

Appendix 4 Biologic 2021 Report



Kalgoorlie Nickel Smelter,
Reconnaissance Flora and
Vegetation Survey and Basic
Terrestrial Fauna Survey

Biologic Environmental Survey

Report for BHP Nickel West

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EXECUTIVE SUMMARY

BHP Nickel West (BHP NiW) requires a native vegetation clearing permit to support upcoming operations at their Kalgoorlie Nickel Smelter site. BHP NiW commissioned Biologic Environmental Survey (Biologic) to undertake a single-season reconnaissance flora and vegetation survey and basic terrestrial fauna survey for the Kalgoorlie Nickel Smelter, and a targeted flora and fauna survey of two corridors (hereafter collectively known as 'the Survey Area'). The reconnaissance flora and vegetation and basic fauna Survey Area comprises the entire nickel smelter operations tenure (smelter Survey Area) measuring approximately 2.7 kilometres (km) by 2.3 km. Additionally a targeted vertebrate fauna and flora survey was requested for an adjacent road and pipeline corridor (corridor Survey Area), totalling 717 hectares (ha). The Survey Area is located approximately 12.5 km south of Kalgoorlie town in the City of Kalgoorlie-Boulder in the Goldfields region of Western Australia.

A comprehensive flora, vegetation and vertebrate fauna desktop assessment comprising of database searches and literature review was undertaken for the Survey Area as detailed in EPA and BHP guidance documents.

The field survey, which comprised a total of 25 relevé sites, 11 mapping notes and 22 fauna habitat assessments, was completed over three days between the 8th and 10th of September 2021.

Vertebrate Fauna

The desktop assessment identified 297 vertebrate fauna species that have previously been recorded within the vicinity of the Survey Area or have the potential to occur based on estimated distribution. Twenty-three of these species are of conservation significance, being species that are listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), *Biodiversity Conservation Act 2016* (BC Act); or listed as Priority fauna species by the Department of Biodiversity Conservation and Attractions (DBCAs).

Four broad fauna habitat types were identified and mapped within the Survey Area, comprising in order of extent, Open Eucalypt Woodland, Allocasuarina Shrubland, Low Chenopod Shrubland and Claypan. A total of 18 vertebrate fauna species were recorded during the field survey, comprising, 16 bird and two mammal species. One of the species recorded during the survey, the malleefowl (*Leipoa ocellata*), is listed as Vulnerable under the EPBC Act and BC Act. The species was confirmed from an old, inactive mound within the Allocasuarina Shrubland habitat; however, no recent evidence of the species was detected. Of the species of conservation significance recorded during the desktop assessment, eight were considered Possible to occur, comprising:

- common sandpiper (*Actitis hypoleucos*) – Migratory (EPBC and BC Act)
- fork-tailed swift (*Apus pacificus*) – Migratory (EPBC and BC Act)
- sharp-tailed sandpiper (*Calidris acuminata*) - Migratory (EPBC and BC Act)
- common greenshank (*Tringa nebularia*) – Migratory (EPBC and BC Act)
- wood sandpiper (*Tringa glareola*) - Migratory (EPBC and BC Act)
- red-necked stint (*Calidris ruficollis*) – Migratory (EPBC and BC Act)

- glossy ibis (*Plegadis falcinellus*) – Migratory (EPBC and BC Act)
- peregrine falcon (*Falco peregrinus*) – Other Specially Protected (BC Act)

The remaining 14 species are considered Unlikely or Highly Unlikely to occur within the Survey Area.

Open Eucalypt Woodland and Low Chenopod Shrubland fauna habitats were considered to be of low significance as they are widespread in the surrounding landscape and/or are not relied upon by species of conservation significance. Allocasuarina Shrubland habitat was considered to be of moderate significance as it represents potential foraging and breeding habitat for the malleefowl. As no recent evidence of the species was detected and the Survey Area is highly disturbed, it is considered unlikely that the species is active within the area and unlikely that the Survey Area is of significance to the species. The Claypan habitat has the potential to support species of conservation significance, particularly foraging habitat for the eight bird species assessed as being Possible to occur. Given the widespread nature of this habitat type in the region, including an array of large salt lakes and claypans immediately to the west and east of the Survey Area, it is unlikely that these species are reliant on the habitat within the Survey Area. The Claypan habitat was therefore determined to be of moderate significance to vertebrate fauna. No conservation significant vertebrate fauna species listed under the EPBC Act or BC Act are dependent on the fauna habitat within the Survey Area. All habitats are common and widespread in the surrounding landscape.

Flora and Vegetation

A total of 114 vascular flora taxa from 31 families and 62 genera were recorded from the smelter Survey Area during the field survey (109 native taxa and five introduced taxa). Of the five introduced taxa; *Echium plantagineum* (Patterson's Curse) is a Declared Pest under Section 22 of the *Biosecurity and Agriculture Management Act*. *Eragrostis curvula* is on the priority list for weed management for the Goldfields Region due to it being currently absent from lands managed by the Department of Biodiversity, Conservation and Attractions.

No conservation significant flora taxa were recorded during this survey from the smelter or corridor Survey Area. Nine taxa observed and collected from the field were difficult to confidently identify to genus, species or infraspecies level. One of these taxa identified to genus level, *Lepidosperma* sp. indet., does have affinities with the conservation significant taxon *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (Priority 2, DBCA). However, the specimen collected during this survey was sterile, and the Western Australian Herbarium has insufficient material and supporting literature to confidently identify this specimen. Therefore, this specimen is not considered to represent that of a conservation significant taxon. However, *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2) is considered Possible to occur in the Survey Area following the post-survey likelihood assessment. All other conservation significant flora taxa are considered either Unlikely or Highly Unlikely to occur in the Survey Area.

Five flora taxa recorded from the smelter Survey Area by this survey are considered to be flora of "Other" significance:

- *Calandrinia pumila* – range extension 78 km southeast;
- *Centipeda crateriformis* subsp. *compacta* – fills a gap in distribution;

- *Lepidosperma* sp. indet – does not match any taxa currently held and described at the Western Australian Herbarium, most closely resembles *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2);
- *Ptilotus obovatus* var. *obovatus* - range extension 141 km east-southeast;
- *Swainsona purpurea* – range extension 17 km south.

Seven vegetation types were mapped in the smelter Survey Area:

Eucalypt Woodlands (E)

- E1 - Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland;
- E2 - Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissima* mallee woodland;
- E3 - Low open *Eucalyptus torquata* mallee woodland;
- E4 - Low open *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* mallee woodland.

Shrublands (S)

- S1 - Tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland;
- S2 - Mid to low open *Lycium australe*, *Frankenia* sp., *Maireana sedifolia*, *Atriplex nummularia*, *Atriplex vesicaria* and *Sclerolaena diacantha* mixed chenopod shrubland;
- S3 - Mid sparse *Duma florentia* shrubland.

A range of landforms were present in the smelter Survey Area including (in descending order of dominance across the smelter Survey Area) gentle hillslopes (lower, mid, upper), flats / saline flats, floodplains and hilltops / crests. The majority of the vegetation within the smelter Survey Area was in very good condition. One additional mapping unit, Cleared, was mapped (representing tracks, infrastructure, and cleared areas).

The area mapped as vegetation type S3 (Mid sparse *Duma florentia* shrubland) shared affinities to a Priority Ecological Community (PEC). This vegetation type contained lignum (*Duma florulenta*), and scattered herbs and grasses fringed by *Melaleuca lateriflora*, and was situated on a small claypan landform. Although this occurrence cannot represent the 'Emu Land System' (Priority 3, DBCA) PEC based on geographical distribution, it is considered to represent vegetation of other significance at a local level due to these attributes.

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1 INTRODUCTION

1.1 Background

BHP Nickel West Pty Ltd (BHP NiW) commissioned Biologic Environmental Survey (Biologic) to undertake a single-season reconnaissance flora and vegetation survey and a single-season basic vertebrate fauna survey at their Kalgoorlie Nickel Smelter operations (smelter Survey Area), and a targeted flora and fauna survey of proposed pipeline and road alignment corridors (corridor Survey Area). These areas are collectively referred to as “the Survey Area”. The Survey Area is located approximately 12.5 kilometres (km) south of Kalgoorlie town in the City of Kalgoorlie-Boulder in the Goldfields region of Western Australia. The purpose of the survey is to support a native vegetation clearing permit (NVCP) application for the operations. The Survey Area comprises the nickel smelter operations tenure (smelter Survey Area), which measures approximately 2.7 km by 2.3 km (approximately 607 hectares (ha)) and includes a road corridor and pipeline corridor (corridor Survey Area) to support the operations (Figure 1.1). The Survey Area is approximately 717 ha.

1.2 Objectives

The overarching objective of this assessment was to document the environmental value of the Survey Area as it relates to terrestrial vertebrate fauna, flora and vegetation. The specific objectives of the assessment were to:

- conduct a desktop assessment to gather background information, identify flora, vegetation and fauna which potentially occur in the Survey Area, and verify methods for a field survey;
- define and map vegetation units and fauna habitats occurring in the smelter Survey Area and rate their condition;
- conduct a reconnaissance flora and vegetation survey to identify flora and vegetation occurring in the smelter Survey Area;
- conduct a basic vertebrate fauna survey to identify species occurring in the smelter Survey Area; and
- conduct a targeted survey for flora and fauna within the targeted Survey Area.

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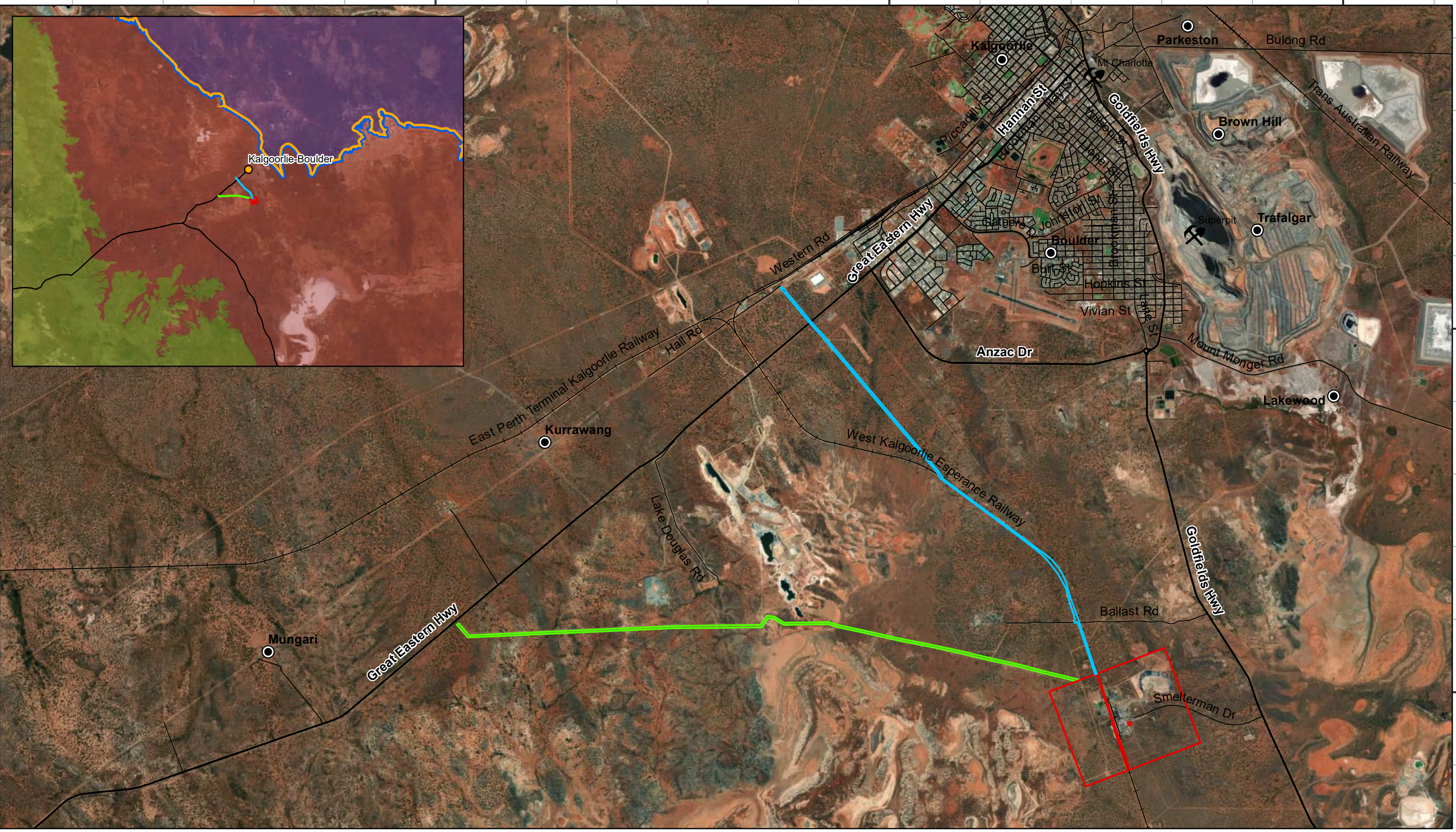
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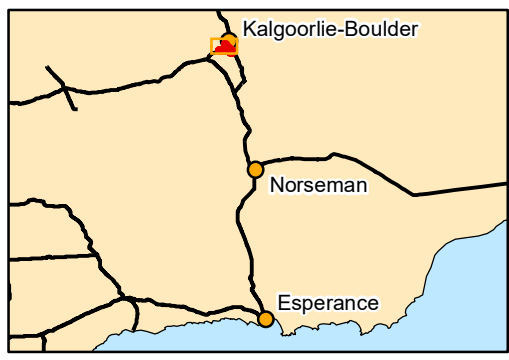
Legend

Survey Area	— Local Road	IBRA Region	IBRA Subregion
Smelter Survey Area	— State Road	Coolgardie	Eastern Goldfield
Pipeline Corridor	— Rail	Murchison	Eastern Murchison
Road Corridor	Operating Mine		Southern Cross

biologic
Environmental Survey

Scale: 1:80,000

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 04/11/2021



BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 1.1: The Survey Area
and regional location

1.3 Background to Protection of Flora and Fauna

Within Western Australia, all native flora and fauna is protected under the *Biodiversity Conservation Act 2016* (BC Act), and federally under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Any action that has the potential to impact native flora or fauna needs to be approved by relevant state and/or federal departments as dictated by the state BC Act and the federal EPBC Act.

Some species of flora and fauna that are determined to be at risk of extinction or decline are afforded extra protection under these acts. A summary of applicable legislation and status codes is provided in Table 1.1 and additional information on status codes is provided in Appendix A.

The EPBC Act identifies Threatened Ecological Communities (TECs) as ecological communities at risk of extinction. The BC Act provides for the statutory listing of TECs by the WA Minister for Environment (the Minister). The Minister has endorsed 69 ecological communities as threatened under Critically Endangered (20), Endangered (17), Vulnerable (28) and Presumed Totally Destroyed (four).

For some species and ecological communities, there is insufficient information to determine their status. These species are generally considered by the Environmental Protection Authority (EPA) and the Department of Biodiversity, Conservation and Attractions (DBCA) as being of conservation significance for all development related approvals and are listed on a 'Priority List' that is regularly reviewed and maintained by the DBCA (Table 1.1). TECs that do not meet the criteria for statutory listing by the Minister for Environment are added to DBCA's Priority Ecological Community (PEC) list under Priorities 1, 2, 3, 4 (near threatened) or 5 (conservation dependent).

Table 1.1: Conservation significance assessment guidelines

Agreement, Act or List	Status Codes
Federal	
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i></p> <p>The Department of Agriculture, Water and the Environment (DAWE) lists Threatened flora, which are determined by the Threatened Species Scientific Committee (TSSC) per criteria set out in the Act. The Act lists flora and fauna that are considered to be of significance in the categories listed under 'Status Codes'.</p> <p>Threatened Ecological Communities (TECs) are those that are at risk of extinction.</p>	<p>Species</p> <ul style="list-style-type: none"> • Extinct (EX) • Extinct in the Wild (EW) • Critically Endangered (CR) • Endangered (EN) • Vulnerable (VU) • Conservation Dependent (CD) • Migratory (MI) <p>TECs</p> <ul style="list-style-type: none"> • Critically Endangered (CR) • Endangered (EN) • Vulnerable (VU)
State	
<p><i>Biodiversity Conservation Act 2016</i></p> <p>At a State level, native flora, fauna and TECs are protected under the BC Act. Species in need of conservation are given a ranking ranging from Critically Endangered to Vulnerable.</p> <p>TECs are given a ranking ranging from Vulnerable to Presumed Totally Destroyed.</p>	<p>Species</p> <ul style="list-style-type: none"> • Extinct (EX) • Extinct in the Wild (EW) • Critically Endangered (CR) • Endangered (EN) • Vulnerable (VU) • Migratory (MI) • Conservation Dependent Fauna (CD) • Other Specially Protected Species (OS) <p>TECs</p> <ul style="list-style-type: none"> • Presumed Totally Destroyed (PD) • Critically Endangered (CR) • Endangered (EN) • Vulnerable (VU)
<p>DBCA Priority List</p> <p>DBCA produces a list of Priority species and ecological communities that have not been assigned statutory protection under the BC Act. This system gives a ranking from Priority 1 to Priority 4 for flora and fauna, and Priority 1 to Priority 5 for ecological communities.</p>	<ul style="list-style-type: none"> • Priority 1 (P1) • Priority 2 (P2) • Priority 3 (P3) • Priority 4 (P4) • Priority 5 (PECs) (P5)

1.4 Conformance with Regulatory Guidance and Best Practice

1.4.1 Vertebrate Fauna

The single-season basic terrestrial fauna and targeted fauna survey was carried out in a manner consistent with the following guidelines and recommendations:

- BHP (2017) Guidance for terrestrial vertebrate fauna surveys in the Pilbara procedure (document number: SPR-IEN-EMS-012);
- BHP WAIO (2020) Biodiversity survey spatial data requirements procedure (document number: SPR-IEN-EMS-015);
- DEWHA (2010) Survey guidelines for Australia's threatened birds;
- DPaW (2017) Interim guidelines for the preliminary surveys of night parrot (*Pezoporus occidentalis*) in Western Australia;
- (EPA, 2020b) Environmental factor guideline: terrestrial fauna;
- EPA (2018) Instructions for the preparation of data packages for the index of biodiversity surveys for assessments (IBSA);
- EPA (2020a) Statement of environmental principles, factors and objectives;
- EPA (2020b) Technical guidance: terrestrial vertebrate fauna surveys for environmental impact assessment; and
- Natural Heritage Trust (2007) National manual for the malleefowl monitoring system: standards, protocols and monitoring procedures;

1.4.2 Flora and Vegetation

The single-season reconnaissance flora and vegetation assessment and targeted flora survey was carried out in a manner consistent with the following guidelines and recommendations from the EPA, DBCA and BHP:

- BHP WAIO (2020) Biodiversity survey spatial data requirements procedure (document number: SPR-IEN-EMS-015);
- BHP (2018) Vegetation and Flora Survey Procedure (document number: 0124627);
- EPA (2016a) Environmental Factor Guideline: Flora and Vegetation;
- EPA (2016b) Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment;
- EPA (2018) Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA); and
- EPA (2020a) Statement of Environmental Principles, Factors and Objectives.

2 ENVIRONMENT

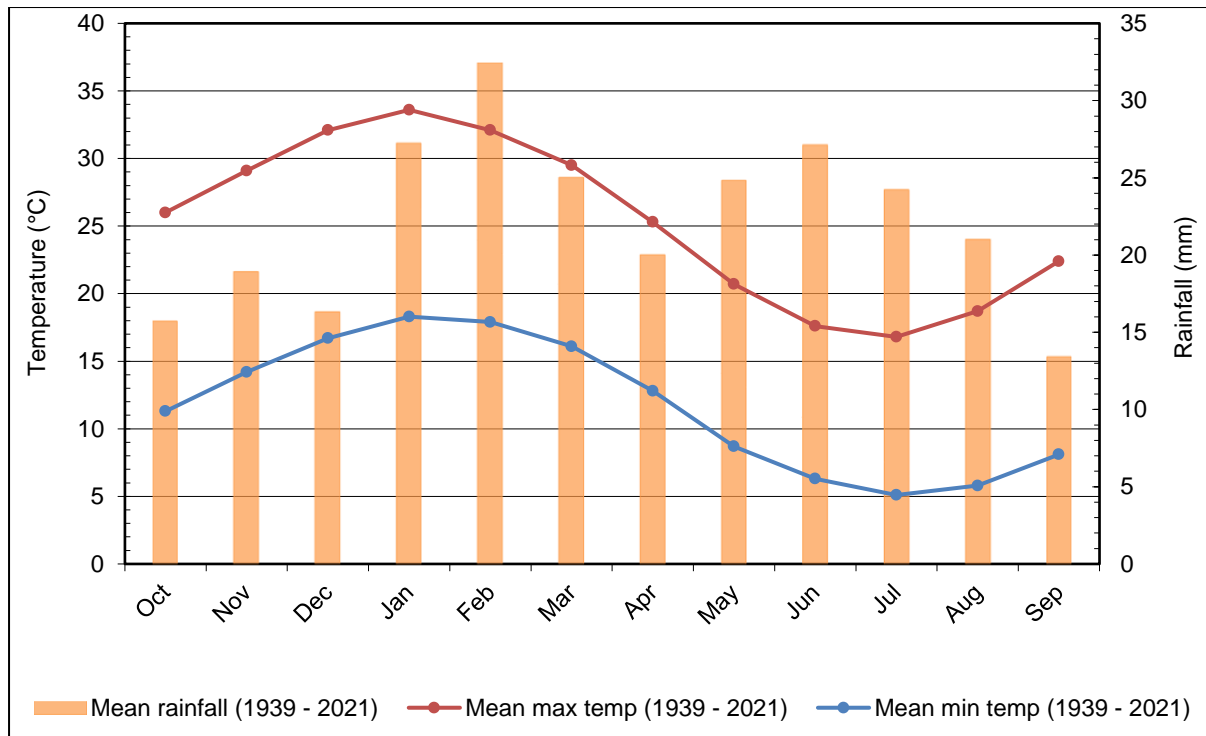
2.1 Biogeography

The Interim Biogeographic Regionalisation for Australia (IBRA) (version 7) is a bioregional framework that divides Australia into 85 bioregions and 419 subregions on the basis of climate, geology, landforms, vegetation and fauna (Thackway & Cresswell, 1995). The Survey Area is located within the Coolgardie bioregion (see Figure 1.1). The Coolgardie bioregion is located within the Yilgarn craton and is characterised by a granite basement with occluded drainage (McKenzie *et al.*, 2002). The Coolgardie bioregion is itself a major biogeographic interzone where communities of acacia on sandplain valley floors, and ephemeral plants on tertiary sandplains and in valley floor woodlands, are extremely rich (McKenzie *et al.*, 2002). The diversity in its eucalypt woodlands reflects a regional radiation in acacias and myrtaceae, with for example 170 species of eucalypt occurring of which many are endemic (McKenzie *et al.*, 2002).

The bioregion is divided into three sub-regions; Mardabilla, Southern Cross and Eastern Goldfields. The Survey Area is located within the Eastern Goldfields subregion (Figure 1.1) which is characterised by low hills and undulating plains, covered with tertiary soils and with scattered exposures of bedrock (Cowan, 2001). Vegetation within the subregion is of mallees, acacia thickets and shrub-heaths on sandplains, and diverse eucalyptus woodlands occur around salt lakes, on ranges and in valleys (McKenzie *et al.*, 2002). The Eastern Goldfields subregion is home to Rowles Lagoon, and Clear and Muddy Lakes, a system of wetlands that is the largest semi-permanent freshwater complex in the region and plays an important ecological role (Cowan, 2001). The Eastern Goldfields subregion hosts a diversity of fauna species; most of which are widespread and can also be found in other subregions. Key threats to fauna within the subregion include grazing, changed fire regimes, feral predators and habitat clearing, mining and fragmentation (Cowan, 2001).

2.2 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 Bureau of Meteorology (BoM) weather station at Kalgoorlie-Boulder Airport (station 12038); located 8.8 km north of the Survey Area provides long-term climatic data relevant to the Survey Area. Kalgoorlie-Boulder Airport receives an average annual rainfall of 264.9 mm, with a bimodal rainfall pattern with peak falls in summer (February) and winter (June) (Figure 2.1). 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.



Source: (BoM, 2021) weather station 12038

Figure 2.1: Climate data for Kalgoorlie-Boulder Airport

2.3 Land Systems

The Department of Agriculture (now the Department of Primary Industries and Regional Development [DPIRD]) has conducted 14 rangeland surveys since 1972. These inventory and condition surveys used an integrated survey method involving the land system approach to rangeland description and evaluation. The primary objective of the surveys was to provide comprehensive descriptions and mapping of the biophysical resources of the region, as well as an evaluation of the condition of soils and vegetation. The mapping was based on patterns in topography, soils and vegetation.

The patchwork of differing soil/rangeland mapping styles, combined with the general lack of clear patterns of geological differentiation and subdued terrain, made identification of soil-landscape zones in the Kalgoorlie Province difficult and mapping requires review (Tille, 2006). Based on this mapping, the Survey Area occurs across three soil-land systems (Table 2.1, Figure 2.2). The western side of the smelter Survey Area consisting mostly of valley plains with instances of outcropping (Mx43 land system) and the eastern side consisting of rocky ranges and hills (BB5 land system) (Figure 2.2). The pipeline corridor is located exclusively within Mx43 land system, with the road corridor intersecting both BB5 and Mx43 systems plus additionally passing through SV15 land system characterised by salt lake and saltpan systems.

All land systems identified in the Survey Area extend well outside the Survey Area.

Table 2.1: Land systems occurring within the Survey Area

Land System	Type	Description	Extent in Survey Area	
			Area (ha)	%
BB5	Hillcrest/hillslope	Rocky ranges and hills of greenstones-basic igneous rocks	423.0	59
Mx43	Stony plains/sand plains	Gently undulating valley plains and pediments; some outcrop of basic rock	263.4	37
SV15	Salt lakes and marshes	Salt lakes and their associated areas	30.6	4
Total			717	100

2.4 Soil and Landscape

The Survey Area falls within the Kalgoorlie Province, 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). Atlas of Australian Soils was compiled by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in the 1960s to provide a consistent national description of Australia's soils (CSIRO, 1992; Northcote *et al.*, 1960-1968). It comprises a series of ten maps published at a scale of 1:2,000,000 (with contributing data being mapped at scales from 1:250,000 to 1:500,000), along with explanatory notes. Based on this mapping, the Survey Area occurs across three soil-landscape units closely associated with the corresponding land system mapping (Table 2.2; Figure 2.3). The smelter Survey Area is predominantly characterised by shallow soils of soil unit BB5, with the eastern portion consisting of low nutrient soils (soil unit Mx43) (Figure 2.3). The pipeline corridor intersects both BB5 and Mx43 soil units, while the road corridor to the west intersects all three soil units.

Table 2.2 Soil-landscape units occurring within the Survey Area

Unit code	Description ¹	Extent in Survey Area	
		ha	%
BB5	Soils with predominantly physical limitations; shallow soils.	537.7	75
Mx43	Soils with predominantly chemical limitations; soils naturally low in nutrients	160.3	22
SV15	Soils with predominantly chemical limitations; saline soils	19.0	3
Total		717	100

¹Source: CSIRO (1992). Supporting soil code information is available in McKenzie and Hook (1992) and McKenzie *et al.* (2000).

2.5 Geology

The Survey Area is located within the Kalgoorlie Province (soil-landscape mapping zone), on the eastern portion of the Archaean Yilgarn Craton. Basement rocks are a mix of granite, gneiss and greenstone (Tille, 2006). Even-grained porphyritic granitic rocks (intruded by quartz veins and dolerite dykes) are most common across the north as well as the western half and north-east of the Province

(Tille, 2006). The patchwork of differing soil/rangeland mapping styles, combined with the general lack of clear patterns of geological differentiation and subdued terrain, made identification of soil-landscape zones in the Kalgoorlie Province difficult. The mapping of this province requires review (Tille, 2006). The Survey Area lies on the border of the Kambalda and Norseman soil-landscape zones and can be described as containing undulating plains and uplands (with some sandplains and salt lakes) on granitic rocks of the Yilgarn Craton, with calcareous loamy earths, yellow sandy and loamy earths, red loamy earths, red deep sands and salt lake soils (Tille, 2006).

With respect to regolith geology, the Survey Area contains seven geological units with almost half (46.6%) being described as Sheetwash unit characterised by clay, silt and sand in extensive fans with local ferruginous gravels (Table 2.3; Figure 2.4). The Colluvial unit is the next most prevalent unit at 22.5%, with a similar area of Exposed Bedrock unit at around 18.2% (Table 2.3).

Table 2.3: Geological units occurring within the Survey Area

Unit code	Unit name	Description	Extent in Survey Area	
			ha	%
_W-YPP	Sheetwash unit, YPP	Clay, silt, and sand in extensive fans; local ferruginous gravel	334.45	46.64
_C-YPP	Colluvial unit, YPP	Colluvium derived from different rock types; includes gravel, sand, and silt	161.79	22.56
_X-YPP	Exposed unit, YPP	Exposed bedrock	130.29	18.17
_Lm-YPP	Lacustrine unit, YPP	Mixed dunes, evaporite, and alluvial deposits; typically adjacent to playa lakes	57.02	7.95
_Rr-f-YPP	Residual or relict unit, YPP	Ferruginous duricrust, massive to rubbly; includes iron-cemented reworked products	21.49	3
_A-YPP	Alluvial/fluviial unit, YPP	Clay, silt, sand, and gravel in channels and on floodplains	10.72	1.49
_Lp-YPP	Lacustrine unit, YPP	Saline and gypsiferous evaporite deposits, clay, silt, and sand in playa lakes	1.26	0.18
Total			717.03	100

Source: GSWA (2016)

2.6 Hydrology and Surface Drainage

The Survey Area does not contain major rivers or watercourses and is likely to only contain surface water for temporary periods of time following substantial rainfall events. Two minor non-perennial watercourses intersect the eastern boundary of the Survey Area. Surface drainage flows away from the site toward salt lakes situated on both the east and western flanks of the Survey Area (Figure 2.5).

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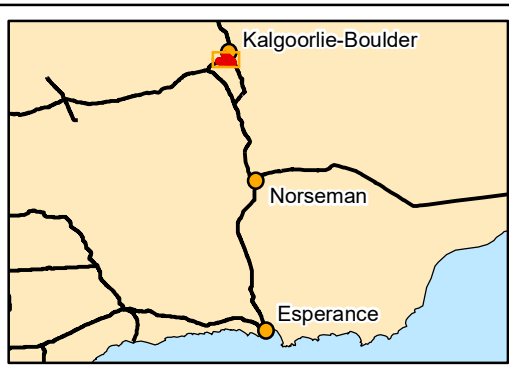


Legend

Survey Area		Land System	
	Smelter Survey Area		BB5
	Pipeline Corridor		Graves System
	Road Corridor		Gumland System
			Lefroy System
			Moriarty System
			Mx43
			SV15

Scale: 1:80,000

Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



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Fauna Survey

Figure 2.2: Land systems
of the Survey Area

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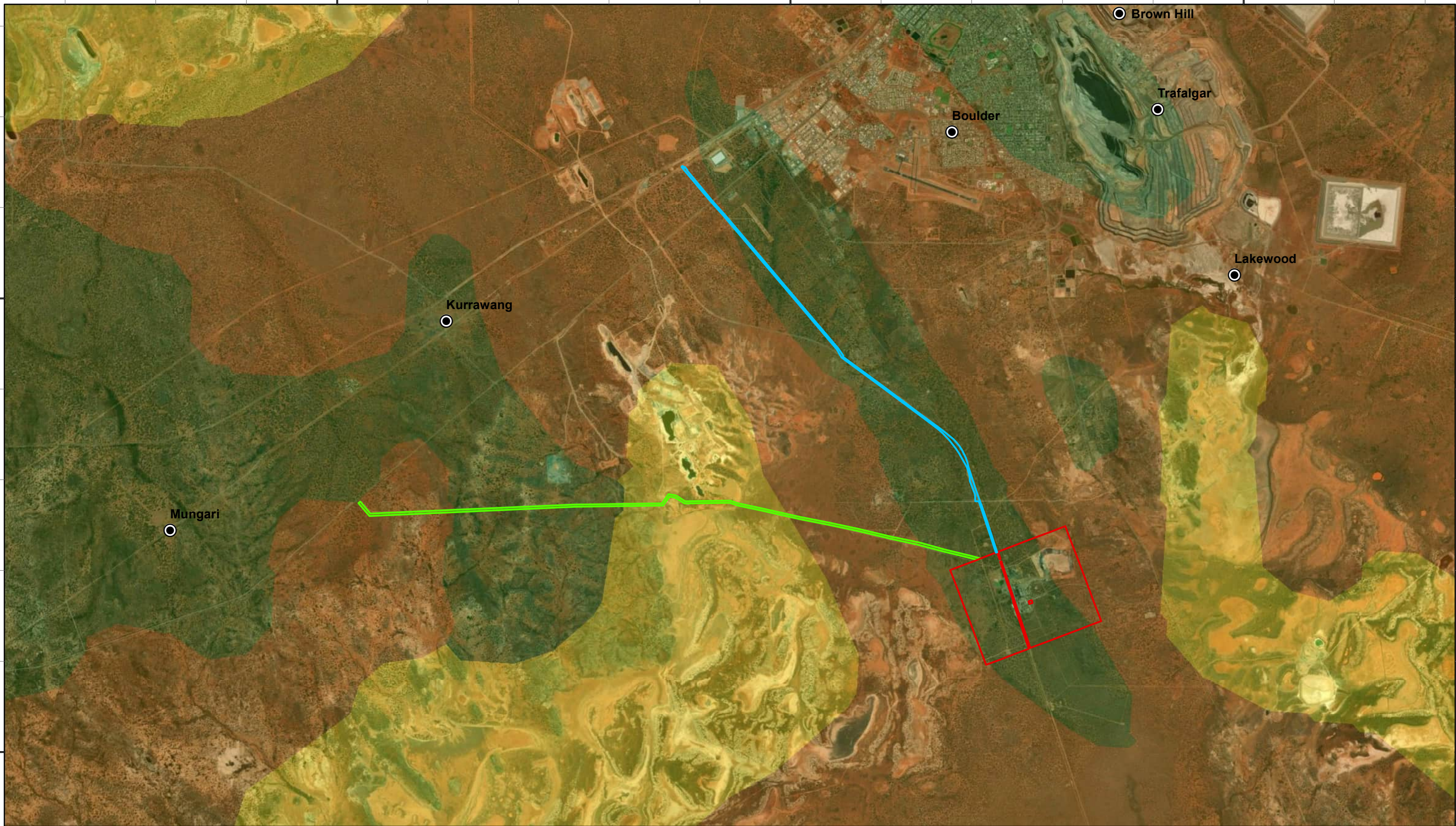
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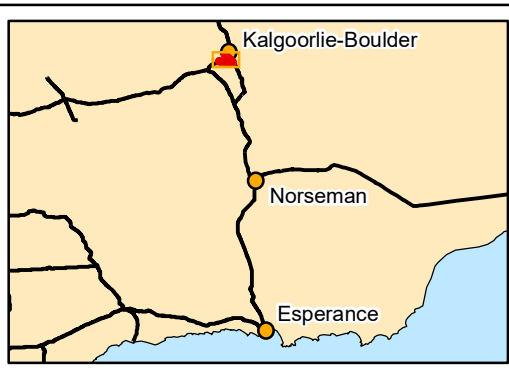


Legend

Survey Area	Soil Unit
Smelter Survey Area	BB5
Pipeline Corridor	Mx43
Road Corridor	SV15

Scale: 1:80,000

Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



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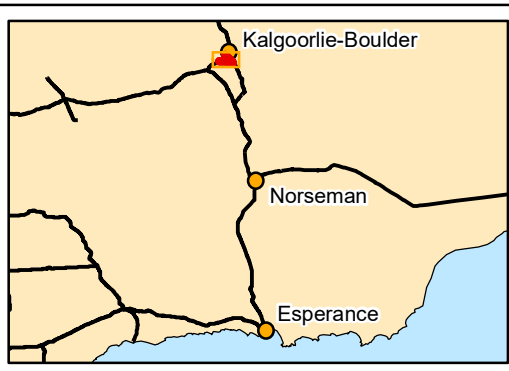
Figure 2.3: Soils of the
Survey Area



Legend		
Survey Area		
	Smelter Survey Area	
	Pipeline Corridor	
	Road Corridor	
Regolith Geology		
	A-YPP; Alluvial/fluvial unit	
	C-YPP; Colluvial unit	
	Lm-YPP; Lacustrine unit	
	Lp-YPP; Lacustrine unit	

Scale: 1:80,000

Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



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Figure 2.4: Broad geology
of the Survey Area

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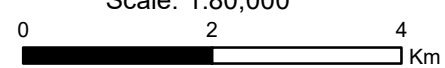
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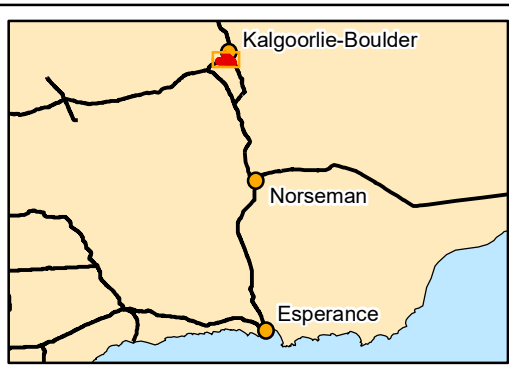
Survey Area

- Smelter Survey Area
- Pipeline Corridor
- Road Corridor

Surface Hydrology

- Lake/ Wetland
- Minor


 Scale: 1:80,000

 Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



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Figure 2.5: Hydrology
of the Survey Area

2.7 Vegetation System Associations

Located in the Coolgardie Botanical District, in the South Western Interzone Botanical Province, the Survey Area is characterised by eucalypt woodlands, becoming open and with saltbush-bluebush understorey on the more calcareous soils (Beard, 1990). Beard (1990) broadly mapped the vegetation of Western Australia in terms of vegetation associations, including the Survey Area, and Shepherd *et al.* (2002) reinterpreted and updated the mapping to reflect the National Vegetation Information System (NVIS Technical Working Group) standards and to take into account extensive clearing that had occurred since (ESCAVI, 2003).

Based on updated mapping by Shepherd *et al.* (2002), the Survey Area occurs across five vegetation system associations (Table 2.4, Figure 2.6). Coolgardie 9 described as medium woodland: coral gum (*Eucalyptus torquata*) and Goldfields blackbutt (*E. lesouefii*) occurs predominantly in the smelter Survey Area and in the corridor Survey Area (Figure 2.6). Coolgardie 1294 (medium woodland: coral gum) represents a large strip of the eastern portion of the smelter Survey Area and is also present in the targeted Survey Area. This association is well represented in the Coolgardie bioregion (Figure 2.6). Vegetation association Coolgardie 936 is mapped as occurring in the south-western corner of the smelter Survey Area and is characterised by medium woodland comprising salmon gum (Shepherd *et al.*, 2002). The portion of this association within the Survey Area is located at the north-eastern extent of the association within the greater area (Figure 2.6). The remaining two associations Coolgardie 123 (succulent steppe with open low woodland: sheoak over saltbush and bluebush) and Coolgardie 125 (bare areas: salt lakes) are represented in small areas within Survey Area. The latter two associations, while minimally represented within the Survey Area, are proportionately represented in the broader area (Figure 2.6). Clearing of these vegetation system associations has been minimal, with greater than 95 % of the original vegetation remaining at the time of mapping (Government of Western Australia, 2018) (Table 2.4). While the vegetation is largely intact, the level of protection offered to these vegetation system associations is low, with Coolgardie 9 and Coolgardie 1294 having less than 2 % of its extent located within the State Reserve System at state, regional and subregional levels (Government of Western Australia, 2018) (Table 2.4).

Table 2.4: Regional and local extent of vegetation system associations within the Survey Area

Code	Description	Extent in Survey Area (ha /%)	Scale	Pre-European extent (ha)	Current extent (ha /% of Pre-European extent)	Current extent remaining in reserves (ha /%)
Coolgardie 9	Medium woodland; coral gum (<i>Eucalyptus torquata</i>) and goldfields blackbutt (<i>E. lesouefii</i>)	512.5 / 71.5	State	98,770	95,687 / 96.9	521 / 0.5
			Bioregion	98,770	95,687 / 96.9	521 / 0.5
			Subregion	98,770	95,687 / 96.9	521 / 0.5
			LGA	26,268	25,038 / 95.3	0 / 0
Coolgardie 1294	Medium woodland; coral gum (<i>E. torquata</i>)	125.5 / 17.5	State	6,296	6047 / 96.1	114.8 / 1.9
			Bioregion	6,296	6047 / 96.1	114.8 / 1.9
			Subregion	6,296	6047 / 96.1	114.8 / 1.9
			LGA	2,910	2,669 / 91.7	0 / 0
Coolgardie 936	Medium woodland: salmon gum (<i>E. salmonophloia</i>)	42.2 / 5.9	State	57,830	57,459 / 99.4	0 / 0
			Bioregion	57,830	57,459 / 99.4	0 / 0
			Subregion	57,551	57,179 / 99.4	0 / 0
			LGA	2,173	2,173 / 100	0 / 0
Coolgardie 123	Succulent steppe with open low woodland; sheoak over saltbush and bluebush	36.2 / 5.0	State	9,090	8,902 / 97.9	0 / 0
			Bioregion	9,090	8,902 / 97.9	0 / 0
			Subregion	9,090	8,902 / 97.9	0 / 0
			LGA	3,082	2,893 / 95.3	0 / 0
Coolgardie 125	Salt lake, lagoon, clay pan	0.6 / 0.1	State	13,429	13,261 / 98.8	0 / 0
			Bioregion	13,391	13,223 / 98.8	0 / 0
			Subregion	13,391	13,223 / 98.8	0 / 0
			LGA	8,828	8,702 / 98.6	0 / 0
Total		717 / 100				

NB: Bioregion: Coolgardie, Subregion: Eastern Goldfields, Local Government Authority: City of Kalgoorlie-Boulder

NB: Values have been rounded to two decimal places for hectares and to one decimal place for percentages.

