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COPPABELLA MINE CONTINUATION PROJECT - SECONDARY STUDY AREA - TERRESTRIAL ECOLOGY

1. Introduction

Peabody Energy Australia Pty Ltd (Peabody) has requested E2M Pty Ltd (E2M) to assess ecological values within an area in the north-eastern extent of Mining Lease (ML) 70164 of the Coppabella Mine Site. This area is herein referred to as the 'Secondary Study Area' (refer to Figure 1). The ecological assessment within the Secondary Study Area was required to identify ecological values present to inform management measures required for continuation of mining activities.

This report provides an overview of terrestrial ecological values present within the Secondary Study Area (Figure 1) which were identified during desktop and field assessments. The assessments were focussed on Matters of National Environmental Significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Matters of State Environmental Significance (MSES) defined under the Queensland *Environmental Offsets Regulation 2014*.

This report includes the following information:

- a description of the Secondary Study Area and its environmental setting
- methods of desktop and field assessments conducted within the Secondary Study Area
- results of desktop and field assessments conducted within the Secondary Study Area, including:
 - a summary of vegetation communities, their condition and composition (including pest flora species), including regional ecosystems (REs) and threatened ecological communities (TECs)
 - an assessment of the likelihood of occurrence for State and Commonwealth threatened flora and fauna species and associated habitat extents,
- a summary of the ecological functionality of the Secondary Study Area and surrounds; and
- recommendations and management/ mitigation measures to minimise and avoid impacts to identified ecological values.

2. Secondary Study Area Description

The Secondary Study Area is located directly north of the Coppabella mine within ML 70164 and consists mostly of remnant vegetation. The Secondary Study Area is situated on gently undulating plains of various soil types (corresponding to Land Zone 5), together with alluvial channels associated with Humbug Gully (Land Zone 3). It is in the Isaac River sub-catchment and includes a section of Humbug Gully. The Secondary Study area consists of forest co-dominated by *Casuarina cristata* and *Acacia harpophylla*, together with eucalypt woodlands dominated by *Eucalyptus populnea*, *E. crebra* and/or *E. platyphylla*. Areas around Humbug Gully are riparian woodlands dominated by *E. tereticornis* and *E. camaldulensis*.

The average annual rainfall is 562 mm, with most rain falling between November and March (BOM, 2023). Temperatures across the year range from a mean minimum of 8.8°C to a mean maximum of 35.0°C (Moranbah Airport (station 34035) about 40 km north of the Secondary Study Area) (BOM, 2023a, BOM 2023b).

3. Methods

3.1 Desktop Assessment

A desktop assessment was undertaken to identify potential MNES and MSES within the Secondary Study Area. Previous ecological studies undertaken at the Coppabella Mine site were reviewed, including:

- Wormington, K. (2015) *Regional Ecosystem Mapping at Coppabella Coal Mine*, KRW Environmental Pty Ltd, Queensland
- Ison Environmental Planners. (1997). *Flora and Fauna Assessment - Coppabella Mine*
- WBM Oceanics Australia. (2000). *Flora and fauna habitat assessment for the Peak Downs Highway Diversion at Coppabella*, and
- McCollum Environmental Management Services. (2011). *Coppabella Underground Project Terrestrial Ecological Baseline Assessment*.

For desktop searches requiring a search extent, a search radius of 20 km from the approximate centre of the Secondary Study Area (-21.8326, 148.4547) was applied. The assessment included a review of data/information from the following sources:

- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) EPBC Act - Protected Matters Search Tool (DCCEEW 2023a)
- Queensland Department of Environment and Science (DES) Wildlife Online database for species listed under the EPBC Act and Queensland *Nature Conservation Act 1992* (NC Act) (DES 2023a)
- DES MSES mapping
- Queensland Department of Resources (DoR) - Regulated Vegetation Management Map and Vegetation Management Supporting Map, including Essential Habitat Mapping (DoR, 2023)
- DES remnant regional ecosystem and pre-clear mapping (Version 12.2) (DES, 2023b) and associated Regional Ecosystem Description Database (REDD) (Version 13) (Queensland Herbarium, 2023a) definitions
- Mapped wetlands under the *Queensland Wetlands Program and the Environmental Protection (Water and Wetland Biodiversity) Policy 2019* and their suitability as habitat for MNES
- Atlas of Living Australia (ALA) database (ALA 2023)
- Species Profiles and Threats Database (DCCEEW 2023b)



- Detailed Surface Geology Mapping and GeoScience Australia 1:250,000 geology mapping (Geological Survey of Queensland, 2023)
- Bureau of Meteorology (BOM) Groundwater Dependent Ecosystems Atlas; and
- the latest currently available aerial photography (Nearmaps and Queensland Globe).

3.2 Field assessment

The ecological field survey was undertaken on 1 December 2023, as part of a larger field survey across a 10-day survey event from 28 November to 7 December 2023.

The field survey included the following components:

- ground-truthing and validating vegetation community mapping in accordance with the *Methodology for surveying and mapping of regional ecosystems and vegetation communities in Queensland* (Neldner et al., 2022)
- TEC assessments as per associated Conservation Advice to determine presence and extent of TECs
- targeted searches for threatened flora species; and
- recording of any pest species including individuals and/or signs of presence including seeds, tracks and scats.

No targeted fauna surveys (i.e. nocturnal spotlighting etc.) were undertaken within the Secondary Study Area. Instead, opportunistic sightings and habitat assessments undertaken during ground-truthing of vegetation provided information as to which MNES and MSES are likely to occur within the Secondary Study Area.

3.3 Likelihood of occurrence assessment

Following the completion of field surveys, MNES and MSES flora and fauna identified in the initial (pre-survey) desktop review were re-assessed for their likelihood of occurrence within the Secondary Study Area. This assessment considered the distribution, habitat requirements (foraging, breeding and shelter), presence of suitable habitat within the Secondary Study Area and records for each MNES within and surrounding the Secondary Study Area.

The occurrence of species within the Secondary Study Area was categorised as ‘known’, ‘likely’, ‘possible’ or ‘unlikely’ based primarily on the criteria outlined below:

- **Known to occur:** the species has been observed within the Secondary Study Area
- **Likely to occur:** suitable habitat to support the species is present within the Secondary Study Area, and the species has previously been recorded within the desktop search extent
- **Possible occurrence:** The Secondary Study Area is within the species known distribution and suitable habitat to support the species is present, however:
 - the species has not previously been recorded within the desktop search extent; and/or
 - suitable habitat is degraded, limited in extent, and/or isolated from areas of known occupied habitat, thereby reducing the likelihood of the species occurrence; and/or
 - the species occurs within 20 km of the Secondary Study Area, however, the species known distribution does not intersect the Secondary Study Area due to specific microhabitat requirements.

Unlikely to occur: the Secondary Study Area does not comprise suitable habitat for the species and/or is outside of the species known distribution; or records from within the desktop search extent are >40 years



old and/or predate the decline and likely extinction of a species within the Secondary Study Area and surrounds.

3.4 Threatened species and habitat mapping

The results of desktop and field surveys were used to generate habitat mapping for threatened MNES and MSES flora and fauna species assessed as known or likely within the Secondary Study Area. Specifically, species habitat was mapped using the following categories:

- **Preferred habitat:** is most important to the species and provides breeding, roosting and/or foraging habitat that is required for the species to persist in the area.
- **Suitable habitat:** is habitat that provides breeding, roosting and/or reliable foraging habitat but is not essential for the species to persist in the area. It may occasionally provide resources or be in low density of resources and only be used intermittently.
- **Marginal habitat:** is habitat that provides limited resources for the species and may only be occupied infrequently, during transit between suitable habitat, or when desired habitat is scarce. The species is unlikely to be undertaking key activities such as breeding, roosting or extensive foraging.

Not all categories are relevant for each species due to their ecological role and regional context. What constitutes these categories for each species is discussed separately below.

4. Results

4.1 Desktop assessment

4.1.1 MNES vegetation

The desktop assessment identified four TECs that have the potential to occur within the Secondary Study Area (refer Appendix A), one of which has previously been confirmed present within the Coppabella Mine. Namely, the Brigalow TEC that is listed as endangered under the EPBC Act (McCollum Environmental Management Services, 2011).

4.1.2 MSES vegetation

The desktop assessment identified that the following categories of MSES vegetation are mapped within the Secondary Study Area:

- Category B regulated vegetation comprising endangered and of concern REs (*Vegetation Management Act 1999* status)
- essential habitat; and
- regulated vegetation within the defined distance of a watercourse.

4.1.3 Habitat for MNES and MSES species

The desktop assessment identified the following MNES and MSES flora and fauna species listed under the EPBC Act and NC Act as potentially occurring within, or in proximity to, the Secondary Study Area (refer to Figure 1):

- 42 threatened flora and fauna species, including:
 - 10 flora species
 - 21 birds



- seven mammals
- five reptiles; and
- 13 migratory fauna species.

MSES wildlife habitat is also mapped within the Secondary Study Area (refer Appendix A), including essential habitat for the following species:

- greater glider (central) (*Petauroides armillatus*) - endangered under the EPBC Act and NC Act
- koala (*Phascolarctos cinereus*) - endangered under the EPBC Act and NC Act
- ornamental snake (*Denisonia maculata*) - vulnerable under the EPBC Act and NC Act; and
- squatter pigeon (southern) (*Geophaps scripta scripta*) - vulnerable under the EPBC Act and NC Act.

