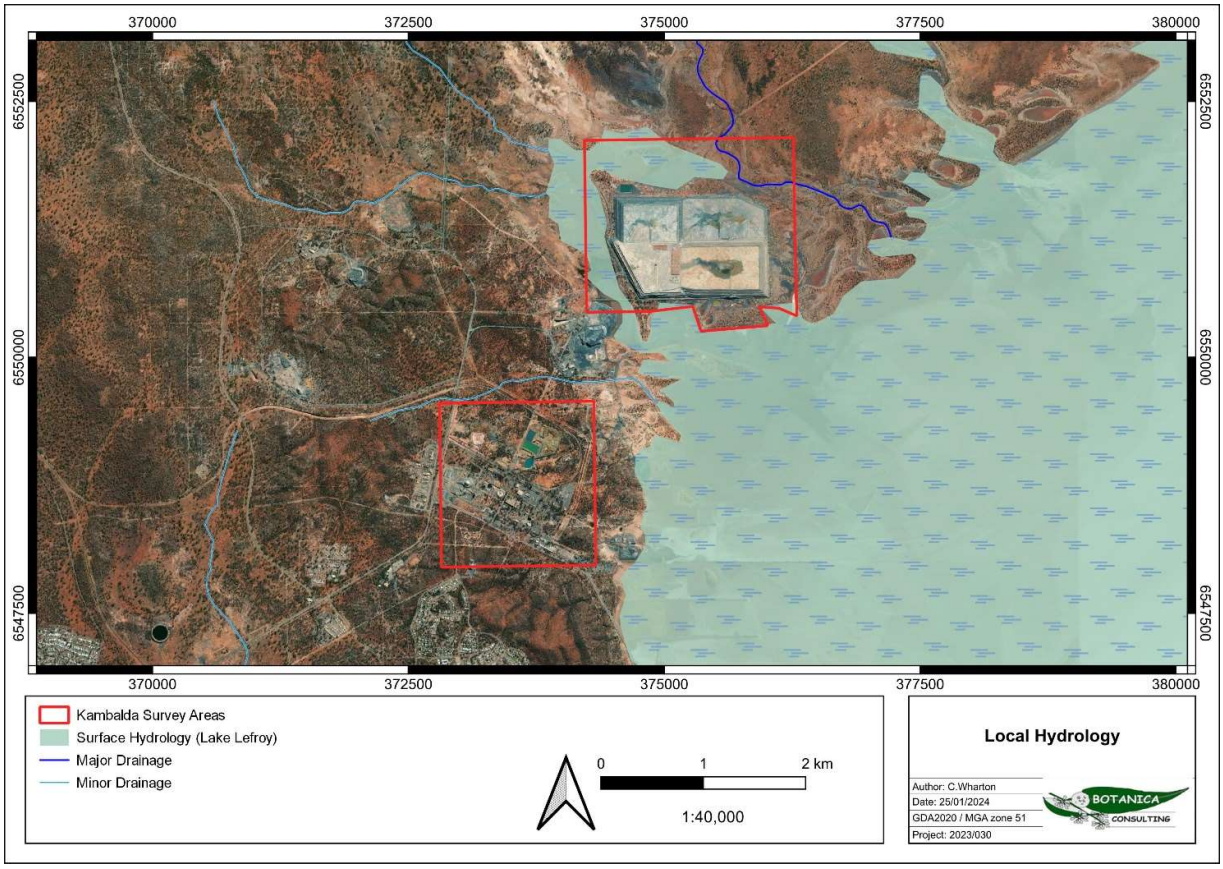


Figure 2-9: Regional hydrology of the survey areas

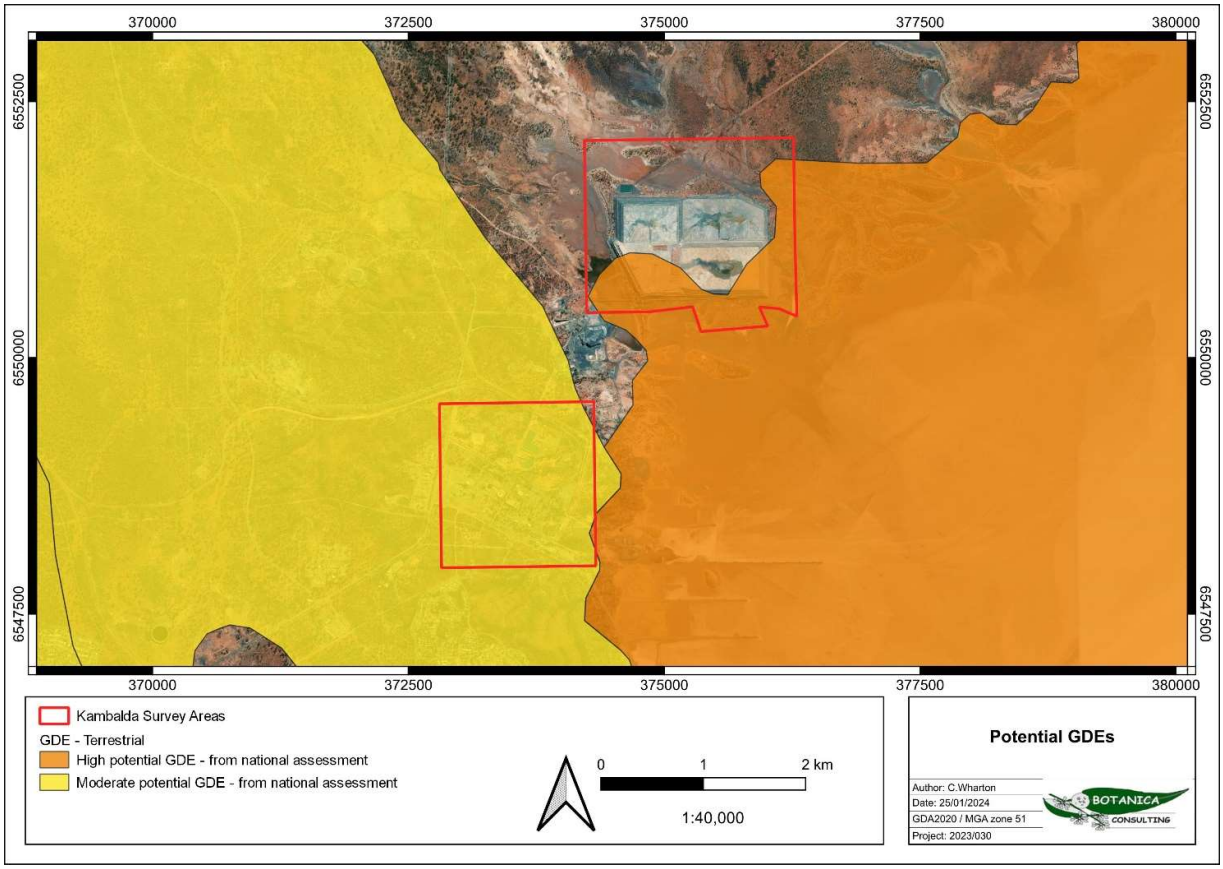


Figure 2-10: Potential GDEs of the survey areas

3 SURVEY METHODOLOGY

3.1 Desktop Assessment

3.1.1 Literature Review

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

- ATA Environmental (2006a). *Fauna Assessment, St. Ives Caves Rock Satellite Pit, Waste Dump and Haul Road.* Unpublished Report commissioned by Jim's Seeds, Weeds and Trees Pty Ltd.
- ATA Environmental (2006b). *Vertebrate Fauna Assessment, St. Ives Gold Mine.* Unpublished Report commissioned by Jim's Seeds, Weeds and Trees Pty Ltd.
- Bamford Consulting Ecologists (2010). *Fauna Assessment: impacts of water discharge and general mining activity on vertebrate fauna*. Unpublished report for Goldfields - St Ives Gold Mine, Kambalda.
- Biologic Environmental Survey (2021). *Kalgoorlie Nickel Smelter, Reconnaissance Flora and Vegetation Survey and Basic Terrestrial Fauna Survey*. Prepared for BHP Nickel West. December 2021.
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3.1.2 Database Searches

In addition to the literature review, searches of the following databases were undertaken to aid in the compilation of a list of flora and fauna taxa and communities within the survey areas:

- DBCA's Threatened and Priority Flora Database (Ref: 08-0224FL) (DBCA, 2024a)
- DBCA's Threatened and Priority Ecological Communities Database (Ref: 81-0822EC) (DBCA, 2022)
- DBCA's Threatened and Priority Fauna Database (Ref: 8141) (DBCA, 2024b)
- NatureMap Search (Ref: 68-0124) (DBCA, 2024c)
- EPBC Act online Matters of National Environmental Significance (MNES) database (Department of Climate Change, Energy, the Environment, and Water [DCCEEW], 2024a).

The database searches were conducted for an area encompassing a 40 km buffer around the survey areas (i.e., the assessment area).

It should be noted that these lists are sometimes 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 the actual species which may be present within the specific area being investigated.

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

- EPBC Act. Administered by the Australian Government (DCCEEW);
- BC Act. 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 and Fauna lists. A non-legislative list maintained by DBCA for management purposes: Priority flora list released 1st February 2024 (DBCA, 2024d); Priority fauna list released 6th October 2023 (DBCA, 2023).

3.1.3 Likelihood of Occurrence

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 areas. 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.

Significant fauna species identified by the desktop review were assessed with regards to their distribution and preferred habitat to determine their likelihood of occurrence within the survey areas. The assessment categorised fauna species as follows:

- **Would Not Occur:** There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).
- **Unlikely to Occur:** The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the desktop review or field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the site itself would not support a population or part population of the species.
- **Possibly Occurs:** Survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as likely to be present during the desktop review or field survey, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified as possibly being present at times, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.
- **Known to Occur:** The species in question has been positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) within the survey area. This information may have been obtained by direct observation of individuals or by way of secondary evidence (e.g., tracks, foraging debris, and scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (e.g., poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

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

3.2 Field Assessment

3.2.1 Flora and Vegetation Field Assessment

Botanica conducted a reconnaissance flora and vegetation survey of the survey areas from the 22nd to 24th October 2023.

The survey areas were traversed using a 4WD vehicle and on foot by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Greg Harewood (Principal Zoologist, BSc. Zoology). The GPS track log of the flora and vegetation survey effort is shown in Figure 3-1.

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.

The survey was conducted using 22 survey sites (relevés) (Figure 3-1). At each relevé site, the area was walked on foot to observe and record all flora species. The distance surveyed at each relevé varied dependent on the diversity/ variability of species and landforms/ vegetation types.

At each relevé, 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 the Western Australian Herbarium (WAH). Vouchering of the specimens with the WAH was not required as none of the specimens were of significance (i.e. conservation flora, novel taxa, range extensions etc.).

Structural vegetation classification was used to characterise the different vegetation types identified within the survey areas. Vegetation types were described in accordance with NVIS classifications - Vegetation Types (Level V).

The vegetation condition rating scale adapted from Keighery (1994) and Trudgen (1988), as specified in the *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a), for the South West and Interzone botanical provinces was used to rate the condition of vegetation within the survey areas. Vegetation condition rating descriptions are listed in Appendix F.

3.2.1.1 Targeted Survey

Targeted searches for conservation significant flora species, as identified during the desktop assessment, were undertaken in areas of suitable habitat.

3.2.1.2 Data Analysis

Following the field assessment, vegetation types and condition were mapped using the GIS program QGIS, and the hectare area/ percentage area of each vegetation type and condition within the survey areas was calculated. Spatial maps illustrating the location of vegetation types and any significant flora/ vegetation were generated using QGIS.

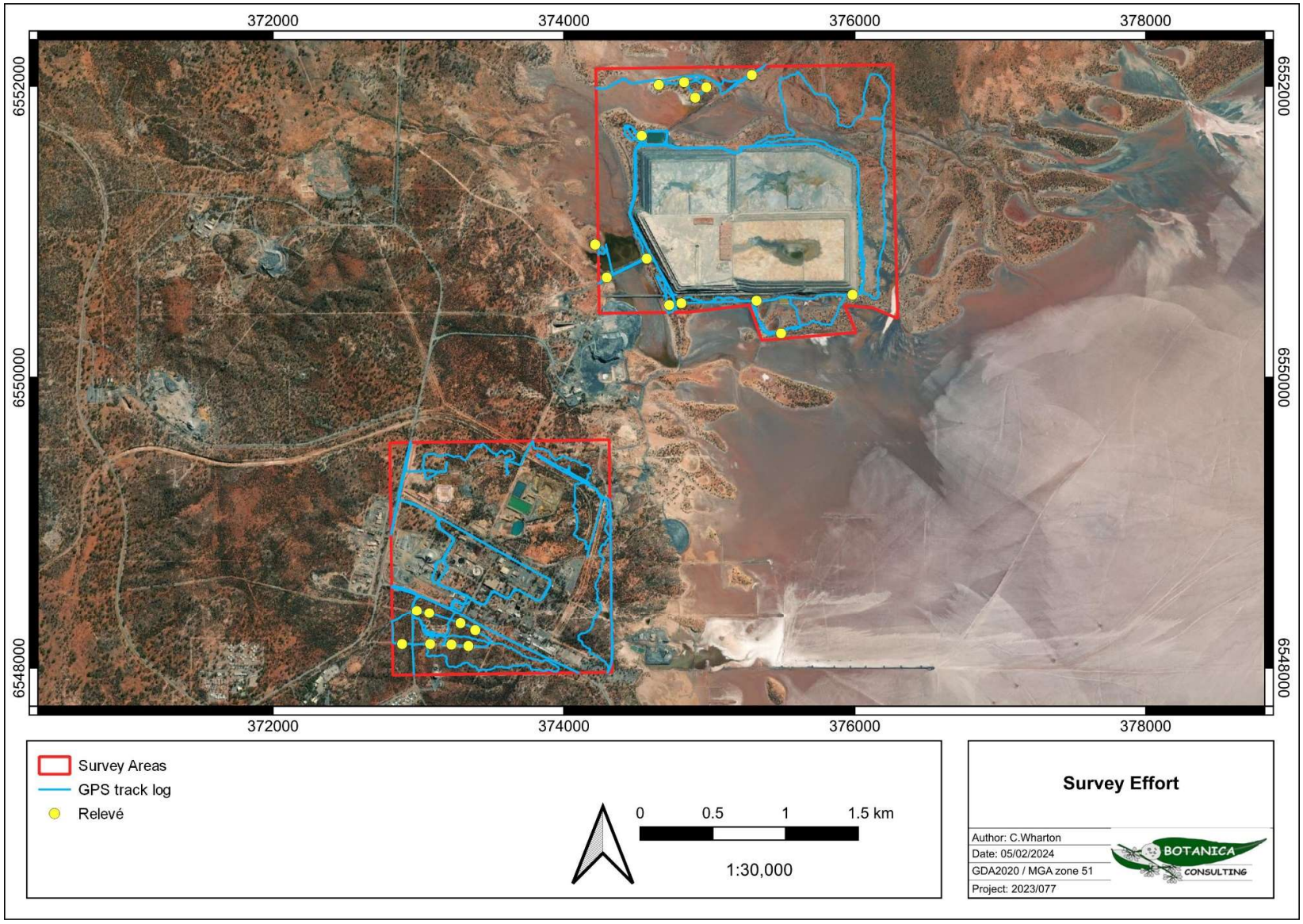


Figure 3-1: GPS track log of the flora and vegetation survey effort and locations of relevés

3.2.1.3 Scientific Licences

Table 3-1: Scientific Licenses of Botanica Staff Coordinating the Survey

Licensed Staff	Permit Number	Date of Expiry
Jim Williams	FB62000457 – Flora Taking (Biological Assessment) Licence	04/08/2025

3.2.1.4 Flora Survey Limitations and Constraints

The flora/vegetation assessment was designed and carried out to conform to a reconnaissance survey as defined in *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a). The assessment included a desktop assessment aimed at providing a list of expected species, and targeted and opportunistic flora collections via relevé sites and traverses. It is important to note that flora surveys will entail limitations notwithstanding careful planning and design. Potential limitations of the survey, as stipulated within the *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a), 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 are present in the survey area.

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: Flora Survey Limitations and Constraints

Potential Constraint	Potential Impact on Survey	Comments on Survey Outcomes
Access problems	Not a constraint	The survey was conducted via 4WD and on foot. Numerous access tracks were present within the survey areas providing ease of access and good coverage of vegetation types.

Potential Constraint	Potential Impact on Survey	Comments on Survey Outcomes
Competency/ Experience	Not a constraint	The Botanist that conducted the survey was regarded as suitably qualified and experienced. **Coordinating and Field Staff**: Jim Williams (Director/ Principal Botanist, Diploma of Horticulture). Jim has over 30 years' experience in biological surveying across Western Australia. **Data Interpretation**: Catherine Wharton (Senior Environmental Consultant, BSc. Conservation Biology) and Greg Harewood (Principal Zoologist, BSc. Zoology).
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. The survey was conducted in October 2023, with the preceding months of April, June and August receiving above average rainfall whilst May, July and September received well below average rainfall.
Area disturbance	Major constraint	The area has been heavily disturbed by ongoing mining operations and other human impacts. The extent of disturbance within the survey areas may have affected the results of survey e.g., species that would normally occur were not found in all areas of the survey area.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/ significance of the area with a reconnaissance flora/ vegetation survey completed to identify vegetation types and target searches for significant flora taxa.
Availability of contextual information at a regional and local scale	Not a constraint	Conservation significant flora and ecological community database searches provided by the DBCA were used to identify any potential locations of Threatened/Priority flora species and/or Threatened/Priority ecological communities. BoM, DWER, DPIRD, DBCA and DCCEEW databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Jim Williams and Greg Harewood have conducted numerous surveys within the Coolgardie bioregion and were also able to obtain information about the area from previous research conducted within the area. Results of previous assessments in the local area were reviewed to provide context on the local environment.
Completeness	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify vegetation assemblages and significant flora taxa. Survey work was conducted within the EPA's recommended approximate timing (September - November). Some taxa were flowering and all taxa were able to be identified to species level. The vegetation associations for this study were based on visual descriptions of locations in the field. Vegetation associations identified were categorised via comparison to vegetation distributions throughout WA given on NVIS (DotEE, 2017).