Reserves – International Union of Nature Conservation (IUCN) Class I-IV reserves (i.e. National Parks, Strict Nature Reserves)

Source: Government of Western Australia (2018)

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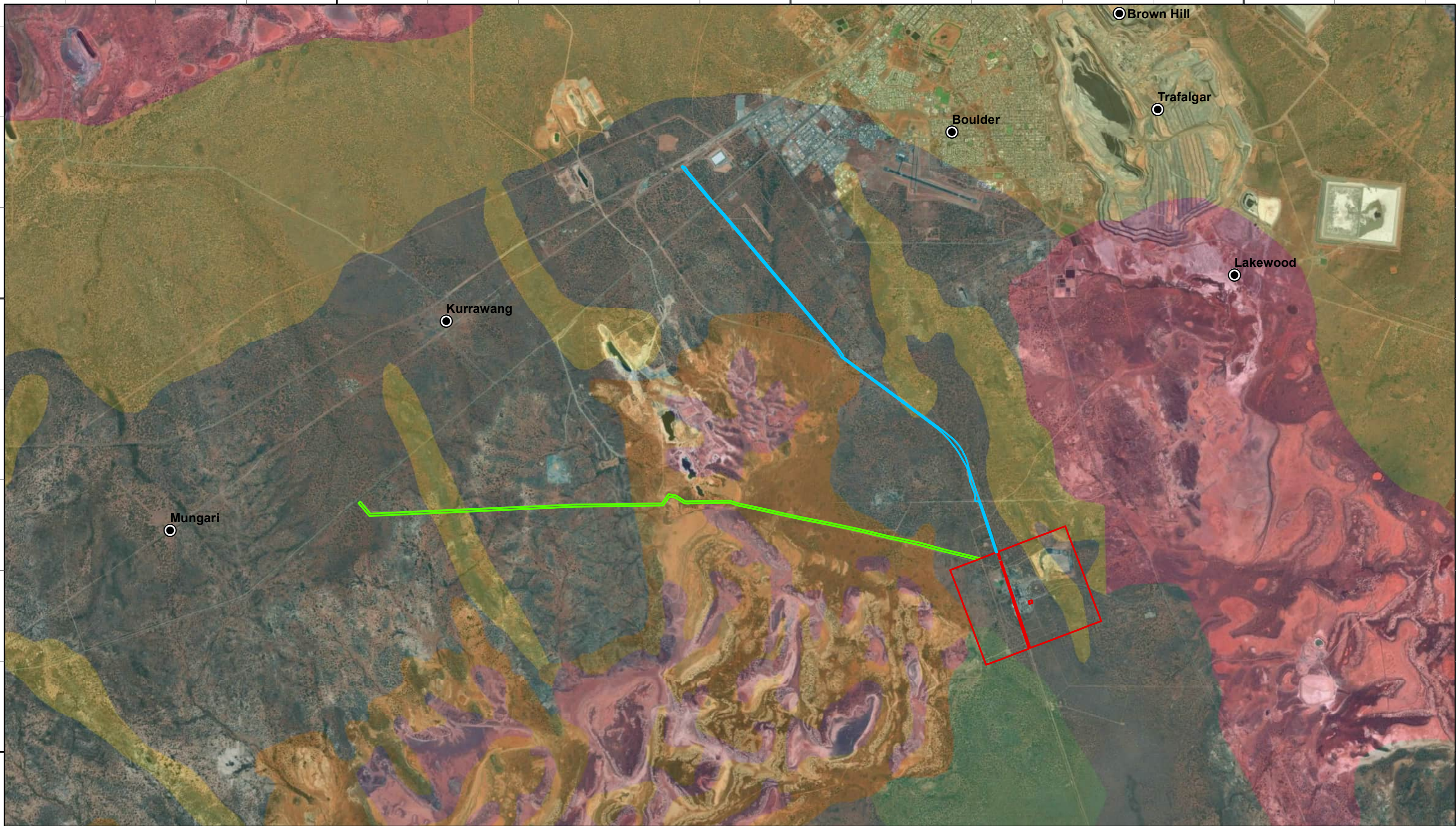
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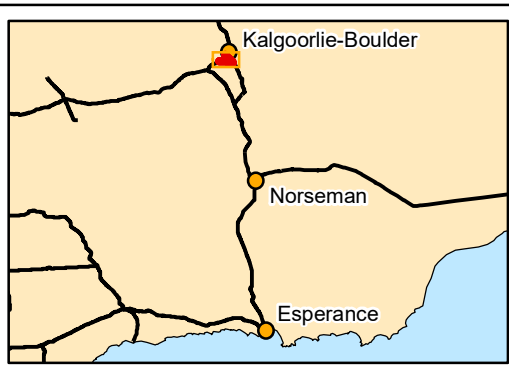
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Survey Area	Pre-European Vegetation	COOLGARDIE_1294	COOLGARDIE_9
Smelter Survey Area	BARLEE_20	COOLGARDIE_468	COOLGARDIE_936
Pipeline Corridor	COOLGARDIE_123	COOLGARDIE_540	RANDELL_468
Road Corridor	COOLGARDIE_125		

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Environmental Survey

Scale: 1:80,000

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 06/12/2021



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Figure 2.6: Pre-European
vegetation of the Survey
Area

3 DESKTOP ASSESSMENT

3.1 Methods

A desktop assessment comprising database searches and a literature review was undertaken prior to the field survey. The purpose of the desktop assessment was to compile a list of terrestrial vertebrate fauna and terrestrial vascular flora species potentially occurring in the Survey Area. Eight database searches were conducted (Table 3.1). Thirteen reports (four fauna and nine flora) which document the results of previous surveys conducted in the vicinity of the Survey Area were used in the literature review (Table 3.2). These references were sourced from a search of the Index of Biodiversity Surveys for Assessments (IBSA) online portal (provided by the Department of Water and Environmental Regulation), or the EPA website for project assessments. Additional reports were provided to Biologic from BHP NiW.

Table 3.1: Details of database searches conducted

Database	Source	Information	Search parameters
Birddata Online Species Search	BirdLife Australia (BirdLife Australia, 2021)	List of bird species known to occur	Survey Area with a 40 km buffer
Threatened Fauna Database	Department of Biodiversity, Conservation and Attractions (DBCA, 2021c)	Previous records of vertebrate fauna species of conservation significance	Survey Area with an 80 km buffer
NatureMap	Department of Biodiversity, Conservation and Attractions (DBCA, 2021a)	List of vertebrate, invertebrate fauna and vascular flora species known to occur	Survey Area with a 40 km buffer
Protected Matters Database Search Tool	Department of Agriculture, Water and the Environment (DAWE, 2021)	List of Matters of Environmental Significance (MNES) known or likely to occur – vascular flora, vertebrate fauna, ecological communities, weeds	Survey Area with a 40 km buffer
Threatened and Priority Ecological Communities Database	Department of Biodiversity, Conservation and Attractions (DBCA, 2021b)	Known records of ecological communities of conservation significance (TECs/ PECs)	Survey Area with a 50 km buffer
Threatened and Priority Flora Database	Department of Biodiversity, Conservation and Attractions (DBCA, 2021d)	Previous records of flora species of conservation significance	Survey Area with an 80 km buffer
Atlas of Living Australia	Atlas of Living Australia ALA (2021)	List of vascular flora species records from a variety of sources (including citizen science)	Survey Area with a 40 km buffer
Declared Pests Database – Western Australian Organism List (WAOL).	Department of Primary Industries and Regional Development (DPIRD, 2021c)	Introduced flora listed under section 22 of the BAM Act	Search of the entire City of Kalgoorlie-Boulder LGA

Table 3.2: Previous surveys considered in the literature review

Survey	Type ¹	Distance from Survey Area (km)
Fauna		
Biological Assessment - Binduli Expansion Project. Level 1 Vertebrate fauna and short range endemic invertebrate fauna survey (Eco Logical, 2016)	Level 1 fauna assessment and targeted malleefowl survey	Overlaps Survey Area
The biological survey of the eastern goldfields of Western Australia. Part 8: Kurnalpi - Kalgoorlie study area, Records of the Western Australian Museum, Supplement 41 (McKenzie <i>et al.</i> , 1992)	Level 2 vertebrate survey of Eastern Goldfields Region	Overlaps Survey Area
Comparisons of ground vertebrate assemblages in arid Western Australia in different seasons and decades (Cowan & How, 2004)	Level 2 vertebrate fauna survey. Several surveys to compare faunal assemblages with a 20 year gap.	50-80 km north
Detailed and Targeted Fauna Survey By-product Storage Site (Onshore, 2021)	Level 2 vertebrate fauna survey	15.0 km north
Flora		
Flora and vegetation survey of the Furnace Rebuild Project Area (Mattiske, 2008)	Level 1 flora and vegetation survey	Covers smelter Survey Area
Reconnaissance flora and vegetation survey of Lot 500 Great Eastern Highway Kalgoorlie (Native Vegetation Solutions, 2018)	Reconnaissance flora and vegetation survey	Adjacent
Reconnaissance flora and vegetation survey for the Mt Marion Project Area (Native Vegetation Solutions, 2019a)	Reconnaissance flora and vegetation survey	14.0 km south-southwest
Joint Venture Operation in the Bulong area: Level 1 vegetation, flora and fauna assessment (GHD, 2015)	Level 1 flora, vegetation and fauna survey	17.0 km east
Flora and vegetation survey for Mungari Gold Operations Cutters Ridge Project (Phoenix, 2019)	Two phase detailed flora and vegetation survey	27.5 km north-northwest
Evolution Mining targeted flora search <i>Calandrinia lefroyensis/quartzitica</i> (Spectrum, 2019)	Targeted flora survey	31 km northwest
Coolgardie landfill: flora, vegetation and fauna habitat assessment (Strategen Environmental, 2019)	Detailed flora and vegetation survey, and fauna habitat assessment	33.5 km west-southwest
Reconnaissance flora and vegetation survey of the Spargos Project (Native Vegetation Solutions, 2020)	Reconnaissance flora and vegetation survey	37 km south
Reconnaissance flora and vegetation survey of the Racetrack, Royal Standard and Golden Funnel Projects (Native Vegetation Solutions, 2019b)	Reconnaissance flora and vegetation survey	37.5 km northwest

¹A detailed review of these studies, including description of survey effort, is provided in Appendix B.

3.2 Results

3.2.1 Vertebrate Fauna

The desktop assessment identified 297 vertebrate fauna species that have previously been recorded within the vicinity of the Survey Area or have a distribution that potentially extends over the Survey Area. This list comprised 172 birds, 38 mammals (10 introduced), 81 reptiles and six amphibians (Table 3.3, Figure 3.1, Appendix D). Twenty-three of these species are of conservation significance comprising 19 birds, three mammals and one reptile (Table 3.4; Appendix D). One of the conservation significant mammals recorded in the desktop (*Myrmecobius fasciatus*, numbat) is an historical record that no longer represents the species natural distribution. While it is included in the desktop search results section (including within figures and tables for the desktop search results) this species will not be considered further within this report. No species of conservation significance have previously been recorded within the Survey Area.

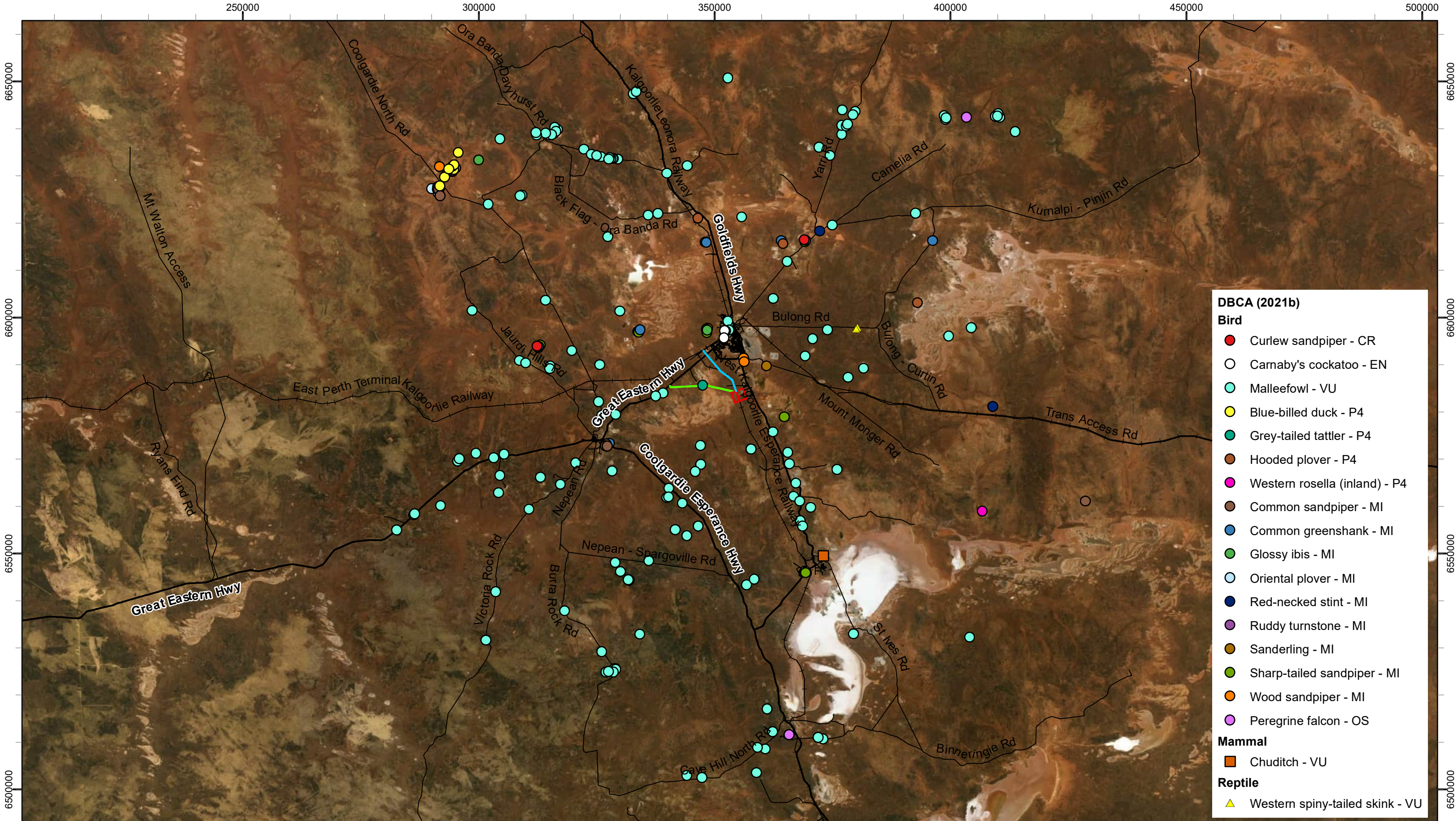
It is important to note the number of species identified during the desktop assessment is likely to be an overestimation of the number of species potentially occurring in the Survey Area. This is because database searches and previous studies were conducted in areas that contained habitats that are not represented in the Survey Area.

Table 3.3: Vertebrate fauna species richness desktop assessment

Source	Mammals	Mammals (introduced)	Birds	Birds (introduced)	Reptiles	Amphibians	Total
Literature review							
Eco Logical (2016)	3	3	41	0	12	1	60
McKenzie <i>et al.</i> (1992)	13	2	55	0	37	3	110
Cowan and How (2004)	6	1	0	0	43	1	51
Onshore (2021)	7	3	46	0	16	0	72
Database searches							
DBCA Threatened Fauna (DBCA, 2021c)	1	0	12	0	1	0	14
NatureMap (DBCA, 2021a)	24	5	131	3	75	6	244
Protected Matters (DAWE, 2021)	2	7	14	3	1	0	27
Birdata (BirdLife Australia, 2021)	0	0	148	3	0	0	151
Total number of species	28	10	169	3	81	6	297
Total number of species of conservation significance	3	0	19	0	1	0	23

Table 3.4: Conservation significant vertebrate fauna desktop assessment

Species Name	Common Name	Conservation Status		
		EPBC Act	BC Act	DBCA
Mammals				
<i>Dasyurus geoffroii fortis</i>	Chuditch	VU	VU	
<i>Myrmecobius fasciatus</i>	Numbat	EN	EN	
<i>Macrotis lagotis</i>	Greater bilby	VU	VU	
Birds				
<i>Apus pacificus</i>	Fork-tailed swift	MI	MI	
<i>Calyptorhynchus latirostris</i>	Carnaby's cockatoo	EN	EN	
<i>Thinornis cucullatus</i>	Hooded plover			P4
<i>Falco hypoleucos</i>	Grey falcon	VU	VU	
<i>Falco peregrinus</i>	Peregrine falcon		OS	
<i>Leipoa ocellata</i>	Malleefowl	VU	VU	
<i>Motacilla cinerea</i>	Grey wagtail	MI	MI	
<i>Pezoporus occidentalis</i>	Night parrot	EN	CR	
<i>Polytelis alexandrae</i>	Princess parrot	VU		P4
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	MI	MI	
<i>Calidris alba</i>	Sanderling	MI	MI	
<i>Calidris ferruginea</i>	Curlew sandpiper	CR/MI	CR/MI	
<i>Calidris melanotos</i>	Pectoral sandpiper	MI	MI	
<i>Calidris ruficollis</i>	Red-necked stint	MI	MI	
<i>Tringa brevipes</i>	Grey-tailed tattler	MI	MI	P4
<i>Tringa glareola</i>	Wood sandpiper	MI	MI	
<i>Actitis hypoleucos</i>	Common sandpiper	MI	MI	
<i>Tringa nebularia</i>	Common greenshank	MI	MI	
<i>Plegadis falcinellus</i>	Glossy ibis	MI	MI	
Reptiles				
<i>Egernia stokesii badia</i>	Western spiny-tailed skink	EN	VU	



Legend

Survey Area

- Smelter Survey Area
- Pipeline Corridor
- Road Corridor

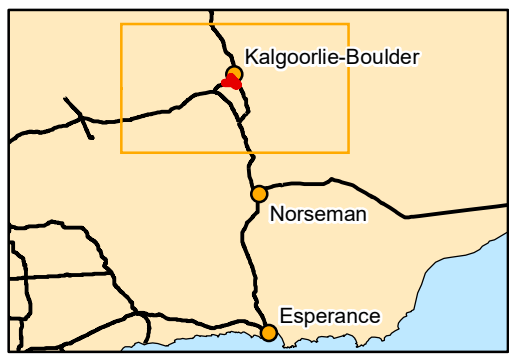
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Scale: 1:750,000

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Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



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Figure 3.1: Conservation
significant fauna desktop
assessment results

3.2.2 Flora and Vegetation

A total of 1222 vascular flora species from 92 families and 398 genera were identified during the desktop assessment (Appendix E).

Ninety-six flora of conservation significance were identified during the desktop assessment. These taxa were assessed and ranked on the likelihood of occurring within the Survey Area. The rankings were assigned using the following definitions presented in Table 3.5.

Table 3.5: Flora likelihood of occurrence decision matrix

Occurrence categories	Habitat categories (within the Survey Area)			
	Core/ critical habitat present	Suitable habitat present/ known distribution	Marginal habitat present/ adjacent to known distribution	No suitable habitat present/ outside of known distribution
Recorded in the Survey Area	Confirmed	Confirmed	Confirmed	Confirmed
Recorded within <5 km	Highly Likely	Likely	Possible	Possible
Recorded within 5-15 km	Likely	Possible	Possible	Unlikely
Recorded within 15 -50 km	Possible	Possible	Unlikely	Unlikely
Recorded >50 km	Possible	Unlikely	Unlikely	Highly Unlikely
Species considered locally/ regionally extinct	Unlikely	Unlikely	Highly Unlikely	Highly Unlikely

Of the 96 taxa, four are Threatened, 31 are Priority one, 15 are Priority two, 38 are Priority three and eight are Priority four (Appendix F). The pre-survey likelihood of occurrence determined two taxa as Highly Likely to occur, three as Likely, and 11 as Possible (Appendix F; Table 3.6). The remaining 80 taxa were considered either Unlikely (40) or Highly Unlikely (40) to occur. Seven species were from unverified ALA records with known distributions of up to 750 km from the Survey Area and were thus considered Highly Unlikely to occur.

Four conservation significant flora were not identified by any of the database searches but were found in previous reports and have subsequently been included in the total of 96. One of these, *Seringia exastia* (T), was found by Native Vegetation Solutions (2020) approximately 37 km south of the Survey Area. A recent revision of the *Seringia* genus found that *Seringia exastia* (T) and *Seringia elliptica* are the same species, with the latter consequently being subsumed into *S. exastia* (Binks *et al.*, 2020). *Seringia exastia* (T), a species previously only known to occur in the Kimberley, now has a much more widespread distribution (primarily in the Pilbara and mid-West). A nomination to delist the species has

been made to the WA Threatened Species Scientific Committee and is expected to be authorised; however until the change is officially made, *Seringia exastia* is still listed as Threatened.

Table 3.6: Conservation significant flora taxa likelihood (Highly Likely, Likely, Possible)

Taxon	Conservation Status			Habit and Habitat	Distance to nearest record	Likelihood of Occurrence
	DBCA	BC Act	EPBC Act			
<i>Eremophila praecox</i>	P2			Broom-like shrub, 1.5-3 m high. Fl. purple, Oct or Dec. Red/brown sandy loam. Undulating plains.	1.2 km NE	Highly Likely
<i>Alyxia tetanifolia</i>	P3			Erect, rigid, pungent shrub, 1-2 m high, to 2.5 m wide. Fl. white-cream, May to Jun or Nov. Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.	1.6 km N	Highly Likely
<i>Notisia intonsa</i>	P3			Prostrate, clumping annual herb, to 0.1 m high. Fl. grey-pink-brown, Sept-Nov. Red clay, ironstone/quartz gravel, cracking clay. Floodplains, slopes, salt lakes.	1.2 km S	Likely
<i>Isolepis australiensis</i>	P3			Annual, grass-like or herb (sedge), 0.03-0.055 m high. Fl. Jun or Sep. Silty sand, sandy clay. Lake margins, pools.	1.6 km WSW	Likely
<i>Eucalyptus jutsonii</i> subsp. <i>jutsonii</i>	P4			(Mallee), 4-7 m high, bark rough over most stems, grey to light grey-brown. Red to pale orange deep sands. Undulating areas and on dunes.	1.5 km W	Likely
<i>Gastrolobium graniticum</i>	T	VU	EN	Erect, open shrub, to 2.5 m high. Fl. Yellow & orange & red, Aug to Sep. Sand, sandy loam, granite. Margins of rock outcrops, along drainage lines.	19.7 km SW	Possible
<i>Acacia websteri</i>	P1			Shrub, 1.2-5 m high, bark fibrous. Fl. Yellow, Jan, June. Red sand, clay or loam. Low-lying areas, flats.	19.7 km SW	Possible
<i>Goodenia salina</i>	P2			Annual, herb, 0.02-0.2 m high. Well-drained, saline, grey or brown loamy clay. Low gypseous dunes near salt pans.	1.6 km WSW	Possible
<i>Elachanthus pusillus</i>	P2			Ascending or decumbent annual, herb, to 0.15 m high. Fl. yellow-green, Aug to Oct.	8.2 km NE	Possible
<i>Lepidium merrallii</i>	P2			Erect to spreading annual (possibly ephemeral), herb, 0.03-0.15 m high. Clay loam.	19.7 km SW	Possible
<i>Lepidium fasciculatum</i>	P3			Erect annual, herb, (0.1-)0.3-0.6 m high.	7.8 km NE	Possible
<i>Cyathostemon verrucosus</i>	P3			Low spreading shrub, to 0.4 m tall. Fl. White, Mar-Apr, Sept-Dec. Yellow sand. Sandplain, flat or undulating.	10.3 km NNE	Possible

Taxon	Conservation Status			Habit and Habitat	Distance to nearest record	Likelihood of Occurrence
	DBCA	BC Act	EPBC Act			
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P3			Perennial tussock grass up to 0.4 m tall. Fl. Sept-Nov. Cracking clay, red rocky loam, sandy clay. Slopes and claypans.	11.7 km SE	Possible
<i>Chrysocephalum apiculatum</i> subsp. <i>norsemanense</i>	P3			Upright, spreading, herbaceous annual, to 0.4 m high. Fl. Yellow, Aug-Oct. Loamy sand. Gentle undulating plain, granite hills, sandplain.	19.1 km SW	Possible
<i>Alyogyne</i> sp. Great Victoria Desert (D.J. Edinger 6212)	P3			Erect shrub, 0.3-2 m high. Fl. pink/purple, Aug to Dec. Red/orange loamy sand. Flats and sandplains.	19.7 km SW	Possible
<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	P4			Spreading or sprawling shrub, to 0.35 m high, to 0.8 m wide. Fl. blue-purple, Oct to Dec. Sand, clay or loam. Undulating plains.	11.1 km WSW	Possible

One PEC, 'Emu Land System', was identified by the desktop assessment as occurring approximately 40 km to the north-east of the Survey Area (Figure 3.3). This PEC is listed as a Priority 3 community and consists of fresh or brackish ephemeral lakes and swamps with cane grass, lignum and paperbark shrublands (DBCA, 2017). The Emu Land System does not occur within the Survey Area according to soil landscape mapping for the rangelands (DPIRD, 2021a, 2021b).

The NatureMap (DBCA, 2021a), Protected Matters (DAWE, 2021), ALA (ALA, 2021) and the Western Australian Organism List (WAOL) (DPIRD, 2021c) database searches identified a list of 158 introduced taxa that may potentially occur within the Survey Area (Appendix G). The list of introduced taxa known to occur or potentially occur within the Survey Area was reviewed to identify Weeds of National Significance (WoNS) and Declared Pests (DPs).

Of the list of introduced taxa identified during the desktop assessment, 18 are listed as WoNS (Appendix G). Seventeen of the 18 WoNS were identified from the WAOL database search for the entire City of Kalgoorlie-Boulder and occur or may potentially occur within the City's boundaries. The remaining WoNS, **Lycium ferocissimum*, was identified from the EPBC Protected Matters Search Tool and rated as 'occur or may potentially occur' within a 40 km buffer of the Survey Area. The 18 taxa include numerous *Opuntia* species that are grouped together in the WoNS listing. The desktop assessment identified 46 DPs (including numerous cacti species that are all listed as DPs), previously recorded or potentially located within the City of Kalgoorlie-Boulder.

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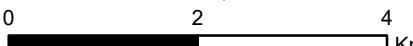
Survey Area

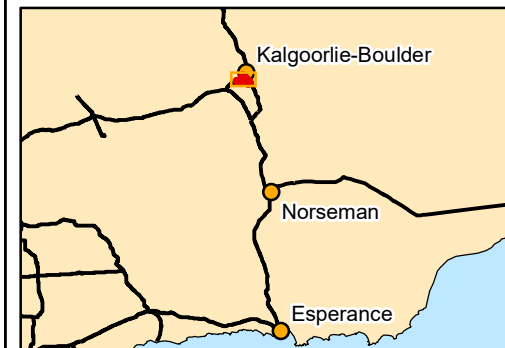
- Smelter Survey Area
- Pipeline Corridor
- Road Corridor

- Local Road
- State Road
- Rail

DBCA (2021b)

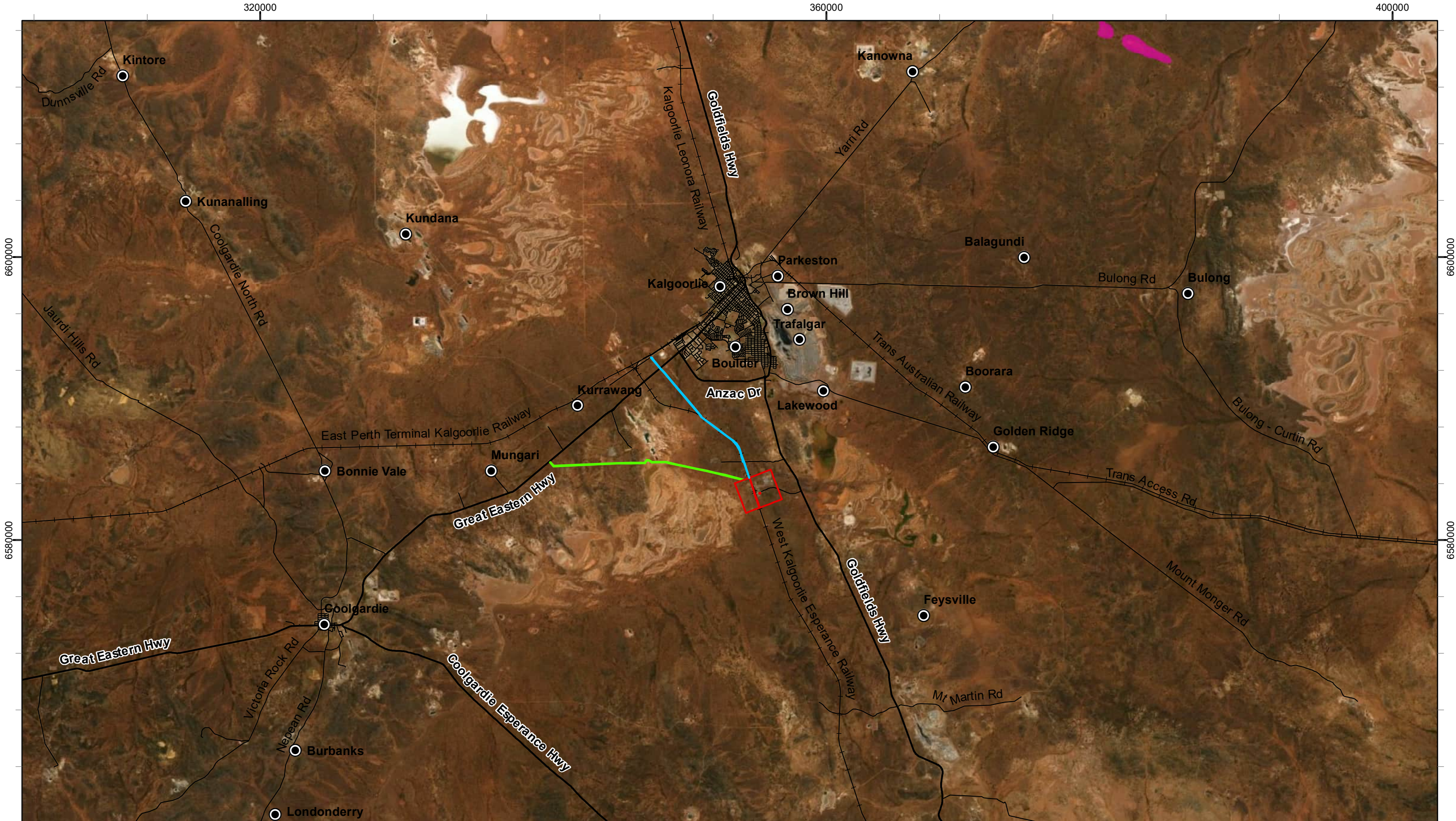
- P1** ● *Ptilotus procumbens*
- P2** ■ *Eremophila praecox*
- P3** ■ *Goodenia salina*
- ▲ *Alyxia tetanifolia*
- ▲ *Isolepis australiensis*
- ▲ *Melaleuca coccinea*
- ▲ *Notisia intonsa*
- ▲ *Xanthoparmelia dayiana*
- P4** ◆ *Eucalyptus jutsonii* subsp. *jutsonii*


 Scale: 1:80,000

 Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021


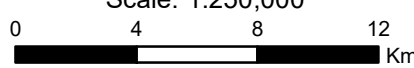


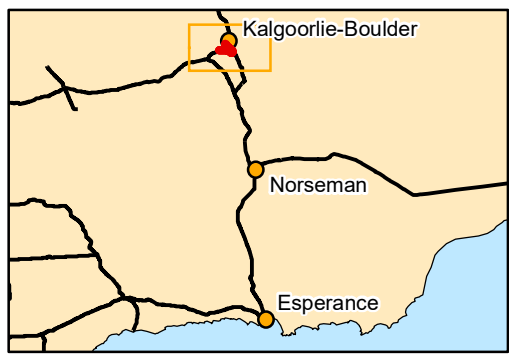
BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 3.2: Conservation
significant flora desktop
assessment results



- Legend**
- | | | |
|--|--------------|--|
| Survey Area | — Local Road | Priority Ecological Community |
| Smelter Survey Area | — State Road | Emu Land System - Priority 3 |
| Pipeline Corridor | — Rail | |
| Road Corridor | | |


 Scale: 1:250,000

 Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 06/12/2021



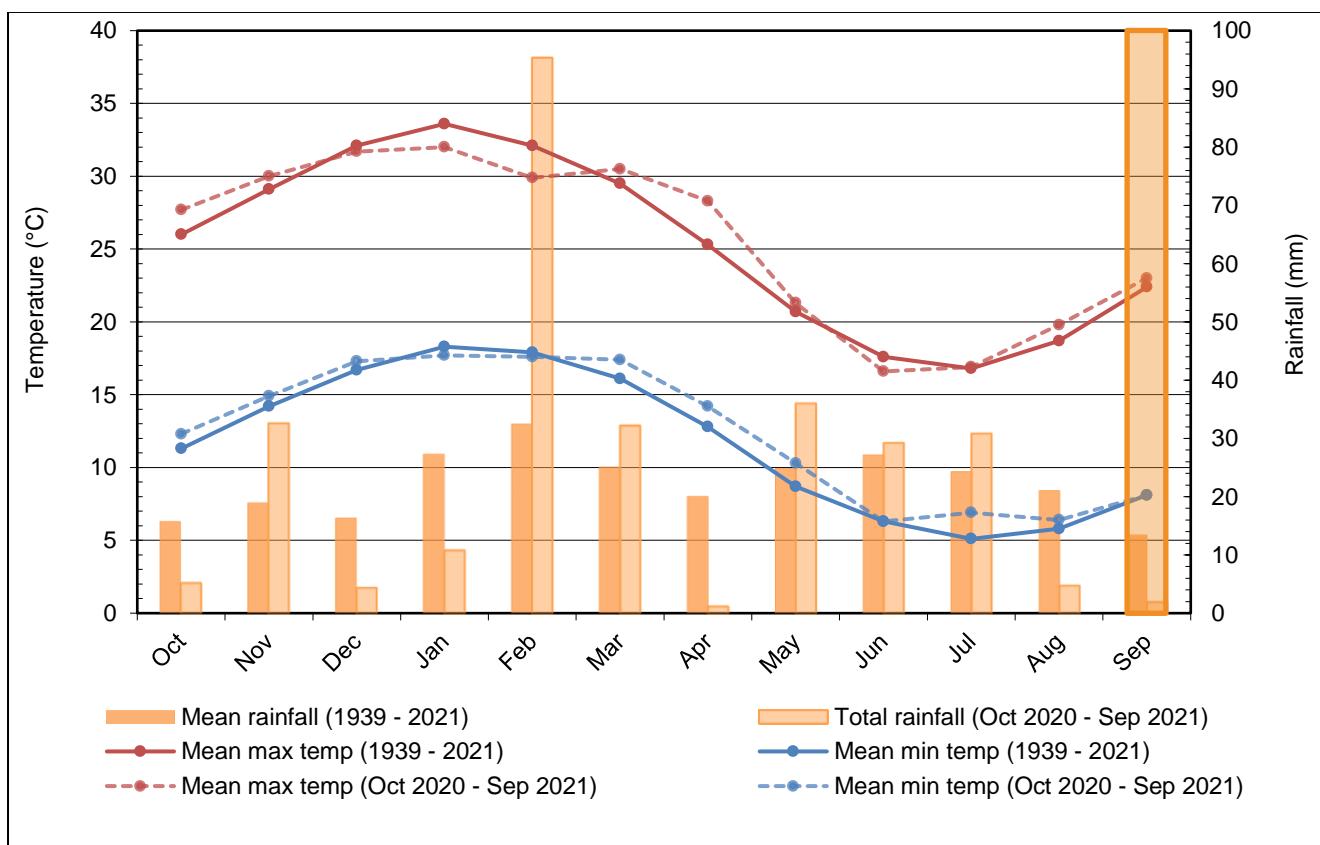
BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 3.3: Conservation significant ecological communities desktop assessment results

4 FIELD SURVEY METHODS

4.1 Survey Timing and Weather

The survey was undertaken over three days, between the 8th and 10th of September 2021. The daytime climatic conditions during the field survey (hot temperatures and clear skies; (BoM, 2021)) were adequate to complete the survey on foot. Rainfall in the 12 months preceding the field survey was variable, with some months receiving record high rainfall; for example February had 95.2 mm compared with the long-term average (LTA) of 32.4 mm, and other months receiving rainfall well below average, including the month preceding the survey (August recorded 4.8 mm compared with an LTA of 21 mm) (Figure 4.1). However, conditions within the Survey Area were favourable, with a high number of annual or short-lived perennial flora taxa present and growing at the time of the field survey. Favourable conditions experienced during the survey were likely a result of the above average rainfall received in the months prior to the survey (May - July) (Figure 4.1). The weather conditions experienced during the survey included minimum temperatures between 10-12°C and maximums between 25.6 and 31.4 °C, with no rainfall over the three days.



Source:(BoM, 2021) weather station 12038

Figure 4.1: Long-term average and pre-survey weather conditions

4.2 Survey Team

The flora and fauna field survey was managed by Sam Coultas, a senior botanist with over seven years' experience. Sam was assisted by ecologist Kaylin Geelhoed who has over 3 years' experience in fauna and flora survey throughout Western Australia. The collection of flora specimens was taken under flora collecting permit (FB62000017-2), pursuant to the BC Act (Regulation 61). Sam also holds a *Permit to Take Declared Rare Flora* for identification purposes (TFL 60-1819), issued under the BC Act, Section 40.

4.3 Vertebrate Fauna

4.3.1 Targeted Searches

The Survey Area was traversed on foot, to provide sufficient coverage and adequately assess the fauna values. Personnel actively searched while traversing the Survey Area focussing on habitat and features considered likely to support species of conservation significance (e.g. outcropping, drainage lines). All GPS tracks, sampling locations and fauna records associated with the fauna survey are displayed in (Figure 4.2, Figure 4.3). Any signs of species presence, whether via the direct observation of individuals or observations of secondary evidence (such as scats, nests, burrows, diggings, bones and carcasses), were recorded. Particular attention was given to species of conservation significance identified by the desktop assessment as potentially occurring in the Survey Area (including the night parrot, princess parrot, malleefowl and peregrine falcon). Efforts were made to search any unique microhabitats encountered, such as by searching crevices and turning rocks and logs.

4.3.2 Habitat Mapping

Habitat assessments were undertaken in the field to characterise and define habitats and their value to vertebrate fauna. These assessments were conducted to meet BHP specifications, which loosely follow methodology described in the *Australian Soil and Land Survey Field Handbook* (National Committee on Soil and Terrain, 2009), with the following habitat variables being considered:

- general site information – location, representative photo;
- landform features – landform type, aspect and inclination of slopes;
- vegetation features – floristic structure and composition, presence of leaf litter, logs, hollow-bearing trees or other habitat structures;
- substrate features – soil texture and colour, amount of bare ground, size and abundance of rocks; and
- level of disturbance – habitat condition, time since last fire, presence of weeds, grazing impacts or other human-induced disturbances.

A total of 22 habitat assessments were conducted within the Survey Area (Figure 4.2; Appendix H).

Mapping of broad fauna habitats was completed using the habitat assessments conducted during the field survey, in conjunction with high-resolution aerial imagery and previous mapping of vegetation,

topography, land systems and drainage. Habitats were delineated and mapped across the Survey Area at a scale of ~1:20,000.

4.3.3 Taxonomy and Nomenclature

The latest checklist of mammal, reptile and amphibian names published by WAM (2020) was used as a guide to the current taxonomy and nomenclature of these groups. For birds, the current checklist of Australian birds maintained by Birdlife Australia (based on Christidis & Boles, 2008) was used in conjunction with the WAM (2020) species list. While compiling a list of fauna potentially occurring in the Survey Area, all records were checked to ensure the latest taxonomy, using recent papers and lists mentioned above.

4.3.4 Likelihood of Occurrence

Species of conservation significance identified by the desktop assessment were assessed following the field survey for their post-survey likelihood of occurring within the Survey Area using a decision matrix which considers habitat suitability of the Survey Area and the proximity of previous records (Table 4.1). Based on this decision matrix, each species was assigned to one of six categories of likelihood: Confirmed, Highly Likely, Likely, Possible, Unlikely, or Highly Unlikely. The Confirmed category also takes into account species which were recorded in the Survey Area during the current field survey.

The decision matrix is intended to be an indicative guide only, and the way in which it is interpreted may vary between species, depending on a given species' habitat preferences and ability to disperse, as well as the reliability and availability of contextual information. For example, considering species which have been previously recorded close to the Survey Area, a species with a limited dispersal capability will have a reduced likelihood of occurring in the Survey Area compared with a species with greater dispersal capability. It is also recognised that a lack of records in the vicinity of the Survey Area may indicate limited sampling effort rather than species' absence, and that previous records may include historic or presumed erroneous information which may misrepresent a species' current distribution. Where the determination of a species' likelihood of occurrence within the Survey Area deviates from the decision matrix, detailed justification for any variation will be presented.

Table 4.1: Vertebrate fauna likelihood of occurrence decision matrix

		Habitat suitability of Survey Area			
		Core habitat ² present	Foraging and dispersal habitat present	Marginally suitable habitat ³ present	No suitable habitat present
Species Records ¹	Recorded in Survey Area	Confirmed	Confirmed	Confirmed	Confirmed
	Recorded within 10 km of Survey Area	Highly Likely	Likely	Possible	Possible
	Recorded within 10–50km of Survey Area	Likely	Possible	Possible	Unlikely
	Recorded within 50–100 km of Survey Area	Possible	Possible	Unlikely	Unlikely
	Recorded >100 km of Survey Area	Possible	Unlikely	Unlikely	Highly Unlikely
	Species considered locally/regionally extinct	Unlikely	Unlikely	Highly Unlikely	Highly Unlikely

¹Only records within the previous 50 years are considered

²Core habitat is habitat which contains elements (e.g. nest sites, roost sites, breeding season foraging locations) which are critical for the survival and reproduction of a species (Bingham & Noon, 1997), or habitat which is otherwise defined as critical habitat within relevant species recovery plans and guidelines.

³Marginally suitable habitat is habitat which is possibly used by a species for roosting or nesting, or during foraging and dispersal activities, but is unlikely to be depended upon; for example, it may be of low quality or only sporadically present

4.4 Flora and Vegetation

4.4.1 Reconnaissance Flora and Vegetation Assessment – Smelter Survey Area

Aerial photography (Scale 1: 30,000) of the smelter Survey Area and Google Earth Pro®, were used with previous vegetation mapping (Beard, 1975; Mattiske, 2008; Shepherd *et al.*, 2002), land systems mapping (van Vreeswyk *et al.*, 2004) and soil landscape mapping (Northcote *et al.*, 1960-1968), to determine broad preliminary vegetation type boundaries prior to the field survey. Reconnaissance surveys are traditionally sampled at a low intensity via relevés (unmarked area within which data is collected, EPA, 2016b) and mapping notes (unmarked area within which the vegetation type and condition is broadly described).

Where practical, at least one sampling site (relevé) was established in each of the preliminary vegetation type areas (25 relevés and 11 mapping notes in total; Figure 4.2; Appendix I) to ensure that each vegetation type occurring within the smelter Survey Area was captured by the survey and described appropriately in accordance with EPA (2016b) guidelines.

Dominant vascular flora taxa within each relevé and mapping note were recorded, along with their corresponding height. Taxa not previously recorded from sites or during site traverses were also recorded to document a comprehensive species list. A brief summary of the vegetation assemblage at each site was also recorded to aid in producing vegetation unit descriptions (NVIS Technical Working Group, 2017). In addition, the following information was recorded at each flora site:

- relevé or mapping note number;
- date of survey;
- personnel;
- a central GPS coordinate (GDA 94);
- site photograph of the representative vegetation unit being recorded;
- soil characteristics (texture and colour);
- geology (type, size and nature of any rocks, stones, gravel, or outcropping);
- topography (landform type and aspect);
- vegetation condition (based on Trudgen, 1988) (Appendix J);
- vegetation structure, including the dominant flora species in the three traditional strata, upper, mid and lower.
- disturbance (if present); and
- approximate time since last fire.

For any observed populations of conservation significant taxa or introduced flora, a GPS location and a count of the individuals present, or percentage foliar cover for a given area, were recorded.

4.4.2 Targeted Searching

Prior to the survey, a list of conservation significant flora with the likelihood to occur within the Survey Area was compiled. Field personnel familiarised themselves with photographs, reference samples and descriptions of likely conservation significant taxa before conducting the survey. Field personnel then actively searched for these conservation significant taxa while traversing the Survey Area, as well as in known locations or preferred habitat (Figure 4.2, Figure 4.3).

If a conservation significant flora species or environmentally significant weed species (WoNS or DP listed under Section 22 of the *Biosecurity and Agriculture Management Act* (BAM Act)) were identified in the field, a GPS coordinate of the individual was taken, when occurring in isolation, or a central coordinate for a small population was taken (central coordinate with an approximate 20 m radius). Generalised information was collected for each occurrence, including an estimate of individuals, reproductive status, condition and broad vegetation community and condition.