Koala, ornamental snake and squatter pigeon (southern) have previously been confirmed present within the Coppabella Mine (McCollum Environmental Management Services, 2011; Wormington, 2015).

4.1.4 MNES and MSES protected areas

No MNES protected areas or MSES conservation areas are mapped within the Secondary Study Area.

4.1.5 MNES and MSES protected areas

No MNES wetlands are mapped within, or in close proximity to, the Secondary Study Area. No MSES wetland values (other than the regulated vegetation watercourse mentioned above) are mapped within the Secondary Study Area.

4.2 Field assessment

4.2.1 MSES vegetation and ground-truthed regional ecosystems

The field survey confirmed the presence of Category B MSES regulated vegetation comprising endangered RE. However, as individual RE polygons could be mapped at a finer scale than the mixed RE polygons currently mapped by DES, the ground-truthed extent of Category B MSES regulated vegetation is lower than that identified by the desktop assessment.

The field assessment ground-truthed a total of four remnant REs, totalling 119.10 ha across the Secondary Study Area. Of this, 14.86 ha did not comprise a RE and was mapped as non-remnant. Descriptions of the extent and condition of each ground-truthed RE is detailed in Table 1 and depicted in Figure 2. All vegetation communities showed varying levels of degradation associated with historic land use, namely the encroachment of non-native shrub and ground-cover species, impacts of grazing pressure and occasionally the clearing/thinning of canopy trees.



Table 1: Ground-truthed regional ecosystems within the Secondary Study Area

RE	Queensland Vegetation Management Act 1999 status	Description	Area (ha)
11.3.25	Least concern	Watercourse fringing woodland of <i>Eucalyptus tereticornis</i> and <i>E. camaldulensis</i> with occasional co-dominance of <i>Melaleuca leucadendra</i> and <i>M. fluviatilis</i> . <i>Corymbia tessellaris</i> is common. A midstory layer is sometimes present with high diversity. This vegetation community exists as a thin band along Humbug Gully and Harrybrandt Creek and occasionally on adjacent levees. Mid-stream islands can occur supporting <i>Melaleuca</i> spp. and <i>Imperata cylindrica</i> . There is occasionally a weedy influence of <i>Chloris gayana</i> , <i>Hyparrhenia rufa</i> and <i>Parthenium hysterophorus</i> .	12.33 ha
11.5.2	Least concern	<i>Eucalyptus crebra</i> woodland on gently undulating plains. The canopy showed heavy dominance of <i>E. crebra</i> with occasional <i>C. dallachiana</i> , <i>E. platyphylla</i> , <i>C. clarksoniana</i> and <i>C. erythrophloia</i> . The subcanopy was generally sparse with a high diversity of species including <i>Petalostigma pubescens</i> , <i>Bursaria incana</i> , <i>Denhamia cunninghamii</i> , <i>Alphitonia excelsa</i> and <i>Acacia holosericea</i> . The ground layer was dominated by <i>Melinis repens</i> *, <i>Themeda triandra</i> , <i>Stylosanthes scabra</i> * and <i>Heteropogon contortus</i> .	15.71 ha
11.5.3	Least concern	<i>Eucalyptus populnea</i> woodland on gently undulating plains. Other trees in the canopy included <i>E. crebra</i> , <i>Corymbia dallachiana</i> , <i>C. clarksoniana</i> and <i>E. platyphylla</i> . In the north of the Secondary Study Area some areas were dominated by <i>Corymbia clarksoniana</i> . The subcanopy consisted of a mixed diversity including canopy recruits, <i>Alphitonia excelsa</i> , <i>Grevillea parallela</i> , <i>Acacia salicina</i> , <i>Cassia brewsteri</i> and <i>Petalostigma pubescens</i> . The shrub layer consisted of <i>Carissa ovata</i> , <i>Alphitonia excelsa</i> , <i>Sida hackettiana</i> , <i>Grewia latifolia</i> , <i>Breynia oblongifolia</i> and occasionally <i>Lantana camara</i> *. The ground layer was dominated by <i>Cenchrus ciliaris</i> *, <i>Stylosanthes viscosa</i> * and <i>Heteropogon contortus</i> , however also contained <i>Aristida</i> spp., <i>Melinis repens</i> *, <i>Panicum effusum</i> , <i>Eragrostis sororia</i> and <i>Capparis lasiantha</i> .	43.79 ha



RE	Queensland Vegetation Management Act 1999 status	Description	Area (ha)
11.5.16	Endangered	<p><i>Acacia harpophylla</i> or <i>Casuarina cristata</i> open forest to woodland in depressions on Cainozoic sand plains. Variation occurred across the Secondary Study Area with both trees (<i>Acacia harpophylla</i> and <i>casuarina cristata</i>) occurring at varying dominance and density. Other trees in the canopy include <i>Eucalyptus populnea</i>, <i>Terminalia oblongata</i>, <i>Flindersia dissosperma</i> and <i>Lysiphyllum hookeri</i>. The subcanopy and shrub layer often included a scrub understory with dry rainforest influence including <i>Psydrax odorata</i>, <i>Erythroxylum australe</i>, <i>Geijera salicifolia</i>, <i>Denhamia cunninghamii</i>, <i>Carissa ovata</i>, <i>Cynanchum viminale</i>, <i>Leichhardtia viridiflora</i>, <i>Capparis lasiantha</i>, <i>C. mitchellii</i>, <i>Alectryon diversifolius</i>, and <i>Diospyros humilis</i>.</p> <p>The ground layer was sparse and dominated by native grasses. Common species were <i>Paspalidium distans</i>, <i>Heteropogon contortus</i>, <i>Sporobolus caroli</i>, <i>Ancistrachne uncinulata</i>, <i>Cenchrus ciliaris</i>*, <i>Megathyrsus maximus</i>*, and <i>Cheilanthes distans</i>.</p> <p>This vegetation community occurred in wetter areas around drainage lines and low points accumulating a higher clay content. This resulted in some areas with gilgai microrelief within the Secondary Study Area.</p>	47.27 ha

* Indicates a naturalised species

4.2.2 MNES vegetation

Field investigations identified the presence of one TEC, namely brigalow (*Acacia harpophylla* dominant and co-dominant) (Brigalow TEC) within the Secondary Study area. This community is listed as endangered under the EPBC Act. The TEC is characterised by the presence of *A. harpophylla* as dominant in the tree layer, or co-dominant with other species (notably *Casuarina cristata*, other species of *Acacia*, or species of *Eucalyptus*). Condition thresholds for the TEC relate to a minimum patch size of 0.5 ha and exotic perennial plants must comprise less than 50% of the total vegetation cover of the patch, as assessed over a minimum sample area of 0.5 ha (DCCEEW, 2023b).

Areas of Brigalow TEC were remnant patches with tree heights averaging between 16-20 m and a canopy cover of 40-55%. The Brigalow TEC within the Secondary Study Area had a high native diversity of shrubs, forbs, and grasses in the understory. Small trees in the understory included *Geijera salicifolia*, *Erythroxylum australe*, *Psydrax odorata* and *Santalum lanceolatum*. The ground layer was largely dominated by native grass species including *Paspalidium distans*, *Heteropogon contortus*, *Sporobolus caroli*, *Chloris ventricosa*, and *Ancistrachne uncinulata*. Weedy occurrences did occur within the ground layer, including *Melinis repens**, *Cenchrus ciliaris** and *Megathyrsus maximus** as well as a lower abundance of *Harrisia martinii** and *Opuntia tomentosa**. These non-native species were common but did not make up the majority of the cover within the system.

The Brigalow TEC was consistent with RE 11.5.16 where *A. harpophylla* occurred as both a dominant and co-dominant species in the canopy with *C. cristata*. Often *Eucalyptus populnea* would occur in the canopy within the system. The extent of this vegetation community was conservatively mapped during the field



survey; further survey and habitat quality analysis may determine that the total extent of Brigalow TEC may be reduced to exclude areas where *Casuarina cristata* is dominant and *Acacia harpophylla* is absent.

Areas of brigalow TEC that were less than 0.5 ha were excluded due to not meeting key diagnostics.

Based on recent field investigations conducted by E2M, the Secondary Study Area has been mapped as containing 47.07 ha of Brigalow TEC.

The extent of Brigalow TEC within the Secondary Study Area is shown in Figure 3.

4.3 Likelihood of occurrence assessment

Information from desktop and field investigations completed identified one TEC that is known to occur within the Secondary Study Area as confirmed during field surveys, including:

- brigalow (*Acacia harpophylla* dominant and co-dominant)

An additional eight MNES and MSES flora and fauna species are considered likely to occur within the Secondary Study Area:

- fork-tailed swift (*Apus pacificus*)
- glossy black cockatoo (northern) (*Calyptorhynchus lathami erebus*)
- greater glider (southern and central) (*Petauroides armillatus/ Petauroides volans*)
- koala (*Phascolarctos cinereus*)
- ornamental snake (*Denisonia maculata*)
- short-beaked echidna (*Tachyglossus aculeatus*)
- squatter pigeon (southern) (*Geophaps scripta scripta*); and
- white-throated needletail (*Hirundapus caudacutus*).

