BLACK CAT SYNDICATE

KAL EAST PROJECT

TROJAN INFRASTRUCTURE CORRIDOR CLEARING PERMIT SUPPORTING DOCUMENT

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1 INTRODUCTION

1.1 BACKGROUND

Black Cat Syndicate Limited ("Black Cat") purchased the Trojan Project from Aruma Resources Limited in November 2020. The Trojan Project area is located approximately 10 km east of Black Cat's Imperial-Majestic Project which is part of Black Cat's 'Kal East Project' which also includes the Fingals, Wombola Dam and Hammer-Tap gold deposits. Trojan will ultimately form a part of this group.

The Project is located approximately 640 kilometres east of Perth and 45 kilometres southeast of Kalgoorlie in Western Australia.

The overall Kal East Project was first identified near Mount Monger in 1896 by local prospectors, following the major discovery of gold at Kalgoorlie in 1893. The Mount Monger area has and continued to be used for pastoral activities (i.e. grazing) for more than 100 years.

The Trojan area was historically used for pastoral activities and has been the subject to a moderate level of exploration and mining activities. Mining commenced at Trojan in 1981 by Southern Cross Batteries Pty Ltd and in the early 1990's the Project, then referred to as the 'Curtin Project', was scheduled to re-open under Mt Martin Gold Mines however this did not occur. Titan Resources NL acquired the project and renamed it to Trojan in 1994. New Hampton Goldfield purchased the Trojan lease from Titan Resources NL in 1999 and recommenced mining at Trojan in 2000 (HBJ 2017).

Currently mine dewatering from the Majestic underground is transported via pipeline to the Imperial open pit for disposal. Black Cat now intends to dewater the Imperial open pit and construct an approximately 10.9 km long dewatering pipeline from the Imperial open pit to the Trojan open pit to dispose of the water. Black Cat also intends to include provision for a haul road to be constructed between Imperial-Majestic and Trojan to allow for future mine activities.

The Imperial-Majestic and Fingals Project areas are covered by existing clearing permits (CPS 9148/3 and CPS 11086/1 respectively) (Figure 1). This submission relates to the amendment of CPS 9148/3 to include the new infrastructure corridor from Imperial-Majestic to Trojan.

1.2 OBJECTIVE

This document is to complement the native vegetation clearing permit (NVCP) amendment application for CPS 9148/3, to increase the area of native vegetation clearing by 35.1 ha to allow for the new Imperial-Majestic to Trojan infrastructure corridor.

As required by the DMPE, the ten clearing principles and background information has been provided in this document relating to the site location, ownership, hydrology, vegetation, fauna and land degradation issues.

To assist in the DMPE's assessment of this clearing permit application, a summary of the relevant environmental information for the Project area has been included in this document in addition to the biological survey reports.

1.3 OWNERSHIP AND TENURE

The Project is 100% owned by Black Cat (Kal East) Pty Ltd. The new tenements part of this amendment are listed in Table 1 and shown in Figure 1 with the tenements part of the Kal East Project.

The Project is located on the Hampton Hill Pastoral lease within the City of Kalgoorlie-Boulder.

The Majestic Timber Reserve is located immediately south of the Trans Access Road (Figure 1).

Table 1: Tenements part of this NVCP Application

Tenement	Tenement Holder
M25/350	Black Cat (Kal East) Pty Ltd
L25/64	Black Cat (Kal East) Pty Ltd
M25/104	Black Cat (Kal East) Pty Ltd

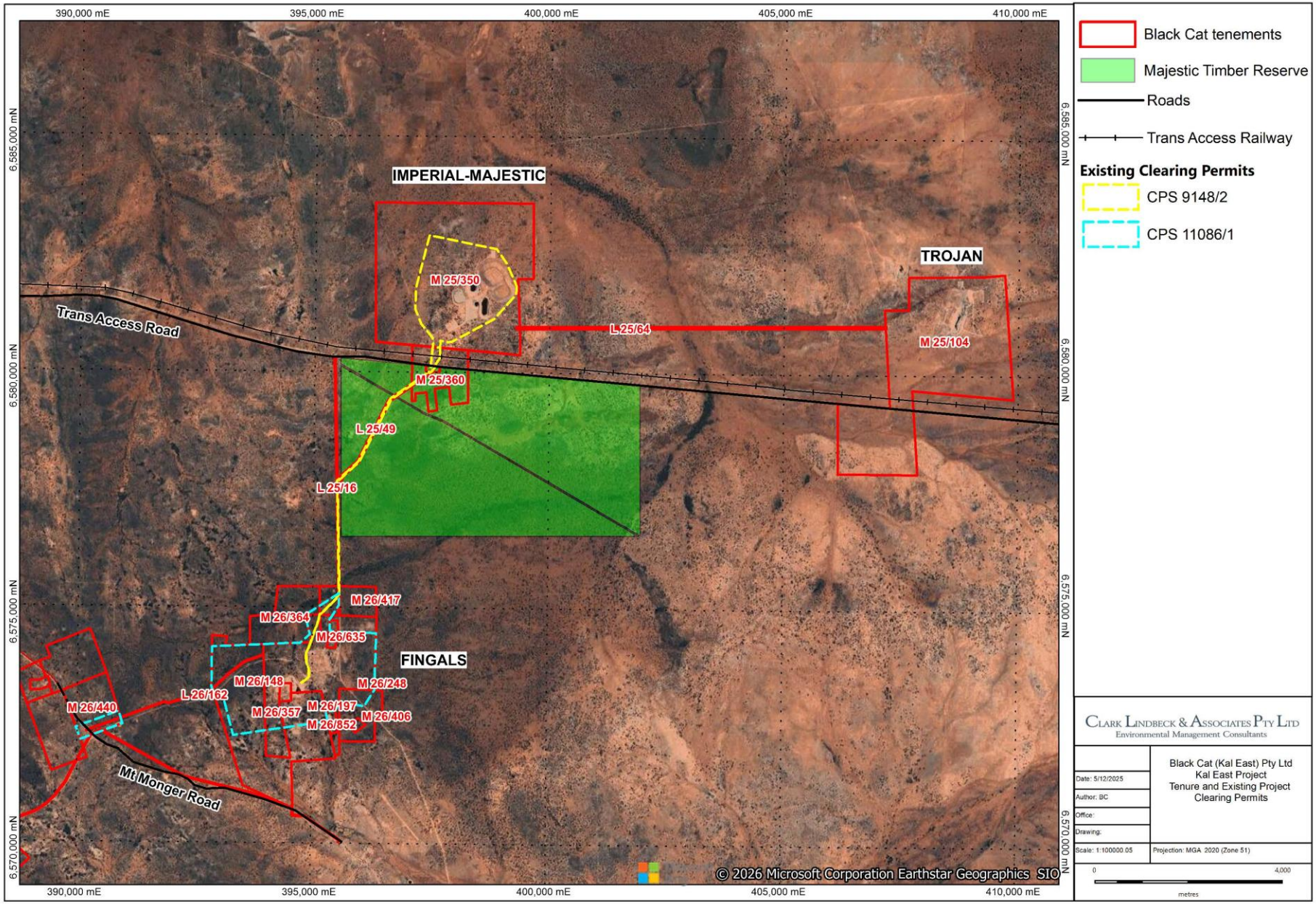

Figure 1: Project Tenure

2 PROPOSED CLEARING

To allow for construction of the Imperial-Majestic to Trojan infrastructure corridor, which will comprise a dewatering pipeline, haul road and associated topsoil stockpiles, Black Cat is seeking approval to:

- Increase the approved area of native vegetation clearing from 214.9 ha to 250 ha i.e. additional 35.1 ha clearing
- Increase the overall 'Area approved to clear' (clearing envelope) from 353.8 ha to 445.8 ha i.e. additional 92 ha (Figure 2).

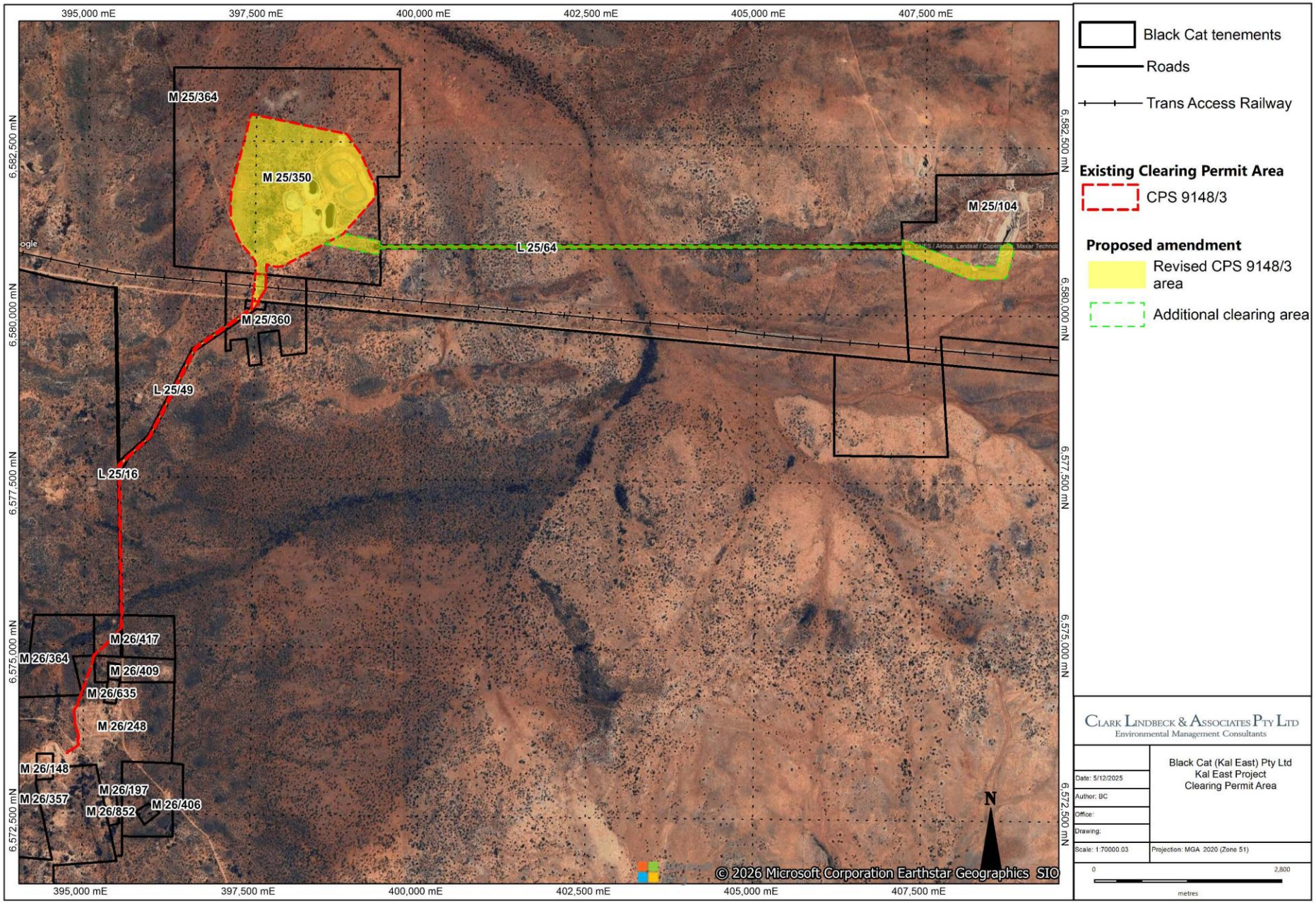

Figure 2: Proposed additional clearing and overall clearing area for CPS 9148/3

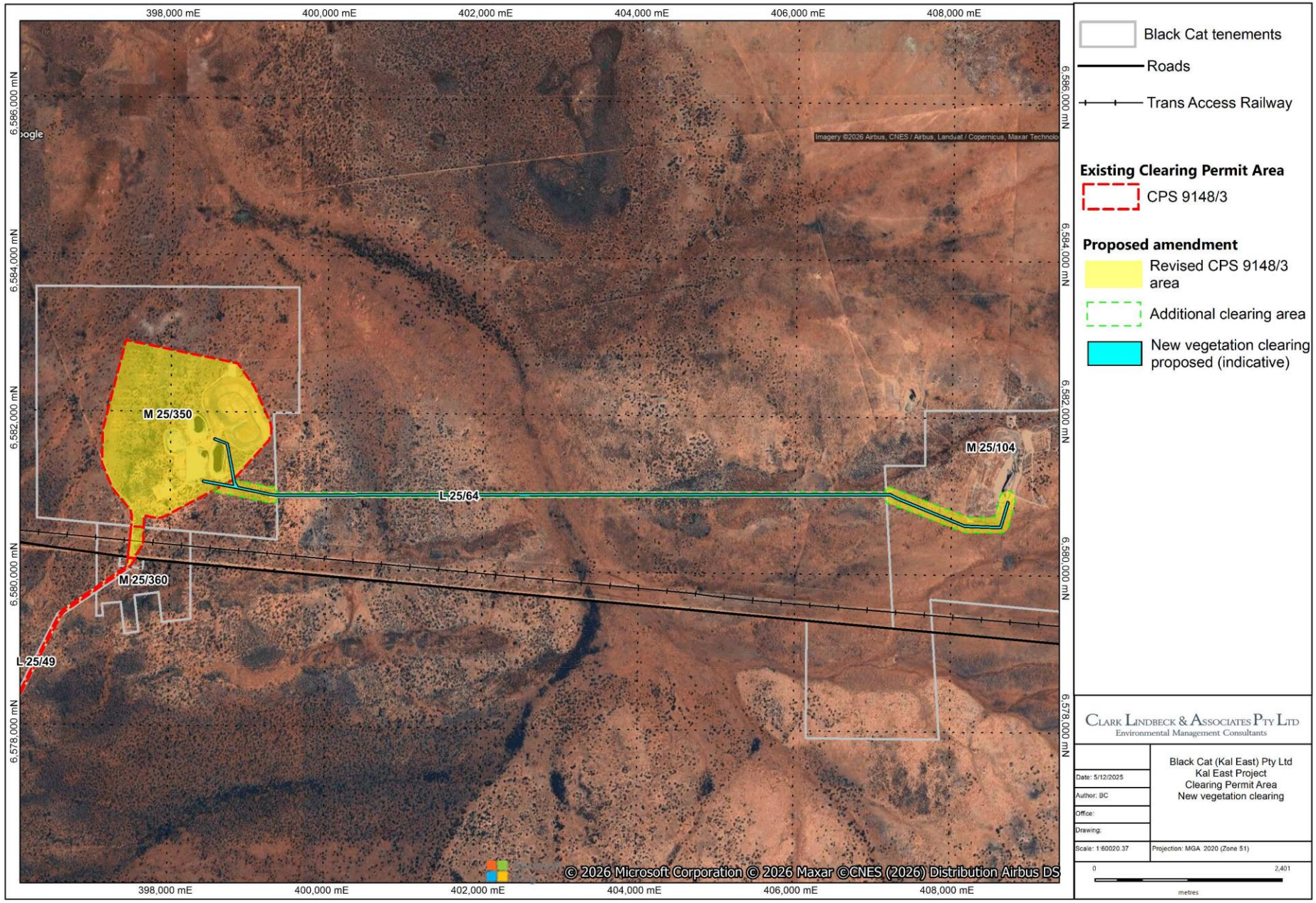

Figure 3: Proposed new vegetation clearing for CPS 9148/3 (indicative)

3 EXISTING ENVIRONMENT

3.1 CLIMATE

The climate of the Eastern Murchison subregion is characterised as an arid climate with mainly winter rainfall and annual rainfall of approximately 200mm (Beard, 1990; Cowan, 2001). The nearest weather station is the Kalgoorlie-Boulder Airport weather station (#12038), which is located approximately 45km west of the survey area and commenced operation in 1939 and from which the data below has been sourced.

The mean annual maximum temperature is 25.3°C and mean annual minimum 16.7°C. Daily maximums above 30°C are usual from December to February. Diurnal temperature variations are commonly high throughout the year

The area is semi-arid and has an average annual rainfall of 266.4 mm. Most of the rain falls from January to March but the amount varies greatly both seasonally and annually. The region can receive high intensity rainfall from degenerating cyclonic low pressure systems and thunderstorms.

The average wind speeds at Kalgoorlie-Boulder vary throughout the year from 11.8–17.1 km/h in the morning to 13.7-17.8 km/h in the afternoon, with morning wind predominantly from the east (NE-SE) and varying in direction in the afternoon (BOM 2025).

Evaporation is high, particularly in the summer months (December to February inclusive) and the average mean daily evaporation rate is 7.2 mm (annual calculated rate is 2,628 mm) (BOM 2025).

Humidity levels vary considerably both daily and yearly, with the mean monthly 9am relative humidity ranging from a low of 43% in December to a high of 74% in June, and relative humidity varies from a low of 24% in December and January to a high of 48% in June at 3pm (BOM 2025).

3.2 LANDSCAPE

3.2.1 IBRA Region

The Interim Biogeographic Regionalisation for Australia (IBRA) divides the Australian continent into 89 bioregions and 419 subregions (DAWE, 2020a). The project is located within the Eastern Goldfields Subregion and the Eastern Murchison Subregion.

As defined in the IBRA, the Project is located in the Eastern Goldfields, a subregion of the Coolgardie bioregion, within south-western Australia (McKenzie *et al.* 2003). The Project lies within the Archaean Yilgarn Craton, characterised by gently undulating topography. Surface material is deeply weathered, with scattered breakaways, dry creeks and low-lying hills of relatively fresh rock (Clarke 1994). Topographic lows are marked by salt lakes and associated dune systems, the largest being Lake Lefroy (Clarke 1994).

Many of the soil and vegetation descriptions of the north-east Goldfields are similar to those that occur in the southern Goldfields (Pringle *et al.* 1994). Dominant vegetation comprises woodlands and shrublands with ancient drainage valleys, low-lying chenopods along salt lakes, low or mid shrublands on hillsides and, stony plains and hardpan plains with *Eucalyptus* and *Acacia* woodlands. Soil types found in this region include calcareous loamy earths, red loamy earths associated with salt lakes and some red to brown hard pan shallow loams and red sandy duplexes (Tille 2006).

3.2.2 Land Systems

Based on the land-type classifications provided by Pringle *et al*. (1994), the Project area comprises:

- woodlands/shrublands with ancient drainage valleys;
- chenopod low or mid shrublands on hillsides and stony plains; and
- hardpan plains with Eucalypt and Acacia woodlands.

Natural ground gradients in the vicinity of the new clearing area are relatively flat, sloping in a north-westerly direction towards Lake Yindarlgooda at gradients of between about 0.3% and 0.7% (GRM 2022).

3.3 SOILS

The project is located within the Kambalda soil-landscape zone of the Kalgoorlie Province) (Tille 2006). This zone covers 35,825 km^2 and comprises flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton. Calcareous loamy earths and red loamy earths with salt lakes soils and some red-brown hardpan shallow loams and red sandy duplexes.

Botanica (2025) completed a flora and fauna assessment over the additional clearing area (refer to Section 3.6, 3.7) and mapped the area into three landforms:

- Clay loam plain – majority of the additional clearing area.
- Drainage depression – associated with drainage line that crosses the clearing area (Section 3.4).
- Rocky hillslope – outside of clearing area.

Baseline surface soils surveys at Imperial- Majestic and Trojan recorded:

- Imperial-Majestic: soil materials were classed as sandy clay loams, clay loams or light to medium clays; pH neutral to moderately alkaline; most sites were non-saline (Outback Ecology 2011).
- Trojan: Soil are red sandy loam and clay loam, ranging from slightly acidic to alkaline (pH 5.2-8.6) and non-saline soil (HBJ 2017).

3.4 SURFACE WATER

Drainage lines and contours (2.5m) over the additional clearing area are presented in Figure 4.

GRM (2022) completed a hydrological assessment of the proposed additional clearing comprising the pipeline and haul road corridor and the report is attached as Appendix 1. The sections below are taken form this report.

The proposed additional clearing area (infrastructure corridor) is located within the DWER's Lake Raeside-Ponton Catchment, located approximately 9 km north of the regional watershed with Lake Lefroy Catchment with Lake Yindarlgooda located approximately 7 km to the north (GRM 2022).

Surface water runoff flow is to the north over the additional clearing area is to the north, with runoff from the catchment upstream of the clearing area (~124 km^2) reporting as shallow sheet flow. An incised creek channel was identified at the lowest point along the alignment i.e. approximately 336.3 mAHD ~ Ch 4.53 km, where an unnamed drainage line ('Central Creek') crosses the additional clearing area (infrastructure corridor). This creek crosses the Trans access road and railway via culvert.

Central Creek comprises several poorly defined, abraded channels that vary in width from about 2 m to 12 m and up to about 0.8 m deep, within a broader floodplain approximately 850 m wide and is indicative of a broad sheet of shallow, slow-moving runoff which has eroded one or two comparatively small, discontinuous channels in the more easily eroded, residual soil material.

Hydraulic calculations were undertaken to assess the Central Creek flows (depth and velocity) for varying rainfall events, from 1:10 to 1:100 ARI. The average velocities were low ranging from 0.30 m/s for 1:10 ARI event and 0.44 m/s for 1:100 ARI event.

Black Cat intend to bury the water pipeline for the ~1.034 km section across Central Creek to maintain the integrity of the pipeline and ensure no impediments to surface water flow. Clearing associated with the haul road and pipeline corridor will not impede surface water flow.

3.5 GROUNDWATER

The general direction of groundwater flow in the area is towards Lake Yindarlgooda (acting as the regional groundwater sink).

Depths to groundwater (pre-mining) across the Imperial-Majestic site lie were recorded in the range 15 m below ground level (BGL) to 20 m BGL. Groundwater sampled at Imperial-Majestic pre-mining recorded acidic pH in the range 3.5 to 6.2. The groundwater is hypersaline with TDS ranging between 42,000 mg/L and 70,100 mg/L. Recent sampling from Imperial-Majestic recorded pH of 6.8-7.4 and salinity of 106,000 – 109,000 mg/L TDS.

The pre-mining groundwater level at Trojan was approximately 35m bgl and groundwater, consistent with that recorded at Imperial-Majestic and the region was hypersaline (New Hampton 1999). The Trojan pit is currently a pit lake with the pit water level in 2022 recorded at 272-273m AHD. Pit water sampled from Trojan in 2022 recorded a pH of 8.1 and salinity of 22,000-23,000 mg/L TDS.

There are no groundwater users at the Project (either human, stock or groundwater dependent ecosystems). Groundwater is naturally saline and there are no stock watering bores.

3.6 VEGETATION AND FLORA

The Pre-European vegetation association descriptions and their remaining extent, as specified in the 2018 Statewide Vegetation Statistics (DBCA, 2019) are provided in Table 2.

The vegetation associations have >97% of their Pre- European extent remaining. Development within the clearing area will not significantly reduce the pre-European extent of these vegetation associations.

Table 2: Pre-European Vegetation Associations within the clearing area

Vegetation Association	Current Extent (ha)	Pre- European extent remaining (%)	% in DBCA managed lands	Floristic Description
Randell 468	88,633.45	99.68	3.72%	Goldfields; gimlet, redwood etc. *E. salubris*, *E. oleosa*. Riverine; rivergum *E. camaldulensis*.
Randell 506	8,180.63	98.77	Nil	Succulent steppe with woodland; salmon gum & bluebush

Botanica conducted a reconnaissance flora/ vegetation survey In October and November 2021 over the proposed pipeline/road corridor which encompasses the proposed clearing area (Botanica 2025). The report is attached as Appendix 1.

Botanica (2025) identified eight broad-scale vegetation types (Figure 6):

- CLP-AFW1 - Acacia woodland: *Acacia acuminata* woodland over *Dodonaea lobulata* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland
- CLP-AOW1 - Acacia low open woodland: *Acacia acuminata* low open woodland over *Dodonaea lobulate* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland
- CLP-COW1 - *Casuarina* low sparse woodland *Casuarina pauper* low sparse woodland over *Eremophila decipiens* open shrubland over *Maireana triptera* low sparse shrubland
- CLP-EW1 - *Eucalyptus* woodland: *Eucalyptus salmonophloia* woodland over *Eremophila interstans* subs *virgata* open shrubland over *Maireana sedifolia* low open shrubland

- CLP-EW2 - *Eucalyptus* open woodland: *Eucalyptus lesouefii* open woodland over *Atriplex nummularia* subsp. *spathulata* shrubland over *Tecticornia disarticulata* low open shrubland
- CLP-MW1 - *Eucalyptus* open mallee woodland: *Eucalyptus griffithsii* open mallee woodland over *Eremophila scoparia* sparse shrubland over *Cratystylis subspinescens* low open shrubland
- DD-EW1 *Eucalyptus* low sparse woodland: *Eucalyptus salmonophloia* low sparse woodland over *Eremophila interstans* subsp. *virgata* open shrubland over *Maireana sedifolia* low open shrubland
- RH-EW1 - *Eucalyptus* low open woodland: *Eucalyptus lesouefii, E. salmonophloia* and *E. salubris* low open woodland over *Tecticornia disarticulata* and *Atriplex nummularia* subsp. *spathulata* low open chenopod shrubland.

The Botanica (2025) survey identified 102 vascular flora taxa within the original survey area comprising 62 genera across 26 families. The flora identified in the 'DD-EW1' vegetation group does not comprise riparian vegetation.

No Threatened or Priority ecological communities or otherwise significant vegetation were identified within the survey area (Botanica 2025).

The vegetation condition was rated as 'Good' to 'Completely Degraded' (Botanica 2025).

One introduced species, *Salvia verbenaca*, was recorded in the Botanica (2025) survey in the *Eucalyptus* low sparse woodland (DD-EW1) vegetation type. This species is not listed as a as a Declared Pest under the *Biosecurity and Agriculture Management Act 2007*.

3.7 FAUNA

3.7.1 Terrestrial Fauna

Based on vegetation and associated landforms identified during the Botanica (2022) flora and vegetation assessment, six broad scale terrestrial fauna habitats were identified as occurring in the new clearing area (Botanica 2025) (Figure 7):

- *Acacia* woodland on clay-loam plain
- *Casuarina* woodland on clay-loam plain
- *Eucalyptus* mallee woodland on clay-loam plain
- *Eucalyptus* woodland in drainage depression
- *Eucalyptus* woodland on clay-loam plain
- *Eucalyptus* woodland on rocky hillslope.

Habitat and distribution data was used to determine the likelihood of occurrence significant fauna species at the Project, for which Botanica identified one fauna species as potentially occurring: Malleefowl (*Leipoa ocellata*).

No evidence for the presence of Malleefowl, including nesting mounds, tracks or other signs, were recorded and no other evidence of other significant fauna species were observed during the Botanica survey (Botanica 2022; 2025). The habitat assessed is considered marginal and unsuitable for breeding.

Botanica (2025) noted that "*while habitats onsite for the species listed above are considered possibly suitable, some or all may be marginal in extent/quality and therefore the fauna species considered as possibly occurring may in fact only visit the area for short periods as infrequent vagrants*".

3.7.2 Arid Bronze Azure Butterfly & Inland Hairstreak

Botanica (2025b) completed a survey on 27 October 2025 which encompassed the additional clearing area to assess the presence of critical habitat of two conservation significant butterfly species:

- Arid Bronze Azure Butterfly (ABAB) (*Ogyris subterrestris petrina*) .
- Inland Hairstreak (*Jalmenus aridus*).

A copy of this report is attached as Appendix 2.

Critical habitat for the ABAB is associated with known host plants of the attendant ant *Camponotus terebrans*, which is typically eucalypt woodland dominated by smooth-barked eucalypts; predominantly gimlet (*E. salubris*), salmon gum (E. salmonophloia), york gum (E. loxophleba) and wheatbelt wandoo (*E. capillosa capillosa).* The attendant ant *Camponotus terebrans*, must be present (Botanica 2025b).

Critical habitat for the Inland Hairstreak is associated with known host plants of the attendant ant *Froggattella kirbii*, which are mature *Acacia tetragonophylla* and mature *Senna artemisioides* subsp. *filifolia*. The attendant ant *Froggattella kirbii*, must be present (Botanica 2025b).

While the Botanica (2025b) survey identified potential suitable habitat for these species, no evidence of the host ants *Camponotus terebrans* or *Froggattella kirbii* were identified. Based on this, no critical habitat for the ABAB or Inland Hairstreak is considered to occur in the clearing area.

3.8 LANDUSE AND DEGRADATION

The Project has been subject to land degradation as a result of historic mining activities and rangeland grazing.

The Project is located on Mt Hampton Pastoral Lease and has historically been subject to grazing.

3.9 REHABILITATION

The Project areas have approved Mine Closure Plans (MCP) which address the rehabilitation and closure works to return the areas to their pastoral pre-mining land use. The MCP's will be updated to include the new Imperial-Majestic to Trojan infrastructure corridor.

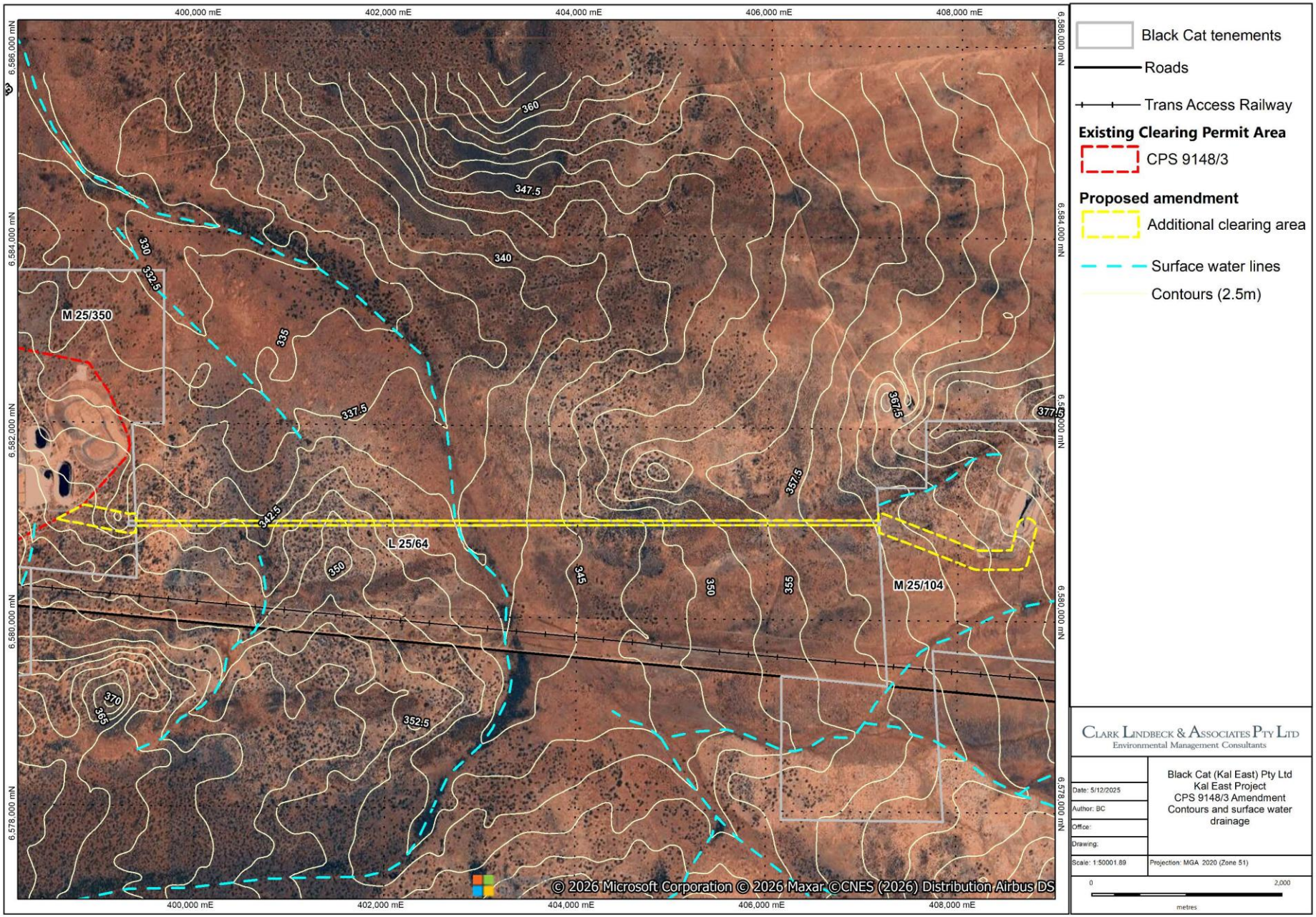

Figure 4: Contours and drainage lines in proximity to the additional clearing area

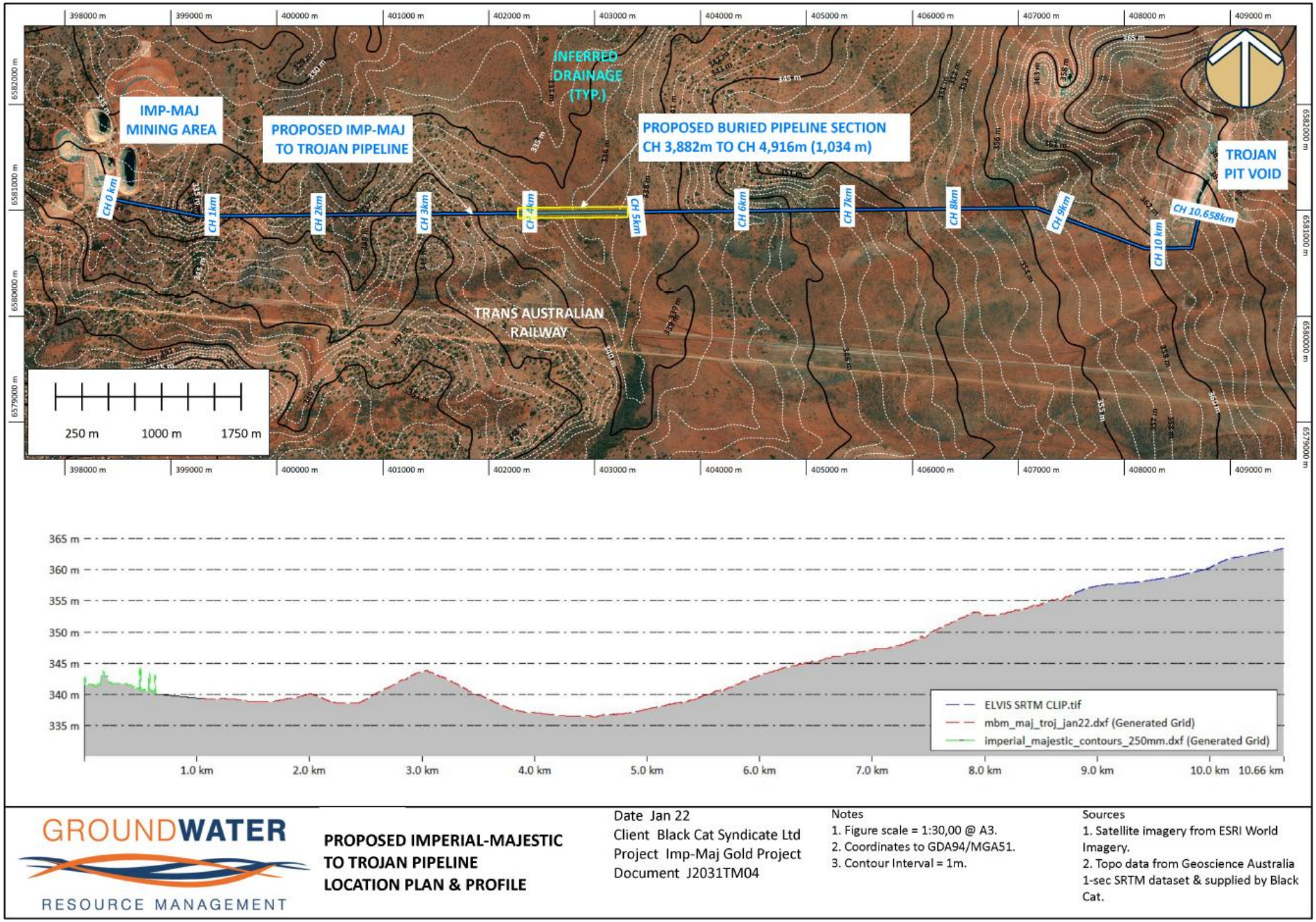

Figure 5: Infrastructure corridor pipeline (from GRM 2022)

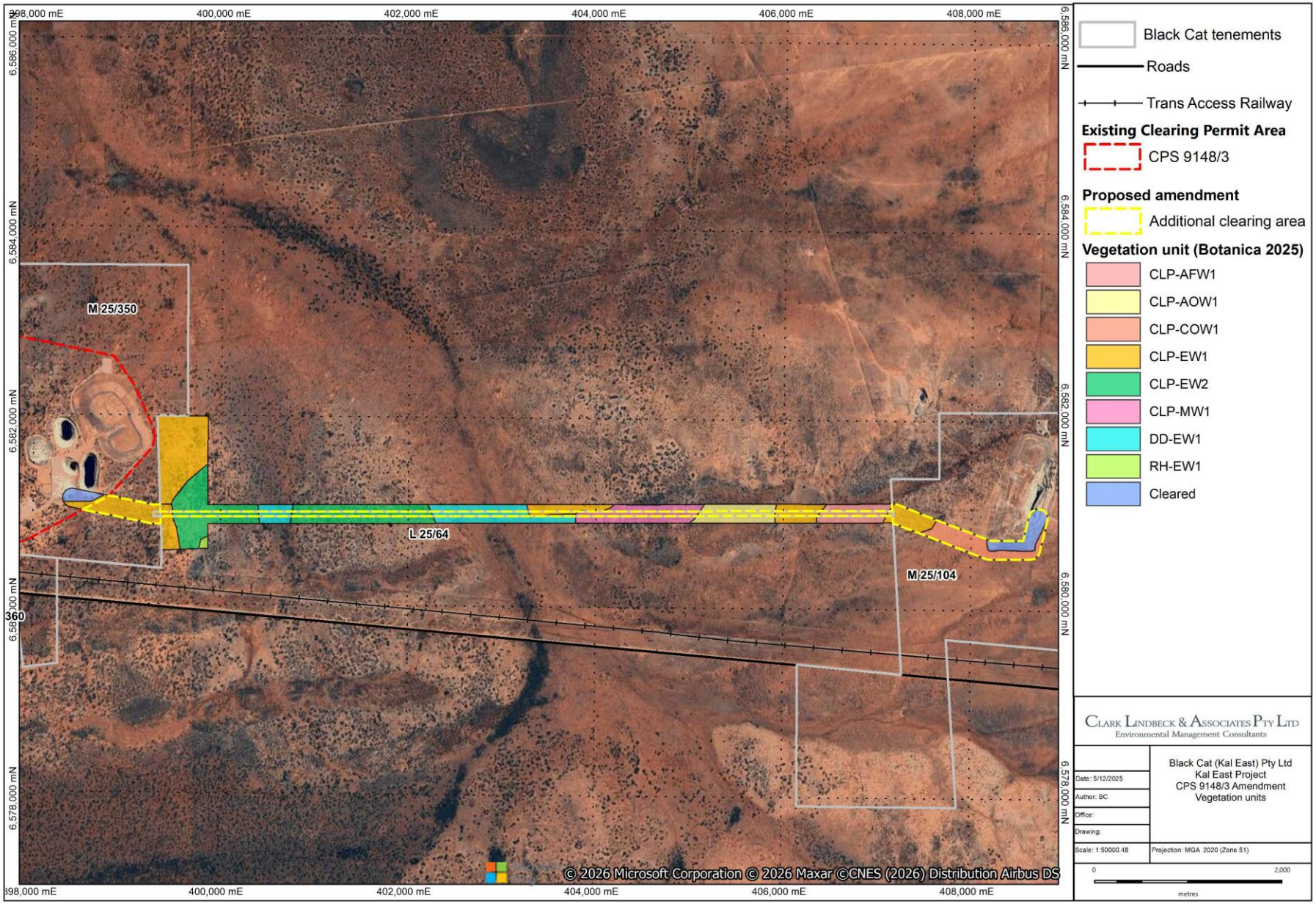

Figure 6: Vegetation types in the new clearing area (from Botanica 2025)

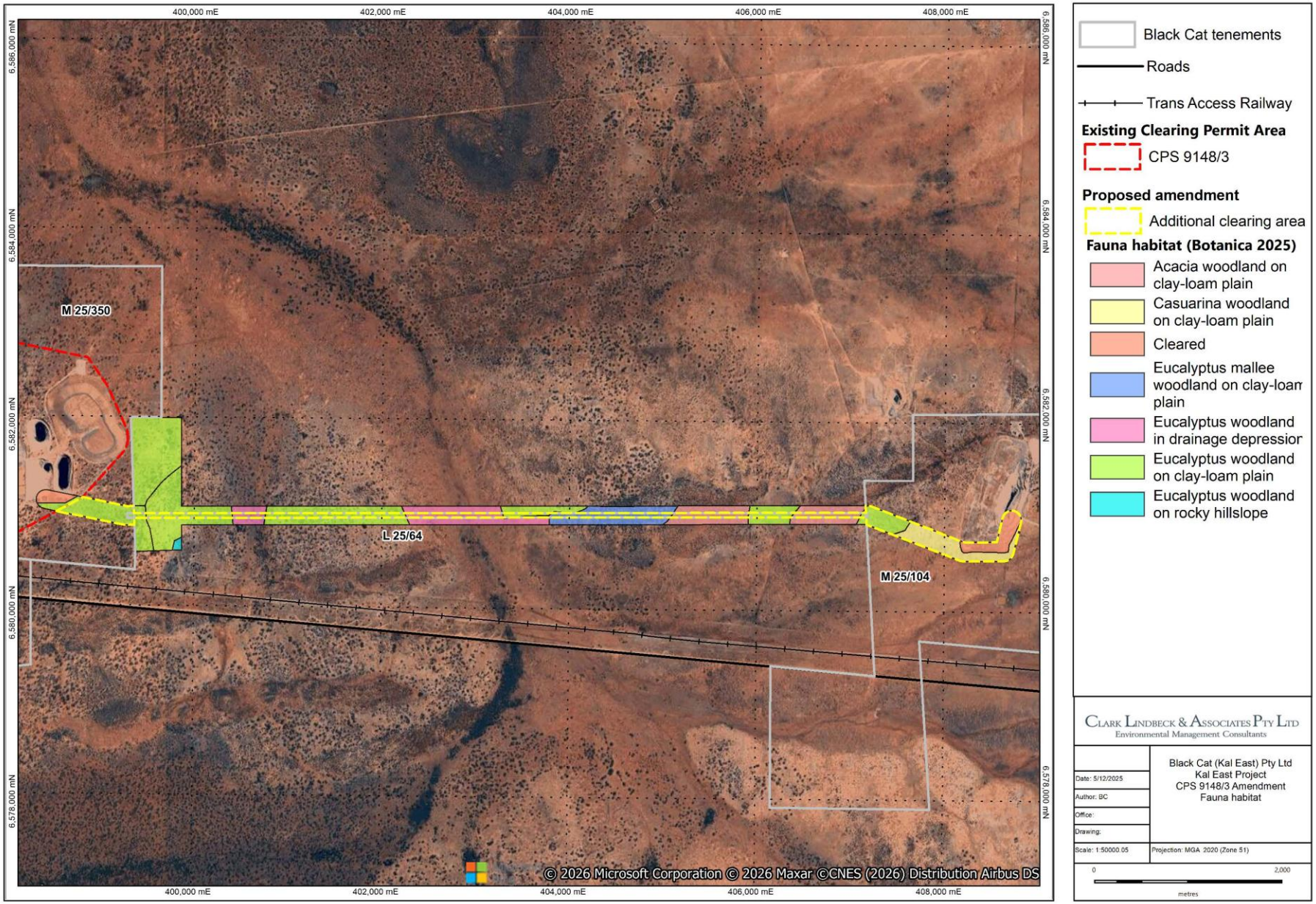

Figure 7: Fauna habitats in Fingals Project area (from Botanica 2025)

4 CLEARING PERMIT PRINCIPLES

a) Native vegetation should not be cleared if it comprises a high level of biological diversity

The clearing permit application area is located within the Eastern Goldfields subregion of the IBRA Coolgardie Bioregion. The Eastern Goldfields subregion is characterised by vegetation of Mallees, Acacia thickets and shrub heaths on sandplains. Diverse Eucalyptus woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire, and woodlands and Dodonaea shrubland occur on basic graninulites of the Fraser Range (CALM, 2002).

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

The Botanica (2025) survey identified 102 vascular flora taxa within the original survey area comprising 62 genera across 26 families. No Threatened or Priority flora species were recorded within the survey area. This vegetation is not considered to be of moderate biological diversity (Botanica 2025) and is well represented outside of the survey area.

The general area has been markedly affected by mining and pastoral activities over an extended period of time.

Based on the fauna work completed it is expected that all fauna habitats within the Project area are common within the locality and occur contiguously with the same habitat types outside of the clearing area.

All vegetation groups are represented outside the additional clearing area and this clearing is not expected to reduce the biodiversity of the area.

Based on the above, the proposed additional clearing is not at variance to this Principle.

(b) Native vegetation should not be cleared if it comprises the whole, or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

No evidence of conservation significant fauna has been recorded in fauna survey work completed at the Project.

Botanica (2025) identified one conservation significant fauna species as potentially occurring, Malleefowl (*Leipoa ocellata*). No evidence of this species, or any other significant fauna species were observed during the Botanica survey (Botanica 2022; 2025). The habitat assessed is considered marginal and unsuitable for Malleefowl breeding.

While the Botanica (2025b) survey identified potential suitable habitat for these ABAB and Inland Hairstreak, no evidence of the host ants *Camponotus terebrans* or *Froggattella kirbii* were identified. Based on this, no critical habitat for the ABAB or Inland Hairstreak is considered to occur in the additional clearing area.

Black Cat considers that the proposed clearing area is not necessary for the on-going maintenance of any significant fauna habitat and that equal or higher quality vegetation and fauna habitats exist in adjoining areas and the region area.

In addition, the proposed clearing will not significantly reduce the extent of fauna habitats at the Project or in the region. Given the above, the proposed additional clearing is not at variance to this Principle.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

No plant taxa located in the proposed clearing area are gazetted as Threatened under the EPBC Act or BC Act.

No Priority flora were recorded in the proposed clearing area.

Given the above, the proposed additional clearing of vegetation will not be at variance to this Principle.

(d) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of a Threatened Ecological Community (TEC).

No TEC's are listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* or endorsed by the Western Australian Minister for the Environment for the Project area.

Therefore, the proposed additional clearing of vegetation is not at variance to this Principle.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The proposed clearing comprises two Vegetation Association which have approximately >97% of their pre-European extent remaining.

Given the above, the vegetation proposed to be cleared cannot be considered significant as a remnant in an area that has been extensively cleared.

Therefore, the proposed clearing will not be at variance to this Principle.

(f) Native vegetation should not be cleared if it is growing, in, or in association with, an environment associated with a watercourse or wetlands.

Surface drainage is largely via sheet flow with surface water flow only following periods of heavy rainfall.

A drainage line, Central Creek, crosses the additional clearing area. Central Creek comprises several poorly defined, abraded channels that vary in width from about 2 m to 12 m and up to about 0.8 m deep, within a broader floodplain approximately 850 m wide and is indicative of a broad sheet of shallow, slow-moving runoff. The vegetation in this drainage line is not considered to be riparian vegetation.

There is, therefore, no vegetation growing in association with a water course or wetland. The proposed clearing is not at variance to this Principle.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Soil materials were classed as sandy clay loams, clay loams or light to medium clays; pH slightly-neutral to moderately alkaline and non-saline.

The proposed additional clearing of vegetation is not likely to lead to land degradation issues such as salinity, water logging or acidic soils and therefore is not at variance to this Principle. All disturbed areas (with the exception of pits) will be rehabilitated at the completion of mining operations.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

There are no conservation or nature reserves within the Project area.

The closest conservation area is the Majestic Timber Reserve, which is located south of the Trans Access road and Railway. The additional clearing proposed is highly unlikely to impact this area.

The proposed additional clearing of vegetation will not have any impact on the environmental values of conservation areas. The proposed clearing, therefore, is not at variance to this Principle.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Surface water in the Project area is sourced from direct precipitation and surface runoff following rainfall events. The clearing area often receives considerable rainfall from degenerating cyclonic depressions from the northern parts of the State. However, overall, the mean annual rainfall is only 266.4 mm.

Evaporation rates in the region vary from 3000-3200 mm annually.

With such high annual evaporation rates, there is little surface flow during normal seasonal rains. Given the low annual rainfall and high evaporation rate there is expected to be minimal rainfall re-charge that would impact the groundwater levels or the quality of the groundwater (which is naturally saline) in the local region.

There is no surface water of significance, large drainage lines, lakes or swamps in or in close proximity to the proposed clearing area. Central Creek, comprises several poorly defined, abraded channels that within a broader floodplain approximately 850 m wide and is indicative of a broad sheet of shallow, slow-moving runoff. Clearing works will not be undertaken during times of surface water runoff and the area for the pipeline at the drainage line crossing will be reinstated to its original level at the completion of clearing works to maintain surface water flow. For the haul road, culverts or floodways will be constructed to ensure surface water flow is maintained.

The area proposed to be cleared does not fall within a Public Drinking Water Source Area (PDWSA) or PDWSA Protection Zone (www.dow.wa.gov.au).

The proposed additional clearing of vegetation is not likely to cause deterioration in the quality of surface or groundwater and, therefore, the proposed clearing is not at variance to this Principle.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Rainfall in the Eastern Goldfields subregion has an average rainfall of 200-300mm and an evaporation rate of 2400 mm. Rainfall data for Kalgoorlie-Boulder indicates that rainfall is spread throughout the year and rainfall events are unlikely to result in localised flooding. Clearing is not likely to increase the incidence or intensity of flooding within the survey area or surrounds which occurs as broad sheetflow of low velocity.

As there is little surface flow during normal rains, the proposed additional area of clearing is not likely to cause or exacerbate the incidence or intensity of flooding. Clearing works will not be undertaken during times of surface water runoff and the area will be reinstated to its original level at the completion of clearing works to maintain surface water flow.

Therefore, it is not at variance to this Principle.