3.2.2 Terrestrial Fauna Field Assessment

A basic fauna survey was completed in conjunction with the reconnaissance flora/vegetation survey on the 22nd to 24th October 2023.

The survey areas were traversed using a 4WD vehicle and on foot by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Greg Harewood (Principal Zoologist, BSc. Zoology). The GPS track log of the survey effort for terrestrial fauna survey is shown in Figure 3-2.

Fauna habitat types were identified across the survey areas based on broad vegetation groups and associated landform. A handheld GPS unit was used to record the coordinates of the boundaries between fauna habitats and each habitat was photographed.

As part of the desktop assessment, available information on the habitat requirements of the species of conservation significance listed as possibly occurring in the area was researched. During the field survey, the habitats within the survey areas were assessed and specific elements identified, if present, to determine the likelihood of listed Threatened and Priority fauna species utilising area and its importance to them.

3.2.2.1 Targeted and Opportunistic Surveys

During the course of the survey work non-systematic opportunistic observations of fauna species were made and recorded. Secondary evidence of fauna such as tracks, diggings and scats were also noted. Active searches of fauna species were undertaken throughout the study area involved a series of transects across the study area during the day including observations of bird species with binoculars. Searches included but were not limited to investigating burrows, investigating scats, tracks and other traces, turning fallen timber and rocks, opening standing timber crevices, peeling bark and raking leaf litter.

Targeted searches for conservation significant fauna species, as identified during the desktop assessment, were undertaken in areas of suitable habitat.

3.2.2.2 Acoustic Bat Recordings

Acoustic bat call recordings were undertaken using two Wildlife Acoustics SM2+ Bat Detectors. Two nights of recording were carried out on the 22nd and 23rd October 2023; this equates to one night of recording per location for a total of four (4) locations and four (4) nights of bat recordings.

The recordings were commenced at sunset and continued until sunrise the following day. The bat detectors were located near water where bats were likely to be attracted (i.e., to forage for insects). The recording locations are shown in Figure 3-2, and a description of each location is provided below:

- BAT 221023 1918: TSF survey area, within Sand Dune, Low Eucalypt Woodlands.
- BAT 221023 1919: TSF survey area, within Sand Dune, Low Eucalypt Woodlands.
- BAT 231023 1918: KNC survey area, within clay/loam area, Low Eucalypt Woodlands.
- BAT 231023 1919: KNC survey area, within an open cleared area.

The detector records ultrasonic echolocation signals produced by bats which are subsequently processed to determine the presence of species-specific calls. The calls were identified to species level by Bob Bullen (Bat Call WA Pty Ltd).

3.2.2.3 Data Analysis

Following the field assessment, fauna habitats were mapped using the GIS program QGIS, and the hectare area/ percentage area of each habitat within the survey areas was calculated. Spatial maps illustrating the location of habitats and any significant fauna were generated using QGIS.

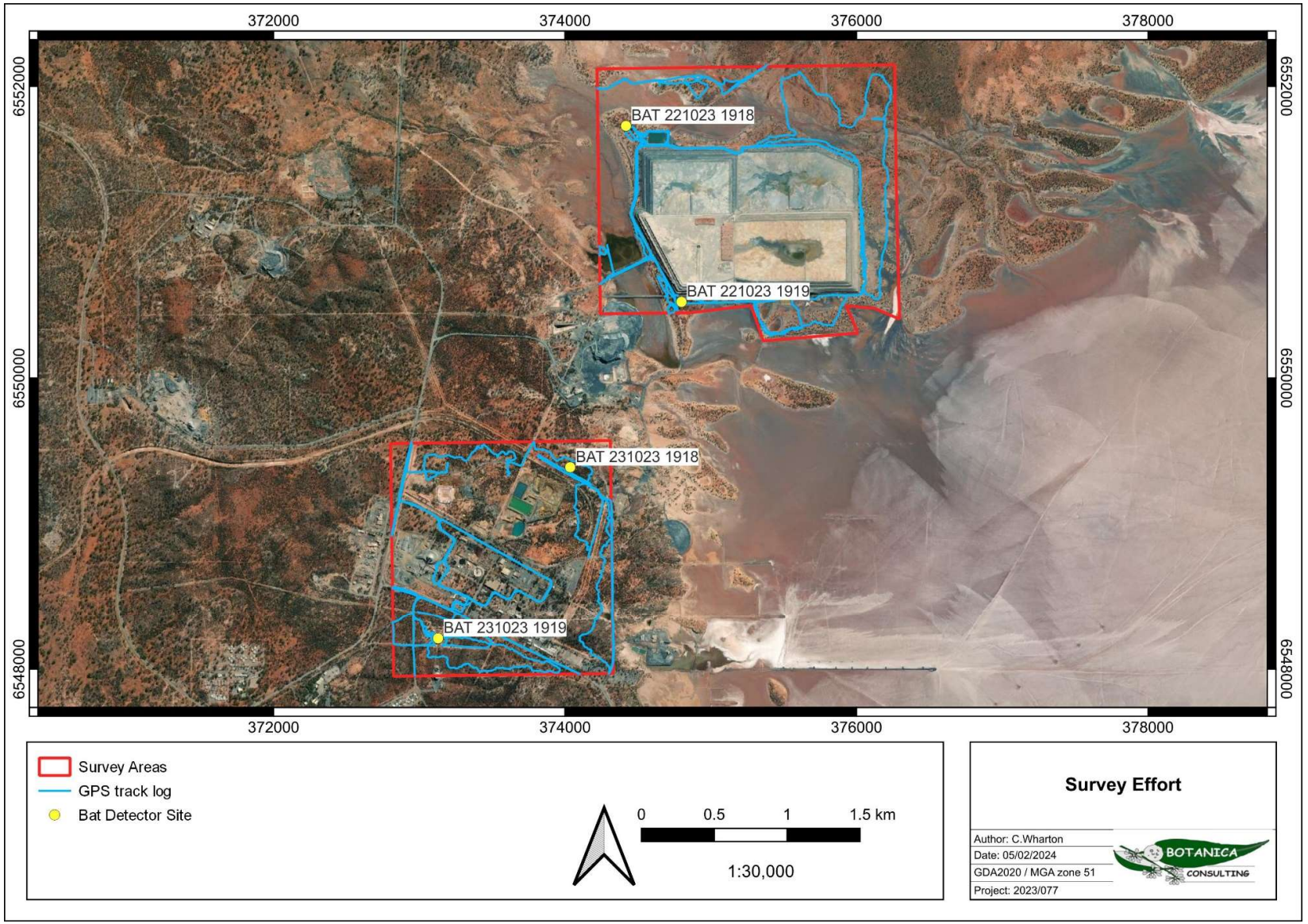


Figure 3-2: GPS track log of the fauna survey effort and locations of bat detector sites

3.2.2.4 Fauna Survey Limitations and Constraints

The fauna assessment was designed and carried out to conform to a basic terrestrial vertebrate fauna survey as defined in *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020). The assessment included a desktop assessment aimed at providing a list of expected species, targeted and opportunistic fauna observations, and the use of bat detector recordings. It is important to note that fauna surveys will entail limitations notwithstanding careful planning and design. Fauna survey limitations and constraints, as stipulated within the *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020), are summarised in Table 3-3.

As discussed above for flora (Section 3.2.1.4), the conclusions presented in this report are indicative of the environmental condition of the site at the time of the field assessments, and it should be recognised that site conditions can change with time.

Fauna species are indicated within this report as potentially present based on there being suitable (quality and extent) habitat within the study area or immediately adjacent. The habitat requirements of species known to occur in the wider area are not always well understood or documented, and therefore it can be difficult to exclude species from the potential list based on a lack of a specific habitats or microhabitats within the survey areas. 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. With respect to trapping, targeted and opportunistic observations, the possibility exists that certain species may not have been detected during field investigations due to:

- seasonal inactivity during field survey;
- species present within micro habitats not surveyed;
- cryptic species able to avoid detection; and
- transient wide-ranging species not present during survey period.

The lack of observational data on some species should therefore not be taken as necessarily indicating that a species is absent from the site.

In recognition of survey limitations a precautionary approach has been adopted for this assessment. Any fauna species that would possibly occur within the study area as identified through ecological databases, publications, discussions with local experts/residents and the habitat knowledge of the zoologist that executed the survey has been assumed to potentially occur in the study area.

Table 3-3: Fauna Survey Limitations and Constraints

Potential Constraint	Potential Impact on Survey	Comments on Survey Outcomes
Competency/ Experience of the consultant carrying out the survey	Not a constraint	The Zoologist that executed the survey has conducted many basic, and detailed surveys in WA and can be regarded as suitably qualified. **Coordinating and Field Staff**: Greg Harewood (Principal Zoologist, BSc. Zoology). Greg has over 30 years' experience in biological surveying across Western Australia. **Data Interpretation**: Catherine Wharton (Senior Environmental Consultant, BSc. Conservation Biology) and Greg Harewood (Principal Zoologist, BSc. Zoology).
Scope	Not a constraint	The survey carried out was a basic terrestrial fauna survey, comprising of a desktop assessment and a field survey that included a habitat assessment, target and opportunistic observations, active searches and bat recordings.
Proportion of fauna identified, recorded and/or collected	Not a constraint	The field survey recorded about 23% of listed potential vertebrate species considered likely to be present on site. It should be noted that the potential species list is very likely an over estimation of the species that use the study area on a regular basis. 94% of records were from fauna encountered in the field, and all bat species were identified from acoustic recordings, which accounted for the remaining 6% of records. No specimens were collected for post survey identification, with all fauna encountered (or evidence of) identified at the time in the field.
Sources of information	Not a constraint	The survey area has not (as far as the Zoologist that executed the survey is aware) been subject to detailed surveys in the past and specific fauna values are not well documented, though significant work has been done in nearby areas.
The proportion of the task achieved and further work	Not a constraint	The basic fauna survey, with targeted searches and surveying, was completed in full; no further work is required.
Timing/ weather/ season/ cycle	Not a constraint	The survey was carried out in October which is within the recommended timing for vertebrate fauna surveys in the Southern climatic region (EPA, 2020).
Disturbances (e.g. fire, flood, accidental human intervention etc.) which affected results of survey	Major constraint	The area has been heavily disturbed by ongoing mining operations and other human impacts. The extent of disturbance within the survey area may have affected the results of survey e.g., species that would normally occur were not found in all areas of the survey area.
Intensity (in retrospect, was the intensity adequate)	Not a constraint	Based on results achieved the survey can be considered adequate for a basic terrestrial fauna survey, with habitat assessments, and targeted and opportunistic searches undertaken (via traverses, active searches and acoustic recordings).
Completeness (e.g. was relevant area fully surveyed)	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify fauna habitats and significant fauna. Survey work was conducted within the EPA's recommended timing for vertebrate fauna.
Resources (e.g. degree of expertise available in animal identification to taxon level)	Not a constraint	No unresolved problems/uncertainties arose with respect to identifying observed vertebrate fauna species.

Potential Constraint	Potential Impact on Survey	Comments on Survey Outcomes
Remoteness and/or access problems	Not a constraint	The survey was conducted via 4WD and on foot. Numerous access tracks were present within the survey area providing ease of access and good coverage of the fauna habitats.
Availability of contextual (e.g. biogeographic) information on the region	Not a constraint	Previous fauna survey data for the wider area, specialist books/publications and government databases were consulted.

4 RESULTS

4.1 Desktop Assessment

4.1.1 Flora

According to the results of the NatureMap search (DBCA, 2024c), a total of 578 vascular flora taxa have been recorded within 40 km of the survey areas. Dominant genera include *Acacia* (41 species), *Eucalyptus* (45 species), and *Eremophila* (33 species); which represent ~20% of the vascular flora species recorded within 40 km of the survey areas.

The full list of vascular flora identified by the NatureMap search (DBCA, 2024c) is contained in Appendix B.

4.1.1.1 Introduced Flora

The desktop review identified 28 introduced flora (weed) species as potentially occurring within 40 km of the survey areas. Of these, three are listed as Declared Pests on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), and two are also listed a as Weed of National Significance (WoNS).

A summary of the potentially occurring Declared Pests and WoNS occurring within 40 km of the survey areas are listed in Table 4-1.

The full list of potential weed species occurring within 40 km of the survey areas is contained in Appendix C.

Table 4-1: Potentially occurring Declared Pests and WoNS within 40 km of the survey areas

Family	Taxon	Common Name	WAOL Status	Control Category	WoNS
Boraginaceae	**Echium plantagineum*	Paterson's Curse	Declared Pest - s22(2)	-	No
Cactaceae	**Cylindropuntia fulgida* var. *mamillata*	Coral Cactus	Declared Pest - s22(2)	C3 Management	Yes
Verbenaceae	**Lantana camara*	Common Lantana	Declared Pest - s22(2)	C3 Management	Yes

4.1.1.2 Significant Flora

The desktop assessment of the DBCA's Threatened and Priority flora database (DBCA, 2024a), NatureMap search (DBCA, 2024c), Protected Matters searches (DCCEEW, 2024) and previous relevant literature identified 42 significant flora species recorded within a 40 km radius of the survey areas. These are comprised of one Threatened, 14 Priority 1, six Priority 2, 16 Priority 3, and five Priority 4 taxa; according to DBCA conservation codes (Table 4-2).

The locations of DBCA database records for significant flora in relation to the survey areas is shown in Figure 4-1.

The significant flora species identified to occur within 40 km of the survey areas were assessed for distribution and known habitat to determine their likelihood of occurrence within the survey areas (Table 4-2). Nil species were previously recorded within the survey areas, and six were previously recorded within 10 km of the survey areas. Of the 42 significant flora species previously recorded within 40 km of the survey areas, five were assessed as being likely to occur within the survey areas, 30 were assessed as possibly occurring within the survey areas, and the remaining seven were assessed as being unlikely to occur within the survey areas due to unsuitable habitat or being outside the known range of the species (Table 4-2).

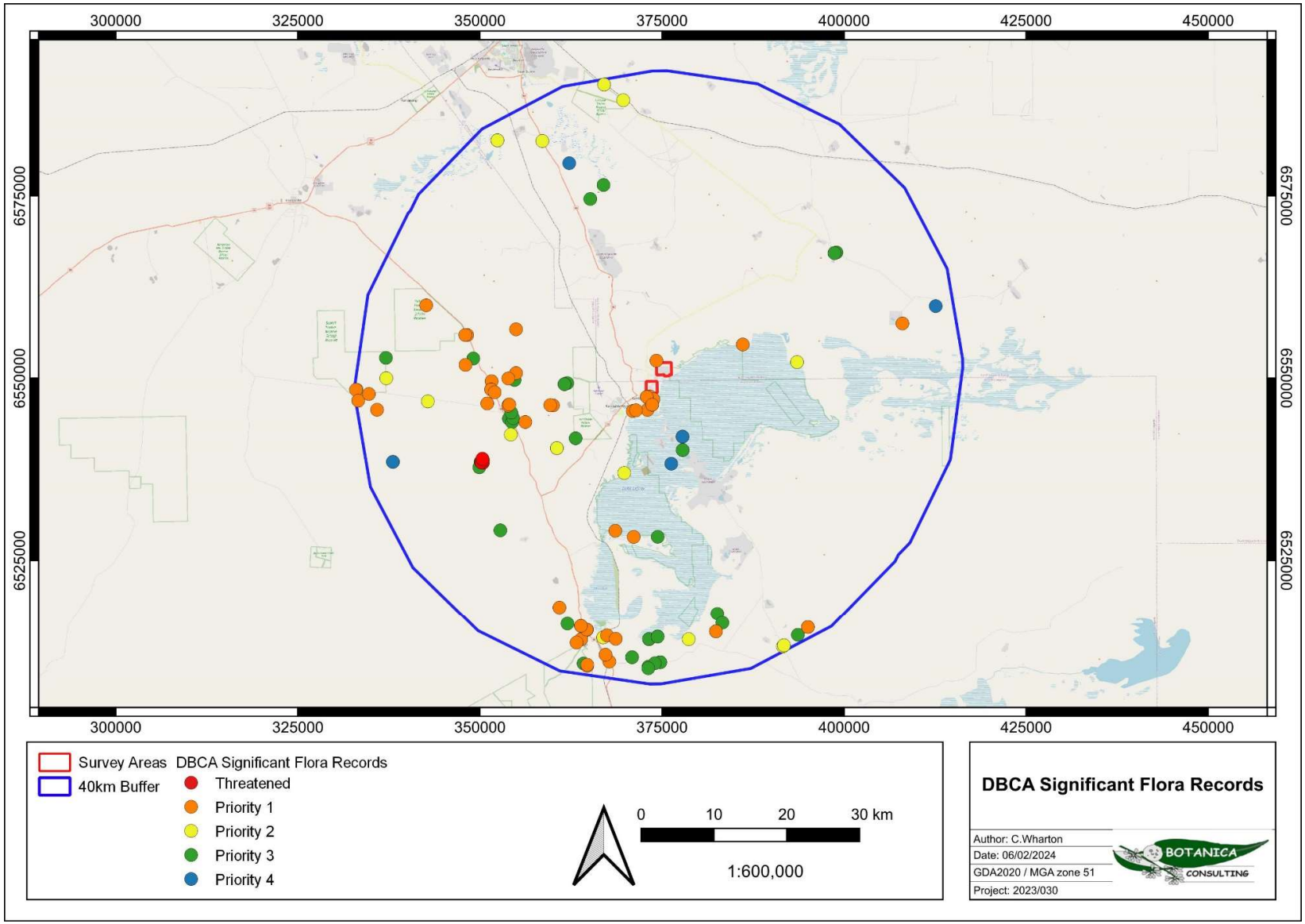


Figure 4-1: Significant flora records (DBCA, 2024a) in relation to the survey areas