4.4.3 Identification of Flora Specimens

Plant taxa that could not be identified during the field surveys were collected and pressed for subsequent identification at the Western Australian Herbarium (WAH). Identifications were carried out by Biologic's taxonomist Dr Rachel Meissner. Assistance was sought from WAH employees when required. All taxa were checked against Florabase® (version 2.9.31; WAH, 1998-) to ensure their currency and validity. Any conservation significant flora taxa, including potential threatened and priority species, range extensions and potential new taxa have been verified and vouchered (if appropriate) at the WAH.

4.4.4 Vegetation Type Mapping – Smelter Survey Area

Broad vegetation mapping was conducted in the field, with vegetation boundaries delineated over aerial photography. Following the completion of the site sampling and taxonomic identifications, the broad vegetation types were refined based on the review of the floristic data collected from the relevés and mapping notes and results of flora and vegetation surveys that occur within and in close proximity to the smelter Survey Area. The vegetation structure information collected from the sites was reviewed to describe the vegetation units based on the dominant taxa, foliage cover and height of the three traditional strata (upper, mid and lower/ ground). This method of vegetation type determination is consistent with EPA (2016b). The vegetation type mapping was then digitised using geographic information systems (GIS) software.

The vegetation types have been described to Level 5 (Vegetation Association) in the NVIS hierarchical structure (NVIS Technical Working Group, 2017), with shortened vegetation codes (e.g. E1 - Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland) produced by identifying the dominant stratum layer, which is consistent with previous vegetation mapping completed in the smelter Survey Area (Mattiske, 2008).

The vegetation type determination has been undertaken from a broad context utilising existing vegetation mapping completed by Mattiske (2008). It is likely that further systematic sampling would

split and further refine the mapping undertaken for this survey. The mapping reliability is moderate to high across the smelter Survey Area due to the limited sampling, survey type (reconnaissance) and extent traversed.

4.4.5 Vegetation Condition Mapping – Smelter Survey Area

Vegetation condition was defined within the smelter Survey Area using the BHP (2018) vegetation condition scale which has been adapted from Keighery (1994) for the South West and Interzone botanical provinces and is also presented by the EPA (2016b) (Appendix J). The vegetation condition was determined based on the level of disturbance observed in an area. Condition was recorded at each relevé and mapping note, while additional notes were taken while traversing to broadly map vegetation condition boundaries. The vegetation condition mapping was then digitised using GIS software.

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West Kalgoorlie Esperance Railway

Smelterman Dr

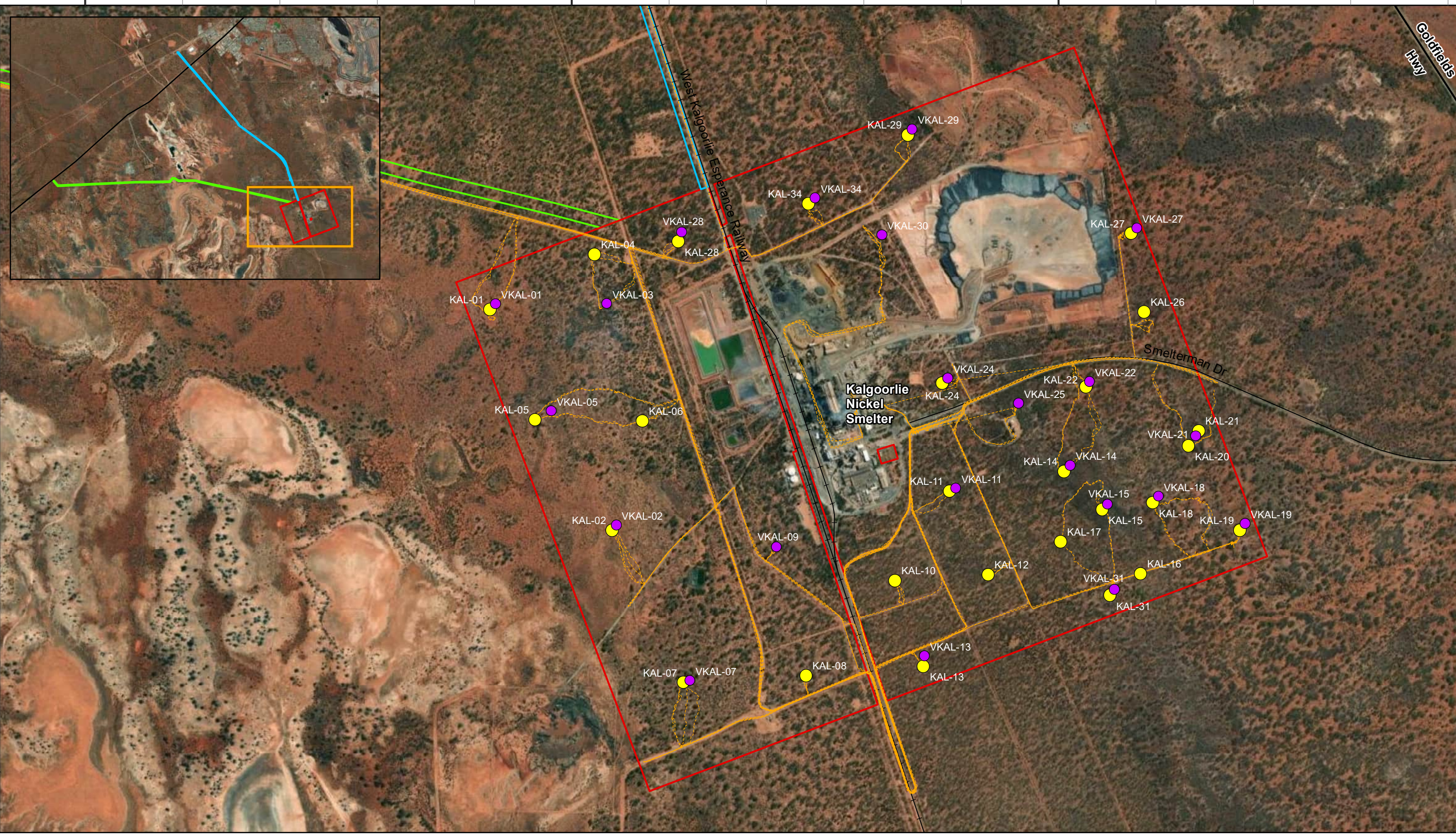
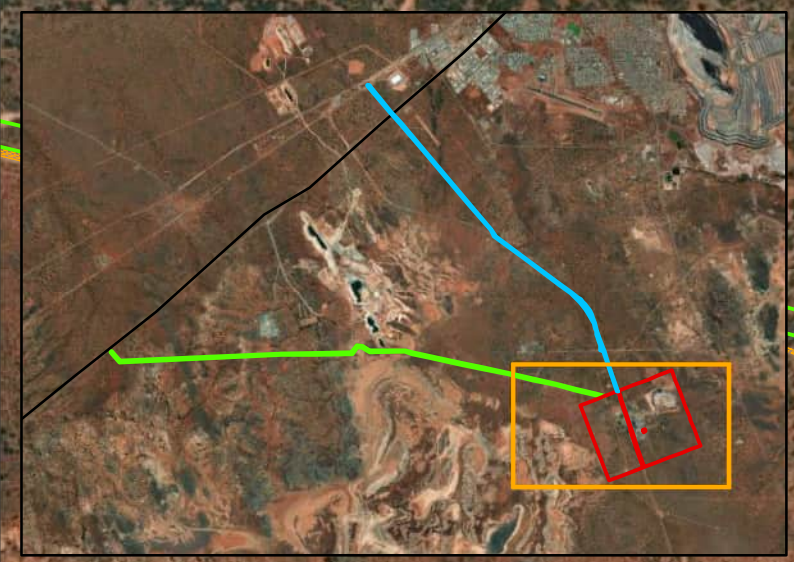
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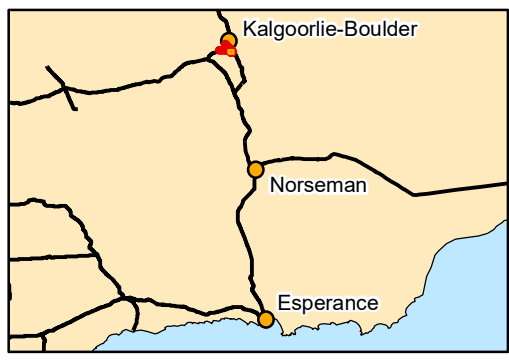


Legend

Smelter Survey Area	Local Road	Fauna Site
Pipeline Corridor	State Road	Flora Site
Road Corridor	Rail	Traverse

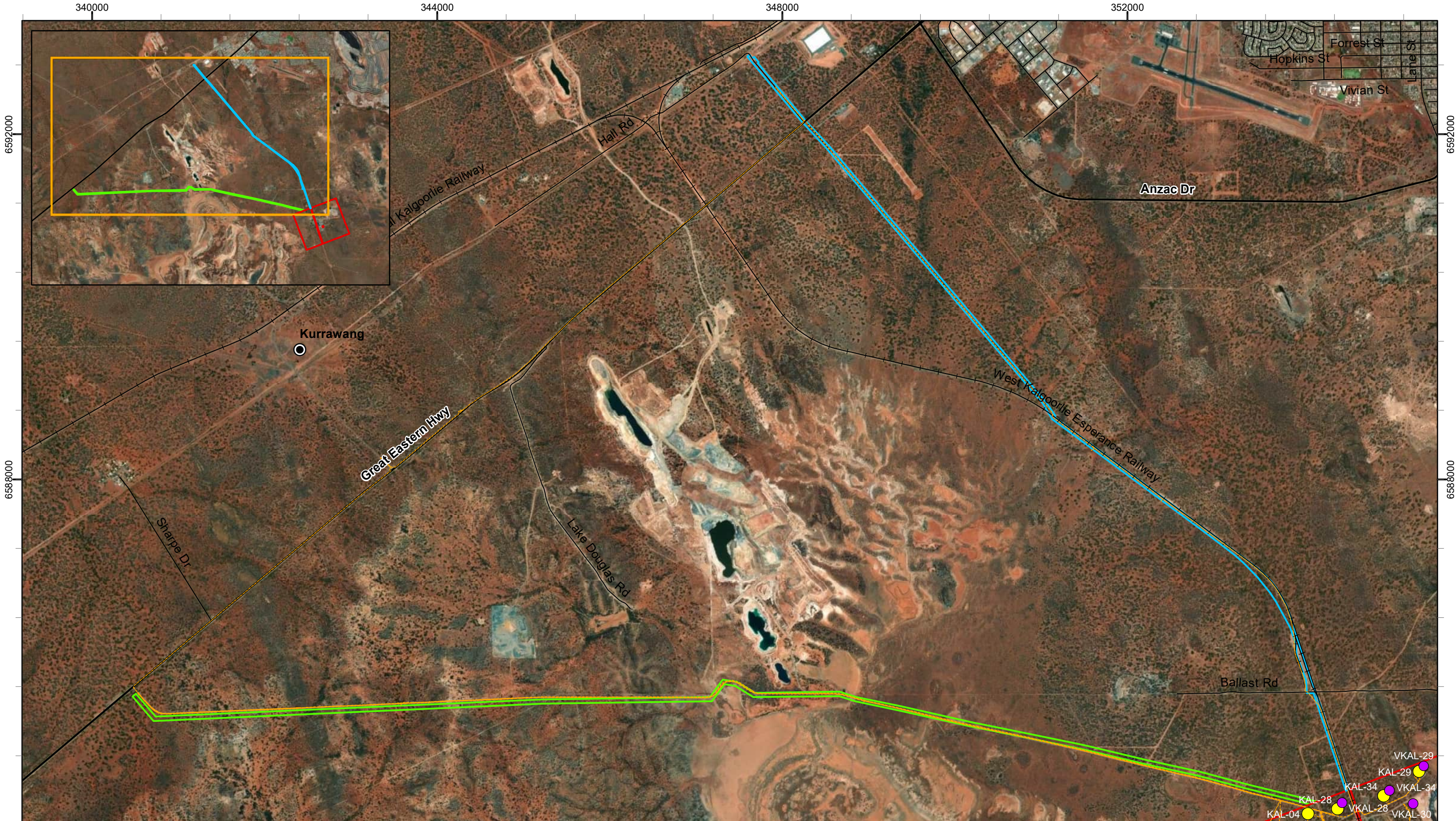
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 Datum: GDA 1994 Created 15/12/2021



BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 4.2: Sample sites and traverses

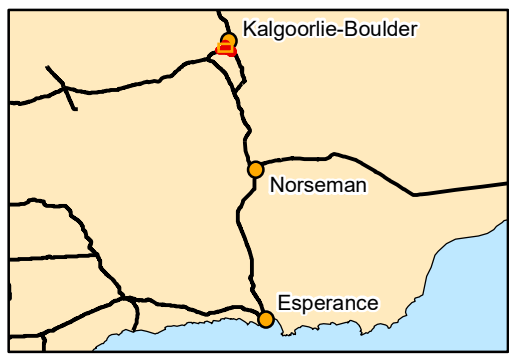


- Legend**
- | | | |
|---------------------|------------|------------|
| Smelter Survey Area | Local Road | Fauna Site |
| Pipeline Corridor | State Road | Flora Site |
| Road Corridor | Rail | Traverse |

biologic
Environmental Survey

Scale: 1:41,000

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 15/12/2021



BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 4.3: Sample sites
and traverses

5 RESULTS AND DISCUSSION

5.1 Vertebrate Fauna

5.1.1 Fauna Habitat

Fauna habitat assessments were completed for each of 22 sites (Appendix H) with habitat mapping subsequently completed for the smelter Survey Area (Figure 5.1). Four broad fauna habitat types were identified within the smelter Survey Area, together with a large area that is completely Cleared/ Disturbed. The four fauna habitats were, in decreasing order of extent, Open Eucalypt Woodland, Allocasuarina Shrubland, Low Chenopod Shrubland, and Claypan (Figure 5.1, Table 5.1).

The majority of the smelter Survey Area comprises Open Eucalypt Woodland, of which a variety of eucalypt species are prevalent (for example; *Eucalyptus salubris*, *E. yilgarnensis*, *E. salmonophloia*, *E. torquate*, *E. trichopoda*, *E. lesouefii*, and *E. griffithsii*) over a range of sparse mid-storey shrubs and grasses. The Open Eucalypt Woodland occurs on a variety of land types including flat ground to upper slopes and ridges and is not restricted to a particular soil type. Allocasuarina Shrubland habitat interrupts the Open Eucalypt Woodland habitat in a band extending north-south in the eastern portion of the smelter Survey Area. This habitat type is associated with upper slopes and ridges, sandy gravel soils with scattered calcrete and dolerite pebbles. Low Chenopod Shrubland habitat is present in the far western portion of the smelter Survey Area and is characterised by *Lycium austral*, and *Atriplex* species and is associated with flat ground of clayey-loam soil that is seasonally inundated. A small area of Claypan habitat occurs in the north-western portion of the smelter Survey Area, associated with the low lying, flat land associated with further claypan and salt lake systems located further to the west of the Survey Area.

Cleared/ Disturbed areas occur primarily in the north and north-eastern portions of the smelter Survey Area and are associated with the existing Kalgoorlie Nickel Smelter operations.

The corridor Survey Area was not subjected to vegetation or habitat mapping during this survey, however, the interpretation of pre-european vegetation alongside the habitat mapping undertaken within the smelter Survey Area can provide suppositions on the habitat contained within the corridor Survey Area. Each corridor is affected by cleared or disturbed areas related to existing roads and infrastructure. The road corridor to the east traverses four vegetation associations also represented within the smelter Survey Area (Coolgardie_9, Coolgardie1294, Coolgardie_123 and Coolgardie_125) and as such is likely to contain all four habitat types associated with the vegetation associations respectively (Open Eucalypt Woodland, Allocasuarina Shrubland, Open Chenopod Shrubland and Claypan) (Table 5.1). The pipeline corridor to the north traverses primarily Coolgardie_9 vegetation association (Figure 2.6) which is associated with Open Eucalypt Woodland, with some potential for the occurrence of Allocasuarina Shrubland (Coolgardie_1294) and Open Chenopod Shrubland (Coolgardie_123).

Open Eucalypt Woodland

The Open Eucalypt Woodland habitat provides structure and diversity for fauna species through offering potential nesting and roosting opportunities, shelter, foraging and safe dispersal corridors. Fallen logs and branches and a small accumulations of leaf litter provide habitat for small mammals and reptiles. This

habitat is common throughout the Survey Area and surrounding region and does not provide any specific or unique habitat value to any of the conservation significant fauna species that may utilise the Survey Area.

Allocasuarina Shrubland

The Allocasuarina Shrubland habitat occurs in a north-south directional band that is dissected in several instances by disturbed areas (i.e. cleared areas, mining and infrastructure). This habitat type is not restricted to the Survey Area and is common in the surrounding region (a common habitat of the Coolgardie IBRA bioregion). Allocasuarina Shrubland habitat may provide valuable refuge, dispersal and foraging properties to many fauna species, due to the high-density foliage cover and interconnectivity throughout the landscape. Sandy and pebble-gravel soils can provide potential nesting habitat and material for malleefowl in addition to the added protection of the dense foliage of surrounding vegetation.

Open Chenopod Shrubland

The Open Chenopod Shrubland habitat may provide valuable refuge, dispersal and foraging properties to many fauna species, due to the diversity of form and structure of shrubs and grasses, the proximity to and occasional presence of water, and provision of shelter in an otherwise open and low relief habitat. The habitat is present on the western margin of the Survey Area and extends into the surrounding region associated with a series of claypan and salt lake systems. This habitat is also likely to be present in the corridor Survey Area. The extent of this habitat type within the Survey Area is relatively small and does not provide any specific or unique habitat value to any of the conservation significant fauna species that may utilise the Survey Area.



Claypan



The area of Claypan habitat is restricted to the north-west corner of the Survey Area (Figure 5.1). This habitat type is also likely to be present throughout the road portion of the corridor Survey Area. Claypan habitat is widespread in the Coolgardie bioregion and extensive claypans are located immediately to the west and east of the Survey Area. The Claypan habitat provides for foraging and dispersal for many vertebrate species and when inundated may be used by waterbird and migratory bird species such as the wood sandpiper, sharp-tailed sandpiper, pectoral sandpiper, common sandpiper, red-necked stint, glossy ibis and common greenshank. The small area of Claypan within the Survey Area is only of importance to these species on a seasonal basis (when inundated) and does not represent high quality habitat in comparison to nearby salt lakes and claypans outside of the Survey Area

Cleared/ Disturbed

Artificial water sources located within the north-western portion of the Survey Area may be used by waterbird species, however the series of ponds are located within a highly disturbed area associated with mining operations and therefore not of value to fauna for long-term survival. The habitat provides little to no value to fauna species, particularly those of conservation significance.

Table 5.1: Broad fauna habitat types identified within the Survey Area

Habitat	Distinguishing features	Local and Regional Extent	Representative photo
<p>Open Eucalypt Woodland</p> <p>Extent in Survey Area: 353.4 ha (58.2%)</p>	<p><i>Eucalyptus griffiths</i> and <i>E. trichopoda</i> woodland over <i>Senna</i> shrubland, sparse understorey. Fallen branches and bark piles, some logs and hollows present. The understorey vegetation may provide shelter and nesting habitat for ground dwelling birds.</p>	<p>Open Eucalypt Woodland is broadly associated with land system Mx43 (gently undulating plains and pediments with some outcropping) and Vegetation Association Coolgardie_9 (Shepherd <i>et al.</i>, 2002), which are wide spread in the surrounding area and bioregion (Figure 2.2, Figure 2.6).</p>	
<p>Allocasuarina Shrubland</p> <p>Extent in Survey Area: 30.2 ha (5.0%)</p>	<p>Characterised by a tall dense shrubland dominated by <i>Allocasuarina helmsii</i>, <i>Acacia acuminata</i> and <i>Acacia tetragonophylla</i> tall shrubs over sand or rocky substrates. This habitat contains scattered larger trees and mallees. The understorey vegetation may provide shelter and nesting habitat for ground dwelling birds.</p>	<p>Allocasuarina Shrubland habitat is closely associated with the Pre-European mapping extent of Coolgardie_1294 (Figure 2.6). This particular vegetation association is limited to 11 linear bands within the local (40km) region.</p>	

Habitat	Distinguishing features	Local and Regional Extent	Representative photo
<p>Low Chenopod Shrubland</p> <p>Extent in Survey Area: 40.3 ha (6.6%)</p>	<p>Low dense shrublands with scattered grasses. Provides shelter for bird and mammal species of conservation significance with possible nesting habitat and proximity to water sources for foraging, seasonally when inundated.</p>	<p>Low Chenopod Shrubland is broadly associated with land system SV15 and Vegetation Association Coolgardie_123 (Shepherd, 2002 #5083), which are common in the surrounding local area and bioregion in association with salt lakes and claypans (Figure 2.2, Figure 2.6).</p>	
<p>Claypan</p> <p>Extent in Survey Area: 0.8 ha (0.1%)</p>	<p>Open low-lying claypans and flats with scattered shrubs and grasses. Inundated seasonally following rains providing foraging habitat for waterbird and migratory bird species.</p>	<p>Claypan fauna habitat is broadly associated with land system SV15 and Vegetation Association Coolgardie_125 (Shepherd, 2002 #5083), which are common in the surrounding local area and bioregion in association with low relief plains and salt lakes (Figure 2.2, Figure 2.6).</p>	
<p>Cleared/ Disturbed</p> <p>Extent in Survey Area: 182.3 ha (30.0%)</p>	<p>Distinguished by the absence or severe reduction in vegetation and high levels of disturbance activities.</p>	<p>NA</p>	<p>NA</p>

354000

356000

358000

6584000

6584000

6582000

6582000



Legend

Survey Area

- Smelter Survey Area
- Pipeline Corridor
- Road Corridor

Local Road
State Road
Rail

Fauna Habitat

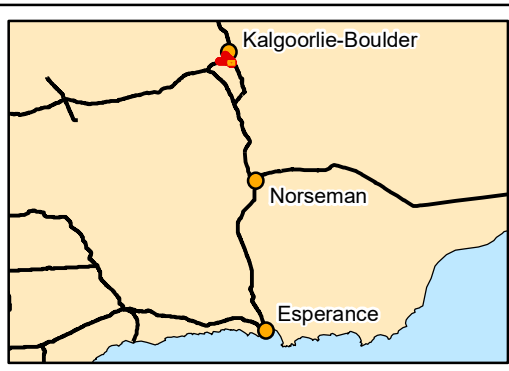
- Malleefowl - Mound (inactive)
- Allocasuarina Shrubland
- Claypan
- Open Chenopod Shrubland
- Open Eucalypt Woodland
- Cleared/ Disturbed

biologic
Environmental Survey

Scale: 1:14,900

0 300 600 Meters

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 30/11/2021



BHP NICKEL WEST
Kalgoorlie Nickel Smelter
Reconnaissance Flora and
Vegetation and Basic Terrestrial
Fauna Survey

Figure 5.1: Fauna habitat and species of conservation significance recorded in the Survey Area

5.1.2 Fauna Records

A total of 16 bird species and two mammal species were observed during the field survey. One of these species, the rabbit (*Oryctolagus cuniculus*) is an introduced pest species. One species of conservation significance was recorded, an old and inactive malleefowl mound located in the smelter Survey Area; however, no recent evidence of the species was detected.

Table 5.2: Vertebrate fauna species recorded during the field survey

Scientific Name	Common Name	Conservation Status		
		EPBC Act	BC Act	DBCA
Mammals				
<i>Oryctolagus cuniculus</i>	Rabbit*			
<i>Macropus fuliginosus</i>	Western grey kangaroo			
Birds				
<i>Ptilotula plumula</i>	Grey-fronted honeyeater			
<i>Nymphicus hollandicus</i>	Cockatiel			
<i>Cinclosoma clarum</i>	Chestnut-breasted quail-thrush			
<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike			
<i>Cracticus torquatus</i>	Grey butcherbird			
<i>Cracticus tibicen</i>	Australian magpie			
<i>Corvus coronoides</i>	Australian raven			
<i>Smicrornis brevirostris</i>	Weebill			
<i>Grallina cyanoleuca</i>	Magpie-lark			
<i>Malurus lamberti</i> subsp. <i>assimilis</i>	Variegated fairy-wren			
<i>Dromaius novaehollandiae</i>	Emu			
<i>Platycercus zonarius</i>	Australian ringneck			
<i>Strepera versicolor</i>	Grey currawong			
<i>Todiramphus sanctus</i>	Sacred kingfisher			
<i>Oreoica gutturalis</i>	Crested bellbird			
<i>Leipoa ocellata</i>	Malleefowl	VU	VU	

* Introduced Species

5.1.3 Species of Conservation Significance

The desktop assessment identified 23 vertebrate fauna species of significance, including 19 birds, three mammals and one reptile (Appendix B). A likelihood of occurrence assessment for species of conservation significance identified in the desktop assessment was undertaken using the decision matrix shown in Table 4.1. The occurrence assessment was based on known information relating to species' distribution, habitat preferences (landforms, substrates and vegetation associations), locality and previous records. The malleefowl was the only vertebrate fauna species of significance to be confirmed within the survey area (recorded during the field survey) (Table 5.2, Figure 5.1), The Survey Area contains suitable habitat for a further nine of the 23 significant species identified in the desktop review, of which eight species are considered Possible to occur (all Migratory bird species). The curlew sandpiper (*Calidris ferruginea*), the ninth species identified in the desktop review as having potential

habitat within the Survey Area, is a predominantly coastal inhabitant and with no suitable nesting habitat identified in the smelter Survey Area, is considered Unlikely to occur. No species were considered Highly Likely or Likely to occur, with the remaining 13 species identified in the desktop assessment considered Unlikely to Highly Unlikely to occur (Table 5.3).

Table 5.3: Conservation significant vertebrate fauna species likelihood of occurrence

Common Name (Scientific Name)	Conservation Status				Preferred Broad Habitats	Nearest Record to the Survey Area	Potential Critical Habitat Within the Survey Area				Likelihood of Occurrence	Occurrence	Comments
	EPBC Act	BC Act	DBCA	IUCN			Eucalypt Woodland	Allocasuarina Shrubland	Low Chenopod Shrubland	Claypan			
Mammals													
Greater bilby (<i>Macrotis lagotis</i>)	VU	VU		VU	Sandy spinifex and tussock grasslands/shrublands throughout current distribution. In the southwest, mixture of woodland including Jarrah, Marri and Wandoo (Abbott, 2001).	~5.2 km (NE) – from road corridor and ~13 km (N) – of Smelter Survey Area -1976 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Chuditch (<i>Dasyurus geoffroi</i>)	VU	VU		NT	The species is known to occupy in a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (DEC, 2012). In the jarrah forest, Chuditch occur in moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest particularly in riparian vegetation (Orell & Morris, 1994).	~37 km SSE – 1974 (DBCA, 2021c)					Highly Unlikely	N/A	Suitable habitat not present
Birds													
Curlew sandpiper (<i>Calidris ferruginea</i>)	CR/MG	CR/MG		NT	Inhabits intertidal mudflats in sheltered coastal areas (i.e. estuaries, bays, inlets and lagoons) (Geering <i>et al.</i> , 2007). This rare species generally roosts on bare dry shingle, shell or sand beaches, sandspits and islets in or around coastal or near-coastal lagoons and other wetlands (Geering <i>et al.</i> , 2007).	~33.8 km (NNE) – 1999 (DBCA, 2021c)				•	Unlikely	N/A	May occur occasionally to forage. Suitable nesting habitat not present.
Night parrot (<i>Pezoporus occidentalis</i>)	EN	CR		EN	The Night Parrot prefers sandy/stony plain habitat with old-growth spinifex for roosting and nesting in conjunction with native grasses and herbs for foraging (DPaW, 2017).	~488 km (E) – 1972 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>)	EN	EN		EN	Proteaceous scrubs and heaths and adjacent eucalypt woodlands and forests (Johnstone & Storr, 1998).	~11.42 km (NNW) – 2018 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Malleefowl (<i>Leipoa ocellata</i>)	VU	VU		VU	Inhabits semi-arid shrublands and low woodlands dominated by mallee eucalypts and/or <i>Acacias</i> with sandy loam soils (Benshemesh, 2007).	~9.05 km (SE) – 2013 (DBCA, 2021c)	•	•			Certain	Confirmed	Potential suitable habitat is found in Survey Area along with the historical remains of a mound within the Allocasuarina Shrubland habitat. The species may use the area for foraging or dispersal but given the level of disturbance, the Survey Area does not present critical habitat for the species.
Princess parrot (<i>Polytelis alexandrae</i>)	VU		P4	NT	The Princess Parrot inhabits low open eucalypt woodlands and savannah shrublands in arid deserts, usually with <i>Casuarina</i> and <i>Allocasuarina</i> spp. Primarily breeds in Marble Gum hollows (Pavey <i>et al.</i> , 2014).	~218 km (E) - 1983 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Grey falcon (<i>Falco hypoleucos</i>)	VU	VU		VU	Timbered lowlands, particularly <i>Acacia</i> shrubland and along inland drainage systems. Also frequent spinifex and tussock grassland (Burbidge <i>et al.</i> , 2010; Olsen & Olsen, 1986)	~238km (N) – 1996 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Common sandpiper (<i>Actitis hypoleucos</i>)	MI	MI			Estuaries and deltas of streams, as well as banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans (Johnstone & Storr, 1998).	~28 km (WSW) – 2013 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Fork-tailed swift (<i>Apus pacificus</i>)	MI	MI			Inhabits dry/open habitats, inclusive of riparian woodlands and tea-tree swamps, low scrub, heathland or saltmarsh, as well as treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes (Johnstone & Storr, 1998). Almost exclusively aerial.	~116 km (E) – 2015 (DBCA, 2021c)	•	•	•	•	Possible	N/A	May occasionally occur within the airspace above the Survey Area to forage. Unlikely to land or nest within Survey Area.
Grey wagtail (<i>Motacilla cinerea</i>)	MI	MI			A rare vagrant to Western Australia where it has been recorded within various habitats with open waterbodies (Johnstone & Storr, 2004).	~670 km (SW) – 2013 (DBCA, 2021c)					Highly Unlikely	N/A	Suitable habitat not present.

Common Name (Scientific Name)	Conservation Status				Preferred Broad Habitats	Nearest Record to the Survey Area	Potential Critical Habitat Within the Survey Area				Likelihood of Occurrence	Occurrence	Comments
	EPBC Act	BC Act	DBCA	IUCN			Eucalypt Woodland	Allocasuarina Shrubland	Low Chenopod Shrubland	Claypan			
Pectoral sandpiper (<i>Calidris melanotos</i>)	MI	MI			Coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands (Johnstone & Storr, 2004; Johnstone <i>et al.</i> , 2013). It prefers wetlands with open fringing mudflats and low, emergent or fringing vegetation (Geering <i>et al.</i> , 2007).	~327 km (S) – 2010 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Sharp-tailed sandpiper (<i>Calidris acuminata</i>)	MI	MI			Coastal and inland areas saline and freshwater but prefers non-tidal fresh or brackish wetlands (Geering <i>et al.</i> , 2007)	~8.8km (ESE) – 1980 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Common greenshank (<i>Tringa nebularia</i>)	MI	MI			Species occurs as a non-breeding summer Migrant which occurs throughout the region. Occurs mainly in Tidal mudflats, mangrove creeks, flooded samphire flats, beaches, river pools, and saltwork and sewage ponds (Johnstone <i>et al.</i> , 2013).	~23.38 km (WNW) – 2001 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Wood sandpiper (<i>Tringa glareola</i>)	MI	MI			Freshwater wetlands and occasional brackish intertidal mudflats (Geering <i>et al.</i> , 2007).	~5.58 km (N) – 2005 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Red-necked stint (<i>Calidris ruficollis</i>)	MI	MI		NT	Lives in permanent or ephemeral wetlands of varying salinity, and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In Western Australia they prefer freshwater to marine environments. The species usually forages in shallow water at the edge of wetlands and roost or loaf on tidal mudflats, near low saltmarsh, and around inland swamps (Johnstone & Storr, 1998).	~37.04km (NNE) – 2001 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Glossy ibis (<i>Plegadis falcinellus</i>)	MI	MI			Freshwater wetlands, irrigated areas, margins of dams, floodplains, brackish and saline wetlands, tidal mudflats, pastures, lawns and public gardens (Johnstone <i>et al.</i> , 2013).	~14.07 km (NNW) - 1981 (DBCA, 2021c)				•	Possible	N/A	May occur occasionally to forage.
Peregrine falcon (<i>Falco peregrinus</i>)		OS			In arid areas, it is most often encountered along cliffs above rivers, ranges and wooded watercourses where it hunts birds (Johnstone & Storr, 1998). It typically nests on rocky ledges occurring on tall, vertical cliff faces between 25 m and 50 m high (Olsen <i>et al.</i> , 2004; Olsen & Olsen, 1989).	~73 km (NW) – 2014 (DBCA, 2021c)	•	•	•	•	Possible	N/A	Likely to occur occasionally to forage. Suitable nesting habitat not present.
Hooded plover (<i>Thinornis rubricollis</i>)			P4	VU	Margins and shallows of salt lakes, sandy and sea-weedy beaches and estuaries and also dams (Johnstone & Storr, 1998).	~31.98 km (N) – 1980 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Sanderling (<i>Calidris alba</i>)	MI	MI			Broad ocean beaches of firm sand, depositing strands and mounds of seaweed. Often near river mouths, tidal mudflats, inlets and coastal lagoons (Pizzey & Knight, 2007).	~6.9km (NE) – 2016 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Grey-tailed tattler (<i>Tringa brevipes</i>)	MI	MI	P4	NT	Found mainly in tidal mudflats, estuaries; shores and reefs of islands and coastal swamps and commercial salt fields (Pizzey & Knight, 2007).	6.21 km (WNW) – 2017 (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present
Reptiles													
Western spiny-tailed skink (<i>Egernia stokesii badia</i>)	EN	VU			Found in tall shrubland, open heath and woodland habitats (Cogger <i>et al.</i> , 1993). In the north-eastern wheatbelt, the species occupied heavier clay and loam soils supporting eucalypt woodlands which provided shelter in the form of fallen and hollow logs (Cogger <i>et al.</i> , 1993).	~27 km ENE – (DBCA, 2021c)					Unlikely	N/A	Suitable habitat not present

Confirmed as occurring in the Survey Area

Malleefowl (Leipoa ocellate)

The Malleefowl is listed as Vulnerable under both the BC Act and EPBC Act. The species was originally common and widespread in semi-arid areas within low eucalypt scrubland on sandy and lateritic soil, and within *Acacia* shrubland on heavy red soils; however, clearing for agriculture has dramatically reduced the extent of suitable habitat for the species, which is consequently now uncommon and patchily distributed (Johnstone & Storr, 1998). The Survey Area was surveyed on foot to search for vertebrate fauna species of significance and their habitat including observation of nesting mounds of malleefowl. A single historical mound was identified within the Allocasuarina Shrubland habitat of the Survey Area (Figure 5.1). The Survey Area provides potentially suitable habitat for this species and previous records also occur in close proximity; with 49 records known within 40 km, the closest of which was recorded approximately 9 km south-east of the Survey Area in 2013 (DBCA, 2021c). The level of disturbance present in the Survey Area however, reduces the suitability of the habitat and therefore the likelihood of this species occurring. No further evidence of the species was recorded, suggesting malleefowl are not currently utilising the Survey Area. The Allocasuarina Shrubland fauna habitat was considered to provide moderate significance habitat for the species, while all other fauna habitat types within the Survey Area are considered to be of low significance to the species.

Therefore, although the species has been confirmed within the Survey Area, the species is not likely to currently occur or be dependent on any of the fauna habitat within the Survey Area.

Possibly occurring in the Survey Area

Common Sandpiper (Actitis hypoleucos)

This species occurs in a range of salt and freshwater habitats, including coasts, river pools, drying swamps and floodwaters (Johnstone & Storr, 1998); however, it is most common on the coast (Geering *et al.*, 2007). This species is likely to occur only as a seasonal visitor to the region, with locally occurring salt lakes and claypans providing foraging opportunities. Claypan fauna habitat type within the Survey Area may be utilised by the common sandpiper (Table 5.3); however, given that the area is only seasonally inundated it is considered that the likelihood of the species occurring in the Survey Area is low. Additionally an artificial pond located in the disturbed portion of the Survey Area provides potential foraging habitat for the species; however, due to the artificial nature of the water source it is of no long-term significance to the species. Due to the lack of appropriate habitat for the species within the Survey Area, it is unlikely that this species is dependent on any specific fauna habitat within the Survey Area.

Fork-tailed Swift (Apus pacificus)

All fauna habitat types within the Survey Area are considered to be marginally suitable and of low significance to the species. The fork-tailed swift is an almost exclusively aerial species largely independent of terrestrial habitat types, occupying very low to low airspace above a variety of habitat types (Menkhorst *et al.*, 2017; Morcombe, 2004; Pizzey & Knight, 2007).

Therefore, although the species occurrence within the Survey Area is possible, the species is not likely to be dependent on any of the fauna habitat within the Survey Area and consequently is not considered to be significant to the species.

Sharp-tailed Sandpiper (Calidris acuminata)

The sharp-tailed sandpiper favours non-tidal freshwater or brackish wetlands, though it also occurs in other habitats (Geering *et al.*, 2007). This species is a visitor to the southwest, mostly between September and March (Johnstone & Storr, 1998). Although this species may be an occasional non-breeding visitor to nearby salt lakes, the Survey Area contains limited habitat to support the species. Claypan habitat and artificial ponds in the disturbed areas may be utilised by the sharp-tailed sandpiper within the Survey Area. However, given that there is only a small area of artificial water in a disturbed area within the Survey Area, and the Claypan habitat is only inundated seasonally, it is considered that the likelihood of the species occurring in the Survey Area is low. Due to the lack of appropriate habitat for the species within the Survey Area, it is unlikely that this species is dependent on any specific fauna habitat within the Survey Area.

Common Greenshank (Tringa nebularia)

Only the Claypan habitat within the Survey Area is considered to possibly be utilised by the common greenshank (Table 5.3). The species may occur seasonally as a migrant in nearby salt lakes, however given that there is only a small area of artificial water in a disturbed area within the Survey Area, and the seasonal nature of the Claypan habitat, it is considered that the species presence within the Survey Area is Possible for temporary visitations only. Due to the lack of appropriate habitat for the species within the Survey Area, it is considered unlikely that this species is dependent on any specific fauna habitat within the Survey Area.

Wood Sandpiper (Tringa glareola)

The wood sandpiper favours freshwater wetlands and occasional brackish intertidal mudflats (Geering *et al.*, 2007). Although this species may be present at nearby salt lakes, the Survey Area contains limited habitat to support the species. Claypan habitat within the Survey Area may be utilised by the wood sandpiper on a seasonal basis; however, given that there is only a small area of artificial water in a disturbed area and limited emergent reeds and fallen timber (preferred habitat) within the Survey Area, it is considered that the likelihood of the species is low. Due to the lack of appropriate habitat for the species within the Survey Area, it is unlikely that this species is dependent on any specific fauna habitat within the Survey Area.

Red-necked Stint (Calidris ruficollis)

The Red-necked Stint occurs across a wide range of fresh and saltwater habitats, including freshwater wetlands (Geering *et al.*, 2007). It is a non-breeding visitor to southwest Australia, between October and March (Johnstone & Storr, 1998). The Survey Area contains limited habitat to support the species. Claypan habitat within the Survey Area may be utilised by the red-necked stint (Table 5.3), as a seasonal

migrant. Further, given that there is only a small area of permanent (artificial) water in a disturbed area, it is considered that this species is not dependent on any specific fauna habitat within the Survey Area.

Glossy Ibis (Plegadis falcinellus)

The glossy ibis prefers freshwater wetlands, irrigated areas, margins of dams, floodplains, brackish and saline wetlands, tidal mudflats, pastures, lawns and public gardens (Johnstone & Storr, 1998). It is a non-breeding visitor to southwest Australia (Pizzey & Knight, 2007). An artificial pond located in the disturbed portion of the Survey Area provides potential foraging habitat for the species; however, due to the artificial nature of the water source, it is of no long-term significance to the species. Claypan habitat within the Survey Area may be utilised by the species when seasonally inundated (Table 5.3); however, it is considered that this species is not dependent on this or any other fauna habitat within the Survey Area.

Peregrine Falcon (Falco peregrinus)

The Peregrine Falcon is listed as OS ('other specially protected fauna') under the BC Act, which means that special protection is required to ensure its conservation. In arid areas the species is most often encountered along cliffs above rivers, ranges and wooded watercourses where it hunts birds (Johnstone & Storr, 1998). It typically nests on rocky ledges occurring on tall, vertical cliff faces and also occasionally within tall trees occurring along major drainage lines, though the species is also known to nest on radio towers and other human-built structures (Olsen & Olsen, 1989).

The species occurs within an extremely diverse range of habitats (Morcombe, 2004) and therefore the species has the possibility of occurring within the Survey Area. Open Eucalypt Woodland habitat within the Survey Area provides tall trees for nesting and from which to forage and disperse. However, as no other preferred habitats occur within the Survey Area, particularly for breeding, such as cliffs, gorges, timbered watercourses, rivers, wetlands and pylons, (Pizzey & Knight, 2007), the Survey Area is considered to contain marginal habitat for the species and is unlikely to be dependent on any specific fauna habitat within the Survey Area.

5.2 Flora and Vegetation

5.2.1 Flora Composition

A total of 114 vascular flora taxa from 31 families and 62 genera were recorded from the smelter Survey Area during the field survey (Appendix K). The total number of vascular flora taxa recorded comprised 109 native taxa and five introduced taxa (Appendix K).

The dominant families equate to 54% of the total taxa recorded and comprised Chenopodiaceae (16 taxa), Asteraceae (12 taxa), Fabaceae (11 taxa), Scrophulariaceae (11 taxa) and Myrtaceae (11 taxa). Of the 31 families, 12 were represented by one taxon, which equates to 10.5% of the total taxa recorded. The dominant genera make up 30% of the total taxa recorded and comprised *Eremophila* (11 taxa), *Acacia* (nine taxa), *Eucalyptus* (eight taxa) and *Maireana* (six taxa). Of the 62 genera recorded, 42 were represented by one taxon, which equates to 37% of the total taxa recorded.

Nine taxa observed and collected from the field were difficult to confidently identify to species or infraspecies level. This was mainly due to the specimens/ individuals lacking suitable flowering and/ or fruiting material for confident taxonomic identification. One taxon was tentatively identified to species level, seven specimens have been identified to genus level, and one specimen tentatively identified as *?Santalum murrayanum*. One of the taxa identified to genus level, *Lepidosperma* sp. indet., does have affinities to a conservation significant taxon (see section 5.2.2), while the remaining eight taxa are not considered to be analogous with any conservation significant flora.

5.2.2 Flora of Significance

Flora of Conservation Significance

No conservation significant flora were recorded in the Survey Area during this survey.

One taxon recorded in the smelter Survey Area (site KAL-31 (Figure 4.2)) identified to genus level, *Lepidosperma* sp. indet., does have affinities with *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2). Shared characters of the collected specimen with *L.* sp. Kambalda (A.A. Mitchell 5156) (P2) included leaf base hairs, resinosity and lack of distinct hatching. However, this specimen was sterile and could not be confidently matched with *L.* sp. Kambalda (A.A. Mitchell 5156) (P2) due to lack of sufficient comparative material at the WAH and supporting literature (personal communications with Biologic's taxonomist Rachel Meissner and WAH expert taxonomist Mike Hislop, November 2021). There is currently only a singular specimen at the WAH (from one collection and subsequent record - (WAH, 1998-)). Therefore, this specimen is not considered to represent that of a conservation significant taxon. However, *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2) is considered 'possible' to occur in the Survey Area post-survey (see sub-section below).