The LOO assessment identified four species as possibly occurring within the Secondary Study Area, including:

- *Macropteranthes leiocaulis*
- oriental cuckoo (*Cuculus optatus*)
- rufous fantail (*Rhipidura rufifrons*); and
- satin flycatcher (*Myiagra cyanoleuca*).

Possibly occurring species are not discussed further in this report due to:

- the lower likelihood of these species' occurring within the Secondary Study Area
- likely absence from the Secondary Study Area due to a lack of suitable or preferred habitat; and
- the low potential for Project impacts on these species.

The full LOO assessment for all potentially occurring species' is presented in Appendix C.



4.3.1 MSES species

Glossy black cockatoo (northern)

Glossy black cockatoo (northern) (*Calyptorhynchus lathami erebus*) is listed as Vulnerable under the NC Act. This northern subspecies occurs approximately from Mackay to Bundaberg inhabiting coastal and some inland areas including areas in the Brigalow belt around Coppabella.

No individuals of glossy black cockatoo (northern) were observed or heard during field surveys, but the species is considered likely to occur based on previous records within the desktop search extent together with the presence of suitable habitat. The species is known to forage in forests and woodlands of belah (*Casuarina cristata*) and other *Allocasuarina* and *Casuarina* species (Glossy Black Conservancy, 2010). The species also requires large hollows within the vicinity of feed species to utilise as shelter and breeding habitat (DCCEEW, 2023b)

This habitat occurs within and adjacent to Humbug Gully where the species may utilise areas of *Casuarina cristata* dominant and co-dominant woodland and eucalypt woodland with *Allocasuarina* and *Casuarina* present within the Secondary Study Area to feed and potentially shelter in large hollows associated with *Eucalyptus tereticornis*, *E. camaldulensis* and *E. crebra*.

Glossy black cockatoo (northern) habitat within the Secondary Study Area has been mapped as preferred habitat in alignment with Section 3.4, with guidance from the Glossy Black Conservancy (Glossy Black Conservancy, 2010).

Preferred habitat for the species within the Secondary Study Area includes:

- areas of remnant *Casuarina cristata* dominant and co-dominant vegetation (RE 11.5.16)
- areas of remnant eucalypt woodland (REs 11.3.25, 11.5.2, 11.5.3) that supports large hollows that are within the vicinity (within 2 km) of *Casuarina cristata* dominant and co-dominant vegetation

Based on desktop and field investigations, the Secondary Study Area contains 119.10 ha of habitat for the species.

The extent of habitat for the species within the Secondary Study Area is shown in Figure 4a.





Plate 1: *Eucalyptus tereticornis* within the Secondary Study Area supporting large hollows (left), and RE 11.5.16 providing *Casuarina cristata* as feeding habitat in the Secondary Study Area (right).

Short-beaked echidna

Short-beaked echidna is listed as special least concern under the NC Act. It occurs throughout Australia as a habitat generalist, utilising most habitats capable of supporting assemblages of ants and termites upon which it feeds (Van Dyck & Strahan, 2008). The species utilises microhabitat features such as thick bushes, hollow logs and debris piles for shelter (Van Dyck & Strahan, 2008).

During field surveys, no observations of the short-beaked echidna were made within the Secondary Study Area. However, the remains of an individual were found in remnant brigalow habitat within 4 km during the survey of the broader landscape. The species is likely to utilise habitat within the Secondary Study Area due to its large home range in search for termites and ants. No notable large termite mounds and/ or ant nests were recorded during the survey however they are likely to be present in the ecosystem.

In the Secondary Study Area, suitable habitat for the species was mapped to include all vegetation communities excluding non-remnant areas where vegetation was absent, such as areas that were flooded for farm dams or by levee banks. The Secondary Study Area encompasses approximately 129.66 ha of suitable habitat for the short-beaked echidna. The location of short-beaked echidna survey records adjacent the Secondary Study Area and extent of habitat for the species are shown in Figure 4b.

4.3.2 MNES and MSES species

Greater glider (southern and central)

Greater glider (southern and central) is listed as endangered under the EPBC Act and NC Act. Greater glider (southern and central) are an arboreal nocturnal marsupial, predominantly solitary and largely restricted to eucalypt forests and woodlands of eastern Australia.

During field surveys, no observations of greater glider (southern and central) were observed within the Secondary Study Area. However, 16 observations of greater gliders were observed in remnant eucalypt



woodland in nearby areas, with one directly adjacent the Secondary Study Area (Figure 4c). Due to the presence of the species in the adjoining landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.

The majority of greater glider observations were recorded were adjacent to watercourses within REs 11.3.25 and 11.3.4. The species was frequently observed feeding in *Corymbia tessellaris* and emerging from medium to large hollows in *Eucalyptus tereticornis* and *E. camaldulensis*. The species has a very similar ecological function to koalas in its folivorous feeding habit (DCCEEW, 2023b). 85% of its water consumption is from consumed leaves which nutrient and moisture rich riverine *Eucalyptus* and *Corymbia* species can provide (DCCEEW, 2023b).

The species was also recorded in eucalypt woodlands away from watercourses including REs 11.5.3, 11.5.2 and 11.5.8c where denning habitat (medium to large hollows in *Eucalyptus populnea*, *E. crebra* and *E. platyphylla*) and feed trees (*E. populnea*, *Corymbia tessellaris*, and *E. crebra*) were abundant. The species is likely utilising large areas of remnant eucalypt woodland within the landscape.

Greater glider habitat within the Secondary Study Area has been mapped as either preferred or suitable habitat in alignment with Section 3.4, with guidance from 'Guide to greater glider habitat in Queensland' (Eyre et al., 2022).

Preferred habitat for the species within the Secondary Study Area includes:

- areas of RE 11.3.25 and 11.3.4 with food trees (*Corymbia tessellaris*) and denning trees (*Eucalyptus tereticornis* and *Eucalyptus camaldulensis*)
- areas of RE 11.3.25 with denning trees and abutting areas of suitable feed trees including *E. crebra* and/or *E. populnea* woodland mapped as RE 11.5.3 and 11.5.2; and
- areas of RE 11.3.25 with or without suitable denning trees and feed trees that connect areas of preferred habitat within the Secondary Study Area.

Suitable habitat for the species within the Secondary Study Area includes:

- areas of RE 11.5.2 and 11.5.3 providing denning (*Eucalyptus populnea*, *E. crebra*) and feed trees (*E. populnea*, *E. crebra* and *Corymbia tessellaris*) in a moderate density within the landscape; and
- remnant vegetation linking areas of preferred and suitable habitat for the species.

Based on desktop and field investigations, the Secondary Study Area contains 776.72 ha of preferred habitat for the species, and 133.16 ha of suitable habitat.

The location of greater glider (southern and central) survey records adjacent to the Secondary Study Area and extent of habitat for the species are shown in Figure 4c.





Plate 2: Greater glider in *Corymbia tessellaris* identified during nocturnal spotlighting (left), and *Eucalyptus tereticornis* in RE 11.3.25 providing suitable denning habitat (right).

Koala

Koala (*Phascolarctos cinereus*) is listed as endangered under the EPBC Act and the NC Act. In Queensland, koala inhabit the moist coastal forests, southern and central western subhumid woodlands, and a number of eucalypt woodlands adjacent to waterbodies in the semi-arid western parts of the state. In many locations, koala populations are of low density, widespread and fragmented.

There were no observations of koala within the Secondary Study Area. However, nine koala observations were recorded during the field survey in the broader landscape. Two of these were directly adjacent the Secondary Study Area in Humbug gully (Figure 4d). It is likely that the koala were moving and therefore the total number of individuals is unknown. Koala were also recorded calling during bio-acoustic surveys at BAR site C10 at Humbug Gully (Figure 4d). Multiple scratches and scats were recorded along Humbug Gully and Harrybrandt creek. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.

Koala were recorded in riparian REs associated with Humbug Gully and Harrybrandt Creek (RE 11.3.25 and 11.3.4). Riverine environments that provide high abundance of refugia and eucalypt trees with high moisture content are of high importance to the continuing of koala populations in rural Queensland. (DAWE, 2022; Runge et al., 2014; Seabrook et al., 2011;). Stream fringing eucalypts (*Eucalyptus camaldulensis* and *E. tereticornis*) have the highest leaf moisture content, and as koalas largely rely on diet to meet their water intake requirements, the presence of eucalypts with a high leaf moisture content is likely to positively influence habitat suitability, particularly during times of drought (Seabrook et al., 2011). Koalas are known to utilise all types of eucalypt woodland across its range where Locally Important Koala Trees (LIKTs) are abundant.

Koala habitat within the Secondary Study Area has been mapped as either preferred or suitable habitat in alignment with Section 3.4, with guidance from 'A review of koala habitat assessment criteria and methods' (Youngtob et al., 2021).



Preferred habitat mapped within the Secondary Study Area includes:

- areas of RE 11.3.25 with abundant LIKTs with high moisture content (*Eucalyptus tereticornis* and *E. camaldulensis*) and ancillary habitat trees (*Corymbia tessellaris*) where records of koala were abundant.

Suitable habitat for the species within the Secondary Study Area includes:

- areas of RE 11.5.2 and 11.5.3 providing abundant LIKTs (*Eucalyptus populnea* and *E. crebra*) and ancillary habitat trees (*E. platyphylla* and *Corymbia tessellaris*) with connectivity to preferred habitat. Although koalas were not recorded in these areas, the species is likely to utilise this habitat.