Table 4-2: Significant flora within a 40 km radius of the survey areas

Taxon	Conservation Status			Habitat Description (WAHERB, 2024)	Assessment	Likelihood of Occurrence
	EPBC	BC Act	DBCA			
Acacia crenulata			P3	Clay, sandy clay, yellow sand. Rocky rises, granite outcrops, breakaways.	Habitat may be present in the survey area.	Possible
Acacia kerryana			P2	Granitic loamy sand, stony clayey loam or clayey sand. Low stony ridges, undulating plains.	Regional records, potential habitat may be present in survey area.	Possible
Acacia websteri			P1	Red sand, clay or loam. Low-lying areas, flats.	Habitat may be present in the survey area.	Possible
Allocasuarina eriochlamys subsp. *grossa*			P3	Stony loam, laterite clay. Granite outcrops.	Regional records, potential habitat may be present in survey area.	Possible
Austrostipa turbinata			P3	*Eucalyptus* open forest, woodland and mallee shrubland, on loam or clay soils.[3]	Habitat may be present in the survey area.	Possible
Calandrinia lefroyensis			P1	Red sandy loam soil. Saline flats, edge of salt lakes.	Recorded within 10km of survey area, Habitat may be present in the survey area.	Likely
Chrysocephalum apiculatum subsp. *norsemanense*			P3	Sandplain with open mallee or shrubland.	Within known range, habitat may be present in the survey area.	Possible
Cratystylis centralis			P3	Red sandy loam with ironstone gravel. Flat plains, breakaway country.	Adjacent to known range, habitat may be present in the survey area.	Possible
Cyathostemon divaricatus			P1	Rocky hillslope. Red loam over laterite	Recorded within 10km of survey area. Habitat may be present in the survey area.	Likely
Eremophila acutifolia			P3	Clay loam, gravelly loam. Undulating flats.	Adjacent to known range, habitat may be present in the survey area.	Possible
Eremophila annosicaulis			P3	No information on habitat.	Adjacent to known range, habitat unknown.	Possible
Eremophila arachnoides subsp. *tenera*			P3	Flat calcareous plain.	Outside known range (east/northeast of Kalgoorlie).	Unlikely
Eremophila caerulea subsp. *merrallii*			P4	Sand, clay or loam. Undulating plains.	Outside known range.	Unlikely
Eremophila perglandulosa			P1	No information on habitat.	Adjacent to known range, habitat unknown.	Possible
Eremophila praecox			P2	Red/brown sandy loam. Undulating plains.	Habitat may be present, occurs within regional context.	Possible
Eremophila succinea			P3	Clay, sand over clay.	Adjacent to known range, habitat may be present in the survey area.	Possible
Eremophila veronica			P3	Stony clay, clay loam. Lateritic breakaways.	Adjacent to known range, habitat may be present in the survey area.	Possible
Eucalyptus kruseana			P4	Sandy loam. Granite outcrops & hills.	Adjacent to known range, habitat may be present in the survey area.	Possible
Eucalyptus websteriana subsp. *norsemanica*			P1	Rocky rises	Outside known range (south of Widgiemooltha).	Unlikely
Eucalyptus x *brachyphylla*			P4	Sandy loam. Granite outcrops	Recorded within 10km of survey area, Habitat may be present in the survey area.	Likely

[3] A.R. Williams, *Austrostipa (Poaceae) in WA: new species and character notes*, published in The journal of the Western Australian Herbarium, Published online 8 March 2022.

Taxon	Conservation Status			Habitat Description (WAHERB, 2024)	Assessment	Likelihood of Occurrence
	EPBC	BC Act	DBCA			
Frankenia glomerata			P4	White sand. Margins of large salt lakes.	Within known range, habitat may be present in the survey area.	Possible
Goodenia salina			P2	Low gypseous dunes near salt pans.	Habitat may be present in survey area.	Possible
Isolepis australiensis			P3	Silty sand, sandy clay. Lake margins, pools.	Habitat may be present in survey area.	Possible
Lepidosperma sp. Kambalda (A.A. Mitchell 5156)			P2	No information on habitat.	Adjacent to known range, habitat unknown.	Possible
Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)			P1	Rocky slope, mallee woodland.	Adjacent to known range, potential habitat may be present in survey area.	Possible
Melaleuca coccinea			P3	Sandy loam over granite. Granite outcrops, sandplain, river valleys.	Recorded within 10km of survey area, Habitat may be present in the survey area.	Likely
Phebalium clavatum			P2	Sandy soils. Sandplains.	Adjacent to known range of species, habitat may be present in survey area.	Possible
Philotheca apiculata			P1	Stony clay loam. Rocky outcrops, hillsides.	Outside known range. Habitat may be present in the survey area.	Unlikely
Phlegmatospermum eremaeum			P3	Stony loam.	Regional records, suitable habitat may be present in the survey area.	Possible
Pityrodia scabra subsp. *dendrotricha*			P3	No information on habitat.	Outside known range (Widgiemooltha). Habitat unknown.	Unlikely
Prostanthera splendens			P1	Stony loam, shallow soils with ironstone pebbles. Breakaways.	Regional records, suitable habitat may be present in the survey area.	Possible
Pterostylis xerampelina			P1	Rocky areas, granite or ironstone.	Regional records, suitable habitat may be present in the survey area.	Possible
Ptilotus procumbens			P1	Red clay.	Outside known range. Habitat may be present in the survey area.	Unlikely
Ptilotus rigidus			P1	Quartz and ironstone hillsides, outcrops. Near salt lakes.	Regional records adjacent to major salt lakes. Habitat may be present in the survey area.	Possible
Ricinocarpos digynus			P1	Rocky hillslopes.	Recorded within 10km of survey area. Habitat may be present in the survey area.	Likely
Sowerbaea multicaulis			P4	Yellow-brown sand.	Recorded within 10km of survey area. Collection made on 14 November 1891, location is possibly incorrect as generally recorded 200km to the west.	Unlikely
Stylidium choreanthum			P3	White/yellow or red sand. Plains.	Regional records, suitable habitat may be present in the survey area.	Possible
Styphelia rectiloba			P3	Granite outcrops and breakaways.	Habitat may be present in the survey area.	Possible
Tecticornia flabelliformis	VU	-	P2	Clay. Saline flats	Adjacent to known range of species, habitat present in survey area.	Possible
Tecticornia mellarium			P1	No information on habitat.	Regional records, habitat unknown.	Possible

Taxon	Conservation Status			Habitat Description (WAHERB, 2024)	Assessment	Likelihood of Occurrence
	EPBC	BC Act	DBCA			
Tetratheca spenceri			VU	No information on habitat.	Isolated regional record, no habitat information.	Possible
Thryptomene planiflora			P1	Sandplain, Acacia shrubland.	Regional records, suitable habitat may be present in the survey area.	Possible

4.1.2 Fauna

According to the results of the NatureMap search (DBCA, 2024c), a total of 215 terrestrial vertebrate fauna taxa have been recorded within 40 km of the survey areas comprising two amphibians, 124 bird species, 12 mammals and 77 reptiles.

The full list of terrestrial vertebrate fauna identified by the NatureMap search (DBCA, 2024c) is contained in Appendix B.

4.1.2.1 Introduced Fauna

The desktop review identified three introduced vertebrate fauna (feral) species as potentially occurring within 40 km of the survey areas (Table 4-3).

Table 4-3: Potentially occurring introduced fauna within 40 km of the survey areas

Family	Taxon	Common Name
Felidae	**Felis catus*	Domestic Cat
Leporidae	**Oryctolagus cuniculus*	Rabbit
Muridae	**Mus musculus*	House Mouse

4.1.2.2 Significant Fauna

The desktop assessment of the DBCA's Threatened and Priority fauna database (DBCA, 2024b), NatureMap search (DBCA, 2024c), Protected Matters searches (DCCEEW, 2024) and previous relevant literature identified 15 significant terrestrial vertebrate fauna species and one significant invertebrate fauna species recorded within 40 km of the survey areas. These comprised of nine Threatened, one Priority, eight migratory bird taxa (three of which are also listed as Threatened) and one 'other' specially protected bird taxa.

The locations of DBCA database records for significant fauna in relation to the survey areas is shown in Figure 4-2.

Habitat and distribution data was used to determine the likelihood of occurrence within the survey areas. The assessment identified three significant fauna species as Possibly Occurs and one as Known to Occur in the survey area (Table 4-4). The remaining 12 species were assessed as unlikely to occur or would not occur within the survey areas.

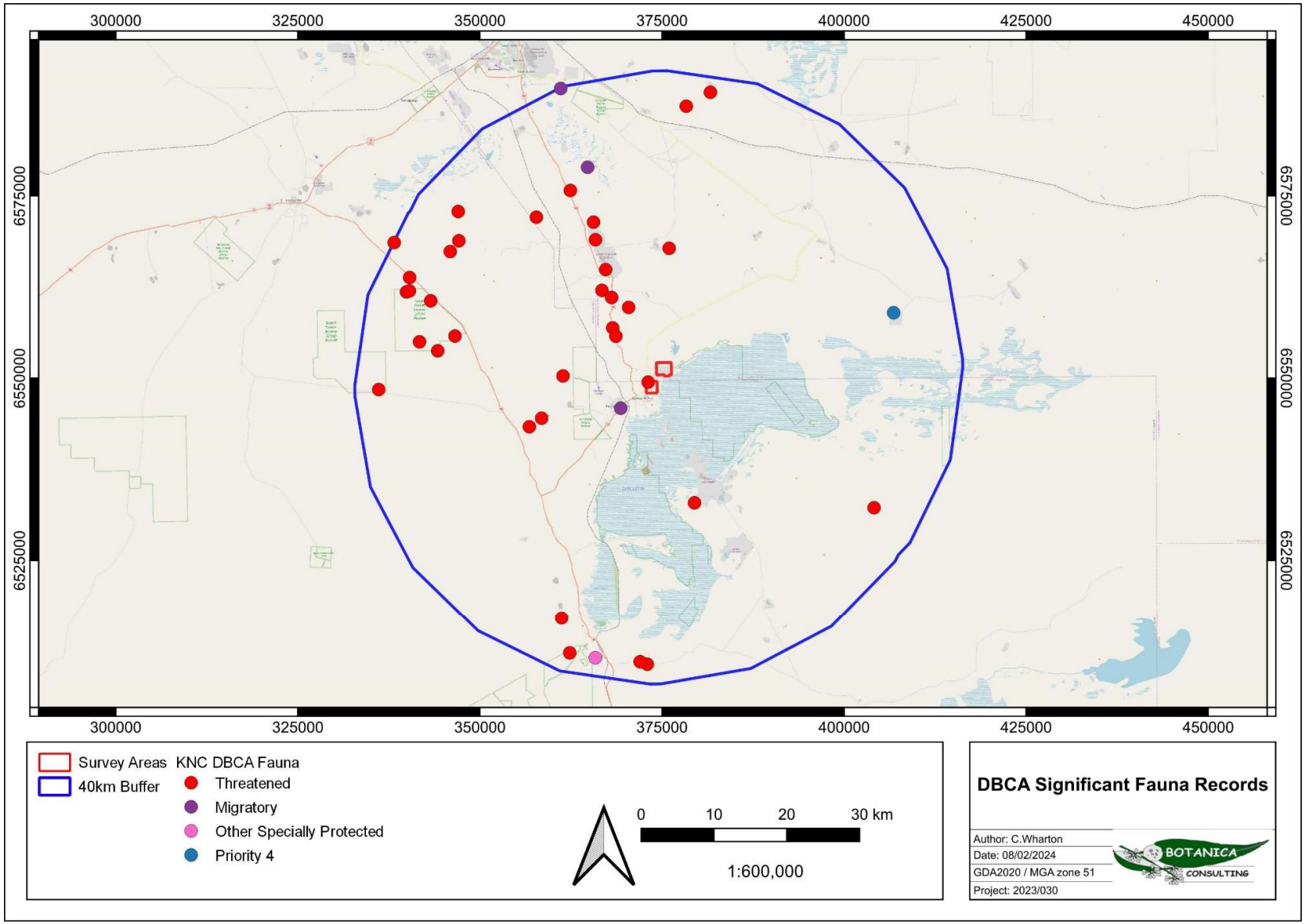


Figure 4-2: Significant fauna records (DBCA, 2024a) in relation to the survey area

Table 4-4: Significant fauna within a 40 km radius of the survey areas

Class	Taxon	Conservation Status			Habitat Description	Assessment	Likelihood of Occurrence
		EPBC	BC Act	DBCA			
Invertebrate	Arid bronze azure butterfly, *Ogyris subterrestris petrina*	CR	CR	-	The potential distribution is extensive and encompasses much of the semi-arid zone (rainfall <325mm), south of approximately 26 degrees latitude, amongst smooth-barked Eucalypts (in particular *Eucalyptus salubris*, *E. salmonophloia*, *E. capillosa* and *E. loxophleba* subsp. *lissophloia*) (DEMIRS, 2022). Many flowering plants of the lower, mid and upper storey are likely to be nectar sources for the adult butterfly. In woodlands, many plants such as *Eucalyptus, Acacia, Grevillea, Hakea*, and annual species would be probable nectar plants (DEMIRS, 2022). This butterfly is obligately dependent on a sugar ant species (*Camponotus* sp. nr. *terebrans*). Floristically diverse habitats are also needed to sustain high densities of the host ant which nests at the base of eucalypts (DEMIRS, 2022).	Species habitat may be in the area.	Possibly Occurs
Mammal	Chuditch *Dasyurus geoffroii fortis*	VU	VU	-	Historically, chuditch inhabited a wide range of habitats, but today it survives mostly in Jarrah *Eucalyptus marginata* forests and woodlands, mallee shrublands and heathlands (DBCA, 2017).	Very small number of historical records, one of which is within the KNC survey area, now considered regionally extinct.	Unlikely to Occur
Aves	Southern Whiteface *Aphelocephala leucopsis*	VU	-	-	Occur across most of mainland Australia south of the tropics, Southern Whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both (DCCEEW, 2024).	PMST report states that the species or species habitat known to occur within area.	Possibly Occurs
	Sharp-tailed Sandpiper *Calidris acuminata*	VU / MI	MI	-	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation (DCCEEW, 2024b).	Small numbers may occur very occasionally after significant rainfall and subsequent inundation of Lake Lefroy, but frequency of occurrence would be low and for short periods only.	Unlikely to Occur

Class	Taxon	Conservation Status			Habitat Description	Assessment	Likelihood of Occurrence
		EPBC	BC Act	DBCA			
Aves (cont.)	Curlew Sandpiper *Calidris ferruginea*	CR / MI	CR	-	Inland, where they are rarely seen, around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand (DCCEEW, 2023).	Small numbers may occur very occasionally after significant rainfall and subsequent inundation of Lake Lefroy, but frequency of occurrence would be low and for short periods only.	Unlikely to Occur
	Grey Falcon *Falco hypoleucos*	VU	VU	-	Occurs at low densities across inland Australia. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. Observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter.	Survey area may form part of larger home range.	Possibly Occurs
	Peregrine Falcon *Falco peregrinus*	-	OS	-	Found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings (BirdLife Australia, 2024).	Small numbers may occur very occasionally after significant rainfall and subsequent inundation of Lake Lefroy, but frequency of occurrence would be low and for short periods only.	Unlikely to Occur
	Malleefowl *Leipoa ocellata*	VU	VU	-	Scrublands and woodlands dominated by mallee and wattle species (DCCEEW, 2023b).	Numerous regional records, within 10km of survey areas, suitable habitat may be present. PMST report states that the species or species habitat known to occur within the area.	Possibly Occurs
	Grey Wagtail *Motacilla cinerea*	MI	MI	-	Running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004).	Never recorded in goldfields region.	Would Not Occur
	Western Rosella (inland) *Platycercus icterotis xanthogenys*	-	-	P4	The only rosella found in southwestern WA, where it inhabits open woodland habitats and parks, usually feeding on the ground (Cornell University, 2024).	Outside known current range of species.	Would Not Occur

Class	Taxon	Conservation Status			Habitat Description	Assessment	Likelihood of Occurrence
		EPBC	BC Act	DBCA			
Aves (cont.)	Night Parrot *Pezoporus occidentalis*	EN	CR	-	Broad habitat requirements include areas of old-growth spinifex (*Triodia*) for roosting and nesting, together with foraging habitats that are likely to include various native grasses and herbs, and may or may not contain shrubs or low trees (DBCA, 2017).	No suitable habitat or previous records.	Would Not Occur
	Common greenshank *Tringa nebularia*	EN / MI	MI	-	Found in a wide variety of inland wetlands (e.g. claypans and saltflats) and sheltered coastal habitats of varying salinity. It will also use artificial wetlands (e.g., sewage farms). The edges of the wetlands used are generally of mud or clay,	Small numbers may occur very occasionally after significant rainfall and subsequent inundation of Lake Lefroy, but frequency of occurrence would be low and for short periods only.	Unlikely to Occur
	Migratory Shorebirds*	MI	MI	-	Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DCCEEW, 2023b).	Small numbers of some species may occur very occasionally after significant rainfall and subsequent inundation of Lake Lefroy, but frequency of occurrence would be low and for short periods only.	Unlikely to Occur

* Migratory Shorebirds include: *Actitis hypoleucos* (Common Sandpiper), *Apus pacificus* (Fort-tailed swift), *Calidris alba* (Sanderling), and *Calidris melanotos* (Pectoral Sandpiper).

4.2 Field Assessment

4.2.1 Flora

The field survey identified 150 vascular flora taxa within the survey areas. These taxa represented 79 genera across 29 families, with the most diverse families being Chenopodiaceae, Fabaceae, Myrtaceae and Scrophulariaceae. Dominant genera include *Eremophila* (15 species), *Eucalyptus* (11 species) and *Maireana* (11 species). The full field species inventory is listed in Appendix D.

4.2.1.1 Introduced Flora

Twenty introduced (weed) species were identified within the survey areas (Table 4-5). No species are listed as a WoNS or as a Declared Pest in Western Australia.

All but one of the weed species were recorded in areas defined as disturbed (Figure 4-3), 16 of which were not recorded elsewhere. Thus, only four weed species were recorded in areas of native vegetation:

- CLP-AFW1: **Tribulus terrestris*.
- CLP-EW2: **Carthamus lanatus*, **Carrichtera annua*, and **Tribulus terrestris*.
- RH-AFW1: **Salvia verbenaca*.

The full field species inventory is listed in Appendix D, which includes the species of weeds recorded in each vegetation type.