5 BIBLIOGRAPHY

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Appendix 1: Imperial-Majestic to Trojan Pipeline Corridor Hydrological Assessment

Technical Memorandum

Date: 20 January 2022 Project No.: J2013TM04

To: Alistair Thornton

Cc: Peter Mayers

From: Alistair Lowry

BLACK CAT SYNDICATE - IMPERIAL-MAJESTIC TO TROJAN PIPELINE CORRIDOR HYDROLOGICAL ASSESSMENT

INTRODUCTION

Black Cat Syndicate Ltd (Black Cat) proposes to develop the Imperial-Majestic Gold Project (IMGP) located about 55 km east-southeast of Kalgoorlie in the Eastern Goldfields Region of WA. The project will comprise the development of a new underground mine accessed via an in-pit portal in the existing Majestic open pit void, along with the development of a new Processing Plant, in pit tailings storage facility at Imperial and other associated mining facilities.

Currently there is in the order of 900,000 m^3 of water in the Majestic pit void which will need to be removed in advance of mining activities. Black Cat plans to campaign pump this water to the existing Trojan pit void located some 10 km to the east where it will be stored before being pumped back to the IMGP on an as-needed basis for use in the Processing Plant. Black Cat therefore proposes to construct the approximately 10.7 km long Imperial-Majestic to Trojan Pipeline (IMTP), along with the required pumping and valving infrastructure (designed by others).

Given that the proposed IMTP corridor is situated in an area of low relief and crosses an existing drainage line with a significant upstream area (approximately 125 km^2) it will be necessary to bury a section of the pipeline in order to minimise potential impacts resulting from runoff following prolonged, intense rainfall. Black Cat has therefore requested Groundwater Resource Management Pty Ltd (GRM) to complete a desktop hydrologic assessment to help quantify the peak flow and velocity for a range of hydrological events and to advise on the protection measures required. The assessment findings are presented in this memorandum.

It should be noted that Black Cat previously engaged GRM to complete the hydrological/surface water management components of the IMGP Feasibility Study. The findings from their desktop study, site visit and preliminary surface water management design were presented earlier[1] and have not been repeated in detail in this report. It has been assumed that the reader is familiar with the findings of the previous report.

[1] "*Hydro-Meteorological & Surface Water Management Study Imperial-Majestic Gold Project Feasibility Study*", (J2013R01 Final), Groundwater Resource Management, 15 October 2020.

IMPERIAL-MAJESTIC TO TROJAN PIPELINE STUDY FINDINGS

PIPELINE ALIGNMENT

A plan and profile of the proposed IMTP is shown on Figure 1. It will commence (Ch 0 m) at the existing Imperial-Majestic turkeynest dam located at the southern end of the IMGP site and will be aligned in a roughly easterly direction for some 8.8 km before turning toward the southeast for about 1.5 km before turning northwards for a further 0.4 km or so before discharging at the southern crest of the Trojan pit void (Ch 10.658 km).

The IMTP vertical profile runs from a ground elevation of about 342 mAHD at the existing Imperial-Majestic turkeynest pond to a ground elevation of about 363 mAHD at the Trojan pit crest, which is also the highest point along the alignment. The lowest elevation along the IMTP alignment is located at about Ch 4.53 km where the ground surface descends to approximately 336.3 mAHD at an unnamed drainage line crossing. Longitudinal surface gradients along the pipeline alignment are generally modest with typical slopes ranging between about 0.1% and 0.5%.

The IMTP roughly parallels and is offset some 750 m to 1,500 m north of the Trans Australian Railway and the Trans Access Track located about 200 m further to the south. As described in more detail later, this infrastructure likely has a significant effect on the passage of runoff from adjacent catchments.

CLIMATIC SETTING

The IMGP is located within a region of climatic extremes, where droughts and major floods can occur in the same area within consecutive years. The climate is highly variable, both spatially and temporally, and careful hydrologic analysis is required for the design of water management measures. The climatic setting of the IMGP can be summarised as follows:

- Regional climatic conditions are arid with mean annual rainfalls of less than 250 mm. The rainfall that occurs during the early winter months of May, June and July tends to be more reliable than the less dependable, but more intense, summer rainfalls from January to March.
- Although tropical cyclones and associated depressions bring heavy rains to the region, they are erratic in nature and occur relatively infrequently. An analysis of cyclone data for the last 50 years or so shows that, on average, a cyclone will pass within 100 km of the IMGP approximately every eight or nine years. Three cyclones (TC's Ingrid 1970, Billy 1986 and Vance 1999) have passed within 50 km of the IMGP in the last 50 years.
- The Bureau of Meteorology (BoM) Bulong rainfall station (No. 12013) is located some 24 km northwest of the IMGP and daily data are available from January 1907 to the present. This record is of very high quality (99.5% complete) and the 106 years of complete data yield mean and median annual rainfalls of 259 and 240 mm respectively.
- Locally, annual maximum and minimum rainfalls of 588 and 43 mm were recorded at Bulong in 1992 and Cowarna Downs (located 42 km to the southeast) in 1976 respectively. The 1992 maximum rainfall

has an annual exceedance probability (AEP) of less than 1% (1 in 100) and was largely due to heavy rainfalls associated with remnant Tropical Cyclone Ian which crossed the Goldfields in early March, along with an unusually wet winter that year. The 1976 local minimum rainfall is representative of 1 in 100 drought conditions.

- Typically there are in the order of 50 rain days each year at local rainfall stations, although this may be as low as 13 days and as high as 132 days. The longest period without rain recorded at Bulong was 149 days as a result of the absence of any summer rainfall between 6 December 1949 and 4 May 1950.
- Locally the wettest day on record occurred on 22 February 1948, when 177.8 mm was recorded at both Kalgoorlie-Boulder Airport and Kalgoorlie Post Office, some 56 km west of the IMGP. This rainfall was directly associated with TC Unnamed #4 1941/42 and had an AEP of less than 1% (1 in 100).
- Short duration rainfall intensities due to remnant cyclones and other tropical depression related events can be significant. A rainfall intensity-frequency-duration relationship was developed for the IMGP using the BoM's latest (2016) dataset. In summary, the 1% AEP intensities for 1, 3, 12, 24 and 72 hr duration events are 50.3, 23.9, 9.9, 6.3 and 2.8 mm/hr respectively (yielding equivalent depths of approximately 50, 72, 118, 152 and 203 mm). The full IFD relationship is presented in Attachment A.

Regional Hydrological Setting

The IMGP site and proposed IMTP corridor is located within the DWER's Lake Raeside-Ponton Catchment (area = 115,965 km^2), some 9 km north of the regional watershed with Lake Lefroy Catchment (area = 24,880 km^2). Both of these catchments form part of the much larger, internally draining Salt Lake Basin (area = 441,000 km^2) which extends across much of central WA.

Currently there are no DWER flow gauging stations within the either the Raeside-Ponton Catchment, or the much larger Salt Lake Basin. It is therefore not possible to use regional flow data when estimating design flows for local watercourses and hydrologic calculation methods should be used.

Local Hydrological Setting

There are no significant or named river systems in the vicinity of the IMGP and proposed IMTP corridor, the most noteworthy local hydrological feature being Lake Yindarlgooda located approximately 7 km to the north, as shown in Figure 2. This endorheic salt lake has a surface area of some 470 km^2, approximately half of which comprises islands of low relief of up to about 10 m high. The lake catchment area is about 4,125 km^2, with the lake situated roughly centrally within this area.

Lake Yindarlgooda is normally dry except following periods of significant rainfall-runoff when up to several hundred millimetres of water may be stored in discrete parts of the lake, before being lost to evaporation and seepage. The lakebed nominal elevation is 315 mAHD, some 25 to 50 m lower than the surface elevation along the proposed pipeline corridor. Natural ground gradients in the vicinity of the IMTP corridor are relatively flat, sloping in a north-westerly direction towards Lake Yindarlgooda at gradients of between about 0.3% and 0.7%.

Runoff from the natural catchment surfaces upstream report to the proposed IMTP corridor mostly as shallow sheet flow. However, an incised creek channel has been identified at the lowest point along the alignment i.e. approximately 336.3 mAHD at about Ch 4.53 km, where an unnamed drainage line (referred to herein as *Central Creek*) crosses the proposed pipeline corridor.

Within the IMTP corridor, Central Creek comprises several poorly defined, abraded channels that vary in width from about 2 m to 12 m and up to about 0.8 m deep, within a broader floodplain, some 850 m wide. The channels are discontinuous, typically only extending for a few hundred metres. There is evidence of overbank flow (scouring of topsoil and tussocky/disturbed vegetation), as well as significant deposition of fine sediment up to small pebble size material along the channel inverts.

Given the longitudinal gradient of about 0.5% these conditions are indicative of a broad sheet of shallow, slow moving runoff which has eroded one or two comparatively small, discontinuous channels in the more easily eroded, residual soil material. The lesser magnitude of the channels and fine size of the transported material are not typical of high energy/velocity runoff from a flashy/fast responding upstream catchment area.

Photographs showing typical Central Creek channel conditions are provided below (1 m gauge stick used for scale).

Photograph No. 1 – Typical Central Creek Conditions

Photograph No. 2 – Typical Central Creek Conditions

LOCAL CATCHMENT DELINEATION

The Central Creek catchment area upstream of the proposed IMTP was delineated using SRTM[2] topographical data applied to GIS spatial analysis tools, as shown on Figure 3. Key catchment parameters are summarised in Table 1.

Table 1: Central Creek Upstream Catchments – Key Parameters

Drainage Name	Area (km^2)	Perimeter (km)	Length (km)	Slope (m/km)
Central Creek	124.62	89.07	17.08	4.1

As mentioned earlier, the Trans Australian Railway and Access Road is located to the south of the IMTP corridor. Central Creek passes below the railway at a location some 1,200 m south (upstream) of the IMTP via 14 No. box culverts (4 No. approximately 3.7m W x 1.0m H and 10 No. 2.7 m W x 1.1 m H – refer to photographs in Attachment B). Although this culverted crossing likely impacts the northwards passage of runoff from the majority of the Central Creek catchment which lies on the southern side of the railway, it is not possible to quantify such impacts without completing a detailed hydraulic modelling. Therefore, for the purposes of this assessment the attenuating effect of the culverts has been *conservatively* ignored.

[2] 1-second Hydro-Enforced SRTM data from Geoscience Australia.

PEAK FLOW ESTIMATES

Due to the absence of local or regional streamflow data, it was necessary to carry out hydrological calculations using published methods in order to estimate peak runoff values for Central Creek. The catchment area was applied to the "Arid Interior Rational Method" as presented in Australian Rainfall and Runoff (AR&R)[3] using the rainfall IFD data developed previously. The resulting peak flow estimates are presented in Table 2 (a calculation worksheet is presented in Attachment C).

Table 2: Peak Flow Estimates – Central Creek

AEP (%)	ARI (years)	Estimated Peak Flow (m3/s)
10	~10	58.2
5	20	91.1
2	50	146.6
1	100	195.0

Note: Peak flow estimates conservatively ignore attenuating effects of Trans Australian Railway culverts.

HYDRAULIC CALCULATIONS

In order or estimate the Central Creek flow and corresponding depth and velocity where it crosses the IMTP a theoretical rating curve was developed for the using the Manning's Equation, as follows:

$$Q = (A\ R^{2/3}\ S^{1/2})/n$$

Where:

Q = flow rate (m^3/sec).
A = cross-sectional area of channel (m^2).
n = roughness coefficient, as per published values (dimensionless).
R = hydraulic radius, i.e. cross-sectional area, A, divided by wetted perimeter, P (m)
S = channel slope (m/m).

The geometric components (flow area, wetted perimeter, hydraulic radius and channel slope) for the Central Creek channel and adjacent overbank areas were developed using GIS spatial analysis tools applied to the detailed topographical survey data provided by Black Cat[4]. A conservatively high roughness coefficient of 0.10 was adopted for a channel with an "irregular and rough cross-section" following a review of published values[5].

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[3] *"Australian Rainfall and Runoff – Book 4, Estimation of Design Peak Discharges",* Inst. of Engineers Australia, 1987.

[4] Black Cat File ref: "*mbm_maj_troj_jan22.dxf*" received 12 January 2022.

[5] *"Manning's Roughness Coefficients"*, Agriculture and Food, Department of Primary Industries and Regional development (See: https://www.agric.wa.gov.au/water-management/mannings-roughness-coefficient)

The resulting rating curve data are shown in Table 3, with the closest values to each hydrological event shown in bold italics.

Table 3: Central Creek Theoretical Rating Curve Data

Water Surface Elevation (mAHD)	Crossing Water Depth (m)	Flow Width (m)	Wetted Perimeter (m)	Flow Area (m^2)	Hydraulic Radius (m)	Calculated Flow (m^3/s)	Calculated Average Velocity (m/s)	Comment
336.30	0.00	0.0	-	0.0	0.00	0.0	0.00	No Flow
336.35	0.05	31.1	30.9	1.4	0.04	0.1	0.09	-
336.40	0.10	37.5	37.7	3.1	0.08	0.4	0.13	-
336.45	0.15	44.7	44.7	5.2	0.12	0.9	0.17	-
336.50	0.20	115.1	116.5	8.1	0.07	1.0	0.12	-
336.55	0.25	252.1	253.0	18.4	0.07	2.3	0.12	-
336.60	0.30	339.3	339.3	34.7	0.10	5.4	0.15	-
336.65	0.35	407.9	408.0	53.6	0.13	9.8	0.18	-
336.70	0.40	448.9	448.7	75.0	0.17	16.1	0.21	-
336.75	0.45	555.6	555.8	100.4	0.18	22.7	0.23	-
336.80	0.50	624.4	626.8	129.2	0.21	31.9	0.25	-
336.85	0.55	655.8	655.8	161.5	0.25	44.9	0.28	-
336.90	***0.60***	***696.6***	***696.4***	***195.0***	***0.28***	***59.1***	***0.30***	***≈10% AEP (58.2 m^3/s)***
336.95	0.65	749.8	749.6	231.7	0.31	74.9	0.32	-
337.00	***0.70***	***778.0***	***777.9***	***269.9***	***0.35***	***94.3***	***0.35***	***≈5% AEP (91.1 m^3/s)***
337.05	0.75	854.5	854.8	311.0	0.36	112.2	0.36	-
337.10	0.80	915.6	915.6	355.2	0.39	133.7	0.38	-
337.15	***0.85***	***973.7***	***973.8***	***402.4***	***0.41***	***157.9***	***0.39***	***≈2% AEP (146.6 m^3/s)***
337.20	0.90	1,005.2	1,005.3	451.9	0.45	187.6	0.42	-
337.25	***0.95***	***1,034.0***	***1,034.1***	***502.9***	***0.49***	***220.0***	***0.44***	***≈1% AEP (195.0 m^3/s)***
337.30	1.00	1,055.9	1,056.0	555.1	0.53	255.8	0.46	-
337.35	1.05	1,076.5	1,076.6	608.5	0.57	294.2	0.48	-
337.40	1.10	1,098.8	1,099.0	662.8	0.60	334.7	0.50	-
337.45	1.15	1,132.9	1,132.9	718.6	0.63	375.3	0.52	-
337.50	1.20	1,152.6	1,152.8	775.8	0.67	421.4	0.54	-
337.55	1.25	1,169.4	1,170.4	833.8	0.71	470.4	0.56	-

Note: Flow values above calculated using Manning's Equation ($Q=A/n\ R^{2/3}\ S^{1/2}$) with n=0.10, channel slope = 0.5% and channel geometry calculated from topographical survey data. Average velocity values calculated from Continuity Equation (V=Q/A).

DISCUSSION

Theoretical rating curve values were presented in Table 3 for the Central Creek crossing of the IMTP for a range of hydrological events ranging from 10% AEP (1 in 10) to 1% AEP (1 in 100).

It is understood that Black Cat wishes to adopt a 1% AEP (1 in 100) design criterion for the pipeline design and so a water surface elevation of approximately 337.25 mAHD or about 0.95 m maximum depth at the crossing point is anticipated. This water elevation equates to a flow width or buried pipeline length of some 1,034 m between Ch 3,882 m (402,277.3 mE & 6,580,973.5 mN) and Ch 4,916 m (403,311.2 mE & 6,580,983.7 mN) approximately, as shown on Figure 4.

The calculated average velocity at the pipeline crossing is approximately 0.44 m/s (Froude number, $F_r^{\#} \approx 0.20$) which is indicative of tranquil, sub-critical flow. The average velocity is of such low magnitude that surface scouring of the buried section of the IMTP is highly unlikely[6] and no special surface treatment e.g. rock armouring, is anticipated.

CLOSURE

Should you have questions regarding any aspect of this memo please do not hesitate to contact the undersigned. We look forward to assisting Black Cat with the design of the surface water management works for their Imperial-Majestic Gold Project as required.

Yours sincerely,

Alistair Lowry MSc, CPEng, MIEAust

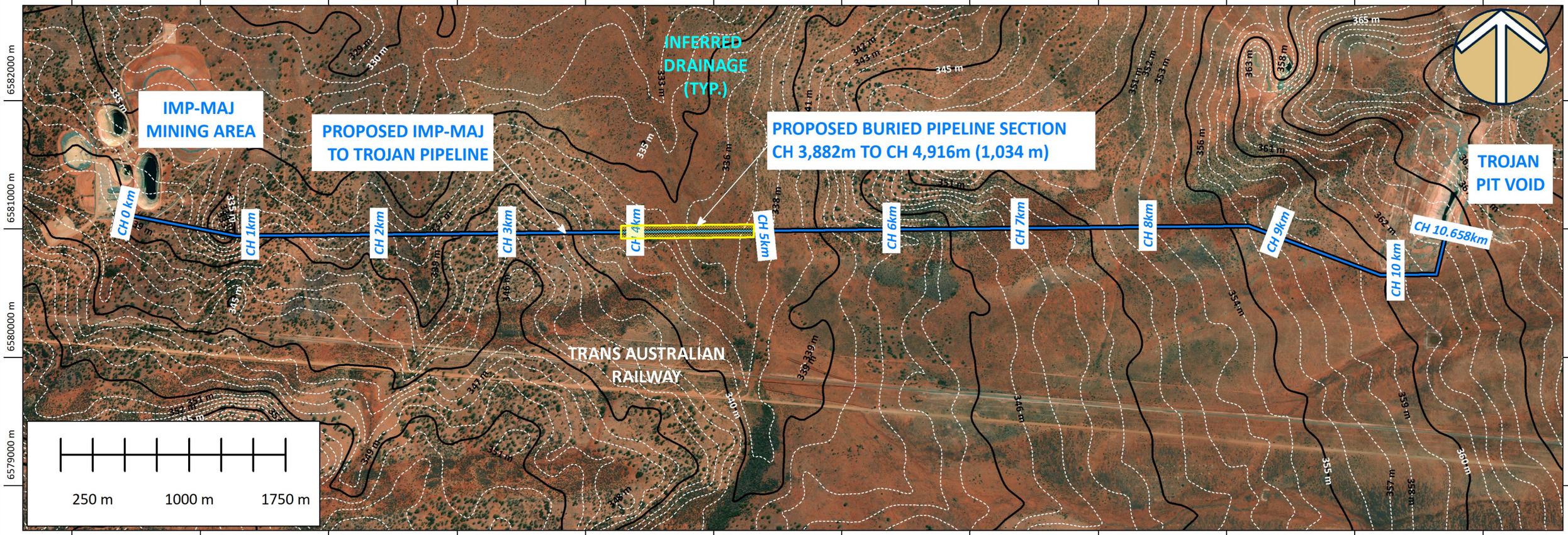
Civil Engineering Hydrologist

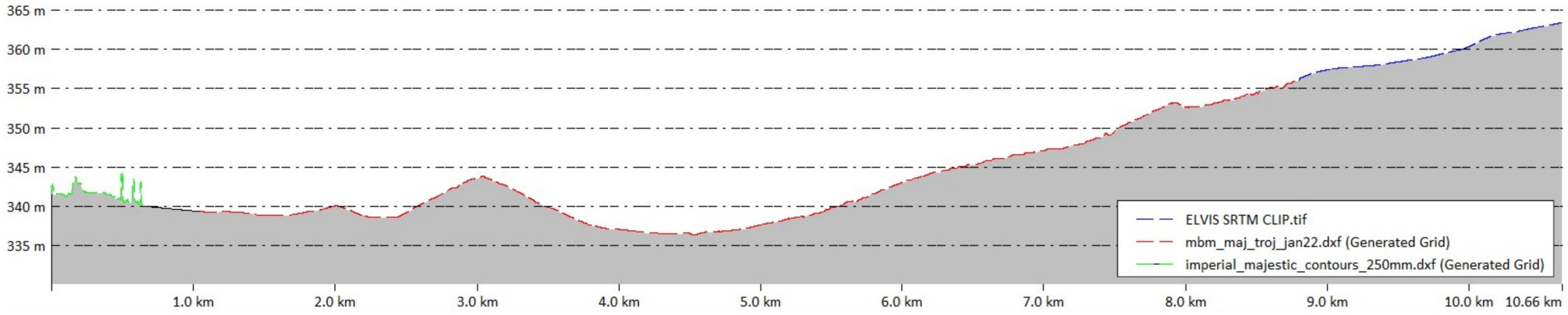
f:\\j2031tm04 imp-maj to trojan pipeline final 220120.docx

Figures & Attachments:

Figure 1	Proposed Imp-Maj to Trojan Pipeline Location Plan & Profile
Figure 2	Location Plan with Local Catchment Delineation
Figure 3	Central Creek Catchment Delineation
Figure 4	Imp-Maj to Trojan Pipeline Buried Section Plan & Profile
Attachment A	IMGP Rainfall Intensity-Frequency-Duration Relationship (BoM 2016)
Attachment B	Trans Australian Railway Culvert Photographs
Attachment C	Central Creek Peak Flow Estimate Worksheet

[6] "*Hydraulic Design of Flood Control Channels"* (US Army Corps of Engineers EM-1110-2-1601) states that velocities of up to about 1.0 m/s are permissible for compacted silty–clay material (ref: Table 2-5).





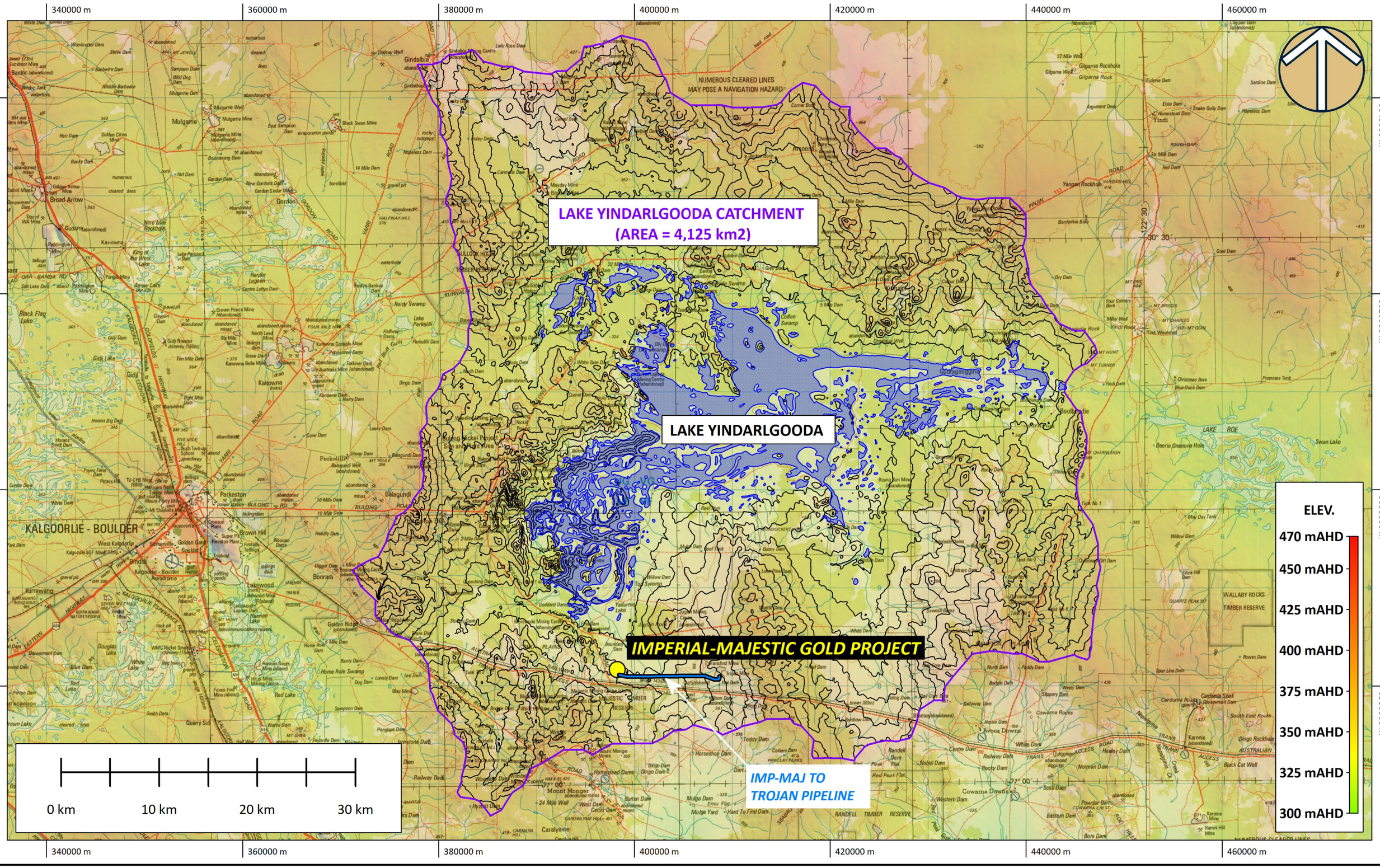
GROUNDWATER RESOURCE MANAGEMENT

FIGURE 1
PROPOSED IMPERIAL-MAJESTIC TO TROJAN PIPELINE LOCATION PLAN & PROFILE

Date Jan 22
Client Black Cat Syndicate Ltd
Project Imp-Maj Gold Project
Document J2031TM04

Notes
1. Figure scale = 1:30,00 @ A3.
2. Coordinates to GDA94/MGA51.
3. Contour Interval = 1m.

Sources
1. Satellite imagery from ESRI World Imagery.
2. Topo data from Geoscience Australia 1-sec SRTM dataset & supplied by Black Cat.



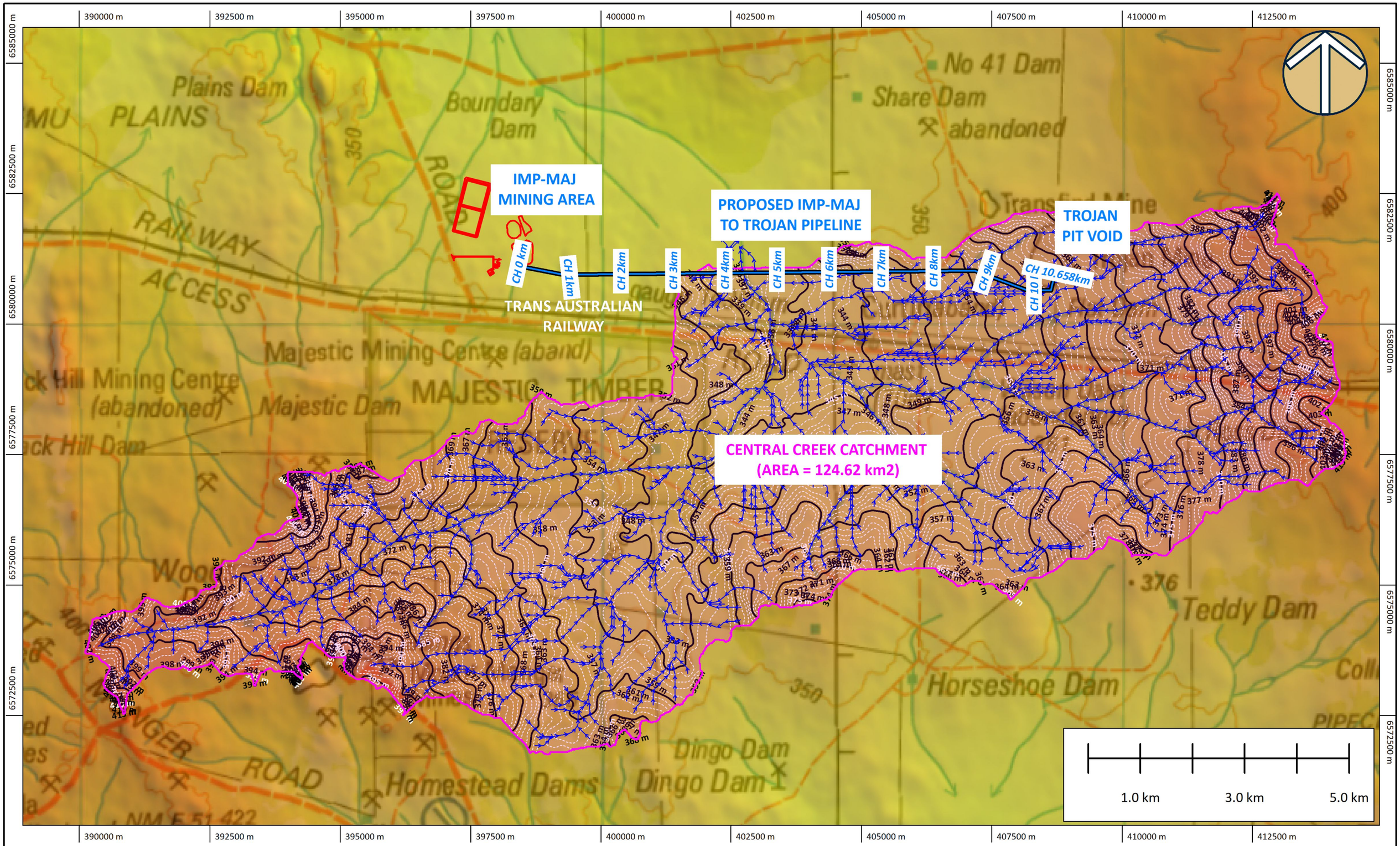
GROUNDWATER RESOURCE MANAGEMENT

FIGURE 3
IMPERIAL-MAJESTIC TO TROJAN PIPELINE LOCATION PLAN WITH LOCAL CATCHMENT DELINEATION

Date Jan 22
Client Black Cat Syndicate Ltd
Project Imp-Maj Gold Project
Document J2031TM04

Notes
1. Figure scale = 1:350,000 @ A3.
2. Coordinates to GDA94/MGA51.
3. DEM from Geoscience Australia's 1-sec SRTM dataset.
4. Contour Interval = 10 m.

Sources
1. Catchment shapes developed using GIS Spatial Analysis tools.
2. Topo mapping Geoscience Australia 250K NATMAP series.



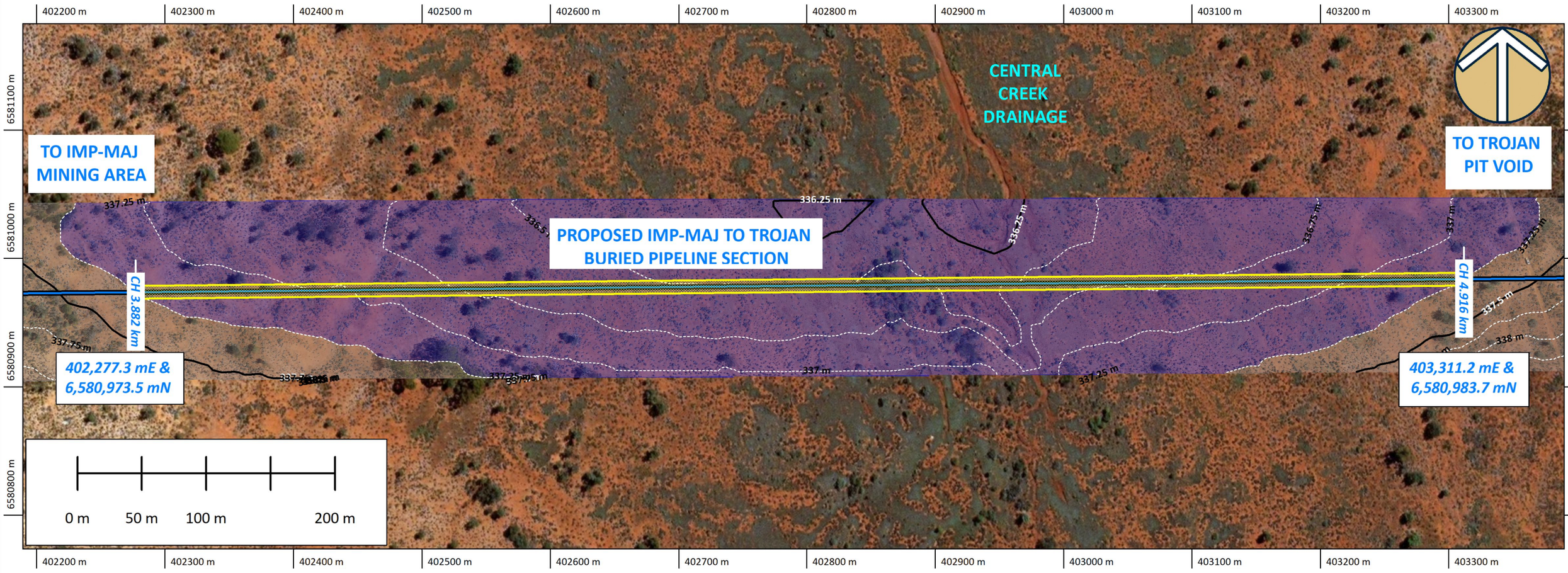
GROUNDWATER RESOURCE MANAGEMENT

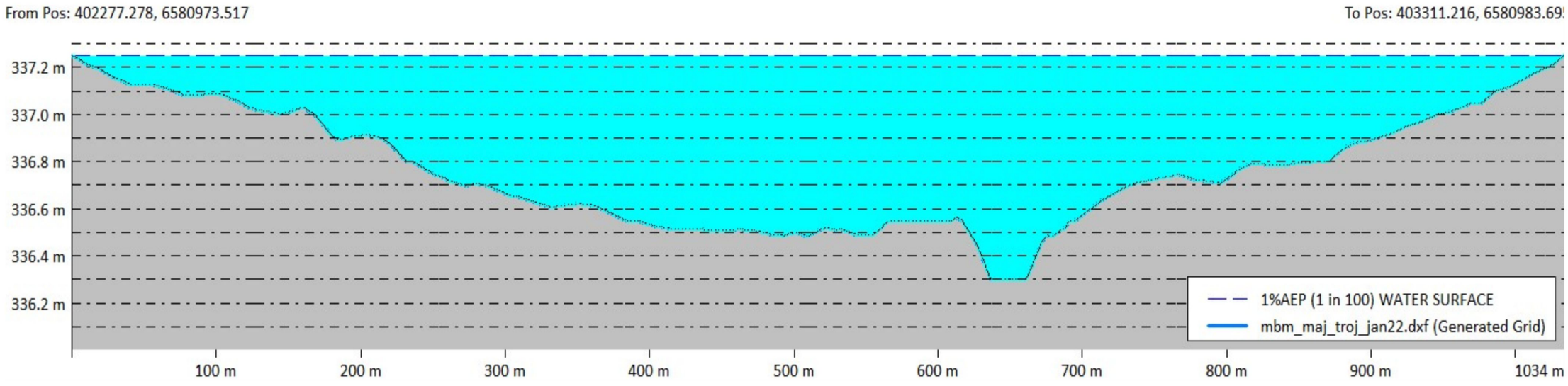
FIGURE 3
IMPERIAL-MAJESTIC
TO TROJAN PIPELINE
CENTRAL CREEK CATCHMENT
DELINEATION

Date Jan 22
Client Black Cat Syndicate Ltd
Project Imp-Maj Gold Project
Document J2031TM04

Notes
1. Figure scale = 1:65,00 @ A3.
2. Coordinates to GDA94/MGA51.
3. Contour Interval = 1m.

Sources
1. Background topgraphic mapping from Geoscience Australia 250k NATMAP series.
2. Topo data from Geoscience Australia 1-sec SRTM dataset.





GROUNDWATER RESOURCE MANAGEMENT

FIGURE 4
PROPOSED IMPERIAL-MAJESTIC TO TROJAN PIPELINE BURIED SECTION PLAN & PROFILE

Date Jan 22
Client Black Cat Syndicate Ltd
Project Imp-Maj Gold Project
Document J2031TM04

Notes
1. Figure scale = 1:3,00 @ A3.
2. Coordinates to GDA94/MGA51.
3. Contour Interval = 0.25m.

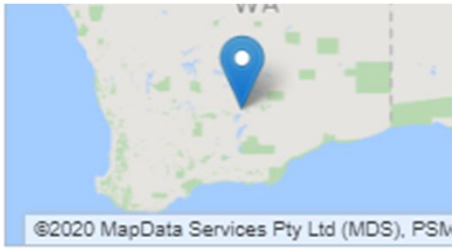
Sources
1. Satellite imagery from ESRI World Imagery.
2. Topo data from Geoscience Australia 1-sec SRTM dataset & supplied by Black Cat.

Location

Label: Imperial-Majestic Gold Project

Latitude: -30.8943 [Nearest grid cell: 30.8875 (S)]

Longitude: 121.9354 [Nearest grid cell: 121.9375 (E)]



IFD Design Rainfall Intensity (mm/h)

Issued: 24 August 20

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP)

FAQ for New ARR probability terminology

Table | Chart

Unit: mm/h

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	72.2	86.0	134	170	209	267	315
2 min	63.3	75.4	116	147	179	226	265
3 min	56.7	67.5	104	132	161	204	240
4 min	51.5	61.3	95.1	121	148	187	221
5 min	47.3	56.4	87.6	111	136	173	205
10 min	34.5	41.2	64.2	81.8	101	129	152
15 min	27.8	33.2	51.7	65.9	81.2	104	123
20 min	23.6	28.1	43.7	55.7	68.6	87.5	104
25 min	20.6	24.6	38.2	48.6	59.8	76.2	90.2
30 min	18.4	21.9	34.1	43.3	53.3	67.8	80.2
45 min	14.2	16.9	26.2	33.2	40.8	51.9	61.2
1 hour	11.8	14.0	21.6	27.4	33.6	42.6	50.3
1.5 hour	8.97	10.7	16.4	20.8	25.5	32.3	38.1
2 hour	7.38	8.76	13.5	17.1	20.9	26.6	31.3
3 hour	5.60	6.64	10.2	13.0	15.9	20.2	23.9
4.5 hour	4.24	5.03	7.77	9.87	12.1	15.5	18.3
6 hour	3.47	4.12	6.39	8.15	10.0	12.8	15.3
9 hour	2.62	3.11	4.86	6.22	7.72	9.92	11.8
12 hour	2.14	2.54	3.99	5.14	6.41	8.26	9.87
18 hour	1.59	1.90	3.01	3.91	4.91	6.36	7.63
24 hour	1.29	1.54	2.46	3.20	4.05	5.26	6.32
30 hour	1.09	1.30	2.09	2.74	3.47	4.52	5.43
36 hour	0.947	1.13	1.82	2.40	3.05	3.97	4.78
48 hour	0.754	0.904	1.46	1.93	2.47	3.22	3.87
72 hour	0.540	0.649	1.05	1.40	1.79	2.34	2.82
96 hour	0.422	0.507	0.826	1.09	1.41	1.83	2.21
120 hour	0.347	0.417	0.677	0.897	1.15	1.50	1.81
144 hour	0.294	0.353	0.573	0.757	0.970	1.27	1.53
168 hour	0.256	0.307	0.496	0.653	0.835	1.09	1.32

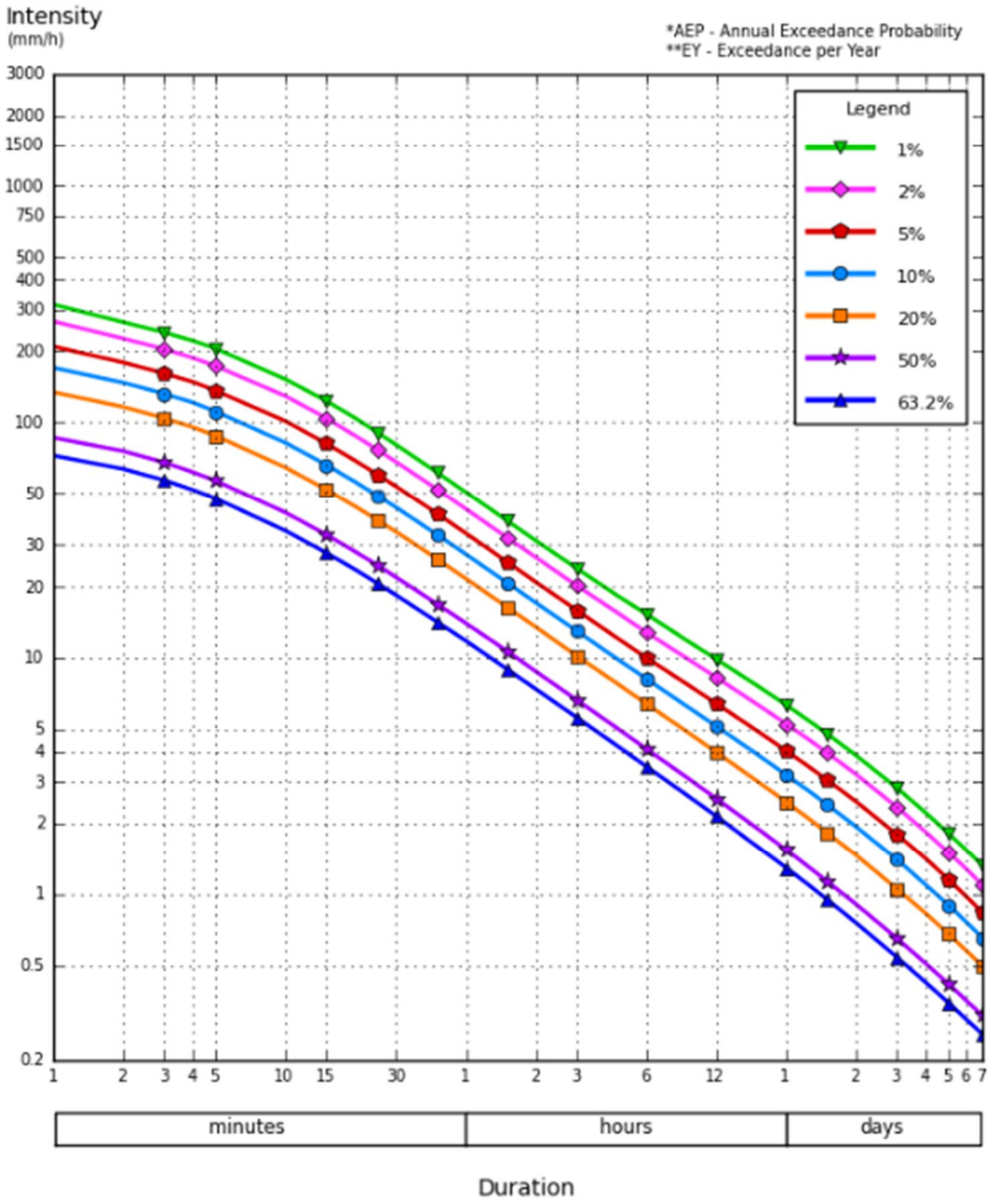
IFD Design Rainfall Intensity (mm/h)

Issued: 24 August 2020

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

Table | Chart

Unit: mm/h



GROUNDWATER RESOURCE MANAGEMENT

ATTACHMENT A - 2
IMPERIAL-MAJESTIC GOLD PROJECT
POINT RAINFALL INTENSITY
FREQUENCY DURATION CHART

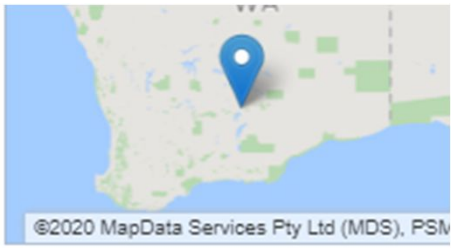
Date Jan 22
Client Black Cat Syndicate Ltd
Project Imp-Maj Gold Project
Document J2031TM04

Location

Label: Imperial-Majestic Gold Project

Latitude: -30.8943 [Nearest grid cell: 30.8875 (S)]

Longitude: 121.9354 [Nearest grid cell: 121.9375 (E)]



IFD Design Rainfall Depth (mm)

Issued: 24 August 20

Rainfall depth for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

Table | Chart

Unit: mm

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	1.20	1.43	2.23	2.84	3.49	4.45	5.26
2 min	2.11	2.51	3.87	4.89	5.96	7.53	8.83
3 min	2.83	3.37	5.22	6.60	8.06	10.2	12.0
4 min	3.43	4.09	6.34	8.03	9.84	12.5	14.7
5 min	3.94	4.70	7.30	9.27	11.4	14.5	17.1
10 min	5.75	6.86	10.7	13.6	16.8	21.4	25.4
15 min	6.95	8.29	12.9	16.5	20.3	25.9	30.7
20 min	7.85	9.36	14.6	18.6	22.9	29.2	34.5
25 min	8.59	10.2	15.9	20.3	24.9	31.8	37.6
30 min	9.21	11.0	17.0	21.7	26.6	33.9	40.1
45 min	10.7	12.7	19.6	24.9	30.6	38.9	45.9
1 hour	11.8	14.0	21.6	27.4	33.6	42.6	50.3
1.5 hour	13.5	16.0	24.6	31.2	38.2	48.5	57.1
2 hour	14.8	17.5	27.0	34.2	41.8	53.1	62.6
3 hour	16.8	19.9	30.7	38.9	47.7	60.6	71.6
4.5 hour	19.1	22.6	35.0	44.4	54.6	69.6	82.5
6 hour	20.8	24.7	38.4	48.9	60.3	77.1	91.5
9 hour	23.6	28.0	43.7	56.0	69.5	89.3	106
12 hour	25.6	30.5	47.9	61.7	76.9	99.1	118
18 hour	28.7	34.2	54.2	70.4	88.4	115	137
24 hour	30.9	37.0	59.0	76.9	97.2	126	152
30 hour	32.7	39.1	62.7	82.1	104	136	163
36 hour	34.1	40.8	65.7	86.3	110	143	172
48 hour	36.2	43.4	70.2	92.6	118	154	186
72 hour	38.9	46.7	76.0	101	129	168	203
96 hour	40.5	48.7	79.3	105	135	176	212
120 hour	41.6	50.0	81.3	108	138	180	217
144 hour	42.4	50.9	82.5	109	140	182	220
168 hour	42.9	51.5	83.3	110	140	183	221

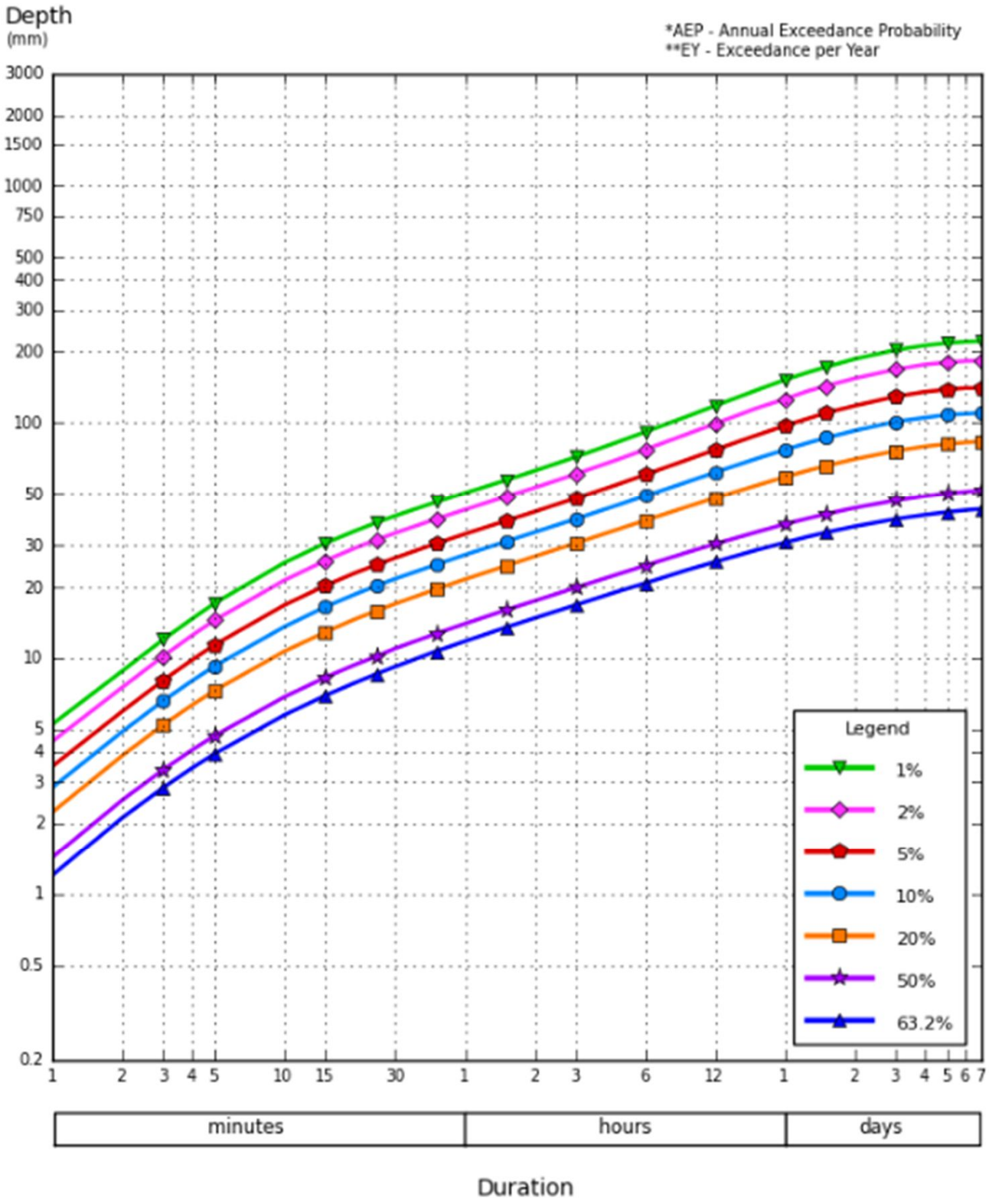
IFD Design Rainfall Depth (mm)