Flora of Other Significance

The EPA (2004) advises that flora species, subspecies, varieties, hybrids and ecotypes may be considered significant for reasons other than listing as a Threatened or Priority Flora taxa. This may include, but is not limited to, range extensions, keystone species, relic status, local endemism and

anomalous features. Based on these features, the following five flora taxa recorded from the smelter Survey Area by this survey are considered to be flora of 'other' significance:

- *Calandrinia pumila* – range extension 78 km southeast;
- *Centipeda crateriformis* subsp. *compacta* – fills a gap in distribution;
- *Lepidosperma* sp. indet – (see sub-section above);
- *Ptilotus obovatus* var. *obovatus* - range extension 141 km east-southeast; and
- *Swainsona purpurea* – range extension 17 km south.

Review of Likelihood of Occurrence

All taxa considered Highly Likely, Likely and Possible to occur in the Survey Area pre-survey are now considered Unlikely or Highly Unlikely post-survey (Table 5.4, Appendix F).

None of these taxa have previously been recorded in the smelter Survey Area (Mattiske, 2008), which was further confirmed by this survey.

The corridor Survey Area mostly contained previously cleared roads, access tracks, railway and pipeline excavated soil, rather than intact vegetation, which is often required for these taxa. Furthermore, although distances of these taxa to the corridor Survey Area were relatively close (1.2–19.7 km, see section 3.2.2), the long, thin and linear nature of the corridor Survey Area decreases the likelihood of intersecting populations and habitat containing these taxa (Figure 3.2).

Only one taxon, *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2), is considered to have a pre-survey likelihood of Highly Unlikely for the Survey Area. This conservation significant taxon shares some affinities with the collected specimen *Lepidosperma* sp. indet. (see subsection above). While pre-survey analysis indicated that no suitable habitat for this species was present within the Survey Area, potentially suitable landforms and soils were observed during the survey, at the southern boundary of the Survey Area (site KAL-31). This area comprised rocky hills with dolerite and calcrete pebbles on the surface. While there is limited information available for *L.* sp. Kambalda, it is known to occur on basalt hills. This, in conjunction with the morphological affinities of the collected specimen, indicate that the occurrence of this species within the Survey Area cannot be completely excluded. Therefore, the post-survey likelihood for *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2) is considered to be Possible (Table 5.4, Appendix F).

All remaining taxa considered Unlikely or Highly Unlikely pre-survey were either downgraded or remained so post-survey due to distances from the Survey Area and marginal or unsuitable habitat observed (Appendix F).

Table 5.4: Post-survey likelihood of occurrence for conservation significant flora

Taxon	Post-survey likelihood	Reason for change in likelihood
Pre-survey likelihood – Highly Likely		
<i>Eremophila praecox</i> (P2)	Unlikely	Limited suitable habitat observed within Survey Area, intensive searching within the Survey Area
<i>Alyxia tetanifolia</i> (P3)	Unlikely	
Pre-survey likelihood – Likely		
<i>Isolepis australiensis</i> (P3)	Unlikely	Limited suitable habitat observed within Survey Area, intensive searching within the Survey Area
<i>Notisia intonsa</i> (P3)	Unlikely	
<i>Eucalyptus jutsonii</i> subsp. <i>jutsonii</i> (P4)	Unlikely	
Pre-survey likelihood – Possible		
<i>Gastrolobium graniticum</i> (T)	Unlikely	Limited suitable habitat observed within Survey Area, intensive searching within the Survey Area
<i>Acacia websteri</i> (P1)	Unlikely	Limited suitable habitat observed within Survey Area, intensive searching within the Survey Area
<i>Elachanthus pusillus</i> (P2)	Unlikely	
<i>Goodenia salina</i> (P2)	Unlikely	
<i>Lepidium merrallii</i> (P2)	Unlikely	
<i>Alyogyne</i> sp. Great Victoria Desert (D.J. Edinger 6212) (P3)	Unlikely	
<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459) (P3)	Unlikely	
<i>Chrysocephalum apiculatum</i> subsp. <i>norsemanense</i> (P3)	Unlikely	
<i>Cyathostemon verrucosus</i> (P3)	Unlikely	
<i>Lepidium fasciculatum</i> (P3)	Unlikely	
<i>Eremophila caerulea</i> subsp. <i>merrallii</i> (P4)	Unlikely	
Pre-survey likelihood – Highly Unlikely		
<i>Lepidosperma</i> sp. Kambalda (A.A. Mitchell 5156) (P2)	Possible	Has affinities with a sterile specimen collected from the smelter Survey Area (<i>Lepidosperma</i> sp. indet.), suitable habitat present within the Survey Area

5.2.3 Introduced Flora

A total of five introduced flora taxa were recorded in the Survey Area during the field survey (Figure 5.2). None of these taxa are listed as WoNS. **Echium plantagineum* (Patterson's Curse) is a DP under Section 22 of the BAM Act, although is exempt from control and keeping requirements. **Eragrostis curvula* is on the priority list for weed management in the Goldfields Region due to it being currently absent from lands managed by the DBCA (Table 5.5). Generally, weed numbers were relatively low, with very few infestations observed. The largest numbers were observed along the pipeline corridor track with solitary infestations of **Cenchrus ciliaris* (20 individuals from one point location), **Echium plantagineum* (50 individuals from one point location) and **Eragrostis curvula* (50 individuals from one point location).

Table 5.5: Introduced flora recorded from the Survey Area

Taxon	Recorded	Count	WoNS	DP	Priority List for Goldfields	DBCA	
						Impact	Invasiveness
* <i>Cenchrus ciliaris</i>	Opp (corridor Survey Area)	20	N	N	N	High	Rapid
* <i>Echium plantagineum</i>	Opp (corridor Survey Area)	50	N	Y	N	Unknown	Unknown
* <i>Eragrostis curvula</i>	KAL-01	20	N	N	Y	Not assessed	Not assessed
* <i>Eragrostis curvula</i>	Opp (corridor Survey Area)	100					
* <i>Oligocarpus calendulaceus</i>	Opp (smelter Survey Area)	20	N	N	N	Unknown	Unknown
* <i>Salvia verbenaca</i>	Opp (smelter Survey Area)	20	N	N	N	Unknown	Unknown



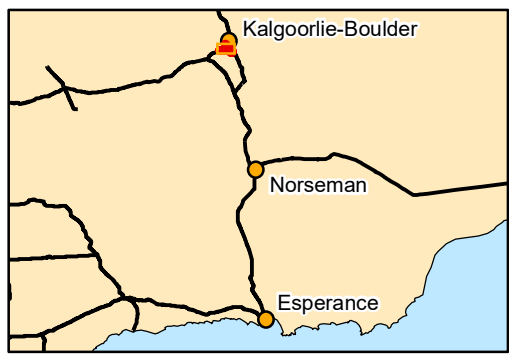
- Legend**
- | | | | |
|-----------------------|--------------|-------------------------------|-------------------------------------|
| Survey Area | — Local Road | Introduced Flora | ● <i>*Eragrostis curvula</i> |
| ▭ Smelter Survey Area | — State Road | ● <i>*Cenchrus ciliaris</i> | ● <i>*Oligocarpus calendulaceus</i> |
| ▭ Pipeline Corridor | — Rail | ● <i>*Echium plantagineum</i> | ● <i>*Salvia verbenaca</i> |
| ▭ Road Corridor | | | |

biologic
Environmental Survey

Scale: 1:53,000

0 1 2 3 Km

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 30/11/2021



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Figure 5.2: Introduced flora
recorded in the Survey Area

5.2.4 Vegetation

Broad Floristic Formations

Five broad floristic formations were described from the smelter Survey Area, based on the dominant growth form and land cover, and genus for the dominant stratum. The broad floristic formations are (and their subsequent extents across the Survey Area):

Shrublands:

- *Allocasuarina* Tall Shrubland 30.2 ha / 0.5 %
- Chenopod Mixed Low Open Shrubland 40.3 ha / 0.7 %
- *Duma* Mid Sparse Shrubland 0.8 ha / 0.1 %

Woodlands:

- *Eucalyptus* Low Open Mallee Woodland 180.2 ha / 29.7 %
- *Eucalyptus* Mid Woodland 173.2 ha / 28.5 %

The dominant broad floristic formation based on extent across the Survey Area is *Eucalyptus* Low Open Mallee Woodland (as above). *Eucalyptus* Low Open Mallee Woodland also supported the greatest number of vegetation types (three), while the remaining formations all supported one each.

One additional mapping unit was delineated from the Survey Area: "Cleared" (182.3 ha / 30.0 %). This unit represents cleared areas (roads, tracks, drill pads, bare areas void of vegetation etc.).

Vegetation Types

Seven vegetation types were mapped in the smelter Survey Area (Table 5.6, Figure 5.3). These vegetation types were described and delineated based on the floristic data collected during the survey and comparisons with previous vegetation mapping completed in the smelter Survey Area (Mattiske, 2008). Shortened vegetation codes were produced, in line with Mattiske (2008), by identifying the dominant stratum layer, comprising:

Eucalypt Woodlands (E):

- E1 - Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland;
- E2 - Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissima* mallee woodland;
- E3 - Low open *Eucalyptus torquata* mallee woodland;
- E4 - Low open *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* mallee woodland.

Shrublands (S)

- S1 - Tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland;
- S2 - Mid to low open *Lycium australe*, *Frankenia* sp., *Maireana sedifolia*, *Atriplex nummularia*, *Atriplex vesicaria* and *Sclerolaena diacantha* mixed chenopod shrubland;




- S3 - Mid sparse *Duma florentia* shrubland.




The vegetation type representing the greatest proportion of the mapping was E1 (28.5 %), followed by types E4 (25 %) and S2 (6.6 %) (Table 5.6).


A range of landforms were present in the smelter Survey Area comprising (in descending order of dominance across) gentle hillslopes (lower, mid, upper), flats / saline flats, floodplains and hilltops / crests.

Vegetation boundaries and descriptions generally aligned with previous mapping within the smelter Survey Area (Mattiske, 2008). Some boundaries shifted, some mapped areas were added and/or removed, while additional areas have been cleared since the mapping was complete in 2008. However, one additional vegetation type was added in this current survey: S3 - Mid sparse *Duma florulenta* shrubland with scattered fringing *Melaleuca lateriflora* shrubs over scattered herbs and grasses on claypans and depressions on red/brown clay. This unit was previously mapped simply as “Claypan” with no description of vegetation provided (Mattiske, 2008).

Table 5.6: Vegetation types in the smelter Survey Area

Veg Code	Veg code (BHP standard)	Broad Floristic Formation	Vegetation Description	Sample sites	Extent (ha/ %)	Significant Features	Condition	Representative photo
E1	FS EsEsa Ms SeafExaEs AnsOmScsp	Eucalyptus Mid Woodland	Mid <i>Eucalyptus salubris</i> and <i>Eucalyptus salmonophloia</i> woodland over occasional dense patches of <i>Melaleuca sheathiana</i> shrubs over mid open <i>Senna artemisioides</i> subsp. <i>filifolia</i> , <i>Exocarpos aphyllus</i> and <i>Eremophila scoparia</i> over low open <i>Atriplex nummularia</i> subsp. <i>spathulata</i> , <i>Olearia muelleri</i> and <i>Scaevola spinescens</i> shrubland on mid and lower slopes and flats on brown clay loam with limited surface stones	KAL-06, KAL-07, KAL-08, KAL-18, KAL-19, KAL-22, KAL-26, KAL-27	173.2 / 28.5		Very Good, Degraded (E1(d))	
E2	HS EffEI EiSeafSaac HaScsp Ts	Eucalyptus Low Open Mallee Woodland	Low open <i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i> and <i>Eucalyptus longissima</i> mallee woodland over tall open <i>Eremophila interstans</i> , <i>Senna artemisioides</i> subsp. <i>filifolia</i> and <i>Santalum acuminatum</i> shrubland over mid to low open <i>Halgania andromedifolia</i> and <i>Scaevola spinescens</i> shrubland over low open <i>Triodia scariosa</i> hummock grassland on mid slopes on red/brown sandy clay loam with limited surface stones	KAL-13 (mapping note), KAL-16	17.8 / 2.9		Excellent, Very Good	
E3	HS Et Ab ScspAsWr Ts	Eucalyptus Low Open Mallee Woodland	Low open <i>Eucalyptus torquata</i> mallee woodland over tall sparse <i>Alyxia buxifolia</i> shrubland over mid to open low <i>Scaevola spinescens</i> , <i>Acacia erinacea</i> and <i>Westringia rigida</i> shrubland over occasional patches of <i>Triodia scariosa</i> hummock grasses on rocky (calcrete pebbles) upper and mid slopes on red/brown sandy clay loam	KAL-21, mapping notes	10.7 / 1.8		Excellent, Very Good	

Veg Code	Veg code (BHP standard)	Broad Floristic Formation	Vegetation Description	Sample sites	Extent (ha/ %)	Significant Features	Condition	Representative photo
E4	SP EgEIEle Ms ScspSeaf WrHa Ts	Eucalyptus Low Open Mallee Woodland	Low open <i>Eucalyptus griffithsii</i> , <i>Eucalyptus longissima</i> and <i>Eucalyptus lesouefii</i> mallee woodland over occasional dense patches of <i>Melaleuca sheathiana</i> shrubs over mid open <i>Scaevola spinescens</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> shrubland over low open <i>Westringia rigida</i> and <i>Halgania andromedifolia</i> shrubland over occasional patches of <i>Triodia scariosa</i> hummock grasses on plains and flats on red/brown sandy clay loam with limited surface stones	KAL-04, KAL-10 (mapping note), KAL-11, KAL-12, KAL-17, KAL-24, KAL-28, KAL-34	151.7 / 25.0		Very Good, Degraded (E4(d))	
S1	HC AhAte ScspPfPs EtEgEI Ts	Allocasuarina Tall Shrubland	Tall <i>Allocasuarina helmsii</i> , <i>Acacia acuminata</i> and <i>Acacia tetragonophylla</i> shrubland over mid open <i>Scaevola spinescens</i> , <i>Pomaderris forrestiana</i> and <i>Prostanthera incurvata</i> shrubland with low isolated <i>Eucalyptus torquata</i> , <i>Eucalyptus griffithsii</i> and <i>Eucalyptus longissima</i> mallee trees over occasional patches of <i>Triodia scariosa</i> hummock grasses on rocky (dolerite and calcrete pebbles) hill tops (crests) and upper hill slopes on red sandy clay loam	KAL-14, KAL-15, KAL-20, KAL-29, KAL-31	30.2 / 5.0		Excellent	
S2	SF LaFsMseAmAvScdi	Chenopod Mixed Low Open Shrubland	Mid to low open <i>Lycium australe</i> , <i>Frankenia</i> sp., <i>Maireana sedifolia</i> , <i>Atriplex nummularia</i> , <i>Atriplex vesicaria</i> and <i>Sclerolaena diacantha</i> on saline flats and floodplains on orange clay loam	KAL-02, KAL-05	40.3 / 6.6		Very Good, Degraded (S2(d))	

Veg Code	Veg code (BHP standard)	Broad Floristic Formation	Vegetation Description	Sample sites	Extent (ha/ %)	Significant Features	Condition	Representative photo
S3	GP Duf MI	Duma Mid Sparse Shrubland	Mid sparse <i>Duma florulenta</i> shrubland with scattered fringing <i>Melaleuca lateriflora</i> shrubs over scattered herbs and grasses on claypans and depressions on red/brown clay	KAL-01	0.8 / 0.1	Shares affinities with Emu Land System PEC	Good	
CI	CI	Cleared	Cleared	-	182.3 / 30.0		Completely Degraded	
TOTALS					607 / 100			

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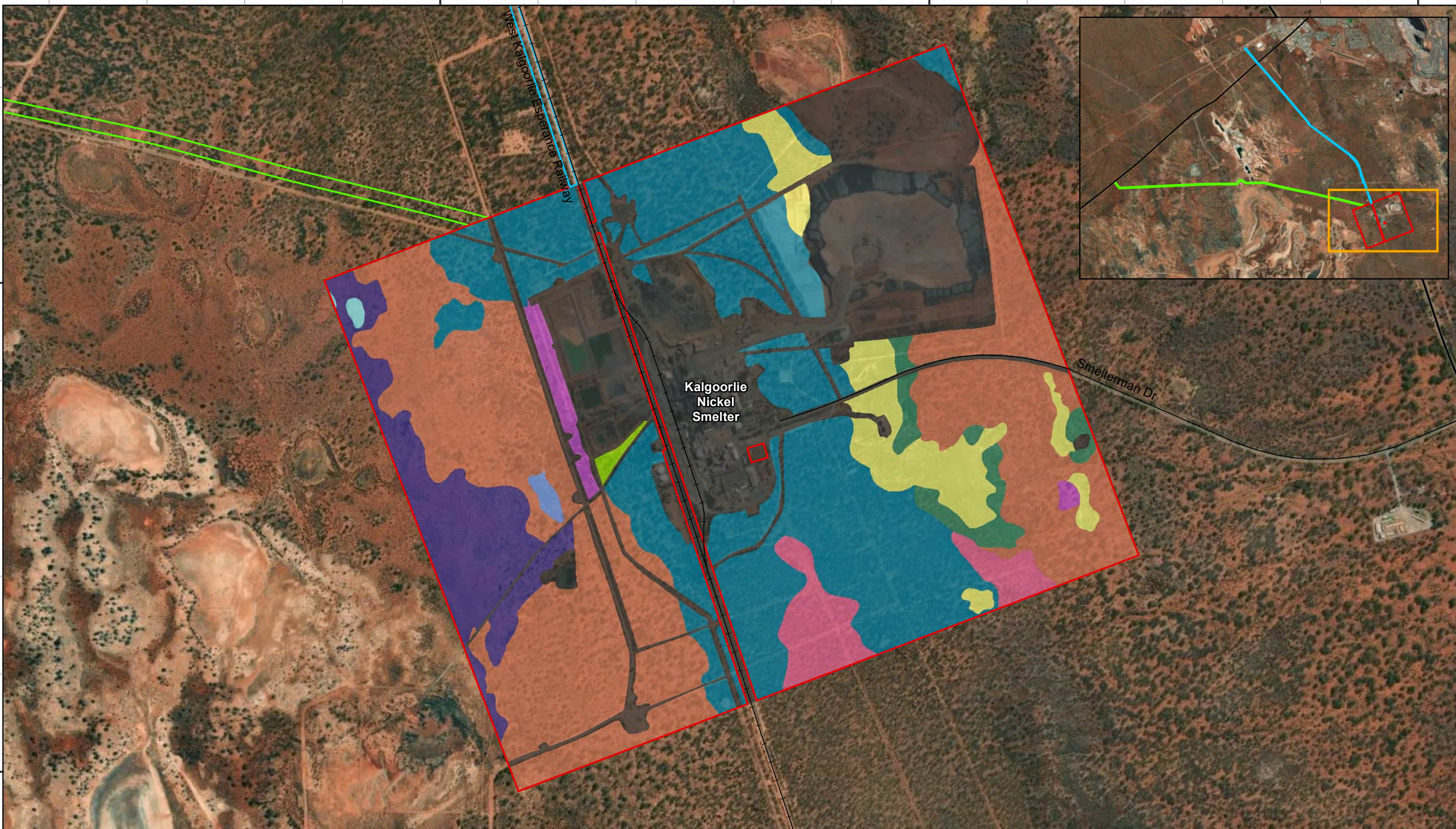
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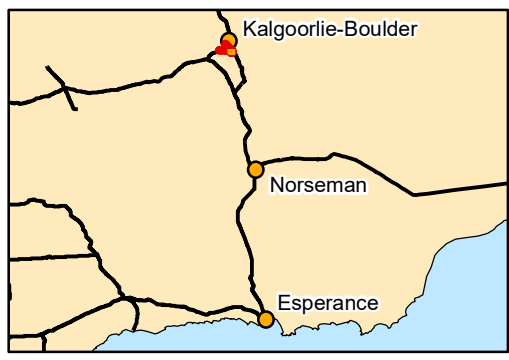


Legend

Smelter Survey Area	Local Road	Vegetation Type	E3	S2
Pipeline Corridor	State Road	E1	E4	S2(d)
Road Corridor	Rail	E1(d)	E4(d)	S3
		E2	S1	Cleared

Scale: 1:14,900

Coordinate System: GDA 1994 MGA Zone 51
 Projection: Transverse Mercator
 Datum: GDA 1994 Created 30/11/2021



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Figure 5.3: Vegetation types
in the Survey Area

5.2.5 Vegetation of Significance

One PEC, 'Emu Land System', was identified by the desktop assessment as occurring approximately 40 km to the north-east of the Survey Area (see section 3.2.2). This PEC is listed as a Priority 3 community and consists of fresh or brackish ephemeral lakes and swamps with cane grass, lignum and paperbark shrublands (DBCA, 2017). The Emu Land System does not occur within the Survey Area according to soil landscape mapping for the rangelands (DPIRD, 2021a, 2021b).

The area mapped as vegetation type S3 (Mid sparse *Duma florentia* shrubland) shared affinities to a PEC. This vegetation type contained lignum (*Duma florulenta*), and scattered herbs and grasses fringed by *Melaleuca lateriflora*, and was situated on a small claypan landform (Plate 5.1, Figure 5.3). Although this vegetation type cannot represent the PEC based on geographical distribution (i.e. it does not occur on the Emu Land System), it is considered to share affinities with the PEC due to its superficial similarity in landform and vegetation structure; i.e., a claypan containing lignum and scattered herbs and grasses (chiefly *Eragrostis* spp.), with fringing paperbark shrublands. As a result, this vegetation type is considered to represent vegetation of other significance at a local level due to its limited representation within the Survey Area. Given the presence of additional claypans to the west of the Survey Area visible on aerial photography, further study would be required to determine whether this vegetation type extended beyond the boundaries of the Survey Area.

None of the remaining vegetation types within the smelter Survey Area are considered to be analogous with any other conservation significant ecological community.



Plate 5.1: Claypan community in the northwest of the Survey Area (Biologic photos)

5.2.6 Vegetation Condition

The condition of the vegetation within the smelter Survey Area ranged from completely degraded (cleared areas) to excellent, with the majority of the vegetation in very good condition (Table 5.7, Figure 5.4). The main disturbances observed were associated with mining/ exploration (proximity to smelter), roads and tracks, and weed invasion. Since Mattiske's last monitoring survey completed in 2017 (Mattiske, 2018), the condition of the vegetation surrounding the smelter is generally either improving or has remained the same. This mostly aligns with observations made during this current survey (the majority of the vegetation was in very good condition). There were signs of stock grazing and trampling across most small portions

of the smelter Survey Area confined to the floodplains, saline flats and claypan landforms (vegetation types S2 and S3) that resulted in a low condition rating. Generally weed cover was low, with only sporadic occurrences through the smelter Survey Area.

Table 5.7: Vegetation condition in the smelter Survey Area

Condition	Extent (ha / %)	Comment
Excellent	58.7 / 9.7	Generally occurred on landforms higher in the landscape (mid to upper slopes, hilltops/crests – vegetation types S1, E2 and E3). Minimal disturbances noted, mainly to do with historical clearing and nearby tracks/ roads.
Very Good	356.7 / 58.8	Occurred across majority of the smelter Survey Area and showed only minimal signs of disturbances associated with mining/ exploration (proximity to smelter).
Good	2.3 / 0.4	Occurred across small portions of the smelter Survey Area and showed evidence of stock trampling and grazing, as well as some weed presence. Mainly occurred on landforms low in the landscape with higher moisture retention (floodplains, saline flats and claypan landforms – vegetation types S2 and S3).
Degraded	7.0 / 1.2	Confined to areas directly adjacent cleared areas close to the smelter. Main disturbances include clearing, dust, plant deaths and soil excavation.
Completely Degraded	182.3 / 30.0	Cleared areas (roads, tracks, drill pads, smelter infrastructure area).

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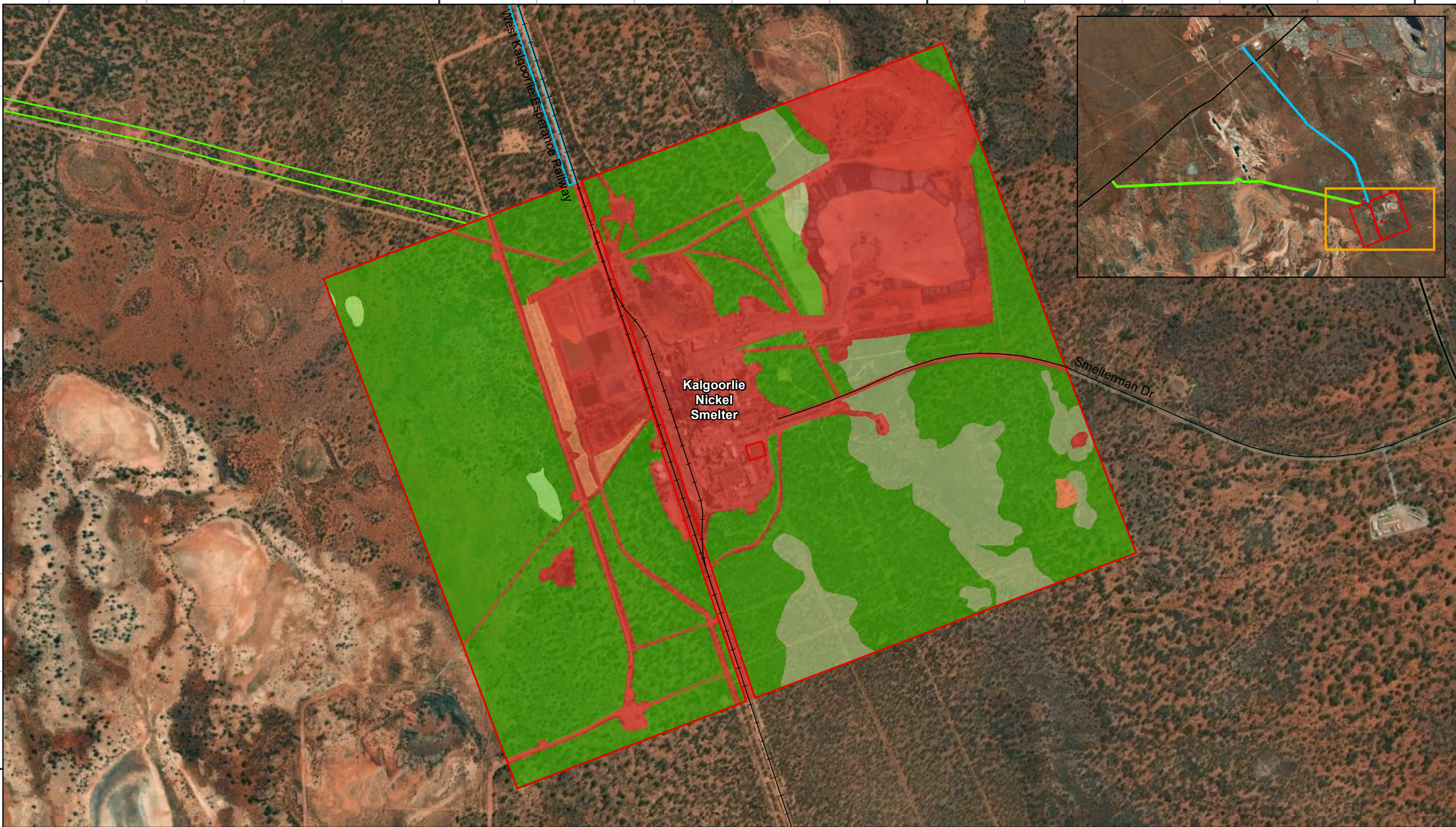
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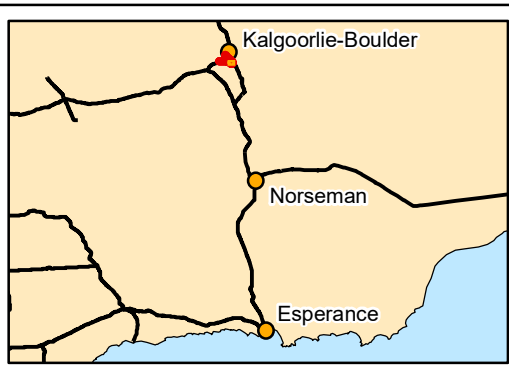
Legend

Survey Area	— Local Road	Vegetation Condition	Good
Smelter Survey Area	— State Road	Excellent	Degraded
Pipeline Corridor	— Rail	Very Good	Completely Degraded
Road Corridor			

biologic
Environmental Survey

Scale: 1:14,900

Coordinate System: GDA 1994 MGA Zone 51
Projection: Transverse Mercator
Datum: GDA 1994 Created 30/11/2021



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Figure 5.4: Vegetation
condition in the Survey Area

6 POTENTIAL LIMITATIONS AND CONSTRAINTS

The EPA’s *Technical Guidance* documents: *Terrestrial vertebrate fauna surveys for environmental impact assessment (2020)*; and *Flora and vegetation surveys for environmental impact assessment (2016)*, outline a number of factors that can affect the adequacy of fauna surveys (EPA, 2016b, 2020b) and vegetation and flora surveys (EPA, 2016b), respectively. These factors were assessed in relation to the current survey and are discussed in Table 6.1. The sampling techniques used during the survey were adequate to complete the necessary level of survey and were not constrained by any significant limitations.

Table 6.1: Survey limitations and constraints

Potential limitation or constraint	Applicability to this survey	Limitation to survey
Experience of personnel	The field survey was completed by senior botanist Sam Coultas, who has over seven years of environmental survey experience with significant skills and techniques in flora sampling and identification and having undertaken projects within the Kalgoorlie/Coolgardie area; and ecologist Kaylin Geelhoed with three years of fauna and flora survey experience. Both personnel have experience in conducting biological surveys within a range of bioregions across the state.	No
Scope (faunal groups sampled and whether any constraints affect this)	The scope was a basic fauna and reconnaissance flora and vegetation survey of the smelter Survey Area, and a targeted fauna and flora survey of the corridor Survey Area. The field survey was conducted within that framework. Fauna and flora were sampled via targeted searches and opportunistic sightings across the corridor Survey Area, while fauna habitat assessments and flora relevé sites and mapping notes were conducted across the smelter Survey Area.	No
Proportion of fauna identified	All observed fauna was identified at the point of observation. A total of 18 fauna species were recorded during the survey, comprising a total of 33 individual records. This is an acceptable number of records given this was not the focus of the field survey, which was to record fauna habitats and assess likelihood of occurrence.	No
Proportion of flora identified	A total of 114 vascular flora taxa from 31 families and 62 genera were recorded from the smelter Survey Area during the field survey. This included a number of annual and ephemeral taxa in reasonable condition. As it is not in the scope to record all taxa from the Survey Area, this is considered an acceptable number for a reconnaissance survey of this Survey Area size. Nine taxa observed and collected from the field were difficult to confidently identify to species or infraspecies level. This was mainly due to the specimens/ individuals lacking suitable flowering and/ or fruiting material for confident taxonomic identification. One of these taxa identified to genus level, <i>Lepidosperma</i> sp. indet., does have affinities to a conservation significant taxon (see section 5.2.2), while the remaining eight taxa are not considered to be analogous with any conservation significant flora. This small number of unidentifiable taxa is not considered to have limited the reconnaissance flora and vegetation survey.	No

Potential limitation or constraint	Applicability to this survey	Limitation to survey
Sources of information (recent or historic) and availability of contextual information	All contextual resources required to complete the assessment were available (previous surveys, database searches, environmental information, climate data). Land system mapping in the Kalgoorlie area is somewhat patchy and requires review. With only four previous records of vertebrate fauna surveys in the vicinity of the Survey Area, the amount of information available about vertebrate species which potentially occur within the Survey Area was somewhat limited. However, neither of the preceding points impacted the outcomes of the survey.	No
Timing /weather /season /cycle	The field survey was completed in early September which is within the recommended survey timing for flora surveys in the Southwest and Interzone Botanical provinces (September – November) (EPA, 2016b). Furthermore, rainfall leading up to the field survey was above average with the exception of the month immediately preceding the survey (conditions within the Survey Area were favourable with a high number of annual or short-lived perennial species present). Similar to above, the conditions did not limit the ability of the survey to fulfil the objectives of a basic fauna survey i.e. to assess fauna habitats present or the likelihood of species of conservation significance occurring in the Survey Area. Therefore timing, weather and season is not a factor limiting the survey.	No
Disturbances (e.g. fire or flood)	The smelter Survey Area ranged in condition from completely degraded to excellent, with the majority in very good condition. It had not been recently affected by fire. All disturbance activity was expected for the region.	No
Intensity of survey	A basic fauna, reconnaissance flora survey and targeted flora and fauna survey was prescribed by BHP and survey techniques (fauna habitat assessments, flora relevé sites and mapping notes, targeted searches) were appropriate for this level of survey. Survey effort/ intensity is presented in Figure 4.2.	No
Completeness of survey	A basic fauna, reconnaissance flora survey and targeted flora and fauna survey was completed. Fauna habitat assessments, flora relevé sites and mapping notes, and targeted searches were completed across the Survey Area, including within all landform and habitat types present.	No
Resources (e.g. degree of expertise available)	All resources required to complete the survey were available. Field personnel consisted of a qualified botanist and ecologist, who have extensive experience in conducting biological surveys in a range of bioregions across the state.	No
Remoteness or access issues	The majority of the Survey Area was accessible either by vehicle or on foot. While not all parts of the smelter Survey Area were walked, habitat assessments, flora sites and targeted searches were conducted within all habitat types present. The entire corridor Survey Area was traversed on foot.	No

7 CONCLUSIONS

7.1 Vertebrate Fauna

Four habitat types were identified within the smelter Survey Area: Open Eucalypt Woodland, Allocasuarina Shrubland, Low Chenopod Shrubland and Claypan habitats. All fauna habitat types are common throughout the local area (directly surrounding the Survey Area) and throughout the region. These habitat types are considered to be of low or moderate significance for vertebrate fauna species as they are widespread in the surrounding landscape and/or are not exclusively relied upon by species of conservation significance.

Claypan habitat provides unique and valuable habitat to a variety of fauna species, particularly for foraging by migratory bird species including glossy ibis, common sandpiper, sharp-tailed sandpiper, fork-tailed swift, red-necked stint, wood sandpiper, and common greenshank. This habitat within the Survey Area is only inundated on a seasonal basis and therefore only supports these species for part of the year. Given the extent and quality of salt lakes and claypans both locally and in the greater bioregion are more likely to support these conservation significant vertebrate fauna species on a longer-term basis, it is unlikely that these species are exclusively reliant on this habitat type within the Survey Area. Claypan habitat is therefore considered to be of moderate significance.

Allocasuarina Woodland within the Survey Area is dense in areas, providing valuable shelter for dispersing fauna, birds and potential for malleefowl nesting. A single historical (long unused) malleefowl nest was recorded during the survey in this habitat type. However, due to no recent evidence of the species and the proximity to disturbance (mining/roads/tracks), this habitat is considered to be of moderate significance to fauna of conservation significance.

The remaining two fauna habitat types, Open Eucalypt Woodland and Low Chenopod Shrubland, do not present unique or significant habitat, are widespread in the local area and in the Coolgardie bioregion and, as such, are considered of low significance to conservation significant vertebrate species.

While historical evidence of the malleefowl has been confirmed within the Survey Area, no other species were assessed as Highly Likely or Likely to occur. While eight species are considered to Possibly occur, none of the conservation significant vertebrate fauna species listed under the EPBC Act or BC Act and identified in the desktop analysis are dependent on any of the fauna habitat identified from within the Survey Area.

7.2 Flora and Vegetation

A total of 114 vascular flora taxa from 31 families and 62 genera were recorded from the smelter Survey Area during the field survey (109 native taxa and five introduced taxa). Of the five introduced taxa recorded, *Echium plantagineum* (Patterson's Curse) is a Declared Pest under s22 of the BAM Act, and *Eragrostis curvula* is on the priority list for the Goldfields Region due to it being currently absent from lands managed by the DBCA.

No conservation significant flora taxa were recorded by this survey from the smelter or corridor Survey Areas.

Nine taxa observed and collected from the field were difficult to confidently identify to species or infraspecies level. One of these taxa identified to genus level, *Lepidosperma* sp. indet., does have affinities with the conservation significant taxon *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2). However, the specimen collected during this survey was sterile, and the WAH has insufficient material and supporting literature to confidentially identify this specimen. Therefore this specimen is not considered to represent that of a conservation significant taxon. However, *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2) is considered Possible to occur in the Survey Area post-survey.

All other conservation significant flora taxa are considered either Unlikely or Highly Unlikely to occur in the Survey Area post-survey.

Five flora taxa recorded from the smelter Survey Area by this survey are considered to be flora of “other” significance:

- *Calandrinia pumila* – range extension 78 km southeast;
- *Centipeda crateriformis* subsp. *compacta* – fills a gap in distribution;
- *Lepidosperma* sp. indet – doesn't match any taxa currently held and described at the Western Australian Herbarium, most closely resembles *Lepidosperma* sp. Kambalda (A.A. Mitchell 5156) (P2);
- *Ptilotus obovatus* var. *obovatus* - range extension 141 km east-southeast;
- *Swainsona purpurea* – range extension 17 km south.

Seven vegetations types were mapped in the smelter Survey Area:

Eucalypt Woodlands (E)

- E1 - Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland;
- E2 - Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissima* mallee woodland;
- E3 - Low open *Eucalyptus torquata* mallee woodland;
- E4 - Low open *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* mallee woodland.

Shrublands (S)

- S1 - Tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland;
- S2 - Mid to low open *Lycium australe*, *Frankenia* sp., *Maireana sedifolia*, *Atriplex nummularia*, *Atriplex vesicaria* and *Sclerolaena diacantha* mixed chenopod shrubland;
- S3 - Mid sparse *Duma florentia* shrubland.

A range of landforms were present in the smelter Survey Area comprising gentle hillslopes (lower, mid, upper), flats / saline flats, floodplains and hilltops / crests. The majority of the vegetation within the smelter Survey Area was in very good condition.

No conservation significant vegetation was recorded in the smelter Survey Area by this survey. The area mapped as vegetation type S3 (Mid sparse *Duma florentia* shrubland) shared affinities to a PEC. This vegetation type contained lignum (*Duma florulenta*), and scattered herbs and grasses fringed by *Melaleuca lateriflora*, and was situated on a small claypan landform. Although this vegetation type cannot represent the PEC based on geographical distribution (i.e. it does not occur on the Emu Land System), it is considered to share affinities with the PEC due to its superficial similarity in landform and vegetation structure. As a result, this vegetation type is considered to represent vegetation of other significance at a local level.

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9 APPENDICES

Appendix A – Conservation status definitions

Environment Protection and Biodiversity Conservation Act 1999

Category	Definition
Threatened	
Extinct (EX)	Presumed extinct i.e. there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	Presumed extinct in the wild, only surviving in cultivation, captivity or as a naturalised population well outside its past range.
Critically Endangered (CE)	Taxa facing an extremely high risk of extinction in the wild in the immediate future (i.e. 50% chance of extinction in the immediate future).
Endangered (EN)	Taxa facing a very high risk of extinction in the wild in the near future i.e. 20% chance of extinction in the near future.
Vulnerable (Simate & Ndlovu)	Taxa facing a high risk of extinction in the wild in the medium-term future i.e. 10% chance of extinction in the medium-term future.
Conservation Dependent (CD)	Taxa which will become Vulnerable, Endangered or Critically Endangered if specific conservation efforts cease.
Other	
Migratory (MI)	Birds listed under international agreements relating to the protection of migratory birds i.e. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), China-Australia Migratory Bird Agreement (CAMBA), Japan-Australia Migratory Bird Agreement (JAMBA) or Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Biodiversity Conservation Act 2016

Category	Definition
Extinct	
Extinct (EX)	Presumed extinct i.e. there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	Presumed extinct in the wild i.e. species which have been adequately searched for and there is no reasonable doubt that the last wild individual has died.
Threatened	
Critically Endangered (CE)	Taxa facing an extremely high risk of extinction in the wild.
Endangered (EN)	Taxa facing a very high risk of extinction in the wild.
Vulnerable (Simate & Ndlovu)	Taxa facing a high risk of extinction in the wild.
Specially Protected	
Migratory (MI)	Birds listed under international agreements relating to the protection of migratory birds i.e. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), China-Australia Migratory Bird Agreement (CAMBA), Japan-Australia Migratory Bird Agreement (JAMBA) or Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).
Conservation Dependent (CD)	Species dependent on ongoing conservation intervention to prevent them becoming eligible for listing as threatened.
Other specially protected fauna (OS)	Species otherwise in need of special protection to ensure their conservation.