Table 4-5: Introduced flora (weed) species within the survey areas

Family	Taxon	Common Name	Declared Pest	WoNS
Aizoaceae	**Mesembryanthemum nodiflorum*	Slenderleaf Iceplant	N	N
Anacardiaceae	**Schinus molle* var. *areira*	[no common name]	N	N
Asparagaceae	**Asphodelus fistulosus*	Onion weed	N	N
Asteraceae	**Carthamus lanatus*	Saffron Thistle	N	N
Asteraceae	**Centaurea melitensis*	Maltese Cockspur	N	N
Asteraceae	**Dittrichia graveolens*	Stinkwort	N	N
Asteraceae	**Gazania linearis*	Gazania	N	N
Asteraceae	**Oncosiphon suffruticosum*	Calomba Daisy	N	N
Brassicaceae	**Brassica tournefortii*	Mediterranean Turnip	N	N
Brassicaceae	**Carrichtera annua*	Ward's Weed	N	N
Fabaceae	**Erythrostemon gilliesii*	Desert bird of paradise	N	N
Lamiaceae	**Salvia verbenaca*	Wild Sage	N	N
Malvaceae	**Malva parviflora*	Marshmallow	N	N
Poaceae	**Avena barbata*	-	N	N
Poaceae	**Cenchrus ciliaris*	Buffel Grass	N	N
Poaceae	**Cynodon dactylon*	Couch	N	N
Polygonaceae	**Rumex vesicarius*	Ruby Dock	N	N

Family	Taxon	Common Name	Declared Pest	WoNS
Solanaceae	**Nicotiana glauca*	Tree Tobacco	N	N
Solanaceae	**Solanum nigrum*	Black Berry Nightshade	N	N
Zygophyllaceae	**Tribulus terrestris*	Caltrop	N	N

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 or Priority Flora taxa were identified within the survey areas.

The five significant flora species identified during the desktop assessment as being 'Likely' to occur (Table 4-2) were not recorded within the survey areas during the field assessment. The following likelihood of occurrence assessment is provided based on information obtained during the filed assessment:

- *Calandrinia lefroyensis* (P1) is an annual species. It is possible that new plants had not germinated or matured to be identified during the field survey due to below average rainfall. Therefore, this species is still considered to be likely to occur.
- The habitat for *Cyathostemon divaricatus* (P1), *Ricinocarpos digynus* (P1) and *Eucalyptus* x *brachyphylla* (P4) was not present within the survey areas and thus these species are considered unlikely to occur.
- *Melaleuca coccinea* (P3) generally flowers from September to November (Western Australian Herbarium, 1998–), thus this species should have been flowering at the time of the field assessment. This species was observed flowering at BHP's Selcast Exploration Area during a field assessment undertaken from the 17th to 20th October 2023; Selcast is located about 5 km north-northwest of the Kambalda Operations. Thus, it is unlikely that this species was overlooked during the field assessment of the Kambalda Operations and it is now considered to be unlikely to occur within the survey areas.

4.2.1.3 Vegetation Communities

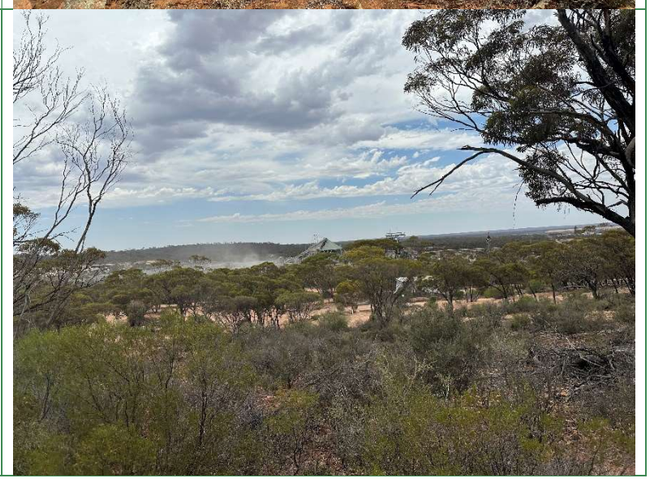
A total of 11 broad-scale vegetation types were identified within the survey areas; plus areas defined as salt lake (i.e., saline flats and marsh which were devoid of vegetation) and disturbed areas which were predominately cleared of native vegetation and contained numerous weed species. These vegetation types were located within four different landform types (not including the salt lake and disturbed areas).

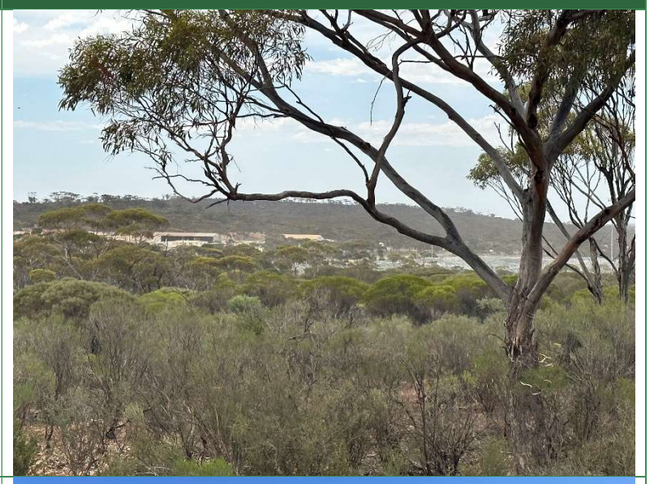
Vegetation community descriptions and extent are detailed below in Table 4-6 and illustrated spatially in Figure 4-3. Vegetation community descriptions and extents were determined from field survey results, aerial imagery interpretation and extrapolation of the communities.

The survey found the majority (49%) of the survey areas are disturbed, whilst 14% are part of the Lake Lefroy salt lake and the remaining 37% are comprised of native vegetation. CLP-EW2 was the most widespread community in the survey areas, occupying 51.35 ha (9%). CLP-EW2 was also the most diverse community, with 50 flora species recorded dominated by *Eucalyptus lesouefii*, whilst CLP-CS1 was the least diverse with 12 flora species dominated by *Tecticornia*.

Table 4-6: Vegetation communities within the survey areas

Landform	BHP Landform	NVIS Vegetation Group	Veg Code	BHP Veg Code	Vegetation Community	Area (ha)	Area (%)	Condition Rating	Image
Drainage Depression	DRAINAGE AREA/ FLOODPLAIN	Chenopod Shrublands	DD-CS1	FP Aka Teper	Very sparse shrubland of *Acacia kalgoorliensis* over low open shrubland of *Tecticornia pergranulata* in drainage depression.	15.5	3%	Good	
Clay-Loam Plain	CLAYPAN	Acacia Forests and Woodlands	CLP-AFW1	CY Aacu Scsp Pto	Low open woodland of *Acacia acuminata* over mid open shrubland of *Scaevola spinescens* and low open shrubland of *Ptilotus obovatus* on clay-loam plain.	29.8	5%	Good	
		Chenopod Shrublands	CLP-CS1	CY Teper	Low open shrubland of *Tecticornia pergranulata* on lake playa.	4.1	1%	Good	

Landform	BHP Landform	NVIS Vegetation Group	Veg Code	BHP Veg Code	Vegetation Community	Area (ha)	Area (%)	Condition Rating	Image
Rocky Hillslope	HILLSLOPE	Eucalypt Woodlands	CLP-EW2	CY Ele Seaf Ted	Low open woodland of *Eucalyptus lesouefii* over mid open shrubland of *Senna artemisioides* subsp. *filifolia* over sparse samphire shrubland of *Tecticornia disarticulata* on clay-loam plain.	51.3	9%	Good	
		Acacia Forests and Woodlands	RH-AFW1	HS Acoll Egel Dm	Low open woodland of *Acacia collegialis* over mid open shrubland of *Eremophila georgei* and low open shrubland of *Dodonaea microzyga* on rocky hillslope.	5.2	1%	Good	
		Eucalypt Woodlands	RH-EW1	HS Ele Ersc Aeri	Low open woodland of *Eucalyptus lesouefii* over mid open shrubland of *Eremophila scoparia* and low open shrubland of *Acacia erinacea* on rocky hillslope.	18.9	3%	Good	

Landform	BHP Landform	NVIS Vegetation Group	Veg Code	BHP Veg Code	Vegetation Community	Area (ha)	Area (%)	Condition Rating	Image
		Eucalypt Woodlands	RH-EW2	HS Ele Seaf	Low open woodland of *Eucalyptus lesouefii* over mid sparse shrubland of *Senna artemisioides* subsp. *filifolia* over low open shrubland of *Westringia rigida* on rocky hillslope.	11.3	2%	Good	
		Acacia Forests and Woodlands	RH-AOW1	HS Acoll Ercl Dm	Low open woodland of *Acacia collegialis* over mid open shrubland of *Eremophila clarkei* and low open shrubland of *Dodonaea microzyga* on rocky hillslope.	8.8	1%	Good	
Sand Dune	SAND DUNE	Acacia Forests and Woodlands	SD-AFW1	SD Aka Scsp	Tall shrubland of *Acacia kalgoorliensis* over low open shrubland over *Scaevola spinescens* on sand dune.	17.1	3%	Good	

Landform	BHP Landform	NVIS Vegetation Group	Veg Code	BHP Veg Code	Vegetation Community	Area (ha)	Area (%)	Condition Rating	Image
		Acacia Forests and Woodlands	SD-AOW1	SD Aka Scsp	Tall sparse open shrubland of *Acacia kalgoorliensis* over low open shrubland of *Scaevola spinescens* on sand dune.	24.3	4%	Good	
		Mallee Woodlands and Shrublands	SD-EW1	SD Esa Aka Tsca	Low open mallee woodland of *Eucalyptus salicola* over mid open shrubland of *Acacia kalgoorliensis* and sparse hummock grassland of *Triodia scariosa* on sand dune.	29.9	5%	Good	
Salt Lake	SALINE FLATS AND MARSH	Salt Lake	LAKE	SF	Salt lake, devoid of vegetation.	85.9	14%	Degraded	
Disturbed	OTHER	Disturbed	Disturbed	CL	Areas cleared for infrastructure e.g. roads, powerlines, buildings.	293.8	49%	Completely Degraded	

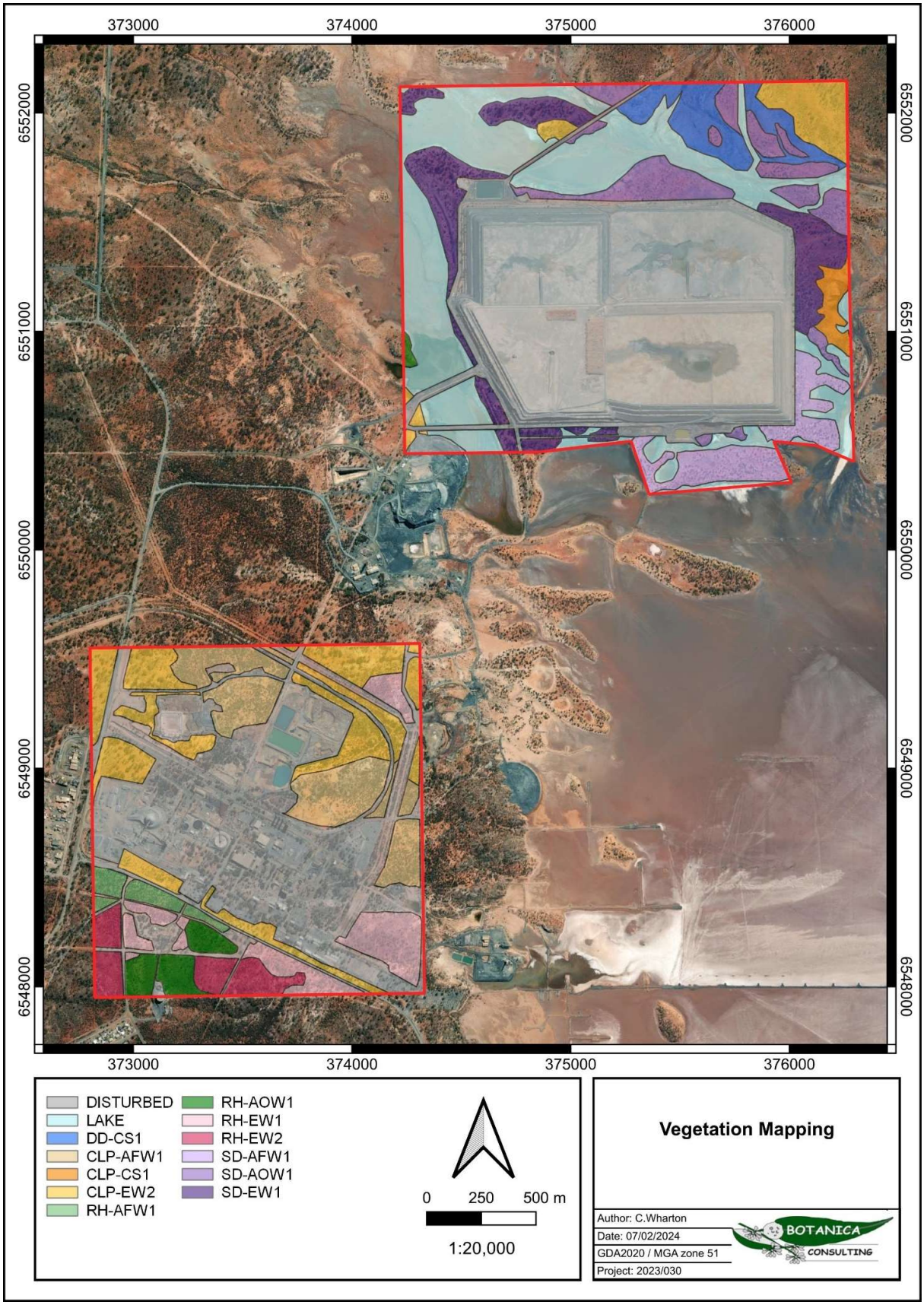


Figure 4-3: Vegetation communities within the survey areas

4.2.1.4 Vegetation Condition

Based on the vegetation condition rating scale adapted from Keighery (1994) and Trudgen, (1988), as specified in the EPA *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a) for the South West and Interzone botanical provinces, native vegetation within the survey areas was rated as 'Completely Degraded' to 'Good' (Table 4-6, Table 4-7, and Figure 4-4). Vegetation condition rating descriptions are listed in Appendix F. Disturbances within the survey areas were the result of clearing for infrastructure (e.g. roads, powerlines, and buildings) and mining.

Table 4-7: Vegetation condition rating within the survey areas

Condition Rating	Description (EPA, 2016)	Area (ha)	Area (%)
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.	216	36%
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.	86	14%
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.	294	49%

4.2.1.5 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 TECs or PECs as listed under State or Commonwealth legislation were identified within the survey area. No other significant vegetation (as described above) was recorded within the survey area.

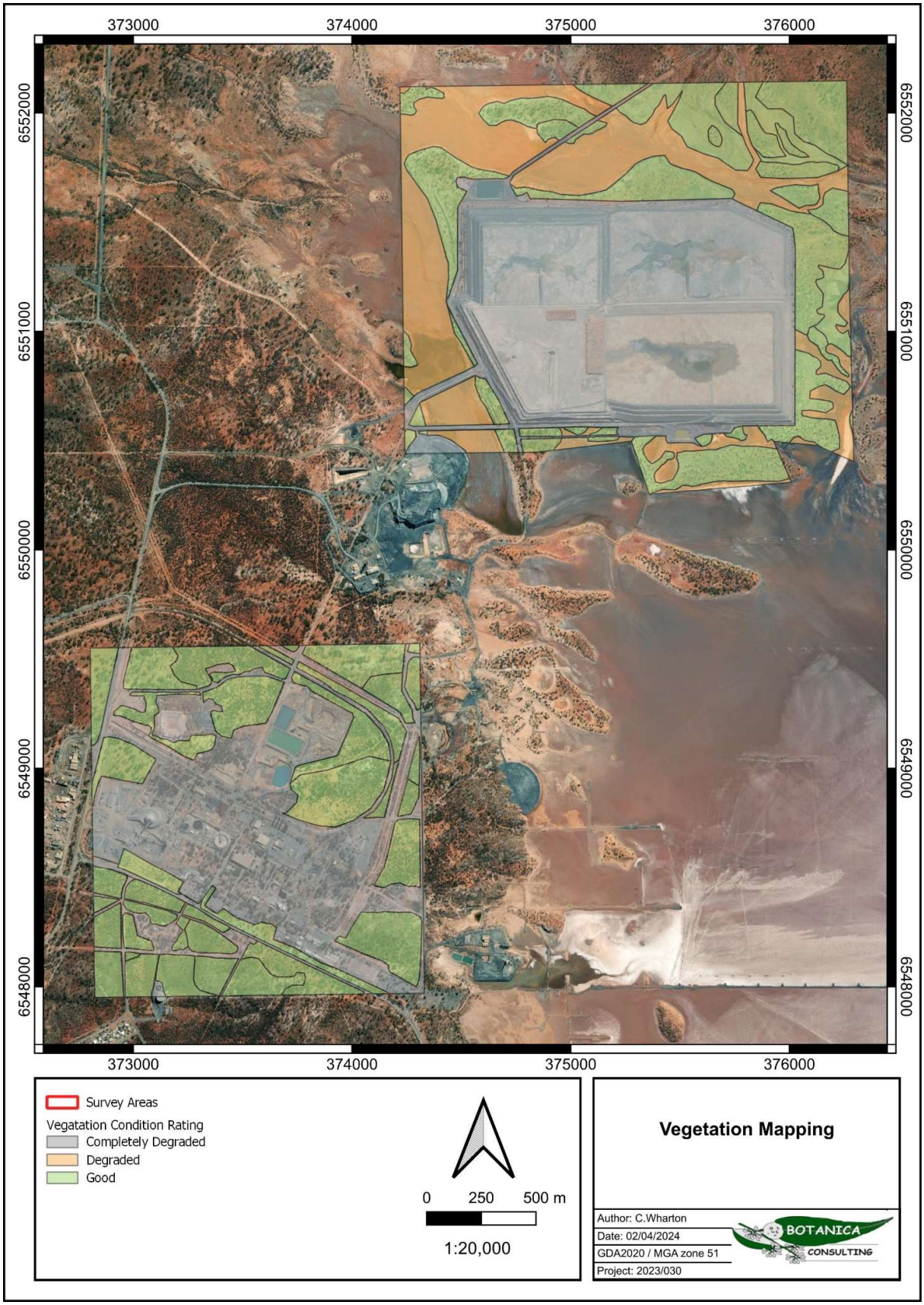


Figure 4-4: Vegetation condition within the survey areas

4.2.2 Fauna

During the field survey a total of 50 vertebrate fauna taxa were identified within the survey area. These taxa represented 28 families across three classes, including Reptilia (3 families, 3 species), Aves (20 families, 38 species), and Mammalia (6 families, 9 species). The full field species inventory is listed in Appendix E.