Issued: 24 August 2020

Rainfall depth for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

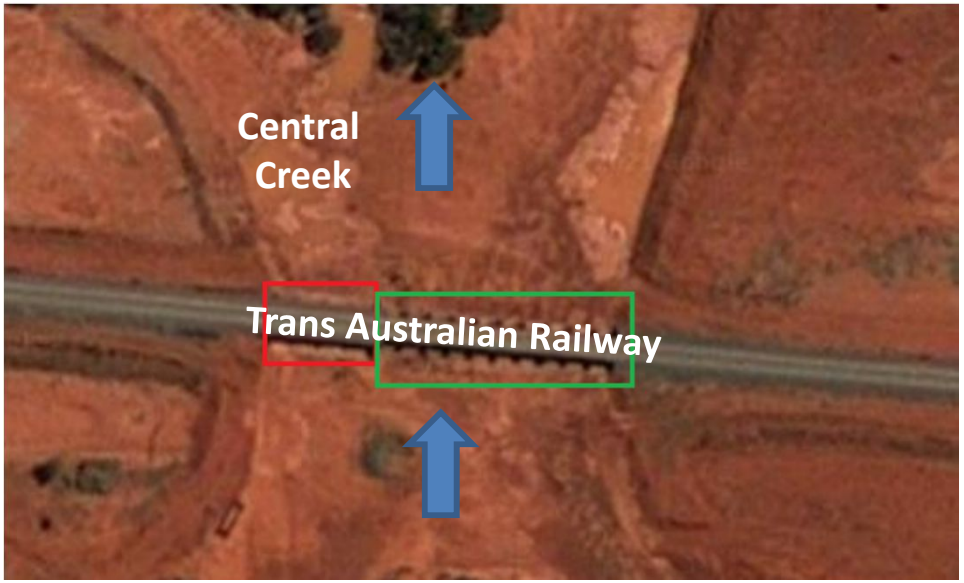
Table | Chart

Unit: mm



Attachment B
Photographs of Trans Australian Railway Crossing at Central Creek
Taken 18 Dec 2021

N.B. All photos taken from downstream (south) side of crossing looking upstream (north)



14 No. box culverts at Central Creek Crossing (4 No. approx. 3.7m W x 1.0m H on Western side (red box) and 10 No. approx. 2.7 m W x 1.1 m H on Eastern side (green box)

4 No. approx. 3.7m W x 1.0m H culverts on Western side

Typical approx. 3.7m W x 1.0m H culvert on Western side

Typical approx. 3.7m W x 1.0m H culvert on Western side

10 No. approx. 2.7 m W x 1.1 m H on Eastern side

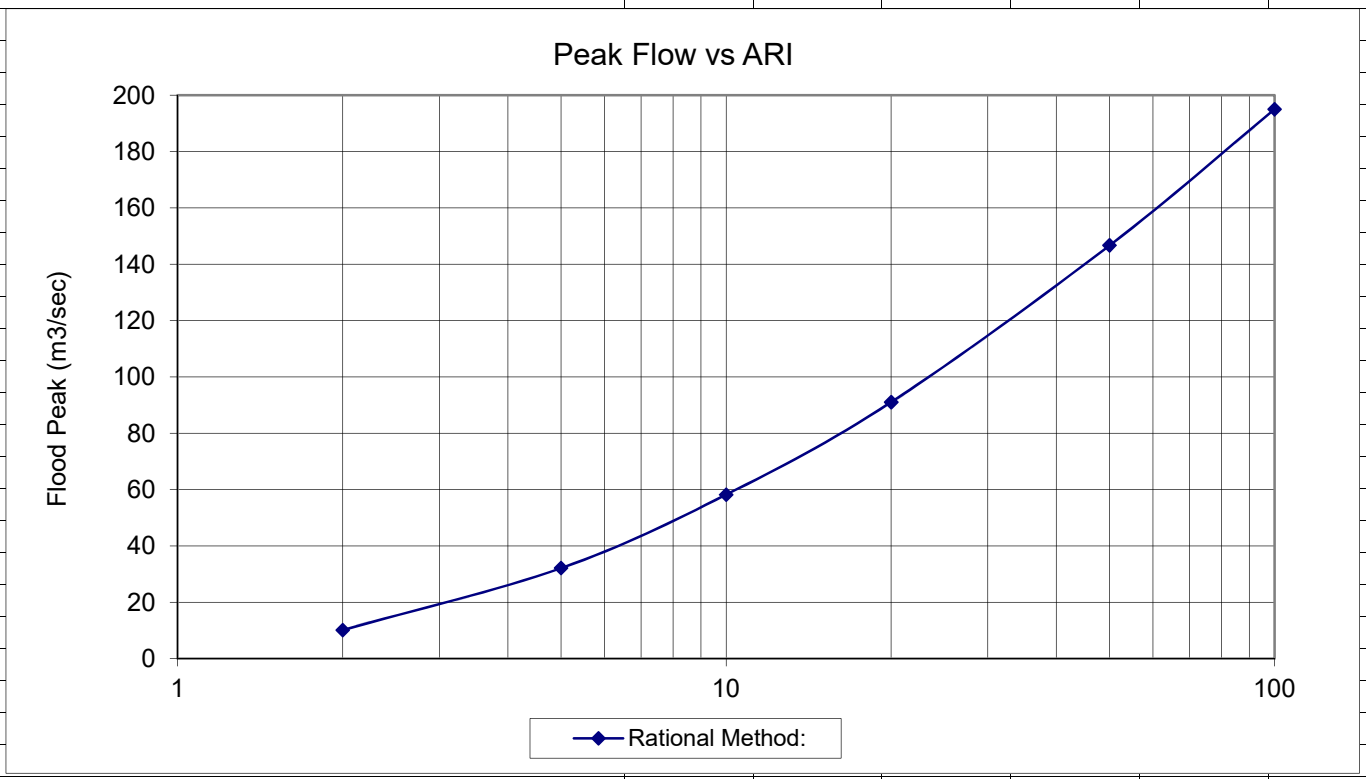
Typical approx. 2.7 m W x 1.1 m H on Eastern side

Typical approx. 2.7 m W x 1.1 m H on Eastern side

Typical approx. 2.7 m W x 1.1 m H on Eastern side

Black Cat Syndicate Ltd - Imperial-Majestic Gold Project
Central Creek

Job No.: J2031			Sheet No.	1	of	1
Calc. By: Alistair Lowry			Chk'd By:			
Calc Date: 12 January 2022			Chk'd Date:			
Sub-Catchment Peak Flow Estimation						
(ref: AR&R 1987, Vol. 1, Book 4)						
Assume Wheatbelt Loamy soil catchments 75-100% cleared						
With Arid Interior Frequency Factors						
Catchment Characteristics:						
Catchment Area , A =	124.620	km2				
Mainstream Length, L =	17.083	km				
Equal Area Stream Slope, Se =	4.10	m/km				
Cleared Area as percentage of catchment, CL =	75-100	%				
Average Annual Rainfall, P =	258	mm				
Rational Method:	**2**	**5**	**10**	**20**	**50**	**100**
tc=0.76A^0.38=	4.75	hours				
Rainfall Intensity for Time of Concentration => $I_{tc,Y}$=	8.2	12.6	16.0	19.6	24.9	29.3
C10=3.46*10^-1L^-0.42=	0.105	-				
	2	**5**	**10**	**20**	**50**	**100**
Frequency Factor (C_Y/C_{10})	0.34	0.7	1	1.28	1.62	1.93
Flood Peak Qy=0.278C_{10}(Cy/C10)IA (m3/sec)	10.1	32.1	58.2	91.1	146.6	195.0



Appendix 2: Jones Find & Imperial-Majestic to Trojan Dewatering Pipeline: Reconnaissance Flora/ Vegetation and Basic Fauna Survey – Extract Report

JONES FIND (P25/2323) & IMPERIAL-MAJESTIC TO TROJAN DEWATERING PIPELINE (L25/64)

Reconnaissance Flora/ Vegetation and Basic Fauna Survey – Extract Report

Prepared for Black Cat Syndicate Ltd.
November 2025

Prepared by
BOTANICA CONSULTING
33 Brewer St PERTH WA 6000 | 0419 916 034

Document Information

Prepared for: Black Cat Syndicate Ltd.
Project Name: Jones Find & Imperial-Majestic to Trojan Dewatering Pipeline
Tenements: L25/64, P25/2323, M25/104 and M25/350
Job Reference: Reconnaissance Flora/ Vegetation and Basic Fauna Survey – Extract Report
Job Number: 2025/048 and 2025/157
Date: 26 November 2025
Version: FINAL

Disclaimer

Quality Assurance

An internal quality review process has been implemented to each project task undertaken by BC. Each document and its contents is carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

Cover Photo: Vegetation within the dewatering pipeline corridor project area (27/10/2021)

Prepared by: Emily Allen
Environmental Consultant
Botanica Consulting

Reviewed by: Andrea Williams
Director
Botanica Consulting

Catherine Wharton
Senior Environmental Consultant
Botanica Consulting

Approved by: Jim Williams
Director
Botanica Consulting

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EXECUTIVE SUMMARY

Botanica Consulting Pty Ltd (Botanica) was commissioned by Black Cat Syndicate Ltd (Black Cat) to prepare a stand-alone reconnaissance flora/vegetation and basic vertebrate fauna survey report for the Jones Find project area on P25/2323 and the proposed Imperial–Majestic to Trojan dewatering pipeline corridor on L25/64 (hereafter referred to as the 'survey area' or 'extracted survey area').

The extracted survey area forms a subset of the original survey area assessed in Botanica's 2022 report *Kalgoorlie East Gold Project: Powerline, Jones Find and Imperial–Trojan Dewatering Pipeline — Reconnaissance Flora and Basic Fauna Assessment*, prepared for Black Cat. This Extract Report re-presents the flora and vegetation findings relevant to the extracted survey area. No additional field survey has been undertaken; however, this Extract Report has taken into account changes in conservation listings since the previous survey and thus the conservation significance of flora and fauna taxa have been reassessed using current information.

Botanica conducted a reconnaissance flora/ vegetation survey on the 27th October and 27th November 2021. The original survey area was traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management).

The survey area lies within the City of Kalgoorlie-Boulder, approximately 45 km south-east of Kalgoorlie. The survey area lies within the Great Western Woodlands and within the Eastern Goldfields (COO03) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA). Two pre-European vegetation associations occur within the survey area, both of which retain at least 98% of their pre-European extent and are therefore not considered threatened.

The updated desktop assessment identified 16 significant flora species recorded within a 40 km radius of the extracted survey area (inclusive of results previously identified within a 40km radius of the original survey area). All are listed as Priority Flora species by DBCA (five Priority 1, two Priority 2, five Priority 3 and four Priority 4) whilst one is also listed as a Threatened (VU) species under the EPBC Act. These significant flora taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the extracted survey area. The assessment did not identify any significant flora as likely or possibly occurring within the extracted survey area.

The updated desktop assessment identified 19 terrestrial vertebrate fauna species and two invertebrate fauna species of conservation significance as previously being recorded within 40 km of the extracted survey area. Eleven are listed as Threatened under either the EPBC Act or the BC Act or both; six are listed as migratory or otherwise protected species under either the EPBC Act or

the BC Act or both; and five are listed as Priority Fauna by the DBCA (four Priority 4) – noting that some species are listed in more than one category.

Habitat and distribution data was used to determine the likelihood of occurrence of these fauna species within the extracted survey area. The updated assessment identified one Threatened (VU) fauna species, as potentially occurring in the extracted survey area.

The field survey completed in Spring 2021 identified 102 vascular flora taxa within the original survey area. These taxa represented 62 genera across 26 families, with the most diverse families being Chenopodiaceae (16 species), followed by Fabaceae and Myrtaceae (13 species each). Dominant genera include Eremophila (12 species), Eucalyptus (11 species) and Acacia (10 species) (Botanica, 2022). One introduced (weed) species (*Salvia verbenaca)* was recorded within the original survey area. This species is not a Weed of National Significance nor a Declared Pest in Western Australia.

No Threatened, Priority or otherwise significant flora species were recorded within the survey area.

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

A total of eight broad-scale vegetation types (not including disturbed areas) were identified within the extracted survey area.

Vegetation condition within the extracted survey area ranged from ‘completely degraded’ to ‘good’ with the majority of vegetation rated as ‘good’. Disturbances in the extracted survey area were associated with existing mining operations.

Based on vegetation and associated landforms identified during the flora and vegetation assessment, seven broad scale terrestrial fauna habitats were identified within the extracted survey area. No evidence for the presence of Malleefowl, including nesting mounds, tracks or other signs, were recorded within the survey area. There was no other evidence of other significant fauna species observed during the survey.

No Environmentally Sensitive Areas were identified within the survey area.

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

There are no proposed nor gazetted conservation reserves within the survey area.

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the *Environmental Protection (EP) Act 1986*. The assessment found that the proposed vegetation clearing activities are not at variance with any of the clearing principles.

1 INTRODUCTION

Botanica Consulting Pty Ltd (Botanica) was commissioned by Black Cat Syndicate Ltd (Black Cat) to prepare a stand-alone reconnaissance flora/vegetation and basic vertebrate fauna survey report for the Jones Find project area on P25/2323 and the proposed Imperial–Majestic to Trojan dewatering pipeline corridor on L25/64 (hereafter referred to as the 'survey area' or 'extracted survey area').

The extracted survey area forms a subset of the original survey area assessed in Botanica's 2022 report *Kalgoorlie East Gold Project: Powerline, Jones Find and Imperial–Trojan Dewatering Pipeline — Reconnaissance Flora and Basic Fauna Assessment*, prepared for Black Cat. This Extract Report re-presents the flora and vegetation findings relevant to the extracted survey area. No additional field survey has been undertaken; however this Extract Report has taken into account changes in conservation listings since the previous survey and thus the conservation significance of flora and fauna taxa have been reassessed using current information.

The survey area lies within the City of Kalgoorlie-Boulder, approximately 45 km south-east of Kalgoorlie.

1.1 Objectives

The following objectives reflect the scope of the reconnaissance flora/ vegetation and fauna survey completed in Spring 2021, from which this Extract Report is derived.

The flora/vegetation assessment (Botanica, 2022) was conducted in accordance with the requirements of a reconnaissance survey as defined in *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a). The objectives of the assessment were to:

- Gather background information on flora and vegetation in the desktop survey area (literature review, database and map-based searches);
- Conduct a field survey to verify / ground truth the desktop assessment findings through reconnaissance survey;
- Define and map vegetation communities of the survey area to a scale appropriate for the Bioregion and described according to the National Vegetation Information System (NVIS) classification (NVIS Level V – Association);
- Record the species composition (abundance and diversity) of each vegetation community within the survey area and compile a species list for the survey area by vegetation type;

- Determine the local and regional conservation significance of flora and vegetation within the survey area;
- Identify and record the locations of any conservation significant flora/vegetation within the survey area;
- Identify and record the locations of any introduced flora species (including Declared Pests) within the survey area;
- Provide a map showing the distribution of conservation significant flora/vegetation within the survey area; and
- Define and map the condition of vegetation within the survey area in accordance with the vegetation condition rating scale specified in the Environmental Protection Authority (EPA) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016a).

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

- Undertake a literature review, including map-based information searches of all current and relevant literature sources and databases relating to the survey area;
- Undertake a desktop investigation to identify any previously recorded occurrences of or potentially occurring Threatened and Priority listed fauna within the survey area;
- Undertake searches on available databases for details relating to any Threatened and Priority listed fauna previously identified as occurring or potentially occurring within the survey area;
- Conduct fauna habitat mapping and identify habitat types which are suitable for each significant fauna considered likely or possible to occur, or fauna recorded in the survey area;
- Compile an inventory of fauna species occurrences within the survey area;
- Undertake opportunistic, low intensity sampling of fauna; and
- Report on the conservation status of species present using the Western Australian Museum and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) databases for presence of Threatened and Priority listed fauna species within the survey area.

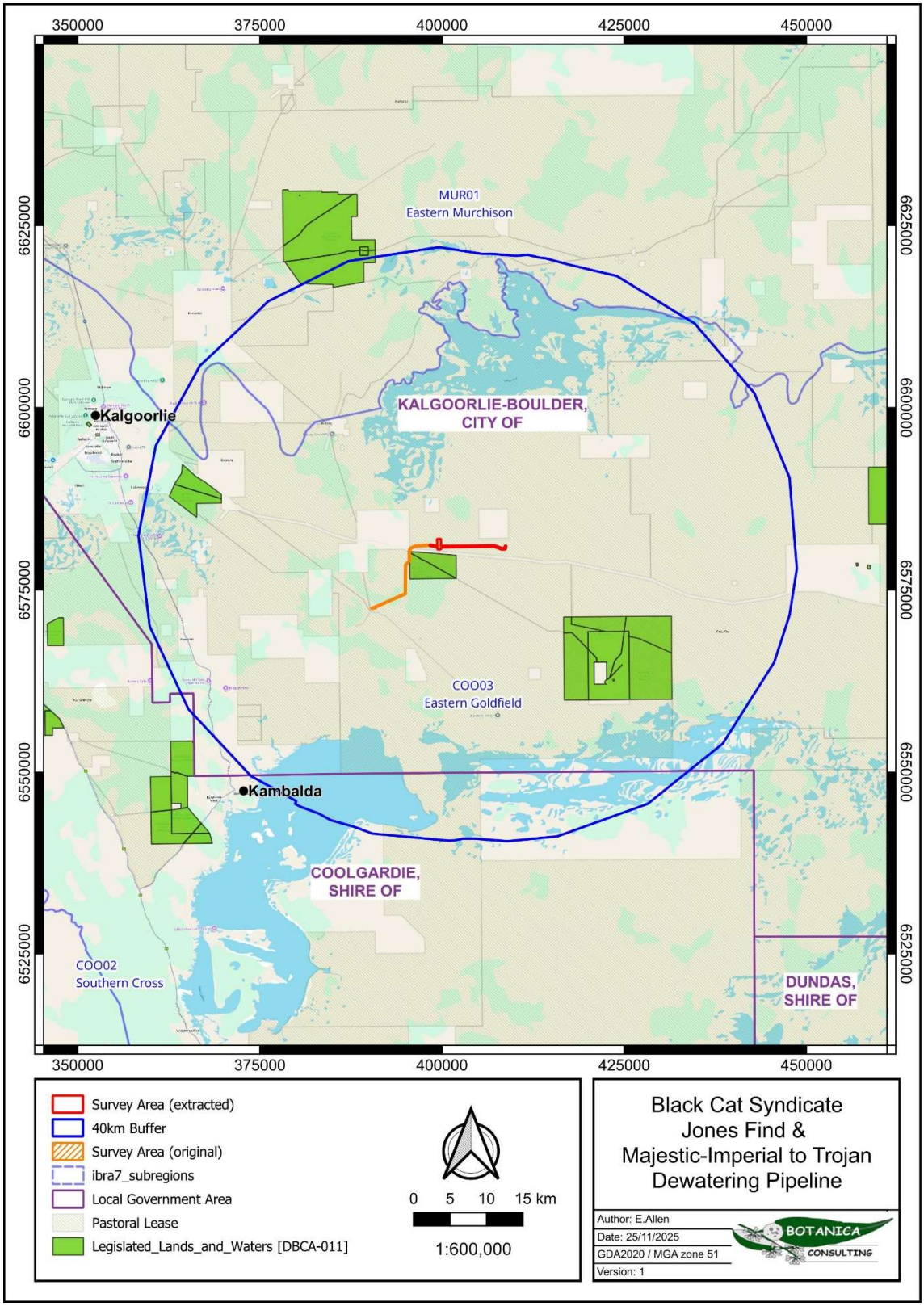

Figure 1-1: Regional map of the original and extracted survey areas

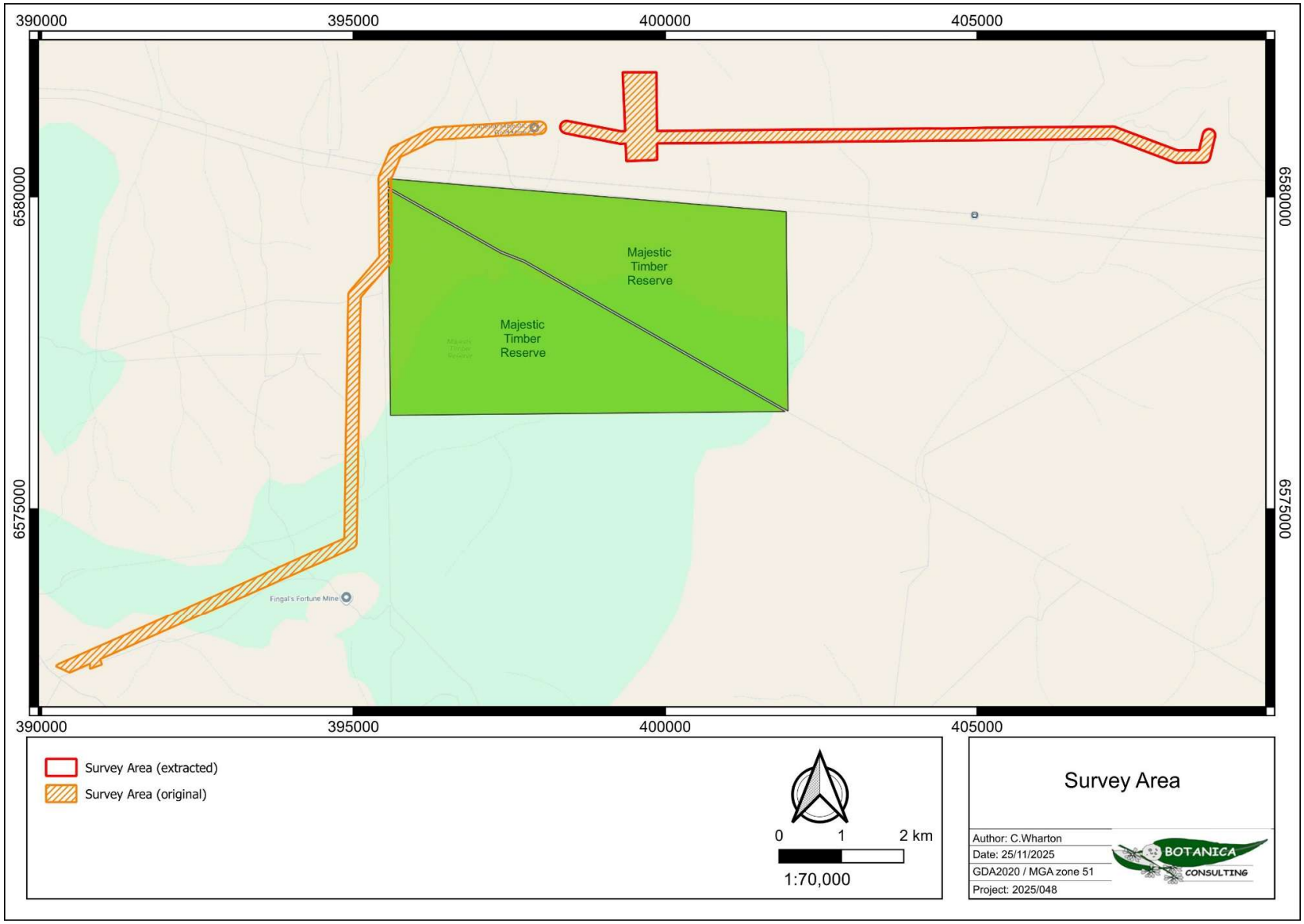

Figure 1-2: Overview of the original and extracted survey areas

2 REGIONAL BIOPHYSICAL ENVIRONMENT

2.1 Regional Environment

The survey area lies within the Eastern Goldfields (COO03) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA).

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

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

In accordance with Beard (1990) the survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes.

Soils are principally brown calcareous earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block. Vegetation is predominately *Eucalyptus* woodlands, with slopes and flats containing *E. longicornis* alongside *E. salubris* and *E. salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A. nummularia*. Some hill slopes contain mallees of *E. livida* or *E. loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and *A. campestris*. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

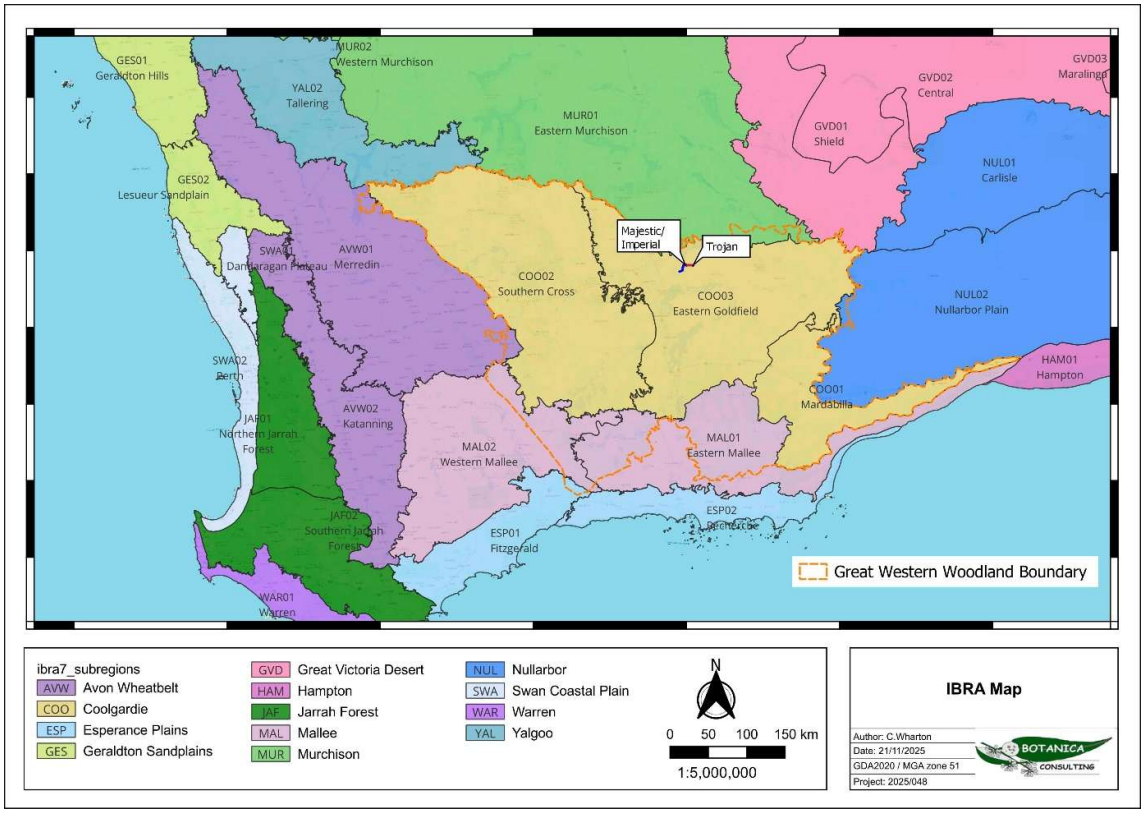

Figure 2-1: Map of IBRA subregions in relation to the survey area

2.2 Land Use

The dominant land uses of the Eastern Murchison subregion have been defined as grazing – native pastures (85.47%), Unallocated Crown Land (UCL) and Crown Reserves (11.34%), mining (1.79%) and Conservation Reserves which account for 1.4% of the land use (Cowan, 2001).

2.3 Soil Landscape Systems

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

The Kalgoorlie Province is further divided into six soil-landscape zones, with the survey area located within the Kambalda Zone (265). This zone is located in the south-eastern Goldfields between Menzies, Norseman and the Fraser Range and contains flat to undulating plains (with hills, ranges

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

In accordance with soil landscape system mapping data (Government of Western Australia, 2019), the soil landscape zones are divided into soil landscape systems, with the survey area located within the 265k9 soil landscape system, as described in Table 2-1 and shown in Figure 2-1.

Table 2-1: Soil landscape systems within the extracted survey area

Zone	Soil Landscape System	Description	Extent within Survey Area
Kambalda (256)	265k9	Gently undulating valley plains and pediments; some outcome of basic rock	279 ha (100%)

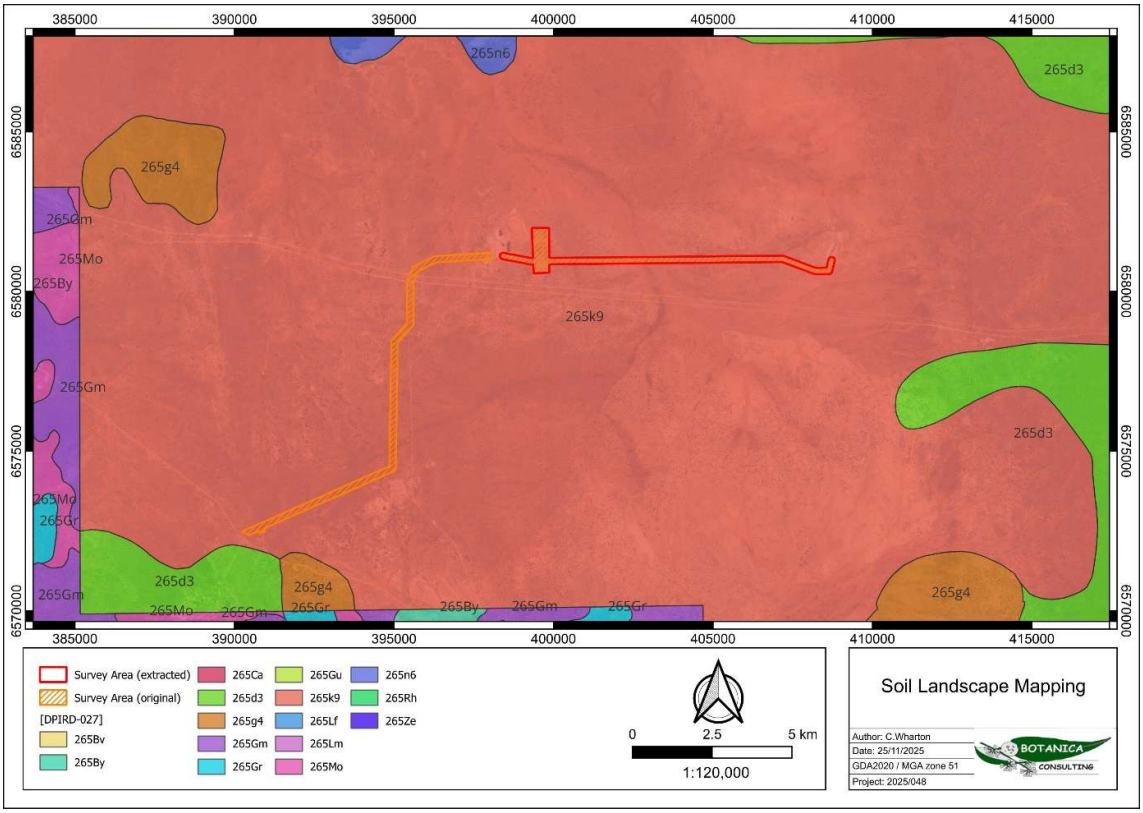

Figure 2-2: Map of soil landscape systems within the extracted **survey area**

2.4 Vegetation

The survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes. Soils are principally brown calcareous

earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block (Beard, 1990; Cowan, 2001).

Vegetation is predominately Eucalyptus woodlands, with slopes and flats containing *E. longicornis* alongside *E. salubris* and *E. salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A. nummularia*. Some hill slopes contain mallees of *E. livida* or *E. loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and A. campestris. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

The survey area occurs wholly within the Randell System. The pre-European vegetation association dataset (DPIRD, 2018) identifies two vegetation associations occurring within the survey area (Figure 2-3). The system association descriptions and their remaining extent within the COO03 IBRA subregion, as specified in Report 3b of the 2018 Statewide Vegetation Statistics (Government of Western Australia, 2019b), are provided in Table 2-2.

Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated species loss, while areas with less than 10% are considered “endangered” (EPA, 2000). Both vegetation associations retain >98% of their pre-European extent, and development within the extracted survey area will not significantly reduce the current extent of these vegetation associations.

Table 2-2: Pre-European vegetation associations within the extracted survey area

Pre-European Vegetation		Current Extent (ha)	% Remaining	% of current extent within DBCA managed lands	Extent within Survey Area
System / Vegetation Association	**Floristic Description**				
Randell / 468	Medium woodland; salmon gum & goldfields blackbutt	88633.45	99.68	3.72%	153 ha (55%)
Randell / 506	Succulent steppe with woodland; salmon gum & bluebush	8180.63	98.77	-	126 ha (45%)

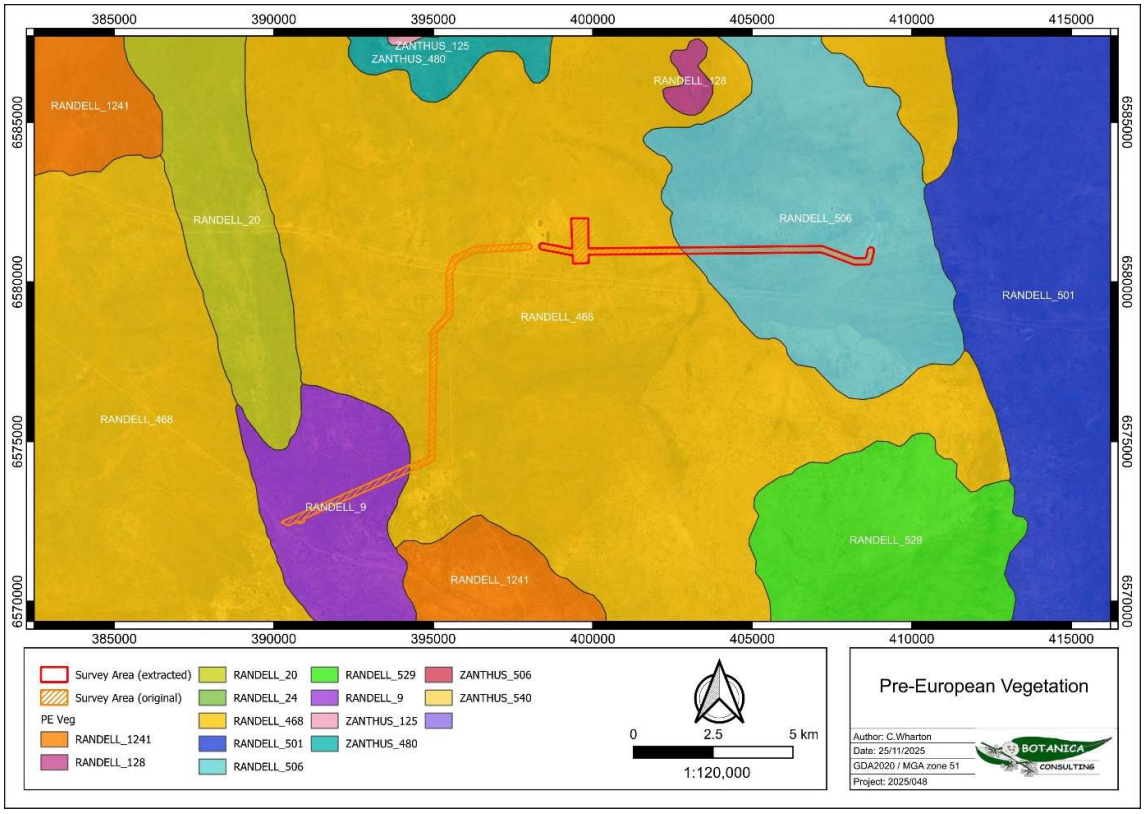

Figure 2-3: Pre-European vegetation associations within the extracted **survey area**

2.5 Climate

The climate of the Eastern Goldfield subregion is characterised as arid to semi-arid with 200-300 mm of rainfall, sometimes in summer but usually in winter (Cowan 2001). Rainfall data for the Kalgoorlie-Boulder Airport (#12038) weather station, located approximately 47 km northwest of the survey area. Mean monthly rainfall ranges from 31.8 mm in February to 13.3 mm in September, with a mean annual rainfall of about 265 mm.

The survey was conducted in October/November 2021, with the preceding months (August-September) being characterised by below average rainfall. Climate conditions may represent a survey constraint, with potentially below average presence of flowering material and ephemeral species.

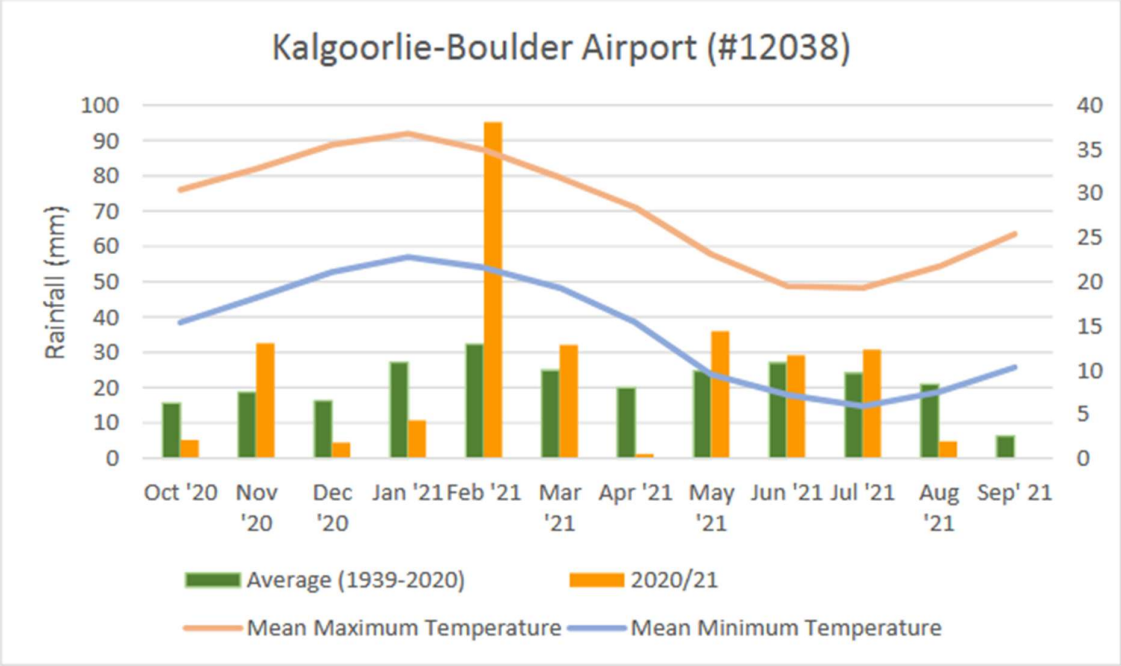

Figure 2-4: Monthly rainfall (January 2020 to October 2025) for the Kalgoorlie-Boulder Airport weather station (#12038) (BoM, 2025)

2.6 Hydrology

According to the Geoscience Australia database (2015), there are no permanent or ephemeral water bodies within the extracted survey area (Figure 2-5). One minor ephemeral drainage lines intersects the extracted survey area.

Groundwater Dependent Ecosystems (GDEs) includes biological assemblages of species such as wetlands or woodlands that use groundwater either opportunistically or as their primary water source. For the purposes of this report, a GDE is defined as any vegetation community that derives part of its water budget from groundwater and must be assumed to have some degree of groundwater dependency.

In accordance with the BoM Atlas of Groundwater Dependent Ecosystems (BoM, 2017) database, there are no potential terrestrial nor aquatic GDEs within the extracted survey area.

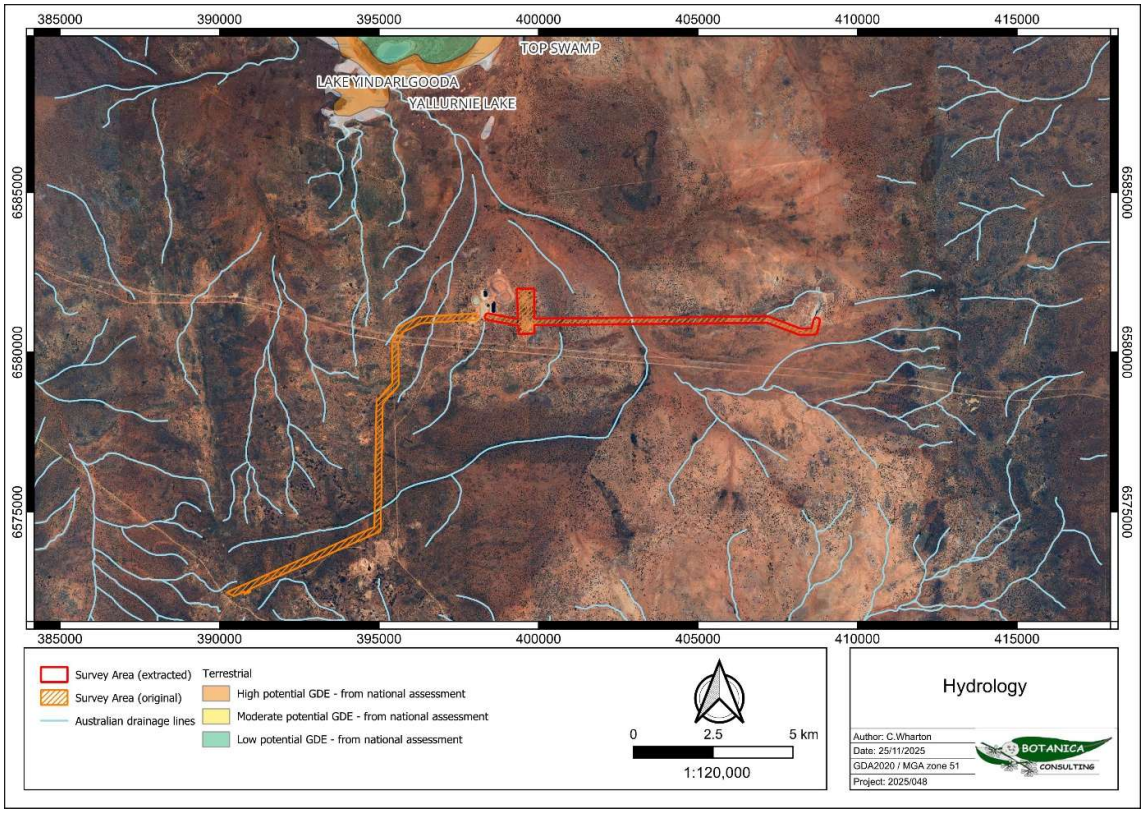

Figure 2-5: Hydrology of the extracted survey area

2.7 Conservation Values

No Threatened Ecological Communities (TECs) listed under the Commonwealth EPBC Act or the Western Australian BC Act are known to occur within the survey area or within 40 km of the extracted survey area. The nearest known TEC is located more than 200 km south of the extracted survey area in the Mallee bioregion.

No Priority Ecological Communities (PECs) as listed by DBCA occur within the survey area, whilst two PECs are located within 40 km of the extracted survey area: Mount Belches BIF (Priority 3) and Emu Land System (Priority 3) ae located approximately 16 km southeast and 35 km north-northwest of the extracted survey area respectively.

There are no Ramsar wetlands of international importance or sites listed in the Directory of Important (DIWA) (*i.e.*, wetlands of national importance) within the survey area or within 40 km of the extracted survey area. The Eastern Goldfields (COO03) subregion contains one wetland of national importance: Rowles Lagoon System, located approximately 113 km northwest of the survey area. The nearest Ramsar wetland: Lake Ballard, is located approximately 167 km northwest of the extracted survey area.

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

There are no proposed nor gazetted conservation reserves within the extracted survey area. However, there are several gazetted conservation reserves within 40 km of the survey area. The closest being the Majestic Timber Reserve which is located ~600m south of the extracted survey area. Noting that the Trans-Australian Railway corridor and Trans Access Road are located between the extracted survey area and the Majestic Timber Reserve.

A map showing conservation values in relation to the survey area is provided in Figure 2-6.

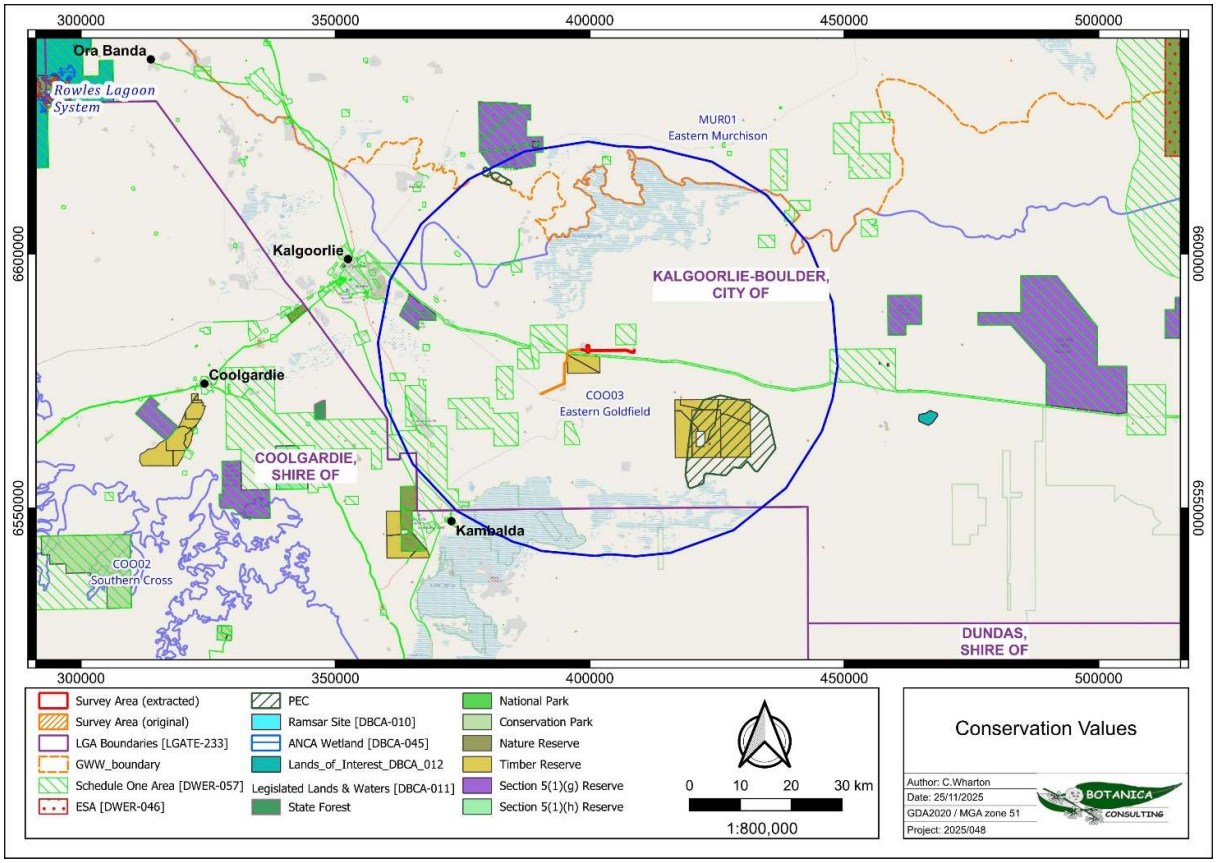

Figure 2-6: Conservation values in relation to the extracted survey area

2.7.1 Great Western Woodlands

The extracted survey area lies within the Great Western Woodlands, located within 50 km of the northern boundary. The Great Western Woodlands is considered by The Wilderness Society of WA to be of global biological and conservation importance as one of the largest and healthiest temperate woodlands on Earth, containing many endemic taxa. The region covers almost 16 million hectares, 160,000 square kilometres, from the southern edge of the Western Australian Wheatbelt to the

pastoral lands of the Mulga country in the north, the inland deserts to the northeast, and the treeless Nullarbor Plain to the east.

The area provides an eastward connection between southwest forests and inland deserts (Gondwana Link) as well as linking the north-west passage to Shark Bay. The majority of the Great Western Woodlands is unallocated crown land (61.1%) with other interests including pastoral leases (20.4%), conservation reserves (15.4%), unallocated crown land ex-pastoral managed by the DBCA (2%) and private land (approximately 1%) (Watson *et. al.,* 2008).

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

3 SURVEY METHODOLOGY

The following methodologies reflect the scope of the reconnaissance flora/ vegetation and fauna survey completed in Spring 2021, from which this Extract Report is derived. No additional survey effort has been undertaken, however, the desktop assessment presented in this Extract Report has been updated to reflect current conservation listings, nomenclature and regulatory statuses (including Threatened and Priority Flora). Changes in conservation status since the 2021 field survey have been incorporated into the significant flora and fauna assessments presented in this Extract Report.

3.1 Desktop Assessment

3.1.1 Literature Review

Prior to the Spring 2021 field assessment a literature review was undertaken of previous flora and fauna assessments conducted within the local region. Documents reviewed included:

- Botanica Consulting Ltd. (2020). *Reconnaissance Flora/ Vegetation Survey and Basic Fauna Survey of the L25/53 Project*. Unpublished report prepared on behalf of Black Cat Syndicate Ltd., February 2021.
- Botanica Consulting Ltd. (2020). *Fingalls Reconnaissance Flora/ Vegetation Survey and Basic Fauna Survey.* Unpublished report prepared on behalf of Black Cat Syndicate Ltd., December 2020.

3.1.2 Database Searches

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

- DBCA's Threatened and Priority Flora database (DBCA, 2019a);
- Atlas of Living Australia (ALA) database (ALA, 2022); and
- EPBC Act online Matters of National Environmental Significance (MNES) database (Department of Agriculture, Water and the Environment [DAWE], 2021a).

The ALA spatial portal search and EPBC Protected Matters search were conducted with a 40 km buffer from the survey area.

This Extract Report has taken into account changes in conservation listings since the 2021 survey and the desktop assessment has been updated accordingly. To ensure currency of conservation significance, additional database searches were undertaken using the following sources:

- DBCA's Threatened and Priority Flora database (DBCA, 2024);

- EPBC Act online Matters of National Environmental Significance (MNES) database (Department of Climate Change, Energy, the Environment, and Water [DCCEEW], 2025).

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

This Extract Report has taken into account changes in conservation listings since the Spring 2021 survey and thus the conservation significance of flora and fauna taxa have been reassessed using data from the following sources:

- *Environment Protection and Biodiversity and Conservation Act 1999* (EPBC Act). Administered by the Australian Government (DCCEEW);
- *Biodiversity Conservation Act 2016* (BC Act). Administered by the WA Government (DBCA);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List – the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- Priority Flora and Fauna lists. A non-legislative list maintained by DBCA for management purposes: Priority flora list released 1st July 2025 (DBCA, 2025a); Priority fauna list released 1st July 2025 (DBCA, 2025b).

The EPBC Act also requires the compilation of a list of migratory species that are recognised under international treaties including the:

- Japan Australia Migratory Bird Agreement 1981 (JAMBA)[1];
- China Australia Migratory Bird Agreement 1998 (CAMBA);
- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA); and
- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

[1] Most but not all species listed under JAMBA are also specially protected under Specially Protected Species of the BC Act.

Most but not all migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as Matters of National Environmental Significance (MNES) under the EPBC Act. Descriptions of conservation significant species and communities are provided in Appendix A.

3.1.3 Likelihood of Occurrence

Significant flora identified during the literature review and database searches were assessed with regards to their population extent and distribution and preferred habitat to determine their likelihood of occurrence within the survey area. The assessment categorised flora species as follows

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

3.2 Field Assessment

3.2.1 Flora and Vegetation

Botanica conducted a reconnaissance flora/ vegetation survey on the 27th October and 27th November 2021. The original survey area was traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management).