Based on desktop and field investigations, the Secondary Study Area contains 12.33 ha of preferred habitat for the species, including 64.12 ha of suitable habitat.

The location of koala survey records adjacent the Secondary Study Area and extent of habitat for the species are shown in Figure 4d.



Plate 3: Koala in *Eucalyptus tereticornis* in RE 11.3.25 adjacent the Secondary Study Area (left), and koala scats in RE. 11.3.25 on Harrybrandt Creek (right).

Ornamental snake

Ornamental snake (*Denisonia maculata*) is listed as vulnerable under the EPBC Act and NC Act. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions in land zone 4, but also lake margins and wetlands. Gilgai formations are found where deep-cracking alluvial soils with high clay contents occur.

While no individuals were identified within the Secondary Study Area, one ornamental snake was identified adjacent to the Secondary Study Area during the field survey. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.

The observed ornamental snake individual was identified along a sandy creek bed of Humbug Gully. The creek had flowed the previous day and the frog diversity and abundance at the time of survey was high. Vegetation adjacent to Humbug Gully is dominated by *Casuarina cristata* and *Acacia harpophylla* (RE 11.5.16) and occurs over small steep gullies. These areas have a higher clay content and, in some areas, form gilgais. The wide channel of Humbug Gully has fine sediment deposits that pool water along the sides



of the low flow channel. Deep cracks were not visible within Humbug Gully; however, the species is likely seeking refuge in inconspicuous smaller cracks within the soil profile or within other microrefugia in the landscape. There is abundant woody debris along Humbug Gully as well as a dense mat of *Imperata cylindrica*, *Megathyrsus maximus** and *Melinis repens** over islands and banks of the watercourse.

Previous surveys within the Coppabella Mine site have identified ornamental snake along Humbug gully in similar habitat (McCollum Environmental Management Services, 2011).

Ornamental snake habitat within the Secondary Study Area has been mapped as preferred habitat in alignment with Section 3.4, with guidance from the *Draft Referral guidelines for the nationally listed Brigalow Belt reptiles* (DSEWPC, 2011).

Preferred habitat mapped within the Secondary Study Area includes:

- areas of RE 11.3.25 adjacent to areas of RE 11.5.16 (within 500m) where suitable shelter is present and sediments allow for pooling of water suitable as amphibian breeding habitat
- areas of RE 11.5.16 where suitable shelter is present and sediments allow for pooling of water suitable as amphibian breeding habitat; and
- areas of non-remnant vegetation where suitable shelter is present and sediments allow for pooling of water suitable as amphibian breeding habitat.

Based on desktop and field investigations, the Secondary Study Area contains 59.60 ha of preferred habitat for the species.

The location of ornamental snake records and extent of habitat for the species within the Secondary Study Area are shown in Figure 4e.



Plate 4: ornamental snake in RE 11.3.25 in Humbug Gully during nocturnal spotlighting (left), and pooling water in RE. 11.3.25 providing suitable foraging habitat (amphibian breeding habitat) for the species (right).

Squatter pigeon (southern)

Squatter pigeon (southern) is listed as vulnerable under the EPBC Act and NC Act. The species is locally abundant within the northern part of its range (i.e. Brigalow Belt (North) and Desert Uplands Bioregions). The species occurs in a wide range of habitats wherever there is a grassy understorey of an open eucalypt woodland (and less often savannas). It is often found within close proximity of water bodies.

Squatter pigeon (southern) was observed eight times during the broader field survey; however, no observations were made within the Secondary Study Area. Most records were from an area to the west along Spring Creek Road in association with cattle troughs adjacent to the road. The species was also recorded along Harrybrandt Creek. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.

Ground cover was variable throughout the Secondary Study Area in terms of compositions (native and non-native species) and percent ground cover. The majority of areas contained a mixture of native and non-native ground cover species and total ground cover was generally suitable for squatter pigeon breeding and foraging habitat (less than 33% cover) (DCCEEW, 2023b). It is likely that most areas experience a fluctuating ground cover through rain, grazing and fire throughout the Secondary Study Area.

Areas of non-remnant vegetation without a canopy were limited in extent in the Secondary Study Area. These areas were not suitable for squatter pigeon (southern) due to the high percentage of ground cover in these open areas.

Permanent water sources adjacent to the Secondary Study Area have been mapped as dams and cattle troughs. There were no permanent water sources inside the Secondary Study Area. Publicly available surface water and dam geospatial data as well as aerial imagery was used as a reference to supplement ground-truthed permanent water sources observed during the field surveys. Humbug Gully is ephemeral and has not been used as a permanent water source for squatter pigeon (southern) habitat.

Squatter pigeon (southern) habitat within the Secondary Study Area has been mapped as suitable habitat in alignment with Section 3.4, with guidance from the SPRAT profile for squatter pigeon (southern) (DCCEEW, 2023b).

Suitable habitat for the species within the Secondary Study Area includes:

- areas of Eucalypt woodland on land zones 3 and 5 within 3 km from a permanent water source with a patchy ground cover of mixed native and introduced grasses suitable for foraging
- areas of non-remnant vegetation on land zones 3 and 5 within 3 km from a permanent water source with a patchy ground cover of mixed native and introduced grasses suitable for foraging; and
- remnant and non-remnant vegetation linking areas of preferred and suitable habitat for the species.

No areas of preferred habitat were mapped due to no permanent water sources being within 1 km of the Secondary Study Area.

Based on desktop and field investigations, the Secondary Study Area contains 65.49 ha of suitable habitat for the species within the Secondary Study Area.

The extent of habitat for the species within the Secondary Study Area is shown in Figure 4f.





Plate 5: Squatter pigeon (southern) in RE 11.3.25 at Harrybrandt Creek in the broader landscape (left), and squatter pigeons in non-remnant vegetation adjacent to RE. 11.3.25 at Harrybrandt Creek (right).

White-throated needletail

White-throated needletail is listed as vulnerable and migratory under the EPBC Act, and vulnerable under the NC Act. The species is almost exclusively aerial. In the non-breeding season in Australia, the species can occur over most habitat types. The species is most often recorded above wooded areas including open forest, closed forest and rainforest.

White-throated needletail was not recorded during field surveys within the Secondary Study Area. However, the desktop assessment revealed that white-throated needletail has previously been recorded from the surrounding landscape and therefore the species is likely to utilise airspace over the Secondary Study Area for foraging.

While predominately aerial when in Australia, the species is known to roost in trees at night (amongst foliage, in tree hollows or clinging to the side of rough-barked trees) ((Tarburton, 2015). Roosting birds likely require a clear airspace when approaching roost trees at night and are known to roost in canopy trees on ridges, low spurs and trees at the edges of clearings (Tarburton, 2015). No roosting habitat was present within the Secondary Study Area.

Marginal habitat for the species mapped within the Secondary Study Area includes:

- All areas within the Secondary Study Area that provide potential foraging habitat in the airspace above.

Based on desktop and field investigations, the Secondary Study Area contains 133.96 ha of marginal habitat for the species.

The extent of habitat for the species within the Secondary Study Area is shown in Figure 4g.

Fork-tailed swift

Fork-tailed swift is listed as migratory under the EPBC Act and special least concern under the NC Act. The species is predominantly aerial and occurs over inland areas and occasionally above the foothills in coastal areas with dry and open habitat. The species can also occur over low scrub, heathland, saltmarsh and riparian woodlands and are associated with low pressure systems that favour the occurrence of insect prey.



During the field survey, a flock of 20-40 fork-tailed swifts were observed high in the airspace above Humbug Gully adjacent the Secondary Study Area. The species is likely to utilise airspace over the Secondary Study Area for foraging. The species is likely to be completely aerial in Australia with only one record of the species roosting in Australia in emergent branches above foliage (Newell, 1930).

Marginal habitat for the species mapped within the Secondary Study Area includes all areas within the Secondary Study Area that provide potential foraging habitat in the airspace above.

Based on desktop and field surveys, the Secondary Study Area contains 133.96 ha of marginal habitat for the species. The extent of habitat for the species within the Secondary Study Area is shown in Figure 4h.

4.3.3 Pest flora

Two weed species listed as Weeds of National Significance (WoNS) and restricted matters under the Biosecurity Act were recorded within the Secondary Study Area (Figure 5), namely lantana (*Lantana camara**) and velvet prickly-pear (*Opuntia tomentosa**) (refer Table 2).

Other WoNS and restricted matters observed during the broader field survey within the surrounding landscape included harrisia cactus (*Harrisia martinii**), bellyache bush (*Jatropha gossypifolia**) and parthenium (*Parthenium hysterophorus**).

Whilst not classified as a WoNS or as restricted matter, infestations of stylo (*Stylosanthes scabra**) were frequently observed throughout Secondary Study Area. Other commonly-encountered introduced species identified within the Secondary Study Area, included red Natal grass (*Melinis repens**), Guinea grass (*Megathyrus maximus*) and buffell grass (*Cenchrus ciliaris**).

Table 2: Pest flora within the Secondary Study Area

Scientific name	Common name	WoNS	Biosecurity Act status	Location and relative abundance
<i>Lantana camara</i>	lantana	WoNS	Category 3	Localised minor to moderate infestations within the Secondary Study Area.
<i>Opuntia tomentosa</i>	velvet prickly-pear	WoNS	Category 3	Localised infestations and scattered plants throughout the Secondary Study Area in riparian and woodland areas.