4.2.2.1 Introduced Fauna

Three introduced fauna species were identified within the survey area:

1. **Bos taurus* (European Cattle)
2. **Capra hircus* (Goat)
3. **Oryctolagus cuniculus* (Rabbit).

These species were identified during the field survey via secondary evidence (e.g., scats and tracks).

4.2.2.2 Fauna Habitat

Based on vegetation and associated landforms identified during the flora and vegetation assessment, eight broad scale terrestrial fauna habitats were identified as occurring within the survey area including areas defined as salt lake (i.e., saline flats and marsh which were devoid of vegetation) and disturbed areas which were predominately cleared of native vegetation and contained man-made infrastructure.

Table 4-8 provides a description, the area and a visual representation of fauna habitat types, and the extent of fauna habitats is shown spatially in Figure 4-5.

Table 4-8: Main terrestrial fauna habitats within the survey areas

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Drainage Depression, Sparse Shrublands Extent in Survey Area: 15.5 ha (3%)	Sparse *Acacia* shrublands over low open shrubland of *Tecticornia* in drainage depression.	• Ground has low suitability to burrowing species • Potential refuge for small fauna (e.g., reptiles) under shrubs • Low diversity vegetation strata • Low vegetation density and leaf litter	
Clay-Loam Plains, Low Open Woodlands Extent in Survey Area: 81.1 ha (14%)	Low open *Acacia/ Eucalyptus* woodlands over mixed shrublands of *Scaevola/ Senna* over sparse samphire shrublands of *Ptilotus/ Tecticornia* on clay-loam plains.	• Ground has low suitability to burrowing species • Potential refuge for small fauna (e.g, reptiles) under shrubs • Moderate diversity vegetation strata supporting avifauna assemblage • Moderate vegetation density and leaf litter, providing good refuge for reptiles	

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Clay-Loam Plain, Low Open Shrublands Extent in Survey Area: 4.1 ha (1%)	Low open shrubland of *Tecticornia* pergranulata on clay-loam plains.	• Ground has low suitability to burrowing species • Low diversity vegetation strata	
Rocky Hillslope, Low Open Eucalypt/ Acacia Woodlands Extent in Survey Area: 44.2 ha (7%)	Low open *Acacia/ Eucalyptus* woodlands over mixed shrublands of *Eremophila/ Senna* over low open shrubland of *Dodonaea/ Acacia/ Westringia* on rocky hillslopes.	• Ground not suited to burrowing species • Moderate diversity vegetation strata supporting avifauna assemblage • Low vegetation density and rocks providing good refuge for reptiles	

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Sand Dune, Tall Acacia Shrublands Extent in Survey Area: 41.4 ha (7%)	Tall *Acacia* shrublands over low open shrubland of *Scaevola* on sand dunes.	• Ground suited to burrowing species • Moderate diversity vegetation strata supporting avifauna • Moderate vegetation density and leaf litter providing good refuge for reptiles and mammals	
Sand Dune, Low Open Mallee Woodlands Extent in Survey Area: 29.9 ha (5%)	Low open Mallee woodlands over mid open *Acacia* shrublands and sparse hummock *Triodia* grassland on sand dunes.	• Ground suited to burrowing species • Moderate diversity vegetation strata supporting avifauna • Moderate vegetation density and leaf litter providing good refuge for reptiles and mammals	

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Saline Flats and Marsh (Salt Lake) Extent in Survey Area: 85.9 ha (14%)	Open low-lying saline flats distinguished by absence of vegetation and salt crusting.	• Ground not well suited to burrowing species • Lack of vegetation, thus low suitability as foraging habitat and low provision of refuge for reptiles or mammals • Occasionally suitable for migratory shorebirds following significant rainfall and inundation of salt lake areas • Fauna more likely to occur within adjacent habitats such as sand dunes	
Disturbed Extent in Survey Area: 293.8 ha (49%)	Areas which have been subject to high levels of disturbance activities, predominately cleared of native vegetation and contain numerous weed species.	• Ground not well suited to burrowing species • Low value foraging habitat for mammals and avifauna due to lack of native vegetation • Man made structures (e.g., buildings) and remnant materials (e.g., old tin sheets) provide good refuge for reptiles	

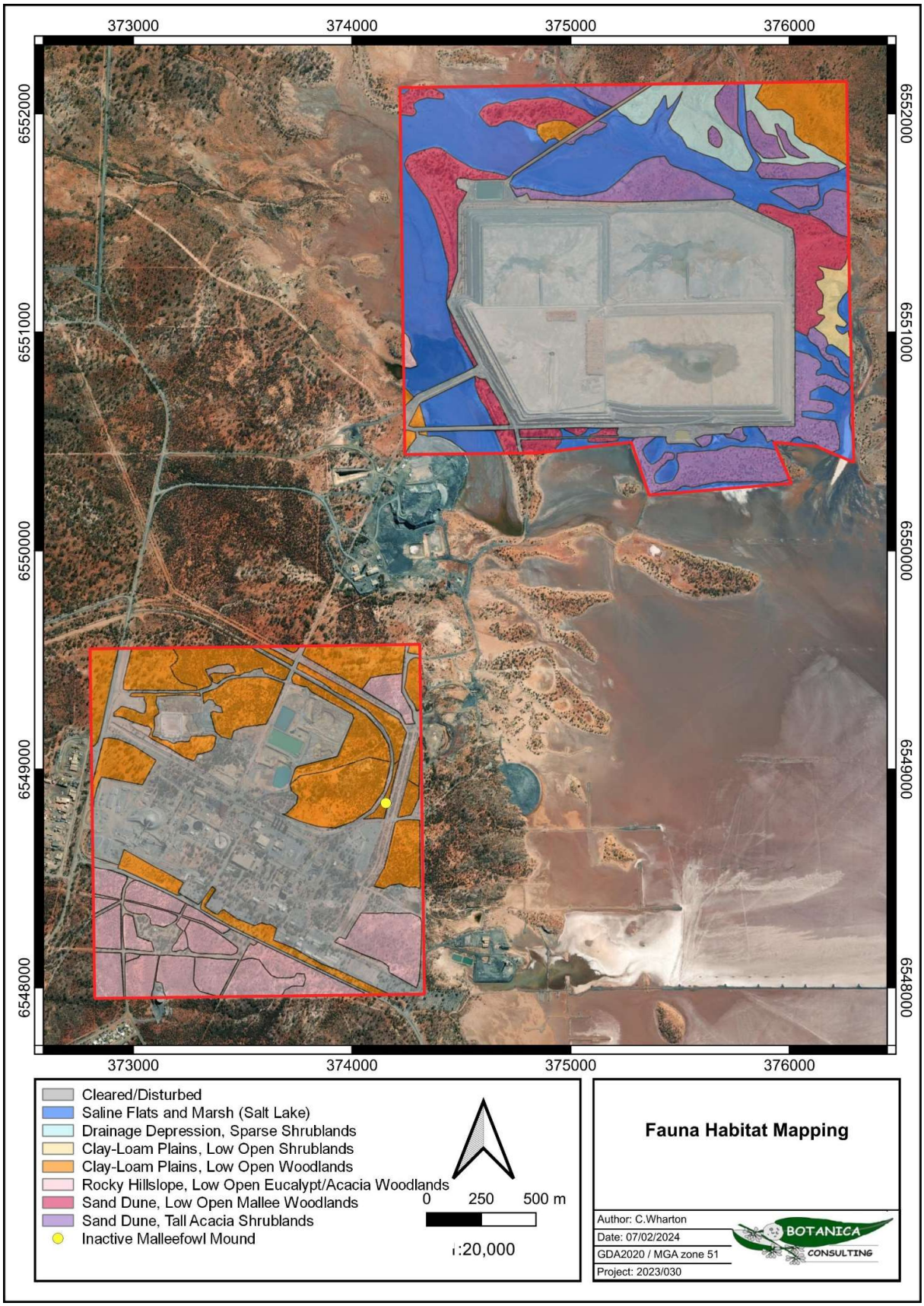


Figure 4-5: Terrestrial fauna habitats within the survey areas

4.2.2.3 Significant Fauna

According to the EPA *Environmental Factor Guideline for Terrestrial Fauna* (EPA, 2016c) significant fauna includes:

- Fauna being identified as a Threatened or Priority species;
- Fauna species with restricted distribution;
- Fauna subject to a high degree of historical impact from threatening processes; and
- Fauna providing an important function required to maintain the ecological integrity of a significant ecosystem.

No vertebrate fauna species of conservation significance were recorded within the survey areas during the field survey.

The fauna species of conservation significance that were classified as "Known to Occur" or as "Possibly Occurs" within the survey areas during the desktop review were further assessed below for the likelihood of them utilising the survey areas based on direct on ground observations.

- **Malleefowl (*Leipoa ocellata*) - Vulnerable (EPBC Act and BC Act)**

  This species is occasionally recorded in the Eastern Goldfields subregion.

  Historical evidence of Malleefowl was observed during the field survey within the KNC survey area in the form of single inactive nest mound (Plate 4-1). This was recorded within the Low Open Woodlands on Clay-Loam Plains habitat (Figure 4-5).

  It was estimated that this mound was well over 20 years old (Hopkins, n.d.), and in fact maybe much older than this as they deteriorate slowly. No active Malleefowl mounds or other evidence of Malleefowl activity (tracks, feathers or bird observations etc.) were observed during the field survey. Available information suggests that a breeding population of this species is unlikely to be present in the survey areas, though transient non-breeding individuals may occasionally occur if present in the surrounding area.

Plate 4-1: Inactive (>20 years) Malleefowl mound observed within the survey area

- **Grey Falcon (*Falco hypoleucos*) - Vulnerable (EPBC Act and BC Act)**

This species is sparsely recorded throughout inland Australia and very rarely in the Eastern Goldfields. While some vegetation with the survey areas appears superficially suitable for this species to utilise it is very unlikely to represent critical habitat. This species is considered as being very unlikely to occur under normal circumstances.

- **Southern Whiteface (*Aphelocephala leucopsis*) - Vulnerable (EPBC Act)**

Suitable habitat for this species may be present within the survey areas but is unlikely to represent critical habitat. Additionally, the survey areas are at the extent of this species' range. This species is considered as being very unlikely to occur under normal circumstances.

- **Arid bronze azure butterfly (*Ogyris subterrestris petrina)* – Critically Endangered (EPBC Act and BC Act)**

This species potentially has an extensive distribution which encompasses much of the semi-arid zone (rainfall <325 mm), south of approximately 26 degrees latitude. Vegetation superficially resembling the documented preferred habitat requirements of this species (such as woodlands smooth-barked Eucalypts) was identified within the survey areas (i.e., *E. salmonophloia*).

While it is unlikely that this species occurs, its presence within the survey area is difficult to discount without a more detailed/targeted and appropriately timed survey of suitable habitat.

It should be noted that while habitats onsite for one or more of the species listed above are considered possibly suitable, some or all may be marginal in extent/quality and therefore the fauna species considered as possibly occurring may in fact only visit the area for short periods as infrequent vagrants.

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 (MNES) and is used by the Commonwealth DCCEEW to list threatened taxa and ecological communities into categories based on the criteria set out in the EPBC Act (www.environment.gov.au/epbc/index.html). The EPBC 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. MNES 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 MNES as defined by the Commonwealth EPBC Act were identified within the survey areas.

4.4 Matters of State Environmental Significance

4.4.1 Environmental Protection Act 1986 (WA)

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) 2004* (WA) any clearing of native vegetation in Western Australia that is not eligible for exemption under Schedule 6 of the EP Act or under the Regulations requires a clearing permit from the DWER or the Department of Mines, Industry Regulation and Safety (DMIRS). Under Section 51A of the EP Act 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 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 in TECs listed under State and Commonwealth legislation.

No evidence of the survey areas containing any TECs or Threatened flora or fauna was found during the survey. The survey areas are not located within an ESA.

4.4.2 Biodiversity Conservation Act 2016

Under the BC Act, native species are listed as threatened when they face a high to very high risk of extinction in the wild, and ecological communities are listed as threatened when they face a high to very high risk of collapse.

Whilst all native flora and fauna are protected throughout the State, it is an offence under the BC Act, subject, on conviction, to a financial penalty, to take Threatened species without authorisation of the Minister.

The BC Act also provides for the statutory listing of TECs by the Minister. The legislation describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

Furthermore, The Minister may list vegetation as a 'critical habitat' if it is critical to the survival of a threatened species or a TEC.

No TECs or Threatened species or critical habitat listed under the BC Act were recorded within the survey areas.

4.5 Other Areas of Conservation Significance

The DBCA lists 'Priority' species and communities which are under consideration for declaration as 'Threatened' under the BC Act. These Priority species/ communities have no formal legal protection until they are endorsed by the Minister as being Threatened.

No Priority flora or fauna species were identified within the survey areas.

No PECs were identified within the survey areas.

There are no wetlands of international importance (Ramsar Wetlands) or national importance (Australian Nature Conservation Agency Wetlands) within the survey areas.

There are no proposed nor gazetted conservation reserves within the survey areas. The closest gazetted conservation reserve is the Kambalda Nature Reserve which is located about 8 km west of the survey areas (Figure 2-8).

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APPENDIX A:
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.	
MI	**Migratory species** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Code	Category
	Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species. Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
CD	**Species of special conservation interest** 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.

Code	Category
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** 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:

Category Code	Category
	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;
	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	
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 B:
NATUREMAP SEARCH RESULTS (DBCA, 2024C)

Vascular Flora

CLASS	TAXON	CONS
DICOT	Acacia acuminata	
DICOT	Acacia andrewsii	
DICOT	Acacia aneura	
DICOT	Acacia aptaneura	
DICOT	Acacia burkittii	
DICOT	Acacia calcarata	
DICOT	Acacia camptoclada	
DICOT	Acacia chrysella	
DICOT	Acacia collegialis	
DICOT	Acacia colletioides	
DICOT	Acacia dempsteri	
DICOT	Acacia donaldsonii	
DICOT	Acacia eremophila var. eremophila	
DICOT	Acacia erinacea	
DICOT	Acacia gibbosa	
DICOT	Acacia hemiteles	
DICOT	Acacia inaequiloba	
DICOT	Acacia inamabilis	
DICOT	Acacia inceana subsp. inceana	
DICOT	Acacia jennerae	
DICOT	Acacia kalgoorliensis	
DICOT	Acacia kerryana	P2
DICOT	Acacia lasiocalyx	
DICOT	Acacia ligulata	
DICOT	Acacia longispinea	
DICOT	Acacia masliniana	
DICOT	Acacia merrallii	
DICOT	Acacia mulganeura	
DICOT	Acacia murrayana	
DICOT	Acacia nyssophylla	
DICOT	Acacia pachypoda	
DICOT	Acacia prainii	
DICOT	Acacia pritzeliana	
DICOT	Acacia rendlei	
DICOT	Acacia resinosa	
DICOT	Acacia sp. narrow phyllode (B.R. Maslin 7831)	
DICOT	Acacia sp. Norseman (B. Archer 1554)	
DICOT	Acacia tetragonophylla	
DICOT	Acacia warramaba	
DICOT	Acacia websteri	P1
DICOT	Acacia xerophila var. brevior	
DICOT	Alectryon oleifolius subsp. canescens	
DICOT	Allocasuarina acutivalvis subsp. acutivalvis	
DICOT	Allocasuarina campestris	
DICOT	Allocasuarina campestris / eriochlamys subsp. grossa	
DICOT	Allocasuarina cf. campestris	
DICOT	Allocasuarina eriochlamys subsp. eriochlamys	
DICOT	Allocasuarina eriochlamys subsp. grossa	P3
DICOT	Allocasuarina helmsii	
DICOT	Alyogyne hakeifolia	
DICOT	Alyxia buxifolia	
DICOT	Amyema benthamii	
DICOT	Amyema miquelii	
DICOT	Amyema preissii	
DICOT	Androcalva luteiflora	
DICOT	Angianthus tomentosus	
DICOT	Arabidella chrysodema	
DICOT	Arabidella trisecta	
DICOT	Asteridea athrixioides	
DICOT	Asteridea chaetopoda	
DICOT	Atriplex acutibractea	
DICOT	Atriplex acutibractea subsp. karoniensis	
DICOT	Atriplex codonocarpa	
DICOT	Atriplex eardleyae	
DICOT	Atriplex nana	
DICOT	Atriplex nummularia	
DICOT	Atriplex nummularia subsp. spathulata	
DICOT	Atriplex quadrivalvata var. quadrivalvata	
DICOT	Atriplex semibaccata	
DICOT	Atriplex stipitata	
DICOT	Atriplex vesicaria	
DICOT	Bertya dimerostigma	
DICOT	Beyeria lechenaultii	
DICOT	Beyeria sulcata var. brevipes	
DICOT	Beyeria sulcata var. sulcata	
DICOT	Boronia coerulescens subsp. spinescens	
DICOT	Boronia inornata subsp. leptophylla	
DICOT	Bossiaea cucullata	
DICOT	Brachychiton gregorii	
DICOT	Brachyscome ciliaris	
DICOT	Brachyscome lineariloba	
DICOT	Brunonia sp. Goldfields (K.R. Newbey 6044)	
DICOT	Bryophyllum delagoense	
DICOT	Calandrinia calyptrata	
DICOT	Calandrinia eremaea	
DICOT	Calandrinia lefroyensis	P1
DICOT	Calandrinia sp. Blackberry (D.M. Porter 171)	
DICOT	Calandrinia translucens	
DICOT	Calothamnus gilesii	
DICOT	Calotis hispidula	
DICOT	Calotis multicaulis	
DICOT	Calytrix tetragona	
DICOT	Carduus tenuiflorus	
DICOT	Carrichtera annua	
DICOT	Cassytha melantha	
DICOT	Casuarina obesa	
DICOT	Casuarina obesa x pauper	
DICOT	Casuarina pauper	
DICOT	Centaurea melitensis	
DICOT	Cephalipterum drummondii	
DICOT	Ceratogyne obionoides	
DICOT	Chamelaucium ciliatum	
DICOT	Chenopodium curvispicatum	
DICOT	Chrysocephalum apiculatum subsp. norsemanense	P3
DICOT	Chrysocephalum puteale	
DICOT	Citrullus amarus	
DICOT	Citrullus colocynthis	
DICOT	Codonocarpus cotinifolius	
DICOT	Commersonia craurophylla	
DICOT	Convolvulus remotus	
DICOT	Coopernookia strophiolata	
DICOT	Crassula colorata var. acuminata	
DICOT	Crassula colorata var. colorata	
DICOT	Cratystylis conocephala	
DICOT	Cratystylis conocephala x microphylla	
DICOT	Cratystylis microphylla	
DICOT	Cratystylis subspinescens	
DICOT	Cryptandra aridicola	
DICOT	Cryptandra distigma	
DICOT	Cryptandra graniticola	
DICOT	Cryptandra recurva	
DICOT	Cullen cinereum	
DICOT	Cyanostegia microphylla	
DICOT	Cyathostemon divaricatus	P1
DICOT	Cyathostemon heterantherus	
DICOT	Cylindropuntia fulgida var. mamillata	
DICOT	Dampiera latealata	
DICOT	Dampiera stenostachya	
DICOT	Dampiera tenuicaulis var. curvula	
DICOT	Dampiera tenuicaulis var. tenuicaulis	
DICOT	Darwinia sp. Karonie (K. Newbey 8503)	
DICOT	Dasymalla terminalis	
DICOT	Daucus glochidiatus	
DICOT	Daviesia aphylla	
DICOT	Daviesia croniniana	
DICOT	Daviesia grahamii	
DICOT	Daviesia pachyloma	
DICOT	Dicrastylis parvifolia	
DICOT	Diocirea acutifolia	P3
DICOT	Diocirea violacea	
DICOT	Diocirea x Eremophila violacea x clavata	
DICOT	Disphyma crassifolium subsp. clavellatum	
DICOT	Dodonaea boroniifolia	
DICOT	Dodonaea cf. microzyga/adenophora	
DICOT	Dodonaea lobulata	
DICOT	Dodonaea lobulata x microzyga	
DICOT	Dodonaea microzyga	
DICOT	Dodonaea microzyga var. acrolobata	
DICOT	Dodonaea stenozyga	
DICOT	Dodonaea viscosa subsp. angustissima	
DICOT	Drummondita hassellii	
DICOT	Duboisia hopwoodii	
DICOT	Echium plantagineum	
DICOT	Enchylaena tomentosa	
DICOT	Eremaea zonospila	
DICOT	Eremophila alternifolia	
DICOT	Eremophila annosocaulis	
DICOT	Eremophila arachnoides subsp. tenera	P3
DICOT	Eremophila caerulea subsp. caerulea	
DICOT	Eremophila caerulea subsp. merrallii	P4
DICOT	Eremophila caperata	
DICOT	Eremophila cf. deserti	
DICOT	Eremophila clarkei	