A GPS track log of the survey effort is shown in Figure 3-1. No additional survey effort has been undertaken for this Extract Report. Although the survey area was traversed on foot by Jim Williams on 27th October 2025 during a targeted survey for critical habitat assessment pertaining to the conservation significant butterfly species Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and *Inland Hairstreak (Jalmenus aridus)* (Botanica, 2025).

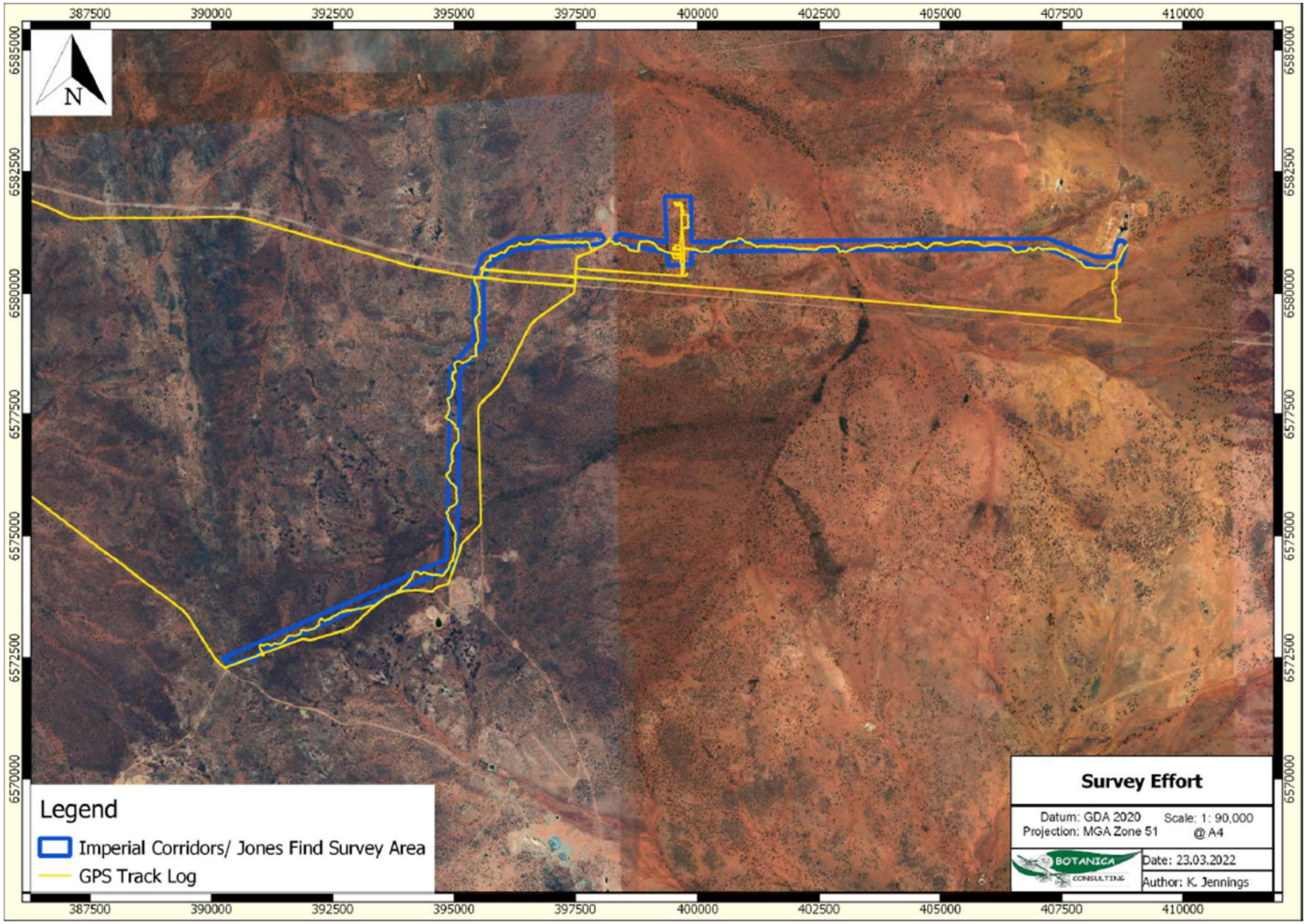

Figure 3-1: GPS track log of the survey effort in 2021

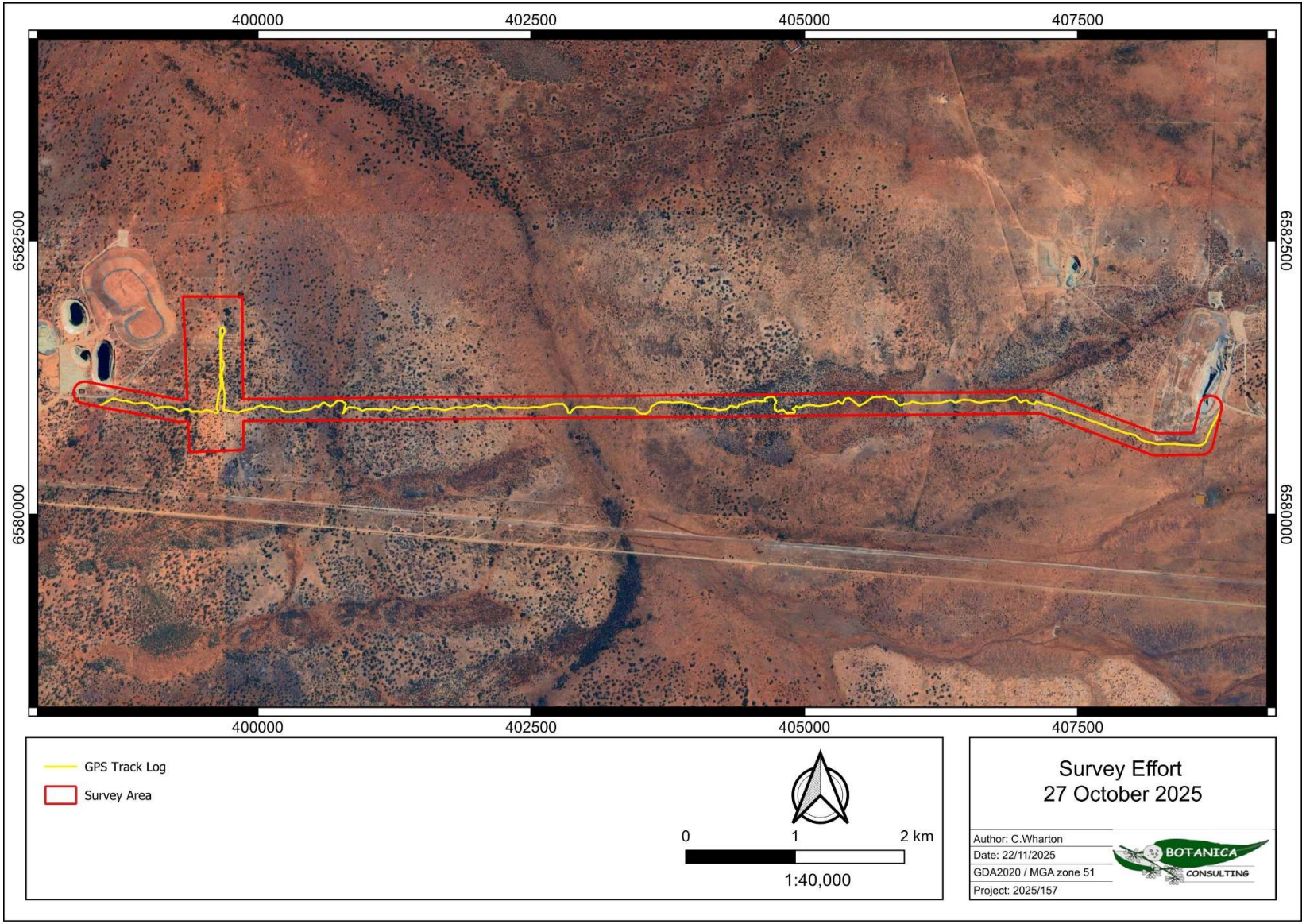

Figure 3-2: GPS track log of the survey effort in 2025

3.2.1.1 Vegetation Mapping

Prior to the commencement of field work (in 2021), aerial photography was inspected and obvious differences in the vegetation assemblages were identified. The different vegetation types identified were then inspected during the field survey to assess their validity. A handheld GPS unit was used to record the coordinates of the boundaries between vegetation types.

At each sample point, the following information was recorded:

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

Vegetation types were classified in accordance with the NVIS Level V-Association classification.

3.2.1.2 Targeted Flora Survey

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

3.2.1.3 Flora Identification

Unknown specimens collected during the survey were identified with the aid of samples housed at the Botanica Herbarium and the Western Australian Herbarium.

3.2.2 Terrestrial Fauna

Botanica conducted a basic fauna survey on the 27th October and 27th November 2021, with the area traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management) (Figure 3-1).

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

The main aim of the fauna habitat assessment was to determine the likelihood of a species of conservation significance utilising habitat within the survey area. The habitat information obtained was also used to aid in finalising the overall potential fauna list.

Available information on the habitat requirements of the species of conservation significance listed as possibly occurring in the area (determined from the desktop assessment) was researched. During the field survey, the habitats within the survey area were assessed and specific elements identified, if present, to determine the likelihood of listed Threatened and Priority species utilising habitat within the survey area.

Opportunistic observations of fauna species were made during all field survey work.

Fauna of conservation significance identified during the literature review and database searches as previously being recorded in the general area were assessed and ranked for their likelihood of occurrence within the survey area. The rankings and criteria used were:

- **Would Not Occur:** There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).
- **Locally Extinct:** Populations no longer occur within a small part of the species natural range, in this case within 10 or 20 km of the survey area. Populations do however persist outside of this area.
- **Regionally Extinct:** Populations no longer occur in a large part of the species natural range, in this case within the Goldfields region. Populations do however persist outside of this area.
- **Unlikely to Occur:** The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the site itself would not support a population or part population of the species.
- **Possibly Occurs:** Survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as likely to be present during the field survey and literature review, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified

as possibly being present at times, habitat may be marginal (*e.g.*, poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

- **Known to Occur:** The species in question has been positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) during field surveys within or near the survey area. This information may have been obtained by direct observation of individuals or by way of secondary evidence (*e.g.*, tracks, foraging debris, scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (*e.g.*, poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

3.3 Data Analysis

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

3.4 Personnel Involved

Table 3-1: Personnel involved with the flora, vegetation and fauna survey/ reporting

Staff Member	Position/ Qualifications	Experience	Tasks conducted during survey
Jim Williams	Director/ Principal Botanist (Diploma of Horticulture)	> 30 years' experience across WA	2021/2022 Project Management (Lead Botanist). Flora and vegetation survey- identifying flora species and opportunistic flora/ fauna observations. Identifying and recording vegetation types. Vegetation Mapping.
Jennifer Jackson	Senior Botanist (BSc-Honours Environmental Management)	> 20 years' experience across WA	2021/2022 Fauna survey-opportunistic fauna observations and fauna habitat assessments. Flora and vegetation survey- identifying flora species and opportunistic flora/ fauna observations. Identifying and recording vegetation types.
Catherine Wharton	Senior Environmental Consultant (BSc-Conservation Biology)	> 20 years' experience across WA	2025 Data analysis and preparation of Extract Report.

3.5 Scientific Licences

Table 3-2: Scientific Licences of Botanica Staff coordinating the original survey

Licensed Staff	Permit Number	Valid
Jim Williams	FB62000108 (licence to take flora for scientific purposes)	27/05/2019-27/05/2022
Jennifer Jackson	FB62000309 (licence to take flora for scientific purposes)	18/02/2021-11/01/2024

Information current at time of 2021 survey.

3.6 Survey Limitations and Constraints

It is important to note that field surveys will entail limitations, notwithstanding careful planning and design. Potential limitations of the survey undertaken on 27th October and 27th November 2021, as stipulated within the *technical guidance for Flora And Vegetation surveys* (EPA, 2016a) and the *technical guidance for Terrestrial Vertebrate Fauna surveys* (EPA, 2020), are listed in Table 3-3.

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

Some species are reported as potentially occurring based on there being suitable habitat (quality and extent) within the survey area or immediately adjacent. The habitat requirements and ecology of many of the species known to occur in the wider area are however, often not well understood or documented. It can therefore be difficult to exclude species from the potential list based on a lack of a specific habitats or microhabitats within the survey area. As a consequence of this limitation, the potential species list produced is most likely an overestimation of those species that actually utilise the survey area for some purpose.

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

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

Variable	Potential Impact on Survey	Details
Access problems	Not a constraint	The survey was conducted via 4WD and on foot. Numerous access tracks were present within the survey area providing ease of access.
Competency/ Experience	Not a constraint	The Botanica personnel that conducted the survey were regarded as suitably qualified and experienced. **Coordinating Staff**: Jim Williams (Botanist) **Field Staff**: Jim Williams (Botanist), Jennifer Jackson (Botanist) **Data Interpretation**: Jim Williams (Botanist), Kelby Jennings (Environmental Consultant)
Timing of survey, weather & season	Not a constraint	Fieldwork was undertaken within the EPA's recommended survey period (September - November) for the South-West Interzone Province. Reduced rainfall levels may impact the presence of flowering material and ephemeral species but are unlikely to represent a survey constraint.

Variable	Potential Impact on Survey	Details
Area disturbance	Not a constraint	The majority of the survey area was in very good condition and comprised of native vegetation.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/significance of the area with a detailed flora survey and basic fauna survey completed to identify vegetation types/ fauna habitats and significant flora, fauna and vegetation.
Availability of contextual information at a regional and local scale	Not a constraint	Conservation significant flora database searches provided by the DBCA were used to identify any potential locations of Threatened/Priority flora species. BoM, DWER, DPIRD, DBCA and DAWE databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Botanica has conducted a number of surveys within Coolgardie Bioregion and was also able to obtain information about the area from previous research conducted within the area. Results of previous assessments in the local area were reviewed to provide context on the local environment.
Completeness	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify vegetation assemblages. All observed flora individuals were able to be identified to species level. The vegetation associations for this study were based on visual descriptions of locations in the field. The distribution of these vegetation associations outside the survey area is not known, however vegetation associations identified were categorised via comparison to vegetation distributions throughout WA given on NVIS (DotEE, 2017).

Information current at time of 2021 survey.

4 RESULTS

4.1 Desktop Assessment

4.1.1 Flora/ Vegetation

According to the results of the ALA desktop search (ALA, 2022), a total of 415 flora taxa were recorded within a 40 km radius of the original survey area, representing 173 genera from 55 families. The most diverse families were Chenopodiaceae (53 species), Myrtaceae (51 species) and Fabaceae (47 species). The most dominant genera were Acacia (27 species), Eucalyptus (32 species) and Eremophila (24 species).

4.1.1.1 Introduced Flora

The desktop review (Botanica, 2022) identified 33 introduced flora species (weeds), representing 16 families, as potentially occurring within a 40 km radius of the original survey area. Three of these taxa are listed as a Declared Pests on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). Of these, two are also listed as Weeds of National Significance (WoNS) and one additional WoNS provides a total of four potentially occurring significant weeds.

The full list of potential weed species is presented below in Table 4-1; the four significant weed species are highlighted in green.

Table 4-1: Introduced flora potentially occurring within 40 km of the original survey area

Taxon	Common Name	Declared Pest	WoNS
Bromus diandrus	Great Brome	N	N
Bryophyllum delagoense		N	N
Carduus tenuiflorus	Slender Thistle	N	N
Carrichtera annua	Wards Weed	N	N
Carthamus lanatus	Saffron Thistle	N	N
Cenchrus ciliaris	Buffel Grass	N	N
Cenchrus setaceus	Fountain Grass	N	N
Centaurea melitensis	Maltese Cockspur, Malta Thistle	N	N
Chenopodium album	Fat-hen	N	N
Cylindropuntia spp.	Prickly Pear	Y	Y
Echium plantagineum	Paterson's Curse	Y	N
Erodium cicutarium	Common Storksbill	N	N
Heliotropium europaeum	Common Heliotrope	N	N
Heliotropium supinum	Prostrate Heliotrope	N	N
Lantana camara	Common lantana	Y	Y
Leontodon rhagadioloides	Cretan Weed	N	N
Lycium ferocissimum	African Boxthorn	N	Y
Lysimachia arvensis	Pimpernel	N	N
Medicago polymorpha	Burr Medic	N	N

Taxon	Common Name	Declared Pest	WoNS
Mesembryanthemum crystallinum	Iceplant	N	N
Mesembryanthemum nodiflorum	Slender Iceplant	N	N
Monoculus monstrosus		N	N
Nicotiana glauca	Tree Tobacco	N	N
Oncosiphon suffruticosum	Calomba Daisy	N	N
Phalaris minor	Lesser Canary Grass	N	N
Polypogon monspeliensis	Annual Beard Grass	N	N
Puccinellia ciliata	Pucinellia	N	N
Reseda luteola	Wild Mongonette	N	N
Rumex hypogaeus	Doublegee	N	N
Sisymbrium irio	London Rockert	N	N
Sonchus oleraceus	Common Sowthistle	N	N
Symphyotrichum squamatum	Bushy Starwort	N	N
Tribulus terrestris	Caltrop	N	N

Information current at time of 2021 survey.

4.1.1.2 Conservation Significant Flora

The updated desktop review of conservation significant flora (DBCA, 2024a; DCCEEW, 2025) identified 16 significant flora species recorded within a 40 km radius of the extracted survey area (inclusive of results previously identified within a 40km radius of the original survey area ((ALA, 2022)). These consist of one Threatened (VU) species under the EPBC Act; five Priority 1, two Priority 2, five Priority 3 and four Priority 4 species as listed by DBCA – noting that the Threatened species is also listed a Priority 2 (Table 4-2).

These significant flora taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the extracted survey area. The assessment did not identify any significant flora as likely or possibly occurring within the extracted survey area.

Table 4-2: Significant Flora – likelihood of occurrence within the extracted survey area

Taxon	Conservation Status			Habitat	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Acacia websteri	-	-	P1	Red sand, clay or loam. Low-lying areas, flats.	Unlikely. Outside known range of species.	ALA (2022) [1]
Alyxia tetanifolia	-	-	P3	Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.	Unlikely. Outside known range of species.	ALA (2022) [1]
Austrostipa turbinata	-	-	P3	It is found in sandy soils, sometimes with limestone or clay, and can occur on sandhills, undulating plains, and open mallee country	Unlikely. Within known range, habitat unlikely to be present.	DBCA (2024a)
Calandrinia lefroyensis	-	-	P1	Typically found in arid to semi-arid regions, often associated with salt lakes and associated low, rocky ridges or floodplains. It grows on soils such as stony, calcareous, or silty loams, and often occurs within or near low chenopod shrublands or *Tecticornia* dominated vegetation.	Unlikely. Within known range, habitat unlikely to be present.	DBCA (2024a)
Dicrastylis reticulata	-	-	P3	Sandy soils, often over granite. Amongst granite rock, hills, flats.	Unlikely Well outside known range of species. Survey area is >200km east of known records. Habitat unlikely to be present.	ALA (2022)
Eremophila arachnoides subsp. tenera	-	-	P3	Flat calcareous plain.	Unlikely. Records within 5km of survey area but considered to de mis-identification	ALA (2022); DBCA (2024a)
Eremophila praecox	-	-	P2	Red/brown sandy loam. Undulating plains.	Unlikely. Outside known range of species.	ALA (2022); DBCA (2024a)
Eremophila xantholaemus	-	-	P1	Hilltop and slopes. Brown/red very rocky loam/granite.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Eucalyptus kruseana	-	-	P4	Sandy loam. Granite outcrops & hills.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Eucalyptus efflorescens	-	-	P1	Red-brown loam, red sand, granite. Near outcrops.	Unlikely. Well outside known range of species. Survey area is >300km southeast of known records.	*Formerly Eucalyptus leptophylla* var. *floribunda* Source unknown.
Eucalyptus x *brachyphylla*	-	-	P4	Sandy loam. Granite outcrops.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024)

Taxon	Conservation Status			Habitat	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Frankenia glomerata			P4	White sand.	Unlikely, Within known range, habitat unlikely to be present.	DBCA (2024)
Lechenaultia pulvinaris	-	-	P4	White/grey sand.	Unlikely. Well outside known range of species. Survey area is >500km northeast of known records.	ALA (2022)
Melaleuca coccinea	-	-	P3	Sandy loam over granite. Granite outcrops, sandplain, river valleys.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022)
Ptilotus rigidus	-	-	P1	Quartz hillsides	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Tecticornia flabelliformis	VU	-	P2	Clay. Saline flats.	Unlikely. Within known range, habitat unlikely to be present.	APA (2022); DBCA (2024a), DCCEEW (2025) Previously recorded as P1.

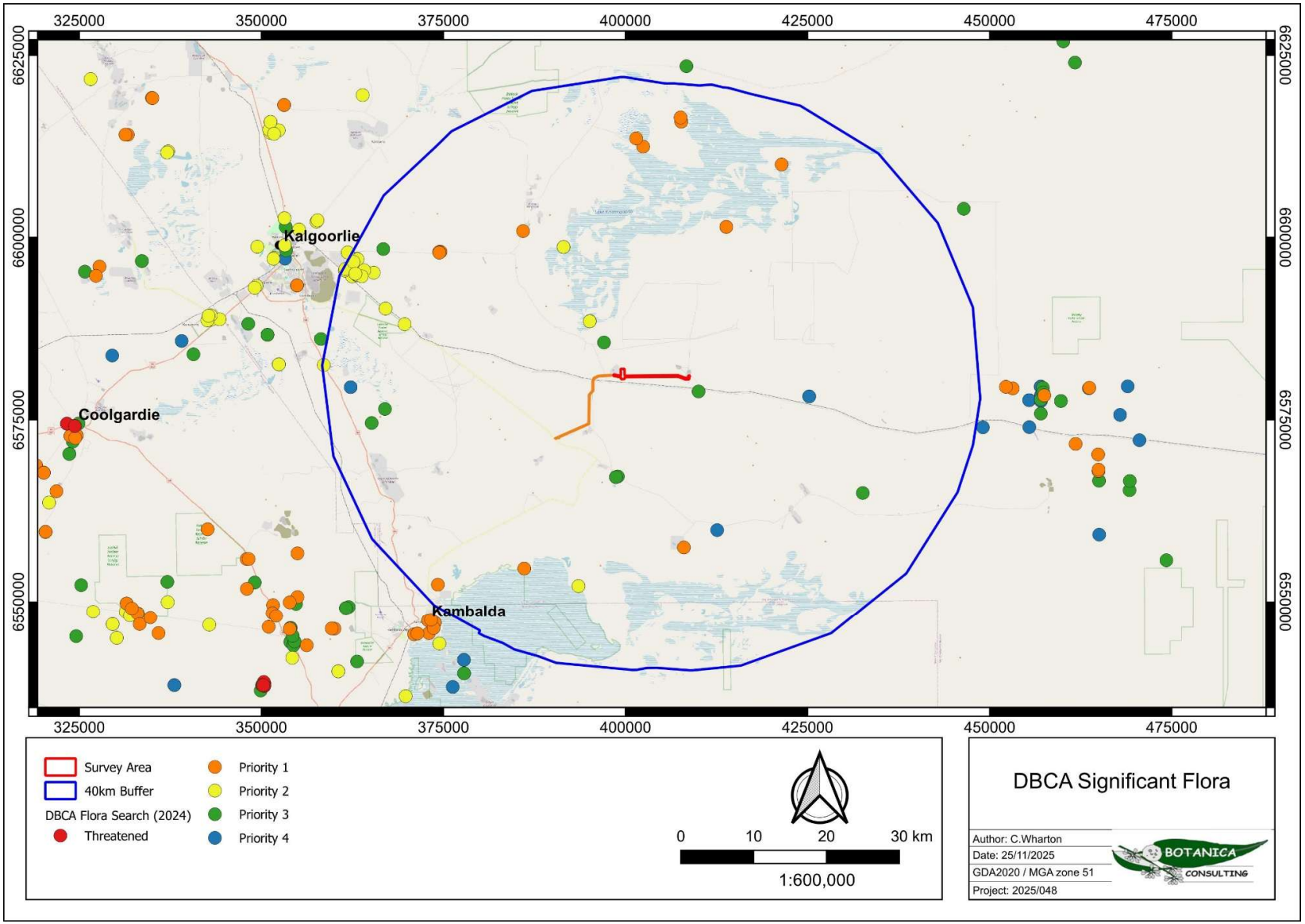

Figure 4-1: Significant flora (DBCA, 2024a) within the desktop search area (40km Buffer)

4.1.2 Fauna

According to the results of the ALA database search (ALA, 2022), a total of 208 terrestrial vertebrate fauna taxa have been recorded within 40 km of the original survey area, consisting of 141 bird, 11 mammal, 55 reptile and one amphibian taxa.

4.1.2.1 Introduced Fauna

The NatureMap and EPBC database searches identified nine feral fauna species, representing six families, as potentially occurring in the original survey area (Table 4-3)

Table 4-3: Potentially occurring introduced fauna within the original survey area

Family	Species	Common Name
Camelidae	Camelus dromedarius	Dromedary Camel
Canidae	lupus familiaris	Domestic Dog
	Vulpes vulpes	Red Fox
Columbidae	Columba livia	Domestic Pigeon
	Streptopelia chinensis	Spotted Turtle-Dove
	Streptopelia senegalensis	Laughing Turtle-Dove
Felidae	Felis catus	Cat
Leporidae	Oryctolagus cuniculus	Rabbit
Muridae	Mus musculus	House Mouse

4.1.2.2 Conservation Significant Fauna

The updated desktop assessment of conservation significant fauna (DBCA, 2024b; DCCEEW, 2025) identified 19 terrestrial vertebrate fauna species and two invertebrate fauna species of conservation significance that have previously been recorded within 40 km of the extracted survey area. Eleven are listed as Threatened under either the EPBC Act or the BC Act or both; six are listed as migratory or otherwise protected species under either the EPBC Act or the BC Act or both; and five are listed as Priority Fauna by the DBCA (four Priority 4) – noting that some species are listed in more than one category.

Habitat and distribution data was used to determine the likelihood of occurrence within the extracted survey area. Four species of migratory wading/ shorebirds were assessed collectively due to their similar classification and habitat requirements. The updated assessment identified one Threatened (VU) fauna species, as potentially occurring in the extracted survey area (Table 4-4).

Table 4-4: Significant Fauna – likelihood of occurrence within the extracted survey area

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Mammal						
Chuditch *Dasyurus geoffroii*	VU	VU	-	Deserts, woodlands, eucalypt shrubland, open forests and coastal areas. It is now found only in the southwest corner of Western Australia (ALA, 2025).	Unlikely to Occur. Considered to be locally extinct.	DCCEEW (2025)
Bird						
Western Grasswren *Amytornis textilis textilis*	-	-	P4	Its preferred habitat is low, often Acacia dominated, semiarid shrubland, no more than a metre in height, that forms densely foliaged clumps and thickets.	Would Not Occur. No suitable habitat.	DBCA (2024b)
Southern Whiteface *Aphelocephala leucopsis*	VU	VU	-	Found in arid regions across most of the southern half of the Australian continent, Acacia woodlands, particularly those dominated by mulga and drought-resistant chenopod shrub species, including saltbush and bluebush (ALA, 2025). It is found in open woodlands and shrublands with an understorey of grasses and low shrubs (DCCEEW, 2023).	Unlikely to Occur. Habitat likely marginal and unsuitable for breeding. Occasional transients only.	DCCEEW (2025)
Fork-tailed Swift *Apus pacificus*	MI	MI	-	Low to very high airspace over varied habitat from rainforest to semi desert (Birdlife	Unlikely to Occur. Very occasional transients only.	DCCEEW (2025)
Grey Falcon *Falco hypoleucos*	VU	VU	-	Occurs at low densities across inland Australia. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. Observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter. Prey species are predominately birds, including doves, pigeons, small parrots and cockatoos and finches, but also includes small mammals and lizards.	Unlikely to Occur. Very occasional transients only	DCCEEW (2025)
Grey Wagtail *Motacilla cinerea*	MI	MI	-	Running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004).	Would not occur. No suitable habitat.	DCCEEW (2025)
Malleefowl *Leipoa ocellata*	VU	VU	-	Scrublands and woodlands dominated by mallee and wattle species (DAWE, 2020b).	Possibly Occurs. Habitat likely marginal and unsuitable for breeding. Occasional transients only.	DBCA (2024b); DCCEEW (2025)
Night Parrot *Pezoporus occidentalis*	EN	CR	-	Most habitat records are of Triodia (Spinifex) grasslands and/or chenopod shrublands in the arid and semi-arid zones,	Would Not Occur. Very marginal habitat.	DCCEEW (2025)

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
				or Astrebla spp. (Mitchell grass), shrubby samphire and chenopod associations, scattered trees and shrubs, Acacia aneura (Mulga) woodland, treeless areas and bare gibber are associated with sightings of the species. Roosting and nesting sites are consistently reported as within clumps of dense vegetation, primarily old and large Spinifex (Triodia) clumps, but sometimes other vegetation types (DAWE, 2020b).		
Western Rosella (inland) *Platycercus icterotis xanthogenys*	-	-	P4	The inland subspecies (*P.i. xanthogenys*) is found in eucalypt and sheoak woodlands and scrubs, especially those containing wandoo (*E. wandoo*), flooded gum, salmon gum (E. *salmonophloia*), tall mallee and rock sheoak (*Allocasuarina huegeliana*) (DEC, 2009).	Unlikely to Occur. Only one record within 100km of Kalgoorlie. No suitable habitat (*i.e.*, limited availability of suitable hollow-bearing trees for breeding).	DBCA (2024b)
Princess Parrot *Polytelis alexandrae*	VU		P4	Dry inland areas of Spinifex with Eucalypts, desert oaks, Acacias, and sometimes amongst succulents around saltpans. Often far from water (ALA, 2025).	Unlikely to Occur. Known to occur further east in the Great Victoria Desert, although PMST records state that the species or species habitat may be in the area.	DCCEEW (2025)
Sharp-tailed Sandpiper *Calidris acuminata*	VU / MI	MI	-	Intertidal mudflats, also freshwater swamps and saltwater lakes (ALA, 20256).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)
Curlew Sandpiper *Calidris ferruginea*	CR / MI	MI		Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DCCEEW, 2025b).	Would Not Occur. No suitable habitat.	DCCEEW (2025)
Hooded Plover *Thinornis cucullatus*	-	-	P4	Freshwater lakes, freshwater marshes, coastal saline lagoons, and sandy beaches (ALA, 2025).	Would Not Occur. No suitable habitat.	DBCA (2024b)
Common Greenshank *Tringa nebularia*	EN / MI	MI	-	Inland wetlands and sheltered coastal areas, including mudflats, saltmarshes, river estuaries, deltas and lagoons (ALA, 2025).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)
Various migratory wading/ shorebirds *	IA/MI	IA/MI	-	Prefer muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DAWE, 2020b).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Reptile						
Western Spiny-tailed Skink *Egernia stokesii badia*	EN	VU	-	Egernia s. badia occurs in open eucalypt woodlands and Acacia-dominated shrublands in semi-arid to arid areas of south-western WA (Geraldton Sandplains and Yalgoo IBRA) and, depending on taxonomic clarification, around Shark Bay including Peron Peninsula, Edel Land and Dirk Hartog Island (Geraldton Sandplain and Carnarvon IBRA). It tends to shelter in logs, in cavities in the trunks and branches of shrubs, as well as in houses and ruins, especially in accumulations of old corrugated iron.	Would Not Occur. No suitable habitat. Survey area is >350km from majority of occurrence records (west of Meridan), although there is one isolated record ~25km northwest of survey area.	DBCA (2024b)
Invertebrate						
Inland Hairstreak Butterfly *Jalmenus aridus*	-	-	P1	Open woodland with mature *Senna artemisioides* ssp. *filifolia* as well as mixed flowering shrubs with open areas of well drained exposed ground adjoining the hostplants (Eastwood et al, 2023). The attendant ant Froggattella kirbii, must be present.	Would Not Occur. No suitable habitat.**	DBCA (2024b)
Arid Bronze Azure Butterfly *Ogyris petrina*	CR	CR	-	Known to occur within mature smooth barked Eucalypt woodlands in the Goldfields and Wheatbelt region of WA (DBCA, 2020). Critical habitat for the ABAB is associated with known host plants of the attendant ant Camponotus terebrans, which is typically eucalypt woodland dominated by smooth-barked eucalypts; predominantly gimlet (E. salubris), salmon gum (E. salmonophloia), york gum (E. loxophleba) and wheatbelt wandoo (E. capillosa capillosa). The attendant ant *Camponotus terebrans* (pale form), must be present.	Would Not Occur. No suitable habitat.**	DCCEEW (2025)

Information updated based on current conservation listings and data sources.

Based on results of additional databased searches (DBCA, 2024b; DCCEEW, 2025) the following species were added to the table: Western Grasswren, Southern Whiteface, Western Rosella (inland), Princess Parrot, Western Spiny-tailed Skink, Inland Hairstreak, and Arid Bronze Azure Butterfly.

* Migratory Shorebirds include: *Actitis hypoleucos* (Common Sandpiper), *Calidris alba* (Sanderling), *Calidris melanotos* (Pectoral Sandpiper), and Calidris ruficollis (Red-necked Stint).

** Based on results of a targeted survey to assess the presence of critical habitat of the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and the Inland Hairstreak (*Jalmenus aridus*) (Botanica, 2025).

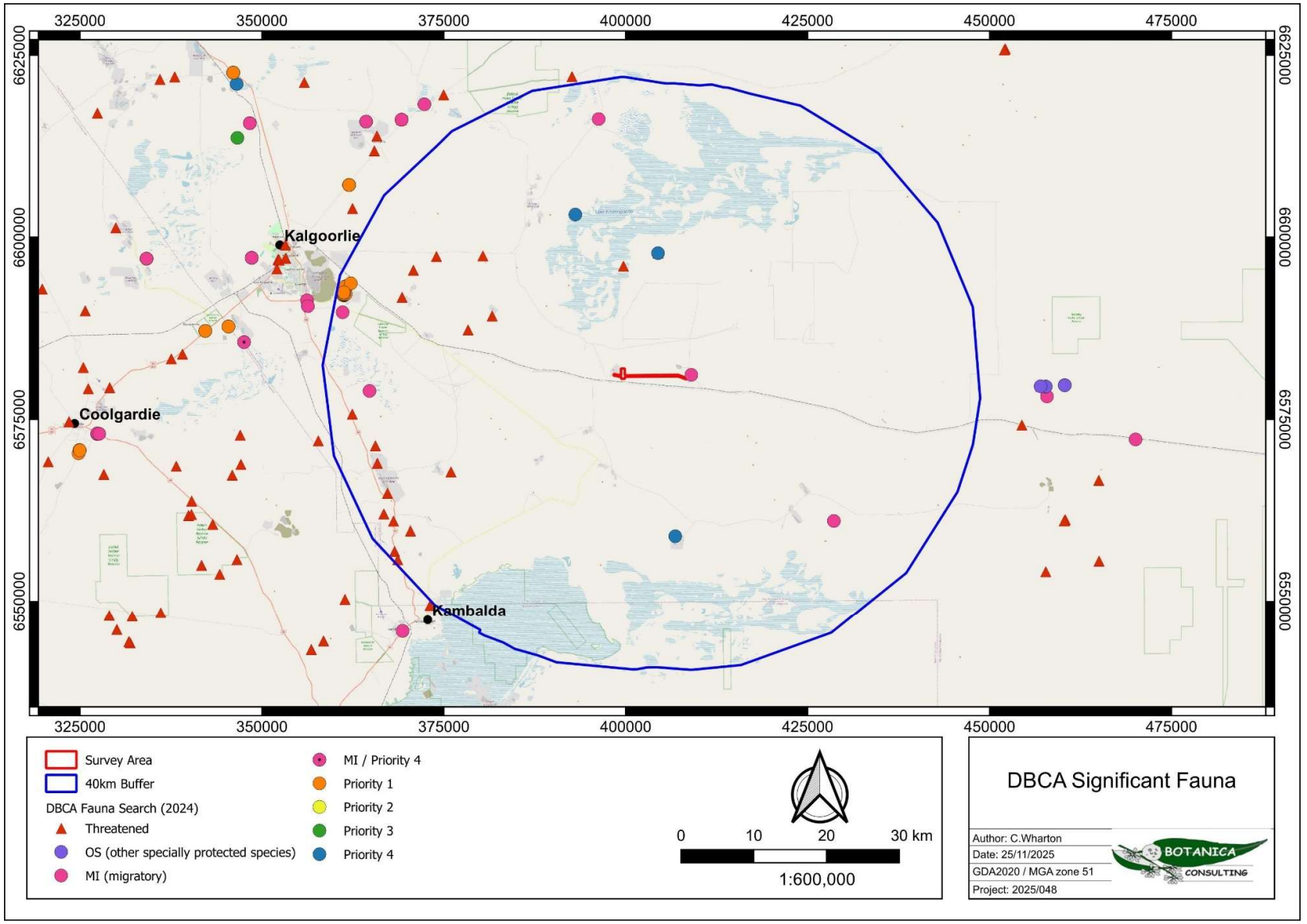

Figure 4-2: Significant fauna (DBCA, 2024b) within the desktop search area (40km Buffer)

4.2 Field Assessment

4.2.1 Flora

The field survey completed in Spring 2021 identified 102 vascular flora taxa within the original survey area. These taxa represented 62 genera across 26 families, with the most diverse families being Chenopodiaceae (16 species), followed by Fabaceae and Myrtaceae (13 species each). Dominant genera include Eremophila (12 species), Eucalyptus (11 species) and Acacia (10 species) (Botanica, 2022). The full field species inventory is listed in Appendix B.

4.2.1.1 Introduced Flora

One introduced (weed) species (*Salvia verbenaca*) was recorded within the original survey area in Spring 2021. This species is not listed as a WoNS or as a Declared Pest in Western Australia.

Table 4-5: Introduced flora species identified within the original survey area

Taxon	Common Name	Image
Salvia verbenaca	Wild sage	

4.2.1.2 Significant Flora

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

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

No Threatened, Priority or otherwise significant flora species were recorded within the survey area in Spring 2021.

4.2.2 Vegetation

4.2.2.1 Vegetation Types

Based on the Spring 2021 survey (Botanica, 2022), a total of eight broad-scale vegetation types (not including disturbed areas) were identified within the extracted survey area. Vegetation community descriptions and extents were determined from field survey results, aerial imagery interpretation and extrapolation of the communities. A map showing the vegetation types present in the survey area is provided in Figure 4-1 and a summary of vegetation types is presented in Table 4-6.

Table 4-6: Summary of vegetation types within the extracted survey area

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plain	CLP-AFW1 Area = 16.7 ha (6%)	*Acacia* woodland	*Acacia acuminata* woodland over *Dodonaea lobulata* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland	
Clay-loam plain	CLP-AOW1 Area = 14.4 ha (5.2%)	*Acacia* low open woodland	*Acacia acuminata* low open woodland over *Dodonaea lobulate* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plan	CLP-COW1 Area = 19.3 ha (6.9%)	*Casuarina* low sparse woodland	*Casuarina pauper* low sparse woodland over *Eremophila decipiens* open shrubland over *Maireana triptera* low sparse shrubland	
Clay-loam plain	CLP-EW1 Area = 32.5 ha (32.5%)	*Eucalyptus* woodland	*Eucalyptus salmonophloia* woodland over *Eremophila interstans* subs *virgata* open shrubland over *Maireana sedifolia* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plan	CLP-EW2 Area = 65.9 ha (23.6%)	*Eucalyptus* open woodland	*Eucalyptus lesouefii* open woodland over *Atriplex nummularia* subsp. *spathulata* shrubland over *Tecticornia disarticulata* low open shrubland	
Clay-loam plain	CLP-MW1 Area = 23.3 ha (8.4%)	*Eucalyptus* open mallee woodland	*Eucalyptus griffithsii* open mallee woodland over *Eremophila scoparia* sparse shrubland over *Cratystylis subspinescens* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Drainage depression	DD-EW1 Area = 31.9 ha (11.4%)	*Eucalyptus* low sparse woodland	*Eucalyptus salmonophloia* low sparse woodland over *Eremophila interstans* subsp. *virgata* open shrubland over *Maireana sedifolia* low open shrubland	
Rocky hillslope	RH-EW1 Area = 1 ha (5.2%)	*Eucalyptus* low open woodland	*Eucalyptus lesouefii, E. salmonophloia* and *E. salubris* low open woodland over *Tecticornia disarticulata* and *Atriplex nummularia* subsp. *spathulata* low open chenopod shrubland	
Cleared	Disturbed Area = 16 ha (5.7%)	-	Areas associated with existing mining operations.	

Information current at time of 2021 survey.

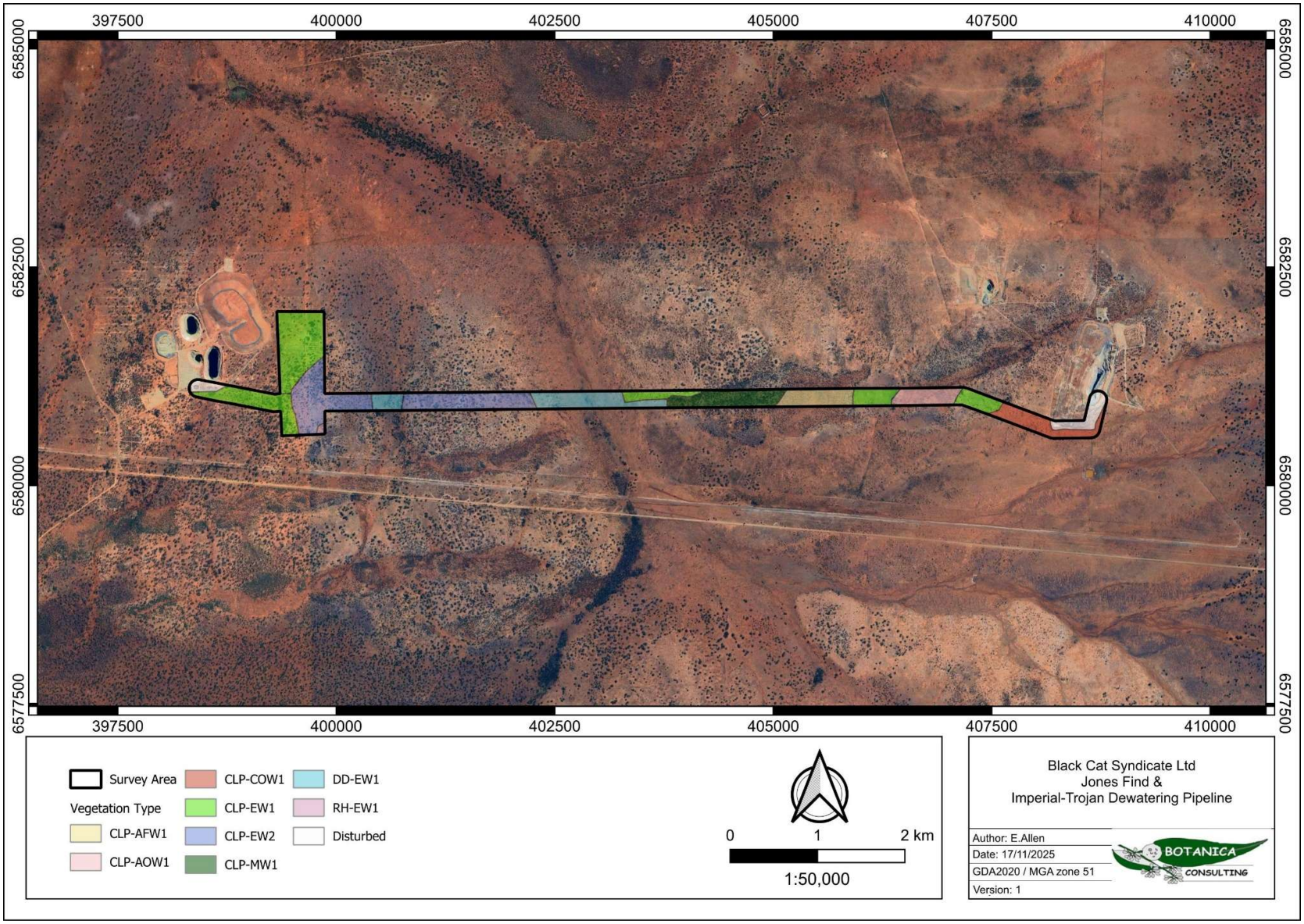

Figure 4-3: Vegetation types within the extracted survey area

4.2.2.2 Vegetation Condition

Based on the vegetation condition rating scale adapted from Keighery (1994) and Trudgen, (1988), native vegetation within the extracted survey area was categorised as 'very good' to 'good' condition (Table 4-7). Disturbances within the extracted survey area were associated with existing mining operations. A map of the vegetation condition across the survey area is provided in Figure 4-4.

Table 4-7: Vegetation condition rating within the extracted survey area

Condition rating	Description (EPA, 2016a)	Area (ha)	Area (%)
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.	263	94
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e., areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.	16	6
TOTAL		**279**	**100**

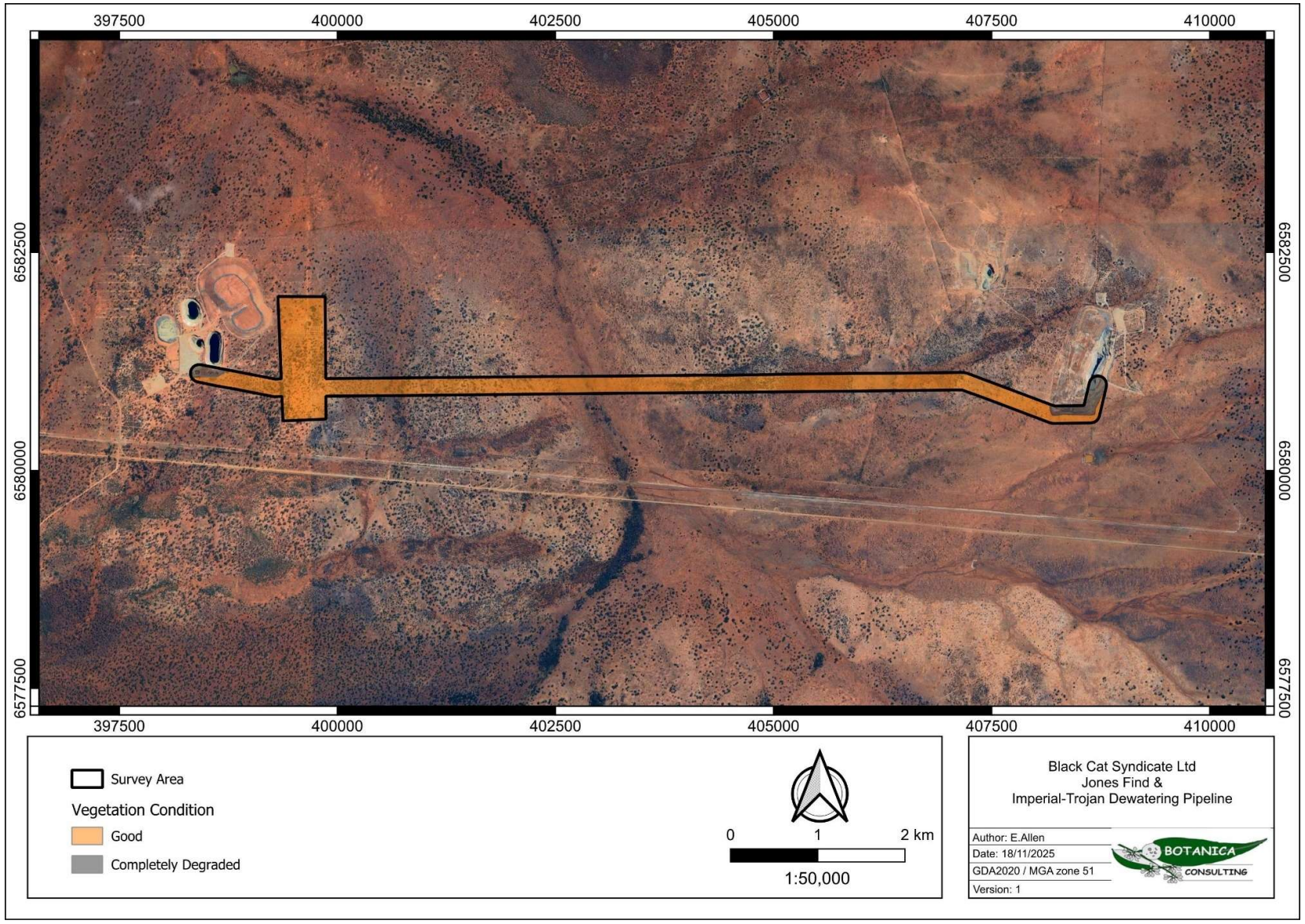

Figure 4-4: Vegetation condition rating of the extracted survey area

4.2.2.3 Significant Vegetation

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

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

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

4.2.3 Fauna

4.2.3.1 Fauna Habitat

Based on vegetation and associated landforms identified during the flora and vegetation assessment (Botanica, 2022) (Table 4-6), six broad scale terrestrial fauna habitats (not including disturbed areas) were identified within the extracted survey area. The extent of the identified fauna habitat and a summary description is provided in Table 4-8 below. A map of fauna habitats is provided in Figure 4-5.