4.3.4 Pest fauna

One pest fauna species was recorded within the Secondary Study Area, namely wild dog/dingo (*Canis lupus dingo*) (Figure 5). Two individual wild dogs were detected north-west of the Secondary Study Area on Motion Camera 027 on two separate days. Numerous dog prints on sandy creek beds were observed throughout the field survey, mainly in Humbug Gully.

Four additional pest fauna species were identified adjacent in the landscape surrounding the Secondary Study Area during the field assessment (Figure 5), namely:

- cane toad (*Rhinella marina*)
- cat (*Felis catus*)
- rabbit (*Oryctolagus cuniculus*); and
- pig (*Sus scrofa*).



In regard to pest fauna species in the surrounding landscape, during the survey there was evidence of minor habitat disturbance by feral pigs in adjacent areas including pig rooting on the bank of Humbug Gully. Pig remains were found in Harrybrandt Creek. Numerous pigs were detected on motion camera in an area of Humbug Gully adjoining the Secondary Study Area. A cat was observed during nocturnal spotlighting in the riparian area of Harrybrandt Creek. Numerous cane toads were observed during nocturnal spotlighting, mainly within Humbug Gully.

Wild dogs/dingoes and feral pigs are currently prevalent within the Secondary Study Area, as substantiated by the large number of animals captured on remote activated camera traps and direct observations made during the field survey. The presence of these species may pose a significant threat to target MNES within the Secondary Study Area, with predation by dogs/dingoes and feral cats considered a major threat to some species (DCCEEW, 2023b).



Plate 6: Images of feral pigs (left) and wild dog/dingo (right) recorded on motion cameras.

5. Ecological function of the Secondary Study Area

The Secondary Study Area is located to the north of lands within the Coppabella Mine that are currently actively mined. While some disturbances were observed within the Secondary Study Area during the field survey, including access tracks, grazing, selecting thinning and infestation by pest species, the Secondary Study Area largely supports remnant Eucalypt and Acacia woodlands and is connected to expansive tracts of similar vegetation communities to the north, east and west. Accordingly, the Secondary Study Area has a role in supporting biodiversity values at both local and regional scales. Specifically, ecological functions of the Secondary Study Area include the following:

- Supporting a diversity of flora and fauna populations
- Maintaining genetic diversity
- Providing breeding, shelter and foraging resources for a diversity of fauna including threatened species
- Providing of fauna movement opportunities across the landscape, particularly along the riparian corridor; and
- Facilitating of plant reproductive processes including pollen and propagule dispersal.



6. Impacts to ecological values

A definitive footprint or description of proposed works within the Secondary Study Area is not yet available. In general, future mining activity within the Secondary Study Area has the potential to result in the following:

- clearing of vegetation, including regulated vegetation (MSES) and Brigalow TEC (MNES)
- loss of habitat and resources, including habitat and resources for MSES and MNES species
- habitat degradation
- disruption of habitat connectivity along the riparian corridor, including connectivity for MNES and MSES species
- injury or mortality of fauna, including MNES and MSES species
- introduction or spread of pest species
- disturbance from light, dust and noise
- increased risk of fire incursion
- increased sedimentation and erosion (including of watercourse banks)
- hydrological changes
- changes in surface water and groundwater quality; and
- groundwater drawdown.

Potential impacts to MSES and MNES are summarised in Table 3.

Table 3 Potential impacts to MNES and MSES within the Secondary Study Area

Value	EPBC Act status	Queensland status	Presence	Ground-truthed extent within Secondary Study Area (ha)
MNES - Threatened ecological communities				
Brigalow TEC	Endangered	-	Known	47.07
MSES - Regulated vegetation				
Category B (endangered RE)	-	Endangered	Known	47.27
Vegetation within defined distance of a watercourse	-	Endangered, least concern	Known	11.25
Essential habitat	-	Endangered, least concern	Known	119.10
MNES and MSES - Habitat for threatened species				
Fork-tailed swift (<i>Apus pacificus</i>)	Marine; Migratory (CAMBA, JAMBA, ROKAMBA)	Special Least Concern	Likely	133.96



Value	EPBC Act status	Queensland status	Presence	Ground-truthed extent within Secondary Study Area (ha)
Glossy black cockatoo (northern) (<i>Calyptorhynchus lathami erebus</i>)	-	Vulnerable	Likely	0.00
Greater glider (southern and central) (<i>Petauroides armillatus/ Petauroides volans</i>)	Endangered	Endangered	Likely	76.45
Koala (<i>Phascolarctos cinereus</i>)	Endangered	Endangered	Likely	76.45
Ornamental snake (<i>Denisonia maculata</i>)	Vulnerable	Vulnerable	Likely	59.60
Short-beaked echidna (<i>Tachyglossus aculeatus</i>)	-	Special Least Concern	Likely	129.66
Squatter pigeon (southern) (<i>Geophaps scripta scripta</i>)	Vulnerable	Vulnerable	Likely	65.49
White-throated needletail (<i>Hirundapus caudacutus</i>).	V; Marine; Migratory (CAMBA, JAMBA, ROKAMBA)	Vulnerable	Likely	133.96

7. Mitigations and management measures

As identified above, a definitive footprint or description of proposed works within the Secondary Study Area is not yet available. Accordingly, generic mitigation and management have been identified and include the following:

- Vegetation clearing extents should be kept to the minimum area necessary
- Areas that must not be cleared or damaged should be clearly identified on plans
- Boundaries of areas to be cleared, and those not to be cleared, should be clearly defined during clearing activities
- Erosion and sediment controls should be in place
- Weed hygiene protocols (e.g. wash-down, weed hygiene certification) should be implemented for all vehicles, equipment and materials
- Cleared areas which are no longer required should be rehabilitated
- Topsoil should be stockpiled for redistribution during rehabilitation activities
- A suitably experienced and qualified fauna spotter/catcher should be present during the clearing



- Prior to removal, all hollow-bearing trees should be thoroughly checked for fauna presence prior to felling. If presence is identified, it is recommended that the tree be left overnight to allow for self-dispersal
- Management of fauna identified during clearing should include relocating individuals to adjacent habitat or treating injuries
- In the event a koala is identified within areas to be cleared, the individual is to be left to vacate the area on its own accord
- Select habitat features (e.g. hollow bearing trees, woody debris, logs and rocks) should be salvaged for re-use in rehabilitation areas or relocated into adjacent areas of habitat to be retained
- Vegetation clearing should be carried out sequentially over the life of the Project to allow fauna species the opportunity to disperse away from clearing areas
- Directional clearing towards retained vegetation should be undertaken where practical to enable the movement of fauna into retained vegetation
- Work areas and excavations (trenches) should be checked for fauna that may have become trapped
- Vehicles are to remain on designated access tracks and adhere to site rules relating to speed limits
- Removal of roadkill should be undertaken to minimise the risk of attracting other fauna to the road corridor
- Contingencies and procedures should be in place for the treatment of injured fauna; and
- Where installation of fencing is required, considerations to facilitate movement of fauna around and/or through the fencing, except where fenced areas seek to protect fauna from threats such as active mine areas.

Kind regards,

Kurtis Kemp
Senior Ecologist



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Appendix A Desktop Assessment Results



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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: 31-Oct-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

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:	4
Listed Threatened Species:	24
Listed Migratory Species:	11

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:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
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:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	10
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 Ecological Communities

[[Resource Information](#)]

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

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area	In feature area
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area	In feature area

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			
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
PLANT			
Dichanthium queenslandicum King Blue-grass [5481]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area

REPTILE

Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat known to occur within area	In feature area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat may occur within area	In feature area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In buffer area only
Lerista allanae Allan's Lerista, Retro Slider [1378]	Endangered	Species or species habitat may occur within area	In buffer area only
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		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]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

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
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine 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]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Dipperu	National Park (Scientific)	QLD	In buffer area only

EPBC Act Referrals [[Resource Information](#)]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Alpha Coal Project - Mine and Rail Development	2008/4648	Controlled Action	Post-Approval	In feature area
Arrow Bowen Pipeline (CSG), QLD	2012/6459	Controlled Action	Post-Approval	In buffer area only
Bowen Gas Project	2012/6377	Controlled Action	Post-Approval	In feature area
Construct and Operate the Connors River Dam and Pipelines	2008/4429	Controlled Action	Post-Approval	In feature area
Goonyella Riverside Mine to South Walker Creek Mine Dragline Move	2016/7788	Controlled Action	Completed	In feature area
Harrybrandt Open Cut Coal Mine and Associated Infrastructure, Bowen Basin, Qld	2012/6483	Controlled Action	Completed	In feature area
MRA2C Project, South Walker Creek Operations	2017/7957	Controlled Action	Post-Approval	In buffer area only
South Walker Creek Mulgrave Pit mine extension, Nebo, QLD	2014/7272	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Coppabella-Ingston Railway Duplication	2008/4103	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 are 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

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

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

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
- 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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Department of Climate Change, Energy, the Environment and Water