Department of Biodiversity, Conservation and Attractions Priority codes

Category	Definition
Poorly known	
Priority 1 (P1)	Species that are known from one or a few locations which are potentially at risk. Species whose occurrences are either small, on lands not managed for conservation or otherwise threatened with habitat destruction or degradation. Species that are well known from one or more locations but are under immediate threat from threatening processes. In urgent need of further survey.
Priority 2 (P2)	Species that are known from one or a few locations, some of which are on lands managed for conservation. Species that are well known from one or more locations but are under threat from threatening processes. In urgent need of further survey. In need of further survey.
Priority 3 (P3)	Species that are well known from several locations and are not are under imminent threat. Species known from few but widespread locations with either a large population size or with large areas of suitable habitat remaining, much of which is not under imminent threat. Species that are well known from one or more locations and threatening processes exist that could affect them.
Rare, Near Threatened and other species in need of monitoring	
Priority 4 (P4)	<p><i>Rare</i> – Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change.</p> <p><i>Near Threatened</i> – Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.</p> <p><i>In need of monitoring</i> - Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy</p>

International Union for Conservation of Nature

Category	Definition
Extinct (EX)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Extinct in the Wild (EX)	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Critically Endangered (CR)	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.
Vulnerable (Simate & Ndlovu)	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.
Near Threatened (NT)	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future
Data Deficient (DD)	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases, great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

Appendix B – Vertebrate fauna literature review

Survey	Biological Assessment – Binduli Expansion Project. Level 1 vertebrate fauna and short-range endemic invertebrate survey. (Eco Logical, 2016)	The biological survey of the eastern goldfields of Western Australia. Part 8: Kurnalpi - Kalgoorlie study area, Records of the Western Australian Museum, Supplement 41. (McKenzie <i>et al.</i> , 1992)	Comparisons of ground vertebrate assemblages in arid Western Australia in different seasons and decades. (Cowan & How, 2004)	Detailed and Targeted Fauna Survey By-product Storage Site (Onshore, 2021)
Consultant	Ecological	McKenzie et al.	WAM/CALM	Onshore Environmental
Year	2016	1992	2004	2021
Type	Level 1 Vertebrate Fauna and SRE invertebrate fauna	Level 2 Vertebrate fauna	Level 2 Vertebrate Comparison Survey 20 years apart	Level 2 Vertebrate
Duration	23-30 May 2016	October 1979 August 1980 February 1981	Two Surveys with 4 discrete sampling periods; 10-15 March 1979 and 6-11 October 1980 (WAM) 24-30 October 2001 and 6-11 March 2002 (CALM)	4-12 September 2020
Approximate Distance from Survey Area	~0 km	~0 km	~80 km N	~ 15km N
General methods	Opportunistic observations	Drift fence trapping, quadrats, opportunistic sampling, bat mist netting and spotlighting	Sampling at all sites involved the use of pitfall traplines with drift fences, Elliott mammal traps and extensive opportunistic sampling that included both foraging and nocturnal searches	Pit-trap and drift fence; Elliot box traps; Funnel traps; Cage traps; Anabat recording (to detect bat echolocation calls); Detailed and Targeted Fauna Survey: opportunistic searching; and nocturnal searches
No. Trapping Sites	0	Various per site per survey Between 5-16 nights, averaging 10 nights.	10 13,050 trapping nights	2
Elliot trap nights	0	Not specified	Not specified	8
Pitfall trap nights	336	Not specified	Not specified	160
Funnel trap nights	0	Not specified	0	192
Cage trap nights	0	Not specified	Not specified	64
Diurnal search (person hours)	0	Not specified	Not specified	0
Nocturnal search (person hours)	0	Not specified	Not specified	2

Survey	Biological Assessment – Binduli Expansion Project. Level 1 vertebrate fauna and short-range endemic invertebrate survey. (Eco Logical, 2016)	The biological survey of the eastern goldfields of Western Australia. Part 8: Kurnalpi - Kalgoorlie study area, Records of the Western Australian Museum, Supplement 41. (McKenzie <i>et al.</i> , 1992)	Comparisons of ground vertebrate assemblages in arid Western Australia in different seasons and decades. (Cowan & How, 2004)	Detailed and Targeted Fauna Survey By-product Storage Site (Onshore, 2021)
Consultant	Ecological	McKenzie et al.	WAM/CALM	Onshore Environmental
Year	2016	1992	2004	2021
Targeted avifauna survey (person hours)	0	Sampled daily for 5 days during each survey period	Not specified	4
Bat survey effort	N/A	1 night per survey at each location Mist net or spotlighting	N/A	Anabat ultrasonic bat recorders: 1 unit for 1 night at each of 2 sites
Motion-sensor Camera nights	0	0	N/A	0
Active foraging for SRE invertebrates	Yes	0	0	0
Leaf litter sieving for SRE invertebrates	Yes	0	0	0
Survey Limitations	Poor taxonomic resolution SRE species Some areas inaccessible	None identified	None identified	None identified

Appendix C – Flora literature review

Study Details	Methods	Results	Significant Findings	Limitations
Mattiske (2008) Client: BHP Billiton Type: Level 1 flora and vegetation survey Location: Kalgoorlie Nickel Smelter (same survey area) Timing: March 2008	<ul style="list-style-type: none"> Sites Opportunistic records Targeted searches 	<ul style="list-style-type: none"> 98 vascular flora taxa from 26 families and 42 genera Six vegetation units Completely degraded to very good condition 	<ul style="list-style-type: none"> No significant findings 	Survey was out of season
Native Vegetation Solutions (2018) Client: City of Kalgoorlie-Boulder Type: Reconnaissance flora and vegetation survey Location: Lot 500 Great Eastern Hwy Kalgoorlie (adjacent to pipeline survey area) Timing: June 2018	<ul style="list-style-type: none"> 23 relevés 	<ul style="list-style-type: none"> 77 vascular flora species from 21 families and 38 genera Six vegetation units Good to very good condition 	<ul style="list-style-type: none"> No significant findings 	No substantial limitations
Native Vegetation Solutions (2019a) Client: Mineral Resources Ltd Type: Reconnaissance flora and vegetation survey Location: Mt Marion (14.0 km south-southwest) Timing: May 2012, January/ March 2013, November 2015, September/ November 2017, July 2018	<ul style="list-style-type: none"> Relevés Targeted searches 	<ul style="list-style-type: none"> 198 flora species from 38 families and 84 genera 30 vegetation units Degraded to excellent condition 	<ul style="list-style-type: none"> 28 populations of <i>Eremophila acutifolia</i> (P3) – known as <i>Diocirea acutifolia</i> at time of surveys 	No substantial limitations
GHD (2015) Client: Metals X Limited Type: Level 1 flora, vegetation and fauna survey Location: leases L25-48 and L25-43 Bulong (17 km east) Timing: February 2015	<ul style="list-style-type: none"> 12 relevés Opportunistic searches 	<ul style="list-style-type: none"> Nine vegetation units No other results given 	<ul style="list-style-type: none"> No significant findings 	Survey was out of season

Study Details	Methods	Results	Significant Findings	Limitations
Phoenix (2019) Client: Evolution Mining Ltd Type: Two phase detailed flora and vegetation survey Location: (27.5 km north-northwest) Timing: June and October 2018	<ul style="list-style-type: none"> 38 quadrats Three transects Six relevés 	<ul style="list-style-type: none"> 215 flora taxa from 36 families and 81 genera 19 vegetation units Completely degraded to pristine condition 	<ul style="list-style-type: none"> Four priority flora taxa: <ul style="list-style-type: none"> <i>Eremophila praecox</i> (P2) – P1 at time of survey <i>Allocasuarina eriochlamys</i> subsp. <i>grossa</i> (P3) <i>Austrostipa blackii</i> (P3) <i>Calandrinia ?quartzitica/ ?leeroyensis</i> (P1) 	<ul style="list-style-type: none"> Targeted searches not exhaustive Access restrictions Identification issues
Spectrum (2019) Client: Evolution Mining Type: Targeted flora survey Location: Regional survey Timing: November 2019	<ul style="list-style-type: none"> Targeted searches 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Three populations of <i>Calandrinia leroyensis</i> (P1) – closest was 31 km northwest of Survey Area 	<ul style="list-style-type: none"> Access restrictions
Strategen Environmental (2019) Client: Shire of Coolgardie Type: Detailed flora and vegetation survey, and fauna habitat assessment Location: (33.5 km west-southwest) Timing: December 2018	<ul style="list-style-type: none"> Four quadrats 	<ul style="list-style-type: none"> 25 vascular flora taxa from 11 families One vegetation unit Completely to excellent condition 	<ul style="list-style-type: none"> No significant findings 	<ul style="list-style-type: none"> No substantial limitations
Native Vegetation Solutions (2020) Client: Karora Resources Inc Type: Reconnaissance flora and vegetation survey Location: Spargos Project (37 km south) Timing: October and December 2020	<ul style="list-style-type: none"> Relevés Targeted searches 	<ul style="list-style-type: none"> 146 flora species from 35 families and 71 genera 10 vegetation units Completely degraded to very good condition 	<ul style="list-style-type: none"> One Threatened taxon: <ul style="list-style-type: none"> <i>Seringia exastia</i> (T) – taxon now encompasses the common <i>Seringia elliptica</i> and is due to be de-listed Six priority taxa: <ul style="list-style-type: none"> <i>Eremophila microphylla</i> (P3) – known as <i>Diocirea microphylla</i> at time of survey <i>Cryptandra crispula</i> (P3) <i>Acacia crenulata</i> (P3) <i>Styphelia rectiloba</i> (P3) <i>Lepidosperma</i> sp. Parker Range (N. Gibson & M. Lyons 2094) (P1) <i>Lepidosperma lyonsii</i> (P1) Two WoNS/ DPs: <ul style="list-style-type: none"> <i>Opuntia ficus-indica</i> <i>Opuntia</i> sp. 	<ul style="list-style-type: none"> No substantial limitations

Study Details	Methods	Results	Significant Findings	Limitations
<p>Native Vegetation Solutions (2019b) Client: Norton Gold Fields Pty Ltd Type: Reconnaissance flora and vegetation survey Location: Kanowna (37.5 km northwest) Timing: June and November 2019</p>	<ul style="list-style-type: none"> • Relevés • Opportunistic sampling 	<ul style="list-style-type: none"> • 113 flora species from 28 families and 58 genera • 17 vegetation units • Degraded to very good condition 	<ul style="list-style-type: none"> ○ No significant findings 	<p>No substantial limitations</p>

Appendix D – Vertebrate fauna identified by the desktop assessment and field survey

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Bovidae														
<i>*Bos taurus</i>	Cow					•							•	
<i>*Capra hircus</i>	Goat					•	•			•				
<i>Ovis aries</i>	*Sheep					•								
Burramyidae														
<i>Cercartetus concinnus</i>	Western pygmy-possum, mundarda					•					•		•	
Canidae														
<i>*Canis familiaris</i> subsp. <i>familiaris</i>	Dog						•							
<i>*Vulpes vulpes</i>	Fox						•			•	•			
Dasyuridae														
<i>Dasyurus geoffroii fortis</i>	Chuditch	VU	VU		NT	•	•	•						
<i>Ningau ridei</i>	Wongai ningau												•	
<i>Ningau yvonneae</i>	Southern ningau					•								
<i>Sminthopsis crassicaudata</i>	Fat-tailed dunnart					•					•	•		
<i>Sminthopsis dolichura</i>	Little long-tailed dunnart					•					•	•		
<i>Sminthopsis gilberti</i>	Gilbert's dunnart					•								
<i>Sminthopsis ooldea</i>	Ooldea dunnart					•								
Emballonuridae														
<i>Taphozous hilli</i>	Hill's sheath-tail bat					•							•	
Equidae														
<i>*Equus asinus</i>	Donkey						•							
<i>*Equus caballus</i>	Horse						•							
Felidae														
<i>*Felis catus</i>	Domestic cat					•	•			•			•	

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Leporidae														
<i>*Oryctolagus cuniculus</i>	Rabbit					•	•			•			•	•
Macropodidae														
<i>Macropus fuliginosus</i>	Western grey kangaroo					•				•	•		•	•
<i>Osphranter robustus</i> subsp. <i>erubescens</i>	Euro					•								
<i>Osphranter rufus</i>	Red kangaroo					•					•			
Molossidae														
<i>Austronomus australis</i>	White-striped free-tailed bat										•			
<i>Ozimops planiceps</i>	Southern free-tailed bat										•			
Muridae														
<i>*Mus musculus</i>	House mouse					•	•				•	•	•	
<i>Notomys alexis</i>	Spinifex hopping-mouse											•		
<i>Notomys mitchellii</i>	Mitchell's hopping-mouse											•		
<i>Pseudomys bolami</i>	Bolam's mouse					•					•			
<i>Pseudomys hermannsburgensis</i>	Sandy inland mouse					•						•		
Myrmecobiidae														
<i>Myrmecobius fasciatus</i>	Numbat, walpurti	EN	EN		EN	•								
Tachyglossidae														
<i>Tachyglossus aculeatus</i> subsp. <i>acanthion</i>	Short-beaked Echidna					•				•			•	
Thylacomyidae														
<i>Macrotis lagotis</i>	Greater bilby	VU	VU		VU	•								
Vespertilionidae														
<i>Chalinolobus gouldii</i>	Gould's wattled bat					•					•		•	
<i>Chalinolobus morio</i>	Chocolate wattled bat					•					•			

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Nyctophilus geoffroyi</i>	Lesser long-eared bat					•					•			
<i>Scotorepens balstoni</i>	Inland broad-nosed bat					•					•			
<i>Vespadelus baverstocki</i>	Inland forest bat					•								
<i>Vespadelus finlaysoni</i>	Finlayson's cave bat					•								
<i>Vespadelus regulus</i>	Southern forest bat					•					•		•	
Acanthizidae														
<i>Acanthiza apicalis</i>	Broad-tailed thornbill or inland thornbill					•			•		•		•	
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped thornbill					•			•		•		•	
<i>Acanthiza inornata</i>	Western thornbill												•	
<i>Acanthiza iredalei</i>	Samphire thornbill												•	
<i>Acanthiza robustirostris</i>	Slaty-backed thornbill					•			•					
<i>Acanthiza uropygialis</i>	Chestnut-rumped thornbill					•			•		•			
<i>Aphelocephala leucopsis</i>	Southern whiteface					•			•				•	
<i>Calamanthus cautus</i>	Shy groundwren					•								
<i>Gerygone fusca</i>	Western gerygone					•			•					
<i>Pyrrholaemus brunneus</i>	Redthroat					•			•		•		•	
<i>Sericornis frontalis</i>	White-browed scrubwren								•					
<i>Smicromis brevirostris</i>	Weebill					•			•	•	•		•	•
Accipitridae														
<i>Accipiter cirrocephalus</i>	Collared sparrowhawk					•			•					
<i>Accipiter fasciatus</i>	Brown goshawk					•			•					
<i>Aquila audax</i>	Wedge-tailed eagle					•			•	•	•		•	
<i>Circus assimilis</i>	Spotted harrier								•					
<i>Elanus caeruleus</i> subsp. <i>axillaris</i>	Black-shouldered kite					•			•					

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Haliastur sphenurus</i>	Whistling kite					•			•					
<i>Hamirostra isura</i>	Square-tailed kite								•					
<i>Hieraaetus morphnoides</i>	Little eagle					•			•					
Aegothelidae														
<i>Aegotheles cristatus</i>	Australian owlet-nightjar					•			•					
Alcedinidae														
<i>Todiramphus pyrrhopygius</i>	Red-backed kingfisher					•			•		•			
<i>Todiramphus sanctus</i>	Sacred kingfisher					•			•					•
Anatidae														
<i>Anas gracilis</i>	Grey teal					•			•	•	•			
<i>Anas platyrhynchos</i>	*Mallard					•			•					
<i>Anas rhynchotis</i>	Australasian shoveler					•			•					
<i>Anas superciliosa</i>	Pacific black duck					•			•					
<i>Aythya australis</i>	Hardhead					•			•					
<i>Biziura lobata</i>	Musk duck					•				•				
<i>Chenonetta jubata</i>	Australian wood duck					•			•					
<i>Cygnus atratus</i>	Black swan					•			•	•				
<i>Malacorhynchus membranaceus</i>	Pink-eared duck					•			•					
<i>Stictonetta naevosa</i>	Freckled duck					•			•					
<i>Tadorna tadornoides</i>	Australian shell duck					•			•	•				
Anhingidae														
<i>Anhinga novaehollandiae</i>	Australasian darter					•			•					
Apodidae														
<i>Apus pacificus</i>	Fork-tailed swift	MI	MI						•					

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Ardeidae														
<i>Ardea ibis</i>	Cattle egret						•							
<i>Ardea modesta</i>	Eastern great egret					•			•					
<i>Ardea novaehollandiae</i>	White-faced heron					•			•					
<i>Ardea pacifica</i>	White-necked heron					•			•					
<i>Artamus cinereus</i>	Black-faced woodswallow					•			•	•				
<i>Artamus cyanopterus</i>	Dusky woodswallow					•			•		•			
<i>Artamus minor</i>	Little woodswallow								•					
<i>Artamus personatus</i>	Masked woodswallow					•			•	•				
<i>Cracticus nigrogularis</i>	Pied butcherbird					•			•	•			•	
<i>Cracticus tibicen</i>	Australian magpie					•			•	•			•	•
<i>Cracticus torquatus</i>	Grey butcherbird					•			•	•			•	•
<i>Strepera versicolor</i>	Grey currawong					•			•	•			•	•
Cacatuidae														
<i>Cacatua roseicapilla</i>	Galah					•			•		•		•	
<i>Cacatua sanguinea</i>	Little corella					•			•					
<i>Calyptorhynchus banksii</i>	Red-tailed black cockatoo								•					
<i>Calyptorhynchus latirostris</i>	Carnaby's cockatoo	EN	EN		EN	•		•	•					
<i>Lophochroa leadbeateri</i>	Major Mitchell's cockatoo								•					
<i>Nymphicus hollandicus</i>	Cockatiel					•			•		•			•
Campephagidae														
<i>Coracina maxima</i>	Ground cuckoo-shrike					•			•		•			
<i>Coracina novaehollandiae</i> subsp. <i>subpallida</i>	Black-faced cuckoo-shrike					•			•	•	•		•	•
<i>Lalage tricolor</i>	White-winged triller					•			•		•			

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Caprimulgidae														
<i>Eurostopodus argus</i>	Spotted nightjar					•			•					
Casuariidae														
<i>Dromaius novaehollandiae</i>	Emu					•			•	•	•		•	•
Charadriidae														
<i>Charadrius ruficapillus</i>	Red-capped plover					•			•					
<i>Erythronyx cinctus</i>	Red-kneed dotterel					•			•					
<i>Elseya melanops</i>	Black-fronted dotterel					•			•				•	
<i>Peltohyas australis</i>	Inland dotterel								•					
<i>Thinornis cucullatus</i>	Hooded plover			P4	VU	•	•	•						
<i>Vanellus tricolor</i>	Banded lapwing					•			•					
Cinclosomatidae														
<i>Cinclosoma clarum</i>	Western chestnut quail-thrush								•					•
<i>Cinclosoma castaneothorax</i>	Chestnut-breasted quail-thrush								•					
Climacteridae														
<i>Climacteris affinis</i>	White-browed treecreeper								•					
<i>Climacteris rufa</i>	Rufous treecreeper								•	•				
Columbidae														
* <i>Columba livia</i>	Domestic pigeon					•	•		•					
<i>Ocyphaps lophotes</i>	Crested pigeon					•			•	•	•		•	
<i>Phaps chalcoptera</i>	Common bronzewing					•			•	•	•		•	
<i>Spilopelia chinensis</i>	*Spotted turtle dove						•							
<i>Spilopelia senegalensis</i>	*Laughing turtle dove					•	•		•					

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Corvidae														
<i>Corvus bennetti</i>	Little crow					•			•					
<i>Corvus coronoides</i>	Australian raven					•			•	•			•	•
<i>Corvus orru</i> subsp. <i>ceciliae</i>	Torresian crow					•			•					
Cuculidae														
<i>Cacomantis flabelliformis</i>	Fan-tailed cuckoo					•			•					
<i>Cacomantis pallidus</i>	Pallid cuckoo					•			•	•				
<i>Chrysococcyx basalis</i>	Horsfield's bronze cuckoo					•			•	•			•	
<i>Chrysococcyx osculans</i>	Black-eared cuckoo					•	•		•					
Dicaeidae														
<i>Dicaeum hirundinaceum</i>	Mistletoebird					•			•					
Estrilidae														
<i>Taeniopygia guttata</i> subsp. <i>castanotis</i>	Zebra finch					•			•					
Falconidae														
<i>Falco berigora</i>	Brown falcon					•			•	•	•		•	
<i>Falco cenchroides</i>	Nankeen kestrel					•			•	•				
<i>Falco hypoleucos</i>	Grey falcon	VU	VU		VU		•							
<i>Falco longipennis</i>	Australian hobby					•			•	•				
<i>Falco peregrinus</i>	Peregrine falcon		OS						•					
Hirundinidae														
<i>Cheramoeca leucosterna</i>	White-backed swallow					•			•					
<i>Hirundo neoxena</i>	Welcome swallow					•			•	•	•			
<i>Petrochelidon ariel</i>	Fairy martin					•			•					
<i>Petrochelidon nigricans</i>	Tree martin					•			•	•	•			

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Laridae														
<i>Larus novaehollandiae</i>	Silver gull					•			•					
Locustellidae														
<i>Cincloramphus cruralis</i>	Brown songlark								•					
<i>Cincloramphus mathewsi</i>	Rufous songlark								•					
Maluridae														
<i>Malurus lamberti</i> subsp. <i>assimilis</i>	Variegated fairywren													•
<i>Malurus leucopterus</i> subsp. <i>leuconotus</i>	White-winged fairywren					•			•	•			•	
<i>Malurus pulcherrimus</i>	Blue-breasted fairywren					•			•					
<i>Malurus splendens</i>	Splendid fairywren					•			•				•	
Megapodiidae														
<i>Leipoa ocellata</i>	Malleefowl	VU	VU		VU	•	•	•	•					•
Meliphagidae														
<i>Acanthagenys rufogularis</i>	Spiny-cheeked honeyeater					•			•		•		•	
<i>Anthochaera carunculata</i>	Red wattlebird					•			•	•	•		•	
<i>Certhionyx variegatus</i>	Pied honeyeater								•					
<i>Epthianura albifrons</i>	White-fronted chat					•			•				•	
<i>Epthianura tricolor</i>	Crimson chat					•			•				•	
<i>Gavicalis virescens</i> subsp. <i>forresti</i>	Inland singing honeyeater								•	•	•		•	
<i>Lichmera indistincta</i>	Brown honeyeater					•			•	•	•			
<i>Manorina flavigula</i>	Yellow-throated miner					•			•	•	•		•	
<i>Melithreptus brevirostris</i>	Brown-headed honeyeater					•			•		•			
<i>Melithreptus chloropsis</i>	Western white-naped honeyeater									•				
<i>Nesoptilotis leucotis</i>	White-eared honeyeater					•			•		•		•	

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Ptilotula keartlandi</i>	Grey-headed Honeyeater									•			•	
<i>Ptilotula ornata</i>	Yellow-plumed honeyeater								•		•		•	
<i>Ptilotula penicillata</i>	White-plumed honeyeater												•	
<i>Ptilotula plumula</i>	Grey-fronted honeyeater								•					•
<i>Purnella albifrons</i>	White-fronted honeyeater					•			•		•		•	
<i>Sugomel niger</i>	Black honeyeater								•					
Meropidae														
<i>Merops ornatus</i>	Rainbow bee-eater					•	•		•		•			
Monarchidae														
<i>Grallina cyanoleuca</i>	Magpie-lark					•			•	•	•		•	•
Motacillidae														
<i>Anthus australis</i> subsp. <i>australis</i>	Australasian pipit					•			•		•			
<i>Motacilla cinerea</i>	Grey wagtail	MI	MI				•							
Neosittidae														
<i>Daphoenositta chrysoptera</i>	Varied sittella					•			•		•		•	
Oreoicidae														
<i>Oreoica gutturalis</i>	Crested bellbird					•			•	•	•		•	•
Otididae														
<i>Ardeotis australis</i>	Australian bustard					•			•					
Pachycephalidae														
<i>Colluricincla harmonica</i> subsp. <i>rufiventris</i>	Grey shrike thrush					•			•	•	•		•	
<i>Pachycephala inornata</i>	Gilbert's whistler					•			•					
<i>Pachycephala fuliginosa occidentalis</i>	Western golden whistler								•					
<i>Pachycephala rufiventris</i> subsp. <i>rufiventris</i>	Rufous whistler					•			•				•	

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
Pardalotidae														
<i>Pardalotus punctatus</i>	Spotted pardalote					•			•				•	
<i>Pardalotus striatus</i> subsp. <i>murchisoni</i>	Striated pardalote					•			•	•	•		•	
Petroicidae														
<i>Drymodes brunneopygia</i>	Southern scrub robin					•			•					
<i>Eopsaltria griseogularis</i>	Western yellow robin					•								
<i>Melanodryas cucullata</i>	Hooded robin								•	•				
<i>Microeca fascinans</i>	Jacky winter					•			•	•			•	
<i>Petroica goodenovii</i>	Red-capped robin					•			•	•			•	
Phaethontidae														
<i>Phalacrocorax melanoleucos</i>	Little pied cormorant					•			•					
<i>Phalacrocorax sulcirostris</i>	Little black cormorant					•			•					
Podargidae														
<i>Podargus strigoides</i>	Tawny frogmouth					•			•	•	•		•	
Podicipedidae														
<i>Poliiocephalus poliocephalus</i>	Hoary-headed grebe					•			•					
<i>Tachybaptus novaehollandiae</i>	Australasian grebe					•			•					
Pomatostomidae														
<i>Pomatostomus superciliosus</i>	White-browed babbler					•			•	•	•			
Psittacidae														
<i>Barnardius zonarius</i>	Australian ringneck												•	•
<i>Melopsittacus undulatus</i>	Budgerigar					•			•					
<i>Parvipsitta porphyrocephala</i>	Purple-crowned lorikeet								•	•	•			
<i>Pezoporus occidentalis</i>	Night parrot	EN	CR		EN		•							

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Platycercus zonarius</i> subsp. <i>zonarius</i>	Port Lincoln parrot					•				•	•			
<i>Polytelis alexandrae</i>	Princess parrot	VU		P4	NT				•					
<i>Polytelis anthopeplus</i>	Regent parrot					•			•					
<i>Psephotus varius</i>	Mulga parrot					•			•	•				
Rallidae														
<i>Fulica atra</i>	Eurasian coot					•			•					
<i>Porzana fluminea</i>	Australian spotted crake					•								
<i>Tribonyx ventralis</i>	Black-tailed native hen					•			•					
Recurvirostridae														
<i>Cladorhynchus leucocephalus</i>	Banded stilt					•			•					
<i>Himantopus himantopus</i>	Black-winged stilt					•			•					
<i>Recurvirostra novaehollandiae</i>	Red-necked avocet					•			•	•				
Rhipiduridae														
<i>Rhipidura albiscapa</i>	Grey fantail					•			•					
<i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i>	Willie wagtail					•			•	•	•		•	
Scolopacidae														
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	MI	MI			•	•	•	•					
<i>Calidris alba</i>	Sanderling	MI	MI			•		•	•					
<i>Calidris ferruginea</i>	Curlew sandpiper	CR/ MI	CR/ MI		NT	•	•	•	•					
<i>Calidris melanotos</i>	Pectoral sandpiper	MI	MI				•							
<i>Calidris ruficollis</i>	Red-necked stint	MI	MI		NT	•		•	•					
<i>Tringa brevipes</i>	Grey-tailed tattler	MI	MI		NT	•		•						
<i>Tringa glareola</i>	Wood sandpiper	MI	MI			•		•	•					

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
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<i>Actitis hypoleucos</i>	Common sandpiper	MI	MI			•	•	•	•					
<i>Tringa nebularia</i>	Common greenshank	MI	MI			•	•	•	•					
Strigidae														
<i>Ninox boobook</i>	Boobook owl								•		•			
Threskiornithidae														
<i>Platalea flavipes</i>	Yellow-billed spoonbill					•			•					
<i>Plegadis falcinellus</i>	Glossy ibis	MI	MI					•						
<i>Threskiornis spinicollis</i>	Straw-necked ibis					•			•					
Turnicidae														
<i>Turnix velox</i>	Little button quail					•			•					
Tytonidae														
<i>Tyto javanica</i>	Eastern barn owl					•			•					
Zosteropidae														
<i>Zosterops lateralis</i>	Silvereye					•			•					
Reptiles														
Agamidae														
<i>Ctenophorus caudicinctus</i>	Ring-tailed dragon					•								
<i>Ctenophorus cristatus</i>	Bicycle dragon					•					•	•	•	
<i>Ctenophorus fordi</i>	Mallee sand dragon					•					•	•		
<i>Ctenophorus isolepis</i> subsp. <i>isolepis</i>	Crested dragon					•								
<i>Ctenophorus nuchalis</i>	Central netted dragon					•								
<i>Ctenophorus reticulatus</i>	Western netted dragon					•				•	•	•		
<i>Ctenophorus salinarum</i>	Salt pan dragon					•				•				
<i>Ctenophorus scutulatus</i>	Dragon					•					•	•		

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Moloch horridus</i>	Thorny devil					•					•	•		
<i>Pogona minor</i>	Western bearded dragon					•				•	•	•	•	
<i>Tympanocryptis pseudopsephos</i>	Pebble dragon					•								
Carpodactylidae														
<i>Nephrurus laevisissimus</i>	Gecko					•						•		
<i>Nephrurus vertebralis</i>						•					•			
<i>Underwoodisaurus milii</i>	Barking gecko					•				•	•	•	•	
Chelidae														
<i>Chelodina steindachneri</i>	Flat-shelled turtle					•								
Diplodactylidae														
<i>Diplodactylus granariensis</i>						•					•	•	•	
<i>Diplodactylus pulcher</i>	Fine-faced gecko					•					•	•	•	
<i>Hesperoedura reticulata</i>						•					•			
<i>Lucasium damaeum</i>						•								
<i>Rhynchoedura ornata</i>	Western beaked gecko					•					•	•	•	
<i>Strophurus assimilis</i>	Goldfields spiny-tailed gecko					•						•		
<i>Strophurus elderi</i>	Jewelled gecko					•					•			
Elapidae														
<i>Acanthophis pyrrhus</i>	Desert death adder					•								
<i>Brachyuropis fasciolatus</i>						•						•		
<i>Brachyuropis semifasciatus</i>						•						•		
<i>Demansia psammophis</i> subsp. <i>cupreiceps</i>	Yellow-faced whipsnake					•						•		
<i>Echiopsis curta</i>	Bardick					•								
<i>Furina ornata</i>	Moon snake					•								

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Neelaps bimaculatus</i>	Black-naped snake					•								
<i>Parasuta gouldii</i>	Gould's hooded snake					•					•			
<i>Suta monachus</i>	Snake					•					•	•		
<i>Pseudechis australis</i>	Mulga snake					•				•				
<i>Pseudonaja affinis</i>	Dugite					•								
<i>Pseudonaja mengdeni</i>	Western brown snake					•					•			
<i>Pseudonaja modesta</i>	Ringed brown snake					•					•	•		
<i>Simoselaps bertholdi</i>	Jan's banded snake					•					•	•		
<i>Suta fasciata</i>	Rosen's snake					•								
Gekkonidae														
<i>Gehyra purpurascens</i>	Gecko					•						•	•	
<i>Gehyra variegata</i>	Tree gecko					•				•	•	•	•	
<i>Hemidactylus frenatus</i>	Asian house gecko					•	•							
<i>Heteronotia binoei</i>	Binoe's gecko					•				•	•	•	•	
Pygopodidae														
<i>Delma australis</i>						•				•	•			
<i>Delma butleri</i>	Legless lizard					•						•		
<i>Lialis burtonis</i>	Burton's legless lizard					•					•			
<i>Pygopus lepidopodus</i>	Common scaly foot					•								
<i>Pygopus nigriceps</i>	Legless lizard					•						•		
Pythonidae														
<i>Morelia spilota</i>	Carpet python					•								
Scincidae														
<i>Cryptoblepharus buchananii</i>	Buchanan's snake-eyed skink					•					•			

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Cryptoblepharus plagiocephalus</i>	Skink					•						•		
<i>Ctenotus atlas</i>						•					•	•		
<i>Ctenotus brooksi</i>	Skink											•		
<i>Ctenotus leonhardii</i>	Skink					•								
<i>Ctenotus schomburgkii</i>	Skink					•					•	•		
<i>Ctenotus uber</i>	Spotted ctenotus					•					•	•		
<i>Cyclodomorphus melanops</i> subsp. <i>melanops</i>	Slender blue-tongue					•					•	•		
<i>Egernia depressa</i>	Pygmy spiny-tailed skink					•						•		
<i>Egernia formosa</i>	Goldfields crevice-skink					•					•	•		
<i>Egernia stokesii badia</i>	Western spiny-tailed skink	EN	VU			•		•						
<i>Eremiascincus richardsonii</i>	Broad-banded sand swimmer					•								
<i>Hemiergis initialis</i>						•							•	
<i>Hemiergis peronii</i>						•								
<i>Lerista desertorum</i>													•	
<i>Lerista kingi</i>						•				•				
<i>Lerista macropisthopus</i>	Skink											•		
<i>Lerista picturata</i>						•					•			
<i>Lerista timida</i>	Timid slider					•						•		
<i>Liopholis inornata</i>						•				•	•	•		
<i>Liopholis multiscutata</i>						•								
<i>Menetia greyii</i>	Common dwarf skink					•				•	•	•	•	
<i>Morethia adelaidensis</i>						•					•		•	
<i>Morethia butleri</i>						•					•	•		

Scientific Name	Common Name	Conservation Status				Database Searches				Previous Surveys				This Survey
		EPBC Act	BC Act	DBCA	IUCN	NatureMap (40 km)	EPBC (40km)	DBCA (40km)	Birdlife (40km)	Eco Logical (2016)	McKenzie et al. (1992)	Cowan and How (2004)	Onshore (2021)	
<i>Morethia obscura</i>						•								
<i>Tiliqua occipitalis</i>	Western blue-tongue					•						•		
<i>Tiliqua rugosa</i>						•				•	•		•	
Typhlopidae														
<i>Anilius australis</i>													•	
<i>Anilius bituberculatus</i>													•	
<i>Anilius hamatus</i>	Blind-snake												•	
<i>Ramphotyphlops waitii</i>	A blind-snake													•
<i>Varanus caudolineatus</i>	Stripe-tailed pygmy monitor					•						•		
<i>Varanus gouldii</i>	Bungarra					•						•	•	
<i>Varanus tristis</i> subsp. <i>tristis</i>	Racehorse goanna					•						•		
Limnodynastidae														
<i>Neobatrachus kunapalari</i>	Kunapalari frog					•				•				
<i>Neobatrachus pelobatoides</i>	Humming frog					•								
<i>Neobatrachus sutor</i>	Shoemaker frog					•						•		
<i>Neobatrachus wilsmorei</i>	Plonking frog					•						•	•	
Myobatrachidae														
<i>Pseudophryne occidentalis</i>	Western toadlet					•						•		
Pelodyadidae														
<i>Litoria moorei</i>	Motorbike frog					•								

*denotes introduced species

Appendix E – Flora identified by the desktop assessment

Family	Taxon	Source						Conservation Status			Introduced	
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act		
Aizoaceae	<i>Aizoon pubescens</i>	●	●									Y
	<i>Disphyma crassifolium</i>		●									
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	●										
	<i>Gunniopsis quadrifida</i>	●	●									
	<i>Mesembryanthemum crystallinum</i>	●	●									Y
	<i>Mesembryanthemum nodiflorum</i>	●	●									Y
	<i>Tetragonia eremaea</i>	●	●									
Alismataceae	<i>Sagittaria platyphylla</i>						●					Y
Amaranthaceae	<i>Alternanthera denticulata</i>	●	●									
	<i>Alternanthera nodiflora</i>	●	●									
	<i>Amaranthus viridis</i>	●	●									Y
	<i>Ptilotus aevoides</i>	●	●									
	<i>Ptilotus carlsonii</i>	●	●									
	<i>Ptilotus chamaecladus</i>		●									
	<i>Ptilotus divaricatus</i>		●									
	<i>Ptilotus drummondii</i>		●									
	<i>Ptilotus eremita</i>	●	●									
	<i>Ptilotus exaltatus</i>	●										
	<i>Ptilotus gaudichaudii</i>	●	●									
	<i>Ptilotus grandiflorus</i>	●										
	<i>Ptilotus helichrysoides</i>	●	●									
	<i>Ptilotus holosericeus</i>	●	●									
	<i>Ptilotus nobilis</i>		●									
	<i>Ptilotus obovatus</i>	●	●									
	<i>Ptilotus polystachyus</i>	●	●									
	<i>Ptilotus procumbens</i>	●	●	●					P1			
	<i>Ptilotus rigidus</i>		●	●	●				P1			
	<i>Ptilotus rotundifolius</i>		●									
<i>Ptilotus schwartzii</i>		●										
<i>Ptilotus</i> sp. Kalgoorlie (J. Jackson & B. Moyle 260)				●				P1				
<i>Surreya diandra</i>	●	●										
Anacardiaceae	<i>Schinus molle</i>		●									Y

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Anacardiaceae cont.	<i>Schinus molle</i> var. <i>areira</i>	●									Y
Apiaceae	<i>Daucus glochidiatus</i>	●	●								
	<i>Platysace effusa</i>	●	●								
	<i>Platysace trachymenioides</i>	●	●								
Apocynaceae	<i>Alyxia buxifolia</i>	●	●								
	<i>Alyxia tetanifolia</i>	●	●	●	●			P3			
	<i>Asclepias curassavica</i>	●	●								Y
	<i>Calotropis procera</i>						●				Y
	<i>Cryptostegia madagascariensis</i>						●				Y
	<i>Marsdenia australis</i>	●	●								
	<i>Orbea variegata</i>	●	●								Y
	<i>Vincetoxicum lineare</i>	●	●								
Araceae	<i>Pistia stratiotes</i>						●				Y
	<i>Zantedeschia aethiopica</i>						●				Y
Araliaceae	<i>Hydrocotyle intertexta</i>		●								
	<i>Hydrocotyle pilifera</i>		●								
	<i>Hydrocotyle pilifera</i> var. <i>glabrata</i>	●									
	<i>Hydrocotyle ranunculoides</i>						●				Y
	<i>Trachymene coerulea</i>		●								
	<i>Trachymene croniniana</i>		●					P3			
	<i>Trachymene cyanopetala</i>		●								
	<i>Trachymene ornata</i>	●	●								
<i>Trachymene pyrophila</i>			●				P1				
Asparagaceae	<i>Agave americana</i>	●	●								Y
	<i>Asparagus asparagoides</i>						●				Y
	<i>Chamaexeros fimbriata</i>	●	●								
	<i>Sowerbaea multicaulis</i>		●	●				P4			
	<i>Thysanotus manglesianus</i>	●	●								
	<i>Thysanotus</i> sp.	●									
Asphodelaceae	<i>Bulbine semibarbata</i>	●	●								
Asteraceae	<i>Actinobole uliginosum</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Angianthus prostratus</i>	●	●	●				P3			
	<i>Angianthus tomentosus</i>	●	●								
	<i>Arctotheca calendula</i>	●	●								Y
	<i>Asteridea athrioides</i>	●	●								
	<i>Asteridea chaetopoda</i>	●	●								
	<i>Blennospora drummondii</i>		●								
	<i>Brachyscome ciliaris</i>	●	●								
	<i>Brachyscome iberidifolia</i>	●	●								
	<i>Brachyscome lineariloba</i>	●	●								
	<i>Brachyscome perpusilla</i>	●	●								
	<i>Calotis breviradiata</i>	●	●								
	<i>Calotis hispidula</i>	●	●								
	<i>Calotis multicaulis</i>	●	●								
	<i>Calotis plumulifera</i>		●								
	<i>Carthamus lanatus</i>	●	●								Y
	<i>Centaurea melitensis</i>	●	●								Y
	<i>Cephalipterum drummondii</i>	●	●								
	<i>Ceratogyne obionoides</i>	●	●								
	<i>Chondrilla juncea</i>						●				Y
	<i>Chondropyxis halophila</i>		●								
	<i>Chrysocephalum apiculatum</i>		●								
	<i>Chrysocephalum apiculatum</i> subsp. <i>norsemanense</i>	●		●				P3			
	<i>Chrysocephalum puteale</i>	●	●								
	<i>Chthonocephalus pseudevax</i>		●								
	<i>Cichorium intybus</i>	●	●								Y
	<i>Conyza bonariensis</i>	●									Y
	<i>Conyza sumatrensis</i>	●									Y
	<i>Cotula australis</i>	●	●								
	<i>Craspedia haplorrhiza</i>	●									
	<i>Cratystylis conocephala</i>	●	●								
	<i>Cratystylis microphylla</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Cratystylis subspinescens</i>	●	●								
	<i>Cratystylis centralis</i>			●				P3			
	<i>Cymbonotus preissianus</i>		●					P3			
	<i>Elachanthus pusillus</i>	●	●	●				P2			
	<i>Erigeron bonariensis</i>		●								Y
	<i>Erigeron sumatrensis</i>		●								Y
	<i>Erymophyllum glossanthus</i>	●									
	<i>Erymophyllum ramosum</i>	●	●								
	<i>Erymophyllum ramosum</i> subsp. <i>ramosum</i>	●									
	<i>Gazania linearis</i>	●	●								Y
	<i>Gilberta tenuifolia</i>	●	●								
	<i>Gnephosis brevifolia</i>	●									
	<i>Gnephosis macrocephala</i>	●	●								
	<i>Gnephosis tenuissima</i>	●	●								
	<i>Helianthus annuus</i>	●	●								Y
	<i>Helipterum craspedioides</i>		●								
	<i>Hyalochlamys globifera</i>		●								
	<i>Hyalosperma cotula</i>		●								
	<i>Hyalosperma demissum</i>	●	●								
	<i>Hyalosperma glutinosum</i>	●	●								
	<i>Hyalosperma glutinosum</i> subsp. <i>glutinosum</i>	●									
	<i>Hyalosperma zacchaeus</i>	●	●								
	<i>Isoetopsis graminifolia</i>	●	●								
	<i>Kippistia suaedifolia</i>	●	●								
	<i>Lactuca serriola</i>		●								Y
	<i>Lactuca serriola</i> forma <i>serriola</i>	●									Y
	<i>Lawrencella rosea</i>	●	●								
	<i>Leiocarpa websteri</i>	●	●								
	<i>Lemooria burkittii</i>	●	●								
	<i>Millotia myosotidifolia</i>	●	●								
	<i>Millotia perpusilla</i>	●	●								
	<i>Millotia tenuifolia</i>		●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Minuria cunninghamii</i>	●	●								
	<i>Minuria gardneri</i>	●	●								
	<i>Minuria leptophylla</i>	●	●								
	<i>Monoculus monstrosus</i>	●	●								Y
	<i>Myriocephalus pygmaeus</i>	●	●								
	<i>Notisia intonsa</i>	●	●	●	●			P3			
	<i>Olearia adenolasia</i>		●								
	<i>Olearia exiguifolia</i>	●	●								
	<i>Olearia homolepis</i>	●	●								
	<i>Olearia incana</i>	●	●								
	<i>Olearia muelleri</i>	●	●								
	<i>Olearia muricata</i>		●								
	<i>Olearia paucidentata</i>		●								
	<i>Olearia pimeleoides</i>	●	●								
	<i>Olearia rudis</i>	●	●								
	<i>Olearia</i> sp. Eremicola (Diels & Pritzel s.n. PERTH 00449628)	●									
	<i>Olearia subspicata</i>	●	●								
	<i>Olearia trifurcata</i>		●								
	<i>Oligocarpus calendulaceus</i>	●	●								Y
	<i>Oncosiphon suffruticosum</i>	●	●								Y
	<i>Onopordum acaulon</i>						●				Y
	<i>Ozothamnus cassiope</i>	●	●								
	<i>Podolepis aristata</i>		●								
	<i>Podolepis aristata</i> subsp. <i>affinis</i>	●									
	<i>Podolepis capillaris</i>	●	●								
	<i>Podolepis lessonii</i>	●	●								
	<i>Podolepis rugata</i>	●	●								
	<i>Podotheca wilsonii</i>	●	●								
	<i>Pterocaulon sphacelatum</i>	●	●								
	<i>Rhodanthe battii</i>	●	●								
	<i>Rhodanthe charsleyae</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Rhodanthe chlorocephala</i>		●								
	<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	●									
	<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i>	●									
Asteraceae	<i>Rhodanthe floribunda</i>	●	●								
	<i>Rhodanthe haigii</i>	●	●								
	<i>Rhodanthe humboldtiana</i>		●								
	<i>Rhodanthe laevis</i>	●	●								
	<i>Rhodanthe manglesii</i>	●	●								
	<i>Rhodanthe nullarborensis</i>	●	●								
	<i>Rhodanthe oppositifolia</i>		●								
	<i>Rhodanthe oppositifolia</i> subsp. <i>oppositifolia</i>	●									
	<i>Rhodanthe pygmaea</i>	●	●								
	<i>Rhodanthe rubella</i>	●	●								
	<i>Rhodanthe stricta</i>	●	●								
	<i>Rhodanthe uniflora</i>	●	●	●					P1		
	<i>Schoenia cassiniana</i>	●	●								
	<i>Schoenia filifolia</i>		●								
	<i>Schoenia filifolia</i> subsp. <i>filifolia</i>	●									
	<i>Senecio dolichocephalus</i>	●	●								
	<i>Senecio glossanthus</i>	●	●								
	<i>Senecio gregorii</i>		●								
	<i>Senecio lacustrinus</i>	●	●								
	<i>Senecio magnificus</i>	●	●								
	<i>Senecio minimus</i>		●								
	<i>Senecio pinnatifolius</i>	●	●								
	<i>Silybum marianum</i>							●			Y
<i>Sonchus oleraceus</i>	●	●								Y	
<i>Sondottia connata</i>		●									
<i>Streptoglossa liatroides</i>	●	●									
<i>Symphotrichum squamatum</i>	●	●								Y	
<i>Thiseltonia gracillima</i>	●	●									
<i>Trichanthodium skirrophorum</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Triptilodiscus pygmaeus</i>	●	●								
	<i>Verbesina encelioides</i>		●								Y
	<i>Vittadinia cervicalis</i>		●								
Asteraceae cont.	<i>Vittadinia cervicalis</i> var. <i>circularis</i>	●									
	<i>Vittadinia dissecta</i>		●								
	<i>Vittadinia dissecta</i> var. <i>hirta</i>	●									
	<i>Vittadinia eremaea</i>		●								
	<i>Vittadinia humerata</i>	●	●								
	<i>Vittadinia sulcata</i>	●	●								
	<i>Waitzia acuminata</i>		●								
	<i>Waitzia acuminata</i> var. <i>acuminata</i>	●									
	<i>Waitzia fitzgibbonii</i>	●	📄								
	<i>Xanthium spinosum</i>	●	●				●				Y
Bignoniaceae	<i>Jacaranda mimosifolia</i>		●								Y
Boraginaceae	<i>Buglossoides arvensis</i>	●	●								Y
	<i>Echium plantagineum</i>	●	●				●				Y
	<i>Halgania andromedifolia</i>	●	●								
	<i>Halgania cyanea</i>		●								
	<i>Halgania cyanea</i> var. Allambi Stn (B.W. Strong 676)	●									
	<i>Halgania cyanea</i> var. Charleville (R.W. Purdie +111)	●									
	<i>Halgania integerrima</i>	●	●								
	<i>Halgania lavandulacea</i>		●								
	<i>Heliotropium euodes</i>		●								
	<i>Heliotropium europaeum</i>	●	●								Y
	<i>Heliotropium supinum</i>	●	●								Y
	<i>Omphalolappula concava</i>	●	●								
	<i>Trichodesma zeylanicum</i>	●	●								
Boryaceae	<i>Borya constricta</i>		●								
Brassicaceae	<i>Alyssum linifolium</i>	●	●								Y
	<i>Arabidella chrysodema</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Arabidella trisecta</i>	●	●								
	<i>Brassica tournefortii</i>	●	●								Y
	<i>Capsella bursa-pastoris</i>	●	●								Y
	<i>Carrichtera annua</i>	●	●			●					Y
Brassicaceae cont.	<i>Harmsiodoxa brevipes</i>		●								
	<i>Lepidium africanum</i>	●	●								Y
	<i>Lepidium fasciculatum</i>	●	●	●				P3			
	<i>Lepidium merrallii</i>	●		●				P2			
	<i>Lepidium oxytrichum</i>	●	●								
	<i>Lepidium papillosum</i>	●	●								
	<i>Lepidium phlebopetalum</i>	●	●								
	<i>Menkea australis</i>		●								
	<i>Phlegmatospermum eremaeum</i>	●	●	●	●			P3			
	<i>Sisymbrium irio</i>	●	●								Y
	<i>Sisymbrium orientale</i>	●	●								Y
	<i>Stenopetalum anfractum</i>		●								
	<i>Stenopetalum filifolium</i>	●	●								
	<i>Stenopetalum lineare</i>	●	●								
	<i>Stenopetalum lineare</i> var. <i>lineare</i>	●									
<i>Stenopetalum pedicellare</i>	●										
Cactaceae	<i>Austrocylindropuntia cylindrica</i>						●				Y
	<i>Austrocylindropuntia subulata</i>						●				Y
	<i>Cylindropuntia fulgida</i>		●				●				Y
	<i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	●									Y
	<i>Cylindropuntia imbricata</i>	●	●				●				Y
	<i>Cylindropuntia kleiniae</i>	●	●				●				Y
	<i>Cylindropuntia pallida</i>						●				Y
	<i>Cylindropuntia</i> spp.					●					Y
	<i>Cylindropuntia tunicata</i>	●	●				●				Y
	<i>Opuntia elata</i>	●	●				●				Y
	<i>Opuntia elatior</i>						●				Y
	<i>Opuntia engelmannii</i>						●				Y