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

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Acacia woodland on clay-loam plain Area = 31 ha (11.2%)	*Acacia acuminata* woodland over *Dodonaea shrubland*	• Ground not especially suited to burrowing species • Moderately diverse vegetation strata supporting avifauna assemblage • Moderately dense vegetation and low leaf litter	Malleefowl *Leipoa ocellata* Grey Falcon *Falco hypoleucos*	
Casuarina woodland on clay-loam plain Area = 19.3 ha (6.9%)	*Casuarina pauper* woodland over Eremophila shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Eucalyptus mallee woodland on clay-loam plain Area = 23.3 ha (8.3%)	Mixed Eucalyptus mallee woodland over Eremophila shrubland	• Ground not particularly to burrowing species • Low diversity vegetation strata • Low vegetation density and moderate leaf litter	Malleefowl *Leipoa ocellata* *Western Rosella (inland) Platycercus icterotis xanthogenys*	
Eucalyptus woodland in drainage depression Area = 31.9 ha (11.5%)	Eucalyptus woodland over Eremophila shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Eucalyptus woodland on clay loam plain Area = 156.7 ha (56.2%)	Eucalyptus woodland over Acacia and Eremophila shrubland	• Ground not especially suited to burrowing species • Moderate diversity vegetation strata • Moderate vegetation density and moderate leaf litter	Malleefowl *Leipoa ocellata* *Western Rosella (inland) Platycercus icterotis xanthogenys*	
Eucalyptus woodland on rocky hillslope Area = 1 ha (0.4%)	Eucalyptus mallee woodland over chenopod shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Cleared Area = 15.5 ha (5.6%)	Disturbed areas	• Ground is not well suited to burrowing species. • Low value foraging habitat for mammals and avifauna due to lack of native vegetation. • Man made structures (e.g., buildings) provide good refuge for reptiles.	-	

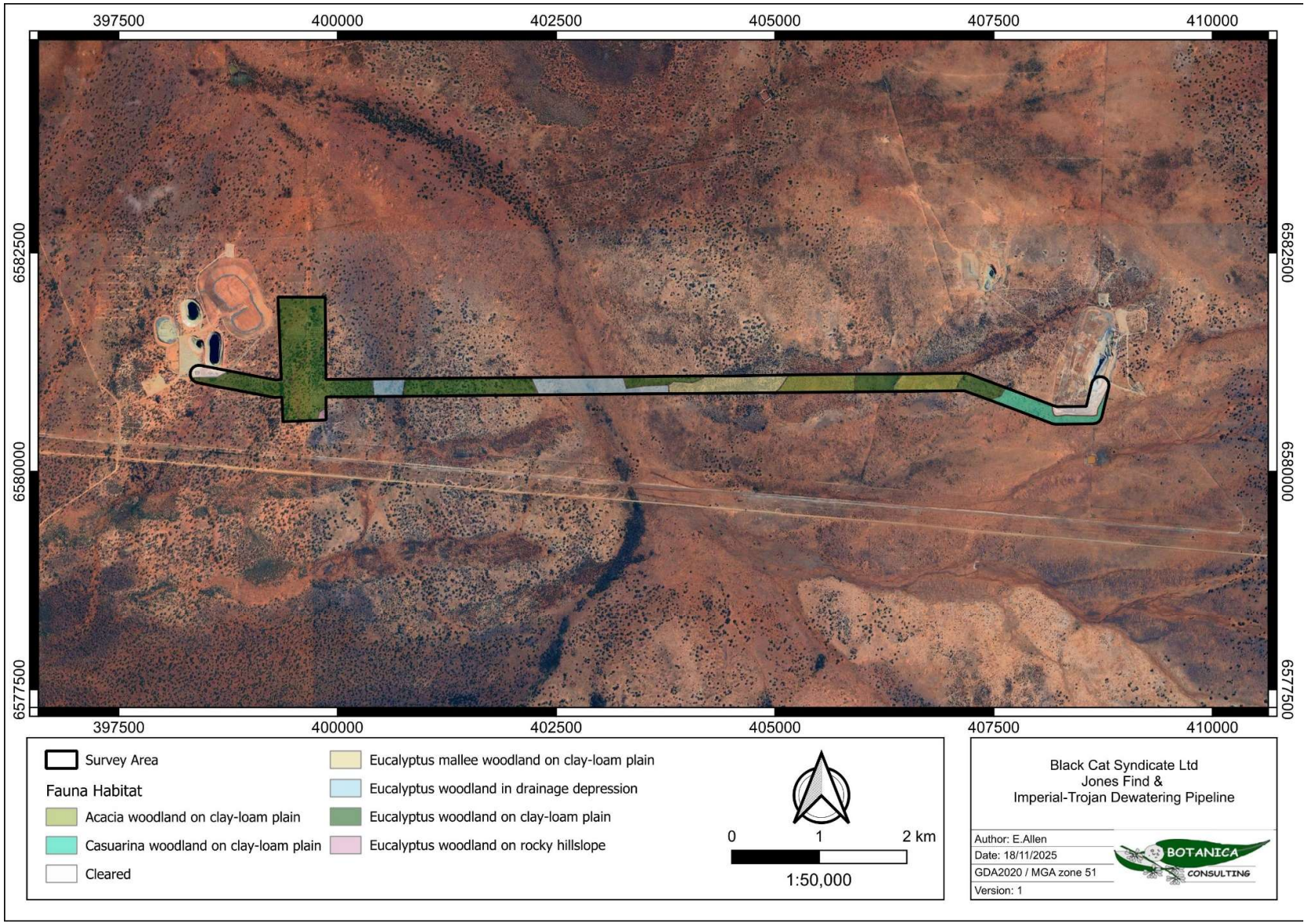

Figure 4-5: Fauna habitats within the extracted survey area

4.2.3.2 Significant Fauna

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

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

No evidence for the presence of Malleefowl, including nesting mounds, tracks or other signs, were recorded within the survey area in Spring 2021. No other evidence of other significant fauna species were observed during the survey (Botanica, 2022).

The current status of some species on site and/or in the general area is difficult to determine, however, based on the habitats present and/ or recent nearby records, the following species of conservation significance can be regarded as possibly utilising the extracted survey area for some purpose at times:

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

  This species is occasionally recorded in the Eastern Goldfields subregion. Habitat appears marginal/or unsuitable for breeding, however occasional transients could potentially occur. No evidence of Malleefowl activity (inactive or active mounds, tracks, feathers or bird observations *etc*.) were observed within the survey area. Significant impact unlikely.

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

4.3 Matters of National Environmental Significance

4.3.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

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

The EPBC Act covers nine protected matters:

- world heritage areas
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- water resources (that relate to unconventional gas development and large coal mining development).

No MNES as defined by the EPBC Act were identified within the survey area.

4.4 Matters of State Environmental Significance

4.4.1 *Environmental Protection Act 1986* (WA)

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

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

Environmentally sensitive areas (ESAs) are classes or areas of native vegetation as declared in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005* for the purposes of Part V

Division 2 of the EP Act, where the exemptions for clearing vegetation under the Clearing Regulations do not apply.

The following areas are declared to be ESAs:

- a declared World Heritage property as defined in section 13 of the EPBC Act;
- an area that is included on the Register of the National Estate, because of its natural heritage value, under the Australian Heritage Council Act 2003 of the Commonwealth;
- a defined wetland and the area within 50 m of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands;
- the area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located;
- the area covered by a TEC;
- a Bush Forever site listed in "Bush Forever" Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission;
- the areas covered by the following policies –
    - *Environmental Protection (Gnangara Mound Crown Land) Policy 1992*;
    - *Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002*;
- the areas covered by the lakes to which the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* applies; and
- protected wetlands as defined in the *Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998*.

No ESAs declared under the EP Act were identified within the survey area.

Additionally, in accordance with Schedule 1, Clause 4 of the Clearing Regulations, clearing of native vegetation in a 'Schedule One Area' for mining purposes is not permitted without a clearing permit. No Schedule One Areas occur within the survey area.

4.4.2 Biodiversity Conservation Act 2016 (WA)

The BC Act is administered by the DBCA to conserve and protect biodiversity and to promote the ecologically sustainable use of biodiversity components in the State of Western Australia. Under the BC Act, native species are listed as Threatened when they face a high to very high risk of extinction in the wild, and ecological communities are listed as Threatened when they face a high to very high risk of collapse. Whilst all native flora and fauna are protected throughout the State, special

protection is afforded to threatened flora and ecological communities, with the authorisation of the Minister being required before such flora can be taken or communities modified.

Furthermore, The Minister may list vegetation as a 'critical habitat' if it is critical to the survival of a threatened species or ecological community. Under Section 54(1) of the BC Act, habitat is eligible for listing as critical habitat if:

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

No TECs, Threatened species or critical habitat listed under the BC Act were recorded within the survey area (Botanica, 2022).

4.5 Other areas of Conservation Significance

The DBCA lists 'Priority' species and communities which are under consideration for declaration as 'Threatened' under the BC Act. These Priority species/ communities have no formal legal protection until they are endorsed by the Minister as being Threatened. No Priority species or PECs as listed by DBCA were identified within the survey area (Botanica, 2022).

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

There are no proposed nor gazetted conservation reserves within the survey area. The nearest conservation reserve is the Majestic Timber Reserve, located approximately 600 m south of the survey area.

4.6 Native Vegetation Clearing Principles

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the EP Act (Table 4-9). The assessment found that the proposed vegetation clearing activities are not at variance with any of the clearing principles.

Table 4-9: Assessment against native vegetation clearing principles

Letter	Principle	Assessment	Outcome
Native vegetation should not be cleared if it:			
(a)	comprises a high level of biological diversity.	Vegetation within the survey area is considered to be of moderate biological diversity. No Threatened, Priority or otherwise significant flora or ecological communities were identified within the survey area.	Clearing is unlikely to be at variance with this principle

Letter	Principle Native vegetation should not be cleared if it:	Assessment	Outcome
(b)	comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to WA.	The basic fauna search did not record any evidence for the presence of significant fauna or habitat within the survey area. A targeted survey for critical habitat assessment pertaining to the conservation significant butterfly species Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and Inland Hairstreak (*Jalmenus aridus*) (Botanica, 2025), confirms that the survey area does not contain critical habitat associated with these species.	Clearing is unlikely to be at variance with this principle
(c)	includes, or is necessary for the continued existence of rare flora.	No Threatened Flora taxa, pursuant to the BC Act and the EPBC Act were identified within the survey area.	Clearing is unlikely to be at variance with this principle
(d)	comprises the whole or part of or is necessary for the maintenance of a threatened ecological community (TEC).	No Threatened Ecological Communities were identified as potentially occurring within the survey area.	Clearing is not at variance with this principle
(e)	is significant as a remnant of native vegetation in an area that has been extensively cleared	All vegetation associations retain over 98% of their pre-European extent.	Clearing is unlikely to be at variance with this principle
(f)	is growing, in, or in association with, an environment associated with a watercourse or wetland	One minor ephemeral drainage line was identified within the survey area.	Clearing is unlikely to be at variance with this principle
(g)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The survey area and surrounding region has not been extensively cleared. Clearing within the survey area is not considered likely to lead to land degradation issues such as salinity, water logging or acidic soils.	Clearing is unlikely to be at variance with this principle
(h)	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	Clearing within the survey area is considered unlikely to impact the adjacent Majestic Timber Reserve. Noting that the Trans-Australian Railway corridor and Trans Access Road are located between the survey area and the Majestic Timber Reserve.	Clearing is unlikely to be at variance with this principle
(i)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	No surface water bodies were identified within the survey area. No potential terrestrial GDEs were identified within the survey area. Clearing activities are unlikely to impact hydrological systems.	Clearing is unlikely to be at variance with this principle
(j)	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	Rainfall in the Eastern Goldfields subregion has an average rainfall of 200-300mm and an evaporation rate of 2400 mm. Rainfall data for Kalgoorlie-Boulder indicates that rainfall is spread throughout the year and rainfall events are unlikely to result in localised	Clearing is unlikely to be at variance with this principle

Letter	Principle Native vegetation should not be cleared if it:	Assessment	Outcome
		flooding. Clearing within the survey area is not likely to increase the incidence or intensity of flooding within the survey area or surrounds.	

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APPENDIX A:
CONSERVATION CATEGORIES (BC ACT AND EPBC ACT)

Definitions of Conservation Significant Species

Code	Category
State categories of Threatened and Priority species	
Threatened Species (T) Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as Threatened species under section 26(2) of the BC Act. - Published under Schedule 2 of the *Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1060-1069).* - Published under Schedule 1 of the *Biodiversity Conservation (Listing of Native Species) (Flora) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1070-1075).*	
CR	**Critically Endangered** Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
EN	**Endangered** Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
VU	**Vulnerable** Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under Schedule 2 Division 3 of the *Biodiversity Conservation (Listing of Native Species)*
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild. - Published under Schedule 3 of the *Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1060-1069).* - Published under Schedule 2 of the *Biodiversity Conservation (Listing of Native Species) (Flora) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1070-1075).*	
EX	**Extinct** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
EW	**Extinct in the Wild** Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no Threatened fauna or Threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species. *- Published under Schedule 1 of the Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78).*	
CD	**Species of special conservation interest** Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as Threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Code	Category
IA	**International Agreement/ Migratory** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).
Priority species Possibly Threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of Priority for survey and evaluation of conservation status so that consideration can be given to their declaration as Threatened Fauna or Flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.	
P1	**Priority 1: Poorly-known species** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
P2	**Priority 2: Poorly-known species** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
P3	**Priority 3: Poorly-known species** Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
P4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Commonwealth categories of Threatened species	
EX	**Extinct** Taxa where there is no reasonable doubt that the last member of the species has died.
EW	**Extinct in the Wild** Taxa where it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CR	**Critically Endangered** Taxa that are facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

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

Definitions of Conservation Significant Communities

Code	Category
State categories of Threatened Ecological Communities (TEC)	
PD	**Presumed Totally Destroyed**
	An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies:
	• records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or;
	• all occurrences recorded within the last 50 years have since been destroyed.
CR	**Critically Endangered**
	An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	**Endangered**
	An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short-term future, or is unlikely to be substantially rehabilitated in the short-term future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the short-term future.
VU	**Vulnerable**
	An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria:
	The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated;
	The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution;
	The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.
Commonwealth categories of Threatened Ecological Communities (TEC)	
CE	**Critically Endangered** If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).

Code	Category
EN	**Endangered** If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
VU	**Vulnerable** If, at that time, an ecological community is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).
Priority Ecological Communities	
P1	**Poorly-known ecological communities**
	Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	**Poorly-known ecological communities**
	Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	**Poorly known ecological communities**
	Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:
	Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
	Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	**Ecological communities that are adequately known, rare but not threatened** or meet criteria for near threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.
P5	**Conservation Dependent ecological communities**
	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

APPENDIX B:
LIST OF SPECIES IDENTIFIED WITHIN EACH VEGETATION TYPE

(A) and blue text-denotes annual taxa; (W) and green text-denotes introduced flora (WAHERB, 1998-)

Green highlighted columns indicate vegetation types within the extracted survey area.

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
Aizoaceae	*Gunniopsis quadrifida*				*		*		
Amaranthaceae	*Ptilotus aervoides*	*	*	*					
	Ptilotus exaltatus		*	*					*
	Ptilotus holosericeus		*				*	*	*
	Ptilotus obovatus	*	*	*	*				*
Apocynaceae	*Alyxia buxifolia*	*						*	*
	Leichhardtia australis	*		*			*	*	*
Asparagaceae	*Thysanotus manglesianus*	*		*					*
Asteraceae	*Cratystylis conocephala*	*			*	*		*	
	Cratystylis microphylla		*				*	*	*
	Cratystylis subspinescens			*	*		*	*	
	Erymophyllum ramosum						*		*
	Olearia muelleri		*	*					*
	Olearia pimelioides							*	*
	Rhodanthe floribunda								
Boraginaceae	*Halgania andromedifolia*				*		*		*
Casuarinaceae	*Casuarina pauper*	*		*			*	*	
Chenopodiaceae	*Atriplex nummularia* subsp. *spathulata*	*		*	*	*		*	*
	Atriplex stipitate		*		*	*			*
	Atriplex vesicaria		*		*		*	*	

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Chenopodium curvispicatum	*		*					*
	Maireana georgei	*		*	*			*	
	Maireana oppositifolia	*	*			*		*	*
	Maireana pentatropis		*			*	*	*	
	Maireana pyramidata			*			*	*	
	Maireana sedifolia	*		*				*	
	Maireana trichoptera		*				*	*	*
	Maireana triptera	*	*	*	*		*		
	Rhagodia eremaea		*				*	*	*
	Sclerolaena densiflora	*	*				*		
	Sclerolaena diacantha	*	*		*	*	*	*	*
	Sclerolaena parviflora			*	*	*	*	*	
	Tecticornia disarticulata					*		*	
Fabaceae	*Acacia acuminata*	*	*		*				*
	Acacia colletioides	*			*				
	Acacia erinacea	*	*		*				*
	Acacia hemiteles		*	*	*		*		
	Acacia jennerae			*	*		*	*	
	Acacia kalgoorliensis				*				
	Acacia murrayana		*				*	*	
	Acacia oswaldii								
	Acacia collegialis								
	Acacia tetragonophylla								
	Glycyrrhiza acanthocarpa							*	
	Senna artemisioides subsp. *filifolia*		*	*	*	*			*
	Swainsona canescens				*			*	
Frankeniaceae	*Frankenia setosa*							*	
Goodeniaceae	*Scaevola spinescens*	*		*					*
Hemerocallidaceae	*Dianella revoluta*	*	*	*					*
Lamiaceae	*Salvia verbenaca (W)*							*	

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Westringia rigida	*	*	*					*
Nyctaginaceae	*Boerhavia coccinea*								*
Malvaceae	*Lawrencia glomerata*							*	
	Sida spodochroma		*	*	*		*	*	
Myrtaceae	*Eucalyptus celastroides*							*	
	Eucalyptus griffithsii	*	*	*	*				*
	Eucalyptus lesouefii		*	*		*			*
	Eucalyptus oleosa		*	*		*	*	*	
	Eucalyptus salmonophloia				*			*	
	Eucalyptus salubris				*	*	*		
	Eucalyptus stricklandii					*			
	Eucalyptus torquata								
	Eucalyptus ewartiana								*
	Eucalyptus transcontinentalis			*			*		
	Eucalyptus yilgarnensis				*	*		*	
	Melaleuca lateriflora								
	Melaleuca sheathiana					*	*		
Pittosporaceae	Pittosporum angustifolium			*			*	*	
Poaceae	*Aristida contorta*	*	*	*	*				
	Austrostipa elegantissima		*	*	*				*
	Austrostipa nitida	*			*	*		*	
	Cymbopogon ambiguus							*	*
	Enneapogon caerulescens	*	*				*	*	
	Eragrostis eriopoda	*	*					*	*
	Triodia scariosa	*		*					
	Enteropogon ramosus			*					*
Proteaceae	*Grevillea acuaria*					*			*
	Grevillea nematophylla		*						*
Rutaceae	*Philotheca brucei*								*
Santalaceae	*Exocarpos aphyllus*			*		*			

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Santalum acuminatum					*	*	*	
	Santalum spicatum	*	*	*			*		
Sapindaceae	*Alectryon oleifolius*				*			*	
	Dodonaea lobulata				*		*		*
	Dodonaea viscosa								*
Scrophulariaceae	*Eremophila alternifolia*			*			*		
	Eremophila clarkei							*	
	Eremophila dempsteri						*		
	Eremophila decipiens			*	*				
	Eremophila glabra			*					
	Eremophila interstans								
	Eremophila interstans subsp. *virgata*							*	
	Eremophila ionantha				*				
	Eremophila oldfieldii subsp. *angustifolia*		*						*
	Eremophila parvifolia				*	*			
	Eremophila pustulata								
	Eremophila scoparia			*	*	*		*	*
Solanaceae	*Lycium australe*					*	*	*	
	Solanum hoplopetalum							*	
	Solanum lasiophyllum	*	*	*	*		*		*
Thymelaeaceae	*Pimelea microcephala*	*			*				*
Zygophyllaceae	*Roepera eremaea*		*				*	*	

APPENDIX C:
VEGETATION CONDITION RATING

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

APPENDIX D:
ATLAS OF LIVING AUSTRALIA DESKTOP SEARCH (40KM)

(ALA, 2022)

Vascular Flora

Family	Taxon
Aizoaceae	*Carpobrotus edulis* subsp. *edulis*
Aizoaceae	*Carpobrotus rossii*
Aizoaceae	*Disphyma crassifolium* subsp. *clavellatum*
Aizoaceae	*Gunniopsis quadrifida*
Aizoaceae	*Mesembryanthemum crystallinum*
Aizoaceae	*Mesembryanthemum nodiflorum*
Aizoaceae	*Tetragonia eremaea*
Amaranthaceae	*Ptilotus carlsonii*
Amaranthaceae	*Ptilotus holosericeus*
Amaranthaceae	*Ptilotus nobilis* subsp. *nobilis*
Amaranthaceae	*Ptilotus obovatus*
Amaranthaceae	*Ptilotus rigidus*
Amaranthaceae	*Surreya diandra*
Apocynaceae	*Alyxia tetanifolia*
Apocynaceae	*Marsdenia australis*
Apocynaceae	*Vincetoxicum lineare*
Araliaceae	*Trachymene ornata*
Asparagaceae	*Arthropodium* sp. Goldfields (H.Pringle 2188)
Asparagaceae	*Chamaexeros fimbriata*
Asparagaceae	*Thysanotus manglesianus*
Asphodelaceae	*Bulbine semibarbata*
Asteraceae	*Angianthus tomentosus*
Asteraceae	*Asteridea athrixioides*
Asteraceae	*Asteridea chaetopoda*
Asteraceae	*Brachyscome ciliaris*
Asteraceae	*Brachyscome lineariloba*
Asteraceae	*Calotis multicaulis*
Asteraceae	*Calotis plumulifera*
Asteraceae	*Carduus tenuiflorus*
Asteraceae	*Carthamus lanatus*
Asteraceae	*Centaurea melitensis*
Asteraceae	*Chrysocephalum semipapposum*
Asteraceae	*Cratystylis conocephala*
Asteraceae	*Cratystylis microphylla*
Asteraceae	*Cratystylis subspinescens*
Asteraceae	*Hyalosperma glutinosum*
Asteraceae	*Hyalosperma glutinosum* subsp. *glutinosum*
Asteraceae	*Isoetopsis graminifolia*
Asteraceae	*Leiocarpa websteri*
Asteraceae	*Lemooria burkittii*
Asteraceae	*Leontodon rhagadioloides*
Asteraceae	*Millotia myosotidifolia*
Asteraceae	*Minuria cunninghamii*
Asteraceae	*Monoculus monstrosus*
Asteraceae	*Olearia muelleri*
Asteraceae	*Olearia pimeleoides*
Asteraceae	*Oligocarpus calendulaceus*
Asteraceae	*Oncosiphon suffruticosum*
Asteraceae	*Podolepis capillaris*
Asteraceae	*Pterocaulon sphacelatum*
Asteraceae	*Rhodanthe chlorocephala* subsp. *rosea*
Asteraceae	*Rhodanthe floribunda*
Asteraceae	*Rhodanthe stricta*
Asteraceae	*Senecio glossanthus*
Asteraceae	*Senecio gregorii*
Asteraceae	*Senecio lacustrinus*
Asteraceae	*Sonchus oleraceus*
Asteraceae	*Streptoglossa liatroides*
Asteraceae	*Symphyotrichum squamatum*
Asteraceae	*Trichanthodium skirrophorum*
Asteraceae	*Vittadinia sulcata*
Asteraceae	*Waitzia acuminata* var. *acuminata*
Boraginaceae	*Halgania cyanea*
Boraginaceae	*Halgania cyanea* var. Allambi Stn (B.W.Strong 676)
Boraginaceae	*Halgania cyanea* var. Charleville (R.W.Purdie+ 111)

Boraginaceae	*Halgania lavandulacea*
Boraginaceae	*Heliotropium curassavicum*
Boraginaceae	*Heliotropium europaeum*
Boraginaceae	*Heliotropium supinum*
Brassicaceae	*Alyssum linifolium*
Brassicaceae	*Arabidella trisecta*
Brassicaceae	*Carrichtera annua*
Brassicaceae	*Lepidium africanum*
Brassicaceae	*Lepidium oxytrichum*
Brassicaceae	*Lepidium phlebopetalum*
Brassicaceae	*Lepidium platypetalum*
Brassicaceae	*Sisymbrium erysimoides*
Brassicaceae	*Sisymbrium irio*
Brassicaceae	*Sisymbrium orientale*
Brassicaceae	*Stenopetalum lineare*
Brassicaceae	*Stenopetalum pedicellare*
Cactaceae	*Cylindropuntia fulgida* var. *mamillata*
Caryophyllaceae	*Spergularia marina*
Casuarinaceae	*Allocasuarina acuaria*
Casuarinaceae	*Allocasuarina helmsii*
Casuarinaceae	*Casuarina pauper*
Chenopodiaceae	*Atriplex acutibractea*
Chenopodiaceae	*Atriplex acutibractea* subsp. *acutibractea*
Chenopodiaceae	*Atriplex amnicola*
Chenopodiaceae	*Atriplex codonocarpa*
Chenopodiaceae	*Atriplex eardleyae*
Chenopodiaceae	*Atriplex holocarpa*
Chenopodiaceae	*Atriplex nana*
Chenopodiaceae	*Atriplex nummularia*
Chenopodiaceae	*Atriplex nummularia* subsp. *spathulata*
Chenopodiaceae	*Atriplex semibaccata*
Chenopodiaceae	*Atriplex stipitata*
Chenopodiaceae	*Atriplex vesicaria*
Chenopodiaceae	*Atriplex vesicaria* subsp. *variabilis*
Chenopodiaceae	*Chenopodium album*
Chenopodiaceae	*Chenopodium curvispicatum*
Chenopodiaceae	*Didymanthus roei*
Chenopodiaceae	*Dysphania kalpari*
Chenopodiaceae	*Enchylaena tomentosa*
Chenopodiaceae	*Eriochiton sclerolaenoides*
Chenopodiaceae	*Maireana amoena*
Chenopodiaceae	*Maireana appressa*
Chenopodiaceae	*Maireana brevifolia*
Chenopodiaceae	*Maireana erioclada*
Chenopodiaceae	*Maireana georgei*
Chenopodiaceae	*Maireana glomerifolia*
Chenopodiaceae	*Maireana pentatropis*
Chenopodiaceae	*Maireana platycarpa*
Chenopodiaceae	*Maireana pyramidata*
Chenopodiaceae	*Maireana sedifolia*
Chenopodiaceae	*Maireana trichoptera*
Chenopodiaceae	*Rhagodia drummondii*
Chenopodiaceae	*Rhagodia preissii* subsp. *preissii*
Chenopodiaceae	*Salsola australis*
Chenopodiaceae	*Sclerolaena brevifolia*
Chenopodiaceae	*Sclerolaena diacantha*
Chenopodiaceae	*Sclerolaena drummondii*
Chenopodiaceae	*Sclerolaena eurotioides*
Chenopodiaceae	*Sclerolaena obliquicuspis*
Chenopodiaceae	*Sclerolaena patenticuspis*
Chenopodiaceae	*Tecticornia chartacea*
Chenopodiaceae	*Tecticornia disarticulata*
Chenopodiaceae	*Tecticornia doleiformis*
Chenopodiaceae	*Tecticornia doliiformis*
Chenopodiaceae	*Tecticornia flabelliformis*
Chenopodiaceae	*Tecticornia indica* subsp. *bidens*
Chenopodiaceae	*Tecticornia lylei*
Chenopodiaceae	*Tecticornia peltata*
Chenopodiaceae	*Tecticornia pergranulata* subsp. *pergranulata*
Chenopodiaceae	*Tecticornia pruinosa*
Chenopodiaceae	*Tecticornia pterygosperma* subsp. *pterygosperma*
Chenopodiaceae	*Tecticornia syncarpa*
Chenopodiaceae	*Tecticornia triandra*
Chenopodiaceae	*Tecticornia undulata*
Cleomaceae	*Cleome tetrandra*
Colchicaceae	*Wurmbea tenella*
Convolvulaceae	*Convolvulus remotus*
Convolvulaceae	*Wilsonia humilis*
Crassulaceae	*Bryophyllum delagoense*
Cucurbitaceae	*Citrullus colocynthis*
Cupressaceae	*Callitris columellaris*
Cupressaceae	*Callitris glaucophylla*
Cyperaceae	*Chrysitrix distigmatosa*
Cyperaceae	*Eleocharis acutangula*
Dilleniaceae	*Hibbertia ancistrophylla*
Dilleniaceae	*Hibbertia* sp.
Euphorbiaceae	*Bertya dimerostigma*

Euphorbiaceae	*Beyeria lechenaultii*
Euphorbiaceae	*Euphorbia drummondii*
Euphorbiaceae	*Monotaxis bracteata*
Euphorbiaceae	*Monotaxis grandiflora* var. *obtusifolia*
Fabaceae	*Acacia acuminata*
Fabaceae	*Acacia aneura*
Fabaceae	*Acacia aneura* var. *aneura*
Fabaceae	*Acacia aptaneura*
Fabaceae	*Acacia burkittii*
Fabaceae	*Acacia collegialis*
Fabaceae	*Acacia colletioides*
Fabaceae	*Acacia donaldsonii*
Fabaceae	*Acacia erinacea*
Fabaceae	*Acacia hemiteles*
Fabaceae	*Acacia inceana* subsp. *inceana*
Fabaceae	*Acacia jennerae*
Fabaceae	*Acacia kalgoorliensis*
Fabaceae	*Acacia lasiocalyx*
Fabaceae	*Acacia masliniana*
Fabaceae	*Acacia merrallii*
Fabaceae	*Acacia murrayana*
Fabaceae	*Acacia nyssophylla*
Fabaceae	*Acacia oswaldii*
Fabaceae	*Acacia prainii*
Fabaceae	*Acacia quadrimarginea*
Fabaceae	*Acacia resinistipulea*
Fabaceae	*Acacia resinosa*
Fabaceae	*Acacia warramaba*
Fabaceae	*Acacia websteri*
Fabaceae	*Acacia xerophila*
Fabaceae	*Acacia xerophila* var. *brevior*
Fabaceae	*Chorizema racemosum*
Fabaceae	*Cullen discolor*
Fabaceae	*Daviesia croniniana*
Fabaceae	*Glycyrrhiza acanthocarpa*
Fabaceae	*Jacksonia arida*
Fabaceae	*Medicago polymorpha*
Fabaceae	*Pultenaea* sp.
Fabaceae	*Senna artemisioides*
Fabaceae	*Senna artemisioides* subsp. *filifolia*
Fabaceae	*Senna cardiosperma*
Fabaceae	*Senna flexuosa*
Fabaceae	*Senna pleurocarpa* var. *angustifolia*
Fabaceae	*Senna stowardii*

Fabaceae	*Swainsona affinis*
Fabaceae	*Swainsona beasleyana*
Fabaceae	*Swainsona canescens*
Fabaceae	*Swainsona colutoides*
Fabaceae	*Swainsona formosa*
Fabaceae	*Swainsona kingii*
Fabaceae	*Templetonia incrassata*
Frankeniaceae	*Frankenia desertorum*
Frankeniaceae	*Frankenia interioris*
Frankeniaceae	*Frankenia interioris* var. *interioris*
Frankeniaceae	*Frankenia pauciflora*
Frankeniaceae	*Frankenia setosa*
Frankeniaceae	*Frankenia* sp. (aff. confusa)
Geraniaceae	*Erodium cicutarium*
Geraniaceae	*Erodium crinitum*
Geraniaceae	*Erodium cygnorum*
Goodeniaceae	*Coopernookia strophiolata*
Goodeniaceae	*Dampiera latealata*
Goodeniaceae	*Dampiera stenostachya*
Goodeniaceae	*Goodenia azurea*
Goodeniaceae	*Goodenia havilandii*
Goodeniaceae	*Lechenaultia pulvinaris*
Goodeniaceae	*Scaevola oxyclona*
Goodeniaceae	*Scaevola spinescens*
Haloragaceae	*Haloragis gossei*
Haloragaceae	*Haloragis trigonocarpa*
Lamiaceae	*Dicrastylis parvifolia*
Lamiaceae	*Dicrastylis reticulata*
Lamiaceae	*Lachnostachys coolgardiensis*
Lamiaceae	*Physopsis viscida*
Lamiaceae	*Prostanthera althoferi*
Lamiaceae	*Prostanthera althoferi* subsp. *althoferi*
Lamiaceae	*Prostanthera incurvata*
Lamiaceae	*Salvia verbenaca*
Lamiaceae	*Teucrium disjunctum*
Lamiaceae	*Westringia cephalantha*
Lamiaceae	*Westringia rigida*
Loranthaceae	*Amyema fitzgeraldii*
Loranthaceae	*Amyema miquelii*
Loranthaceae	*Amyema pendula*
Loranthaceae	*Amyema preissii*
Malvaceae	*Abutilon cryptopetalum*
Malvaceae	*Androcalva luteiflora*
Malvaceae	*Brachychiton gregorii*

Malvaceae	*Lawrencia diffusa*
Malvaceae	*Lawrencia glomerata*
Malvaceae	*Lawrencia helmsii*
Malvaceae	*Lawrencia repens*
Malvaceae	*Lawrencia squamata*
Malvaceae	*Malva preissiana*
Malvaceae	*Radyera farragei*
Malvaceae	*Sida calyxhymenia*
Malvaceae	*Sida intricata*
Malvaceae	*Sida spodochroma*
Martyniaceae	*Proboscidea louisianica*
Myrtaceae	*Calothamnus chrysanthereus*
Myrtaceae	*Calytrix merrelliana*
Myrtaceae	*Cyathostemon divaricatus*
Myrtaceae	*Darwinia* sp. Karonie (K.Newbey 8503)
Myrtaceae	*Enekbatus clavifolius*
Myrtaceae	*Eucalyptus campaspe*
Myrtaceae	*Eucalyptus celastroides*
Myrtaceae	*Eucalyptus celastroides* subsp. *celastroides*
Myrtaceae	*Eucalyptus ceratocorys*
Myrtaceae	*Eucalyptus concinna*
Myrtaceae	*Eucalyptus eremicola*
Myrtaceae	*Eucalyptus eremophila*
Myrtaceae	*Eucalyptus griffithsii*
Myrtaceae	*Eucalyptus horistes*
Myrtaceae	*Eucalyptus hypolaena*
Myrtaceae	*Eucalyptus kruseana*
Myrtaceae	*Eucalyptus leptophylla*
Myrtaceae	*Eucalyptus lesouefii*
Myrtaceae	*Eucalyptus longissima*
Myrtaceae	*Eucalyptus oleosa*
Myrtaceae	*Eucalyptus oleosa* subsp. *oleosa*
Myrtaceae	*Eucalyptus orbifolia*
Myrtaceae	*Eucalyptus planipes*
Myrtaceae	*Eucalyptus platycorys*
Myrtaceae	*Eucalyptus ravida*
Myrtaceae	*Eucalyptus salicola*
Myrtaceae	*Eucalyptus salmonophloia*
Myrtaceae	*Eucalyptus salubris*
Myrtaceae	*Eucalyptus stricklandii*
Myrtaceae	*Eucalyptus tenuis*
Myrtaceae	*Eucalyptus torquata*
Myrtaceae	*Eucalyptus transcontinentalis*
Myrtaceae	*Eucalyptus vittata*

Myrtaceae	*Eucalyptus websteriana*
Myrtaceae	*Eucalyptus websteriana* subsp. *websteriana*
Myrtaceae	*Eucalyptus x brachyphylla*
Myrtaceae	*Eucalyptus yilgarnensis*
Myrtaceae	*Leptospermum nitens*
Myrtaceae	*Melaleuca coccinea*
Myrtaceae	*Melaleuca fulgens* subsp. *fulgens*
Myrtaceae	*Melaleuca hamata*
Myrtaceae	*Melaleuca lateriflora*
Myrtaceae	*Melaleuca sheathiana*
Myrtaceae	*Melaleuca uncinata*
Myrtaceae	*Melaleuca xerophila*
Myrtaceae	*Micromyrtus monotaxis*
Myrtaceae	*Thryptomene australis* subsp. *brachyandra*
Myrtaceae	*Verticordia chrysantha*
Myrtaceae	*Verticordia helmsii*
Myrtaceae	*Verticordia picta*
Myrtaceae	*Verticordia rennieana*
Orchidaceae	*Pterostylis tryphera*
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*
Pittosporaceae	*Pittosporum angustifolium*
Plantaginaceae	*Plantago drummondii*
Poaceae	*Austrostipa drummondii*
Poaceae	*Austrostipa elegantissima*
Poaceae	*Austrostipa eremophila*
Poaceae	*Austrostipa nitida*
Poaceae	*Austrostipa scabra*
Poaceae	*Austrostipa scabra* subsp. *scabra*
Poaceae	*Austrostipa tuckeri*
Poaceae	*Bromus diandrus*
Poaceae	*Cenchrus ciliaris*
Poaceae	*Cenchrus setaceus*
Poaceae	*Chloris truncata*
Poaceae	*Enneapogon caerulescens*
Poaceae	*Enneapogon cylindricus*
Poaceae	*Enneapogon polyphyllus*
Poaceae	*Eragrostis dielsii*
Poaceae	*Eragrostis falcata*
Poaceae	*Hordeum glaucum*
Poaceae	*Panicum effusum*
Poaceae	*Paspalidium gracile*
Poaceae	*Phalaris minor*
Poaceae	*Polypogon monspeliensis*
Poaceae	*Puccinellia ciliata*

Poaceae	*Rytidosperma caespitosum*
Poaceae	*Triodia irritans*
Poaceae	*Triodia scariosa*
Polygalaceae	*Comesperma scoparium*
Polygonaceae	*Persicaria prostrata*
Polygonaceae	*Rumex hypogaeus*
Polygonaceae	*Rumex vesicarius*
Portulacaceae	*Calandrinia lefroyensis*
Portulacaceae	*Calandrinia polyandra*
Portulacaceae	*Calandrinia* sp. Gypsum (F.Obbens & L.Hancock FO 10/14)
Portulacaceae	*Calandrinia translucens*
Primulaceae	*Lysimachia arvensis*
Proteaceae	*Grevillea acacioides*
Proteaceae	*Grevillea acuaria*
Proteaceae	*Grevillea didymobotrya* subsp. *didymobotrya*
Proteaceae	*Grevillea haplantha* subsp. *haplantha*
Proteaceae	*Grevillea huegelii*
Proteaceae	*Grevillea nematophylla* subsp. *nematophylla*
Proteaceae	*Grevillea oncogyne*
Proteaceae	*Grevillea plurijuga*
Proteaceae	*Grevillea sarissa*
Proteaceae	*Grevillea sarissa* subsp. *sarissa*
Proteaceae	*Hakea preissii*
Proteaceae	*Hakea recurva*
Proteaceae	*Petrophile arcuata*
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*
Resedaceae	*Reseda luteola*
Rhamnaceae	*Cryptandra aridicola*
Ruppiaceae	*Ruppia polycarpa*
Rutaceae	*Phebalium filifolium*
Santalaceae	*Exocarpos aphyllus*
Santalaceae	*Santalum murrayanum*
Santalaceae	*Santalum spicatum*
Sapindaceae	*Alectryon oleifolius*
Sapindaceae	*Alectryon oleifolius* subsp. *canescens*
Sapindaceae	*Dodonaea lobulata*
Sapindaceae	*Dodonaea microzyga*
Sapindaceae	*Dodonaea microzyga* var. *acrolobata*
Sapindaceae	*Dodonaea stenozyga*
Sapindaceae	*Dodonaea viscosa* subsp. *angustissima*
Scrophulariaceae	*Eremophila alternifolia*
Scrophulariaceae	*Eremophila arachnoides* subsp. *tenera*
Scrophulariaceae	*Eremophila clarkei*
Scrophulariaceae	*Eremophila decipiens* subsp. *decipiens*
Scrophulariaceae	*Eremophila georgei*
Scrophulariaceae	*Eremophila glabra* subsp. *glabra*
Scrophulariaceae	*Eremophila granitica*
Scrophulariaceae	*Eremophila interstans*
Scrophulariaceae	*Eremophila interstans* subsp. *interstans*
Scrophulariaceae	*Eremophila interstans* subsp. *virgata*
Scrophulariaceae	*Eremophila ionantha*
Scrophulariaceae	*Eremophila longifolia*
Scrophulariaceae	*Eremophila maculata* subsp. *brevifolia*
Scrophulariaceae	*Eremophila miniata*
Scrophulariaceae	*Eremophila oldfieldii* subsp. *angustifolia*
Scrophulariaceae	*Eremophila oppositifolia* subsp. *angustifolia*
Scrophulariaceae	*Eremophila pantonii*
Scrophulariaceae	*Eremophila parvifolia*
Scrophulariaceae	*Eremophila parvifolia* subsp. *auricampa*
Scrophulariaceae	*Eremophila praecox*
Scrophulariaceae	*Eremophila pustulata*
Scrophulariaceae	*Eremophila rugosa*
Scrophulariaceae	*Eremophila scoparia*
Scrophulariaceae	*Eremophila xantholaema*
Scrophulariaceae	*Myoporum montanum*
Scrophulariaceae	*Myoporum platycarpum*
Scrophulariaceae	*Myoporum platycarpum* subsp. *platycarpum*
Solanaceae	*Lycium australe*
Solanaceae	*Nicotiana glauca*
Solanaceae	*Nicotiana occidentalis*
Solanaceae	*Nicotiana occidentalis* subsp. *obliqua*
Solanaceae	*Solanum hoplopetalum*
Solanaceae	*Solanum lasiophyllum*
Solanaceae	*Solanum petrophilum*
Solanaceae	*Solanum plicatile*
Thymelaeaceae	*Pimelea angustifolia*
Verbenaceae	*Lantana camara*
Violaceae	*Hybanthus floribundus* subsp. *curvifolius*
Violaceae	*Hybanthus floribundus* subsp. *floribundus*
Zygophyllaceae	*Roepera apiculata*
Zygophyllaceae	*Roepera aurantiaca*
Zygophyllaceae	*Roepera aurantiaca* subsp. *aurantiaca*
Zygophyllaceae	*Roepera eremaea*
Zygophyllaceae	*Roepera glauca*
Zygophyllaceae	*Roepera ovata*
Zygophyllaceae	*Roepera reticulata*
Zygophyllaceae	*Tribulus terrestris*

Terrestrial Vertebrate Fauna

Class	Taxon
Amphibia	*Neobatrachus kunapalari*
Aves	*Smicrornis brevirostris*
Aves	*Acanthagenys rufogularis*
Aves	*Barnardius zonarius*
Aves	*Anthochaera (Anthochaera) carunculata*
Aves	*Pardalotus (Pardalotinus) striatus*
Aves	*Ptilotula ornata*
Aves	*Gavicalis virescens*
Aves	*Manorina (Myzantha) flavigula*
Aves	*Oreoica gutturalis*
Aves	*Pumella albifrons*
Aves	*Lichmera (Lichmera) indistincta*
Aves	*Gymnorhina tibicen*
Aves	*Nesoptilotis leucotis*
Aves	*Corvus coronoides*
Aves	*Acanthiza (Geobasileus) uropygialis*
Aves	*Acanthiza (Acanthiza) apicalis*
Aves	*Cracticus nigrogularis*
Aves	*Coracina (Coracina) novaehollandiae*
Aves	*Cracticus torquatus*
Aves	*Colluricincla (Colluricincla) harmonica*
Aves	*Rhipidura (Sauloprocta) leucophrys*
Aves	*Pyrrholaemus brunneus*
Aves	*Ocyphaps lophotes*
Aves	*Petroica (Petroica) goodenovii*
Aves	*Acanthiza (Geobasileus) chrysorrhoa*
Aves	*Eolophus roseicapilla*
Aves	*Malurus (Musciparus) leucopterus*
Aves	*Anthus (Anthus) novaeseelandiae*
Aves	*Artamus (Angroyan) cinereus*
Aves	*Corvus bennetti*
Aves	*Grallina cyanoleuca*
Aves	*Strepera (Neostrepera) versicolor*
Aves	*Microeca (Microeca) fascinans*
Aves	*Dromaius novaehollandiae*
Aves	*Aquila (Uroaetus) audax*
Aves	*Pomatostomus (Morganornis) superciliosus*
Aves	*Petrochelidon (Hylochelidon) nigricans*
Aves	*Melithreptus (Eidopsarus) brevirostris*
Aves	*Malurus (Malurus) splendens*
Aves	*Parvipsitta porphyrocephala*
Aves	*Hirundo (Hirundo) neoxena*
Aves	*Falco (Tinnunculus) cenchroides*
Aves	*Merops (Merops) ornatus*
Aves	*Cinclosoma (Malleeavis) castanotum*
Aves	*Phaps (Phaps) chalcoptera*
Aves	*Artamus (Angroyan) cyanopterus*
Aves	*Ptilotula plumula*
Aves	*Chenonetta jubata*
Aves	*Psephotus (Psephotus) varius*
Aves	*Anas (Nettion) gracilis*
Aves	*Chalcites basalis*
Aves	*Climacteris (Climacteris) rufa*
Aves	*Falco (Ieracidea) berigora*
Aves	*Pachycephala (Alisterornis) rufiventris*
Aves	*Aegotheles (Aegotheles) cristatus*
Aves	*Anas (Anas) superciliosa*
Aves	*Aphelocephala leucopsis*
Aves	*Cincloramphus (Cincloramphus) cruralis*
Aves	*Tadorna (Casarca) tadornoides*
Aves	*Cheramoeca leucosterna*
Aves	*Epthianura (Epthianura) albifrons*
Aves	*Melanodryas (Melanodryas) cucullata*
Aves	*Todiramphus (Cyanalcyon) pyrrhopygius*
Aves	*Cincloramphus (Maclennania) mathewsi*
Aves	*Poliocephalus poliocephalus*
Aves	*Taeniopygia guttata*
Aves	*Cygnus (Chenopis) atratus*
Aves	*Dicaeum (Dicaeum) hirundinaceum*
Aves	*Egretta novaehollandiae*
Aves	*Epthianura (Parepthianura) tricolor*
Aves	*Tachybaptus novaehollandiae*
Aves	*Vanellus (Lobivanellus) tricolor*
Aves	*Podargus strigoides*
Aves	*Artamus (Campbellornis) personatus*
Aves	*Cacomantis (Vidgenia) pallidus*
Aves	*Pachycephala (Timixos) inornata*
Aves	*Accipiter (Leucospiza) fasciatus*
Aves	*Fulica atra*
Aves	*Lalage (Lalage) sueurii*
Aves	*Microcarbo melanoleucos*
Aves	*Coracina (Pteropodocys) maxima*
Aves	*Daphoenositta (Neositta) chrysoptera*
Aves	*Falco (Falco) longipennis*
Aves	*Ninox (Ninox) novaeseelandiae*
Aves	*Petrochelidon (Petrochelidon) ariel*

Aves	*Phalacrocorax (Phalacrocorax) sulcirostris*
Aves	*Anas (Spatula) rhynchotis*
Aves	*Aythya (Nyroca) australis*
Aves	*Biziura lobata*
Aves	*Certhionyx (Certhionyx) variegatus*
Aves	*Chalcites osculans*
Aves	*Circus assimilis*
Aves	*Columba (Columba) livia*
Aves	*Elseyornis melanops*
Aves	*Hieraaetus (Hieraaetus) morphnoides*
Aves	*Malacorhynchus membranaceus*
Aves	*Nymphicus hollandicus*
Aves	*Recurvirostra novaehollandiae*
Aves	*Charadrius (Charadrius) ruficapillus*
Aves	*Cinclosoma (Malleeavis) clarum*
Aves	*Corvus orru*
Aves	*Coturnix (Coturnix) pectoralis*
Aves	*Erythrogonys cinctus*
Aves	*Himantopus himantopus*
Aves	*Melopsittacus undulatus*
Aves	*Rhipidura (Rhipidura) albiscapa*
Aves	*Streptopelia (Spilopelia) senegalensis*
Aves	*Turnix (Alphaturnia) velox*
Aves	*Calidris (Erolia) acuminata*
Aves	*Charadrius (Eupoda) australis*
Aves	*Climacteris (Climacterobates) affinis*
Aves	*Elanus axillaris*
Aves	*Eurostopodus (Eurostopodus) argus*
Aves	*Gerygone fusca*
Aves	*Haliastur sphenurus*
Aves	*Himantopus himantopus leucocephalus*
Aves	*Lophoictinia isura*
Aves	*Tringa (Glottis) nebularia*
Aves	*Acanthorhynchus superciliosus*
Aves	*Accipiter (Paraspizias) cirrocephalus*
Aves	*Actitis hypoleucos*
Aves	*Anas (Nettion) castanea*
Aves	*Ardea (Ardea) pacifica*
Aves	*Cacomantis (Vidgenia) flabelliformis*
Aves	*Calidris (Ereunetes) ruficollis*
Aves	*Chroicocephalus novaehollandiae*
Aves	*Cladorhynchus leucocephalus*
Aves	*Colluricincla (Colluricincla) harmonica rufiventris*
Aves	*Epthianura (Aurepthianura) aurifrons*

Aves	*Ninox (Ninox) novaeseelandiae boobook*
Aves	*Nycticorax caledonicus*
Aves	*Pardalotus (Pardalotus) punctatus*
Aves	*Phylidonyris (Meliornis) novaehollandiae*
Aves	*Platalea (Platibis) flavipes*
Aves	*Polytelis anthopeplus*
Aves	*Sericornis (Sericornis) frontalis*
Aves	*Strepera (Neostrepera) versicolor plumbea*
Aves	*Sugomel*
Aves	*Threskiornis spinicollis*
Aves	*Tyto (Tyto) javanica*
Aves	*Zosterops lateralis*
Mammalia	*Sminthopsis crassicaudata*
Mammalia	*Cercartetus concinnus*
Mammalia	*Chalinolobus gouldii*
Mammalia	*Sminthopsis dolichura*
Mammalia	*Sminthopsis ooldea*
Mammalia	*Pseudomys hermannsburgensis*
Mammalia	*Antechinus*
Mammalia	*Mus musculus*
Mammalia	*Pseudomys bolami*
Mammalia	*Sminthopsis fuliginosus*
Mammalia	*Sminthopsis gilberti*
Reptilia	*Heteronotia binoei*
Reptilia	*Pseudonaja mengdeni*
Reptilia	*Hemiergis initialis initialis*
Reptilia	*Lerista timida*
Reptilia	*Demansia psammophis psammophis*
Reptilia	*Anilios australis*
Reptilia	*Gehyra variegata*
Reptilia	*Menetia greyii*
Reptilia	*Egernia formosa*
Reptilia	*Pseudechis australis*
Reptilia	*Pseudonaja modesta*
Reptilia	*Anilios bicolor*
Reptilia	*Anilios bituberculatus*
Reptilia	*Cryptoblepharus buchananii*
Reptilia	*Cryptoblepharus plagiocephalus*
Reptilia	*Ctenophorus cristatus*
Reptilia	*Egernia depressa*
Reptilia	*Lucasium damaeum*
Reptilia	*Lucasium maini*
Reptilia	*Morethia butleri*
Reptilia	*Pogona minor minor*

Reptilia	*Ctenophorus salinarum*
Reptilia	*Cyclodomorphus melanops elongatus*
Reptilia	*Delma butleri*
Reptilia	*Lerista kingi*
Reptilia	*Lerista picturata*
Reptilia	*Morethia adelaidensis*
Reptilia	*Morethia obscura*
Reptilia	*Parasuta monachus*
Reptilia	*Simoselaps bertholdi*
Reptilia	*Suta fasciata*
Reptilia	*Tympanocryptis pseudopsephos*
Reptilia	*Underwoodisaurus milii*
Reptilia	*Varanus tristis*
Reptilia	*Anilios waitii*
Reptilia	*Ctenophorus fordi*
Reptilia	*Ctenotus atlas*
Reptilia	*Delma fraseri*
Reptilia	*Demansia psammophis cupreiceps*

Reptilia	*Demansia psammophis*
Reptilia	*Echiopsis curta*
Reptilia	*Egernia stokesii badia*
Reptilia	*Furina ornata*
Reptilia	*Hemiergis peronii peronii*
Reptilia	*Lialis burtonis*
Reptilia	*Moloch horridus*
Reptilia	*Morelia spilota imbricata*
Reptilia	*Neelaps bimaculatus*
Reptilia	*Nephrurus laevissimus*
Reptilia	*Parasuta gouldii*
Reptilia	*Pseudonaja affinis affinis*
Reptilia	*Pygopus lepidopodus*
Reptilia	*Simoselaps anomalus*
Reptilia	*Tiliqua rugosa*
Reptilia	*Varanus gouldii*

APPENDIX E:
EPBC PROTECTED MATTERS SEARCH (40KM BUFFER)

(DCCEEW, 2025)

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Nov-2025

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	11
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only
INSECT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ogyris petrina listed as Ogyris subterrestris petrina			
Arid Bronze Azure [94250]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Dasyurus geoffroii			
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area	In buffer area only
PLANT			
Tecticornia flabelliformis			
Bead Glasswort, Bead Samphire [82664]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [52233]	WA	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Bullock Holes Timber Reserve	5(1)(g) Reserve	WA	In buffer area only
Lakeside Timber Reserve	5(1)(g) Reserve	WA	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Nava-1 Cable System	2001/510	Controlled Action	Completed	In feature area
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Gold Mining Developments on Lake Lefroy	2010/5402	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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

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

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

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

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Appendix 3: Imperial-Majestic to Trojan Dewatering Pipeline: Targeted Survey for the Arid Bronze Azure Butterfly and Inland Hairstreak Butterfly Critical Habitat Assessment

JONES FIND (P25/2323) & IMPERIAL-MAJESTIC TO TROJAN DEWATERING PIPELINE (L25/64)

Reconnaissance Flora/ Vegetation and Basic Fauna Survey – Extract Report

Prepared for Black Cat Syndicate Ltd.
November 2025

Prepared by
BOTANICA CONSULTING
33 Brewer St PERTH WA 6000 | 0419 916 034

Document Information

Prepared for: Black Cat Syndicate Ltd.
Project Name: Jones Find & Imperial-Majestic to Trojan Dewatering Pipeline
Tenements: L25/64, P25/2323, M25/104 and M25/350
Job Reference: Reconnaissance Flora/ Vegetation and Basic Fauna Survey – Extract Report
Job Number: 2025/048 and 2025/157
Date: 26 November 2025
Version: FINAL

Disclaimer

Quality Assurance

An internal quality review process has been implemented to each project task undertaken by BC. Each document and its contents is carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

Cover Photo: Vegetation within the dewatering pipeline corridor project area (27/10/2021)

Prepared by: Emily Allen
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Director
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EXECUTIVE SUMMARY

Botanica Consulting Pty Ltd (Botanica) was commissioned by Black Cat Syndicate Ltd (Black Cat) to prepare a stand-alone reconnaissance flora/vegetation and basic vertebrate fauna survey report for the Jones Find project area on P25/2323 and the proposed Imperial–Majestic to Trojan dewatering pipeline corridor on L25/64 (hereafter referred to as the 'survey area' or 'extracted survey area').