CLASS	TAXON	CONS
DICOT	Eremophila clavata	
DICOT	Eremophila decipiens subsp. decipiens	
DICOT	Eremophila dempsteri	
DICOT	Eremophila deserti	
DICOT	Eremophila georgei	
DICOT	Eremophila gibbosa	
DICOT	Eremophila glabra subsp. glabra	
DICOT	Eremophila granitica	
DICOT	Eremophila interstans subsp. interstans	
DICOT	Eremophila interstans subsp. virgata	
DICOT	Eremophila ionantha	
DICOT	Eremophila maculata subsp. brevifolia	
DICOT	Eremophila miniata	
DICOT	Eremophila oblonga	
DICOT	Eremophila oldfieldii subsp. angustifolia	
DICOT	Eremophila oppositifolia subsp. angustifolia	
DICOT	Eremophila pantonii	
DICOT	Eremophila parvifolia subsp. auricampa	
DICOT	Eremophila perglandulosa	P1
DICOT	Eremophila praecox	P2
DICOT	Eremophila psilocalyx	
DICOT	Eremophila pustulata	
DICOT	Eremophila rugosa	
DICOT	Eremophila saligna	
DICOT	Eremophila scoparia	
DICOT	Eriochiton sclerolaenoides	
DICOT	Erodium cicutarium	
DICOT	Erodium cygnorum	
DICOT	Erymophyllum glossanthus	
DICOT	Erymophyllum ramosum subsp. ramosum	
DICOT	Eucalyptus aspratilis	
DICOT	Eucalyptus celastroides subsp. celastroides	
DICOT	Eucalyptus ceratocorys	
DICOT	Eucalyptus cf. ravida	
DICOT	Eucalyptus comitae-vallis	
DICOT	Eucalyptus concinna	
DICOT	Eucalyptus cylindrocarpa	
DICOT	Eucalyptus delicata	
DICOT	Eucalyptus eremophila	
DICOT	Eucalyptus flocktoniae	
DICOT	Eucalyptus gracilis	
DICOT	Eucalyptus griffithsii	
DICOT	Eucalyptus horistes	
DICOT	Eucalyptus hypolaena	
DICOT	Eucalyptus incrassata	
DICOT	Eucalyptus kruseana	P4
DICOT	Eucalyptus leptopoda subsp. subluta	
DICOT	Eucalyptus lesouefii	
DICOT	Eucalyptus livida	
DICOT	Eucalyptus longicornis	
DICOT	Eucalyptus longissima	
DICOT	Eucalyptus loxophleba subsp. lissophloia	
DICOT	Eucalyptus oleosa	
DICOT	Eucalyptus oleosa subsp. oleosa	
DICOT	Eucalyptus petraea	
DICOT	Eucalyptus pileata	
DICOT	Eucalyptus planipes	
DICOT	Eucalyptus platycorys	
DICOT	Eucalyptus prolixa	
DICOT	Eucalyptus ravida	

CLASS	TAXON	CONS
DICOT	Eucalyptus rigidula	
DICOT	Eucalyptus salicola	
DICOT	Eucalyptus salmonophloia	
DICOT	Eucalyptus salubris	
DICOT	Eucalyptus stricklandii	
DICOT	Eucalyptus torquata	
DICOT	Eucalyptus transcontinentalis	
DICOT	Eucalyptus trichopoda	
DICOT	Eucalyptus urna	
DICOT	Eucalyptus vittata	
DICOT	Eucalyptus websteriana	
DICOT	Eucalyptus websteriana subsp. norsemanica	P1
DICOT	Eucalyptus websteriana subsp. websteriana	
DICOT	Eucalyptus x brachyphylla	P4
DICOT	Eucalyptus yilgarnensis	
DICOT	Euphorbia tannensis subsp. eremophila	
DICOT	Euryomyrtus maidenii	
DICOT	Exocarpos aphyllus	
DICOT	Exocarpos sparteus	
DICOT	Frankenia cinerea	
DICOT	Frankenia desertorum	
DICOT	Frankenia glomerata / setosa	
DICOT	Frankenia interioris	
DICOT	Frankenia interioris var. interioris	
DICOT	Frankenia interioris var. parviflora	
DICOT	Frankenia pauciflora	
DICOT	Frankenia setosa	
DICOT	Gastrolobium spinosum	
DICOT	Gazania linearis	
DICOT	Glischrocaryon angustifolium	
DICOT	Glycyrrhiza acanthocarpa	
DICOT	Gnephosis angianthoides	
DICOT	Gompholobium gompholobioides	
DICOT	Gonocarpus confertifolius var. helmsii	
DICOT	Goodenia cf. xanthosperma	
DICOT	Goodenia elderi	
DICOT	Goodenia havilandii	
DICOT	Goodenia pusilliflora	
DICOT	Goodenia salina	P2
DICOT	Goodenia xanthosperma	
DICOT	Grevillea acacioides	
DICOT	Grevillea acuaria	
DICOT	Grevillea didymobotrya subsp. didymobotrya	
DICOT	Grevillea excelsior	
DICOT	Grevillea haplantha subsp. haplantha	
DICOT	Grevillea hookeriana subsp. apiciloba	
DICOT	Grevillea hookeriana subsp. hookeriana	
DICOT	Grevillea huegelii	
DICOT	Grevillea nematophylla subsp. nematophylla	
DICOT	Grevillea obliquistigma subsp. obliquistigma	
DICOT	Grevillea oncogyne	
DICOT	Grevillea sarissa subsp. sarissa	
DICOT	Grevillea teretifolia	
DICOT	Gunniopsis glabra	
DICOT	Gunniopsis quadrifida	
DICOT	Gunniopsis rodwayi	
DICOT	Gyrostemon racemiger	
DICOT	Hakea erecta	
DICOT	Hakea francisiana	
DICOT	Hakea minyma	

CLASS	TAXON	CONS
DICOT	Hakea preissii	
DICOT	Halgania andromedifolia	
DICOT	Halgania cyanea var. Charleville (R.W. Purdie +111)	
DICOT	Haloragis gossei	
DICOT	Haloragis trigonocarpa	
DICOT	Hannafordia bissillii subsp. latifolia	
DICOT	Heliotropium curassavicum	
DICOT	Heliotropium europaeum	
DICOT	Hibbertia glomerosa var. glomerosa	
DICOT	Homalocalyx thryptomenoides	
DICOT	Hyalosperma demissum	
DICOT	Hyalosperma glutinosum subsp. glutinosum	
DICOT	Hybanthus epacroides	
DICOT	Hybanthus floribundus subsp. curvifolius	
DICOT	Hydrocotyle pilifera var. glabrata	
DICOT	Hypertelis cerviana	
DICOT	Hysterobaeckea petraea	
DICOT	Isoetopsis graminifolia	
DICOT	Jacksonia arida	
DICOT	Kennedia prorepens	
DICOT	Lachnostachys coolgardiensis	
DICOT	Lantana camara	
DICOT	Lawrencia chrysoderma	
DICOT	Lawrencia helmsii	
DICOT	Lawrencia repens	
DICOT	Lawrencia squamata	
DICOT	Leiocarpa websteri	
DICOT	Leontodon rhagadioloides	
DICOT	Lepidium africanum	
DICOT	Lepidium oxytrichum	
DICOT	Lepidium platypetalum	
DICOT	Leptosema cervicorne	
DICOT	Leptospermum fastigiatum	
DICOT	Leptospermum subtenue	
DICOT	Leucochrysum fitzgibbonii	
DICOT	Leucopogon sp. Boorabbin (K.R. Newbey 8374)	
DICOT	Leucopogon sp. Clyde Hill (M.A. Burgman 1207)	
DICOT	Leucopogon sp. Coolgardie (M. Hislop & F. Hort MH 3197)	
DICOT	Leucopogon sp. Kambalda (J. Williams s.n. PERTH 07305028)	
DICOT	Leucopogon sp. Kau Rock (M.A. Burgman 1126)	
DICOT	Lobelia cf. winfrindae	
DICOT	Lycium australe	
DICOT	Lysimachia arvensis	
DICOT	Maireana aff. planifolia	
DICOT	Maireana amoena	
DICOT	Maireana appressa	
DICOT	Maireana erioclada	
DICOT	Maireana eriosphaera	
DICOT	Maireana georgei	
DICOT	Maireana marginata	
DICOT	Maireana oppositifolia	
DICOT	Maireana pentatropis	
DICOT	Maireana platycarpa	
DICOT	Maireana pyramidata	
DICOT	Maireana radiata	
DICOT	Maireana sedifolia	
DICOT	Maireana suaedifolia	
DICOT	Maireana tomentosa	
DICOT	Maireana tomentosa subsp. tomentosa	
DICOT	Maireana trichoptera	

CLASS	TAXON	CONS
DICOT	Malva preissiana	
DICOT	Malva weinmanniana	
DICOT	Marsdenia australis	
DICOT	Melaleuca acuminata subsp. acuminata	
DICOT	Melaleuca coccinea	P3
DICOT	Melaleuca exuvia	
DICOT	Melaleuca fulgens subsp. fulgens	
DICOT	Melaleuca hamata	
DICOT	Melaleuca lanceolata	
DICOT	Melaleuca lateriflora	
DICOT	Melaleuca pauperiflora subsp. fastigiata	
DICOT	Melaleuca sheathiana	
DICOT	Melaleuca thyoides	
DICOT	Melaleuca uncinata	
DICOT	Melaleuca zeteticorum	
DICOT	Micromyrtus erichsenii	
DICOT	Micromyrtus monotaxis	
DICOT	Micromyrtus stenocalyx	
DICOT	Millotia myosotidifolia	
DICOT	Minuria cunninghamii	
DICOT	Mirbelia depressa	
DICOT	Mirbelia microphylla	
DICOT	Mirbelia multicaulis	
DICOT	Mirbelia sp. 1	
DICOT	Monotaxis grandiflora var. obtusifolia	
DICOT	Myoporum platycarpum	
DICOT	Myoporum platycarpum subsp. platycarpum	
DICOT	Nicotiana glauca	
DICOT	Nitraria billardierei	
DICOT	Olearia homolepis	
DICOT	Olearia muelleri	
DICOT	Olearia pimeleoides	
DICOT	Olearia trifurcata	
DICOT	Oligocarpus calendulaceus	
DICOT	Oncosiphon suffruticosum	
DICOT	Opercularia vaginata	
DICOT	Persicaria prostrata	
DICOT	Persoonia helix	
DICOT	Petrophile arcuata	
DICOT	Phebalium canaliculatum (hybrid)	
DICOT	Phebalium canaliculatum / tuberculosum	
DICOT	Phebalium clavatum	P2
DICOT	Phebalium filifolium	
DICOT	Phebalium filifolium - tuberculosum	
DICOT	Phebalium lepidotum	
DICOT	Phebalium tuberculosum	
DICOT	Philotheca apiculata	P1
DICOT	Phlegmatospermum eremaeum	P3
DICOT	Phyllangium sulcatum	
DICOT	Pimelea angustifolia	
DICOT	Pimelea brevifolia subsp. brevifolia	
DICOT	Pimelea microcephala subsp. microcephala	
DICOT	Pittosporum angustifolium	
DICOT	Pityrodia lepidota	
DICOT	Pityrodia scabra subsp. dendrotricha	P3
DICOT	Plantago drummondii	
DICOT	Platysace effusa	
DICOT	Platysace trachymenioides	
DICOT	Podolepis aristata subsp. affinis	
DICOT	Podolepis kendallii	
DICOT	Podolepis lessonii	
DICOT	Podotheca wilsonii	
DICOT	Pomaderris forrestiana	
DICOT	Prostanthera althoferi / campbellii	
DICOT	Prostanthera althoferi subsp. althoferi	
DICOT	Prostanthera campbellii	
DICOT	Prostanthera grylloana	
DICOT	Prostanthera incurvata	
DICOT	Prostanthera splendens	P1
DICOT	Psammomoya choretroides	
DICOT	Pterocaulon sphacelatum	
DICOT	Ptilotus eremita	
DICOT	Ptilotus exaltatus	
DICOT	Ptilotus exaltatus var. villosus	
DICOT	Ptilotus gaudichaudii var. parviflorus	
DICOT	Ptilotus helichrysoides	
DICOT	Ptilotus holosericeus	
DICOT	Ptilotus obovatus	
DICOT	Ptilotus rigidus	P1
DICOT	Radyera farragei	
DICOT	Ranunculus pentandrus var. platycarpus	
DICOT	Reseda luteola	
DICOT	Rhagodia crassifolia	
DICOT	Rhagodia drummondii	
DICOT	Rhodanthe battii	
DICOT	Rhodanthe chlorocephala subsp. rosea	
DICOT	Rhodanthe floribunda	
DICOT	Rhodanthe haigii	
DICOT	Rhodanthe oppositifolia subsp. oppositifolia	
DICOT	Ricinocarpos sp. Eastern Goldfields (A. Williams 3)	
DICOT	Ricinocarpos stylosus	
DICOT	Roepera apiculata	
DICOT	Roepera aurantiaca	
DICOT	Roepera compressa	
DICOT	Roepera eremaea	
DICOT	Roepera glauca	
DICOT	Roepera halophila	
DICOT	Roepera ovata	
DICOT	Roepera reticulata	
DICOT	Roepera compressa	
DICOT	Roepera eremaea	
DICOT	Roepera fruticulosa	
DICOT	Roepera glauca	
DICOT	Roepera ovata	
DICOT	Rumex vesicarius	
DICOT	Salsola australis	
DICOT	Salvia verbenaca	
DICOT	Santalum acuminatum	
DICOT	Santalum spicatum	
DICOT	Scaevola spinescens	
DICOT	Schoenia cassiniana	
DICOT	Sclerolaena brevifolia	
DICOT	Sclerolaena cuneata	
DICOT	Sclerolaena diacantha	
DICOT	Sclerolaena drummondii	
DICOT	Sclerolaena eurotioides	
DICOT	Sclerolaena fusiformis	
DICOT	Sclerolaena obliquicuspis	
DICOT	Sclerolaena parviflora	
DICOT	Senecio lacustrinus	
DICOT	Senna artemisioides	
DICOT	Senna artemisioides subsp. filifolia	
DICOT	Senna artemisioides subsp. x artemisioides	
DICOT	Senna pleurocarpa var. angustifolia	
DICOT	Senna stowardii	
DICOT	Seringia velutina	
DICOT	Sida calyxhymenia	
DICOT	Sida intricata	
DICOT	Sida spodochroma	
DICOT	Sisymbrium erysimoides	
DICOT	Sisymbrium irio	
DICOT	Solanum lasiophyllum	
DICOT	Solanum nummularium	
DICOT	Solanum plicatile	
DICOT	Solanum simile	
DICOT	Sonchus oleraceus	
DICOT	Spartothamnella sp. Helena & Aurora Range (P.G. Armstrong 155-109)	
DICOT	Stackhousia sp. Mt Keith (G. Cockerton & G. O'Keefe 11017)	
DICOT	Stenanthemum stipulosum	
DICOT	Stenopetalum filifolium	
DICOT	Stenopetalum lineare	
DICOT	Stenopetalum lineare var. lineare	
DICOT	Streptoglossa liatroides	
DICOT	Stylidium arenicola	
DICOT	Stylidium choreanthum	P3
DICOT	Stylidium induratum	
DICOT	Surreya diandra	
DICOT	Swainsona beasleyana	
DICOT	Swainsona canescens	
DICOT	Swainsona kingii	
DICOT	Tecticornia arborea	
DICOT	Tecticornia disarticulata	
DICOT	Tecticornia doliiformis	
DICOT	Tecticornia flabelliformis	P1
DICOT	Tecticornia halocnemoides	
DICOT	Tecticornia halocnemoides subsp. halocnemoides	
DICOT	Tecticornia indica subsp. bidens	
DICOT	Tecticornia indica subsp. leiostachya	
DICOT	Tecticornia lepidosperma	
DICOT	Tecticornia lylei	
DICOT	Tecticornia mellarium	P1
DICOT	Tecticornia moniliformis	
DICOT	Tecticornia peltata	
DICOT	Tecticornia pergranulata subsp. pergranulata	
DICOT	Tecticornia pruinosa	
DICOT	Tecticornia pterygosperma subsp. pterygosperma	
DICOT	Tecticornia syncarpa	
DICOT	Tecticornia triandra	
DICOT	Tecticornia undulata	
DICOT	Templetonia ceracea	
DICOT	Tetratheca spenceri	VU
DICOT	Thiseltonia gracillima	
DICOT	Thryptomene australis subsp. brachyandra	
DICOT	Thryptomene sp. Londonderry (R.H. Kuchel 1763)	
DICOT	Trachymene cyanopetala	
DICOT	Trachymene ornata	
DICOT	Trachymene pyrophila	P2
DICOT	Tribulus terrestris	
DICOT	Trichanthodium skirrophorum	
DICOT	Triptilodiscus pygmaeus	