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Opuntia ficus-indica</i>	●	●				●				Y
	<i>Opuntia microdasys</i>						●				Y
	<i>Opuntia monacantha</i>						●				Y
	<i>Opuntia polyacantha</i>						●				Y
Cactaceae cont.	<i>Opuntia puberula</i>						●				Y
	<i>Opuntia stricta</i>						●				Y
	<i>Opuntia tomentosa</i>						●				Y
Campanulaceae	<i>Isotoma petraea</i>	●	●								
	<i>Wahlenbergia gracilentia</i>	●	●								
Caryophyllaceae	<i>Silene gallica</i>		●								Y
	<i>Spergularia diandra</i>	●	●								Y
	<i>Spergularia marina</i>	●	●								
Casuarinaceae	<i>Allocasuarina acutivalvis</i>		●								
	<i>Allocasuarina campestris</i>	●	●								
	<i>Allocasuarina eriochlamys</i>		●								
	<i>Allocasuarina eriochlamys</i> subsp. <i>eriochlamys</i>	●									
	<i>Allocasuarina eriochlamys</i> subsp. <i>grossa</i>			●				P3			
	<i>Allocasuarina helmsii</i>	●	●								
	<i>Allocasuarina huegeliana</i>		●								
	<i>Casuarina obesa</i>	●	●								
	<i>Casuarina pauper</i>	●	●								
Celastraceae	<i>Psammomoya choretroides</i>	●									
	<i>Psammomoya ephedroides</i>		●								
Chenopodiaceae	<i>Atriplex acutibractea</i>	●	●								
	<i>Atriplex acutibractea</i> subsp. <i>acutibractea</i>	●									
	<i>Atriplex acutibractea</i> subsp. <i>karoniensis</i>	●									
	<i>Atriplex amnicola</i>	●	●								
	<i>Atriplex codonocarpa</i>	●	●								
	<i>Atriplex eardleyae</i>	●	●								
	<i>Atriplex exilifolia</i>		●								
	<i>Atriplex holocarpa</i>	●	●								
	<i>Atriplex lindleyi</i>		●								

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Atriplex lindleyi</i> subsp. <i>conduplicata</i>			●				P3			
	<i>Atriplex lindleyi</i> subsp. <i>inflata</i>	●									
	<i>Atriplex nana</i>	●	●								
	<i>Atriplex nummularia</i>	●	●								
	<i>Atriplex nummularia</i> subsp. <i>spathulata</i>	●									
	<i>Atriplex pumilio</i>	●	●								
	<i>Atriplex quadrivalvata</i>		●								
	<i>Atriplex quadrivalvata</i> var. <i>quadrivalvata</i>	●									
	<i>Atriplex semibaccata</i>	●	●								
	<i>Atriplex semilunaris</i>		●								
	<i>Atriplex spongiosa</i>	●	●								
	<i>Atriplex stipitata</i>	●	●								
	<i>Atriplex suberecta</i>	●	●								
	<i>Atriplex vesicaria</i>	●	●								
	<i>Chenopodium album</i>	●	●								Y
	<i>Chenopodium curvispicatum</i>	●	●								
	<i>Chenopodium murale</i>	●	●								Y
Chenopodiaceae cont.	<i>Didymanthus roei</i>	●	●								
	<i>Dissocarpus paradoxus</i>	●	●								
	<i>Dysphania cristata</i>	●	●								
	<i>Dysphania kalpari</i>	●	●								
	<i>Dysphania melanocarpa</i>		●								
	<i>Dysphania pumilio</i>	●	●								
	<i>Dysphania simulans</i>		●								
	<i>Einadia nutans</i>		●								
	<i>Einadia nutans</i> subsp. <i>eremaea</i>	●									
	<i>Enchylaena tomentosa</i>	●	●								
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	●									
	<i>Eriochiton sclerolaenoides</i>	●	●								
	<i>Maireana amoena</i>	●	●								
	<i>Maireana appressa</i>	●	●								
	<i>Maireana atkinsiana</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Maireana brevifolia</i>	●	●								
	<i>Maireana carnosia</i>	●	●								
	<i>Maireana erioclada</i>	●	●								
	<i>Maireana eriosphaera</i>	●	●								
Chenopodiaceae cont.	<i>Maireana georgei</i>	●	●								
	<i>Maireana glomerifolia</i>	●	●								
	<i>Maireana integra</i>	●	●								
	<i>Maireana marginata</i>	●	●								
	<i>Maireana oppositifolia</i>	●	●								
	<i>Maireana pentagona</i>	●	●								
	<i>Maireana pentatropis</i>	●	●								
	<i>Maireana platycarpa</i>	●	●								
	<i>Maireana pyramidata</i>	●	●								
	<i>Maireana radiata</i>	●	●								
	<i>Maireana sedifolia</i>	●	●								
	<i>Maireana suaedifolia</i>	●	●								
	<i>Maireana tomentosa</i>	●	●								
	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	●									
	<i>Maireana trichoptera</i>	●	●								
	<i>Maireana triptera</i>	●	●								
	<i>Maireana turbinata</i>	●	●								
	<i>Rhagodia crassifolia</i>		●								
	<i>Rhagodia drummondii</i>	●	●								
	<i>Rhagodia eremaea</i>	●	●								
	<i>Rhagodia preissii</i>		●								
	<i>Roycea divaricata</i>	●	●								
	<i>Salsola australis</i>	●	●								
	<i>Sclerolaena brevifolia</i>	●	●								
<i>Sclerolaena cuneata</i>	●	●									
<i>Sclerolaena diacantha</i>	●	●									
<i>Sclerolaena drummondii</i>	●	●									
<i>Sclerolaena eurotioides</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Sclerolaena fusiformis</i>	●	●								
	<i>Sclerolaena gardneri</i>	●	●								
	<i>Sclerolaena obliquicuspis</i>	●	●								
	<i>Sclerolaena parviflora</i>	●	●								
	<i>Sclerolaena patenticuspis</i>		●								
	<i>Tecticornia arbuscula</i>		●								
	<i>Tecticornia chartacea</i>	●	●								
	<i>Tecticornia disarticulata</i>	●	●								
	<i>Tecticornia doleiformis</i>		●								
	<i>Tecticornia doliiformis</i>	●	●								
	<i>Tecticornia flabelliformis</i>	●		●	●	●		P1		VU	
	<i>Tecticornia indica</i>		●								
	<i>Tecticornia indica</i> subsp. <i>bidens</i>	●									
	<i>Tecticornia mellarium</i>			●				P1			
	<i>Tecticornia peltata</i>	●	●								
	<i>Tecticornia pergranulata</i>		●								
	<i>Tecticornia pergranulata</i> subsp. <i>elongata</i>	●									
	<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i>	●									
	<i>Tecticornia pruinosa</i>	●	●								
	<i>Tecticornia pterygosperma</i>		●								
	<i>Tecticornia pterygosperma</i> subsp. <i>pterygosperma</i>	●									
	<i>Tecticornia</i> sp. Burnerbinmah (D. Edinger et al. 101)	●									
	<i>Tecticornia</i> sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	●									
	<i>Tecticornia syncarpa</i>		●								
	<i>Tecticornia triandra</i>	●	●								
	<i>Tecticornia undulata</i>	●	●								
Colchicaceae	<i>Wurmbea tenella</i>	●	●								
Convolvulaceae	<i>Convolvulus clementii</i>	●	●								
	<i>Convolvulus remotus</i>	●	●								
	<i>Ipomoea calobra</i>	●	●								

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Crassulaceae	<i>Bryophyllum delagoense</i>	●	●								Y
	<i>Crassula colorata</i>		●								
	<i>Crassula colorata</i> var. <i>acuminata</i>	●									
	<i>Crassula colorata</i> var. <i>colorata</i>	●									
	<i>Crassula tetramera</i>	●	●								
Cucurbitaceae	<i>Cucumis myriocarpus</i>		●								Y
	<i>Cucumis myriocarpus</i> subsp. <i>myriocarpus</i>	●									Y
Cupressaceae	<i>Athrotaxis cupressoides</i>		●								
	<i>Callitris columellaris</i>	●	📄								
	<i>Callitris preissii</i>	●	●								
	<i>Callitris tuberculata</i>		●								
	<i>Callitris verrucosa</i>	●	●								
Cyperaceae	<i>Chrysitrix distigmata</i>	●	●								
	<i>Eleocharis acutangula</i>	●	●								
	<i>Gahnia deusta</i>	●	●								
	<i>Isolepis australiensis</i>	●	●	●				P3			
	<i>Lepidosperma diurnum</i>	●									
	<i>Lepidosperma lyonsii</i>							P1			
	<i>Lepidosperma</i> sp.	●									
	<i>Lepidosperma</i> sp. Kambalda (A.A. Mitchell 5156)			●				P2			
	<i>Lepidosperma</i> sp. Parker Range (N. Gibson & M. Lyons 2094)			●				P2			
	<i>Mesomelaena preissii</i>	●	●								
	<i>Schoenus hexandrus</i>	●									
<i>Schoenus subaphyllus</i>	●	●									
Didiereaceae	<i>Portulacaria afra</i>	●	●								Y
Dilleniaceae	<i>Hibbertia ancistrophylla</i>	●	●								
	<i>Hibbertia desmophylla</i>		●								
	<i>Hibbertia glomerosa</i>		●								
	<i>Hibbertia glomerosa</i> var. <i>glomerosa</i>	●									
	<i>Hibbertia pachyphylla</i>			●				P3			
Droseraceae	<i>Drosera macrantha</i>		●								

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Drosera macrophylla</i>		●								
	<i>Drosera</i> sp. Branched styles (S.C. Coffey 193)	●									
Elaeocarpaceae	<i>Tetratheca efoliata</i>	●	●								
	<i>Tetratheca spenceri</i>			●	●			T	VU		
Ericaceae	<i>Andersonia carinata</i>		●					P2			
	<i>Astroloma pallidum</i>		●								
	<i>Astroloma serratifolium</i>		●								
Ericaceae cont.	<i>Leucopogon</i> sp. Boorabbin (K.R. Newbey 8374)	●									
	<i>Leucopogon</i> sp. Coolgardie (M. Hislop & F. Hort MH 3197)	●									
	<i>Lysinema ciliatum</i>		●								
	<i>Melichrus</i> sp. Coolgardie (K.R. Newbey 8698)			●				P3			
	<i>Styphelia rectiloba</i>	●	●	●	●			P3			
	<i>Styphelia saxicola</i>			●				P3			
Euphorbiaceae	<i>Bertya dimerostigma</i>		●								
	<i>Beyeria lechenaultii</i>	●	●								
	<i>Beyeria sulcata</i>		●								
	<i>Beyeria sulcata</i> var. <i>brevipes</i>	●									
	<i>Beyeria sulcata</i> var. <i>sulcata</i>	●									
	<i>Euphorbia drummondii</i>	●	●								
	<i>Euphorbia multifaria</i>	●	●								
	<i>Euphorbia porcata</i>	●	●								
	<i>Jatropha gossypifolia</i>						●				Y
	<i>Monotaxis bracteata</i>		●								
	<i>Monotaxis grandiflora</i>		●								
	<i>Monotaxis grandiflora</i> var. <i>obtusifolia</i>	●									
	<i>Monotaxis luteiflora</i>	●	●								
	<i>Ricinocarpos digynus</i>			●				P1			
	<i>Ricinocarpos stylosus</i>	●	●								
	<i>Ricinocarpos velutinus</i>	●	●								
Fabaceae	<i>Acacia acuminata</i>	●	●								
	<i>Acacia aestivalis</i>		●								

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia ancistrophylla</i>		●								
	<i>Acacia ancistrophylla</i> var. <i>ancistrophylla</i>	●									
	<i>Acacia andrewsii</i>	●	●								
	<i>Acacia aneura</i>	●	●								
	<i>Acacia beauverdiana</i>	●	●								
	<i>Acacia brachystachya</i>		●								
	<i>Acacia burkittii</i>	●	●								
Fabaceae cont.	<i>Acacia calcarata</i>	●	●								
	<i>Acacia camptoclada</i>	●	●								
	<i>Acacia chrysellia</i>	●	●								
	<i>Acacia coatesii</i>		●	●				P1			
	<i>Acacia collegialis</i>	●	●								
	<i>Acacia colletioides</i>	●	●								
	<i>Acacia coolgardiensis</i>	●	●								
	<i>Acacia crenulata</i>		●	●	●			P3			
	<i>Acacia cyclops</i>		●								
	<i>Acacia dempsteri</i>	●	●								
	<i>Acacia densiflora</i>		●								
	<i>Acacia desertorum</i>		●								
	<i>Acacia desertorum</i> var. <i>desertorum</i>	●									
	<i>Acacia donaldsonii</i>	●	●								
	<i>Acacia duriuscula</i>	●	●								
	<i>Acacia effusifolia</i>	●	●								
	<i>Acacia enervia</i>		●								
	<i>Acacia enervia</i> subsp. <i>explicata</i>	●									
	<i>Acacia epedunculata</i>			●	●			P1			
	<i>Acacia eremophila</i>		●								
	<i>Acacia eremophila</i> var. <i>eremophila</i>	●									
	<i>Acacia erinacea</i>	●	●								
<i>Acacia fragilis</i>		●									
<i>Acacia gibbosa</i>	●	●									
<i>Acacia hemiteles</i>	●	●									

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia inaequiloba</i>	●	●								
	<i>Acacia inamabilis</i>		●								
	<i>Acacia inceana</i>		●								
	<i>Acacia inceana</i> subsp. <i>inceana</i>	●									
	<i>Acacia jennerae</i>	●	●								
	<i>Acacia jensenii</i>	●	●								
	<i>Acacia kalgoorliensis</i>	●	●								
	<i>Acacia kerryana</i>		●	●				P2			
	<i>Acacia lasiocalyx</i>	●	●								
	<i>Acacia leptopetala</i>	●	●								
	<i>Acacia ligulata</i>	●	●								
	<i>Acacia lineolata</i>		●								
	<i>Acacia longispinea</i>	●	●								
	<i>Acacia masliniana</i>	●	●								
	<i>Acacia merrallii</i>	●	●								
	<i>Acacia microbotrya</i>		●								
	<i>Acacia mulganeura</i>	●	●								
	<i>Acacia multispicata</i>	●	●								
	<i>Acacia murrayana</i>	●	●								
	<i>Acacia nyssophylla</i>	●	●								
	<i>Acacia oswaldii</i>	●	●								
	<i>Acacia pachypoda</i>	●	●								
	<i>Acacia prainii</i>	●	●								
	<i>Acacia pritzeliana</i>	●	●								
	<i>Acacia pulchella</i>		●								
	<i>Acacia pycnantha</i>	●	●								Y
	<i>Acacia quadrimarginea</i>		●								
	<i>Acacia ramulosa</i>		●								
	<i>Acacia rendlei</i>	●	●								
	<i>Acacia resinimarginea</i>	●	●								
	<i>Acacia resinistipulea</i>	●	●								
	<i>Acacia rostelifera</i>		●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Acacia sclerophylla</i>		●								
	<i>Acacia sclerophylla</i> var. <i>teretiuscula</i>			●				P1			
	<i>Acacia sclerosperma</i>		●								
	<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>	●									
	<i>Acacia sericocarpa</i>	●	●								
	<i>Acacia sibirica</i>	●	●								
	<i>Acacia</i> sp. Mt Jackson (B. Ryan 176)	●									
Fabaceae cont.	<i>Acacia synchronicia</i>	●	●								
	<i>Acacia tetragonophylla</i>	●	●								
	<i>Acacia warramaba</i>	●	●								
	<i>Acacia websteri</i>	●	●	●	●			P1			
	<i>Acacia xerophila</i>		●								
	<i>Acacia xerophila</i> var. <i>brevior</i>	●									
	<i>Acacia yorkrakinensis</i>		●								
	<i>Acacia yorkrakinensis</i> subsp. <i>acrita</i>	●									
	<i>Alhagi maurorum</i>	●	●				●				Y
	<i>Bossiaea celata</i>			●				P3			
	<i>Bossiaea cucullata</i>	●	●								
	<i>Bossiaea laxa</i>			●				P2			
	<i>Callistachys lanceolata</i>		●								
	<i>Chorizema racemosum</i>	●	●								
	<i>Cullen discolor</i>	●	●								
	<i>Cullen leucanthum</i>	●	●								
	<i>Daviesia aphylla</i>	●									
	<i>Daviesia benthamii</i>		●								
	<i>Daviesia croniniana</i>	●	●								
	<i>Daviesia decurrens</i>		●								
	<i>Daviesia grahamii</i>	●	●								
	<i>Daviesia nematophylla</i>	●	●								
	<i>Daviesia pachyloma</i>	●	●								
<i>Dillwynia acerosa</i>		●									
<i>Dillwynia</i> sp. Coolgardie (V.E. Sands 637.3.1)	●										

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Erichsenia uncinata</i>		●								
	<i>Erythrostemon gilliesii</i>	●	●								Y
	<i>Gastrolobium graniticum</i>	●	●	●	●			T	VU	EN	
	<i>Glycyrrhiza acanthocarpa</i>	●	●								
	<i>Gompholobium cinereum</i>			●	●			P3			
	<i>Gompholobium gompholobioides</i>	●	●								
	<i>Goodia medicaginea</i>		●								
Fabaceae cont.	<i>Hovea acanthoclada</i>	●	●								
	<i>Indigofera occidentalis</i>		●								
	<i>Jacksonia arida</i>	●	●								
	<i>Kennedia prorepens</i>	●	●								
	<i>Leptosema cervicorne</i>	●	●								
	<i>Leptosema daviesioides</i>	●	●								
	<i>Lotus cruentus</i>	●	●								
	<i>Medicago laciniata</i>	●	●								Y
	<i>Medicago minima</i>	●	●								Y
	<i>Medicago polymorpha</i>	●	●								Y
	<i>Mirbelia depressa</i>	●	●								
	<i>Mirbelia microphylla</i>	●	●								
	<i>Mirbelia ramulosa</i>	●	●								
	<i>Mirbelia seorsifolia</i>	●	●								
	<i>Parkinsonia aculeata</i>							●			Y
	<i>Petalostylis cassioides</i>	●	●								
	<i>Prosopis glandulosa</i> x <i>Prosopis velutina</i>							●			Y
	<i>Senna alata</i>							●			Y
	<i>Senna artemisioides</i>	●	●								
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	●									
	<i>Senna artemisioides</i> subsp. x <i>artemisioides</i>	●									
<i>Senna cardiosperma</i>	●	●									
<i>Senna flexuosa</i>		●									
<i>Senna obtusifolia</i>							●			Y	
<i>Senna pleurocarpa</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Senna pleurocarpa</i> var. <i>angustifolia</i>	●									
	<i>Senna pleurocarpa</i> var. <i>pleurocarpa</i>	●									
	<i>Senna stowardii</i>	●	●								
	<i>Swainsona affinis</i>	●	●								
	<i>Swainsona beasleyana</i>	●	●								
	<i>Swainsona canescens</i>	●	●								
	<i>Swainsona colutoides</i>	●	●								
Fabaceae cont.	<i>Swainsona formosa</i>		●								
	<i>Swainsona gracilis</i>	●	●								
	<i>Swainsona halophila</i>		●								
	<i>Swainsona incei</i>	●	●								
	<i>Swainsona kingii</i>	●	●								
	<i>Swainsona leeana</i>	●	●								
	<i>Swainsona microphylla</i>		●								
	<i>Swainsona oliveri</i>	●	●								
	<i>Swainsona oroboides</i>	●	●								
	<i>Swainsona paradoxa</i>	●	●								
	<i>Swainsona purpurea</i>	●	●								
	<i>Swainsona rostellata</i>	●	●								
	<i>Templetonia ceracea</i>	●	●								
	<i>Templetonia egena</i>		●								
	<i>Templetonia incrassata</i>	●	●								
	<i>Vicia monantha</i>		●								Y
	<i>Vicia monantha</i> subsp. <i>triflora</i>	●									Y
Frankeniaceae	<i>Frankenia cinerea</i>	●	●								
	<i>Frankenia desertorum</i>	●	●								
	<i>Frankenia georgei</i>			●				P1			
	<i>Frankenia glomerata</i>	●	●	●				P4			
	<i>Frankenia interioris</i>	●	●								
	<i>Frankenia interioris</i> var. <i>interioris</i>	●									
	<i>Frankenia interioris</i> var. <i>parviflora</i>	●									
	<i>Frankenia setosa</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Frankenia tetrapetala</i>	●									
Gentianaceae	<i>Schenkia clementii</i>	●	●								
Geraniaceae	<i>Erodium aureum</i>		●								Y
	<i>Erodium cicutarium</i>	●	●								Y
	<i>Erodium crinitum</i>	●	●								
	<i>Erodium cygnorum</i>	●	●								
Goodeniaceae	<i>Anthotium rubriflorum</i>		●								
Goodeniaceae cont.	<i>Brunonia australis</i>	●	●								
	<i>Brunonia</i> sp. Goldfields (K.R. Newbey 6044)	●									
	<i>Cooperookia strophiolata</i>	●	●								
	<i>Dampiera eriocephala</i>	●	●								
	<i>Dampiera latealata</i>	●	●								
	<i>Dampiera lavandulacea</i>	●	●								
	<i>Dampiera linearis</i>		●								
	<i>Dampiera luteiflora</i>	●	●								
	<i>Dampiera oligophylla</i>		●								
	<i>Dampiera plumosa</i>	●	●	●				P1			
	<i>Dampiera roycei</i>		●								
	<i>Dampiera stenostachya</i>	●	●								
	<i>Dampiera tenuicaulis</i>		●								
	<i>Dampiera tenuicaulis</i> var. <i>curvula</i>	●									
	<i>Dampiera tenuicaulis</i> var. <i>tenuicaulis</i>	●									
	<i>Dampiera tomentosa</i>		●								
	<i>Goodenia concinna</i>	●	●								
	<i>Goodenia cycnopotamica</i>		●								
	<i>Goodenia elderi</i>	●	●								
	<i>Goodenia havilandii</i>	●	●								
	<i>Goodenia mimuloides</i>	●	●								
	<i>Goodenia pinnatifida</i>		●								
	<i>Goodenia pusilliflora</i>	●	●								
	<i>Goodenia salina</i>	●	●	●				P2			
<i>Goodenia xanthosperma</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Lechenaultia biloba</i>		●								
	<i>Lechenaultia brevifolia</i>	●	●								
	<i>Lechenaultia tubiflora</i>		●								
	<i>Scaevola canescens</i>		●								
	<i>Scaevola restiacea</i>		●								
	<i>Scaevola spinescens</i>	●	●								
	<i>Scaevola striata</i>		●								
Goodeniaceae cont.	<i>Velleia daviesii</i>		●								
	<i>Velleia discophora</i>		●								
	<i>Velleia rosea</i>	●	●								
	<i>Verreauxia dyeri</i>		●								
Gyrostemonaceae	<i>Codonocarpus cotinifolius</i>	●	●								
	<i>Gyrostemon racemiger</i>	●	●								
Haemodoraceae	<i>Anigozanthos manglesii</i>		●								
	<i>Conostylis petrophiloides</i>		●								
	<i>Conostylis serrulata</i>		●								
Haloragaceae	<i>Glischrocaryon angustifolium</i>	●	●								
	<i>Glischrocaryon aureum</i>		●								
	<i>Glischrocaryon flavescens</i>	●	●								
	<i>Gonocarpus confertifolius</i>		●								
	<i>Gonocarpus confertifolius</i> var. <i>helmsii</i>	●									
	<i>Haloragis maierae</i>	●	●								
	<i>Haloragis trigonocarpa</i>	●	●								
	<i>Myriophyllum petraeum</i>			●	●			P4			
Hemerocallidaceae	<i>Stypandra glauca</i>		●								
Iridaceae	<i>Moraea flaccida</i>						●				Y
	<i>Moraea miniata</i>						●				Y
	<i>Patersonia occidentalis</i>		●								
Isoetaceae	<i>Isoetes brevicula</i>			●				P3			
Juncaginaceae	<i>Triglochin hexagona</i>		●								
Lamiaceae	<i>Brachysola coerulea</i>		●								
	<i>Cyanostegia angustifolia</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Cyanostegia microphylla</i>	●	●								
	<i>Dasymalla terminalis</i>	●	●								
	<i>Dicrastylis brunnea</i>	●									
	<i>Dicrastylis corymbosa</i>		●								
	<i>Dicrastylis parvifolia</i>	●	●								
	<i>Hemiandra pungens</i>		●								
	<i>Hemigenia dielsii</i>		●								
	<i>Hemigenia loganiacea</i>		●								
	<i>Hemiphora elderi</i>	●	●								
	<i>Lachnostachys bracteosa</i>		●								
	<i>Lachnostachys coolgardiensis</i>	●	●								
	<i>Lachnostachys verbascifolia</i>		●								
	<i>Marrubium vulgare</i>	●	●								Y
	<i>Newcastelia insignis</i>		●					P2			
	<i>Physopsis viscida</i>	●	●								
	<i>Pityrodia lepidota</i>	●	●								
	<i>Pityrodia scabra</i> subsp. <i>dendrotricha</i>			●	●			P3			
	<i>Prostanthera althoferi</i>		●								
	<i>Prostanthera althoferi</i> subsp. <i>althoferi</i>	●									
	<i>Prostanthera campbellii</i>	●	●								
	<i>Prostanthera grylloana</i>	●	●								
	<i>Prostanthera incurvata</i>	●	●								
	<i>Prostanthera splendens</i>			●	●			P1			
	<i>Salvia reflexa</i>	●	●								Y
	<i>Salvia verbenaca</i>	●	●								Y
	<i>Teucrium disjunctum</i>		●								
	<i>Teucrium sessiliflorum</i>	●	●								
	<i>Westringia cephalantha</i>	●	●								
	<i>Westringia rigida</i>	●	●								
Lauraceae	<i>Cassytha glabella</i>		●								
Loganiaceae	<i>Phyllangium sulcatum</i>	●	●								
Loranthaceae	<i>Amyema benthamii</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Amyema fitzgeraldii</i>		●								
	<i>Amyema gibberula</i>		●								
	<i>Amyema gibberula</i> var. <i>gibberula</i>	●									
	<i>Amyema linophylla</i>		●								
	<i>Amyema linophylla</i> subsp. <i>linophylla</i>	●									
	<i>Amyema miquelii</i>	●	●								
	<i>Amyema preissii</i>	●	●								
Loranthaceae cont.	<i>Lysiana casuarinae</i>	●	●								
	<i>Nuytsia floribunda</i>		●								
Lythraceae	<i>Lythrum hyssopifolia</i>	●	●								Y
Malvaceae	<i>Abutilon cryptopetalum</i>	●	●								
	<i>Adansonia gregorii</i>		●								
	<i>Alyogyne hakeifolia</i>		●								
	<i>Alyogyne pinoniana</i>		●								
	<i>Alyogyne</i> sp. Great Victoria Desert (D.J. Edinger 6212)			●				P3			
	<i>Androcalva aphrix</i>	●	●								
	<i>Androcalva loxophylla</i>		●								
	<i>Androcalva luteiflora</i>	●	●								
	<i>Brachychiton gregorii</i>	●	●								
	<i>Commersonia crauophylla</i>	●	●								
	<i>Guichenotia macrantha</i>		●								
	<i>Hannafordia bissillii</i>		●								
	<i>Hannafordia bissillii</i> subsp. <i>latifolia</i>	●									
	<i>Hibiscus solarifolius</i>	●	●								
	<i>Lawrencia diffusa</i>		●								
	<i>Lawrencia glomerata</i>	●	●								
	<i>Lawrencia helmsii</i>	●	●								
	<i>Lawrencia repens</i>	●	●								
	<i>Lawrencia squamata</i>	●	●								
<i>Malva parviflora</i>	●	●								Y	
<i>Malva preissiana</i>		●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Malva weinmanniana</i>	●	●								
	<i>Radyera farragei</i>	●	●								
	<i>Seringia exastia</i> [^]							T [^]	CR	CR	
	<i>Seringia velutina</i>	●	●								
	<i>Sida ammophila</i>		●								
	<i>Sida calyxhymenia</i>	●	●								
	<i>Sida intricata</i>	●	●								
	<i>Sida petrophila</i>		●								
Malvaceae cont.	<i>Sida spodochroma</i>	●	●								
Meliaceae	<i>Melia azedarach</i>	●	●								Y
Molluginaceae	<i>Hypertelis cerviana</i>	●	●								
Montiaceae	<i>Calandrinia calyprata</i>	●	●								
	<i>Calandrinia eremaea</i>	●	●								
	<i>Calandrinia lefroyensis</i>	●	●	●				P1			
	<i>Calandrinia polyandra</i>	●	●								
	<i>Calandrinia quartzitica</i> [^]							P1			
	<i>Calandrinia schistorhiza</i>		●								
	<i>Calandrinia sculpta</i>	●	●								
	<i>Calandrinia translucens</i>	●	●								
Myrtaceae	<i>Agonis flexuosa</i>		●								Y
	<i>Aluta aspera</i>		●								
	<i>Aluta aspera</i> subsp. <i>aspera</i>	●									
	<i>Baeckea elderiana</i>	●	●								
	<i>Baeckea grandibracteata</i>		●								
	<i>Baeckea muricata</i>		●								
	<i>Baeckea</i> sp. Koonadgin (B.L. Rye & M.E. Trudgen BLR 241137)	●									
	<i>Balaustion pulcherrimum</i>		●								
	<i>Calothamnus gilesii</i>	●	●								
	<i>Calothamnus quadrifidus</i>		●								
	<i>Calytrix amethystina</i>	●	●								
	<i>Calytrix birdii</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Calytrix leschenaultii</i>		●								
	<i>Calytrix merrelliana</i>		●								
	<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)			●				P1			
	<i>Cyathostemon divaricatus</i>	●	●	●	●			P1			
	<i>Cyathostemon verrucosus</i>	●	●	●				P3			
	<i>Darwinia</i> sp. Karonie (K. Newbey 8503)	●									
	<i>Enekbatus clavifolius</i>		●								
	<i>Enekbatus cryptandroides</i>		●								
Myrtaceae cont.	<i>Enekbatus eremaeus</i>	●									
	<i>Ericomyrtus serpyllifolia</i>	●	●								
	<i>Eucalyptus calycogona</i>		●								
	<i>Eucalyptus calycogona</i> subsp. <i>calycogona</i>	●									
	<i>Eucalyptus campaspe</i>	●	●								
	<i>Eucalyptus carnei</i>		●								
	<i>Eucalyptus celastroides</i>	●	●								
	<i>Eucalyptus celastroides</i> subsp. <i>celastroides</i>	●									
	<i>Eucalyptus clelandiorum</i>	●	●								
	<i>Eucalyptus comitae-vallis</i>	●	●								
	<i>Eucalyptus concinna</i>	●	●								
	<i>Eucalyptus corrugata</i>	●	●								
	<i>Eucalyptus crucis</i>		●								
	<i>Eucalyptus cylindrocarpa</i>	●	●								
	<i>Eucalyptus delicata</i>		●								
	<i>Eucalyptus distuberosa</i>		●								
	<i>Eucalyptus distuberosa</i> subsp. <i>distuberosa</i>	●									
	<i>Eucalyptus educta</i>			●				P2			
	<i>Eucalyptus eremicola</i>		●								
	<i>Eucalyptus eremophila</i>	●	●								
<i>Eucalyptus eremophila</i> subsp. <i>eremophila</i>	●										
<i>Eucalyptus erythronema</i>		●									
<i>Eucalyptus exigua</i>			●	●			P3				

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eucalyptus flocktoniae</i>	●	●								
	<i>Eucalyptus foecunda</i>		●								
	<i>Eucalyptus fraseri</i>		●								
	<i>Eucalyptus fraseri</i> subsp. <i>fraseri</i>	●									
	<i>Eucalyptus frenchiana</i>			●				P3			
	<i>Eucalyptus gracilis</i>	●	●								
	<i>Eucalyptus griffithsii</i>	●	●								
	<i>Eucalyptus horistes</i>	●	●								
	<i>Eucalyptus incerata</i>		●								
Myrtaceae cont.	<i>Eucalyptus incrassata</i>	●	●								
	<i>Eucalyptus jutsonii</i>		●								
	<i>Eucalyptus jutsonii</i> subsp. <i>jutsonii</i>	●		●				P4			
	<i>Eucalyptus kingsmillii</i>		●								
	<i>Eucalyptus kruseana</i>		●	●				P4			
	<i>Eucalyptus leptophylla</i>	●	●								
	<i>Eucalyptus leptopoda</i>		●								
	<i>Eucalyptus leptopoda</i> subsp. <i>subluta</i>	●									
	<i>Eucalyptus lesouefii</i>	●	●								
	<i>Eucalyptus longicornis</i>	●	●								
	<i>Eucalyptus longissima</i>	●	●								
	<i>Eucalyptus loxophleba</i>		●								
	<i>Eucalyptus loxophleba</i> subsp. <i>lissophloia</i>	●									
	<i>Eucalyptus moderata</i>		●								
	<i>Eucalyptus oldfieldii</i>		●								
	<i>Eucalyptus oleosa</i>	●	●								
	<i>Eucalyptus oleosa</i> subsp. <i>oleosa</i>	●									
	<i>Eucalyptus petraea</i>	●	●								
	<i>Eucalyptus pileata</i>	●	●								
	<i>Eucalyptus planipes</i>	●	●								
<i>Eucalyptus platycorys</i>	●	●									
<i>Eucalyptus prolixa</i>	●	●									
<i>Eucalyptus ravida</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eucalyptus rigidula</i>	●	●								
	<i>Eucalyptus salicola</i>	●	●								
	<i>Eucalyptus salmonophloia</i>	●	●								
	<i>Eucalyptus salubris</i>	●	●								
	<i>Eucalyptus socialis</i>		●								
	<i>Eucalyptus</i> sp. Mulga Rock (K.D. Hill & L.A.S. Johnson KH 2668)	●									
	<i>Eucalyptus</i> sp. Southern smooth-bark (D. Nicolle & M. French DN 6916)	●									
	<i>Eucalyptus stricklandii</i>	●	●								
Myrtaceae cont.	<i>Eucalyptus tenera</i>	●	●								
	<i>Eucalyptus tenuis</i>		●								
	<i>Eucalyptus torquata</i>	●	●								
	<i>Eucalyptus transcontinentalis</i>	●	●								
	<i>Eucalyptus urna</i>	●	●								
	<i>Eucalyptus websteriana</i>	●	●								
	<i>Eucalyptus websteriana</i> subsp. <i>norsemanica</i>			●	●			P1			
	<i>Eucalyptus websteriana</i> subsp. <i>websteriana</i>	●									
	<i>Eucalyptus</i> x <i>brachyphylla</i>	●	●	●				P4			
	<i>Eucalyptus yilgarnensis</i>	●	●								
	<i>Euryomyrtus maidenii</i>	●	●								
	<i>Homalocalyx coarctatus</i>		●								
	<i>Homalocalyx pulcherrimus</i>		●								
	<i>Homalocalyx thryptomenoides</i>	●	●								
	<i>Hysterobaeckea petraea</i>	●	●								
	<i>Kunzea pulchella</i>		●								
	<i>Leptospermum fastigiatum</i>	●	●								
	<i>Leptospermum roei</i>		●								
	<i>Leptospermum subtenu</i>	●	●								
	<i>Malleostemon peltiger</i>	●									
<i>Malleostemon roseus</i>	●	●									
<i>Malleostemon tuberculatus</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Melaleuca acuminata</i>		●								
	<i>Melaleuca acuminata</i> subsp. <i>acuminata</i>	●									
	<i>Melaleuca calyptroides</i>	●	●								
	<i>Melaleuca coccinea</i>	●	●	●				P3			
	<i>Melaleuca concreta</i>		●								
	<i>Melaleuca cordata</i>	●	●								
	<i>Melaleuca eleuterostachya</i>		●								
	<i>Melaleuca elliptica</i>	●	●								
	<i>Melaleuca fulgens</i>		●								
	<i>Melaleuca fulgens</i> subsp. <i>fulgens</i>	●									
	<i>Melaleuca halmaturorum</i>	●	●								
	<i>Melaleuca hamata</i>	●	●								
	<i>Melaleuca huegelii</i>		●								
	<i>Melaleuca lanceolata</i>	●	●								
	<i>Melaleuca lateriflora</i>	●	●								
	<i>Melaleuca macronychia</i> subsp. <i>macronychia</i>	●									
	<i>Melaleuca macronychia</i> subsp. <i>trygonoides</i>			●				P3			
	<i>Melaleuca pauperiflora</i>		●								
	<i>Melaleuca pauperiflora</i> subsp. <i>fastigiata</i>	●									
	<i>Melaleuca scabra</i>		●								
	<i>Melaleuca sheathiana</i>	●	●								
	<i>Melaleuca thymoides</i>		●								
	<i>Melaleuca uncinata</i>	●	●								
	<i>Melaleuca xerophila</i>		●								
	<i>Melaleuca zeteticorum</i>	●	●								
	<i>Micromyrtus erichsenii</i>	●	●								
	<i>Micromyrtus monotaxis</i>	●	●								
	<i>Micromyrtus obovata</i>		●								
	<i>Micromyrtus stenocalyx</i>	●	●								
	<i>Rinzia carnosa</i>	●	●								
	<i>Rinzia triplex</i>			●				P1			
	<i>Thryptomene australis</i>		●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Thryptomene australis</i> subsp. <i>brachyandra</i>	●									
	<i>Thryptomene kochii</i>	●	●								
	<i>Thryptomene planiflora</i>	●		●				P1			
	<i>Thryptomene</i> sp. Coolgardie (E. Kelso s.n. 1902)	●		●				P1			
	<i>Thryptomene</i> sp. Londonderry (R.H. Kuchel 1763)		●								
	<i>Thryptomene urceolaris</i>	●	●								
	<i>Verticordia chrysantha</i>	●	●								
	<i>Verticordia picta</i>	●	●								
	<i>Verticordia pritzelii</i>	●	●								
Nitrariaceae	<i>Nitraria billardiarei</i>	●	●								
Nyctaginaceae	<i>Boerhavia coccinea</i>	●	●								
Orchidaceae	<i>Caladenia footeana</i>	●									
	<i>Caladenia nobilis</i>	●	●								
	<i>Caladenia roei</i>	●	●								
	<i>Caladenia varians</i> MS		●								
	<i>Diuris hazeliae</i>		●								
	<i>Diuris longifolia</i>		●								
	<i>Oligochaetochilus exsertus</i>		●								
	<i>Pterostylis</i> sp. inland (A.C. Beauglehole 11880)	●									
	<i>Pterostylis tryphera</i>	●	●								
	<i>Pterostylis xerampelina</i>			●				P1			
	<i>Thelymitra antennifera</i>	●	●								
	<i>Thelymitra petrophila</i>		●								
<i>Thelymitra stellata</i>		●				●	T	EN	EN		
Oxalidaceae	<i>Oxalis bowiei</i>	●	●								Y
	<i>Oxalis pes-caprae</i>	●	●								Y
Papaveraceae	<i>Argemone ochroleuca</i>		●								Y
	<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	●									Y
	<i>Papaver hybridum</i>	●	●								Y
Pittosporaceae	<i>Billardiera fusiformis</i>	●	●								
	<i>Marianthus bicolor</i>	●	●								
	<i>Pittosporum angustifolium</i>	●	●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Plantaginaceae	<i>Plantago debilis</i>	●	●								
	<i>Plantago drummondii</i>	●	●								
	<i>Plantago</i> sp. Mt Magnet (A.S. George 6793)	●									
Plumbaginaceae	<i>Limonium sinuatum</i>	●	●								Y
	<i>Psylliostachys suworowii</i>		●								
Poaceae	<i>Amphipogon caricinus</i>		●								
	<i>Amphipogon caricinus</i> var. <i>caricinus</i>	●									
	<i>Anthosachne scabra</i>		●								
	<i>Aristida contorta</i>	●	●								
	<i>Austrostipa blackii</i>	●	●	●				P3			
Poaceae cont.	<i>Austrostipa drummondii</i>	●	●								
	<i>Austrostipa elegantissima</i>	●	●								
	<i>Austrostipa eremophila</i>	●	●								
	<i>Austrostipa nitida</i>	●	●								
	<i>Austrostipa platychaeta</i>	●	●								
	<i>Austrostipa puberula</i>		●								
	<i>Austrostipa scabra</i>	●	●								
	<i>Austrostipa</i> sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	●		●				P1			
	<i>Austrostipa</i> sp. Dowerin (G. Wiehl F 8004)	●		●				P2			
	<i>Austrostipa trichophylla</i>	●	●								
	<i>Avena fatua</i>		●								Y
	<i>Bromus arenarius</i>	●	●								
	<i>Bromus catharticus</i>	●									Y
	<i>Bromus diandrus</i>	●	●								Y
	<i>Cenchrus ciliaris</i>	●	●				●				Y
	<i>Cenchrus longisetus</i>		●								Y
	<i>Cenchrus setaceus</i>	●	●								Y
<i>Chloris gayana</i>		●								Y	
<i>Chloris truncata</i>	●	●									
<i>Cymbopogon obtectus</i>		●									
<i>Cynodon dactylon</i>		●								Y	