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Canberra ACT 2601 Australia

+61 2 6274 1111



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Queensland status: Rare and threatened species
Records: All
Date: Since 1980
Latitude: -21.8354
Longitude: 148.4588
Distance: 25
Email: kurtis.kemp@e2mconsulting.com.au
Date submitted: Tuesday 09 Jan 2024 15:57:57
Date extracted: Tuesday 09 Jan 2024 16:00:06

The number of records retrieved = 11

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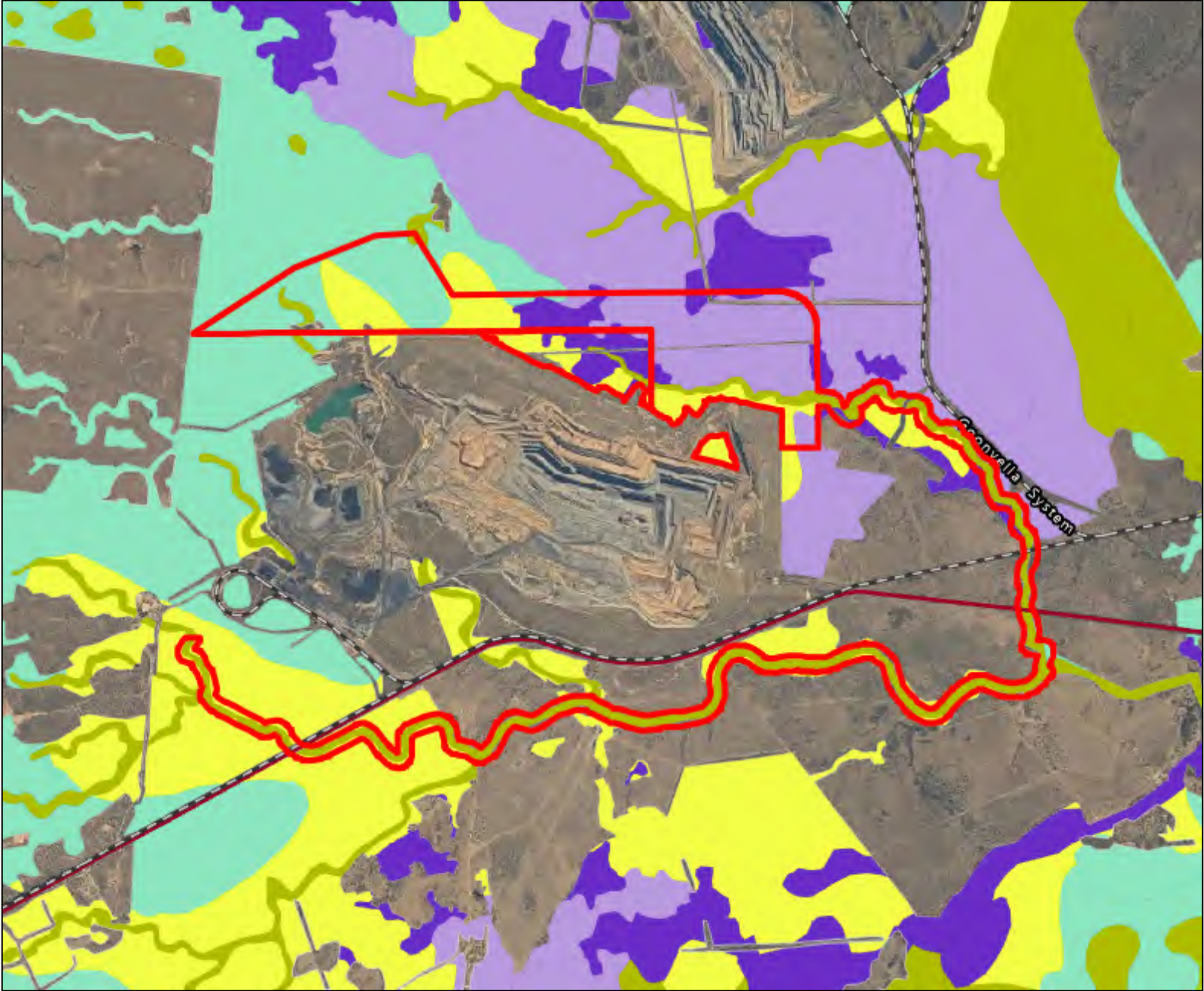
Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.

The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Biodiversity Status - Remnant

21°47'25"S 148°22'34"E

21°47'25"S 148°32'7"E



Legend located on next page



Scale: 1:85060

Printed at: A4
Print date: 1/11/2023

Not suitable for accurate measurement.
Projection: Web Mercator EPSG 102100 (3857)

For more information, visit
<https://qldglobe.information.qld.gov.au/help-info/Contact-us.html>

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21°54'43"S 148°22'34"E

21°54'43"S 148°32'7"E

Biodiversity Status - Remnant

Legend

POLYGON-
Referral_Study_Area.zip -
poly



POLYGON-
Secondary_Study_Area.zip -
poly



Biodiversity status - remnant

- Endangered - Dominant vegetation
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- No concern at present
- Non-remnant vegetation, cultivated or built environment
- Plantation
- Water

Cities and Towns



Green bridges



Roads and tracks

- Motorway
- Highway
- Secondary
- Connector
- Local
- Restricted Access Road
- Mall
- Busway
- Bikeway
- Restricted Access Bikeway
- Walkway
- Restricted Access Walkway
- Non-vehicular Track
- Track
- Restricted Access Track
- Ferry
- Proposed Thoroughfare

Railway



Railway station



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Queensland Herbarium (2022) Biodiversity Status of Pre-clearing Regional Ecosystems of Queensland. State of Queensland (Department of Environment and Science).

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Bridges



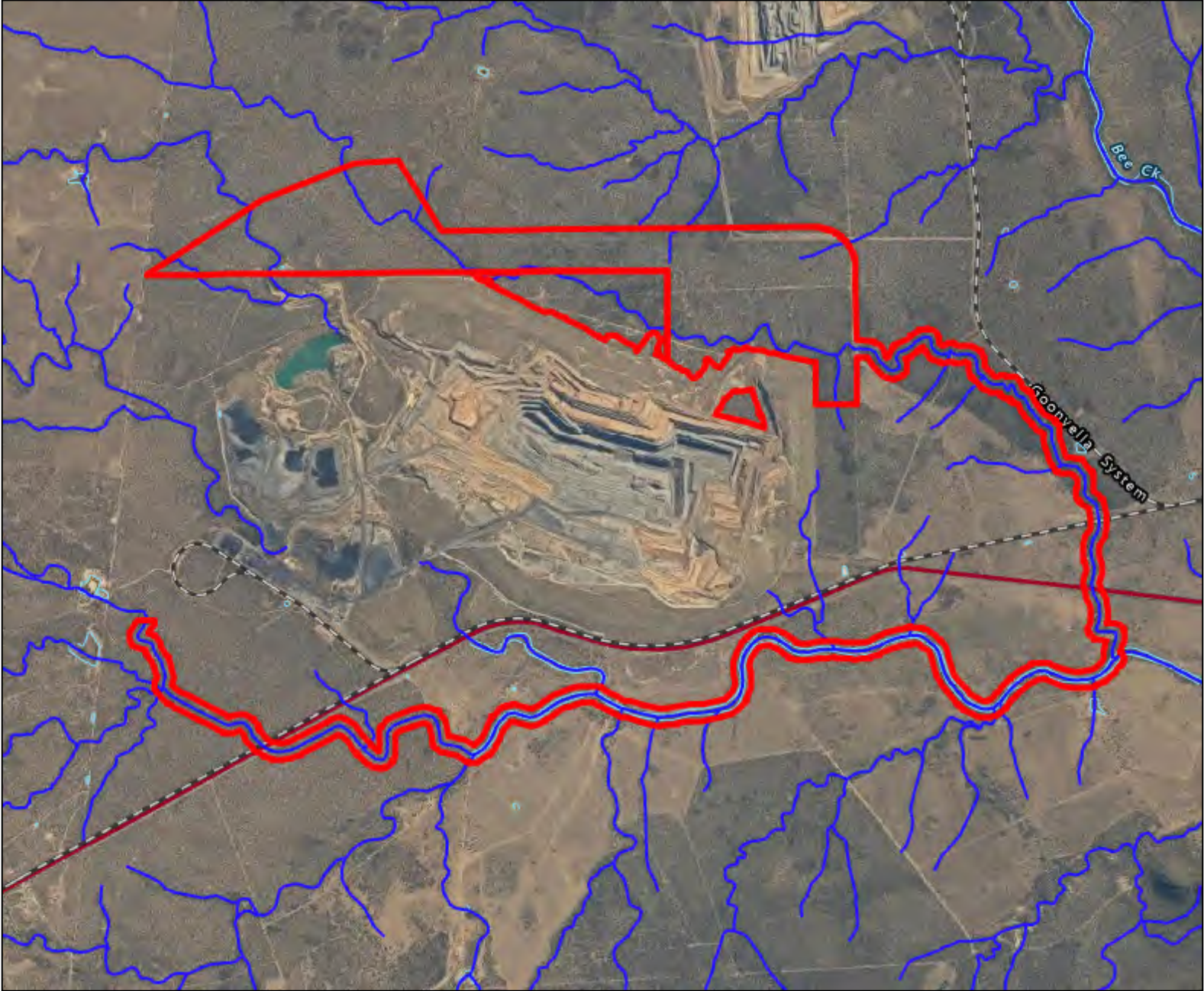
Tunnels



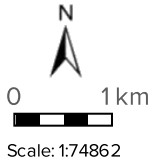
Drainage

21°48'6"S 148°23'4"E

21°48'6"S 148°31'28"E



Legend located on next page



Printed at: A4
Print date: 1/11/2023

Not suitable for accurate measurement.
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21°54'32"S 148°23'4"E