The extracted survey area forms a subset of the original survey area assessed in Botanica's 2022 report *Kalgoorlie East Gold Project: Powerline, Jones Find and Imperial–Trojan Dewatering Pipeline — Reconnaissance Flora and Basic Fauna Assessment*, prepared for Black Cat. This Extract Report re-presents the flora and vegetation findings relevant to the extracted survey area. No additional field survey has been undertaken; however, this Extract Report has taken into account changes in conservation listings since the previous survey and thus the conservation significance of flora and fauna taxa have been reassessed using current information.

Botanica conducted a reconnaissance flora/ vegetation survey on the 27th October and 27th November 2021. The original survey area was traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management).

The survey area lies within the City of Kalgoorlie-Boulder, approximately 45 km south-east of Kalgoorlie. The survey area lies within the Great Western Woodlands and within the Eastern Goldfields (COO03) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA). Two pre-European vegetation associations occur within the survey area, both of which retain at least 98% of their pre-European extent and are therefore not considered threatened.

The updated desktop assessment identified 16 significant flora species recorded within a 40 km radius of the extracted survey area (inclusive of results previously identified within a 40km radius of the original survey area). All are listed as Priority Flora species by DBCA (five Priority 1, two Priority 2, five Priority 3 and four Priority 4) whilst one is also listed as a Threatened (VU) species under the EPBC Act. These significant flora taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the extracted survey area. The assessment did not identify any significant flora as likely or possibly occurring within the extracted survey area.

The updated desktop assessment identified 19 terrestrial vertebrate fauna species and two invertebrate fauna species of conservation significance as previously being recorded within 40 km of the extracted survey area. Eleven are listed as Threatened under either the EPBC Act or the BC Act or both; six are listed as migratory or otherwise protected species under either the EPBC Act or

the BC Act or both; and five are listed as Priority Fauna by the DBCA (four Priority 4) – noting that some species are listed in more than one category.

Habitat and distribution data was used to determine the likelihood of occurrence of these fauna species within the extracted survey area. The updated assessment identified one Threatened (VU) fauna species, as potentially occurring in the extracted survey area.

The field survey completed in Spring 2021 identified 102 vascular flora taxa within the original survey area. These taxa represented 62 genera across 26 families, with the most diverse families being Chenopodiaceae (16 species), followed by Fabaceae and Myrtaceae (13 species each). Dominant genera include Eremophila (12 species), Eucalyptus (11 species) and Acacia (10 species) (Botanica, 2022). One introduced (weed) species (*Salvia verbenaca)* was recorded within the original survey area. This species is not a Weed of National Significance nor a Declared Pest in Western Australia.

No Threatened, Priority or otherwise significant flora species were recorded within the survey area.

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

A total of eight broad-scale vegetation types (not including disturbed areas) were identified within the extracted survey area.

Vegetation condition within the extracted survey area ranged from ‘completely degraded’ to ‘good’ with the majority of vegetation rated as ‘good’. Disturbances in the extracted survey area were associated with existing mining operations.

Based on vegetation and associated landforms identified during the flora and vegetation assessment, seven broad scale terrestrial fauna habitats were identified within the extracted survey area. No evidence for the presence of Malleefowl, including nesting mounds, tracks or other signs, were recorded within the survey area. There was no other evidence of other significant fauna species observed during the survey.

No Environmentally Sensitive Areas were identified within the survey area.

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

There are no proposed nor gazetted conservation reserves within the survey area.

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the *Environmental Protection (EP) Act 1986*. The assessment found that the proposed vegetation clearing activities are not at variance with any of the clearing principles.

1 INTRODUCTION

Botanica Consulting Pty Ltd (Botanica) was commissioned by Black Cat Syndicate Ltd (Black Cat) to prepare a stand-alone reconnaissance flora/vegetation and basic vertebrate fauna survey report for the Jones Find project area on P25/2323 and the proposed Imperial–Majestic to Trojan dewatering pipeline corridor on L25/64 (hereafter referred to as the 'survey area' or 'extracted survey area').

The extracted survey area forms a subset of the original survey area assessed in Botanica's 2022 report *Kalgoorlie East Gold Project: Powerline, Jones Find and Imperial–Trojan Dewatering Pipeline — Reconnaissance Flora and Basic Fauna Assessment*, prepared for Black Cat. This Extract Report re-presents the flora and vegetation findings relevant to the extracted survey area. No additional field survey has been undertaken; however this Extract Report has taken into account changes in conservation listings since the previous survey and thus the conservation significance of flora and fauna taxa have been reassessed using current information.

The survey area lies within the City of Kalgoorlie-Boulder, approximately 45 km south-east of Kalgoorlie.

1.1 Objectives

The following objectives reflect the scope of the reconnaissance flora/ vegetation and fauna survey completed in Spring 2021, from which this Extract Report is derived.

The flora/vegetation assessment (Botanica, 2022) was conducted in accordance with the requirements of a reconnaissance survey as defined in *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016a). The objectives of the assessment were to:

- Gather background information on flora and vegetation in the desktop survey area (literature review, database and map-based searches);
- Conduct a field survey to verify / ground truth the desktop assessment findings through reconnaissance survey;
- Define and map vegetation communities of the survey area to a scale appropriate for the Bioregion and described according to the National Vegetation Information System (NVIS) classification (NVIS Level V – Association);
- Record the species composition (abundance and diversity) of each vegetation community within the survey area and compile a species list for the survey area by vegetation type;

- Determine the local and regional conservation significance of flora and vegetation within the survey area;
- Identify and record the locations of any conservation significant flora/vegetation within the survey area;
- Identify and record the locations of any introduced flora species (including Declared Pests) within the survey area;
- Provide a map showing the distribution of conservation significant flora/vegetation within the survey area; and
- Define and map the condition of vegetation within the survey area in accordance with the vegetation condition rating scale specified in the Environmental Protection Authority (EPA) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment – December 2016* (EPA, 2016a).

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

- Undertake a literature review, including map-based information searches of all current and relevant literature sources and databases relating to the survey area;
- Undertake a desktop investigation to identify any previously recorded occurrences of or potentially occurring Threatened and Priority listed fauna within the survey area;
- Undertake searches on available databases for details relating to any Threatened and Priority listed fauna previously identified as occurring or potentially occurring within the survey area;
- Conduct fauna habitat mapping and identify habitat types which are suitable for each significant fauna considered likely or possible to occur, or fauna recorded in the survey area;
- Compile an inventory of fauna species occurrences within the survey area;
- Undertake opportunistic, low intensity sampling of fauna; and
- Report on the conservation status of species present using the Western Australian Museum and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) databases for presence of Threatened and Priority listed fauna species within the survey area.

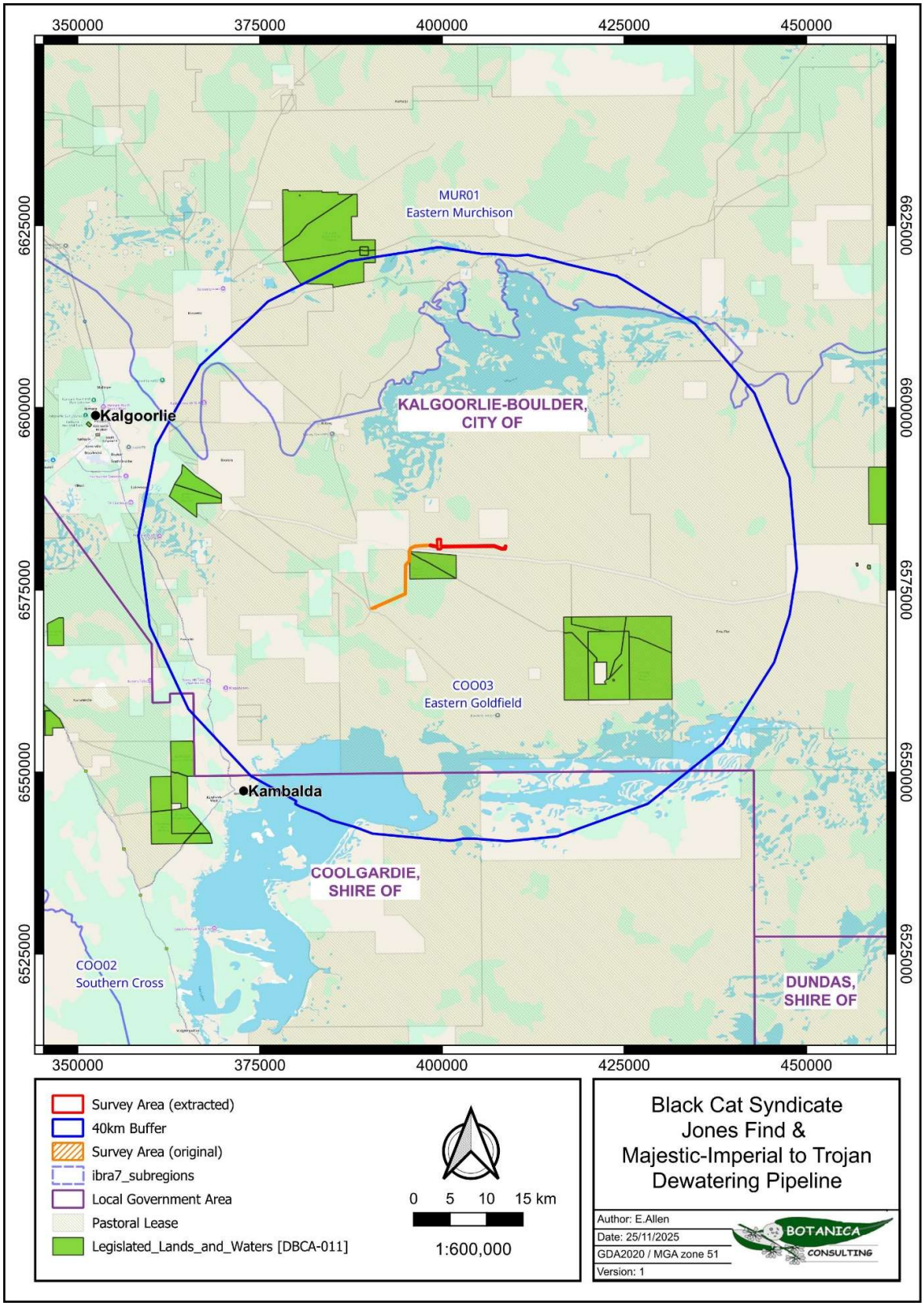

Figure 1-1: Regional map of the original and extracted survey areas

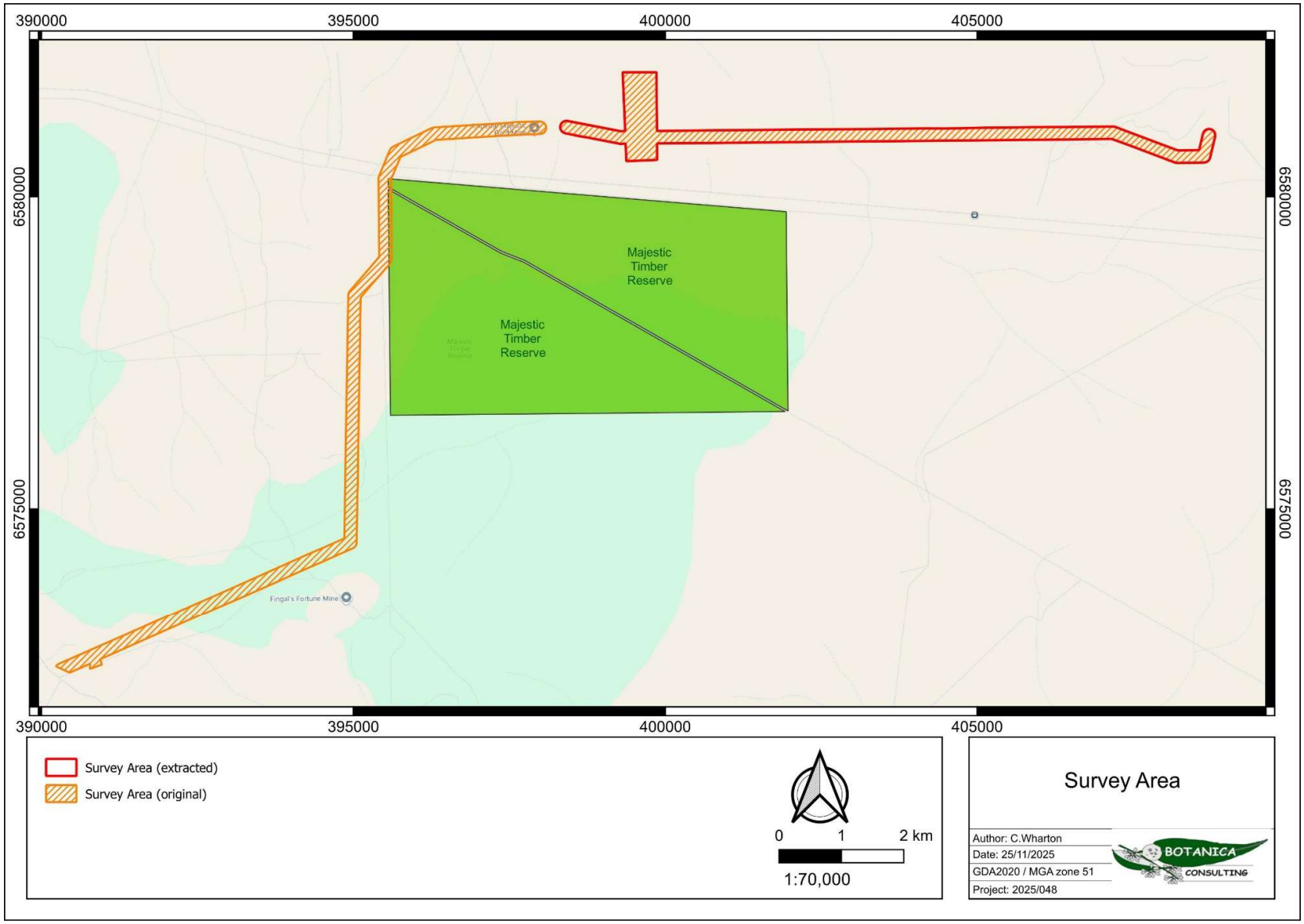

Figure 1-2: Overview of the original and extracted survey areas

2 REGIONAL BIOPHYSICAL ENVIRONMENT

2.1 Regional Environment

The survey area lies within the Eastern Goldfields (COO03) subregion of the Coolgardie Bioregion, as defined by the Interim Biogeographic Regionalisation of Australia (IBRA).

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

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

In accordance with Beard (1990) the survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes.

Soils are principally brown calcareous earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block. Vegetation is predominately *Eucalyptus* woodlands, with slopes and flats containing *E. longicornis* alongside *E. salubris* and *E. salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A. nummularia*. Some hill slopes contain mallees of *E. livida* or *E. loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and *A. campestris*. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

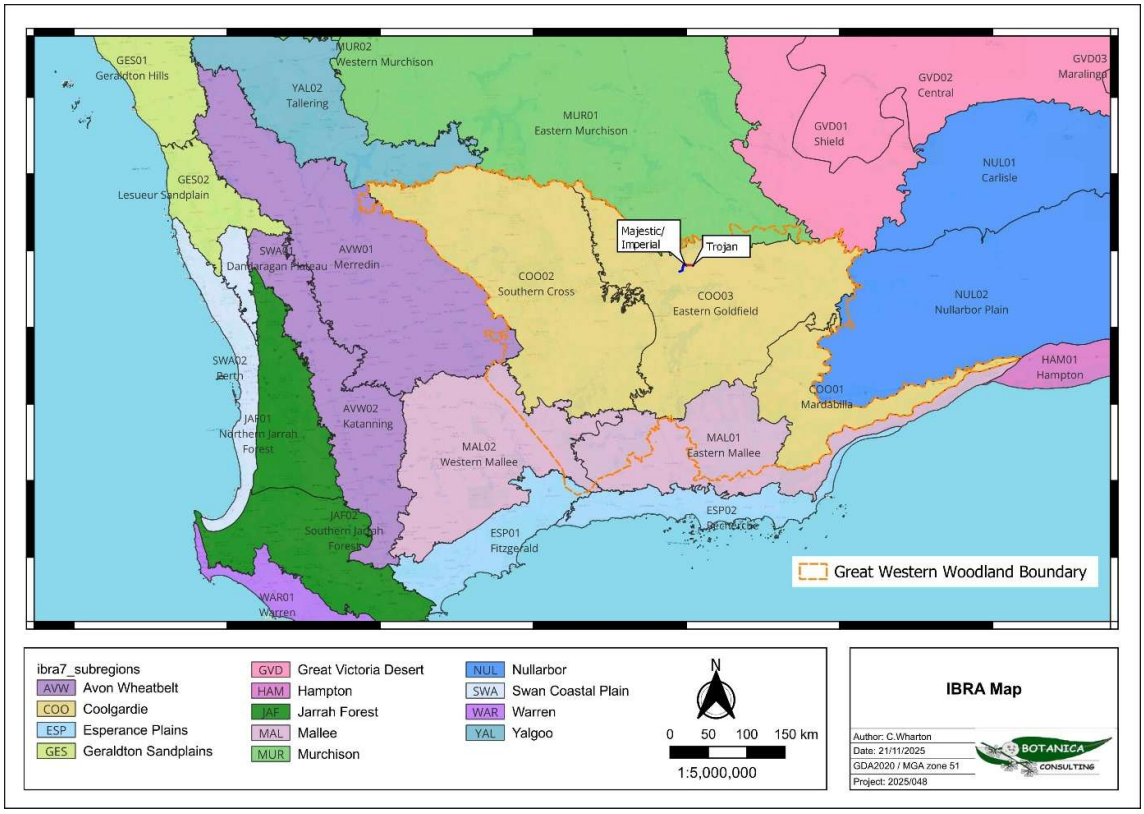

Figure 2-1: Map of IBRA subregions in relation to the survey area

2.2 Land Use

The dominant land uses of the Eastern Murchison subregion have been defined as grazing – native pastures (85.47%), Unallocated Crown Land (UCL) and Crown Reserves (11.34%), mining (1.79%) and Conservation Reserves which account for 1.4% of the land use (Cowan, 2001).

2.3 Soil Landscape Systems

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

The Kalgoorlie Province is further divided into six soil-landscape zones, with the survey area located within the Kambalda Zone (265). This zone is located in the south-eastern Goldfields between Menzies, Norseman and the Fraser Range and contains flat to undulating plains (with hills, ranges

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

In accordance with soil landscape system mapping data (Government of Western Australia, 2019), the soil landscape zones are divided into soil landscape systems, with the survey area located within the 265k9 soil landscape system, as described in Table 2-1 and shown in Figure 2-1.

Table 2-1: Soil landscape systems within the extracted survey area

Zone	Soil Landscape System	Description	Extent within Survey Area
Kambalda (256)	265k9	Gently undulating valley plains and pediments; some outcome of basic rock	279 ha (100%)

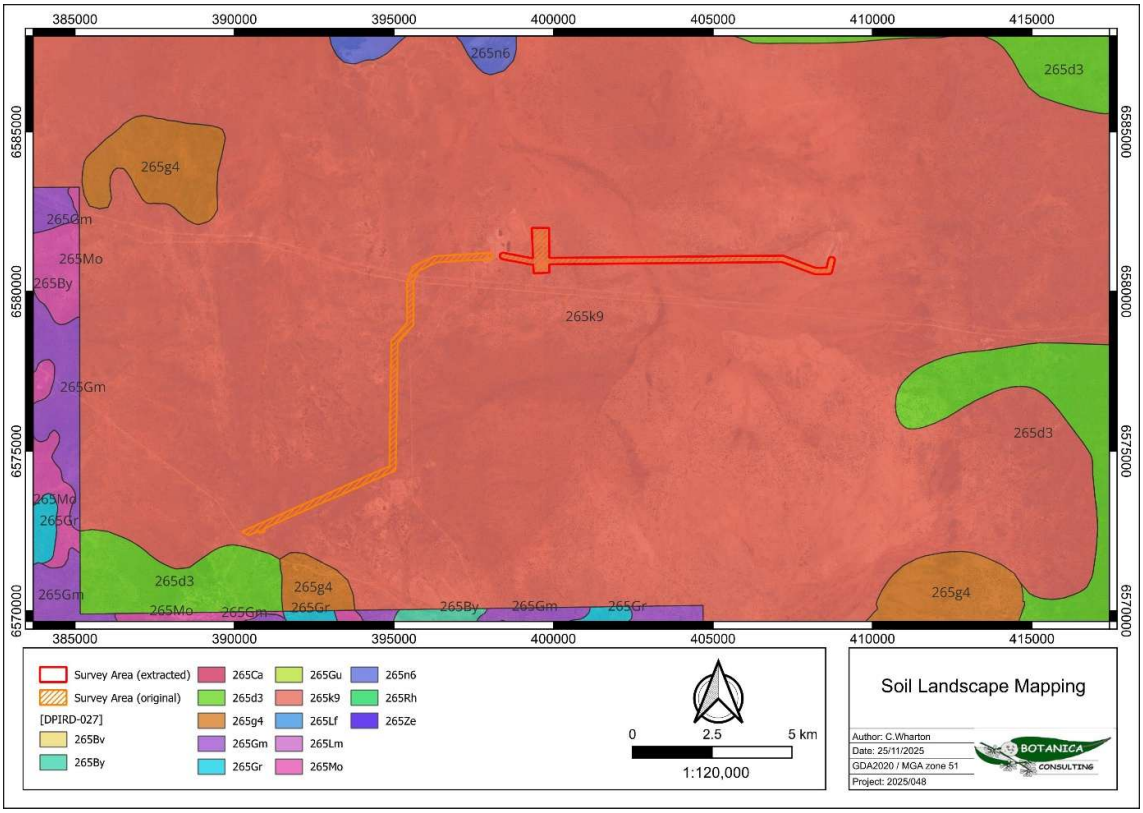

Figure 2-2: Map of soil landscape systems within the extracted **survey area**

2.4 Vegetation

The survey area is located in the Coolgardie Botanical District of the Southwestern Interzone Province. The landscape is described as gently undulating with occasional ranges of low hills, with sandplains in the western part and some large playa lakes. Soils are principally brown calcareous

earths, which overlays the Proterozoic granite and gneiss of the Fraser Range block and Archaean granite, with infolded volcanics and meta-sediments, of the Yilgarn block (Beard, 1990; Cowan, 2001).

Vegetation is predominately Eucalyptus woodlands, with slopes and flats containing *E. longicornis* alongside *E. salubris* and *E. salmonophloia*. Woodland understories range from tall sclerophyll shrubland dominated by *Melaleuca pauperiflora* to soft-leaved saltbush shrubland of *Atriplex vesicaria* and *A. nummularia*. Some hill slopes contain mallees of *E. livida* or *E. loxophleba*, while ironstone ridges are covered in thickets of *Acacia quadrimarginea*, *Allocasuarina acutivalvis* and A. campestris. Other vegetation assemblages include species-rich scrub-heaths and *Allocasuarina* thickets on sandplains, merging into *Acacia* thickets and Kwongan vegetation to the north.

The survey area occurs wholly within the Randell System. The pre-European vegetation association dataset (DPIRD, 2018) identifies two vegetation associations occurring within the survey area (Figure 2-3). The system association descriptions and their remaining extent within the COO03 IBRA subregion, as specified in Report 3b of the 2018 Statewide Vegetation Statistics (Government of Western Australia, 2019b), are provided in Table 2-2.

Areas retaining less than 30% of their pre-European vegetation extent generally experience exponentially accelerated species loss, while areas with less than 10% are considered “endangered” (EPA, 2000). Both vegetation associations retain >98% of their pre-European extent, and development within the extracted survey area will not significantly reduce the current extent of these vegetation associations.

Table 2-2: Pre-European vegetation associations within the extracted survey area

Pre-European Vegetation		Current Extent (ha)	% Remaining	% of current extent within DBCA managed lands	Extent within Survey Area
System / Vegetation Association	**Floristic Description**				
Randell / 468	Medium woodland; salmon gum & goldfields blackbutt	88633.45	99.68	3.72%	153 ha (55%)
Randell / 506	Succulent steppe with woodland; salmon gum & bluebush	8180.63	98.77	-	126 ha (45%)

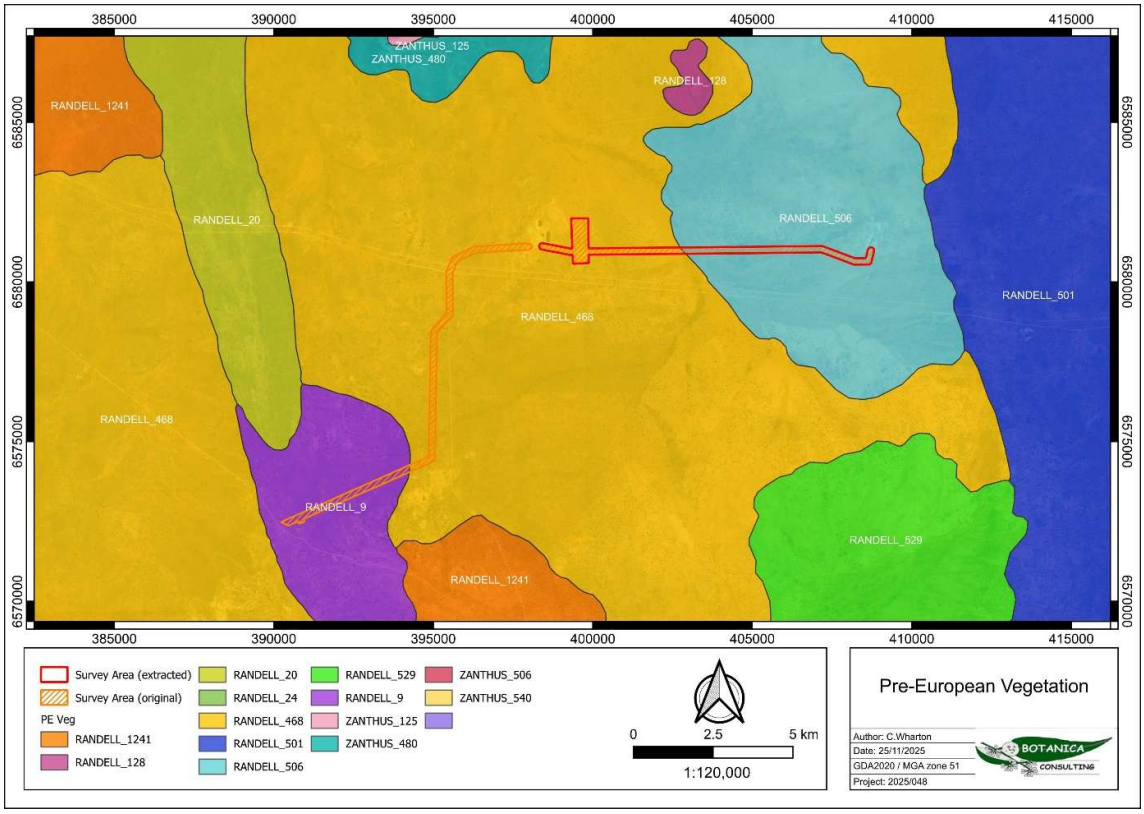

Figure 2-3: Pre-European vegetation associations within the extracted **survey area**

2.5 Climate

The climate of the Eastern Goldfield subregion is characterised as arid to semi-arid with 200-300 mm of rainfall, sometimes in summer but usually in winter (Cowan 2001). Rainfall data for the Kalgoorlie-Boulder Airport (#12038) weather station, located approximately 47 km northwest of the survey area. Mean monthly rainfall ranges from 31.8 mm in February to 13.3 mm in September, with a mean annual rainfall of about 265 mm.

The survey was conducted in October/November 2021, with the preceding months (August-September) being characterised by below average rainfall. Climate conditions may represent a survey constraint, with potentially below average presence of flowering material and ephemeral species.

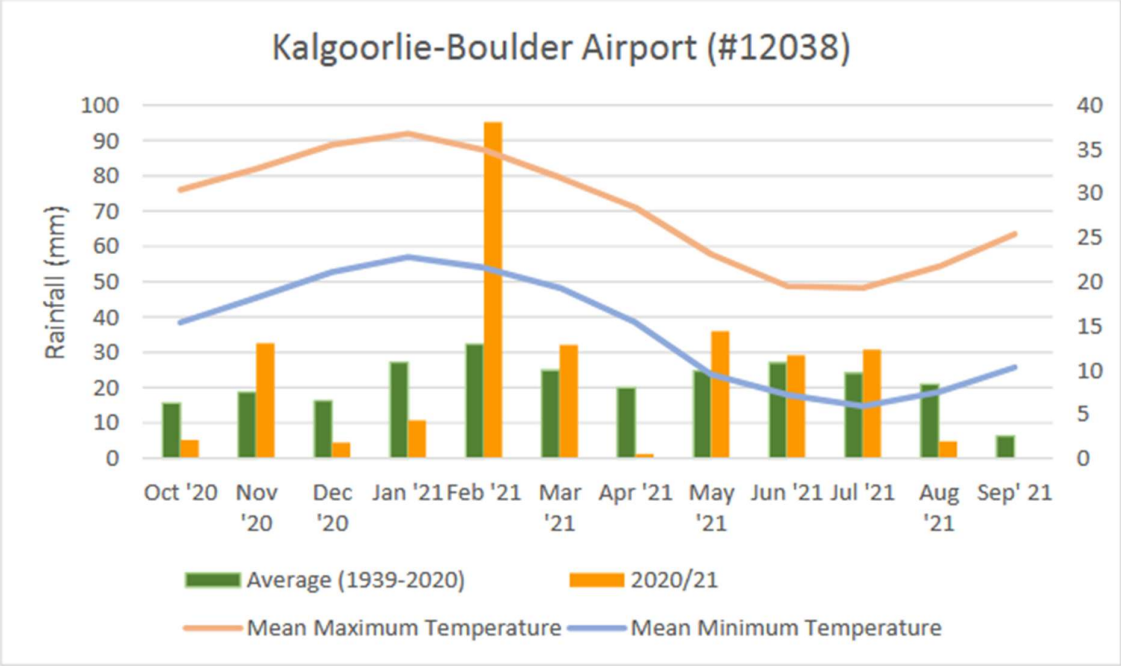

Figure 2-4: Monthly rainfall (January 2020 to October 2025) for the Kalgoorlie-Boulder Airport weather station (#12038) (BoM, 2025)

2.6 Hydrology

According to the Geoscience Australia database (2015), there are no permanent or ephemeral water bodies within the extracted survey area (Figure 2-5). One minor ephemeral drainage lines intersects the extracted survey area.

Groundwater Dependent Ecosystems (GDEs) includes biological assemblages of species such as wetlands or woodlands that use groundwater either opportunistically or as their primary water source. For the purposes of this report, a GDE is defined as any vegetation community that derives part of its water budget from groundwater and must be assumed to have some degree of groundwater dependency.

In accordance with the BoM Atlas of Groundwater Dependent Ecosystems (BoM, 2017) database, there are no potential terrestrial nor aquatic GDEs within the extracted survey area.

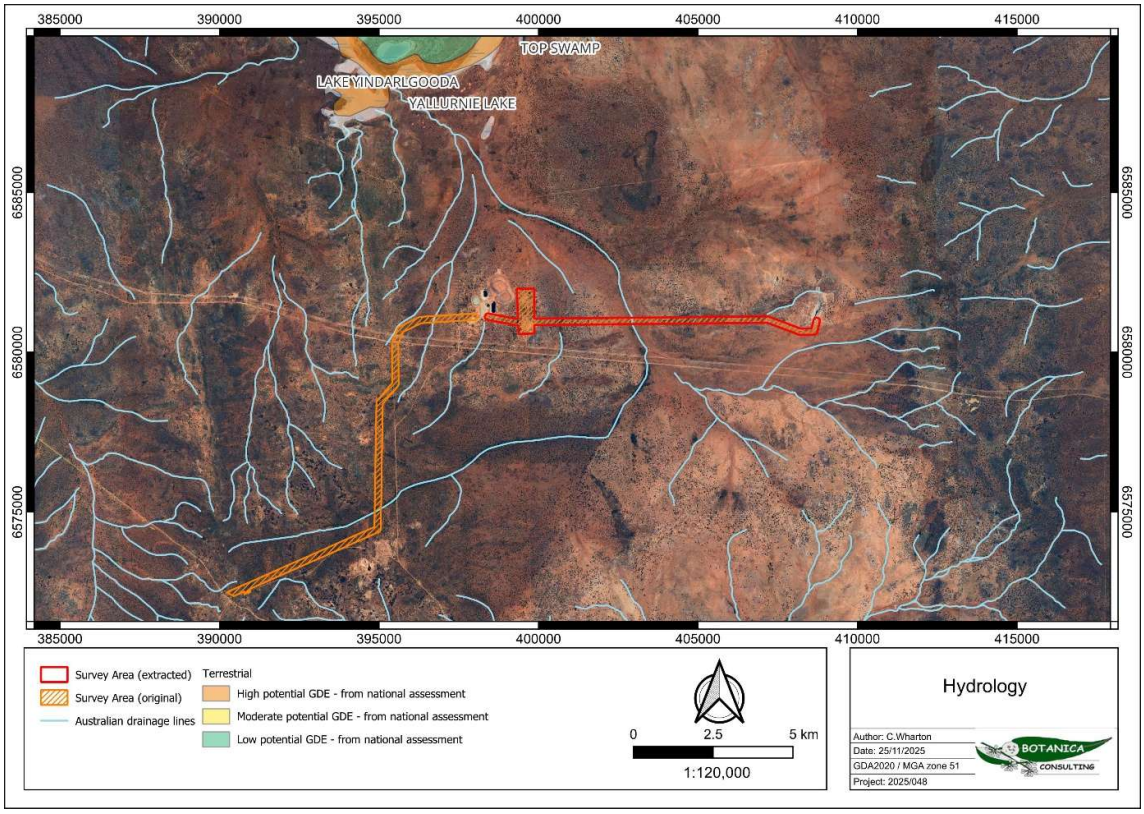

Figure 2-5: Hydrology of the extracted survey area

2.7 Conservation Values

No Threatened Ecological Communities (TECs) listed under the Commonwealth EPBC Act or the Western Australian BC Act are known to occur within the survey area or within 40 km of the extracted survey area. The nearest known TEC is located more than 200 km south of the extracted survey area in the Mallee bioregion.

No Priority Ecological Communities (PECs) as listed by DBCA occur within the survey area, whilst two PECs are located within 40 km of the extracted survey area: Mount Belches BIF (Priority 3) and Emu Land System (Priority 3) ae located approximately 16 km southeast and 35 km north-northwest of the extracted survey area respectively.

There are no Ramsar wetlands of international importance or sites listed in the Directory of Important (DIWA) (*i.e.*, wetlands of national importance) within the survey area or within 40 km of the extracted survey area. The Eastern Goldfields (COO03) subregion contains one wetland of national importance: Rowles Lagoon System, located approximately 113 km northwest of the survey area. The nearest Ramsar wetland: Lake Ballard, is located approximately 167 km northwest of the extracted survey area.

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

There are no proposed nor gazetted conservation reserves within the extracted survey area. However, there are several gazetted conservation reserves within 40 km of the survey area. The closest being the Majestic Timber Reserve which is located ~600m south of the extracted survey area. Noting that the Trans-Australian Railway corridor and Trans Access Road are located between the extracted survey area and the Majestic Timber Reserve.

A map showing conservation values in relation to the survey area is provided in Figure 2-6.

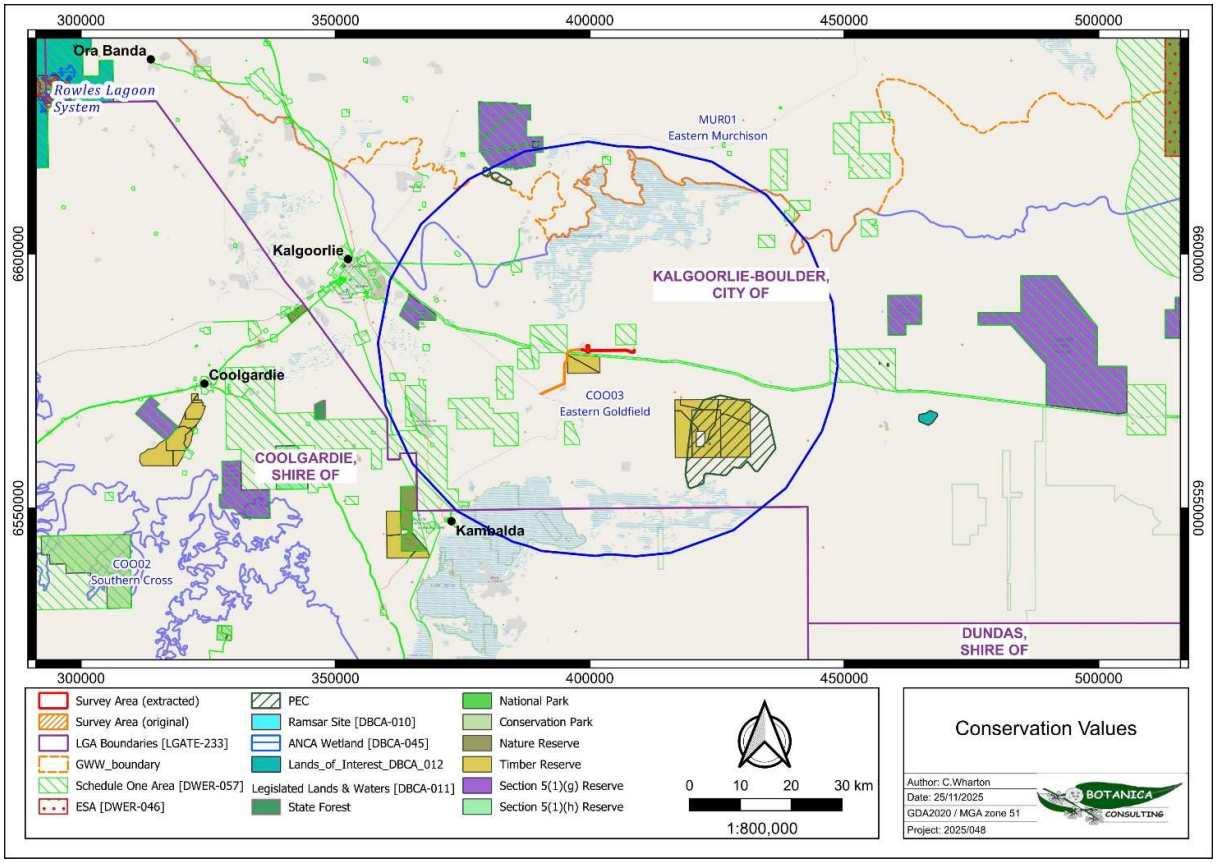

Figure 2-6: Conservation values in relation to the extracted survey area

2.7.1 Great Western Woodlands

The extracted survey area lies within the Great Western Woodlands, located within 50 km of the northern boundary. The Great Western Woodlands is considered by The Wilderness Society of WA to be of global biological and conservation importance as one of the largest and healthiest temperate woodlands on Earth, containing many endemic taxa. The region covers almost 16 million hectares, 160,000 square kilometres, from the southern edge of the Western Australian Wheatbelt to the

pastoral lands of the Mulga country in the north, the inland deserts to the northeast, and the treeless Nullarbor Plain to the east.

The area provides an eastward connection between southwest forests and inland deserts (Gondwana Link) as well as linking the north-west passage to Shark Bay. The majority of the Great Western Woodlands is unallocated crown land (61.1%) with other interests including pastoral leases (20.4%), conservation reserves (15.4%), unallocated crown land ex-pastoral managed by the DBCA (2%) and private land (approximately 1%) (Watson *et. al.,* 2008).

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

3 SURVEY METHODOLOGY

The following methodologies reflect the scope of the reconnaissance flora/ vegetation and fauna survey completed in Spring 2021, from which this Extract Report is derived. No additional survey effort has been undertaken, however, the desktop assessment presented in this Extract Report has been updated to reflect current conservation listings, nomenclature and regulatory statuses (including Threatened and Priority Flora). Changes in conservation status since the 2021 field survey have been incorporated into the significant flora and fauna assessments presented in this Extract Report.

3.1 Desktop Assessment

3.1.1 Literature Review

Prior to the Spring 2021 field assessment a literature review was undertaken of previous flora and fauna assessments conducted within the local region. Documents reviewed included:

- Botanica Consulting Ltd. (2020). *Reconnaissance Flora/ Vegetation Survey and Basic Fauna Survey of the L25/53 Project*. Unpublished report prepared on behalf of Black Cat Syndicate Ltd., February 2021.
- Botanica Consulting Ltd. (2020). *Fingalls Reconnaissance Flora/ Vegetation Survey and Basic Fauna Survey.* Unpublished report prepared on behalf of Black Cat Syndicate Ltd., December 2020.

3.1.2 Database Searches

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

- DBCA's Threatened and Priority Flora database (DBCA, 2019a);
- Atlas of Living Australia (ALA) database (ALA, 2022); and
- EPBC Act online Matters of National Environmental Significance (MNES) database (Department of Agriculture, Water and the Environment [DAWE], 2021a).

The ALA spatial portal search and EPBC Protected Matters search were conducted with a 40 km buffer from the survey area.

This Extract Report has taken into account changes in conservation listings since the 2021 survey and the desktop assessment has been updated accordingly. To ensure currency of conservation significance, additional database searches were undertaken using the following sources:

- DBCA's Threatened and Priority Flora database (DBCA, 2024);

- EPBC Act online Matters of National Environmental Significance (MNES) database (Department of Climate Change, Energy, the Environment, and Water [DCCEEW], 2025).

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

This Extract Report has taken into account changes in conservation listings since the Spring 2021 survey and thus the conservation significance of flora and fauna taxa have been reassessed using data from the following sources:

- *Environment Protection and Biodiversity and Conservation Act 1999* (EPBC Act). Administered by the Australian Government (DCCEEW);
- *Biodiversity Conservation Act 2016* (BC Act). Administered by the WA Government (DBCA);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List – the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- Priority Flora and Fauna lists. A non-legislative list maintained by DBCA for management purposes: Priority flora list released 1st July 2025 (DBCA, 2025a); Priority fauna list released 1st July 2025 (DBCA, 2025b).

The EPBC Act also requires the compilation of a list of migratory species that are recognised under international treaties including the:

- Japan Australia Migratory Bird Agreement 1981 (JAMBA)[1];
- China Australia Migratory Bird Agreement 1998 (CAMBA);
- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA); and
- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

[1] Most but not all species listed under JAMBA are also specially protected under Specially Protected Species of the BC Act.

Most but not all migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as Matters of National Environmental Significance (MNES) under the EPBC Act. Descriptions of conservation significant species and communities are provided in Appendix A.

3.1.3 Likelihood of Occurrence

Significant flora identified during the literature review and database searches were assessed with regards to their population extent and distribution and preferred habitat to determine their likelihood of occurrence within the survey area. The assessment categorised flora species as follows

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

3.2 Field Assessment

3.2.1 Flora and Vegetation

Botanica conducted a reconnaissance flora/ vegetation survey on the 27th October and 27th November 2021. The original survey area was traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management).

A GPS track log of the survey effort is shown in Figure 3-1. No additional survey effort has been undertaken for this Extract Report. Although the survey area was traversed on foot by Jim Williams on 27th October 2025 during a targeted survey for critical habitat assessment pertaining to the conservation significant butterfly species Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and *Inland Hairstreak (Jalmenus aridus)* (Botanica, 2025).