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Dactyloctenium radulans</i>	●	●								
	<i>Dichanthium sericeum</i>		●								
	<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>	●									
	<i>Digitaria ammophila</i>	●	●								
	<i>Digitaria brownii</i>	●	●								
	<i>Ehrharta villosa</i>	●	●								Y
	<i>Enneapogon avenaceus</i>	●	●								
	<i>Enneapogon caerulescens</i>	●	●								
	<i>Enneapogon cylindricus</i>	●	●								
	<i>Enteropogon ramosus</i>	●	●								
	<i>Eragrostis curvula</i>	●	●								
Poaceae cont.	<i>Eragrostis dielsii</i>	●	●								
	<i>Eragrostis falcata</i>	●	●								
	<i>Eragrostis setifolia</i>	●	●								
	<i>Eragrostis xerophila</i>	●									
	<i>Eriachne pulchella</i>	●									
	<i>Hordeum glaucum</i>	●	●								Y
	<i>Hordeum leporinum</i>	●	●								Y
	<i>Hyparrhenia hirta</i>		●								Y
	<i>Leptochloa digitata</i>	●	●								
	<i>Monachather paradoxus</i>	●	●								
	<i>Panicum decompositum</i>	●	●								
	<i>Panicum effusum</i>	●	●								
	<i>Paspalidium constrictum</i>	●	●								
	<i>Paspalidium gracile</i>	●	●								
	<i>Paspalidium reflexum</i>	●	●								
	<i>Pentameris airoides</i>		●								Y
	<i>Pentameris airoides</i> subsp. <i>airoides</i>	●									Y
	<i>Phalaris minor</i>		●								Y
	<i>Phalaris paradoxa</i>	●	●								Y
<i>Polypogon monspeliensis</i>		●								Y	
<i>Puccinellia ciliata</i>		●								Y	

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Rostraria pumila</i>	●	●								Y
	<i>Rytidosperma acerosum</i>		●								
	<i>Rytidosperma caespitosum</i>	●	●								
	<i>Rytidosperma setaceum</i>	●	●								
	<i>Schismus arabicus</i>	●	●								Y
	<i>Schismus barbatus</i>	●	●								Y
	<i>Setaria dielsii</i>	●	●								
	<i>Sorghum halepense</i>	●	●								Y
	<i>Thyridolepis mitchelliana</i>		●								
	<i>Triodia desertorum</i>		●								
	<i>Triodia irritans</i>	●	●								
Poaceae cont.	<i>Triodia rigidissima</i>		●								
	<i>Triodia scariosa</i>	●	●								
	<i>Urochloa panicoides</i>	●	●								Y
Polygalaceae	<i>Comesperma drummondii</i>	●	●								
	<i>Comesperma scoparium</i>	●	●								
Polygonaceae	<i>Muehlenbeckia adpressa</i>		●								
	<i>Persicaria prostrata</i>	●	●								
	<i>Polygonum aviculare</i>	●	●								Y
	<i>Rumex crystallinus</i>			●				P3			
	<i>Rumex vesicarius</i>	●	●								Y
Pontederiaceae	<i>Pontederia crassipes</i>		●								Y
Portulacaceae	<i>Portulaca oleracea</i>	●	●								
Primulaceae	<i>Lysimachia arvensis</i>		●								Y
Proteaceae	<i>Banksia elderiana</i>	●	●								
	<i>Conospermum stoechadis</i>		●								
	<i>Grevillea acacioides</i>	●	●								
	<i>Grevillea acuaria</i>	●	●								
	<i>Grevillea asteriscosa</i>		●					P4			
	<i>Grevillea beardiana</i>	●	●								
	<i>Grevillea cagiana</i>	●	●								
	<i>Grevillea didymobotrya</i>		●								

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>	●									
	<i>Grevillea eriostachya</i>		●								
	<i>Grevillea excelsior</i>	●	●								
	<i>Grevillea georgeana</i>	●	●	●	●			P3			
	<i>Grevillea haplantha</i>		●								
	<i>Grevillea haplantha</i> subsp. <i>haplantha</i>	●									
	<i>Grevillea hookeriana</i>		●								
	<i>Grevillea hookeriana</i> subsp. <i>apiculoba</i>	●									
	<i>Grevillea hookeriana</i> subsp. <i>hookeriana</i>	●									
	<i>Grevillea huegelii</i>	●	●								
	<i>Grevillea nematophylla</i>		●								
Proteaceae cont.	<i>Grevillea nematophylla</i> subsp. <i>nematophylla</i>	●									
	<i>Grevillea obliquistigma</i>		●								
	<i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i>	●									
	<i>Grevillea oligomera</i>	●	●								
	<i>Grevillea oncogyne</i>	●	●								
	<i>Grevillea paniculata</i>	●	●								
	<i>Grevillea paradoxa</i>		●								
	<i>Grevillea phillipsiana</i>				●			P1			
	<i>Grevillea pterosperma</i>		●								
	<i>Grevillea sarissa</i>		●								
	<i>Grevillea sarissa</i> subsp. <i>bicolor</i>	●									
	<i>Grevillea sarissa</i> subsp. <i>sarissa</i>	●									
	<i>Grevillea stenomera</i>		●					P2			
	<i>Grevillea teretifolia</i>	●	●								
	<i>Grevillea uncinulata</i>	●	●								
	<i>Hakea erecta</i>	●									
	<i>Hakea francisiana</i>	●	●								
	<i>Hakea gilbertii</i>		●								
	<i>Hakea meisneriana</i>		●								
<i>Hakea minyma</i>	●	●									
<i>Hakea rigida</i>	●	●	●				P2				

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Hakea trifurcata</i>		●								
	<i>Isopogon dubius</i>		●								
	<i>Persoonia saundersiana</i>	●	●								
	<i>Persoonia scabra</i>			●				P3			
	<i>Petrophile arcuata</i>	●	●								
	<i>Petrophile stricta</i>		●								
	<i>Xylomelum angustifolium</i>		●								
Pteridaceae	<i>Cheilanthes adiantoides</i>	●	●								
	<i>Cheilanthes sieberi</i>		●								
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	●									
Ranunculaceae	<i>Myosurus australis</i>	●	●								
Resedaceae	<i>Reseda luteola</i>		●								Y
Restionaceae	<i>Lepidobolus chaetocephalus</i>	●	●								
	<i>Lepidobolus deserti</i>	●	●								
	<i>Lepidobolus preissianus</i>		●								
Rhamnaceae	<i>Cryptandra aridicola</i>	●	●								
	<i>Cryptandra crispula</i>		●	●				P3			
	<i>Cryptandra intermedia</i>		●								
	<i>Cryptandra leucopogon</i>		●								
	<i>Cryptandra pungens</i>	●	●								
	<i>Pomaderris forrestiana</i>	●	●								
	<i>Stenanthemum stipulosum</i>	●	●								
	<i>Trymalium myrtillus</i>		●								
	<i>Trymalium myrtillus</i> subsp. <i>myrtillus</i>	●									
	<i>Ziziphus mauritiana</i>						●				Y
Rosaceae	<i>Rubus anglocandicans</i>						●				Y
	<i>Rubus laudatus</i>						●				Y
	<i>Rubus rugosus</i>						●				Y
	<i>Rubus ulmifolius</i>						●				Y
Rubiaceae	<i>Opercularia vaginata</i>		●								
Ruppiceae	<i>Ruppia polycarpa</i>	●	●								
Rutaceae	<i>Boronia coerulescens</i> subsp. <i>spinescens</i>	●									

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		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Boronia inornata</i>		●								
	<i>Boronia spathulata</i>		●								
	<i>Boronia ternata</i>		●								
	<i>Cyanothamnus coeruleus</i>		●								
	<i>Cyanothamnus ramosa</i>		●								
	<i>Diplolaena velutina</i>		●								
	<i>Drummondita hassellii</i>	●	●								
	<i>Phebalium appressum</i>	●	●	●				P1			
	<i>Phebalium canaliculatum</i>	●	●								
	<i>Phebalium clavatum</i>	●	●	●	●			P2			
	<i>Phebalium filifolium</i>	●	●								
Rutaceae cont.	<i>Phebalium microphyllum</i>		●								
	<i>Phebalium obovatum</i>		●								
	<i>Phebalium tuberosum</i>	●	●								
	<i>Philothea apiculata</i>			●				P2			
	<i>Philothea brucei</i>		●								
	<i>Philothea pachyphylla</i>			●				P1			
	<i>Philothea tomentella</i>	●	●								
Santalaceae	<i>Exocarpos aphyllus</i>	●	●								
	<i>Leptomeria preissiana</i>		●								
	<i>Santalum acuminatum</i>	●	●								
	<i>Santalum murrayanum</i>		●								
	<i>Santalum spicatum</i>	●	●								
Sapindaceae	<i>Alectryon oleifolius</i>		●								
	<i>Alectryon oleifolius</i> subsp. <i>canescens</i>	●									
	<i>Dodonaea adenophora</i>	●	☐								
	<i>Dodonaea amblyophylla</i>	●	●								
	<i>Dodonaea lobulata</i>	●	●								
	<i>Dodonaea microzyga</i>	●	●								
	<i>Dodonaea microzyga</i> var. <i>acrolobata</i>	●									
	<i>Dodonaea rigida</i>		●								
<i>Dodonaea stenozyga</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Dodonaea viscosa</i>		●								
	<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>	●									
Scrophulariaceae	<i>Eremophila acutifolia</i>	●	●								
	<i>Eremophila alternifolia</i>	●	●								
	<i>Eremophila annosicaulis</i>			●				P3			
	<i>Eremophila arachnoides</i>		●					P3			
	<i>Eremophila arachnoides</i> subsp. <i>tenera</i>			●	●			P3			
	<i>Eremophila caerulea</i>		●								
	<i>Eremophila caerulea</i> subsp. <i>caerulea</i>	●									
	<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	●		●	●			P4			
	<i>Eremophila caperata</i>	●	●								
	Scrophulariaceae cont.	<i>Eremophila clarkei</i>	●	●							
<i>Eremophila clavata</i>		●	●								
<i>Eremophila decipiens</i>		●	●								
<i>Eremophila decipiens</i> subsp. <i>decipiens</i>		●									
<i>Eremophila dempsteri</i>		●	●								
<i>Eremophila deserti</i>		●	●								
<i>Eremophila drummondii</i>		●	●								
<i>Eremophila gibbosa</i>		●	●								
<i>Eremophila glabra</i>			●								
<i>Eremophila glabra</i> subsp. <i>glabra</i>		●									
<i>Eremophila granitica</i>		●	●								
<i>Eremophila interstans</i>			●								
<i>Eremophila interstans</i> subsp. <i>interstans</i>		●									
<i>Eremophila interstans</i> subsp. <i>virgata</i>		●									
<i>Eremophila ionantha</i>		●	●								
<i>Eremophila latrobei</i>			●								
<i>Eremophila longifolia</i>		●	●								
<i>Eremophila maculata</i>			●								
<i>Eremophila maculata</i> subsp. <i>brevifolia</i>		●									
<i>Eremophila microphylla</i> [^]								P3			
<i>Eremophila miniata</i>	●	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Eremophila oblonga</i>	●	●								
	<i>Eremophila oldfieldii</i>		●								
	<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>	●									
	<i>Eremophila oppositifolia</i>		●								
	<i>Eremophila oppositifolia</i> subsp. <i>angustifolia</i>	●									
	<i>Eremophila paisleyi</i>		●								
	<i>Eremophila pantonii</i>		●								
	<i>Eremophila parvifolia</i>		●								
	<i>Eremophila parvifolia</i> subsp. <i>auricampa</i>	●									
	<i>Eremophila perglandulosa</i>			●	●				P1		
	<i>Eremophila platythamnus</i>		●								
Scrophulariaceae cont.	<i>Eremophila praecox</i>	●	●	●	●				P2		
	<i>Eremophila psilocalyx</i>	●	●								
	<i>Eremophila pustulata</i>	●	●								
	<i>Eremophila rugosa</i>	●	●								
	<i>Eremophila saligna</i>	●	●								
	<i>Eremophila scoparia</i>	●	●								
	<i>Eremophila serrulata</i>	●	●								
	<i>Eremophila</i> sp.	●									
	<i>Eremophila sturtii</i>		●								
	<i>Eremophila subfloccosa</i>		●								
	<i>Eremophila subfloccosa</i> subsp. <i>lanata</i>	●									
	<i>Eremophila succinea</i>		●						P3		
	<i>Eremophila veronica</i>		●	●					P3		
	<i>Eremophila violacea</i>	●	●								
	<i>Eremophila xantholaema</i>	●	●	●					P1		
	<i>Myoporum montanum</i>	●	●								
	<i>Myoporum platycarpum</i>		●								
<i>Myoporum platycarpum</i> subsp. <i>platycarpum</i>	●										
Solanaceae	<i>Anthocercis genistoides</i>		●								
	<i>Anthotroche pannosa</i>	●	●								
	<i>Datura ferox</i>	●	●								Y

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Datura innoxia</i>	●									Y
	<i>Duboisia hopwoodii</i>	●	●								
	<i>Lycium australe</i>	●	●								
	<i>Lycium ferocissimum</i>	●	●			●					Y
	<i>Nicotiana glauca</i>	●	●								Y
	<i>Nicotiana occidentalis</i>		●								
	<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>	●									
	<i>Nicotiana rotundifolia</i>	●	●								
	<i>Solanum cleistogamum</i>	●	●								
	<i>Solanum coactiliferum</i>		●								
	<i>Solanum elaeagnifolium</i>						●				Y
Solanaceae cont.	<i>Solanum esuriale</i>	●	●								
	<i>Solanum hoplopetalum</i>	●	●								
	<i>Solanum lasiophyllum</i>	●	●								
	<i>Solanum linnaeanum</i>						●				Y
	<i>Solanum nigrum</i>	●	●								Y
	<i>Solanum nummularium</i>	●	●								
	<i>Solanum petrophilum</i>	●	●								
	<i>Solanum plicatile</i>	●	●								
	<i>Solanum simile</i>	●	●								
	<i>Solanum terraneum</i>		●								
Stylidiaceae	<i>Stylidium arenicola</i>	●	●								
	<i>Stylidium choreanthum</i>	●	●	●				P3			
	<i>Stylidium dielsianum</i>	●	●								
	<i>Stylidium induratum</i>	●	●								
	<i>Stylidium involucreatum</i>		●								
Tamaricaceae	<i>Tamarix aphylla</i>						●				Y
	<i>Tamarix chinensis</i>		●								Y
Thymelaeaceae	<i>Pimelea angustifolia</i>	●	●								
	<i>Pimelea argentea</i>		●								
	<i>Pimelea microcephala</i>		●								
	<i>Pimelea microcephala</i> subsp. <i>microcephala</i>	●									

Family	Taxon	Source						Conservation Status			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	<i>Pimelea spiculigera</i>		●								
Typhaceae	<i>Typha orientalis</i>		●								
Urticaceae	<i>Urtica urens</i>	●	●								Y
Verbenaceae	<i>Glandularia aristigera</i>	●	●								Y
	<i>Lantana camara</i>	●	●				●				Y
	<i>Phyla canescens</i>	●	●								Y
Violaceae	<i>Hybanthus floribundus</i>		●								
	<i>Hybanthus floribundus</i> subsp. <i>curvifolius</i>	●									
Zamiaceae	<i>Macrozamia fraseri</i>		●								
Zygophyllaceae	<i>Roepera angustifolia</i>		●								
	<i>Roepera apiculata</i>		●								
Zygophyllaceae cont.	<i>Roepera aurantiaca</i>		●								
	<i>Roepera aurantiaca</i> subsp. <i>aurantiaca</i>	●									
	<i>Roepera compressa</i>	●	●								
	<i>Roepera eremaea</i>	●	●								
	<i>Roepera glauca</i>	●	●								
	<i>Roepera ovata</i>		●								
	<i>Roepera reticulata</i>	●	●								
	<i>Roepera rowelliae</i>		●								
	<i>Roepera tetraptera</i>	●	●								
	<i>Tribulus terrestris</i>	●	●								Y

Appendix F – Assessment of conservation significant flora likelihood

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
Lepidosperma sp. Kambalda (A.A. Mitchell 5156)	P2			Tussocking sedge, to 0.3 m high. Lower footslope of basalt hill.	No	No	42 km SSE	Highly Unlikely	Possible
Alyxia tetanifolia	P3			Erect, rigid, pungent shrub, 1-2 m high, to 2.5 m wide. Fl. white-cream, May to Jun or Nov. Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.	Yes	Yes	1.6 km N	Highly Likely	Unlikely
Eremophila praecox	P2			Broom-like shrub, 1.5-3 m high. Fl. purple, Oct or Dec. Red/brown sandy loam. Undulating plains.	Yes	Yes	1.2 km NE	Highly Likely	Unlikely
Eucalyptus jutsonii subsp. jutsonii	P4			(Mallee), 4-7 m high, bark rough over most stems, grey to light grey-brown. Red to pale orange deep sands. Undulating areas and on dunes.	Yes	Yes	1.5 km W	Likely	Unlikely
Isolepis australiensis	P3			Annual, grass-like or herb (sedge), 0.03-0.055 m high. Fl. Jun or Sep. Silty sand, sandy clay. Lake margins, pools.	Yes	Yes	1.6 km WSW	Likely	Unlikely
Notisia intonsa	P3			Prostrate, clumping annual herb, to 0.1 m high. Fl. grey-pink-brown, Sept-Nov. Red clay, ironstone/quartz gravel, cracking clay. Floodplains, slopes, salt lakes.	Yes	Yes	1.2 km S	Likely	Unlikely
Acacia websteri	P1			Shrub, 1.2-5 m high, bark fibrous. Fl. Yellow, Jan, June. Red sand, clay or loam. Low-lying areas, flats.	Possible	Adjacent	19.7 km SW	Possible	Unlikely
Alyogyne sp. Great Victoria Desert (D.J. Edinger 6212)	P3			Erect shrub, 0.3-2 m high. Fl. pink/purple, Aug to Dec. Red/orange loamy sand. Flats and sandplains.	Possible	Yes	19.7 km SW	Possible	Unlikely
Austrostipa sp. Carlingup Road (S. Kern & R. Jasper LCH 18459)	P3			Perennial tussock grass up to 0.4 m tall. Fl. Sept-Nov. Cracking clay, red rocky loam, sandy clay. Slopes and claypans.	Possible	Adjacent	11.7 km SE	Possible	Unlikely
Chrysocephalum apiculatum subsp. norsemanense	P3			Upright, spreading, herbaceous annual, to 0.4 m high. Fl. Yellow, Aug-Oct. Loamy sand. Gentle undulating plain, granite hills, sandplain.	Possible	Yes	19.1 km SW	Possible	Unlikely
Cyathostemon verrucosus	P3			Low spreading shrub, to 0.4 m tall. Fl. White, Mar-Apr, Sept-Dec. Yellow sand. Sandplain, flat or undulating.	Possible	Adjacent	10.3 km NNE	Possible	Unlikely
Elachanthus pusillus	P2			Ascending or decumbent annual, herb, to 0.15 m high. Fl. yellow-green, Aug to Oct.	Possible	Adjacent	8.2 km NE	Possible	Unlikely
Eremophila caerulea subsp. merrallii	P4			Spreading or sprawling shrub, to 0.35 m high, to 0.8 m wide. Fl. blue-purple, Oct to Dec. Sand, clay or loam. Undulating plains.	Yes	Adjacent	11.1 km WSW	Possible	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Gastrolobium graniticum</i>	T	VU	EN	Erect, open shrub, to 2.5 m high. Fl. yellow&orange&red, Aug to Sep. Sand, sandy loam, granite. Margins of rock outcrops, along drainage lines.	Possible	Adjacent	19.7 km SW	Possible	Unlikely
<i>Goodenia salina</i>	P2			Annual, herb, 0.02-0.2 m high. Well-drained, saline, grey or brown loamy clay. Low gypseous dunes near salt pans.	Yes	Adjacent	1.6 km WSW	Possible	Unlikely
<i>Lepidium fasciculatum</i>	P3			Erect annual, herb, (0.1-)0.3-0.6 m high.	Possible	Yes	7.8 km NE	Possible	Unlikely
<i>Lepidium merrallii</i>	P2			Erect to spreading annual (possibly ephemeral), herb, 0.03-0.15 m high. Clay loam.	Possible	Adjacent	19.7 km SW	Possible	Unlikely
<i>Acacia coatesii</i>	P1			Compact shrub to 1.5 m wide x 0.4 m high. Fl. yellow, Aug-Oct. Laterite/quartz, sandy clay. Gentle lower slopes, flats.	Possible	No	29 km SW	Unlikely	Unlikely
<i>Acacia crenulata</i>	P3			Bushy shrub or tree, 0.7-3 m high. Fl. Yellow, Mar, Oct-Nov. Clay, sandy clay, yellow sand. Rocky rises, granite outcrops, breakaways.	No	No	35.6 km S	Unlikely	Unlikely
<i>Acacia kerryana</i>	P2			Low, spreading, domed shrub, 0.3-1 m high. Fl. yellow, Oct to Dec or Jan to Feb. Granitic loamy sand, stony clayey loam or clayey sand. Low stony ridges, undulating plains.	No	No	39.7 km S	Unlikely	Unlikely
<i>Acacia sclerophylla</i> var. <i>teretiuscula</i>	P1			Spreading, much-branched shrub, 0.25-2.5 m high. Fl. yellow, Sep to Oct. Clay & loamy soils.	No	No	34.8 km WSW	Unlikely	Unlikely
<i>Angianthus prostratus</i>	P3			Prostrate annual, herb. Fl. white-yellow, Jul to Sep. Red clay or loamy soils. Saline depressions.	Possible	No	28.8 km NNE	Unlikely	Unlikely
<i>Atriplex lindleyi</i> subsp. <i>conduplicata</i>	P3			Monoecious, short-lived annual or perennial, herb, ca 0.2 m high. Crabhole plains.	Possible	Yes	64.7 km NW	Unlikely	Unlikely
<i>Austrostipa blackii</i>	P3			Tufted perennial, grass-like or herb, 1 m high. Fl. Sep to Nov. Sandy clay loam, Winter-wet depression, BIF or basalt outcropping, hills.	Possible	No	24.8 km SW	Unlikely	Unlikely
<i>Austrostipa</i> sp. Dowerin (G. Wiehl F 8004)	P2			Perennial tussock grass 0.4 m high x 0.2 m wide. Fl. Brown/green, Oct-Nov. Red sandy clay, clay-loam, calcrete. Plains, basalt outcropping.	No	No	29.3 km SW	Unlikely	Unlikely
<i>Calandrinia lefroyensis</i>	P1			Slender erect perennial herb, to 0.25 m tall. Fl. Pink/purple, Apr, Oct-Nov. Clayey sand, sand. Slopes or flats ± near salt lakes, sand dunes.	Possible	Yes	35.1 km SSE	Unlikely	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Calandrinia quartzitica</i>	P1			Perennial herb to 40cm. Fl. Pink, cream, Sept-Oct. Red-brown silty loam, quartz. Floodplain, lower slopes of quartz hills.	Possible	No	27.5 km NNW	Unlikely	Unlikely
<i>Chamelaucium</i> sp. Parker Range (B.H. Smith 1255)	P1			Erect shrub, 0.5-1.8 m high. Fl. white or pink. Yellow sand over laterite. Sandplains.	No	No	34.9 km W	Unlikely	Unlikely
<i>Cyathostemon divaricatus</i>	P1			Low, rigid shrub, to 1 m. Fl. White/pink, Apr to Aug, Nov. Red sandy clay loam, gravelly loam. Rocky hillslopes, outcrops.	No	No	36 km SSE	Unlikely	Unlikely
<i>Dampiera plumosa</i>	P1			Erect perennial, herb, 0.15-0.2 m high. Fl. blue, Oct. Red sandy soils.	Possible	No	27.5 km SW	Unlikely	Unlikely
<i>Eremophila annosicaulis</i>	P3			Small, upright, spreading shrub, to 0.8 m high. Fl. Purple, July, Sept. Red sand or loam. Rocky slopes, rocky/sandy plain.	Possible	Yes	71.9 km SSE	Unlikely	Unlikely
<i>Eremophila arachnoides</i> subsp. <i>tenera</i>	P3			Broom-like shrub, to 3 m high, branches with tubercles often elongated & coalescing. Fl. white/blue-purple. Low undulating plains, flats.	Possible	No	40.3 km E	Unlikely	Unlikely
<i>Eremophila microphylla</i>	P3			Rounded shrub, 0.45-0.9 m high, to 1 m wide. Fl. White, red, Nov to Dec. Red-brown clay loam.	Yes	No	37.0 km S	Unlikely	Unlikely
<i>Eremophila veronica</i>	P3			Spreading, erect shrub, 0.5-1 m high. Fl. purple, Apr to May. Stony clay, clay loam. Lateritic breakaways.	No	No	21.2 km SW	Unlikely	Unlikely
<i>Eremophila xantholaema</i>	P1			Erect shrub, up to 3m high. Fl. Mauve (inner corolla tube yellow with orange). Stony brown loam. Hills and upper slopes.	Possible	No	22.5 km NE	Unlikely	Unlikely
<i>Eucalyptus websteriana</i> subsp. <i>norsemanica</i>	P1			(Spreading mallee), to 3 m high, bark 'minni-ritchi'. Fl. yellow, Sep to Nov. Rocky rises.	Possible	No	30.9 km SW	Unlikely	Unlikely
<i>Frankenia glomerata</i>	P4			Prostrate shrub. Fl. pink-white, Nov. White sand.	No	Adjacent	8.2 NE	Unlikely	Unlikely
<i>Gompholobium cinereum</i>	P3			Shrub, to 0.3 m high. Yellow sand, clayey sand, brown loam, sandy gravel, laterite. Well-drained open sites, slopes, plains, roadsides.	No	No	32.2 km WNW	Unlikely	Unlikely
<i>Grevillea georgeana</i>	P3			Erect to widely spreading shrub, 1-3 m high, up to 4 m wide. Fl. red/red & pink & cream, Jan or Mar or Sep to Nov. Stony loam/clay. Ironstone hilltops & slopes.	No	No	22.7 km SW	Unlikely	Unlikely
<i>Hakea rigida</i>	P2			Shrub, 0.6-2.7 m high. Fl. Sep to Oct. Sandy soils, yellow sand.	No	No	22.3 km WNW	Unlikely	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
Lepidosperma sp. Parker Range (N. Gibson & M. Lyons 2094)	P1			Perennial sedge to 0.4 m high. Sandy loam. Rocky hills with ironstone outcropping.	Possible	No	31.2 km SW	Unlikely	Unlikely
Phebalium appressum	P1			Rounded shrub, ca 1 m high, leaves cordate-ovate, ca 2 mm long; flowers usually solitary; pedicels short, thick, ca 1 mm long. Fl. white, Jul. Yellow sandplain.	No	No	20.8 km WNW	Unlikely	Unlikely
Phebalium clavatum	P2			Upright shrub, 0.5-1.5 m high. Fl. white, Aug to Sep. Sandy soils. Sandplains.	No	No	32.7 km SW	Unlikely	Unlikely
Phlegmatospermum eremaeum	P3			Prostrate to spreading annual, herb, 0.02-0.1(-0.2) m high. Fl. white-cream, Jun or Aug to Oct. Stony loam.	Possible	Yes	20.4 km SW	Unlikely	Unlikely
Pterostylis xerampelina	P1			Tuberous perennial herb to 0.15 m high. Fl. Brown, Sept-Oct. Granite with pockets of sandy grit. Banded ironstone hills.	No	Yes	26.8 km SSW	Unlikely	Unlikely
Ptilotus procumbens	P1			Spreading procumbent annual, herb, ca 0.1 m high. Fl. pink-white, Nov. Red clay.	No	Adjacent	5.8 km NE	Unlikely	Unlikely
Ptilotus sp. Kalgoorlie (J. Jackson & B. Moyle 260)	P1			Erect herb, to 0.3 m high. Rocky low hills, quartz outcrops.	Possible	No	29.1 km NNW	Unlikely	Unlikely
Rhodanthe uniflora	P1			Erect, woolly annual, herb, 0.02-0.1(-0.3) m high. Fl. yellow, Aug to Oct. Brown earth. Open eucalyptus woodland.	Possible	Adjacent	28.8 km NNE	Unlikely	Unlikely
Ricinocarpos digynus	P1			Erect shrub 2m x 2m. Fl. Yellow, March. Red sandy loam on sandy/stony plains, rocky hillslopes.	No	Yes	40 km SSE	Unlikely	Unlikely
Seringia exastia	T	CR	CR	Shrub to 1m tall. Fl. Pink. Red sand, ironstone gravel, brown loam. Flats, sandplain, dunes, ridges.	No	No	37.0 km S	Unlikely	Unlikely
Sowerbaea multicaulis	P4			Tufted perennial, herb, 0.075-0.25 m high. Fl. purple-violet, Oct to Dec or Jan. Yellow-brown sand.	Possible	Yes	48.7 km SSE	Unlikely	Unlikely
Stylidium choreanthum	P3			Creeping perennial, herb, 0.01-0.03 m high, to 0.3 m wide. Fl. pink/white, Sep to Nov. White/yellow or red sand. Plains.	No	Adjacent	37.5 km S	Unlikely	Unlikely
Styphelia rectiloba	P3			Compact shrub up to 1.5 m high x 1.5 m wide. Fl. cream, Jan, May. Calcretic sand, pale brown laom. Granitic breakaways, ridge.	No	No	32.2 km S	Unlikely	Unlikely
Tecticornia flabelliformis	P1			Erect shrub, to 0.2 m high. Clay. Saline flats.	Possible	Adjacent	38 km ENE	Unlikely	Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Tecticornia mellarium</i>	P1			Perennial samphire shrub, to 0.5 m high. Brown sandy clay. Edges of salt lakes, undulating saline dunes.	Possible	Yes	54.7 km SSE	Unlikely	Unlikely
<i>Thryptomene planiflora</i>	P1			Erect to spreading shrub, to 1.5 m high. Fl. white/pink, Jun to Nov. Yellow sand, sandy loam. Sandplains, gentle hillslopes.	Possible	No	20.4 km SW	Unlikely	Unlikely
<i>Thryptomene</i> sp. Coolgardie (E. Kelso s.n. 1902)	P1			No available information.	No	No	19.7 km SW	Unlikely	Unlikely
<i>Acacia epedunculata</i>	P1			Low spreading, becoming rounded, multi-stemmed shrub, 0.5-0.65 m high. Fl. yellow, Aug. Yellow sand. Sandplains.	No	No	47.8 km N	Highly Unlikely	Highly Unlikely
<i>Allocasuarina eriochlamys</i> subsp. <i>grossa</i>	P3			Dioecious or monoecious shrub, 1-3 m high, bracteoles prominently exceeding cone. Stony loam, laterite clay. Granite outcrops.	No	No	42 km SSE	Highly Unlikely	Highly Unlikely
<i>Andersonia carinata</i>	P2			Erect slender shrub, 0.1-0.45(-0.8) m high. Fl. pink/pink-white/pink-purple, Aug to Oct. White sand, gravelly lateritic soils. Plains.	No	No	> 350 km SW	Highly Unlikely	Highly Unlikely
<i>Bossiaea celata</i>	P3			Compact, intricately-branched shrub, to 0.8 m high. Fl. yellow-red-orange, Sep to Oct. Deep sand. Open mallee.	No	No	43.1 km SSW	Highly Unlikely	Highly Unlikely
<i>Bossiaea laxa</i>	P2			Lax, open, spreading shrub, to 2 m high. Fl. yellow-green, May. Brown loam over deep granite. Sheltered positions around outcrops.	No	No	60.9 km S	Highly Unlikely	Highly Unlikely
<i>Cratystylis centralis</i>	P3			Much-branched, brittle, greyish shrub, to 1 m high. Red sandy loam with ironstone gravel. Flat plains, breakaway country.	No	Yes	43.6 km S	Highly Unlikely	Highly Unlikely
<i>Cryptandra crispula</i>	P3			Non-spinescent shrub, 0.25-0.9 m high. Brown sandy clay, yellow loamy sand, red soil, pebbles. Dune ridges, hills, near salt lakes.	No	No	58.4 km WSW	Highly Unlikely	Highly Unlikely
<i>Cymbonotus preissianus</i>	P3			Stemless perennial herb. Fl. yellow. Sandy clay. Flats.	No	No	> 500 km SW	Highly Unlikely	Highly Unlikely
<i>Eremophila perglandulosa</i>	P1			Low, spreading, viscid shrub, ca 0.25 m high. Fl. blue-purple, Jan. Orange sand/sandy loam. Plains, riverbanks.	No	No	72.4 km SSE	Highly Unlikely	Highly Unlikely
<i>Eremophila succinea</i>	P3			Erect shrub, 1.2-3 m high. Fl. blue-purple, Sep. Clay, sand over clay.	No	No	> 160 km S	Highly Unlikely	Highly Unlikely
<i>Eucalyptus educta</i>	P2			(Straggling & spreading mallee), 3-5 m high, bark rough, 'minni-ritchi'. Fl. cream-yellow, Apr. Shallow soils. Granite rocks.	No	No	43.7 km WNW	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Eucalyptus exigua</i>	P3			(Mallee), 2-5 m high, bark smooth. Fl. white-cream, Mar. Sandy loam, white sand. Sandplains.	No	No	67.2 km SW	Highly Unlikely	Highly Unlikely
<i>Eucalyptus frenchiana</i>	P3			Mallet, to 10 m high. Pale brown, smooth bark. Red/brown sandy loam. Flat/undulating plains, rocky outcrop.	No	No	69.8 km SSW	Highly Unlikely	Highly Unlikely
<i>Eucalyptus kruseana</i>	P4			(Straggly mallee), 2-3.5 m high, bark smooth. Fl. yellow, Jun to Sep. Sandy loam. Granite outcrops & hills.	No	No	60.3 km ESE	Highly Unlikely	Highly Unlikely
<i>Eucalyptus x brachyphylla</i>	P4			(Mallee) or tree, to 4 m high, bark rough, flaky. Fl. white, Jun. Sandy loam. Granite outcrops.	No	No	46 km SSE	Highly Unlikely	Highly Unlikely
<i>Frankenia georgei</i>	P1			Small shrub. Fl. pink, Dec. Rocky slopes.	No	No	96.7 km SSE	Highly Unlikely	Highly Unlikely
<i>Grevillea asteriscosa</i>	P4			Divaricately branched shrub, 0.3-2.6 m high. Fl. red, May or Jul to Nov. Gravelly or granitic soils. Gravel rises, granite outcrops.	No	No	> 270 km WSW	Highly Unlikely	Highly Unlikely
<i>Grevillea phillipsiana</i>	P1			Prickly shrub, 0.8-1.5 m high. Fl. red/red & orange, Jul to Sep. Red sand, stony loam. Granite hills.	No	No	79.2 km SSE	Highly Unlikely	Highly Unlikely
<i>Grevillea stenomera</i>	P2			Grey, lignotuberous shrub, 0.9-2.2 m high. Fl. orange & red & pink, May to Jun or Aug to Oct or Dec. Red or yellow sand on limestone. Coastal areas.	No	No	> 750 km NW	Highly Unlikely	Highly Unlikely
<i>Hibbertia pachyphylla</i>	P3			Shrub, to 0.5 m high. Fl. yellow, Sep to Nov. White to yellow sand, brown sandy gravel, gravelly loam, laterite, granite, quartz. Undulating plains, low rises, valley floors.	No	No	62.4 km SSW	Highly Unlikely	Highly Unlikely
<i>Isoetes brevicula</i>	P3			Cormous, perennial, herb or (fern ally), to 0.01 m high, stock 3-lobed; leaves 4-8 mm long; mature megaspores greyish white when dry. Submerged in rock pools on granitic outcrops.	No	No	62.2 km SSW	Highly Unlikely	Highly Unlikely
<i>Lepidosperma lyonsii</i>	P1			Tufted rhizomatous, perennial, herb (sedge), leaves 0.31-0.53 m high. Pale orange skeletal sandy loam with banded ironstone gravel & rock, well-drained shallow stony loamy with quartz. Gentle hill slopes, upper slopes of large hill.	No	Yes	93.8 km SE	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
Melaleuca coccinea	P3			Much branched shrub, 1.5-2.6 m high, leaf blade elliptic to ovate. Fl. red, Sep to Nov or Jan. Sandy loam over granite. Granite outcrops, sandplain, river valleys.	No	No	47.6 km SSE	Highly Unlikely	Highly Unlikely
Melaleuca macronychia subsp. trygonoides	P3			Multi-stemmed, spreading shrub, 1-4 m high, leaves broadly elliptic. Fl. red, Feb or Jul to Aug or Oct. Sandy soils. Granite outcrops.	No	No	62 km S	Highly Unlikely	Highly Unlikely
Melichrus sp. Coolgardie (K.R. Newbey 8698)	P1			Low, compact, perennial shrub, to 0.5 m high. Yellow loamy sand. Low hillsides, sandplains.	No	No	52.8 km SW	Highly Unlikely	Highly Unlikely
Myriophyllum petraeum	P4			Aquatic annual, herb, stems 0.15-0.3 m long. Fl. white, Aug to Dec. Strictly confined to ephemeral rock pools on granite outcrops.	No	No	60.3 km WSW	Highly Unlikely	Highly Unlikely
Persoonia scabra	P3			Erect, spreading, lignotuberous shrub, 0.3-0.9 m high. Fl. yellow, Nov to Dec or Jan. White sand or sandy loam.	No	No	51.9 km NE	Highly Unlikely	Highly Unlikely
Philotheca apiculata	P1			Erect shrub, 0.5-1.5 m high. Fl. white-pink, Aug to Nov. Stony clay loam. Rocky outcrops, hillsides.	No	No	63.7 km S	Highly Unlikely	Highly Unlikely
Philotheca pachyphylla	P1			Erect shrub, 0.3-1.5 m high. Fl. white, May or Sep. Sand, red loam, clay loam. Sandplains, hill tops.	No	No	51.6 km WSW	Highly Unlikely	Highly Unlikely
Pityrodia scabra subsp. dendrotricha	P3			Upright, viscid perennial shrub, to 1 m high. Fl. white. Yellow sand, sandy loam. Flat, drainage lines, upslope lake edge.	No	No	70.1 km SSE	Highly Unlikely	Highly Unlikely
Prostanthera splendens	P1			Erect, openly branched shrub, 0.2-1 m high. Fl. blue-purple, Aug to Oct. Stony loam, shallow soils with ironstone pebbles. Breakaways.	No	No	67.3 km SSE	Highly Unlikely	Highly Unlikely
Ptilotus rigidus	P1			Rounded shrub 0.15-0.3 m high. Fl. Pink, Sept-Nov. Quartz, ironstone outcrops or low hills on edge of salt lakes.	No	Yes	69.3 km SSE	Highly Unlikely	Highly Unlikely
Rinzia triplex	P3			Erect shrub, to 1.5 m high. Fl. pink. Yellow sandy clay loam. Sandplains.	No	No	52.3 km WSW	Highly Unlikely	Highly Unlikely
Rumex crystallinus	P2			Annual, herb, 0.06-0.4 m high. Fl. green. Red clay. Edges of clay pan. Arid & semi-arid areas.	No	No	65.1 km NW	Highly Unlikely	Highly Unlikely
Styphelia saxicola	P3			Erect, open shrub, to 1 m high. Fl. white/cream. Red/brown loamy clay. Laterite/ duricrust outcropping.	No	No	46.4 km WSW	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Habitat within Study Area	Within Current Known Distribution	Distance to Nearest Record	Likelihood of Pre-Survey	Likelihood Post-Survey
	DBCA	BC Act	EPBC Act						
<i>Tetratheca spenceri</i>	T			Small shrub. Fl. dark pink. Lateritic soils. Gentle slope on duricrust breakaway.	No	No	43.2 km	Highly Unlikely	Highly Unlikely
<i>Thelymitra stellata</i>	T	EN	EN	Tuberous, perennial, herb, 0.15-0.25 m high. Fl. yellow & brown, Oct to Nov. Sand, gravel, lateritic loam.	No	No	> 500 km W	Highly Unlikely	Highly Unlikely
<i>Trachymene croniniana</i>	P3			Annual, herb, 0.09-0.2 m high. Fl. white, Nov. Lateritic or loamy sand. Creek beds.	No	No	> 280 km WSW	Highly Unlikely	Highly Unlikely
<i>Trachymene pyrophila</i>	P2			Annual, herb, 0.1-0.5 m high, indumentum of patent glandular hairs. Fl. white, Nov to Dec or Jan to Mar. Yellow or orange sand. Sandplains; germinating after fire or other disturbances such as mining.	No	No	72.1 km SSE	Highly Unlikely	Highly Unlikely

Appendix G – Introduced flora desktop assessment

Family	Taxon	Source				DP	WoNS	Ecological Impact	Invasiveness
		NM	ALA	EPBC	WAOL				
Aizoaceae	<i>Aizoon pubescens</i>	●	●					Not assessed	Not assessed
	<i>Mesembryanthemum crystallinum</i>		●					Not assessed	Not assessed
	<i>Mesembryanthemum nodiflorum</i>		●					U	U
Alismataceae	<i>Sagittaria platyphylla</i>				●	Y	Y	Not assessed	Not assessed
Amaranthaceae	<i>Amaranthus viridis</i>	●	●					Not assessed	Not assessed
Anacardiaceae	<i>Schinus molle</i>		●					Not assessed	Not assessed
	<i>Schinus molle</i> var. <i>areira</i>	●						H	M
Apocynaceae	<i>Asclepias curassavica</i>	●	●					Not assessed	Not assessed
	<i>Calotropis procera</i>				●	Y		Not assessed	Not assessed
	<i>Cryptostegia madagascariensis</i>				●	Y		Not assessed	Not assessed
	<i>Orbea variegata</i>	●	●					Not assessed	Not assessed
Araceae	<i>Pistia stratiotes</i>				●	Y		Not assessed	Not assessed
	<i>Zantedeschia aethiopica</i>				●	Y		Not assessed	Not assessed
Araliaceae	<i>Hydrocotyle ranunculoides</i>				●	Y		Not assessed	Not assessed
Asparagaceae	<i>Agave americana</i>	●	●					Not assessed	Not assessed
	<i>Asparagus asparagoides</i>				●	Y	Y	Not assessed	Not assessed
Asteraceae	<i>Arctotheca calendula</i>	●	●					Not assessed	Not assessed
	<i>Carthamus lanatus</i>	●	●					Not assessed	Not assessed
	<i>Centaurea melitensis</i>	●	●					Not assessed	Not assessed
	<i>Chondrilla juncea</i>				●	Y		Not assessed	Not assessed
	<i>Cichorium intybus</i>	●	●					Not assessed	Not assessed
	<i>Conyza bonariensis</i>	●						Not assessed	Not assessed
	<i>Conyza sumatrensis</i>	●						Not assessed	Not assessed
	<i>Erigeron bonariensis</i>		●					Not assessed	Not assessed
	<i>Erigeron sumatrensis</i>		●					Not assessed	Not assessed
	<i>Gazania linearis</i>	●	●					Not assessed	Not assessed
	<i>Helianthus annuus</i>	●	●					Not assessed	Not assessed
	<i>Lactuca serriola</i>		●					Not assessed	Not assessed
	<i>Lactuca serriola</i> forma <i>serriola</i>	●						Not assessed	Not assessed
	<i>Mesembryanthemum crystallinum</i>	●						Not assessed	Not assessed
	<i>Mesembryanthemum nodiflorum</i>	●						U	U
	<i>Monoculus monstrosus</i>	●	●					U	U
<i>Oligocarpus calendulaceus</i>	●	●					U	U	