21°54'32"S 148°31'28"E

Drainage

Legend

POLYGON-
Referral_Study_Area.zip -
poly



POLYGON-
Secondary_Study_Area.zip -
poly



Coastline



Lake

Lake

Reservoir

Reservoir

Canal line

Canal

Canal area

Canal area

Watercourse line

Major - perennial

Major - non perennial

Water area edge



Watercourse stream order

VM watercourse/drainage
feature - 1:100 000 and
1:250 000



Roads and tracks

Motorway

Highway

Secondary

Connector

Local

Restricted Access Road

Mall

Busway

Bikeway

Restricted Access Bikeway

Walkway

Restricted Access Walkway

Non-vehicular Track

Track

Green bridges



Bridges



Tunnels



Railway



Railway station



Cities and Towns



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— Minor - perennial

- - Minor - non perennial

Watercourse area

Watercourse area

- - Restricted Access Track

- - Ferry

- - Proposed Thoroughfare



Terrestrial GDE (no data)



No ecosystems analysed

Terrestrial GDE



Known GDE
(regional study)



High potential GDE
(regional study)



Moderate potential GDE
(regional study)



Low potential GDE
(regional study)



Unclassified potential GDE
(regional study)



High potential GDE
(national assessment)



Moderate potential GDE
(national assessment)



Low potential GDE
(national assessment)



Unclassified potential GDE
(national assessment)

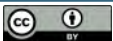


1:171,080



Data Source: Bureau of Meteorology, Geoscience Australia and State/Territory lead water agencies. Refer to metadata for further information: [Click here](#)

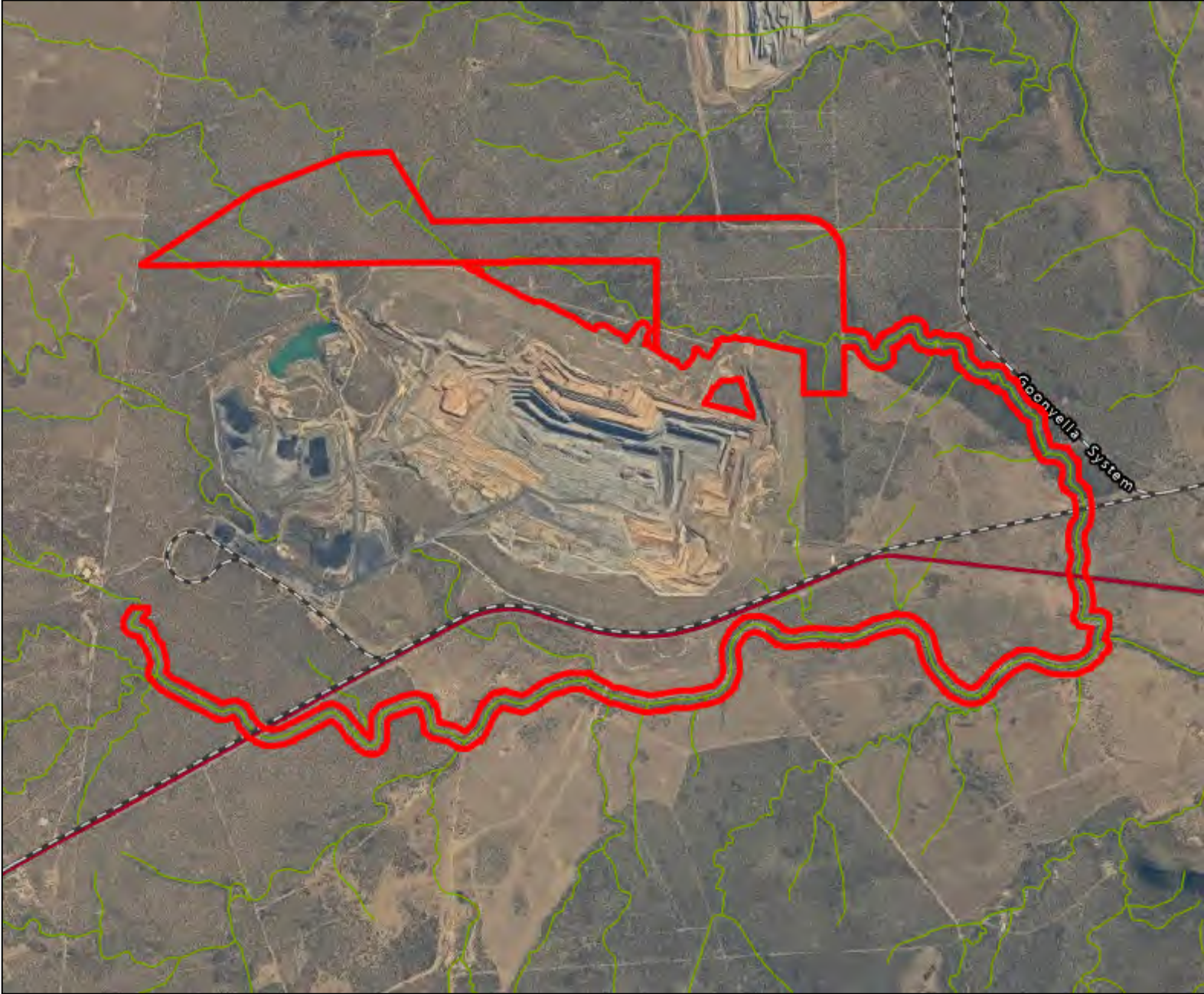
Australian Albers GDA94



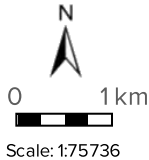
MSES Wetland Values

21°48'9"S 148°23'6"E

21°48'9"S 148°31'36"E



Legend located on next page



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21°54'39"S 148°23'6"E

21°54'39"S 148°31'36"E

MSES Wetland Values

Legend

POLYGON-
Referral_Study_Area.zip -
poly



POLYGON-
Secondary_Study_Area.zip -
poly



MSES regulated vegetation
[defined watercourse]



MSES declared high
ecological value waters
[watercourse]



MSES declared high
ecological value waters
[wetland]



MSES high ecological
significance wetlands



Roads and tracks

- Motorway
- Highway
- Secondary
- Connector
- Local
- Restricted Access Road
- Mall
- Busway
- Bikeway
- Restricted Access Bikeway
- Walkway
- Restricted Access Walkway
- Non-vehicular Track
- Track
- Restricted Access Track
- Ferry
- Proposed Thoroughfare

Tunnels



Railway



Railway station

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MSES strategic
environmental area
[designated precinct]



Cities and Towns



Green bridges



Bridges



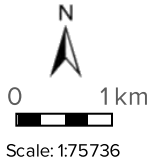
MSES Wildlife Habitat

21°48'3"S 148°23'14"E

21°48'3"S 148°31'44"E



Legend located on next page



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21°54'34"S 148°23'14"E

21°54'34"S 148°31'44"E

MSES Wildlife Habitat

Legend

POLYGON-
Referral_Study_Area.zip -
poly



POLYGON-
Secondary_Study_Area.zip -
poly



MSES wildlife habitat
[endangered or vulnerable]



MSES wildlife habitat
[special least concern
animal]



MSES wildlife habitat [SEQ
koala habitat - core]



MSES wildlife habitat [SEQ
koala habitat - locally
refined]



Roads and tracks

- Motorway
- Highway
- Secondary
- Connector
- Local
- Restricted Access Road
- Mall
- Busway
- Bikeway
- Restricted Access Bikeway
- Walkway
- Restricted Access Walkway
- Non-vehicular Track
- Track
- Restricted Access Track
- Ferry
- Proposed Thoroughfare

Bridges



Tunnels



Cities and Towns

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MSES wildlife habitat [sea
turtle nesting areas]



Railway



Railway station



Green bridges



WetlandMaps Report



For selected area of interest Custom Geometry

Current as at 01/11/2023

Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest (AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

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Summary Information

The following table provides an overview of the area of interest.