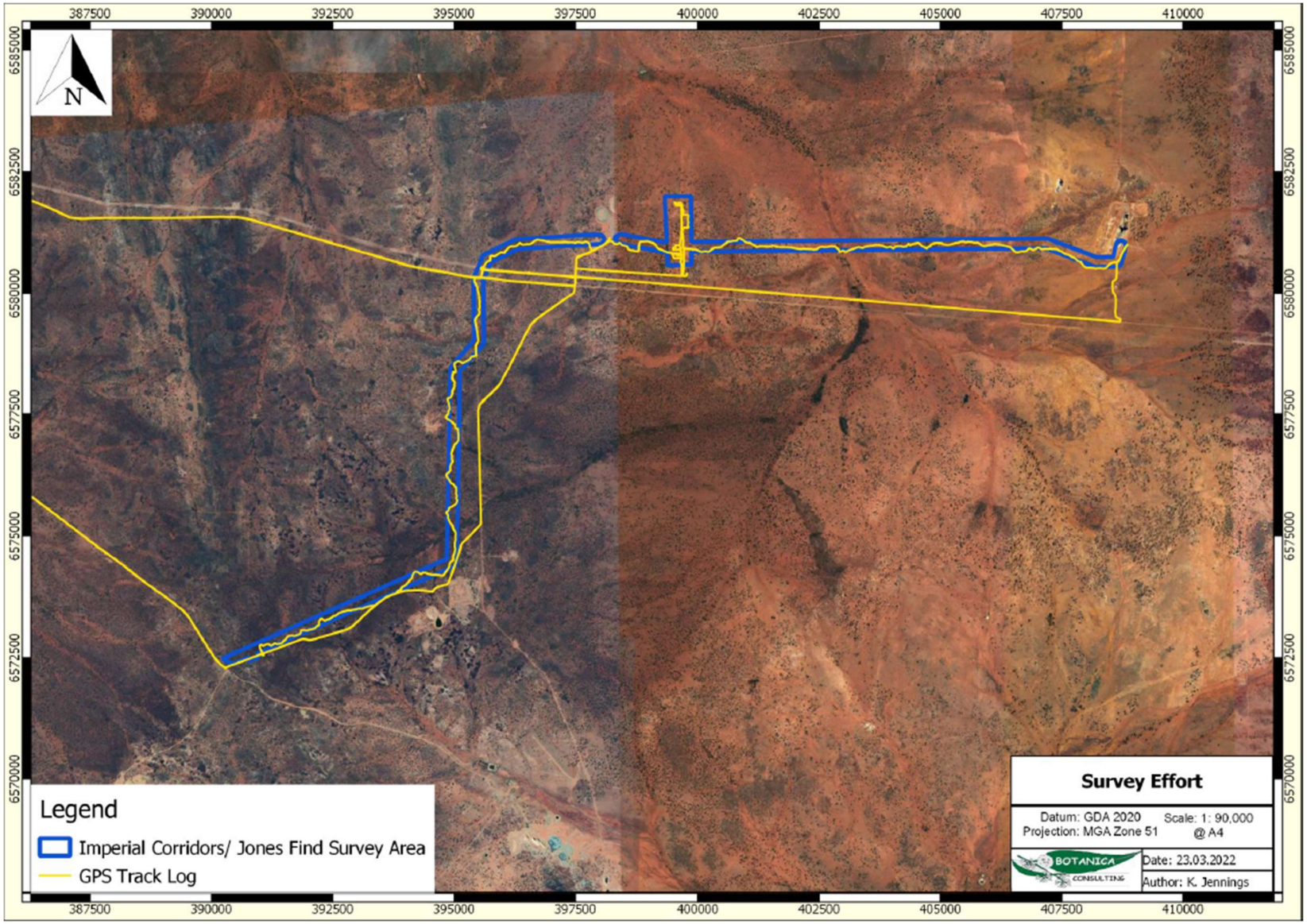

Figure 3-1: GPS track log of the survey effort in 2021

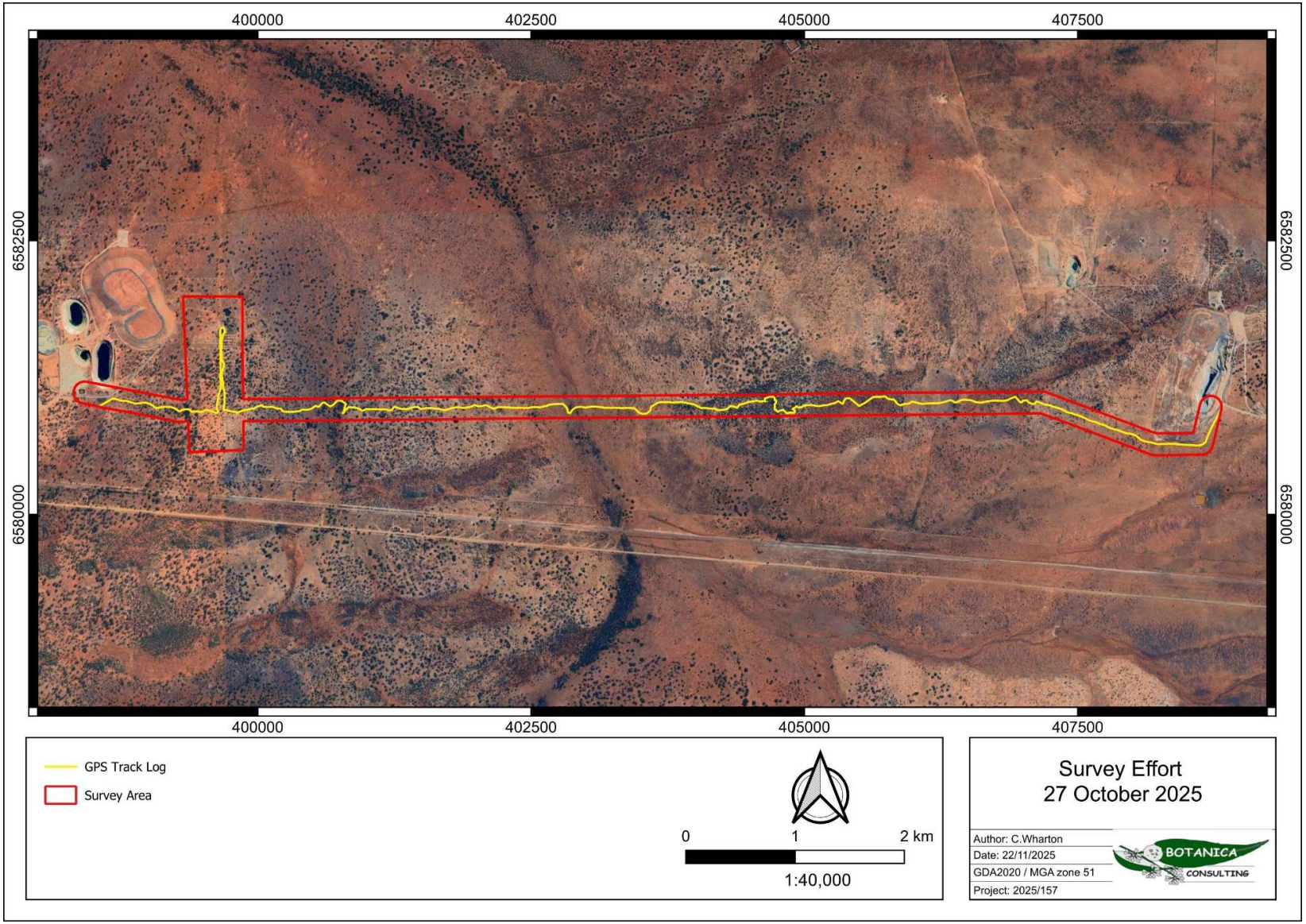

Figure 3-2: GPS track log of the survey effort in 2025

3.2.1.1 Vegetation Mapping

Prior to the commencement of field work (in 2021), aerial photography was inspected and obvious differences in the vegetation assemblages were identified. The different vegetation types identified were then inspected during the field survey to assess their validity. A handheld GPS unit was used to record the coordinates of the boundaries between vegetation types.

At each sample point, the following information was recorded:

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

Vegetation types were classified in accordance with the NVIS Level V-Association classification.

3.2.1.2 Targeted Flora Survey

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

3.2.1.3 Flora Identification

Unknown specimens collected during the survey were identified with the aid of samples housed at the Botanica Herbarium and the Western Australian Herbarium.

3.2.2 Terrestrial Fauna

Botanica conducted a basic fauna survey on the 27th October and 27th November 2021, with the area traversed on foot and by 4WD by Jim Williams (Director/Principal Botanist, Diploma of Horticulture) and Jennifer Jackson (Senior Botanist, BSc (Honours) Environmental Management) (Figure 3-1).

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

The main aim of the fauna habitat assessment was to determine the likelihood of a species of conservation significance utilising habitat within the survey area. The habitat information obtained was also used to aid in finalising the overall potential fauna list.

Available information on the habitat requirements of the species of conservation significance listed as possibly occurring in the area (determined from the desktop assessment) was researched. During the field survey, the habitats within the survey area were assessed and specific elements identified, if present, to determine the likelihood of listed Threatened and Priority species utilising habitat within the survey area.

Opportunistic observations of fauna species were made during all field survey work.

Fauna of conservation significance identified during the literature review and database searches as previously being recorded in the general area were assessed and ranked for their likelihood of occurrence within the survey area. The rankings and criteria used were:

- **Would Not Occur:** There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).
- **Locally Extinct:** Populations no longer occur within a small part of the species natural range, in this case within 10 or 20 km of the survey area. Populations do however persist outside of this area.
- **Regionally Extinct:** Populations no longer occur in a large part of the species natural range, in this case within the Goldfields region. Populations do however persist outside of this area.
- **Unlikely to Occur:** The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the site itself would not support a population or part population of the species.
- **Possibly Occurs:** Survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as likely to be present during the field survey and literature review, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified

as possibly being present at times, habitat may be marginal (*e.g.*, poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

- **Known to Occur:** The species in question has been positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) during field surveys within or near the survey area. This information may have been obtained by direct observation of individuals or by way of secondary evidence (*e.g.*, tracks, foraging debris, scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (*e.g.*, poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

3.3 Data Analysis

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

3.4 Personnel Involved

Table 3-1: Personnel involved with the flora, vegetation and fauna survey/ reporting

Staff Member	Position/ Qualifications	Experience	Tasks conducted during survey
Jim Williams	Director/ Principal Botanist (Diploma of Horticulture)	> 30 years' experience across WA	2021/2022 Project Management (Lead Botanist). Flora and vegetation survey- identifying flora species and opportunistic flora/ fauna observations. Identifying and recording vegetation types. Vegetation Mapping.
Jennifer Jackson	Senior Botanist (BSc-Honours Environmental Management)	> 20 years' experience across WA	2021/2022 Fauna survey-opportunistic fauna observations and fauna habitat assessments. Flora and vegetation survey- identifying flora species and opportunistic flora/ fauna observations. Identifying and recording vegetation types.
Catherine Wharton	Senior Environmental Consultant (BSc-Conservation Biology)	> 20 years' experience across WA	2025 Data analysis and preparation of Extract Report.

3.5 Scientific Licences

Table 3-2: Scientific Licences of Botanica Staff coordinating the original survey

Licensed Staff	Permit Number	Valid
Jim Williams	FB62000108 (licence to take flora for scientific purposes)	27/05/2019-27/05/2022
Jennifer Jackson	FB62000309 (licence to take flora for scientific purposes)	18/02/2021-11/01/2024

Information current at time of 2021 survey.

3.6 Survey Limitations and Constraints

It is important to note that field surveys will entail limitations, notwithstanding careful planning and design. Potential limitations of the survey undertaken on 27th October and 27th November 2021, as stipulated within the *technical guidance for Flora And Vegetation surveys* (EPA, 2016a) and the *technical guidance for Terrestrial Vertebrate Fauna surveys* (EPA, 2020), are listed in Table 3-3.

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

Some species are reported as potentially occurring based on there being suitable habitat (quality and extent) within the survey area or immediately adjacent. The habitat requirements and ecology of many of the species known to occur in the wider area are however, often not well understood or documented. It can therefore be difficult to exclude species from the potential list based on a lack of a specific habitats or microhabitats within the survey area. As a consequence of this limitation, the potential species list produced is most likely an overestimation of those species that actually utilise the survey area for some purpose.

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

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

Variable	Potential Impact on Survey	Details
Access problems	Not a constraint	The survey was conducted via 4WD and on foot. Numerous access tracks were present within the survey area providing ease of access.
Competency/ Experience	Not a constraint	The Botanica personnel that conducted the survey were regarded as suitably qualified and experienced. **Coordinating Staff**: Jim Williams (Botanist) **Field Staff**: Jim Williams (Botanist), Jennifer Jackson (Botanist) **Data Interpretation**: Jim Williams (Botanist), Kelby Jennings (Environmental Consultant)
Timing of survey, weather & season	Not a constraint	Fieldwork was undertaken within the EPA's recommended survey period (September - November) for the South-West Interzone Province. Reduced rainfall levels may impact the presence of flowering material and ephemeral species but are unlikely to represent a survey constraint.

Variable	Potential Impact on Survey	Details
Area disturbance	Not a constraint	The majority of the survey area was in very good condition and comprised of native vegetation.
Survey Effort/ Extent	Not a constraint	Survey intensity was appropriate for the size/significance of the area with a detailed flora survey and basic fauna survey completed to identify vegetation types/ fauna habitats and significant flora, fauna and vegetation.
Availability of contextual information at a regional and local scale	Not a constraint	Conservation significant flora database searches provided by the DBCA were used to identify any potential locations of Threatened/Priority flora species. BoM, DWER, DPIRD, DBCA and DAWE databases were reviewed to obtain appropriate regional desktop information on the biophysical environment of the local region. Botanica has conducted a number of surveys within Coolgardie Bioregion and was also able to obtain information about the area from previous research conducted within the area. Results of previous assessments in the local area were reviewed to provide context on the local environment.
Completeness	Not a constraint	In the opinion of Botanica, the survey area was covered sufficiently in order to identify vegetation assemblages. All observed flora individuals were able to be identified to species level. The vegetation associations for this study were based on visual descriptions of locations in the field. The distribution of these vegetation associations outside the survey area is not known, however vegetation associations identified were categorised via comparison to vegetation distributions throughout WA given on NVIS (DotEE, 2017).

Information current at time of 2021 survey.

4 RESULTS

4.1 Desktop Assessment

4.1.1 Flora/ Vegetation

According to the results of the ALA desktop search (ALA, 2022), a total of 415 flora taxa were recorded within a 40 km radius of the original survey area, representing 173 genera from 55 families. The most diverse families were Chenopodiaceae (53 species), Myrtaceae (51 species) and Fabaceae (47 species). The most dominant genera were Acacia (27 species), Eucalyptus (32 species) and Eremophila (24 species).

4.1.1.1 Introduced Flora

The desktop review (Botanica, 2022) identified 33 introduced flora species (weeds), representing 16 families, as potentially occurring within a 40 km radius of the original survey area. Three of these taxa are listed as a Declared Pests on the Western Australian Organism List (WAOL) under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). Of these, two are also listed as Weeds of National Significance (WoNS) and one additional WoNS provides a total of four potentially occurring significant weeds.

The full list of potential weed species is presented below in Table 4-1; the four significant weed species are highlighted in green.

Table 4-1: Introduced flora potentially occurring within 40 km of the original survey area

Taxon	Common Name	Declared Pest	WoNS
Bromus diandrus	Great Brome	N	N
Bryophyllum delagoense		N	N
Carduus tenuiflorus	Slender Thistle	N	N
Carrichtera annua	Wards Weed	N	N
Carthamus lanatus	Saffron Thistle	N	N
Cenchrus ciliaris	Buffel Grass	N	N
Cenchrus setaceus	Fountain Grass	N	N
Centaurea melitensis	Maltese Cockspur, Malta Thistle	N	N
Chenopodium album	Fat-hen	N	N
Cylindropuntia spp.	Prickly Pear	Y	Y
Echium plantagineum	Paterson's Curse	Y	N
Erodium cicutarium	Common Storksbill	N	N
Heliotropium europaeum	Common Heliotrope	N	N
Heliotropium supinum	Prostrate Heliotrope	N	N
Lantana camara	Common lantana	Y	Y
Leontodon rhagadioloides	Cretan Weed	N	N
Lycium ferocissimum	African Boxthorn	N	Y
Lysimachia arvensis	Pimpernel	N	N
Medicago polymorpha	Burr Medic	N	N

Taxon	Common Name	Declared Pest	WoNS
Mesembryanthemum crystallinum	Iceplant	N	N
Mesembryanthemum nodiflorum	Slender Iceplant	N	N
Monoculus monstrosus		N	N
Nicotiana glauca	Tree Tobacco	N	N
Oncosiphon suffruticosum	Calomba Daisy	N	N
Phalaris minor	Lesser Canary Grass	N	N
Polypogon monspeliensis	Annual Beard Grass	N	N
Puccinellia ciliata	Pucinellia	N	N
Reseda luteola	Wild Mongonette	N	N
Rumex hypogaeus	Doublegee	N	N
Sisymbrium irio	London Rockert	N	N
Sonchus oleraceus	Common Sowthistle	N	N
Symphyotrichum squamatum	Bushy Starwort	N	N
Tribulus terrestris	Caltrop	N	N

Information current at time of 2021 survey.

4.1.1.2 Conservation Significant Flora

The updated desktop review of conservation significant flora (DBCA, 2024a; DCCEEW, 2025) identified 16 significant flora species recorded within a 40 km radius of the extracted survey area (inclusive of results previously identified within a 40km radius of the original survey area ((ALA, 2022)). These consist of one Threatened (VU) species under the EPBC Act; five Priority 1, two Priority 2, five Priority 3 and four Priority 4 species as listed by DBCA – noting that the Threatened species is also listed a Priority 2 (Table 4-2).

These significant flora taxa were assessed for distribution and known habitat to determine their likelihood of occurrence within the extracted survey area. The assessment did not identify any significant flora as likely or possibly occurring within the extracted survey area.

Table 4-2: Significant Flora – likelihood of occurrence within the extracted survey area

Taxon	Conservation Status			Habitat	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Acacia websteri	-	-	P1	Red sand, clay or loam. Low-lying areas, flats.	Unlikely. Outside known range of species.	ALA (2022) [1]
Alyxia tetanifolia	-	-	P3	Sandy clay, loam, concretionary gravel. Drainage lines, near lakes.	Unlikely. Outside known range of species.	ALA (2022) [1]
Austrostipa turbinata	-	-	P3	It is found in sandy soils, sometimes with limestone or clay, and can occur on sandhills, undulating plains, and open mallee country	Unlikely. Within known range, habitat unlikely to be present.	DBCA (2024a)
Calandrinia lefroyensis	-	-	P1	Typically found in arid to semi-arid regions, often associated with salt lakes and associated low, rocky ridges or floodplains. It grows on soils such as stony, calcareous, or silty loams, and often occurs within or near low chenopod shrublands or *Tecticornia* dominated vegetation.	Unlikely. Within known range, habitat unlikely to be present.	DBCA (2024a)
Dicrastylis reticulata	-	-	P3	Sandy soils, often over granite. Amongst granite rock, hills, flats.	Unlikely Well outside known range of species. Survey area is >200km east of known records. Habitat unlikely to be present.	ALA (2022)
Eremophila arachnoides subsp. tenera	-	-	P3	Flat calcareous plain.	Unlikely. Records within 5km of survey area but considered to de mis-identification	ALA (2022); DBCA (2024a)
Eremophila praecox	-	-	P2	Red/brown sandy loam. Undulating plains.	Unlikely. Outside known range of species.	ALA (2022); DBCA (2024a)
Eremophila xantholaemus	-	-	P1	Hilltop and slopes. Brown/red very rocky loam/granite.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Eucalyptus kruseana	-	-	P4	Sandy loam. Granite outcrops & hills.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Eucalyptus efflorescens	-	-	P1	Red-brown loam, red sand, granite. Near outcrops.	Unlikely. Well outside known range of species. Survey area is >300km southeast of known records.	*Formerly Eucalyptus leptophylla* var. *floribunda* Source unknown.
Eucalyptus x *brachyphylla*	-	-	P4	Sandy loam. Granite outcrops.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024)

Taxon	Conservation Status			Habitat	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Frankenia glomerata			P4	White sand.	Unlikely, Within known range, habitat unlikely to be present.	DBCA (2024)
Lechenaultia pulvinaris	-	-	P4	White/grey sand.	Unlikely. Well outside known range of species. Survey area is >500km northeast of known records.	ALA (2022)
Melaleuca coccinea	-	-	P3	Sandy loam over granite. Granite outcrops, sandplain, river valleys.	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022)
Ptilotus rigidus	-	-	P1	Quartz hillsides	Unlikely. Within known range, habitat unlikely to be present.	ALA (2022); DBCA (2024a)
Tecticornia flabelliformis	VU	-	P2	Clay. Saline flats.	Unlikely. Within known range, habitat unlikely to be present.	APA (2022); DBCA (2024a), DCCEEW (2025) Previously recorded as P1.

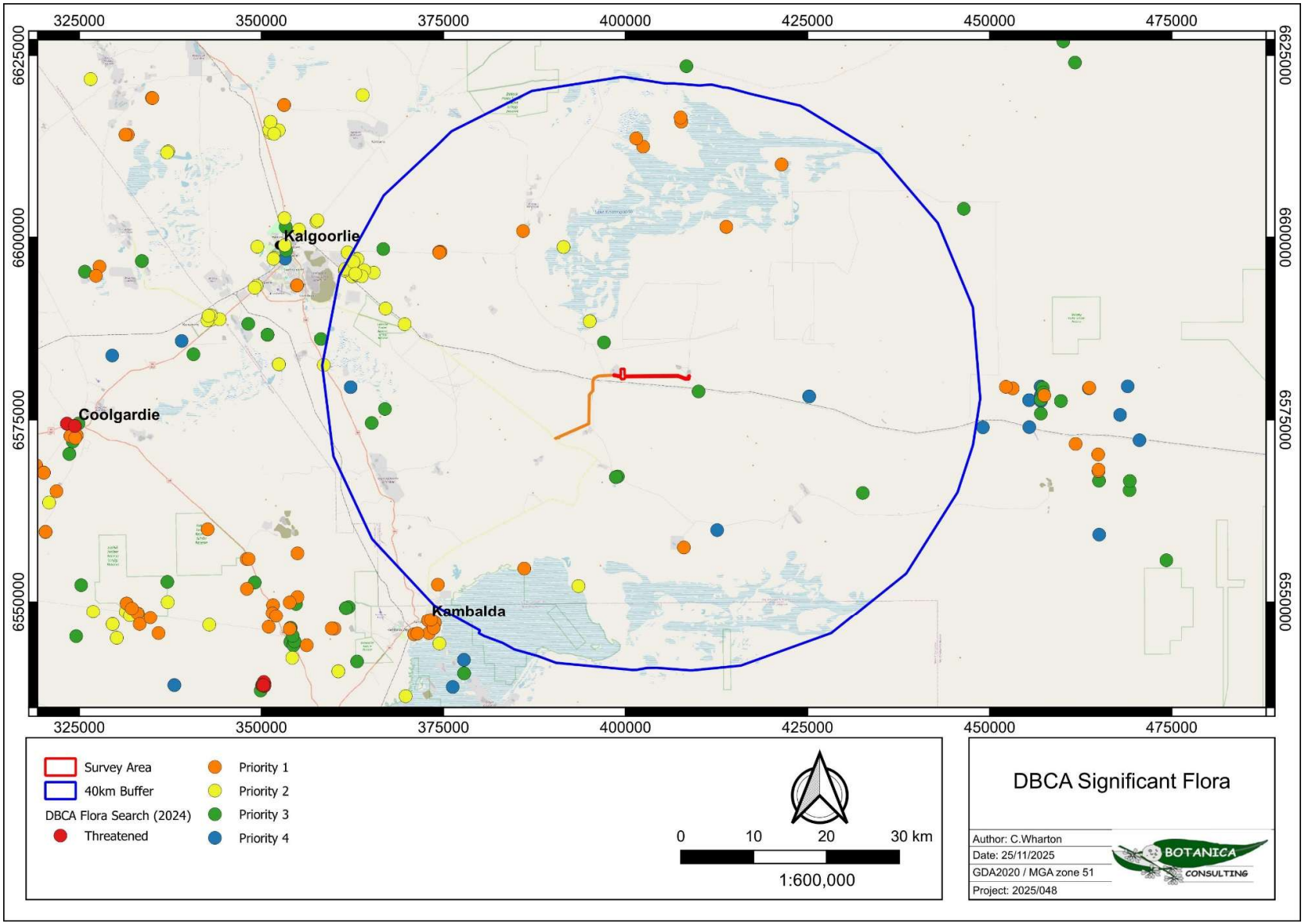

Figure 4-1: Significant flora (DBCA, 2024a) within the desktop search area (40km Buffer)

4.1.2 Fauna

According to the results of the ALA database search (ALA, 2022), a total of 208 terrestrial vertebrate fauna taxa have been recorded within 40 km of the original survey area, consisting of 141 bird, 11 mammal, 55 reptile and one amphibian taxa.

4.1.2.1 Introduced Fauna

The NatureMap and EPBC database searches identified nine feral fauna species, representing six families, as potentially occurring in the original survey area (Table 4-3)

Table 4-3: Potentially occurring introduced fauna within the original survey area

Family	Species	Common Name
Camelidae	Camelus dromedarius	Dromedary Camel
Canidae	lupus familiaris	Domestic Dog
	Vulpes vulpes	Red Fox
Columbidae	Columba livia	Domestic Pigeon
	Streptopelia chinensis	Spotted Turtle-Dove
	Streptopelia senegalensis	Laughing Turtle-Dove
Felidae	Felis catus	Cat
Leporidae	Oryctolagus cuniculus	Rabbit
Muridae	Mus musculus	House Mouse

4.1.2.2 Conservation Significant Fauna

The updated desktop assessment of conservation significant fauna (DBCA, 2024b; DCCEEW, 2025) identified 19 terrestrial vertebrate fauna species and two invertebrate fauna species of conservation significance that have previously been recorded within 40 km of the extracted survey area. Eleven are listed as Threatened under either the EPBC Act or the BC Act or both; six are listed as migratory or otherwise protected species under either the EPBC Act or the BC Act or both; and five are listed as Priority Fauna by the DBCA (four Priority 4) – noting that some species are listed in more than one category.

Habitat and distribution data was used to determine the likelihood of occurrence within the extracted survey area. Four species of migratory wading/ shorebirds were assessed collectively due to their similar classification and habitat requirements. The updated assessment identified one Threatened (VU) fauna species, as potentially occurring in the extracted survey area (Table 4-4).

Table 4-4: Significant Fauna – likelihood of occurrence within the extracted survey area

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Mammal						
Chuditch *Dasyurus geoffroii*	VU	VU	-	Deserts, woodlands, eucalypt shrubland, open forests and coastal areas. It is now found only in the southwest corner of Western Australia (ALA, 2025).	Unlikely to Occur. Considered to be locally extinct.	DCCEEW (2025)
Bird						
Western Grasswren *Amytornis textilis textilis*	-	-	P4	Its preferred habitat is low, often Acacia dominated, semiarid shrubland, no more than a metre in height, that forms densely foliaged clumps and thickets.	Would Not Occur. No suitable habitat.	DBCA (2024b)
Southern Whiteface *Aphelocephala leucopsis*	VU	VU	-	Found in arid regions across most of the southern half of the Australian continent, Acacia woodlands, particularly those dominated by mulga and drought-resistant chenopod shrub species, including saltbush and bluebush (ALA, 2025). It is found in open woodlands and shrublands with an understorey of grasses and low shrubs (DCCEEW, 2023).	Unlikely to Occur. Habitat likely marginal and unsuitable for breeding. Occasional transients only.	DCCEEW (2025)
Fork-tailed Swift *Apus pacificus*	MI	MI	-	Low to very high airspace over varied habitat from rainforest to semi desert (Birdlife	Unlikely to Occur. Very occasional transients only.	DCCEEW (2025)
Grey Falcon *Falco hypoleucos*	VU	VU	-	Occurs at low densities across inland Australia. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. Observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter. Prey species are predominately birds, including doves, pigeons, small parrots and cockatoos and finches, but also includes small mammals and lizards.	Unlikely to Occur. Very occasional transients only	DCCEEW (2025)
Grey Wagtail *Motacilla cinerea*	MI	MI	-	Running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004).	Would not occur. No suitable habitat.	DCCEEW (2025)
Malleefowl *Leipoa ocellata*	VU	VU	-	Scrublands and woodlands dominated by mallee and wattle species (DAWE, 2020b).	Possibly Occurs. Habitat likely marginal and unsuitable for breeding. Occasional transients only.	DBCA (2024b); DCCEEW (2025)
Night Parrot *Pezoporus occidentalis*	EN	CR	-	Most habitat records are of Triodia (Spinifex) grasslands and/or chenopod shrublands in the arid and semi-arid zones,	Would Not Occur. Very marginal habitat.	DCCEEW (2025)

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
				or Astrebla spp. (Mitchell grass), shrubby samphire and chenopod associations, scattered trees and shrubs, Acacia aneura (Mulga) woodland, treeless areas and bare gibber are associated with sightings of the species. Roosting and nesting sites are consistently reported as within clumps of dense vegetation, primarily old and large Spinifex (Triodia) clumps, but sometimes other vegetation types (DAWE, 2020b).		
Western Rosella (inland) *Platycercus icterotis xanthogenys*	-	-	P4	The inland subspecies (*P.i. xanthogenys*) is found in eucalypt and sheoak woodlands and scrubs, especially those containing wandoo (*E. wandoo*), flooded gum, salmon gum (E. *salmonophloia*), tall mallee and rock sheoak (*Allocasuarina huegeliana*) (DEC, 2009).	Unlikely to Occur. Only one record within 100km of Kalgoorlie. No suitable habitat (*i.e.*, limited availability of suitable hollow-bearing trees for breeding).	DBCA (2024b)
Princess Parrot *Polytelis alexandrae*	VU		P4	Dry inland areas of Spinifex with Eucalypts, desert oaks, Acacias, and sometimes amongst succulents around saltpans. Often far from water (ALA, 2025).	Unlikely to Occur. Known to occur further east in the Great Victoria Desert, although PMST records state that the species or species habitat may be in the area.	DCCEEW (2025)
Sharp-tailed Sandpiper *Calidris acuminata*	VU / MI	MI	-	Intertidal mudflats, also freshwater swamps and saltwater lakes (ALA, 20256).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)
Curlew Sandpiper *Calidris ferruginea*	CR / MI	MI		Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DCCEEW, 2025b).	Would Not Occur. No suitable habitat.	DCCEEW (2025)
Hooded Plover *Thinornis cucullatus*	-	-	P4	Freshwater lakes, freshwater marshes, coastal saline lagoons, and sandy beaches (ALA, 2025).	Would Not Occur. No suitable habitat.	DBCA (2024b)
Common Greenshank *Tringa nebularia*	EN / MI	MI	-	Inland wetlands and sheltered coastal areas, including mudflats, saltmarshes, river estuaries, deltas and lagoons (ALA, 2025).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)
Various migratory wading/ shorebirds *	IA/MI	IA/MI	-	Prefer muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DAWE, 2020b).	Would Not Occur. No suitable habitat.	DBCA (2024b); DCCEEW (2025)

Taxon	Conservation Status			Habitat Description	Likelihood of Occurrence	Source, Comments
	EPBC Act	BC Act	DBCA			
Reptile						
Western Spiny-tailed Skink *Egernia stokesii badia*	EN	VU	-	Egernia s. badia occurs in open eucalypt woodlands and Acacia-dominated shrublands in semi-arid to arid areas of south-western WA (Geraldton Sandplains and Yalgoo IBRA) and, depending on taxonomic clarification, around Shark Bay including Peron Peninsula, Edel Land and Dirk Hartog Island (Geraldton Sandplain and Carnarvon IBRA). It tends to shelter in logs, in cavities in the trunks and branches of shrubs, as well as in houses and ruins, especially in accumulations of old corrugated iron.	Would Not Occur. No suitable habitat. Survey area is >350km from majority of occurrence records (west of Meridan), although there is one isolated record ~25km northwest of survey area.	DBCA (2024b)
Invertebrate						
Inland Hairstreak Butterfly *Jalmenus aridus*	-	-	P1	Open woodland with mature *Senna artemisioides* ssp. *filifolia* as well as mixed flowering shrubs with open areas of well drained exposed ground adjoining the hostplants (Eastwood et al, 2023). The attendant ant Froggattella kirbii, must be present.	Would Not Occur. No suitable habitat.**	DBCA (2024b)
Arid Bronze Azure Butterfly *Ogyris petrina*	CR	CR	-	Known to occur within mature smooth barked Eucalypt woodlands in the Goldfields and Wheatbelt region of WA (DBCA, 2020). Critical habitat for the ABAB is associated with known host plants of the attendant ant Camponotus terebrans, which is typically eucalypt woodland dominated by smooth-barked eucalypts; predominantly gimlet (E. salubris), salmon gum (E. salmonophloia), york gum (E. loxophleba) and wheatbelt wandoo (E. capillosa capillosa). The attendant ant *Camponotus terebrans* (pale form), must be present.	Would Not Occur. No suitable habitat.**	DCCEEW (2025)

Information updated based on current conservation listings and data sources.

Based on results of additional databased searches (DBCA, 2024b; DCCEEW, 2025) the following species were added to the table: Western Grasswren, Southern Whiteface, Western Rosella (inland), Princess Parrot, Western Spiny-tailed Skink, Inland Hairstreak, and Arid Bronze Azure Butterfly.

* Migratory Shorebirds include: *Actitis hypoleucos* (Common Sandpiper), *Calidris alba* (Sanderling), *Calidris melanotos* (Pectoral Sandpiper), and Calidris ruficollis (Red-necked Stint).

** Based on results of a targeted survey to assess the presence of critical habitat of the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and the Inland Hairstreak (*Jalmenus aridus*) (Botanica, 2025).

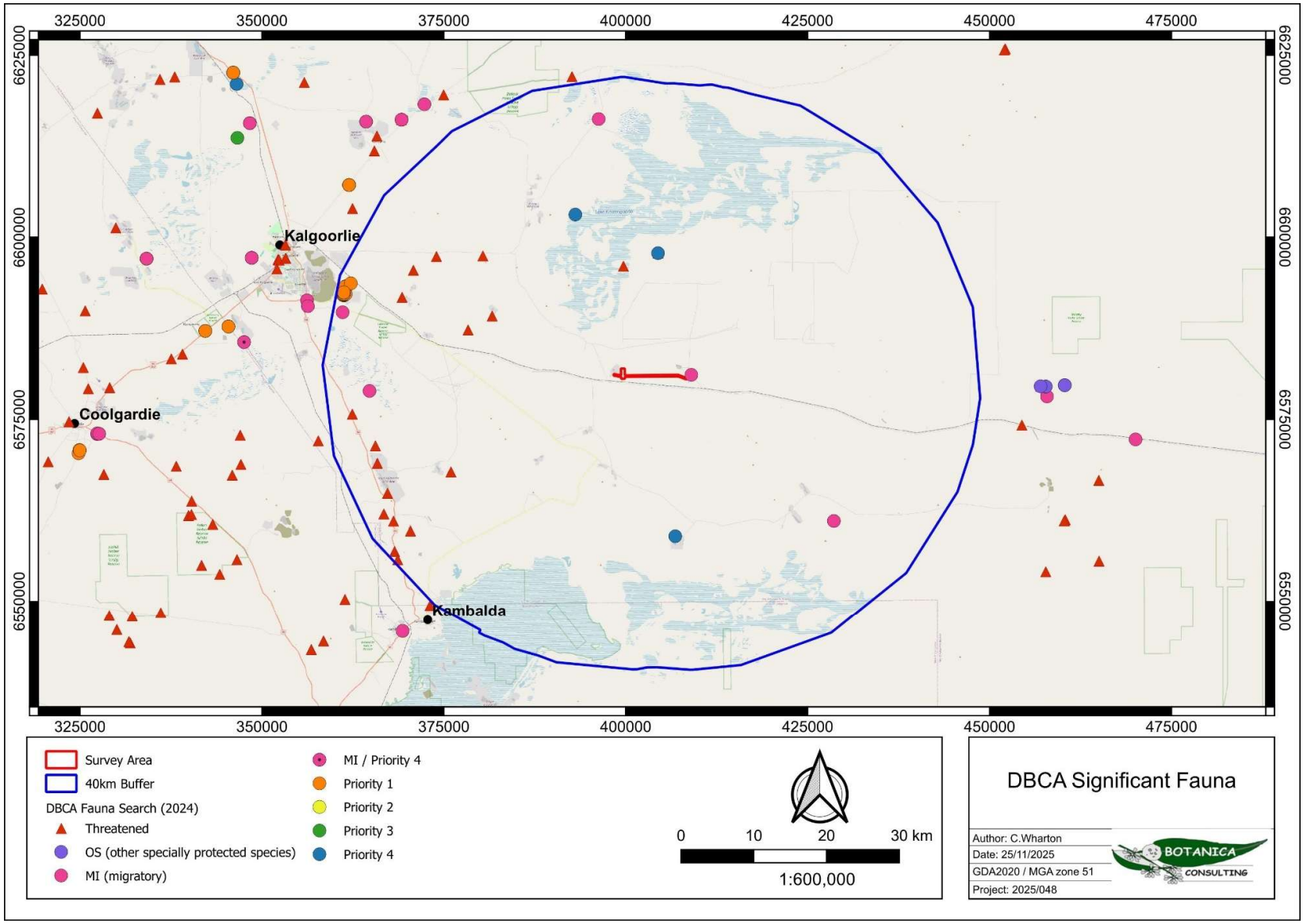

Figure 4-2: Significant fauna (DBCA, 2024b) within the desktop search area (40km Buffer)

4.2 Field Assessment

4.2.1 Flora

The field survey completed in Spring 2021 identified 102 vascular flora taxa within the original survey area. These taxa represented 62 genera across 26 families, with the most diverse families being Chenopodiaceae (16 species), followed by Fabaceae and Myrtaceae (13 species each). Dominant genera include Eremophila (12 species), Eucalyptus (11 species) and Acacia (10 species) (Botanica, 2022). The full field species inventory is listed in Appendix B.

4.2.1.1 Introduced Flora

One introduced (weed) species (*Salvia verbenaca*) was recorded within the original survey area in Spring 2021. This species is not listed as a WoNS or as a Declared Pest in Western Australia.

Table 4-5: Introduced flora species identified within the original survey area

Taxon	Common Name	Image
Salvia verbenaca	Wild sage	

4.2.1.2 Significant Flora

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

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

No Threatened, Priority or otherwise significant flora species were recorded within the survey area in Spring 2021.

4.2.2 Vegetation

4.2.2.1 Vegetation Types

Based on the Spring 2021 survey (Botanica, 2022), a total of eight broad-scale vegetation types (not including disturbed areas) were identified within the extracted survey area. Vegetation community descriptions and extents were determined from field survey results, aerial imagery interpretation and extrapolation of the communities. A map showing the vegetation types present in the survey area is provided in Figure 4-1 and a summary of vegetation types is presented in Table 4-6.

Table 4-6: Summary of vegetation types within the extracted survey area

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plain	CLP-AFW1 Area = 16.7 ha (6%)	*Acacia* woodland	*Acacia acuminata* woodland over *Dodonaea lobulata* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland	
Clay-loam plain	CLP-AOW1 Area = 14.4 ha (5.2%)	*Acacia* low open woodland	*Acacia acuminata* low open woodland over *Dodonaea lobulate* open shrubland over *Ptilotus obovatus* and *Westringia rigida* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plan	CLP-COW1 Area = 19.3 ha (6.9%)	*Casuarina* low sparse woodland	*Casuarina pauper* low sparse woodland over *Eremophila decipiens* open shrubland over *Maireana triptera* low sparse shrubland	
Clay-loam plain	CLP-EW1 Area = 32.5 ha (32.5%)	*Eucalyptus* woodland	*Eucalyptus salmonophloia* woodland over *Eremophila interstans* subs *virgata* open shrubland over *Maireana sedifolia* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Clay-loam plan	CLP-EW2 Area = 65.9 ha (23.6%)	*Eucalyptus* open woodland	*Eucalyptus lesouefii* open woodland over *Atriplex nummularia* subsp. *spathulata* shrubland over *Tecticornia disarticulata* low open shrubland	
Clay-loam plain	CLP-MW1 Area = 23.3 ha (8.4%)	*Eucalyptus* open mallee woodland	*Eucalyptus griffithsii* open mallee woodland over *Eremophila scoparia* sparse shrubland over *Cratystylis subspinescens* low open shrubland	

Landform	Vegetation Code	NVIS Major Vegetation Group	Vegetation Type	Image
Drainage depression	DD-EW1 Area = 31.9 ha (11.4%)	*Eucalyptus* low sparse woodland	*Eucalyptus salmonophloia* low sparse woodland over *Eremophila interstans* subsp. *virgata* open shrubland over *Maireana sedifolia* low open shrubland	
Rocky hillslope	RH-EW1 Area = 1 ha (5.2%)	*Eucalyptus* low open woodland	*Eucalyptus lesouefii, E. salmonophloia* and *E. salubris* low open woodland over *Tecticornia disarticulata* and *Atriplex nummularia* subsp. *spathulata* low open chenopod shrubland	
Cleared	Disturbed Area = 16 ha (5.7%)	-	Areas associated with existing mining operations.	

Information current at time of 2021 survey.

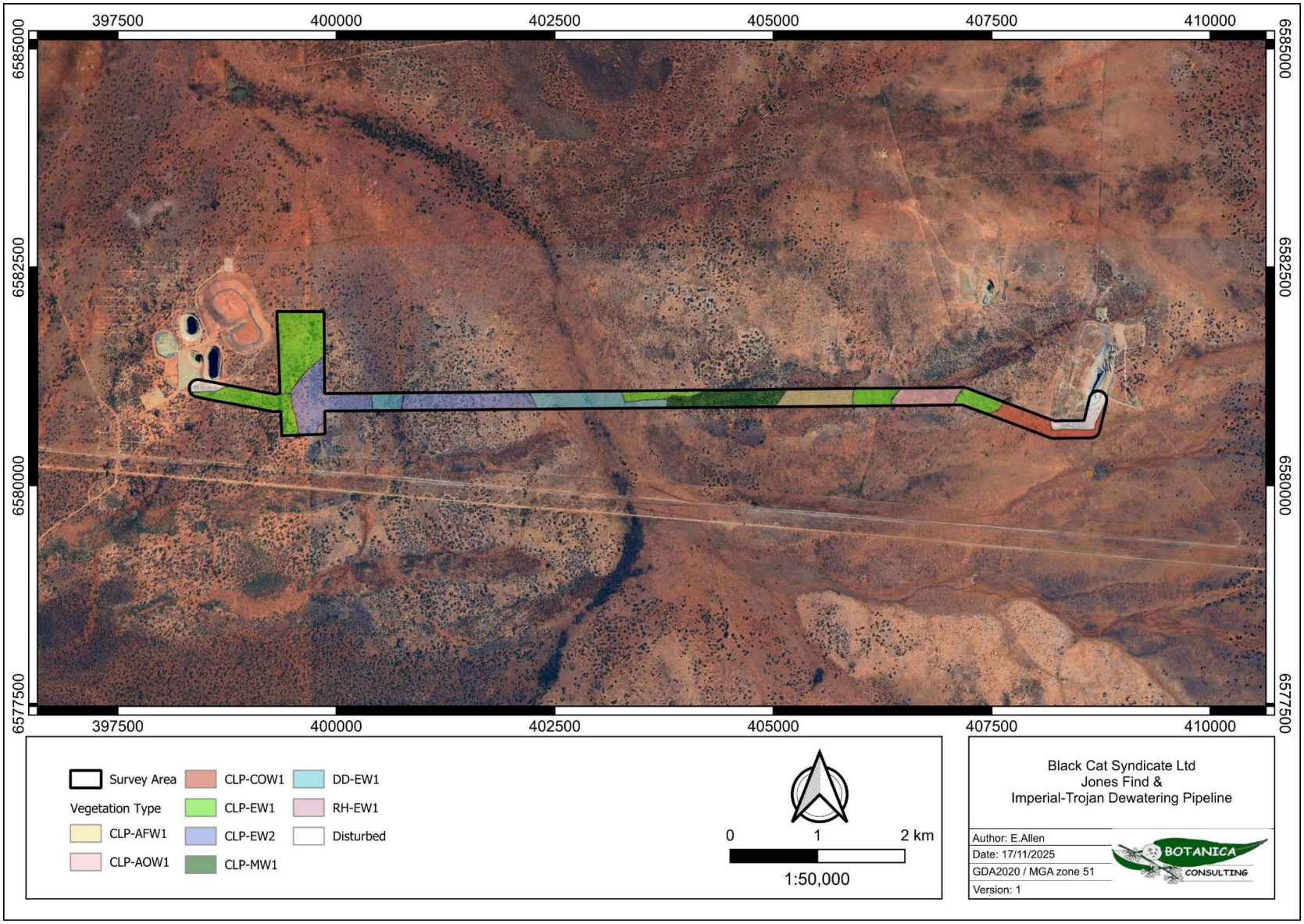

Figure 4-3: Vegetation types within the extracted survey area

4.2.2.2 Vegetation Condition

Based on the vegetation condition rating scale adapted from Keighery (1994) and Trudgen, (1988), native vegetation within the extracted survey area was categorised as 'very good' to 'good' condition (Table 4-7). Disturbances within the extracted survey area were associated with existing mining operations. A map of the vegetation condition across the survey area is provided in Figure 4-4.

Table 4-7: Vegetation condition rating within the extracted survey area

Condition rating	Description (EPA, 2016a)	Area (ha)	Area (%)
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.	263	94
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e., areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.	16	6
TOTAL		**279**	**100**

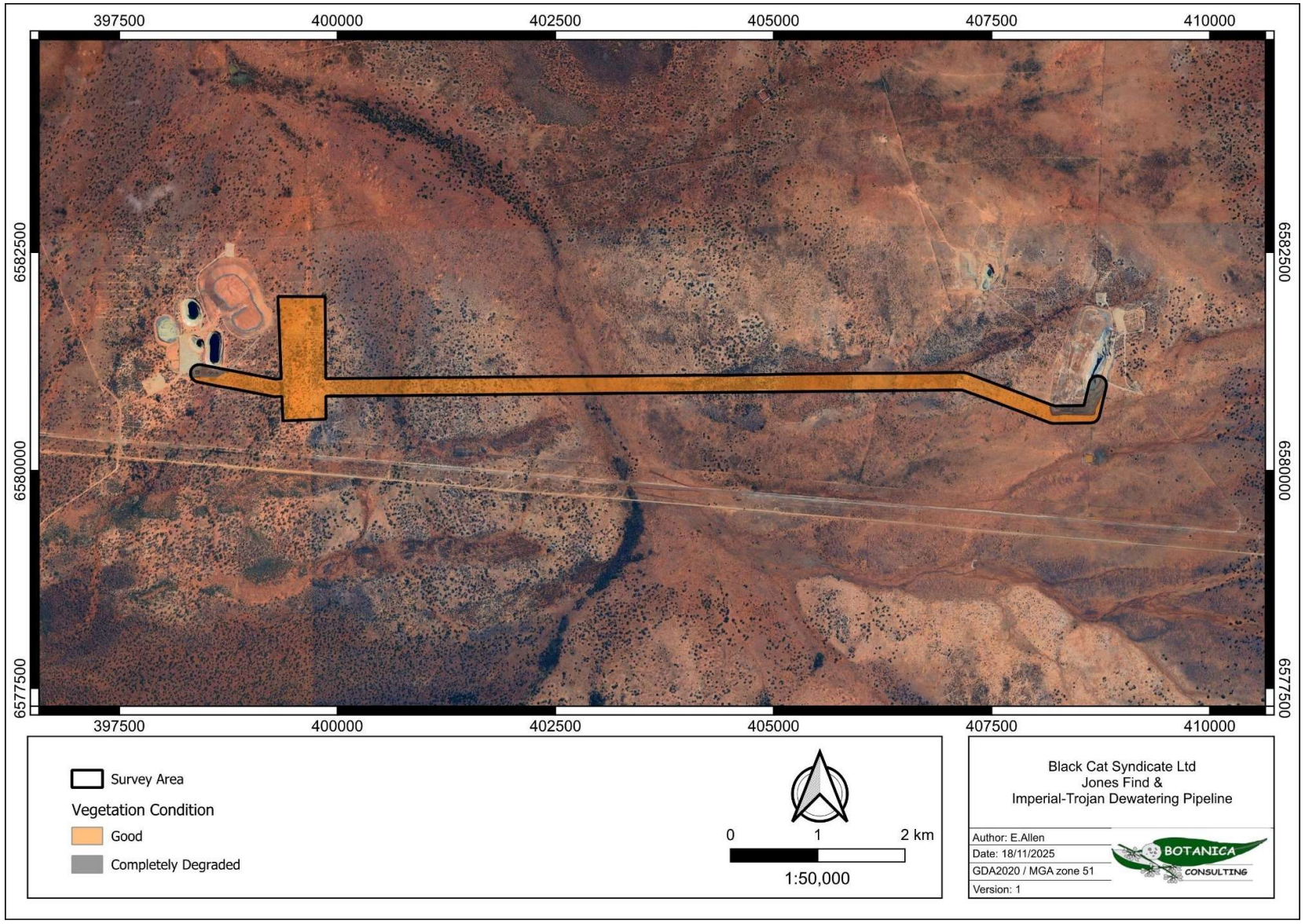

Figure 4-4: Vegetation condition rating of the extracted survey area

4.2.2.3 Significant Vegetation

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

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

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

4.2.3 Fauna

4.2.3.1 Fauna Habitat

Based on vegetation and associated landforms identified during the flora and vegetation assessment (Botanica, 2022) (Table 4-6), six broad scale terrestrial fauna habitats (not including disturbed areas) were identified within the extracted survey area. The extent of the identified fauna habitat and a summary description is provided in Table 4-8 below. A map of fauna habitats is provided in Figure 4-5.

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

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Acacia woodland on clay-loam plain Area = 31 ha (11.2%)	*Acacia acuminata* woodland over *Dodonaea shrubland*	• Ground not especially suited to burrowing species • Moderately diverse vegetation strata supporting avifauna assemblage • Moderately dense vegetation and low leaf litter	Malleefowl *Leipoa ocellata* Grey Falcon *Falco hypoleucos*	
Casuarina woodland on clay-loam plain Area = 19.3 ha (6.9%)	*Casuarina pauper* woodland over Eremophila shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Eucalyptus mallee woodland on clay-loam plain Area = 23.3 ha (8.3%)	Mixed Eucalyptus mallee woodland over Eremophila shrubland	• Ground not particularly to burrowing species • Low diversity vegetation strata • Low vegetation density and moderate leaf litter	Malleefowl *Leipoa ocellata* *Western Rosella (inland) Platycercus icterotis xanthogenys*	
Eucalyptus woodland in drainage depression Area = 31.9 ha (11.5%)	Eucalyptus woodland over Eremophila shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Eucalyptus woodland on clay loam plain Area = 156.7 ha (56.2%)	Eucalyptus woodland over Acacia and Eremophila shrubland	• Ground not especially suited to burrowing species • Moderate diversity vegetation strata • Moderate vegetation density and moderate leaf litter	Malleefowl *Leipoa ocellata* *Western Rosella (inland) Platycercus icterotis xanthogenys*	
Eucalyptus woodland on rocky hillslope Area = 1 ha (0.4%)	Eucalyptus mallee woodland over chenopod shrubland	• Ground not especially suited to burrowing species • Low diversity vegetation strata • Low vegetation density and low leaf litter	Grey Falcon *Falco hypoleucos*	

Fauna Habitat	Description	Representative Fauna Attributes	Possibly Occurring Conservation Significant Species	Image
Cleared Area = 15.5 ha (5.6%)	Disturbed areas	• Ground is not well suited to burrowing species. • Low value foraging habitat for mammals and avifauna due to lack of native vegetation. • Man made structures (e.g., buildings) provide good refuge for reptiles.	-	

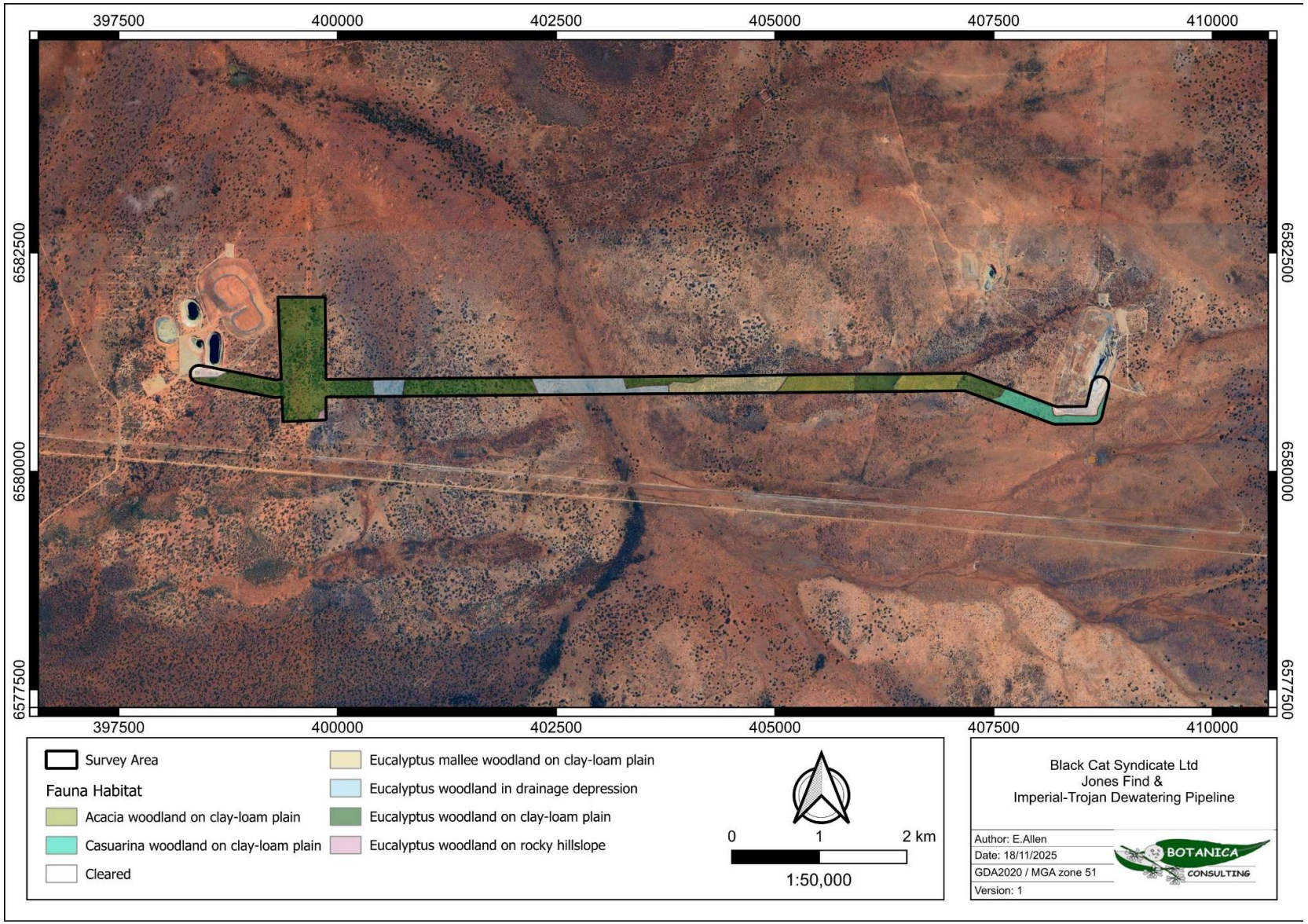

Figure 4-5: Fauna habitats within the extracted survey area

4.2.3.2 Significant Fauna

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

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

No evidence for the presence of Malleefowl, including nesting mounds, tracks or other signs, were recorded within the survey area in Spring 2021. No other evidence of other significant fauna species were observed during the survey (Botanica, 2022).