Family	Taxon	Source				DP	WoNS	Ecological Impact	Invasiveness
		NM	ALA	EPBC	WAOL				
Asteraceae cont.	<i>Oncosiphon suffruticosum</i>	●	●					Not assessed	Not assessed
	<i>Onopordum acaulon</i>				●	Y		Not assessed	Not assessed
	<i>Silybum marianum</i>				●	Y		Not assessed	Not assessed
	<i>Sonchus oleraceus</i>	●	●					Not assessed	Not assessed
	<i>Symphotrichum squamatum</i>	●	●					Not assessed	Not assessed
	<i>Verbesina encelioides</i>		●					Not assessed	Not assessed
	<i>Xanthium spinosum</i>	●	●		●	Y		Not assessed	Not assessed
Bignoniaceae	<i>Jacaranda mimosifolia</i>		●					Not assessed	Not assessed
Boraginaceae	<i>Buglossoides arvensis</i>	●	●					Not assessed	Not assessed
	<i>Echium plantagineum</i>	●	●		●	Y		Not assessed	Not assessed
	<i>Heliotropium europaeum</i>	●	●					Not assessed	Not assessed
	<i>Heliotropium supinum</i>	●	●					Not assessed	Not assessed
Brassicaceae	<i>Alyssum linifolium</i>	●	●					Not assessed	Not assessed
	<i>Brassica tournefortii</i>	●	●					Not assessed	Not assessed
	<i>Capsella bursa-pastoris</i>	●	●					Not assessed	Not assessed
	<i>Carrichtera annua</i>	●	●	●				H	R
	<i>Lepidium africanum</i>	●	●					Not assessed	Not assessed
	<i>Sisymbrium irio</i>	●	●					Not assessed	Not assessed
	<i>Sisymbrium orientale</i>	●	●					Not assessed	Not assessed
Cactaceae	<i>Austrocylindropuntia cylindrica</i>				●	Y		Not assessed	Not assessed
	<i>Austrocylindropuntia subulata</i>				●	Y		Not assessed	Not assessed
	<i>Cylindropuntia fulgida</i>		●		●	Y		H	R
	<i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	●						Not assessed	Not assessed
	<i>Cylindropuntia imbricata</i>	●	●		●	Y		Not assessed	Not assessed
	<i>Cylindropuntia kleiniae</i>	●	●		●	Y		Not assessed	Not assessed
	<i>Cylindropuntia pallida</i>				●	Y		Not assessed	Not assessed
	<i>Cylindropuntia</i> spp.			●				Not assessed	Not assessed
	<i>Cylindropuntia tunicata</i>	●	●		●	Y		Not assessed	Not assessed
	<i>Opuntia elata</i>	●	●		●	Y	Y	Not assessed	Not assessed
	<i>Opuntia elatior</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia engelmannii</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia ficus-indica</i>	●	●		●	Y	Y	Not assessed	Not assessed
<i>Opuntia microdasys</i>				●	Y	Y	Not assessed	Not assessed	







Family	Taxon	Source				DP	WoNS	Ecological Impact	Invasiveness
		NM	ALA	EPBC	WAOL				
Cactaceae cont.	<i>Opuntia monacantha</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia polyacantha</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia puberula</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia stricta</i>				●	Y	Y	Not assessed	Not assessed
	<i>Opuntia tomentosa</i>				●	Y	Y	Not assessed	Not assessed
Caryophyllaceae	<i>Silene gallica</i>		●					Not assessed	Not assessed
	<i>Spergularia diandra</i>	●	●					Not assessed	Not assessed
Chenopodiaceae	<i>Chenopodium album</i>	●	●					Not assessed	Not assessed
	<i>Chenopodium murale</i>	●	●					Not assessed	Not assessed
Crassulaceae	<i>Bryophyllum delagoense</i>	●	●					Not assessed	Not assessed
Cucurbitaceae	<i>Cucumis myriocarpus</i>		●					Not assessed	Not assessed
	<i>Cucumis myriocarpus</i> subsp. <i>myriocarpus</i>	●						Not assessed	Not assessed
Didiereaceae	<i>Portulacaria afra</i>	●	●					Not assessed	Not assessed
Euphorbiaceae	<i>Jatropha gossypifolia</i>				●	Y		Not assessed	Not assessed
Fabaceae	<i>Acacia pycnantha</i>	●	●					Not assessed	Not assessed
	<i>Alhagi maurorum</i>	●	●		●	Y		Not assessed	Not assessed
	<i>Erythrostemon gilliesii</i>	●	●					Not assessed	Not assessed
	<i>Medicago laciniata</i>	●	●					Not assessed	Not assessed
	<i>Medicago minima</i>	●	●					Not assessed	Not assessed
	<i>Medicago polymorpha</i>	●	●					Not assessed	Not assessed
	<i>Oxalis bowiei</i>	●						Not assessed	Not assessed
	<i>Oxalis pes-caprae</i>	●						Not assessed	Not assessed
	<i>Parkinsonia aculeata</i>				●	Y	Y	Not assessed	Not assessed
	<i>Prosopis glandulosa</i> x <i>Prosopis velutina</i>				●	Y	Y	Not assessed	Not assessed
	<i>Senna alata</i>				●	Y		Not assessed	Not assessed
	<i>Senna obtusifolia</i>				●	Y		Not assessed	Not assessed
	<i>Vicia monantha</i>		●					Not assessed	Not assessed
	<i>Vicia monantha</i> subsp. <i>triflora</i>	●						Not assessed	Not assessed
Geraniaceae	<i>Erodium aureum</i>		●					U	U
	<i>Erodium cicutarium</i>	●	●					Not assessed	Not assessed
Iridaceae	<i>Moraea flaccida</i>				●	Y		Not assessed	Not assessed
	<i>Moraea miniata</i>				●	Y		Not assessed	Not assessed
Lamiaceae	<i>Marrubium vulgare</i>	●	●					Not assessed	Not assessed

Family	Taxon	Source				DP	WoNS	Ecological Impact	Invasiveness
		NM	ALA	EPBC	WAOL				
Lamiaceae cont.	<i>Salvia reflexa</i>	●	●					Not assessed	Not assessed
	<i>Salvia verbenaca</i>	●	●					Not assessed	Not assessed
Lythraceae	<i>Lythrum hyssopifolia</i>	●	●					Not assessed	Not assessed
Malvaceae	<i>Malva parviflora</i>	●	●					Not assessed	Not assessed
Meliaceae	<i>Melia azedarach</i>	●	●					Not assessed	Not assessed
Myrtaceae	<i>Agonis flexuosa</i>		●					Not assessed	Not assessed
Oxalidaceae	<i>Oxalis bowiei</i>		●					Not assessed	Not assessed
	<i>Oxalis pes-caprae</i>		●					Not assessed	Not assessed
Papaveraceae	<i>Argemone ochroleuca</i>		●					Not assessed	Not assessed
	<i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	●						Not assessed	Not assessed
	<i>Papaver hybridum</i>	●	●					Not assessed	Not assessed
Plumbaginaceae	<i>Limonium sinuatum</i>	●	●					Not assessed	Not assessed
Poaceae	<i>Avena fatua</i>		●					Not assessed	Not assessed
	<i>Bromus catharticus</i>	●						Not assessed	Not assessed
	<i>Bromus diandrus</i>	●	●					Not assessed	Not assessed
	<i>Cenchrus ciliaris</i>	●	●	●				Not assessed	Not assessed
	<i>Cenchrus longisetus</i>		●					Not assessed	Not assessed
	<i>Cenchrus setaceus</i>	●	●					Not assessed	Not assessed
	<i>Chloris gayana</i>		●					Not assessed	Not assessed
	<i>Cynodon dactylon</i>		●					Not assessed	Not assessed
	<i>Ehrharta villosa</i>	●	●					Not assessed	Not assessed
	<i>Hordeum glaucum</i>	●	●					Not assessed	Not assessed
	<i>Hordeum leporinum</i>	●	●					Not assessed	Not assessed
	<i>Hyparrhenia hirta</i>		●					Not assessed	Not assessed
	<i>Pentameris airoides</i>		●					Not assessed	Not assessed
	<i>Pentameris airoides</i> subsp. <i>airoides</i>	●						Not assessed	Not assessed
	<i>Phalaris minor</i>		●					Not assessed	Not assessed
	<i>Phalaris paradoxa</i>	●	●					Not assessed	Not assessed
	<i>Polypogon monspeliensis</i>		●					Not assessed	Not assessed
	<i>Puccinellia ciliata</i>		●					Not assessed	Not assessed
	<i>Rostraria pumila</i>	●	●					Not assessed	Not assessed
<i>Schismus arabicus</i>	●	●					Not assessed	Not assessed	
<i>Schismus barbatus</i>	●	●					Not assessed	Not assessed	





Family	Taxon	Source				DP	WoNS	Ecological Impact	Invasiveness
		NM	ALA	EPBC	WAOL				
Poaceae cont.	<i>Sorghum halepense</i>	●	●					Not assessed	Not assessed
	<i>Urochloa panicoides</i>	●	●					Not assessed	Not assessed
Polygonaceae	<i>Polygonum aviculare</i>	●	●					Not assessed	Not assessed
	<i>Rumex vesicarius</i>	●	●					Not assessed	Not assessed
Pontederiaceae	<i>Pontederia crassipes</i>		●					Not assessed	Not assessed
Primulaceae	<i>Lysimachia arvensis</i>		●					U	R
Resedaceae	<i>Reseda luteola</i>		●					Not assessed	Not assessed
Rhamnaceae	<i>Ziziphus mauritiana</i>				●	Y		Not assessed	Not assessed
Rosaceae	<i>Rubus anglocandicans</i>				●	Y		Not assessed	Not assessed
	<i>Rubus laudatus</i>				●	Y		Not assessed	Not assessed
	<i>Rubus rugosus</i>				●	Y		Not assessed	Not assessed
	<i>Rubus ulmifolius</i>				●	Y		Not assessed	Not assessed
Solanaceae	<i>Datura ferox</i>	●	●					Not assessed	Not assessed
	<i>Datura inoxia</i>	●						Not assessed	Not assessed
	<i>Lycium ferocissimum</i>	●	●	●			Y	Not assessed	Not assessed
	<i>Nicotiana glauca</i>	●	●					Not assessed	Not assessed
	<i>Solanum elaeagnifolium</i>				●	Y	Y	Not assessed	Not assessed
	<i>Solanum linnaeanum</i>				●	Y		Not assessed	Not assessed
	<i>Solanum nigrum</i>	●	●					Not assessed	Not assessed
Tamaricaceae	<i>Tamarix aphylla</i>				●	Y	Y	H	R
	<i>Tamarix chinensis</i>		●					Not assessed	Not assessed
Urticaceae	<i>Urtica urens</i>	●	●					Not assessed	Not assessed
Verbenaceae	<i>Glandularia aristigera</i>	●	●					Not assessed	Not assessed
	<i>Lantana camara</i>	●	●		●	Y	Y	Not assessed	Not assessed
	<i>Phyla canescens</i>	●	●					Not assessed	Not assessed
Zygophyllaceae	<i>Tribulus terrestris</i>	●	●					Not assessed	Not assessed

Appendix H – Habitat assessments

Site ID	Location		Date	Habitat type	Aspect	Slope	Ground cover (%)				Outcropping		Soil		Water features	Hoolow Count	Vegetation condition	Disturbances	Time since last fire (years)	Photo
	Lat	Long					Rocks	Bare soil	Leaf litter	Perennial vegetation	Extent	Rock type	Type	Availability						
VKAL-27	-30.8666	121.4969	2021-09-08	Stony Plain	Flat	Flat	Gravel (1-4cm)	Many Large Patches	Many Small Patches	Eucalypt Woodland	Negligible	BIF	Clay Loam	Many Large Patches	None	0	Very Good	Road/ Access track	Old (6+ yr)	
VKAL-19	-30.8776	121.5014	2021-09-08	Stony Plain	Flat	Flat	Pebbles (5-10cm)	Few Small Patches	Many Small Patches	Senna tall shrubland	Negligible	Detritals	Clay Loam	Few Small Patches	None	0	Excellent	Road/ Access track	Old (6+ yr)	
VKAL-18	-30.8766	121.4977	2021-09-08	Stony Plain	South/East	Low	Pebbles (5-10cm)	Few Small Patches	Many Small Patches	Eucalypt Woodland	Limited	Dolerite	Clay Loam	Few Small Patches	None	0	Excellent	None Discernible	Old (6+ yr)	
VKAL-31	-30.8800	121.4958	2021-09-08	Stony Plain	North/East	Low	Pebbles (5-10cm)	Scarce	Many Small Patches	Eucalypt Woodland	Limited	Dolerite	Clay Loam	Scarce	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-15	-30.8769	121.4955	2021-09-08	Hillcrest/ Hillslope	South/East	Low	Small Rocks (11-20cm)	Scarce	Few Small Patches	Eucalypt Woodland, Tall Allocasuarina shrubland	Negligible	Dolerite	Clay Loam	Scarce	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-21	-30.8744	121.4993	2021-09-09	Stony Plain	South	Low	Gravel (1-4cm)	Scarce	Many Small Patches	Eucalypt Woodland	Negligible	BIF	Clay Loam	Scarce	None	0	Very Good	Mining Exploration	Old (6+ yr)	

Site ID	Location		Date	Habitat type	Aspect	Slope	Ground cover (%)				Outcropping		Soil		Water features	Hoolow Count	Vegetation condition	Disturbance s	Time since last fire (years)	Photo
	Lat	Long					Rocks	Bare soil	Leaf litter	Perennial vegetation	Extent	Rock type	Type	Availability						
VKAL-22	-30.8723	121.4948	2021-09-09	Eucalypt Woodland	Flat	Flat	Gravel (1-4cm)	Evenly Spread	Many Large Patches	Eucalypt Woodland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-14	-30.8754	121.4939	2021-09-09	Hillcrest/ Hillslope	North	Low	Small Rocks (11-20cm)	Scarce	Many Small Patches	Tall Allocasuarina shrubland	Limited Outcropping	Dolerite	Clay Loam	Scarce	None	0	Very Good	None Discernible	Old (6+ yr)	
VKAL-24	-30.8721	121.4887	2021-09-09	Sand Plain	West	Flat	Negligible	Evenly Spread	Many Large Patches	Eucalypt Woodland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Excellent	Mining Exploration	Old (6+ yr)	
VKAL-07	-30.8832	121.4775	2021-09-09	Sand Plain	Flat	Flat	Negligible	Evenly Spread	Many Large Patches	Eucalypt Woodland, Mid, patchy Senna shrubland, not much low understorey	Negligible		Clayey Sand	Evenly Spread	None	0	Very Good	Mining Exploration	Old (6+ yr)	
VKAL-13	-30.8824	121.4876	2021-09-09	Sand Plain	Flat	Flat	Negligible	Evenly Spread	Many Small Patches	Eucalypt Woodland, Spinifex Hummock Grassland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-11	-30.8762	121.4890	2021-09-09	Eucalypt Woodland	Flat	Flat	Negligible	Evenly Spread	Many Small Patches	Eucalypt Woodland, Spinifex Hummock Grassland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Very Good	Road/ Access Track	Old (6+ yr)	

Site ID	Location		Date	Habitat type	Aspect	Slope	Ground cover (%)				Outcropping		Soil		Water features	Hoolow Count	Vegetation condition	Disturbance s	Time since last fire (years)	Photo
	Lat	Long					Rocks	Bare soil	Leaf litter	Perennial vegetation	Extent	Rock type	Type	Availability						
VKAL-09	-30.8783	121.4813	2021-09-09	Sand Plain	Flat	Flat	Negligible	Evenly Spread	Many Small Patches	Eucalypt Woodland, Spinifex Hummock Grassland, mid Melaleuca and Senna shrubland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	0.8	Road/ Access Track	Old (6+ yr)	
VKAL-02	-30.8774	121.4744	2021-09-09	Saline Flats and Marsh	Flat	Flat	Negligible	Evenly Spread	Few Small Patches	Mixed Chenopod shrubland	Negligible		Clayey Sand	Evenly Spread	None	0	Very Good	Mining Exploration	Old (6+ yr)	
VKAL-30	-30.8668	121.4860	2021-09-09	Eucalypt Woodland	Flat	Flat	Gravel (1-4cm)	Evenly Spread	Few Large Patches	Eucalypt Woodland, Melaleuca and Eremophila shrubland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	0.8	Mining Exploration	Old (6+ yr)	
VKAL-28	-30.8666	121.4774	2021-09-09	Eucalypt Woodland	Flat	Flat	Negligible	Evenly Spread	Many Small Patches	Eucalypt Woodland, Spinifex Hummock Grassland, Senna Shrubland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-03	-30.8692	121.4741	2021-09-09	Sand Plain	Flat	Flat	Gravel (1-4cm)	Few Large Patches	Many Large Patches	Dense Melaleuca shrubland	Negligible		Sandy Clay Loam	Few Large Patches	None	0	0.8	Road/ Access Track	Old (6+ yr)	
VKAL-25	-30.8731	121.4917	2021-09-10	Rocky Hillslope	North/East	Moderate	Pebbles (5-10cm)	Few Small Patches	Many Small Patches	Allocasuarina shrubland	Negligible		Clay Loam	Few Small Patches	None	0	0.8	Mining Exploration	Old (6+ yr)	

Site ID	Location		Date	Habitat type	Aspect	Slope	Ground cover (%)				Outcropping		Soil		Water features	Hoolow Count	Vegetation condition	Disturbances	Time since last fire (years)	Photo
	Lat	Long					Rocks	Bare soil	Leaf litter	Perennial vegetation	Extent	Rock type	Type	Availability						
VKAL-05	-30.8731	121.4717	2021-09-10	Saline Flats and Marsh	Flat	Flat	Negligible	Evenly Spread	Few Small Patches	Scattered Eucalypts, Senna Shrubland	Negligible		Clayey Sand	Evenly Spread	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-01	-30.8691	121.4693	2021-09-10	Saline Flats and Marsh	Flat	Flat	Gravel (1-4cm)	Evenly Spread	Scarce	Duma shrubland	Negligible		Clay Loam	Evenly Spread	Prone to Pooling	0	Very Good	None Discernable	Old (6+ yr)	
VKAL-29	-30.8629	121.4873	2021-09-10	Stony Plain	Flat	Flat	Pebbles (5-10cm)	Many Large Patches	Many Small Patches	Eucalypt Woodland, Spinifex Hummock Grassland, Allocasuarina Shrubland	Negligible		Clay Loam	Many Large Patches	None	0	Excellent	Road/ Access Track	Old (6+ yr)	
VKAL-34	-30.8654	121.4831	2021-09-10	Eucalypt Woodland	Flat	Flat	Gravel (1-4cm)	Evenly Spread	Many Small Patches	Eucalypt Woodland, Senna Shrubland	Negligible		Sandy Clay Loam	Evenly Spread	None	0	Excellent	Road/ Access Track	Old (6+ yr)	

Appendix I – Raw flora data

Kalgoorlie Nickel Smelter

Site KAL-01

Date 10/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 353664 mE; 6583898 mN
 121.4693 E -30.869135 S
Veg Condition Very Good
Soil Red Medium Clay
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Claypan
Vegetation Mid sparse *Duma florulenta* shrubland over herbs

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Calandrinia pumila</i>				KAL01-01	
<i>Centipeda crateriformis</i> subsp. <i>compacta</i>				KAL01-02	
<i>Cratystylis subspinescens</i>				KAL01-06	
<i>Duma florulenta</i>				KAL01-05	
<i>Eragrostis curvula</i>				KAL01-03	
<i>Eragrostis</i> sp. indet					
<i>Maireana glomerifolia</i>				KAL01-07	
<i>Melaleuca lateriflora</i>				KAL01-04	



Kalgoorlie Nickel Smelter

Site KAL-02

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354166 mE; 6582991 mN
 121.4744 E -30.877376 S
Veg Condition Very Good
Soil Orange Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Drainage Area/ Floodplain
Vegetation Mid to low mixed chenopod shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Atriplex vesicaria</i>					
<i>Cratystylis microphylla</i>					
<i>Cratystylis subspinescens</i>				KAL02-02	
<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>				KAL02-06	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>					
<i>Enneapogon caerulescens</i>					
<i>Eremophila scoparia</i>					
<i>Frankenia</i> sp. <i>indet</i>				KAL02-03	
<i>Lycium australe</i>					
<i>Maireana georgei</i>				KAL02-09	
<i>Maireana sedifolia</i>				KAL02-13	
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>				KAL02-08	
<i>Maireana trichoptera</i>				KAL02-10	
<i>Minuria cunninghamii</i>					
<i>Pimelea microcephala</i> subsp. <i>microcephala</i>				KAL02-05	
<i>Rhagodia drummondii</i>				KAL02-01	
<i>Roycea divaricata</i>				KAL02-11	
<i>Sclerolaena eurotioides</i>				KAL02-07	
<i>Solanum nummularium</i>				KAL02-14	
<i>Tecticornia disarticulata</i>				KAL02-04	
<i>Tecticornia</i> sp. <i>indet</i>				KAL02-12	



Kalgoorlie Nickel Smelter

Site KAL-04

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone
mE; mN
E S

Veg Condition

Soil Red Sandy Clay Loam

Rock Type None Discernible

Fire Age

Habitat Sandy/ Stony Plain

Vegetation Low open woodland of *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* over occasional dense patches of *Melaleuca sheathiana* over *Santalum lanceolatum*, *Halgania andromedifolia*, *Senna artemisioides* subsp. *filifolia*, *Scaevola spinescens* and *Westringia rigida* over *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Santalum lanceolatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-05

Date 10/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 353849 mE; 6583446 mN
 121.4711 E -30.873239 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Drainage Area/ Floodplain
Vegetation Mid scattered *Eucalyptus salubris* trees over tall isolated *Exocarpos aphyllus* and *Acacia coolgardiensis* shrubs over mid to low mixed chenopod shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia inceana</i> subsp. <i>inceana</i>					
<i>Atriplex vesicaria</i>					
<i>Cratystylis conocephala</i>					
<i>Eucalyptus salubris</i>					
<i>Exocarpos aphyllus</i>					
<i>Maireana sedifolia</i>					



Kalgoorlie Nickel Smelter

Site KAL-06

Date 10/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354291 mE; 6583439 mN
 121.4758 E -30.873349 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Drainage Area/ Floodplain
Vegetation Low scattered *Eucalyptus salubris* and *Eucalyptus salmonophloia* over tall *Senna artemisioides* subsp. *filifolia*, *Exocarpos aphyllus* and *Santalum acuminatum* over mid to low open *Cratystylis conocephala*, *Atriplex vesicaria* and *Scaevola spinescens* shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Atriplex vesicaria</i>					
<i>Cratystylis conocephala</i>					
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Exocarpos aphyllus</i>					
<i>Santalum acuminatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					



Kalgoorlie Nickel Smelter

Site KAL-07

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354459 mE; 6582366 mN
 121.4774 E -30.883048 S
Veg Condition Excellent
Soil Brown Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Hardpan Plain
Vegetation Mid open *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland over tall *Senna artemisioides* subsp. *filifolia*, *Eremophila scoparia* and *Exocarpos aphyllus* shrubland over low scattered *Olearia muelleri* and *Scaevola spinescens* shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia hemiteles</i>					
<i>Atriplex vesicaria</i>				KAL07-01	
<i>Austrostipa elegantissima</i>					
<i>Cratystylis conocephala</i>					
<i>Eremophila parvifolia</i> subsp. <i>auricampa</i>					
<i>Eremophila scoparia</i>					
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Exocarpos aphyllus</i>					
<i>Olearia muelleri</i>					
<i>Roepera eremaea</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					



Kalgoorlie Nickel Smelter

Site KAL-08

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354963 mE; 6582395 mN
 121.4826 E -30.882851 S
Veg Condition Very Good
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Mid mixed *Eucalyptus* woodland (mostly *E. salubris* and *E. salmonophloia*) over tall *Senna artemisioides* subsp. *filifolia*, *Eremophila scoparia* and *Santalum acuminatum* over mid to low *Scaevola spinescens* and *Olearia muelleri*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Cratystylis microphylla</i>				KAL08-01	
<i>Eremophila scoparia</i>					
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Olearia muelleri</i>					
<i>Santalum acuminatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					



Kalgoorlie Nickel Smelter

Site KAL-11

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 355553 mE; 6583152 mN
 121.4889 E -30.876100 S
Veg Condition Very Good
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Low mixed *Eucalyptus* woodland over tall *Senna artemisioides* subsp. *filifolia*, *Eremophila scoparia* and *Alyxia buxifolia* shrubland over mid to low *Halgania andromedifolia*, *Westringia rigida* and *Scaevola spinescens* shrubland with occasional patches of *Triodia scariosa* hummock grasses

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Alyxia buxifolia</i>					
<i>Eremophila scoparia</i>					
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Halgania andromedifolia</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-12

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 355711 mE; 6582809 mN
 121.4905 E -30.879212 S
Veg Condition Excellent
Soil Brown Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Mid *Eucalyptus loxophleba*, *Eucalyptus salubris* and *Eucalyptus longissima* woodland over tall scattered *Eremophila scoparia* shrubs over mid to low *Halgania andromedifolia*, *Senna artemisioides* subsp. *filifolia* and *Scaevola spinescens* shrubland with occasional patches of *Melaleuca sheathiana* and *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eremophila scoparia</i>					
<i>Eucalyptus longissima</i>					
<i>Eucalyptus loxophleba</i>					
<i>Eucalyptus salubris</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					



Kalgoorlie Nickel Smelter

Site KAL-14

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356023 mE; 6583233 mN
 121.4938 E -30.875423 S
Veg Condition Excellent
Soil Brown Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillslope
Vegetation Low isolated mallees (*Eucalyptus griffithsii* and *Eucalyptus longissima*) over tall *Allocasuarina helmsii*, *Acacia acuminata* and *Acacia tetragonophylla* shrubland over mid *Scaevola spinescens*, *Pomaderris forrestiana*, *Prostanthera incurvata* and *Melaleuca* sp. shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia acuminata</i>					
<i>Acacia andrewsii</i>					
<i>Acacia tetragonophylla</i>					
<i>Allocasuarina helmsii</i>					
<i>Alyxia buxifolia</i>					
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Grevillea nematophylla</i> subsp. <i>nematophylla</i>					
<i>Melaleuca</i> sp. <i>indet</i>					
<i>Pomaderris forrestiana</i>					
<i>Prostanthera incurvata</i>					
<i>Scaevola spinescens</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-15

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356180 mE; 6583077 mN
 121.4955 E -30.876852 S
Veg Condition Excellent
Soil Red Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillcrest/ Upper Hillslope
Vegetation Scattered low emergent mallees (*Eucalyptus griffithsii* and *Eucalyptus longissima*) over tall *Allocasuarina helmsii* shrubland over mid to low sparse *Scaevola spinescens*, *Prostanthera incurvata* and *Melaleuca* sp. over scattered patches of *Triodia scariosa* hummock grasses

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia acuminata</i>				KAL15-03	
<i>Allocasuarina helmsii</i>					
<i>Beyeria sulcata</i> var. <i>sulcata</i>				KAL15-02	
<i>Dodonaea microzyga</i> var. <i>acrolobata</i>				KAL15-06	
<i>Eremophila alternifolia</i>				KAL15-05	
<i>Eremophila clarkei</i>				KAL-15	
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Haloragis gossei</i>				KAL15-04	
<i>Melaleuca</i> sp. indet					
<i>Prostanthera incurvata</i>					
<i>Scaevola spinescens</i>					
<i>Thysanotus</i> sp.					
<i>Triodia scariosa</i>					



Kalgoorlie Nickel Smelter

Site KAL-16

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356338 mE; 6582812 mN
 121.4971 E -30.879257 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillslope
Vegetation Low open *Eucalyptus flocktoniae* subsp. *flocktoniae* and *Eucalyptus longissima* mallee woodland over tall open *Eremophila interstans*, *Senna artemisioides* subsp. *filifolia* and *Santalum acuminatum* shrubland over mid to low open *Halgania andromedifolia* and *Scaevola spinescens* shrubland over low open *Triodia scariosa* hummock grassland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus flocktoniae</i> subsp. <i>flocktoniae</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Scaevola spinescens</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-17

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356009 mE; 6582945 mN
 121.4936 E -30.878017 S
Veg Condition Excellent
Soil Brown Sandy Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillslope
Vegetation Low mixed *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* woodland over mix *Halgania andromedifolia*, *Scaevola spinescens* and *Westringia rigida* over scattered patches of *Triodia scariosa* hummock grasses

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-18

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356387 mE; 6583104 mN
 121.4976 E -30.876630 S
Veg Condition Excellent
Soil Brown Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillslope
Vegetation Low mixed *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* woodland over occasional patches of tall *Melaleuca sheathiana* shrubs over mid *Scaevola spinescens*, *Halgania andromedifolia*, *Westringia rigida* over occasional patches of low *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>				KAL18-02	
<i>Maireana radiata</i>				KAL18-01	
<i>Melaleuca sheathiana</i>					
<i>Scaevola spinescens</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-19

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356746 mE; 6582991 mN
 121.5014 E -30.877692 S
Veg Condition Excellent
Soil Brown Clay Loam
Rock Type Detritals
Fire Age Old (6+ yr)
Habitat Hillcrest/ Upper Hillslope
Vegetation Low scattered *Casuarina pauper* over mid *Senna artemisioides* subsp. *filifolia*, *Acacia tetragonophylla* and *Scaevola spinescens* over low scattered *Westringia rigida* and *Ptilotus obovatus* var. *obovatus* shrubs

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia tetragonophylla</i>					
<i>Casuarina pauper</i>				KAL19-04	
<i>Eremophila alternifolia</i>				KAL19-02	
<i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>				KAL19-03	
<i>Maireana trichoptera</i>				KAL19-01	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-20

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356535 mE; 6583338 mN
 121.4992 E -30.874533 S
Veg Condition Excellent
Soil Red Clay Loam
Rock Type BIF
Fire Age Old (6+ yr)
Habitat Hillcrest/ Upper Hillslope
Vegetation Open scrub of *Allocasuarina helmsii* with emergent *Eucalyptus longissima* and *Eucalyptus griffithsii* over *Pomaderris forrestiana* and *Prostanthera incurvata* over *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Allocasuarina helmsii</i>					
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Pomaderris forrestiana</i>					
<i>Prostanthera incurvata</i>					
<i>Triodia scariosa</i>					



Kalgoorlie Nickel Smelter

Site KAL-21

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356577 mE; 6583399 mN
 121.4997 E -30.873991 S
Veg Condition Very Good
Soil Red Clay Loam
Rock Type BIF
Fire Age Old (6+ yr)
Habitat Stony Plain
Vegetation Mid mixed *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* woodland over tall sparse *Melaleuca sheathiana* shrubland over mid to low *Scaevola spinescens*, *Halgania andromedifolia* and *Westringia rigida* shrubland

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Phebalium canaliculatum</i>					
<i>Westringia rigida</i>					

KAL19-01



Kalgoorlie Nickel Smelter

Site KAL-22

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356113 mE; 6583581 mN
 121.4948 E -30.872297 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type Detritals
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland over tall *Eremophila scoparia*, *Exocarpos aphyllus* and *Santalum acuminatum* shrubland over mid *Senna artemisioides* subsp. *filifolia*, *Scaevola spinescens* and *Westringia rigida* shrubland with occasional patches of *Melaleuca sheathiana* and *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia merrallii</i>				KAL22-01	
<i>Austrostipa elegantissima</i>					
<i>Eremophila parvifolia</i> subsp. <i>auricampa</i>				KAL22-01	
<i>Eremophila scoparia</i>					
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Exocarpos aphyllus</i>					
<i>Melaleuca sheathiana</i>					
<i>Olearia muelleri</i>					
<i>Santalum acuminatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-24

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 355523 mE; 6583597 mN
 121.4887 E -30.872081 S
Veg Condition Very Good
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sand Plain
Vegetation Mid mixed *Eucalyptus* woodland over tall open *Alyxia buxifolia*, *Melaleuca sheathiana* and *Senna artemisioides* subsp. *filifolia* shrubland over mid open *Scaevola spinescens*, *Westringia rigida* and *Acacia erinacea* shrubland over scattered patches of *Triodia scariosa* hummock grasses

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
? <i>Santalum murrayanum</i>				KAL24-01	
<i>Acacia erinacea</i>					
<i>Alyxia buxifolia</i>					
<i>Austrostipa elegantissima</i>					
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Exocarpos aphyllus</i>					
<i>Melaleuca sheathiana</i>					
<i>Olearia muelleri</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-26

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356352 mE; 6583888 mN
 121.4974 E -30.869555 S
Veg Condition Very Good
Soil Brown Sandy Clay Loam
Rock Type Detritals
Fire Age Old (6+ yr)
Habitat Hillslope
Vegetation Low open *Eucalyptus longissima* and *Eucalyptus griffithsii* mallee woodland over tall *Melaleuca sheathiana* shrubland over low scattered shrubs

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia erinacea</i>					
<i>Cratystylis conocephala</i>				KAL26-03	
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Maireana georgei</i>				KAL26-04	
<i>Melaleuca sheathiana</i>				KAL26-01	
<i>Santalum acuminatum</i>					
<i>Westringia rigida</i>				KAL26-02	



Kalgoorlie Nickel Smelter

Site KAL-27

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356299 mE; 6584210 mN
 121.4969 E -30.866640 S
Veg Condition Very Good
Soil Red Sandy Clay Loam
Rock Type BIF
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Mid *Eucalyptus salubris* and *Eucalyptus salmonophloia* woodland over mid *Acacia hemiteles*, *Senna artemisioides* subsp. *filifolia* and *Eremophila scoparia* shrubland over low scattered shrubs

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia hemiteles</i>				KAL27-01	
<i>Alyxia buxifolia</i>					
<i>Amyema miquelii</i>				KAL27-06	
<i>Austrostipa elegantissima</i>					
<i>Dodonaea microzyga</i> var. <i>acrolobata</i>					
<i>Eremophila glabra</i> subsp. <i>glabra</i>				KAL27-09	
<i>Eremophila oppositifolia</i> subsp. <i>angustifolia</i>				KAL27-04	
<i>Eremophila scoparia</i>				KAL27-02	
<i>Eriochiton sclerolaenoides</i>				KAL27-08	
<i>Eucalyptus salmonophloia</i>					
<i>Eucalyptus salubris</i>					
<i>Maireana trichoptera</i>				KAL27-07	
<i>Olearia muelleri</i>				KAL27-03	
<i>Ptilotus exaltatus</i>					
<i>Ptilotus obovatus</i> var. <i>obovatus</i>					
<i>Roepera eremaea</i>				KAL27-05	
<i>Santalum spicatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					



Kalgoorlie Nickel Smelter

Site KAL-28

Date 9/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354438 mE; 6584178 mN
 121.4774 E -30.866701 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Low open woodland of *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* over occasional dense patches of *Melaleuca sheathiana* over *Santalum lanceolatum*, *Halgania andromedifolia*, *Senna artemisioides* subsp. *filifolia*, *Scaevola spinescens* and *Westringia rigida* over *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Dodonaea viscosa</i> subsp. <i>angustissima</i>				KAL28-01	
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Santalum lanceolatum</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-29

Date 10/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 355381 mE; 6584615 mN
 121.4873 E -30.862879 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Undulating Low Hills
Vegetation Low sparse *Eucalyptus* woodland over tall *Allocasuarina helmsii* and *Alyxia buxifolia* shrubland over mid to low *Pomaderris forrestiana*, *Melaleuca* sp. and *Westringia rigida* shrubland over scattered *Triodia scariosa* hummock grasses

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Allocasuarina helmsii</i>					
<i>Alyxia buxifolia</i>					
<i>Eremophila gibbosa</i>				KAL29-01	
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Melaleuca</i> sp. indet					
<i>Pomaderris forrestiana</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-31

Date 8/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 356211 mE; 6582724 mN
 121.4957 E -30.880035 S
Veg Condition Excellent
Soil Brown Clay Loam
Rock Type Dolerite
Fire Age Old (6+ yr)
Habitat Hillcrest/ Upper Hillslope
Vegetation Low scattered *Eucalyptus torquata*, *Eucalyptus longissima* and *Eucalyptus griffithsii* over tall *Allocasuarina helmsii* over mid to low open *Pomaderris forrestiana*, *Melaleuca* sp. and *Westringia rigida* over scattered patches of *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Acacia andrewsii</i>					
<i>Allocasuarina helmsii</i>				KAL31-05	
<i>Amyema gibberula</i> var. <i>gibberula</i>				KAL31-02	
<i>Cryptandra aridicola</i>				KAL31-06	
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus longissima</i>					
<i>Eucalyptus torquata</i>				KAL31-01	
<i>Grevillea nematophylla</i> subsp. <i>nematophylla</i>					
<i>Lepidosperma</i> sp. indet				KAL31-07	
<i>Melaleuca</i> sp. indet					
<i>Pomaderris forrestiana</i>				KAL31-04	
<i>Prostanthera incurvata</i>				KAL31-03	
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Kalgoorlie Nickel Smelter

Site KAL-34

Date 10/09/2021
Described by SC & KG
Type R
Location MGA Zone 51
 354972 mE; 6584332 mN
 121.4830 E -30.865378 S
Veg Condition Excellent
Soil Red Sandy Clay Loam
Rock Type None Discernible
Fire Age Old (6+ yr)
Habitat Sandy/ Stony Plain
Vegetation Low open woodland of *Eucalyptus griffithsii*, *Eucalyptus longissima* and *Eucalyptus lesouefii* over occasional patches of *Melaleuca sheathiana* shrubs over mid to low *Scaevola spinescens*, *Westringia rigida* and *Senna artemisioides* subsp. *filifolia* and *Halgania andromedifolia* shrubland with occasional patches of *Triodia scariosa*

SPECIES LIST

Name	Cover	C Class	Height	Specimen	Notes
<i>Eucalyptus griffithsii</i>					
<i>Eucalyptus lesouefii</i>					
<i>Eucalyptus longissima</i>					
<i>Halgania andromedifolia</i>					
<i>Melaleuca sheathiana</i>					
<i>Scaevola spinescens</i>					
<i>Senna artemisioides</i> subsp. <i>filifolia</i>					
<i>Triodia scariosa</i>					
<i>Westringia rigida</i>					



Appendix J – Vegetation condition rating scale

Vegetation Condition	Definition
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.
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.
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.
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.
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.

Appendix K – Flora composition

128 Asparagaceae

Thysanotus sp.

130 Hemerocallidaceae

Dianella revoluta

156 Cyperaceae

Lepidosperma sp. indet

163 Poaceae

Austrostipa elegantissima

Austrostipa scabra

* *Cenchrus ciliaris*

Cymbopogon ambiguus

Enneapogon caerulescens

* *Eragrostis curvula*

Eragrostis sp. indet

Triodia scariosa

175 Proteaceae

Grevillea acuaria

Grevillea nematophylla subsp. *nematophylla*

196 Haloragaceae

Haloragis gossei

199 Zygophyllaceae

Roepera eremaea

201 Fabaceae

Acacia ?coolgardiensis

Acacia acuminata

Acacia andrewsii

Acacia erinacea

Acacia hemiteles

Acacia inceana subsp. *inceana*

Acacia merrallii

Acacia nyssophylla

Acacia tetragonophylla

Senna artemisioides subsp. *filifolia*

Swainsona purpurea

208 Rhamnaceae

Cryptandra aridicola

Pomaderris forrestiana

217 Casuarinaceae

Allocasuarina helmsii

Casuarina pauper

242 Euphorbiaceae

Beyeria sulcata var. *sulcata*

281 Myrtaceae

Eucalyptus flocktoniae subsp. *flocktoniae*

Eucalyptus griffithsii

Eucalyptus lesouefii

Eucalyptus longissima

Eucalyptus loxophleba
Eucalyptus salmonophloia
Eucalyptus salubris
Eucalyptus torquata
Melaleuca lateriflora
Melaleuca sheathiana
Melaleuca sp. indet

299 **Sapindaceae**

Dodonaea microzyga var. *acrolobata*
Dodonaea viscosa subsp. *angustissima*

300 **Rutaceae**

Phebalium canaliculatum

311 **Thymelaeaceae**

Pimelea microcephala subsp. *microcephala*

338 **Santalaceae**

Exocarpos aphyllus
Santalum acuminatum
Santalum lanceolatum
 ?*Santalum murrayanum*
Santalum spicatum

339 **Loranthaceae**

Amyema gibberula var. *gibberula*
Amyema miquelii
Amyema preissii

342 **Frankeniaceae**

Frankenia sp. indet

345 **Polygonaceae**

Duma florulenta

357 **Amaranthaceae**

Ptilotus exaltatus
Ptilotus obovatus var. *obovatus*
Ptilotus sp. indet

358 **Chenopodiaceae**

Atriplex codonocarpa
Atriplex vesicaria
Enchylaena tomentosa var. *tomentosa*
Eriochiton sclerolaenoides
Maireana georgei
Maireana glomerifolia
Maireana radiata
Maireana sedifolia
Maireana tomentosa subsp. *tomentosa*
Maireana trichoptera
Rhagodia drummondii
Roycea divaricata
Sclerolaena diacantha
Sclerolaena eurotioides
Tecticornia disarticulata
Tecticornia sp. indet

364

Aizoaceae

Disphyma crassifolium subsp. *clavellatum*
Gunniopsis quadrifida

374

Portulacaceae

Calandrinia eremaea
Calandrinia pumila

413

Apocynaceae

Alyxia buxifolia
Leichhardtia australis

415

Boraginaceae

* *Echium plantagineum*
Halgania andromedifolia
Halgania cyanea var. *Charleville* (R.W. Purdie +111)

417

Solanaceae

Lycium australe
Solanum nummularium

428

Scrophulariaceae

Eremophila alternifolia
Eremophila clarkei
Eremophila gibbosa
Eremophila glabra subsp. *glabra*
Eremophila interstans subsp. *interstans*
Eremophila ionantha
Eremophila miniata
Eremophila oldfieldii subsp. *angustifolia*
Eremophila oppositifolia subsp. *angustifolia*
Eremophila parvifolia subsp. *auricampa*
Eremophila scoparia

432

Lamiaceae

* *Prostanthera incurvata*
Salvia verbenaca
Westringia rigida

458

Goodeniaceae

Scaevola spinescens

460

Asteraceae

Brachyscome ciliaris
Centipeda crateriformis subsp. *compacta*
Cratystylis conocephala
Cratystylis microphylla
Cratystylis subspinescens
Minuria cunninghamii
Olearia muelleri
Olearia pimeleoides
Oligocarpus calendulaceus
Senecio glossanthus
Senecio lacustrinus
Trichanthodium skirrophorum

471

Pittosporaceae

Pittosporum angustifolium