CLASS	TAXON	CONS
DICOT	Trymalium myrtillus subsp. myrtillus	
DICOT	Velleia rosea	
DICOT	Vincetoxicum lineare	
DICOT	Vittadinia dissecta var. hirta	
DICOT	Vittadinia humerata	
DICOT	Wahlenbergia gracilenta	
DICOT	Waitzia acuminata var. acuminata	
DICOT	Waitzia fitzgibbonii	
DICOT	Westringia rigida	
FERN	Cheilanthes adiantoides	
FERN	Cheilanthes austrotenuifolia	
FERN	Cheilanthes lasiophylla	
FERN	Cheilanthes sieberi subsp. sieberi	
GYMNO	Callitris columellaris	
GYMNO	Callitris preissii	
GYMNO	Callitris verrucosa	
MONOCOT	Aristida contorta	
MONOCOT	Austrostipa blackii	P3
MONOCOT	Austrostipa drummondii	
MONOCOT	Austrostipa elegantissima	
MONOCOT	Austrostipa eremophila	
MONOCOT	Austrostipa nitida	
MONOCOT	Austrostipa nodosa	
MONOCOT	Austrostipa platychaeta	
MONOCOT	Austrostipa scabra	
MONOCOT	Austrostipa sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P3
MONOCOT	Austrostipa sp. indet.	
MONOCOT	Austrostipa trichophylla	
MONOCOT	Bulbine semibarbata	
MONOCOT	Cenchrus ciliaris	
MONOCOT	Centrolepis polygyna	
MONOCOT	Chloris truncata	
MONOCOT	Eleocharis acutangula	
MONOCOT	Enneapogon caerulescens	
MONOCOT	Enteropogon ramosus	
MONOCOT	Hordeum glaucum	
MONOCOT	Isolepis australiensis	P3
MONOCOT	Lepidosperma aff. diurnum	
MONOCOT	Lepidosperma diurnum	
MONOCOT	Lepidosperma sp. Kambalda (A.A. Mitchell 5156)	P2
MONOCOT	Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)	P1
MONOCOT	Paspalidium gracile	
MONOCOT	Pterostylis sp. dainty brown (N. Gibson & M. Lyons 3690)	
MONOCOT	Pterostylis sp. inland (A.C. Beauglehole 11880)	
MONOCOT	Pterostylis tryphera	
MONOCOT	Ruppia polycarpa	
MONOCOT	Rytidosperma acerosum	
MONOCOT	Rytidosperma caespitosum	
MONOCOT	Schoenus hexandrus	
MONOCOT	Sowerbaea multicaulis	P4
MONOCOT	Thysanotus manglesianus	
MONOCOT	Thysanotus speckii	
MONOCOT	Triodia irritans	
MONOCOT	Triodia scariosa	
MONOCOT	Typha orientalis	
MOSS	Crossidium davidai	
MOSS	Didymodon torquatus	
MOSS	Fissidens megalotis	
MOSS	Grimmia laevigata	
MOSS	Syntrichia pagorum	
MOSS	Tortula atrovirens	

Vertebrate Fauna

CLASS	TAXON	CONS
AMPHI	Neobatrachus kunapalari	
AMPHI	Pseudophryne occidentalis	
BIRD	Acanthagenys rufogularis	
BIRD	Acanthiza apicalis	
BIRD	Acanthiza chrysorrhoa	
BIRD	Acanthiza robustirostris	
BIRD	Acanthiza uropygialis	
BIRD	Accipiter cirrocephalus	
BIRD	Accipiter fasciatus	
BIRD	Aegotheles cristatus	
BIRD	Anas gracilis	
BIRD	Anas rhynchotis	
BIRD	Anas superciliosa	
BIRD	Anthochaera carunculata	
BIRD	Aphelocephala leucopsis	
BIRD	Aquila audax	
BIRD	Aquila morphnoides subsp. morphnoides	
BIRD	Artamus cinereus	
BIRD	Artamus cyanopterus	
BIRD	Artamus personatus	
BIRD	Aythya australis	
BIRD	Barnardius zonarius	
BIRD	Biziura lobata	
BIRD	Cacomantis flabelliformis	
BIRD	Cacomantis pallidus	
BIRD	Calidris acuminata	MI
BIRD	Calidris alba	MI
BIRD	Chenonetta jubata	
BIRD	Cheramoeca leucosterna	
BIRD	Cheramoeca leucosternus	
BIRD	Chrysococcyx basalis	
BIRD	Cincloramphus mathewsi	
BIRD	Cinclosoma castanotus	
BIRD	Climacteris rufa	
BIRD	Colluricincla harmonica	
BIRD	Columba livia	
BIRD	Coracina maxima	
BIRD	Coracina novaehollandiae	
BIRD	Corvus bennetti	
BIRD	Corvus coronoides	
BIRD	Corvus orru	
BIRD	Coturnix pectoralis	
BIRD	Coturnix ypsilophora	
BIRD	Cracticus nigrogularis	
BIRD	Cracticus tibicen	
BIRD	Cracticus torquatus	
BIRD	Cuculus pallidus	
BIRD	Cygnus atratus	
BIRD	Daphoenositta chrysoptera	
BIRD	Dicaeum hirundinaceum	
BIRD	Dromaius novaehollandiae	
BIRD	Drymodes brunneopygia	
BIRD	Egretta novaehollandiae	
BIRD	Elanus axillaris	
BIRD	Elseyornis melanops	
BIRD	Eolophus roseicapillus	
BIRD	Eopsaltria australis subsp. griseogularis	
BIRD	Epthianura albifrons	
BIRD	Erythrogonys cinctus	
BIRD	Eurostopodus argus	
BIRD	Falco berigora	
BIRD	Falco cenchroides	
BIRD	Falco longipennis	
BIRD	Falco peregrinus	OS
BIRD	Fulica atra	
BIRD	Gerygone fusca	
BIRD	Glossopsitta porphyrocephala	
BIRD	Grallina cyanoleuca	
BIRD	Haliastur sphenurus	
BIRD	Himantopus himantopus	
BIRD	Hirundo neoxena	
BIRD	Hirundo nigricans	
BIRD	Hylacola cauta	
BIRD	Leipoa ocellata	VU
BIRD	Lichenostomus leucotis	
BIRD	Lichenostomus ornatus	
BIRD	Lichenostomus plumulus	
BIRD	Lichenostomus virescens	
BIRD	Lichmera indistincta	
BIRD	Lophoictinia isura	
BIRD	Malacorhynchus membranaceus	
BIRD	Malurus leucopterus	
BIRD	Malurus pulcherrimus	
BIRD	Malurus splendens	
BIRD	Manorina flavigula	
BIRD	Melanodryas cucullata	
BIRD	Melithreptus brevirostris	
BIRD	Melopsittacus undulatus	
BIRD	Merops ornatus	
BIRD	Microcarbo melanoleucos	
BIRD	Microeca fascinans	
BIRD	Ninox novaeseelandiae	
BIRD	Ocyphaps lophotes	
BIRD	Oreoica gutturalis	
BIRD	Pachycephala inornata	
BIRD	Pachycephala pectoralis	
BIRD	Pachycephala rufiventris	
BIRD	Pardalotus punctatus	
BIRD	Pardalotus striatus	
BIRD	Pardalotus striatus subsp. westraliensis	
BIRD	Petrochelidon nigricans	
BIRD	Petroica goodenovii	
BIRD	Phalacrocorax carbo	
BIRD	Phalacrocorax sulcirostris	
BIRD	Phaps chalcoptera	
BIRD	Phylidonyris albifrons	
BIRD	Platycercus varius	
BIRD	Platycercus zonarius	
BIRD	Podargus strigoides	
BIRD	Poliocephalus poliocephalus	
BIRD	Pomatostomus superciliosus	
BIRD	Purnella albifrons	
BIRD	Pyrrholaemus brunneus	

CLASS	TAXON	CONS
BIRD	Recurvirostra novaehollandiae	
BIRD	Rhipidura albiscapa	
BIRD	Rhipidura fuliginosa	
BIRD	Rhipidura leucophrys	
BIRD	Smicrornis brevirostris	
BIRD	Strepera versicolor	
BIRD	Streptopelia senegalensis	
BIRD	Tachybaptus novaehollandiae	
BIRD	Tadorna tadornoides	
BIRD	Taeniopygia guttata	
BIRD	Todiramphus pyrrhopygius	
BIRD	Tribonyx ventralis	
BIRD	Zosterops lateralis	
INVERT	Acarina 002	
INVERT	Acarina 003	
INVERT	Acarina 004	
INVERT	Acarina 005	
INVERT	Acarina 006	
INVERT	Acarina 007	
INVERT	Acarina 008	
INVERT	Acarina 009	
INVERT	Acarina 010	
INVERT	Acarina 011	
INVERT	Acarina 012	
INVERT	Acarina 013	
INVERT	Aganippe sp. indet.	
INVERT	Aname armigera	
INVERT	Aname tepperi	
INVERT	ant 009	
INVERT	ant 037	
INVERT	Araneae 022 juv	
INVERT	Araneae 036	
INVERT	Araneae 044	
INVERT	Araneus eburneiventris	
INVERT	Araneus senicaudatus	
INVERT	beetle 001	
INVERT	beetle 002	
INVERT	beetle 003	
INVERT	beetle 005	
INVERT	beetle 006	
INVERT	beetle 007	
INVERT	beetle 008	
INVERT	beetle 010	
INVERT	beetle 012	
INVERT	beetle 015	
INVERT	beetle 016	
INVERT	beetle 018	
INVERT	beetle 019	
INVERT	beetle 020	
INVERT	beetle 021	
INVERT	beetle larva 001	
INVERT	beetle sp. indet.	
INVERT	Bothriembryon sp. indet.	
INVERT	Branchinella nana	
INVERT	Branchinella nichollsi	
INVERT	Buddelundia cf. frontosa	
INVERT	Calamoecia ampulla var. b01	
INVERT	Clynotis albobarbatus	
INVERT	Cormocephalus turneri	
INVERT	Daphnia carinata	
INVERT	Daphnia carinata s.l.	
INVERT	Diaprograpta peterandrewsi	
INVERT	Eriophora biapicata	
INVERT	fly 003	
INVERT	fly 004	
INVERT	fly 005	
INVERT	fly 008	
INVERT	fly 009	
INVERT	Hemiptera 001	
INVERT	Hemiptera 007	
INVERT	Hemiptera 009	
INVERT	Hemiptera 020	
INVERT	Hemiptera 024	
INVERT	Hemiptera 025	
INVERT	Hemiptera 026	
INVERT	Hemiptera juvenile 001	
INVERT	Hoggicosa castanea	
INVERT	Hoggicosa storri	
INVERT	Hogna salifodina	
INVERT	Holconia nigrigularis	
INVERT	Indolpium sp. indet.	
INVERT	Isometroides vescus	
INVERT	Kwonkan sp. indet.	
INVERT	Lamponina scutata	
INVERT	Latrodectus hasseltii	
INVERT	Longrita grasspatch	
INVERT	Lychas 'adonis'	
INVERT	Lychas jonesae	
INVERT	Mainosa longipes	
INVERT	Maratus 'pes0340'	
INVERT	Missulena occatoria	
INVERT	Myandra bicincta	
INVERT	Nephila edulis	
INVERT	Nicodamus mainae	
INVERT	Pardosa pexa	
INVERT	pseudoscorpion sp. indet.	
INVERT	Scolopendra laeta	
INVERT	Synsphyronus dorothyae	
INVERT	Synsphyronus lathrius	
INVERT	Synsphyronus mimulus	
INVERT	Tasmanicosa leuckartii	
INVERT	Tetralycosa alteripa	
INVERT	Thereuopoda lesueurii	
INVERT	Trichocyclus balladong	
INVERT	Triops australiensis	
INVERT	Urodacus novaehollandiae	
INVERT	Venator yalkara	
INVERT	white ant 001	
INVERT	white ant 002	
INVERT	white ant 003	
MAMMAL	Cercartetus concinnus	
MAMMAL	Chalinolobus gouldii	
MAMMAL	Dasyurus geoffroii	VU
MAMMAL	Felis catus	
MAMMAL	Macropus fuliginosus	
MAMMAL	Mus musculus	
MAMMAL	Ningaui yvonneae	
MAMMAL	Notomys mitchellii	
MAMMAL	Oryctolagus cuniculus	
MAMMAL	Pseudomys bolami	
MAMMAL	Sminthopsis crassicaudata	
MAMMAL	Sminthopsis dolichura	
REPTILE	Brachyurophis fasciolatus subsp. fasciolatus	
REPTILE	Brachyurophis semifasciata	
REPTILE	Brachyurophis semifasciatus	
REPTILE	Christinus marmoratus	
REPTILE	Crenadactylus ocellatus subsp. ocellatus	
REPTILE	Cryptoblepharus buchananii	
REPTILE	Ctenophorus cristatus	
REPTILE	Ctenophorus fordi	
REPTILE	Ctenophorus ornatus	
REPTILE	Ctenophorus reticulatus	
REPTILE	Ctenophorus salinarum	
REPTILE	Ctenophorus scutulatus	
REPTILE	Ctenotus atlas	
REPTILE	Ctenotus leonhardii	
REPTILE	Ctenotus schomburgkii	
REPTILE	Ctenotus uber	
REPTILE	Cyclodomorphus melanops subsp. elongatus	
REPTILE	Delma australis	
REPTILE	Delma butleri	
REPTILE	Delma fraseri	
REPTILE	Demansia psammophis subsp. psammophis	
REPTILE	Diplodactylus granariensis	
REPTILE	Diplodactylus granariensis subsp. granariensis	
REPTILE	Diplodactylus pulcher	
REPTILE	Echiopsis curta	
REPTILE	Egernia depressa	
REPTILE	Egernia formosa	
REPTILE	Egernia inornata	
REPTILE	Eremiascincus richardsonii	
REPTILE	Furina ornata	
REPTILE	Gehyra purpurascens	
REPTILE	Gehyra variegata	
REPTILE	Hemiergis initialis subsp. initialis	
REPTILE	Hemiergis peronii subsp. peronii	
REPTILE	Heteronotia binoei	
REPTILE	Lerista distinguenda	
REPTILE	Lerista kingi	
REPTILE	Lerista picturata	
REPTILE	Lerista rhodonoides	
REPTILE	Lerista taeniata	
REPTILE	Lerista timida	
REPTILE	Lialis burtonis	
REPTILE	Liopholis inornata	
REPTILE	Liopholis multiscutata	
REPTILE	Lucasium damaeum	
REPTILE	Lucasium maini	
REPTILE	Menetia greyii	
REPTILE	Moloch horridus	
REPTILE	Morelia spilota subsp. imbricata	
REPTILE	Morethia butleri	
REPTILE	Morethia obscura	
REPTILE	Nephrurus laevissimus	
REPTILE	Nephrurus milii	
REPTILE	Oedura reticulata	
REPTILE	Parasuta gouldii	
REPTILE	Parasuta monachus	
REPTILE	Pogona minor	
REPTILE	Pogona minor subsp. minor	

CLASS	TAXON	CONS
REPTILE	Pseudechis australis	
REPTILE	Pseudonaja affinis subsp. affinis	
REPTILE	Pseudonaja mengdeni	
REPTILE	Pseudonaja modesta	
REPTILE	Pseudonaja nuchalis	
REPTILE	Pygopus lepidopodus	
REPTILE	Ramphotyphlops australis	
REPTILE	Ramphotyphlops bicolor	
REPTILE	Ramphotyphlops bituberculatus	
REPTILE	Rhynchoedura ornata	
REPTILE	Simoselaps bertholdi	
REPTILE	Strophurus assimilis	
REPTILE	Strophurus elderi	
REPTILE	Suta fasciata	
REPTILE	Tiliqua rugosa	
REPTILE	Tympanocryptis cephalus	
REPTILE	Underwoodisaurus milii	
REPTILE	Varanus gouldii	
REPTILE	Varanus tristis	