The current status of some species on site and/or in the general area is difficult to determine, however, based on the habitats present and/ or recent nearby records, the following species of conservation significance can be regarded as possibly utilising the extracted survey area for some purpose at times:

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

  This species is occasionally recorded in the Eastern Goldfields subregion. Habitat appears marginal/or unsuitable for breeding, however occasional transients could potentially occur. No evidence of Malleefowl activity (inactive or active mounds, tracks, feathers or bird observations *etc*.) were observed within the survey area. Significant impact unlikely.

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

4.3 Matters of National Environmental Significance

4.3.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

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

The EPBC Act covers nine protected matters:

- world heritage areas
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- water resources (that relate to unconventional gas development and large coal mining development).

No MNES as defined by the EPBC Act were identified within the survey area.

4.4 Matters of State Environmental Significance

4.4.1 *Environmental Protection Act 1986* (WA)

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

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

Environmentally sensitive areas (ESAs) are classes or areas of native vegetation as declared in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005* for the purposes of Part V

Division 2 of the EP Act, where the exemptions for clearing vegetation under the Clearing Regulations do not apply.

The following areas are declared to be ESAs:

- a declared World Heritage property as defined in section 13 of the EPBC Act;
- an area that is included on the Register of the National Estate, because of its natural heritage value, under the Australian Heritage Council Act 2003 of the Commonwealth;
- a defined wetland and the area within 50 m of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands;
- the area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located;
- the area covered by a TEC;
- a Bush Forever site listed in "Bush Forever" Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission;
- the areas covered by the following policies –
    - *Environmental Protection (Gnangara Mound Crown Land) Policy 1992*;
    - *Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002*;
- the areas covered by the lakes to which the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* applies; and
- protected wetlands as defined in the *Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998*.

No ESAs declared under the EP Act were identified within the survey area.

Additionally, in accordance with Schedule 1, Clause 4 of the Clearing Regulations, clearing of native vegetation in a 'Schedule One Area' for mining purposes is not permitted without a clearing permit. No Schedule One Areas occur within the survey area.

4.4.2 Biodiversity Conservation Act 2016 (WA)

The BC Act is administered by the DBCA to conserve and protect biodiversity and to promote the ecologically sustainable use of biodiversity components in the State of Western Australia. Under the BC Act, native species are listed as Threatened when they face a high to very high risk of extinction in the wild, and ecological communities are listed as Threatened when they face a high to very high risk of collapse. Whilst all native flora and fauna are protected throughout the State, special

protection is afforded to threatened flora and ecological communities, with the authorisation of the Minister being required before such flora can be taken or communities modified.

Furthermore, The Minister may list vegetation as a 'critical habitat' if it is critical to the survival of a threatened species or ecological community. Under Section 54(1) of the BC Act, habitat is eligible for listing as critical habitat if:

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

No TECs, Threatened species or critical habitat listed under the BC Act were recorded within the survey area (Botanica, 2022).

4.5 Other areas of Conservation Significance

The DBCA lists 'Priority' species and communities which are under consideration for declaration as 'Threatened' under the BC Act. These Priority species/ communities have no formal legal protection until they are endorsed by the Minister as being Threatened. No Priority species or PECs as listed by DBCA were identified within the survey area (Botanica, 2022).

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

There are no proposed nor gazetted conservation reserves within the survey area. The nearest conservation reserve is the Majestic Timber Reserve, located approximately 600 m south of the survey area.

4.6 Native Vegetation Clearing Principles

Based on the outcomes from the survey undertaken, Botanica assessed the results of the desktop and field survey with regards to the native vegetation clearing principles listed under Schedule 5 of the EP Act (Table 4-9). The assessment found that the proposed vegetation clearing activities are not at variance with any of the clearing principles.

Table 4-9: Assessment against native vegetation clearing principles

Letter	Principle	Assessment	Outcome
Native vegetation should not be cleared if it:			
(a)	comprises a high level of biological diversity.	Vegetation within the survey area is considered to be of moderate biological diversity. No Threatened, Priority or otherwise significant flora or ecological communities were identified within the survey area.	Clearing is unlikely to be at variance with this principle

Letter	Principle Native vegetation should not be cleared if it:	Assessment	Outcome
(b)	comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to WA.	The basic fauna search did not record any evidence for the presence of significant fauna or habitat within the survey area. A targeted survey for critical habitat assessment pertaining to the conservation significant butterfly species Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) and Inland Hairstreak (*Jalmenus aridus*) (Botanica, 2025), confirms that the survey area does not contain critical habitat associated with these species.	Clearing is unlikely to be at variance with this principle
(c)	includes, or is necessary for the continued existence of rare flora.	No Threatened Flora taxa, pursuant to the BC Act and the EPBC Act were identified within the survey area.	Clearing is unlikely to be at variance with this principle
(d)	comprises the whole or part of or is necessary for the maintenance of a threatened ecological community (TEC).	No Threatened Ecological Communities were identified as potentially occurring within the survey area.	Clearing is not at variance with this principle
(e)	is significant as a remnant of native vegetation in an area that has been extensively cleared	All vegetation associations retain over 98% of their pre-European extent.	Clearing is unlikely to be at variance with this principle
(f)	is growing, in, or in association with, an environment associated with a watercourse or wetland	One minor ephemeral drainage line was identified within the survey area.	Clearing is unlikely to be at variance with this principle
(g)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The survey area and surrounding region has not been extensively cleared. Clearing within the survey area is not considered likely to lead to land degradation issues such as salinity, water logging or acidic soils.	Clearing is unlikely to be at variance with this principle
(h)	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	Clearing within the survey area is considered unlikely to impact the adjacent Majestic Timber Reserve. Noting that the Trans-Australian Railway corridor and Trans Access Road are located between the survey area and the Majestic Timber Reserve.	Clearing is unlikely to be at variance with this principle
(i)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	No surface water bodies were identified within the survey area. No potential terrestrial GDEs were identified within the survey area. Clearing activities are unlikely to impact hydrological systems.	Clearing is unlikely to be at variance with this principle
(j)	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	Rainfall in the Eastern Goldfields subregion has an average rainfall of 200-300mm and an evaporation rate of 2400 mm. Rainfall data for Kalgoorlie-Boulder indicates that rainfall is spread throughout the year and rainfall events are unlikely to result in localised	Clearing is unlikely to be at variance with this principle

Letter	Principle Native vegetation should not be cleared if it:	Assessment	Outcome
		flooding. Clearing within the survey area is not likely to increase the incidence or intensity of flooding within the survey area or surrounds.	

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APPENDIX A:
CONSERVATION CATEGORIES (BC ACT AND EPBC ACT)

Definitions of Conservation Significant Species

Code	Category
State categories of Threatened and Priority species	
Threatened Species (T) Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as Threatened species under section 26(2) of the BC Act. - Published under Schedule 2 of the *Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1060-1069).* - Published under Schedule 1 of the *Biodiversity Conservation (Listing of Native Species) (Flora) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1070-1075).*	
CR	**Critically Endangered** Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
EN	**Endangered** Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
VU	**Vulnerable** Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under Schedule 2 Division 3 of the *Biodiversity Conservation (Listing of Native Species)*
Extinct species Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild. - Published under Schedule 3 of the *Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1060-1069).* - Published under Schedule 2 of the *Biodiversity Conservation (Listing of Native Species) (Flora) Order 2025 (Government Gazette, WA 1 July 2025 No. 78 pg1070-1075).*	
EX	**Extinct** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
EW	**Extinct in the Wild** Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no Threatened fauna or Threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species. *- Published under Schedule 1 of the Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2025 (Government Gazette, WA 1 July 2025 No. 78).*	
CD	**Species of special conservation interest** Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as Threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Code	Category
IA	**International Agreement/ Migratory** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).
Priority species Possibly Threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of Priority for survey and evaluation of conservation status so that consideration can be given to their declaration as Threatened Fauna or Flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.	
P1	**Priority 1: Poorly-known species** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
P2	**Priority 2: Poorly-known species** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
P3	**Priority 3: Poorly-known species** Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
P4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Commonwealth categories of Threatened species	
EX	**Extinct** Taxa where there is no reasonable doubt that the last member of the species has died.
EW	**Extinct in the Wild** Taxa where it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CR	**Critically Endangered** Taxa that are facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

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

Definitions of Conservation Significant Communities

Code	Category
State categories of Threatened Ecological Communities (TEC)	
PD	**Presumed Totally Destroyed**
	An ecological community will be listed as Presumed Totally Destroyed if there are no recent records of the community being extant and either of the following applies:
	• records within the last 50 years have not been confirmed despite thorough searches or known likely habitats or;
	• all occurrences recorded within the last 50 years have since been destroyed.
CR	**Critically Endangered**
	An ecological community will be listed as Critically Endangered when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	**Endangered**
	An ecological community will be listed as Endangered when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. The ecological community must meet any one of the following criteria:
	The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short-term future, or is unlikely to be substantially rehabilitated in the short-term future due to modification;
	The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area;
	The ecological community is highly modified with potential of being rehabilitated in the short-term future.
VU	**Vulnerable**
	An ecological community will be listed as Vulnerable when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet any one of the following criteria:
	The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated;
	The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution;
	The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.
Commonwealth categories of Threatened Ecological Communities (TEC)	
CE	**Critically Endangered** If, at that time, an ecological community is facing an extremely high risk of extinction in the wild in the immediate future (indicative timeframe being the next 10 years).

Code	Category
EN	**Endangered** If, at that time, an ecological community is not critically endangered but is facing a very high risk of extinction in the wild in the near future (indicative timeframe being the next 20 years).
VU	**Vulnerable** If, at that time, an ecological community is not critically endangered or endangered, but is facing a high risk of extinction in the wild in the medium–term future (indicative timeframe being the next 50 years).
Priority Ecological Communities	
P1	**Poorly-known ecological communities**
	Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist.
P2	**Poorly-known ecological communities**
	Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, un-allocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.
P3	**Poorly known ecological communities**
	Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:
	Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
	Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	**Ecological communities that are adequately known, rare but not threatened** or meet criteria for near threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.
P5	**Conservation Dependent ecological communities**
	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

APPENDIX B:
LIST OF SPECIES IDENTIFIED WITHIN EACH VEGETATION TYPE

(A) and blue text-denotes annual taxa; (W) and green text-denotes introduced flora (WAHERB, 1998-)

Green highlighted columns indicate vegetation types within the extracted survey area.

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
Aizoaceae	*Gunniopsis quadrifida*				*		*		
Amaranthaceae	*Ptilotus aervoides*	*	*	*					
	Ptilotus exaltatus		*	*					*
	Ptilotus holosericeus		*				*	*	*
	Ptilotus obovatus	*	*	*	*				*
Apocynaceae	*Alyxia buxifolia*	*						*	*
	Leichhardtia australis	*		*			*	*	*
Asparagaceae	*Thysanotus manglesianus*	*		*					*
Asteraceae	*Cratystylis conocephala*	*			*	*		*	
	Cratystylis microphylla		*				*	*	*
	Cratystylis subspinescens			*	*		*	*	
	Erymophyllum ramosum						*		*
	Olearia muelleri		*	*					*
	Olearia pimelioides							*	*
	Rhodanthe floribunda								
Boraginaceae	*Halgania andromedifolia*				*		*		*
Casuarinaceae	*Casuarina pauper*	*		*			*	*	
Chenopodiaceae	*Atriplex nummularia* subsp. *spathulata*	*		*	*	*		*	*
	Atriplex stipitate		*		*	*			*
	Atriplex vesicaria		*		*		*	*	

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Chenopodium curvispicatum	*		*					*
	Maireana georgei	*		*	*			*	
	Maireana oppositifolia	*	*			*		*	*
	Maireana pentatropis		*			*	*	*	
	Maireana pyramidata			*			*	*	
	Maireana sedifolia	*		*				*	
	Maireana trichoptera		*				*	*	*
	Maireana triptera	*	*	*	*		*		
	Rhagodia eremaea		*				*	*	*
	Sclerolaena densiflora	*	*				*		
	Sclerolaena diacantha	*	*		*	*	*	*	*
	Sclerolaena parviflora			*	*	*	*	*	
	Tecticornia disarticulata					*		*	
Fabaceae	*Acacia acuminata*	*	*		*				*
	Acacia colletioides	*			*				
	Acacia erinacea	*	*		*				*
	Acacia hemiteles		*	*	*		*		
	Acacia jennerae			*	*		*	*	
	Acacia kalgoorliensis				*				
	Acacia murrayana		*				*	*	
	Acacia oswaldii								
	Acacia collegialis								
	Acacia tetragonophylla								
	Glycyrrhiza acanthocarpa							*	
	Senna artemisioides subsp. *filifolia*		*	*	*	*			*
	Swainsona canescens				*			*	
Frankeniaceae	*Frankenia setosa*							*	
Goodeniaceae	*Scaevola spinescens*	*		*					*
Hemerocallidaceae	*Dianella revoluta*	*	*	*					*
Lamiaceae	*Salvia verbenaca (W)*							*	

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Westringia rigida	*	*	*					*
Nyctaginaceae	*Boerhavia coccinea*								*
Malvaceae	*Lawrencia glomerata*							*	
	Sida spodochroma		*	*	*		*	*	
Myrtaceae	*Eucalyptus celastroides*							*	
	Eucalyptus griffithsii	*	*	*	*				*
	Eucalyptus lesouefii		*	*		*			*
	Eucalyptus oleosa		*	*		*	*	*	
	Eucalyptus salmonophloia				*			*	
	Eucalyptus salubris				*	*	*		
	Eucalyptus stricklandii					*			
	Eucalyptus torquata								
	Eucalyptus ewartiana								*
	Eucalyptus transcontinentalis			*			*		
	Eucalyptus yilgarnensis				*	*		*	
	Melaleuca lateriflora								
	Melaleuca sheathiana					*	*		
Pittosporaceae	Pittosporum angustifolium			*			*	*	
Poaceae	*Aristida contorta*	*	*	*	*				
	Austrostipa elegantissima		*	*	*				*
	Austrostipa nitida	*			*	*		*	
	Cymbopogon ambiguus							*	*
	Enneapogon caerulescens	*	*				*	*	
	Eragrostis eriopoda	*	*					*	*
	Triodia scariosa	*		*					
	Enteropogon ramosus			*					*
Proteaceae	*Grevillea acuaria*					*			*
	Grevillea nematophylla		*						*
Rutaceae	*Philotheca brucei*								*
Santalaceae	*Exocarpos aphyllus*			*		*			

Family	Taxon	CLP-AFW1	CLP-AOW1	CLP-COW1	CLP-EW1	CLP-EW2	CLP-MW1	DD-EW1	RH-EW1
	Santalum acuminatum					*	*	*	
	Santalum spicatum	*	*	*			*		
Sapindaceae	*Alectryon oleifolius*				*			*	
	Dodonaea lobulata				*		*		*
	Dodonaea viscosa								*
Scrophulariaceae	*Eremophila alternifolia*			*			*		
	Eremophila clarkei							*	
	Eremophila dempsteri						*		
	Eremophila decipiens			*	*				
	Eremophila glabra			*					
	Eremophila interstans								
	Eremophila interstans subsp. *virgata*							*	
	Eremophila ionantha				*				
	Eremophila oldfieldii subsp. *angustifolia*		*						*
	Eremophila parvifolia				*	*			
	Eremophila pustulata								
	Eremophila scoparia			*	*	*		*	*
Solanaceae	*Lycium australe*					*	*	*	
	Solanum hoplopetalum							*	
	Solanum lasiophyllum	*	*	*	*		*		*
Thymelaeaceae	*Pimelea microcephala*	*			*				*
Zygophyllaceae	*Roepera eremaea*		*				*	*	

APPENDIX C:
VEGETATION CONDITION RATING

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

APPENDIX D:
ATLAS OF LIVING AUSTRALIA DESKTOP SEARCH (40KM)

(ALA, 2022)

Vascular Flora

Family	Taxon
Aizoaceae	*Carpobrotus edulis* subsp. *edulis*
Aizoaceae	*Carpobrotus rossii*
Aizoaceae	*Disphyma crassifolium* subsp. *clavellatum*
Aizoaceae	*Gunniopsis quadrifida*
Aizoaceae	*Mesembryanthemum crystallinum*
Aizoaceae	*Mesembryanthemum nodiflorum*
Aizoaceae	*Tetragonia eremaea*
Amaranthaceae	*Ptilotus carlsonii*
Amaranthaceae	*Ptilotus holosericeus*
Amaranthaceae	*Ptilotus nobilis* subsp. *nobilis*
Amaranthaceae	*Ptilotus obovatus*
Amaranthaceae	*Ptilotus rigidus*
Amaranthaceae	*Surreya diandra*
Apocynaceae	*Alyxia tetanifolia*
Apocynaceae	*Marsdenia australis*
Apocynaceae	*Vincetoxicum lineare*
Araliaceae	*Trachymene ornata*
Asparagaceae	*Arthropodium* sp. Goldfields (H.Pringle 2188)
Asparagaceae	*Chamaexeros fimbriata*
Asparagaceae	*Thysanotus manglesianus*
Asphodelaceae	*Bulbine semibarbata*
Asteraceae	*Angianthus tomentosus*
Asteraceae	*Asteridea athrixioides*
Asteraceae	*Asteridea chaetopoda*
Asteraceae	*Brachyscome ciliaris*
Asteraceae	*Brachyscome lineariloba*
Asteraceae	*Calotis multicaulis*
Asteraceae	*Calotis plumulifera*
Asteraceae	*Carduus tenuiflorus*
Asteraceae	*Carthamus lanatus*
Asteraceae	*Centaurea melitensis*
Asteraceae	*Chrysocephalum semipapposum*
Asteraceae	*Cratystylis conocephala*
Asteraceae	*Cratystylis microphylla*
Asteraceae	*Cratystylis subspinescens*
Asteraceae	*Hyalosperma glutinosum*
Asteraceae	*Hyalosperma glutinosum* subsp. *glutinosum*
Asteraceae	*Isoetopsis graminifolia*
Asteraceae	*Leiocarpa websteri*
Asteraceae	*Lemooria burkittii*
Asteraceae	*Leontodon rhagadioloides*
Asteraceae	*Millotia myosotidifolia*
Asteraceae	*Minuria cunninghamii*
Asteraceae	*Monoculus monstrosus*
Asteraceae	*Olearia muelleri*
Asteraceae	*Olearia pimeleoides*
Asteraceae	*Oligocarpus calendulaceus*
Asteraceae	*Oncosiphon suffruticosum*
Asteraceae	*Podolepis capillaris*
Asteraceae	*Pterocaulon sphacelatum*
Asteraceae	*Rhodanthe chlorocephala* subsp. *rosea*
Asteraceae	*Rhodanthe floribunda*
Asteraceae	*Rhodanthe stricta*
Asteraceae	*Senecio glossanthus*
Asteraceae	*Senecio gregorii*
Asteraceae	*Senecio lacustrinus*
Asteraceae	*Sonchus oleraceus*
Asteraceae	*Streptoglossa liatroides*
Asteraceae	*Symphyotrichum squamatum*
Asteraceae	*Trichanthodium skirrophorum*
Asteraceae	*Vittadinia sulcata*
Asteraceae	*Waitzia acuminata* var. *acuminata*
Boraginaceae	*Halgania cyanea*
Boraginaceae	*Halgania cyanea* var. Allambi Stn (B.W.Strong 676)
Boraginaceae	*Halgania cyanea* var. Charleville (R.W.Purdie+ 111)

Boraginaceae	*Halgania lavandulacea*
Boraginaceae	*Heliotropium curassavicum*
Boraginaceae	*Heliotropium europaeum*
Boraginaceae	*Heliotropium supinum*
Brassicaceae	*Alyssum linifolium*
Brassicaceae	*Arabidella trisecta*
Brassicaceae	*Carrichtera annua*
Brassicaceae	*Lepidium africanum*
Brassicaceae	*Lepidium oxytrichum*
Brassicaceae	*Lepidium phlebopetalum*
Brassicaceae	*Lepidium platypetalum*
Brassicaceae	*Sisymbrium erysimoides*
Brassicaceae	*Sisymbrium irio*
Brassicaceae	*Sisymbrium orientale*
Brassicaceae	*Stenopetalum lineare*
Brassicaceae	*Stenopetalum pedicellare*
Cactaceae	*Cylindropuntia fulgida* var. *mamillata*
Caryophyllaceae	*Spergularia marina*
Casuarinaceae	*Allocasuarina acuaria*
Casuarinaceae	*Allocasuarina helmsii*
Casuarinaceae	*Casuarina pauper*
Chenopodiaceae	*Atriplex acutibractea*
Chenopodiaceae	*Atriplex acutibractea* subsp. *acutibractea*
Chenopodiaceae	*Atriplex amnicola*
Chenopodiaceae	*Atriplex codonocarpa*
Chenopodiaceae	*Atriplex eardleyae*
Chenopodiaceae	*Atriplex holocarpa*
Chenopodiaceae	*Atriplex nana*
Chenopodiaceae	*Atriplex nummularia*
Chenopodiaceae	*Atriplex nummularia* subsp. *spathulata*
Chenopodiaceae	*Atriplex semibaccata*
Chenopodiaceae	*Atriplex stipitata*
Chenopodiaceae	*Atriplex vesicaria*
Chenopodiaceae	*Atriplex vesicaria* subsp. *variabilis*
Chenopodiaceae	*Chenopodium album*
Chenopodiaceae	*Chenopodium curvispicatum*
Chenopodiaceae	*Didymanthus roei*
Chenopodiaceae	*Dysphania kalpari*
Chenopodiaceae	*Enchylaena tomentosa*
Chenopodiaceae	*Eriochiton sclerolaenoides*
Chenopodiaceae	*Maireana amoena*
Chenopodiaceae	*Maireana appressa*
Chenopodiaceae	*Maireana brevifolia*
Chenopodiaceae	*Maireana erioclada*
Chenopodiaceae	*Maireana georgei*
Chenopodiaceae	*Maireana glomerifolia*
Chenopodiaceae	*Maireana pentatropis*
Chenopodiaceae	*Maireana platycarpa*
Chenopodiaceae	*Maireana pyramidata*
Chenopodiaceae	*Maireana sedifolia*
Chenopodiaceae	*Maireana trichoptera*
Chenopodiaceae	*Rhagodia drummondii*
Chenopodiaceae	*Rhagodia preissii* subsp. *preissii*
Chenopodiaceae	*Salsola australis*
Chenopodiaceae	*Sclerolaena brevifolia*
Chenopodiaceae	*Sclerolaena diacantha*
Chenopodiaceae	*Sclerolaena drummondii*
Chenopodiaceae	*Sclerolaena eurotioides*
Chenopodiaceae	*Sclerolaena obliquicuspis*
Chenopodiaceae	*Sclerolaena patenticuspis*
Chenopodiaceae	*Tecticornia chartacea*
Chenopodiaceae	*Tecticornia disarticulata*
Chenopodiaceae	*Tecticornia doleiformis*
Chenopodiaceae	*Tecticornia doliiformis*
Chenopodiaceae	*Tecticornia flabelliformis*
Chenopodiaceae	*Tecticornia indica* subsp. *bidens*
Chenopodiaceae	*Tecticornia lylei*
Chenopodiaceae	*Tecticornia peltata*
Chenopodiaceae	*Tecticornia pergranulata* subsp. *pergranulata*
Chenopodiaceae	*Tecticornia pruinosa*
Chenopodiaceae	*Tecticornia pterygosperma* subsp. *pterygosperma*
Chenopodiaceae	*Tecticornia syncarpa*
Chenopodiaceae	*Tecticornia triandra*
Chenopodiaceae	*Tecticornia undulata*
Cleomaceae	*Cleome tetrandra*
Colchicaceae	*Wurmbea tenella*
Convolvulaceae	*Convolvulus remotus*
Convolvulaceae	*Wilsonia humilis*
Crassulaceae	*Bryophyllum delagoense*
Cucurbitaceae	*Citrullus colocynthis*
Cupressaceae	*Callitris columellaris*
Cupressaceae	*Callitris glaucophylla*
Cyperaceae	*Chrysitrix distigmatosa*
Cyperaceae	*Eleocharis acutangula*
Dilleniaceae	*Hibbertia ancistrophylla*
Dilleniaceae	*Hibbertia* sp.
Euphorbiaceae	*Bertya dimerostigma*

Euphorbiaceae	*Beyeria lechenaultii*
Euphorbiaceae	*Euphorbia drummondii*
Euphorbiaceae	*Monotaxis bracteata*
Euphorbiaceae	*Monotaxis grandiflora* var. *obtusifolia*
Fabaceae	*Acacia acuminata*
Fabaceae	*Acacia aneura*
Fabaceae	*Acacia aneura* var. *aneura*
Fabaceae	*Acacia aptaneura*
Fabaceae	*Acacia burkittii*
Fabaceae	*Acacia collegialis*
Fabaceae	*Acacia colletioides*
Fabaceae	*Acacia donaldsonii*
Fabaceae	*Acacia erinacea*
Fabaceae	*Acacia hemiteles*
Fabaceae	*Acacia inceana* subsp. *inceana*
Fabaceae	*Acacia jennerae*
Fabaceae	*Acacia kalgoorliensis*
Fabaceae	*Acacia lasiocalyx*
Fabaceae	*Acacia masliniana*
Fabaceae	*Acacia merrallii*
Fabaceae	*Acacia murrayana*
Fabaceae	*Acacia nyssophylla*
Fabaceae	*Acacia oswaldii*
Fabaceae	*Acacia prainii*
Fabaceae	*Acacia quadrimarginea*
Fabaceae	*Acacia resinistipulea*
Fabaceae	*Acacia resinosa*
Fabaceae	*Acacia warramaba*
Fabaceae	*Acacia websteri*
Fabaceae	*Acacia xerophila*
Fabaceae	*Acacia xerophila* var. *brevior*
Fabaceae	*Chorizema racemosum*
Fabaceae	*Cullen discolor*
Fabaceae	*Daviesia croniniana*
Fabaceae	*Glycyrrhiza acanthocarpa*
Fabaceae	*Jacksonia arida*
Fabaceae	*Medicago polymorpha*
Fabaceae	*Pultenaea* sp.
Fabaceae	*Senna artemisioides*
Fabaceae	*Senna artemisioides* subsp. *filifolia*
Fabaceae	*Senna cardiosperma*
Fabaceae	*Senna flexuosa*
Fabaceae	*Senna pleurocarpa* var. *angustifolia*
Fabaceae	*Senna stowardii*

Fabaceae	*Swainsona affinis*
Fabaceae	*Swainsona beasleyana*
Fabaceae	*Swainsona canescens*
Fabaceae	*Swainsona colutoides*
Fabaceae	*Swainsona formosa*
Fabaceae	*Swainsona kingii*
Fabaceae	*Templetonia incrassata*
Frankeniaceae	*Frankenia desertorum*
Frankeniaceae	*Frankenia interioris*
Frankeniaceae	*Frankenia interioris* var. *interioris*
Frankeniaceae	*Frankenia pauciflora*
Frankeniaceae	*Frankenia setosa*
Frankeniaceae	*Frankenia* sp. (aff. confusa)
Geraniaceae	*Erodium cicutarium*
Geraniaceae	*Erodium crinitum*
Geraniaceae	*Erodium cygnorum*
Goodeniaceae	*Coopernookia strophiolata*
Goodeniaceae	*Dampiera latealata*
Goodeniaceae	*Dampiera stenostachya*
Goodeniaceae	*Goodenia azurea*
Goodeniaceae	*Goodenia havilandii*
Goodeniaceae	*Lechenaultia pulvinaris*
Goodeniaceae	*Scaevola oxyclona*
Goodeniaceae	*Scaevola spinescens*
Haloragaceae	*Haloragis gossei*
Haloragaceae	*Haloragis trigonocarpa*
Lamiaceae	*Dicrastylis parvifolia*
Lamiaceae	*Dicrastylis reticulata*
Lamiaceae	*Lachnostachys coolgardiensis*
Lamiaceae	*Physopsis viscida*
Lamiaceae	*Prostanthera althoferi*
Lamiaceae	*Prostanthera althoferi* subsp. *althoferi*
Lamiaceae	*Prostanthera incurvata*
Lamiaceae	*Salvia verbenaca*
Lamiaceae	*Teucrium disjunctum*
Lamiaceae	*Westringia cephalantha*
Lamiaceae	*Westringia rigida*
Loranthaceae	*Amyema fitzgeraldii*
Loranthaceae	*Amyema miquelii*
Loranthaceae	*Amyema pendula*
Loranthaceae	*Amyema preissii*
Malvaceae	*Abutilon cryptopetalum*
Malvaceae	*Androcalva luteiflora*
Malvaceae	*Brachychiton gregorii*

Malvaceae	*Lawrencia diffusa*
Malvaceae	*Lawrencia glomerata*
Malvaceae	*Lawrencia helmsii*
Malvaceae	*Lawrencia repens*
Malvaceae	*Lawrencia squamata*
Malvaceae	*Malva preissiana*
Malvaceae	*Radyera farragei*
Malvaceae	*Sida calyxhymenia*
Malvaceae	*Sida intricata*
Malvaceae	*Sida spodochroma*
Martyniaceae	*Proboscidea louisianica*
Myrtaceae	*Calothamnus chrysanthereus*
Myrtaceae	*Calytrix merrelliana*
Myrtaceae	*Cyathostemon divaricatus*
Myrtaceae	*Darwinia* sp. Karonie (K.Newbey 8503)
Myrtaceae	*Enekbatus clavifolius*
Myrtaceae	*Eucalyptus campaspe*
Myrtaceae	*Eucalyptus celastroides*
Myrtaceae	*Eucalyptus celastroides* subsp. *celastroides*
Myrtaceae	*Eucalyptus ceratocorys*
Myrtaceae	*Eucalyptus concinna*
Myrtaceae	*Eucalyptus eremicola*
Myrtaceae	*Eucalyptus eremophila*
Myrtaceae	*Eucalyptus griffithsii*
Myrtaceae	*Eucalyptus horistes*
Myrtaceae	*Eucalyptus hypolaena*
Myrtaceae	*Eucalyptus kruseana*
Myrtaceae	*Eucalyptus leptophylla*
Myrtaceae	*Eucalyptus lesouefii*
Myrtaceae	*Eucalyptus longissima*
Myrtaceae	*Eucalyptus oleosa*
Myrtaceae	*Eucalyptus oleosa* subsp. *oleosa*
Myrtaceae	*Eucalyptus orbifolia*
Myrtaceae	*Eucalyptus planipes*
Myrtaceae	*Eucalyptus platycorys*
Myrtaceae	*Eucalyptus ravida*
Myrtaceae	*Eucalyptus salicola*
Myrtaceae	*Eucalyptus salmonophloia*
Myrtaceae	*Eucalyptus salubris*
Myrtaceae	*Eucalyptus stricklandii*
Myrtaceae	*Eucalyptus tenuis*
Myrtaceae	*Eucalyptus torquata*
Myrtaceae	*Eucalyptus transcontinentalis*
Myrtaceae	*Eucalyptus vittata*

Myrtaceae	*Eucalyptus websteriana*
Myrtaceae	*Eucalyptus websteriana* subsp. *websteriana*
Myrtaceae	*Eucalyptus x brachyphylla*
Myrtaceae	*Eucalyptus yilgarnensis*
Myrtaceae	*Leptospermum nitens*
Myrtaceae	*Melaleuca coccinea*
Myrtaceae	*Melaleuca fulgens* subsp. *fulgens*
Myrtaceae	*Melaleuca hamata*
Myrtaceae	*Melaleuca lateriflora*
Myrtaceae	*Melaleuca sheathiana*
Myrtaceae	*Melaleuca uncinata*
Myrtaceae	*Melaleuca xerophila*
Myrtaceae	*Micromyrtus monotaxis*
Myrtaceae	*Thryptomene australis* subsp. *brachyandra*
Myrtaceae	*Verticordia chrysantha*
Myrtaceae	*Verticordia helmsii*
Myrtaceae	*Verticordia picta*
Myrtaceae	*Verticordia rennieana*
Orchidaceae	*Pterostylis tryphera*
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*
Pittosporaceae	*Pittosporum angustifolium*
Plantaginaceae	*Plantago drummondii*
Poaceae	*Austrostipa drummondii*
Poaceae	*Austrostipa elegantissima*
Poaceae	*Austrostipa eremophila*
Poaceae	*Austrostipa nitida*
Poaceae	*Austrostipa scabra*
Poaceae	*Austrostipa scabra* subsp. *scabra*
Poaceae	*Austrostipa tuckeri*
Poaceae	*Bromus diandrus*
Poaceae	*Cenchrus ciliaris*
Poaceae	*Cenchrus setaceus*
Poaceae	*Chloris truncata*
Poaceae	*Enneapogon caerulescens*
Poaceae	*Enneapogon cylindricus*
Poaceae	*Enneapogon polyphyllus*
Poaceae	*Eragrostis dielsii*
Poaceae	*Eragrostis falcata*
Poaceae	*Hordeum glaucum*
Poaceae	*Panicum effusum*
Poaceae	*Paspalidium gracile*
Poaceae	*Phalaris minor*
Poaceae	*Polypogon monspeliensis*
Poaceae	*Puccinellia ciliata*

Poaceae	*Rytidosperma caespitosum*
Poaceae	*Triodia irritans*
Poaceae	*Triodia scariosa*
Polygalaceae	*Comesperma scoparium*
Polygonaceae	*Persicaria prostrata*
Polygonaceae	*Rumex hypogaeus*
Polygonaceae	*Rumex vesicarius*
Portulacaceae	*Calandrinia lefroyensis*
Portulacaceae	*Calandrinia polyandra*
Portulacaceae	*Calandrinia* sp. Gypsum (F.Obbens & L.Hancock FO 10/14)
Portulacaceae	*Calandrinia translucens*
Primulaceae	*Lysimachia arvensis*
Proteaceae	*Grevillea acacioides*
Proteaceae	*Grevillea acuaria*
Proteaceae	*Grevillea didymobotrya* subsp. *didymobotrya*
Proteaceae	*Grevillea haplantha* subsp. *haplantha*
Proteaceae	*Grevillea huegelii*
Proteaceae	*Grevillea nematophylla* subsp. *nematophylla*
Proteaceae	*Grevillea oncogyne*
Proteaceae	*Grevillea plurijuga*
Proteaceae	*Grevillea sarissa*
Proteaceae	*Grevillea sarissa* subsp. *sarissa*
Proteaceae	*Hakea preissii*
Proteaceae	*Hakea recurva*
Proteaceae	*Petrophile arcuata*
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*
Resedaceae	*Reseda luteola*
Rhamnaceae	*Cryptandra aridicola*
Ruppiaceae	*Ruppia polycarpa*
Rutaceae	*Phebalium filifolium*
Santalaceae	*Exocarpos aphyllus*
Santalaceae	*Santalum murrayanum*
Santalaceae	*Santalum spicatum*
Sapindaceae	*Alectryon oleifolius*
Sapindaceae	*Alectryon oleifolius* subsp. *canescens*
Sapindaceae	*Dodonaea lobulata*
Sapindaceae	*Dodonaea microzyga*
Sapindaceae	*Dodonaea microzyga* var. *acrolobata*
Sapindaceae	*Dodonaea stenozyga*
Sapindaceae	*Dodonaea viscosa* subsp. *angustissima*
Scrophulariaceae	*Eremophila alternifolia*
Scrophulariaceae	*Eremophila arachnoides* subsp. *tenera*
Scrophulariaceae	*Eremophila clarkei*
Scrophulariaceae	*Eremophila decipiens* subsp. *decipiens*
Scrophulariaceae	*Eremophila georgei*
Scrophulariaceae	*Eremophila glabra* subsp. *glabra*
Scrophulariaceae	*Eremophila granitica*
Scrophulariaceae	*Eremophila interstans*
Scrophulariaceae	*Eremophila interstans* subsp. *interstans*
Scrophulariaceae	*Eremophila interstans* subsp. *virgata*
Scrophulariaceae	*Eremophila ionantha*
Scrophulariaceae	*Eremophila longifolia*
Scrophulariaceae	*Eremophila maculata* subsp. *brevifolia*
Scrophulariaceae	*Eremophila miniata*
Scrophulariaceae	*Eremophila oldfieldii* subsp. *angustifolia*
Scrophulariaceae	*Eremophila oppositifolia* subsp. *angustifolia*
Scrophulariaceae	*Eremophila pantonii*
Scrophulariaceae	*Eremophila parvifolia*
Scrophulariaceae	*Eremophila parvifolia* subsp. *auricampa*
Scrophulariaceae	*Eremophila praecox*
Scrophulariaceae	*Eremophila pustulata*
Scrophulariaceae	*Eremophila rugosa*
Scrophulariaceae	*Eremophila scoparia*
Scrophulariaceae	*Eremophila xantholaema*
Scrophulariaceae	*Myoporum montanum*
Scrophulariaceae	*Myoporum platycarpum*
Scrophulariaceae	*Myoporum platycarpum* subsp. *platycarpum*
Solanaceae	*Lycium australe*
Solanaceae	*Nicotiana glauca*
Solanaceae	*Nicotiana occidentalis*
Solanaceae	*Nicotiana occidentalis* subsp. *obliqua*
Solanaceae	*Solanum hoplopetalum*
Solanaceae	*Solanum lasiophyllum*
Solanaceae	*Solanum petrophilum*
Solanaceae	*Solanum plicatile*
Thymelaeaceae	*Pimelea angustifolia*
Verbenaceae	*Lantana camara*
Violaceae	*Hybanthus floribundus* subsp. *curvifolius*
Violaceae	*Hybanthus floribundus* subsp. *floribundus*
Zygophyllaceae	*Roepera apiculata*
Zygophyllaceae	*Roepera aurantiaca*
Zygophyllaceae	*Roepera aurantiaca* subsp. *aurantiaca*
Zygophyllaceae	*Roepera eremaea*
Zygophyllaceae	*Roepera glauca*
Zygophyllaceae	*Roepera ovata*
Zygophyllaceae	*Roepera reticulata*
Zygophyllaceae	*Tribulus terrestris*

Terrestrial Vertebrate Fauna

Class	Taxon
Amphibia	*Neobatrachus kunapalari*
Aves	*Smicrornis brevirostris*
Aves	*Acanthagenys rufogularis*
Aves	*Barnardius zonarius*
Aves	*Anthochaera (Anthochaera) carunculata*
Aves	*Pardalotus (Pardalotinus) striatus*
Aves	*Ptilotula ornata*
Aves	*Gavicalis virescens*
Aves	*Manorina (Myzantha) flavigula*
Aves	*Oreoica gutturalis*
Aves	*Pumella albifrons*
Aves	*Lichmera (Lichmera) indistincta*
Aves	*Gymnorhina tibicen*
Aves	*Nesoptilotis leucotis*
Aves	*Corvus coronoides*
Aves	*Acanthiza (Geobasileus) uropygialis*
Aves	*Acanthiza (Acanthiza) apicalis*
Aves	*Cracticus nigrogularis*
Aves	*Coracina (Coracina) novaehollandiae*
Aves	*Cracticus torquatus*
Aves	*Colluricincla (Colluricincla) harmonica*
Aves	*Rhipidura (Sauloprocta) leucophrys*
Aves	*Pyrrholaemus brunneus*
Aves	*Ocyphaps lophotes*
Aves	*Petroica (Petroica) goodenovii*
Aves	*Acanthiza (Geobasileus) chrysorrhoa*
Aves	*Eolophus roseicapilla*
Aves	*Malurus (Musciparus) leucopterus*
Aves	*Anthus (Anthus) novaeseelandiae*
Aves	*Artamus (Angroyan) cinereus*
Aves	*Corvus bennetti*
Aves	*Grallina cyanoleuca*
Aves	*Strepera (Neostrepera) versicolor*
Aves	*Microeca (Microeca) fascinans*
Aves	*Dromaius novaehollandiae*
Aves	*Aquila (Uroaetus) audax*
Aves	*Pomatostomus (Morganornis) superciliosus*
Aves	*Petrochelidon (Hylochelidon) nigricans*
Aves	*Melithreptus (Eidopsarus) brevirostris*
Aves	*Malurus (Malurus) splendens*
Aves	*Parvipsitta porphyrocephala*
Aves	*Hirundo (Hirundo) neoxena*
Aves	*Falco (Tinnunculus) cenchroides*
Aves	*Merops (Merops) ornatus*
Aves	*Cinclosoma (Malleeavis) castanotum*
Aves	*Phaps (Phaps) chalcoptera*
Aves	*Artamus (Angroyan) cyanopterus*
Aves	*Ptilotula plumula*
Aves	*Chenonetta jubata*
Aves	*Psephotus (Psephotus) varius*
Aves	*Anas (Nettion) gracilis*
Aves	*Chalcites basalis*
Aves	*Climacteris (Climacteris) rufa*
Aves	*Falco (Ieracidea) berigora*
Aves	*Pachycephala (Alisterornis) rufiventris*
Aves	*Aegotheles (Aegotheles) cristatus*
Aves	*Anas (Anas) superciliosa*
Aves	*Aphelocephala leucopsis*
Aves	*Cincloramphus (Cincloramphus) cruralis*
Aves	*Tadorna (Casarca) tadornoides*
Aves	*Cheramoeca leucosterna*
Aves	*Epthianura (Epthianura) albifrons*
Aves	*Melanodryas (Melanodryas) cucullata*
Aves	*Todiramphus (Cyanalcyon) pyrrhopygius*
Aves	*Cincloramphus (Maclennania) mathewsi*
Aves	*Poliocephalus poliocephalus*
Aves	*Taeniopygia guttata*
Aves	*Cygnus (Chenopis) atratus*
Aves	*Dicaeum (Dicaeum) hirundinaceum*
Aves	*Egretta novaehollandiae*
Aves	*Epthianura (Parepthianura) tricolor*
Aves	*Tachybaptus novaehollandiae*
Aves	*Vanellus (Lobivanellus) tricolor*
Aves	*Podargus strigoides*
Aves	*Artamus (Campbellornis) personatus*
Aves	*Cacomantis (Vidgenia) pallidus*
Aves	*Pachycephala (Timixos) inornata*
Aves	*Accipiter (Leucospiza) fasciatus*
Aves	*Fulica atra*
Aves	*Lalage (Lalage) sueurii*
Aves	*Microcarbo melanoleucos*
Aves	*Coracina (Pteropodocys) maxima*
Aves	*Daphoenositta (Neositta) chrysoptera*
Aves	*Falco (Falco) longipennis*
Aves	*Ninox (Ninox) novaeseelandiae*
Aves	*Petrochelidon (Petrochelidon) ariel*

Aves	*Phalacrocorax (Phalacrocorax) sulcirostris*
Aves	*Anas (Spatula) rhynchotis*
Aves	*Aythya (Nyroca) australis*
Aves	*Biziura lobata*
Aves	*Certhionyx (Certhionyx) variegatus*
Aves	*Chalcites osculans*
Aves	*Circus assimilis*
Aves	*Columba (Columba) livia*
Aves	*Elseyornis melanops*
Aves	*Hieraaetus (Hieraaetus) morphnoides*
Aves	*Malacorhynchus membranaceus*
Aves	*Nymphicus hollandicus*
Aves	*Recurvirostra novaehollandiae*
Aves	*Charadrius (Charadrius) ruficapillus*
Aves	*Cinclosoma (Malleeavis) clarum*
Aves	*Corvus orru*
Aves	*Coturnix (Coturnix) pectoralis*
Aves	*Erythrogonys cinctus*
Aves	*Himantopus himantopus*
Aves	*Melopsittacus undulatus*
Aves	*Rhipidura (Rhipidura) albiscapa*
Aves	*Streptopelia (Spilopelia) senegalensis*
Aves	*Turnix (Alphaturnia) velox*
Aves	*Calidris (Erolia) acuminata*
Aves	*Charadrius (Eupoda) australis*
Aves	*Climacteris (Climacterobates) affinis*
Aves	*Elanus axillaris*
Aves	*Eurostopodus (Eurostopodus) argus*
Aves	*Gerygone fusca*
Aves	*Haliastur sphenurus*
Aves	*Himantopus himantopus leucocephalus*
Aves	*Lophoictinia isura*
Aves	*Tringa (Glottis) nebularia*
Aves	*Acanthorhynchus superciliosus*
Aves	*Accipiter (Paraspizias) cirrocephalus*
Aves	*Actitis hypoleucos*
Aves	*Anas (Nettion) castanea*
Aves	*Ardea (Ardea) pacifica*
Aves	*Cacomantis (Vidgenia) flabelliformis*
Aves	*Calidris (Ereunetes) ruficollis*
Aves	*Chroicocephalus novaehollandiae*
Aves	*Cladorhynchus leucocephalus*
Aves	*Colluricincla (Colluricincla) harmonica rufiventris*
Aves	*Epthianura (Aurepthianura) aurifrons*

Aves	*Ninox (Ninox) novaeseelandiae boobook*
Aves	*Nycticorax caledonicus*
Aves	*Pardalotus (Pardalotus) punctatus*
Aves	*Phylidonyris (Meliornis) novaehollandiae*
Aves	*Platalea (Platibis) flavipes*
Aves	*Polytelis anthopeplus*
Aves	*Sericornis (Sericornis) frontalis*
Aves	*Strepera (Neostrepera) versicolor plumbea*
Aves	*Sugomel*
Aves	*Threskiornis spinicollis*
Aves	*Tyto (Tyto) javanica*
Aves	*Zosterops lateralis*
Mammalia	*Sminthopsis crassicaudata*
Mammalia	*Cercartetus concinnus*
Mammalia	*Chalinolobus gouldii*
Mammalia	*Sminthopsis dolichura*
Mammalia	*Sminthopsis ooldea*
Mammalia	*Pseudomys hermannsburgensis*
Mammalia	*Antechinus*
Mammalia	*Mus musculus*
Mammalia	*Pseudomys bolami*
Mammalia	*Sminthopsis fuliginosus*
Mammalia	*Sminthopsis gilberti*
Reptilia	*Heteronotia binoei*
Reptilia	*Pseudonaja mengdeni*
Reptilia	*Hemiergis initialis initialis*
Reptilia	*Lerista timida*
Reptilia	*Demansia psammophis psammophis*
Reptilia	*Anilios australis*
Reptilia	*Gehyra variegata*
Reptilia	*Menetia greyii*
Reptilia	*Egernia formosa*
Reptilia	*Pseudechis australis*
Reptilia	*Pseudonaja modesta*
Reptilia	*Anilios bicolor*
Reptilia	*Anilios bituberculatus*
Reptilia	*Cryptoblepharus buchananii*
Reptilia	*Cryptoblepharus plagiocephalus*
Reptilia	*Ctenophorus cristatus*
Reptilia	*Egernia depressa*
Reptilia	*Lucasium damaeum*
Reptilia	*Lucasium maini*
Reptilia	*Morethia butleri*
Reptilia	*Pogona minor minor*

Reptilia	*Ctenophorus salinarum*
Reptilia	*Cyclodomorphus melanops elongatus*
Reptilia	*Delma butleri*
Reptilia	*Lerista kingi*
Reptilia	*Lerista picturata*
Reptilia	*Morethia adelaidensis*
Reptilia	*Morethia obscura*
Reptilia	*Parasuta monachus*
Reptilia	*Simoselaps bertholdi*
Reptilia	*Suta fasciata*
Reptilia	*Tympanocryptis pseudopsephos*
Reptilia	*Underwoodisaurus milii*
Reptilia	*Varanus tristis*
Reptilia	*Anilios waitii*
Reptilia	*Ctenophorus fordi*
Reptilia	*Ctenotus atlas*
Reptilia	*Delma fraseri*
Reptilia	*Demansia psammophis cupreiceps*

Reptilia	*Demansia psammophis*
Reptilia	*Echiopsis curta*
Reptilia	*Egernia stokesii badia*
Reptilia	*Furina ornata*
Reptilia	*Hemiergis peronii peronii*
Reptilia	*Lialis burtonis*
Reptilia	*Moloch horridus*
Reptilia	*Morelia spilota imbricata*
Reptilia	*Neelaps bimaculatus*
Reptilia	*Nephrurus laevissimus*
Reptilia	*Parasuta gouldii*
Reptilia	*Pseudonaja affinis affinis*
Reptilia	*Pygopus lepidopodus*
Reptilia	*Simoselaps anomalus*
Reptilia	*Tiliqua rugosa*
Reptilia	*Varanus gouldii*

APPENDIX E:
EPBC PROTECTED MATTERS SEARCH (40KM BUFFER)

(DCCEEW, 2025)

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-Nov-2025

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	11
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only
INSECT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ogyris petrina listed as Ogyris subterrestris petrina			
Arid Bronze Azure [94250]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Dasyurus geoffroii			
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area	In buffer area only
PLANT			
Tecticornia flabelliformis			
Bead Glasswort, Bead Samphire [82664]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [52233]	WA	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Bullock Holes Timber Reserve	5(1)(g) Reserve	WA	In buffer area only
Lakeside Timber Reserve	5(1)(g) Reserve	WA	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Nava-1 Cable System	2001/510	Controlled Action	Completed	In feature area
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Gold Mining Developments on Lake Lefroy	2010/5402	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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

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

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