APPENDIX C:
POTENTIALLY OCCURRING INTRODUCED (WEED) FLORA SPECIES

Family	Taxon	Common Name	WAOL Status	WONS
Asteraceae	*Carduus tenuiflorus*	Slender Thistle	Permitted - s11	
Asteraceae	*Centaurea melitensis*	Maltese Cockspur	Permitted - s11	
Asteraceae	*Gazania linearis*	Gazania	Permitted - s11	
Asteraceae	*Leontodon rhagadioloides*	Cretan Weed	Unlisted	
Asteraceae	*Oligocarpus calendulaceus*	0	Unlisted	
Asteraceae	*Oncosiphon suffruticosum*	Calomba Daisy	Permitted - s11	
Asteraceae	*Sonchus oleraceus*	Common Sowthistle	Permitted - s11	
Boraginaceae	*Echium plantagineum*	Patersons Curse	Declared Pest - s22(2)	No
Boraginaceae	*Sisymbrium erysimoides*	smooth mustard	Permitted - s11	
Borginaceae	*Heliotropium europaeum*	Common Heliotrope	Permitted - s11	
Brassicaceae	*Carrichtera annua*	Ward's Weed	Permitted - s11	
Brassicaceae	*Lepidium africanum*	Rubble Peppercress	Permitted - s11	
Brassicaceae	*Sisymbrium irio*	London Rocket	Permitted - s11	
Cactaceae	*Cylindropuntia fulgida var. mamillata*	Coral Cactus, Boxing Glove Cactus	Declared Pest - s22(2) (C3 Management)	Yes
Chenopodiaceae	*Atriplex semibaccata*	Creeping Saltbush	Permitted - s11	
Crassulaceae	*Bryophyllum delagoense*	Mother-of-millions	Permitted - s11	
Cucurbitaceae	*Citrullus amarus*	Paddy melon	Unlisted	
Cucurbitaceae	*Citrullus colocynthis*	Bitter apple	Permitted - s11	
Geraniaceae	*Erodium cicutarium*	Common Storksbill	Permitted - s11	
Lamiaceae	*Salvia verbenaca*	Wild Sage	Permitted - s11	
Poaceae	*Cenchrus ciliaris*	Buffel Grass	Permitted - s11	
Poaceae	*Hordeum glaucum*	Northern Barleygrass	Permitted - s11	
Polygonaceae	*Rumex vesicarius*	Ruby Dock	Unlisted	
Primulaceae	*Lysimachia arvensis*	Pimpernel	Permitted - s11	
Resedaceae	*Reseda luteola*	Wild mingonette	Permitted - s11	
Solanaceae	*Nicotiana glauca*	Tree Tobacco	Permitted - s11	
Verbenaceae	*Lantana camara*	Common Lantana	Declared Pest - s22(2) (C3)	Yes
Zygophyllaceae	*Tribulus terrestris*	Caltrop	Permitted - s11	

APPENDIX D:
LIST OF FLORA SPECIES IDENTIFIED WITHIN THE SURVEY AREA

Landform		Drainage Depression	Clay-Loam Plain			Rocky-Hillslope				Sand Dune			Disturbed
Family	**Species**	**DD-CS1**	**CLP-AFW1**	**CLP-EW2**	**CLP-CS1**	**RH-AFW1**	**RH-EW1**	**RH-EW2**	**RH-AOW1**	**SD-EW1**	**SD-AOW1**	**SD-AFW1**	**Disturbed**
Aizoaceae	*Disphyma crassifolium*	x		x	x						x	x	
Aizoaceae	*Gunniopsis quadrifida*	x			x						x	x	
Aizoaceae	**Mesembryanthemum nodiflorum (W)*												x
Amaranthaceae	*Ptilotus exaltatus (A)*			x									
Amaranthaceae	*Ptilotus holosericeus*			x									
Amaranthaceae	*Ptilotus obovatus*	x	x			x	x	x	x				x
Amaranthaceae	*Surreya diandra*	x											
Anacardiaceae	**Schinus molle* var. *areira* (W)												x
Apocynaceae	*Alyxia buxifolia*			x			x		x			x	
Araliaceae	*Trachymene ornata*					x							
Asparagaceae	**Asphodelus fistulosus (W)*												x
Asparagaceae	*Lomandra effusa*									x	x	x	
Asparagaceae	*Thysanotus manglesianus (A)*					x	x		x				
Asteraceae	*Asteridea athrixioides (A)*			x									
Asteraceae	*Brachyscome ciliaris (A)*	x											
Asteraceae	**Carthamus lanatus (W)*			x									x
Asteraceae	**Centaurea melitensis (W)*												x
Asteraceae	*Cephalipterum drummondii*			x					x				
Asteraceae	*Chrysocephalum eremaeum (A)*					x							
Asteraceae	*Cratystylis subspinescens*	x								x			
Asteraceae	**Dittrichia graveolens (W)*												x
Asteraceae	**Gazania linearis (W)*												x
Asteraceae	*Olearia muelleri*						x		x				
Asteraceae	*Olearia pimeleoides*									x	x	x	
Asteraceae	**Oncosiphon suffruticosum (W)*												x
Boraginaceae	*Halgania andromedifolia*												
Boraginaceae	*Halgania integerrima*												
Brassicaceae	**Brassica tournefortii (W)*												x
Brassicaceae	**Carrichtera annua (W)*			x									x
Casuarinaceae	*Casuarina pauper*			x			x	x	x	x		x	x
Chenopodiaceae	*Atriplex codonocarpa (A)*	x			x								x
Chenopodiaceae	*Atriplex nummularia*	x					x				x		
Chenopodiaceae	*Atriplex vesicaria*	x		x			x	x					x
Chenopodiaceae	*Chenopodium curvispicatum*		x	x				x					
Chenopodiaceae	*Didymanthus roei*	x			x								
Chenopodiaceae	*Enchylaena tomentosa*			x		x	x		x				
Chenopodiaceae	*Maireana brevifolia*												x
Chenopodiaceae	*Maireana georgei*	x		x		x	x	x	x				
Chenopodiaceae	*Maireana glomerifolia*	x		x			x						
Chenopodiaceae	*Maireana oppositifolia*						x						
Chenopodiaceae	*Maireana pentatropis*						x			x	x	x	x
Chenopodiaceae	*Maireana platycarpa*					x							
Chenopodiaceae	*Maireana pyramidata*			x	x								
Chenopodiaceae	*Maireana sedifolia*			x			x						x
Chenopodiaceae	*Maireana tomentosa*	x											
Chenopodiaceae	*Maireana trichoptera*						x	x					
Chenopodiaceae	*Maireana triptera*							x					
Chenopodiaceae	*Rhagodia eremaea*	x						x		x	x	x	

Landform		Drainage Depression	Clay-Loam Plain			Rocky-Hillslope				Sand Dune			Disturbed
Family	**Species**	**DD-CS1**	**CLP-AFW1**	**CLP-EW2**	**CLP-CS1**	**RH-AFW1**	**RH-EW1**	**RH-EW2**	**RH-AOW1**	**SD-EW1**	**SD-AOW1**	**SD-AFW1**	**Disturbed**
Chenopodiaceae	*Salsola australis (A)*												x
Chenopodiaceae	*Sclerolaena diacantha*	x				x		x					x
Chenopodiaceae	*Sclerolaena eriacantha*												x
Chenopodiaceae	*Sclerolaena uniflora*			x									
Chenopodiaceae	*Tecticornia disarticulata*	x		x	x								
Chenopodiaceae	*Tecticornia doliiformis*	x			x								
Chenopodiaceae	*Tecticornia halocnemoides*	x			x								
Chenopodiaceae	*Tecticornia indica*	x			x								
Chenopodiaceae	*Tecticornia pergranulata*	x			x								
Cupressaceae	*Callitris preissii*	x			x					x	x	x	
Fabaceae	*Acacia acuminata*		x	x		x							x
Fabaceae	*Acacia collegialis*					x		x					
Fabaceae	*Acacia erinacea*						x						
Fabaceae	*Acacia hemiteles*			x			x	x				x	
Fabaceae	*Acacia jennerae*	x		x									
Fabaceae	*Acacia kalgoorliensis*	x		x			x				x	x	
Fabaceae	*Acacia ligulata*									x	x	x	
Fabaceae	*Acacia tetragonophylla*							x	x				
Fabaceae	*Acacia eremophila*								x				
Fabaceae	**Erythrostemon gilliesii (W)*												x
Fabaceae	*Glycyrrhiza acanthocarpa*			x									
Fabaceae	*Jacksonia arida*									x	x	x	
Fabaceae	*Senna artemisioides (DC.) Randell subsp. ×artemisioides*		x	x		x			x				x
Fabaceae	*Senna artemisioides* subsp. *filifolia*			x		x	x	x				x	
Frankeniaceae	*Frankenia interioris*	x	x		x			x					
Goodeniaceae	*Coopernookia strophiolata*									x	x	x	
Goodeniaceae	*Goodenia mimuloides (A)*					x							
Goodeniaceae	*Scaevola spinescens*		x	x		x	x	x	x		x	x	
Hemerocallidaceae	*Dianella revoluta*		x	x								x	
Lamiaceae	*Prostanthera althoferi*							x	x				
Lamiaceae	*Prostanthera grylloana*						x	x					
Lamiaceae	**Salvia verbenaca (W)*					x							
Lamiaceae	*Westringia rigida*						x	x	x				
Lamiaceae	*Westringia cephalantha F.Muell. var. cephalantha*								x			x	
Malvaceae	*Brachychiton gregorii*		x				x	x					
Malvaceae	*Lawrencia glomerata*									x			
Malvaceae	**Malva parviflora (W)*												x
Malvaceae	*Sida calyxhymenia*						x	x					
Malvaceae	*Sida intricata*			x			x						
Myrtaceae	*Darwinia sp. Karonie*										x	x	
Myrtaceae	*Eucalyptus oleosa*					x	x						
Myrtaceae	*Eucalyptus lesouefii*			x			x	x	x	x			x
Myrtaceae	*Eucalyptus celastroides*						x	x					
Myrtaceae	*Eucalyptus griffithsii*						x	x					
Myrtaceae	*Eucalyptus longissima*					x			x				
Myrtaceae	*Eucalyptus moderata*			x									
Myrtaceae	*Eucalyptus ravida*			x									
Myrtaceae	*Eucalyptus salicola*									x		x	
Myrtaceae	*Eucalyptus salmonophloia*			x				x					
Myrtaceae	*Eucalyptus salubris*			x									
Myrtaceae	*Eucalyptus torquata*						x	x	x				
Myrtaceae	*Eucalyptus urna*			x									

Landform		Drainage Depression	Clay-Loam Plain			Rocky-Hillslope				Sand Dune			Disturbed
Family	**Species**	**DD-CS1**	**CLP-AFW1**	**CLP-EW2**	**CLP-CS1**	**RH-AFW1**	**RH-EW1**	**RH-EW2**	**RH-AOW1**	**SD-EW1**	**SD-AOW1**	**SD-AFW1**	**Disturbed**
Myrtaceae	*Eucalyptus yilgarnensis*			x									
Myrtaceae	*Melaleuca hamata*		x										
Myrtaceae	*Melaleuca lateriflora*	x		x				x					
Myrtaceae	*Melaleuca sheathiana*						x	x					
Pittosporaceae	*Pittosporum angustifolium*	x		x			x						
Poaceae	*Amphipogon caricinus*						x						
Poaceae	*Austrostipa elegantissima*		x	x				x	x				
Poaceae	**Avena barbata (W)*												x
Poaceae	**Cenchrus ciliaris (W)*												x
Poaceae	**Cynodon dactylon (W)*												x
Poaceae	*Enneapogon caerulescens (A)*					x							
Poaceae	*Triodia scariosa*						x		x	x	x	x	
Polygonaceae	**Rumex vesicarius (W)*												x
Proteaceae	*Grevillea acuaria*			x				x				x	
Proteaceae	*Grevillea nematophylla*		x					x					
Santalaceae	*Exocarpos aphyllus*	x				x	x	x				x	
Santalaceae	*Santalum acuminatum*						x						
Santalaceae	*Santalum spicatum*								x				
Sapindaceae	*Alectryon oleifolius*		x	x									
Sapindaceae	*Dodonaea adenophora*					x			x				
Sapindaceae	*Dodonaea lobulata*			x			x	x	x				
Sapindaceae	*Dodonaea microzyga*					x	x		x				
Sapindaceae	*Dodonaea stenozyga*			x		x							
Sapindaceae	*Dodonaea viscosa*	x		x						x	x	x	
Scrophulariaceae	*Eremophila alternifolia*	x	x					x					
Scrophulariaceae	*Eremophila clarkei*							x	x				
Scrophulariaceae	*Eremophila decipiens*	x		x			x						
Scrophulariaceae	*Eremophila georgei*					x							
Scrophulariaceae	*Eremophila glabra*						x		x	x			
Scrophulariaceae	*Eremophila interstans* subsp. *virgata*						x		x				
Scrophulariaceae	*Eremophila ionantha*		x										
Scrophulariaceae	*Eremophila longifolia*	x											
Scrophulariaceae	*Eremophila maculata*			x									
Scrophulariaceae	*Eremophila metallicorum*						x		x				
Scrophulariaceae	*Eremophila miniata*	x											
Scrophulariaceae	*Eremophila oldfieldii*						x					x	
Scrophulariaceae	*Eremophila oldfieldii* subsp. *angustifolia*			x			x	x	x				x
Scrophulariaceae	*Eremophila oppositifolia*		x										
Scrophulariaceae	*Eremophila scoparia*	x					x	x					
Solanaceae	*Duboisia hopwoodii*										x	x	
Solanaceae	**Nicotiana glauca (W)*												x
Solanaceae	*Solanum hoplopetalum*			x							x		x
Solanaceae	*Solanum lasiophyllum*	x	x			x						x	x
Solanaceae	**Solanum nigrum (W)*												x
Solanaceae	*Solanum orbiculatum*			x					x				
Solanaceae	*Solanum plicatile*			x									x
Thymelaeaceae	*Pimelea trichostachya*											x	
Zygophyllaceae	*Roepera eremaea (A)*					x							
Zygophyllaceae	*Roepera glauca (A)*					x				x			
Zygophyllaceae	**Tribulus terrestris (W)*		x	x									x

(A) Annual Species (W) Weed Species

APPENDIX E:
LIST OF VERTEBRATE FAUNA SPECIES IDENTIFIED WITHIN THE SURVEY AREA

Class	Family	Species	Common Name	Conservation Status
Aves	Acanthizidae	*Acanthiza apicalis*	Broad-tailed Thornbill	LC
Aves	Acanthizidae	*Acanthiza robustirostris*	Slaty-backed Thornbill	LC
Aves	Acanthizidae	*Pyrrholaemus brunneus*	Redthroat	LC
Aves	Acanthizidae	*Smicrornis brevirostris*	Weebill	LC
Aves	Anatidae	*Anas gracilis*	Grey Teal	LC
Aves	Artamidae	*Artamus cinereus*	Black-faced Woodswallow	LC
Aves	Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckoo-shrike	LC
Aves	Campephagidae	*Lalage tricolor*	White-winged Triller	LC
Aves	Casuariidae	*Dromaius novaehollandiae*	Emu	LC
Aves	Charadriidae	*Charadrius ruficapillus*	Red-capped Plover	LC
Aves	Columbidae	*Ocyphaps lophotes*	Crested Pigeon	LC
Aves	Columbidae	*Phaps chalcoptera*	Common Bronzewing	LC
Aves	Corvidae	*Corvus bennetti*	Little Crow	LC
Aves	Corvidae	*Corvus coronoides*	Australian Raven	LC
Aves	Cracticidae	*Cracticus tibicen*	Australian Magpie	LC
Aves	Cracticidae	*Cracticus torquatus*	Grey Butcherbird	LC
Aves	Cracticidae	*Strepera versicolor*	Grey Currawong	LC
Aves	Dicruridae	*Grallina cyanoleuca*	Magpie-Lark	LC
Aves	Dicruridae	*Rhipidura leucophrys*	Willie Wagtail	LC
Aves	Hirundinidae	*Hirundo neoxena*	Welcome Swallow	LC
Aves	Maluridae	*Malurus leucopterus*	White-winged Fairy-wren	LC
Aves	Maluridae	*Malurus pulcherrimus*	Blue-breasted Fairy Wren	LC
Aves	Meliphagidae	*Acanthagenys rufogularis*	Spiny-cheeked Honeyeater	LC
Aves	Meliphagidae	*Anthochaera carunculata*	Red Wattlebird	LC
Aves	Meliphagidae	*Lichenostomus leucotis*	White-eared Honeyeater	LC
Aves	Meliphagidae	*Lichenostomus virescens*	Singing Honeyeater	LC
Aves	Meliphagidae	*Lichmera indistincta*	Brown Honeyeater	LC
Aves	Meliphagidae	*Melithreptus brevirostris*	Brown-headed Honeyeater	LC
Aves	Meropidae	*Merops ornatus*	Rainbow Bee-eater	LC
Aves	Pachycephalidae	*Colluricincla harmonica*	Grey Shrike-thrush	LC
Aves	Pachycephalidae	*Oreoica gutturalis*	Crested Bellbird	LC
Aves	Pardalotidae	*Pardalotus striatus*	Striated Pardalote	LC
Aves	Petroicidae	*Microeca fascinans*	Jacky Winter	LC
Aves	Petroicidae	*Petroica goodenovii*	Red-capped Robin	LC
Aves	Pomatostomidae	*Pomatostomus superciliosus*	White-browed Babbler	LC
Aves	Psittacidae	*Cacatua roseicapilla*	Galah	LC
Aves	Psittacidae	*Platycercus varius*	Mulga Parrot	LC
Aves	Psittacidae	*Platycercus zonarius*	Australian Ringneck Parrot	LC
Mammalia	Bovidae	**Bos taurus*	European Cattle	Introduced
Mammalia	Bovidae	**Capra hircus*	Goat	Introduced
Mammalia	Leporidae	**Oryctolagus cuniculus*	Rabbit	Introduced
Mammalia	Macropodidae	*Osphranter robustus*	Euro	LC
Mammalia	Macropodidae	*Osphranter rufus*	Red Kangaroo	LC
Mammalia	Molossidae	*Austronomus australis*	White-striped Freetail-bat	LC

Class	Family	Species	Common Name	Conservation Status
Mammalia	Molossidae	*Ozimops petersi*	Inland Free-tailed Bat	LC
Mammalia	Tachyglossidae	*Tachyglossus aculeatus*	Echidna	LC
Mammalia	Vespertilionidae	*Chalinolobus gouldii*	Gould's Wattled Bat	LC
Reptilia	Agamidae	*Ctenophorus cristatus*	Crested Bicycle Dragon	LC
Reptilia	Scincidae	*Tiliqua rugosa*	Bobtail	LC
Reptilia	Varanidae	*Varanus gouldii*	Gould's Sand Monitor	LC

BC Act Status/EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, MI = Migratory, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern, NT = Near Threatened - see https://www.iucnredlist.org/resources/categories-and-criteria for others

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