Table 1. Area of interest details

Size (ha)	8,228.23
Local Government(s)	Isaac Regional
Bioregion(s)	Brigalow Belt
Subregion(s)	Northern Bowen Basin
Catchment(s)	Fitzroy
Drainage sub-basin	Isaac River

NRM Regions

The following NRM region(s) are in the area of interest:

Fitzroy Basin
Association

Water Resource Plan Boundaries

The following Water Resource Plan(s) are in the area of interest:

Fitzroy Basin

Learn more about how Wetlands are mapped in Queensland:

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include**:

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude**:

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria
- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Methodology and Wetland Classification: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/wetland-background/>

Links and support

Other sites that deliver wetland related information include:

WetlandSummary tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: <http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

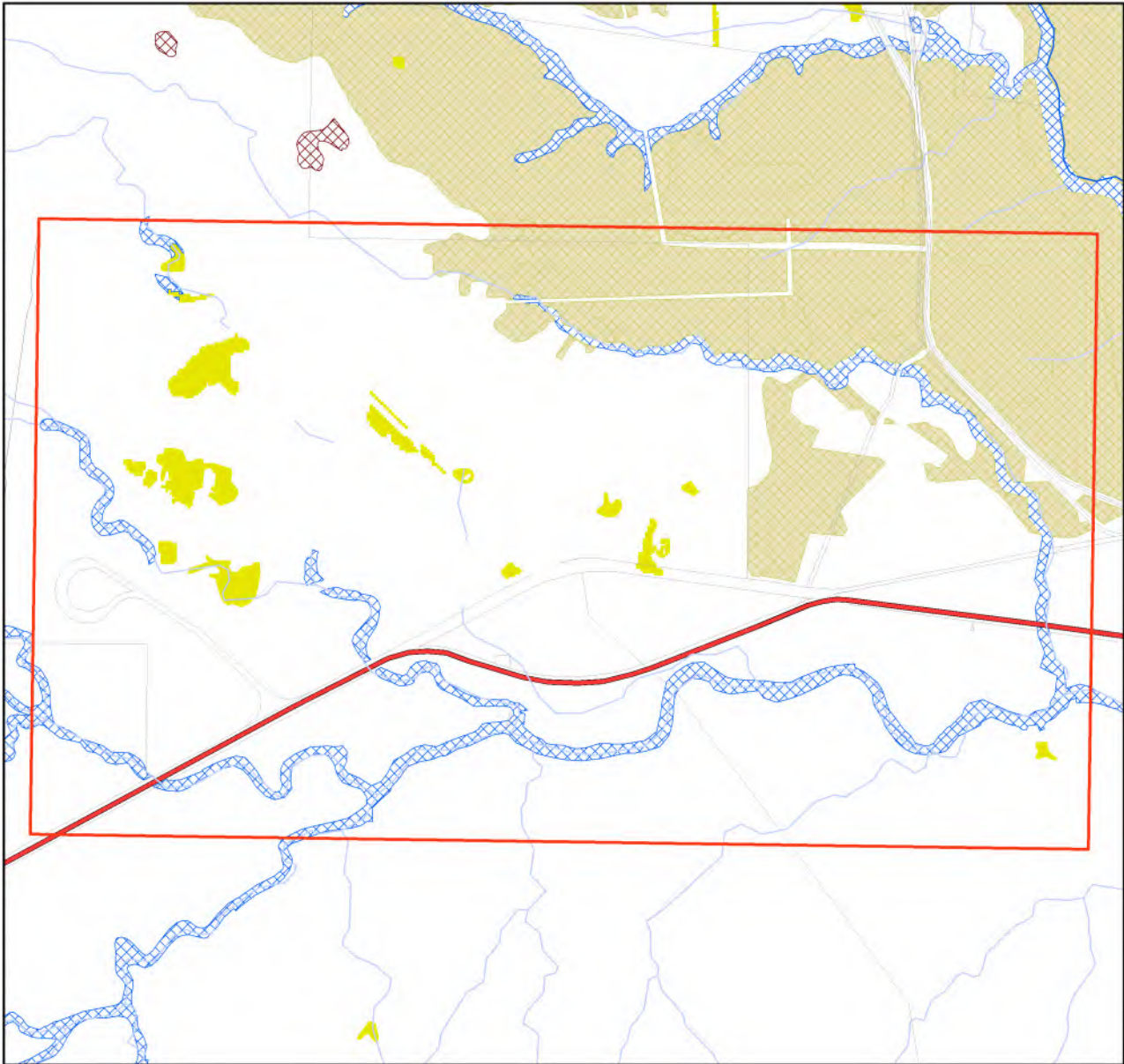
Regional Ecosystem Mapping information: :

<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

Aquatic Conservation Assessments: : <https://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

Groundwater Dependant Ecosystems information:

<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Legend

- polygon
- ▲ Springs
- Dams and weirs
- Towns
- Highways
- Roads
- Cadastral boundaries
- Sub-basin
- Riverine System Drainage Lines**
- Major
- Minor

Wetland Mapping

Hydrologically natural Wetlands

- Lacustrine Wetlands (hydrologically natural)
- Palustrine Wetlands (hydrologically natural)
- Riverine Wetlands (hydrologically natural)
- Intertidal Wetlands (hydrologically natural)
- Subtidal Wetlands (hydrologically natural)
- Intertidal/Subtidal Wetlands (hydrologically natural)

Hydrologically Modified and Artificial Wetlands

- Lacustrine Wetlands (hydrologically modified or artificial)
- Palustrine Wetlands (hydrologically modified or artificial)
- Riverine Wetlands (hydrologically modified or artificial)
- Intertidal Wetlands (hydrologically modified or artificial)
- Subtidal Wetlands (hydrologically modified or artificial)
- Intertidal/Subtidal Wetlands (hydrologically modified or artificial)

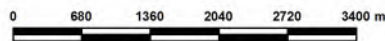
Subdominant Wetlands

- Subdominant Wetlands (51 - 80%)

Contains Wetlands

- Contains Wetlands (1 - 50%)

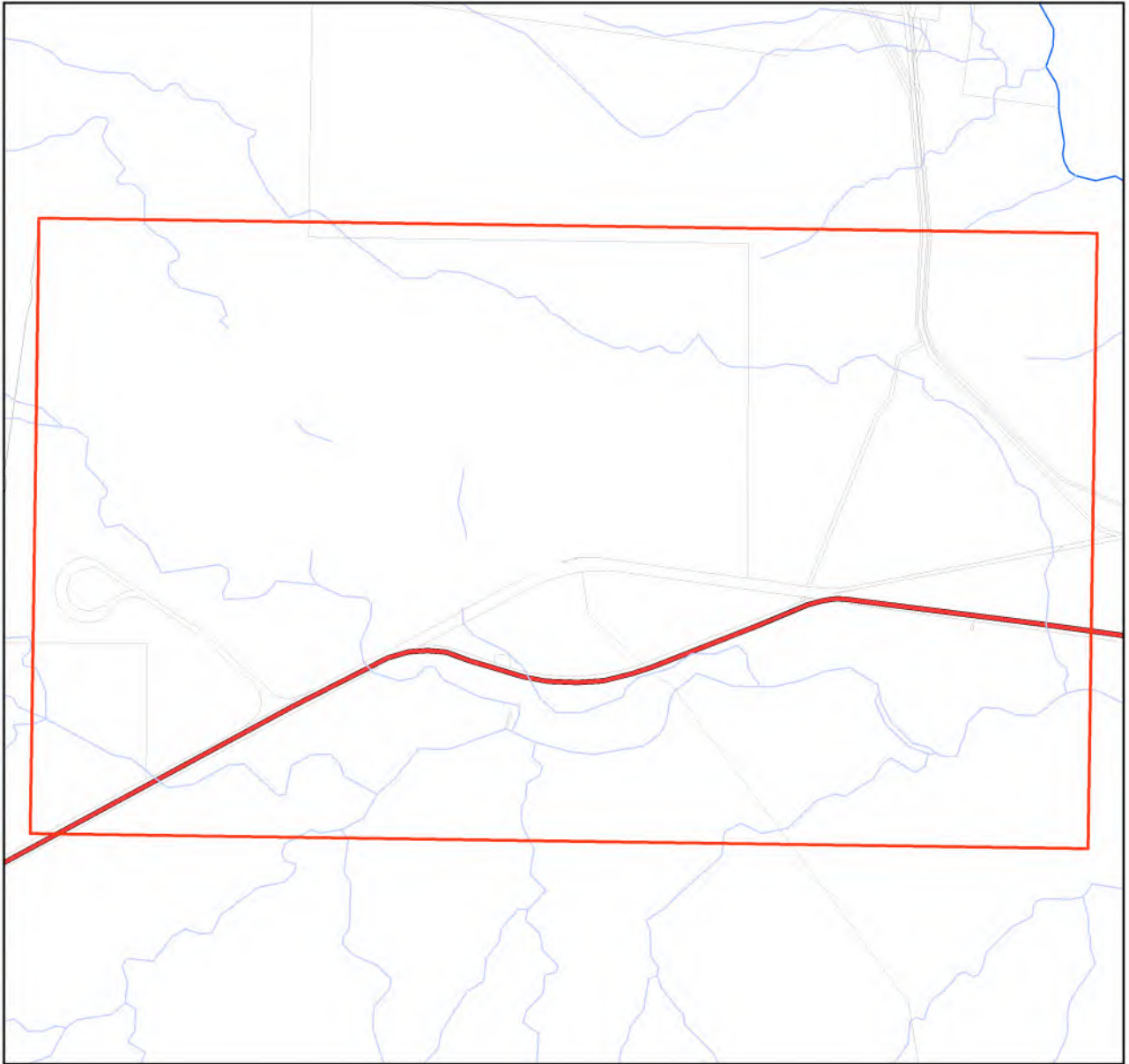
Queensland Wetland Map



Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

This map was produced by the Queensland Wetlands Program, Department of Environment and Science, November 2023.

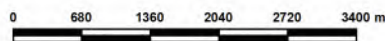
For further information contact: wetlands@des.qld.gov.au



Queensland Wetlands of Importance Map

Legend

- polygon
- Towns
- Cadastral boundaries
- Highways
- Roads
- Sub-basin
- Directory of Important Wetlands
- Ramsar Wetlands
- Riverine System Drainage Lines**
- Major
- Minor

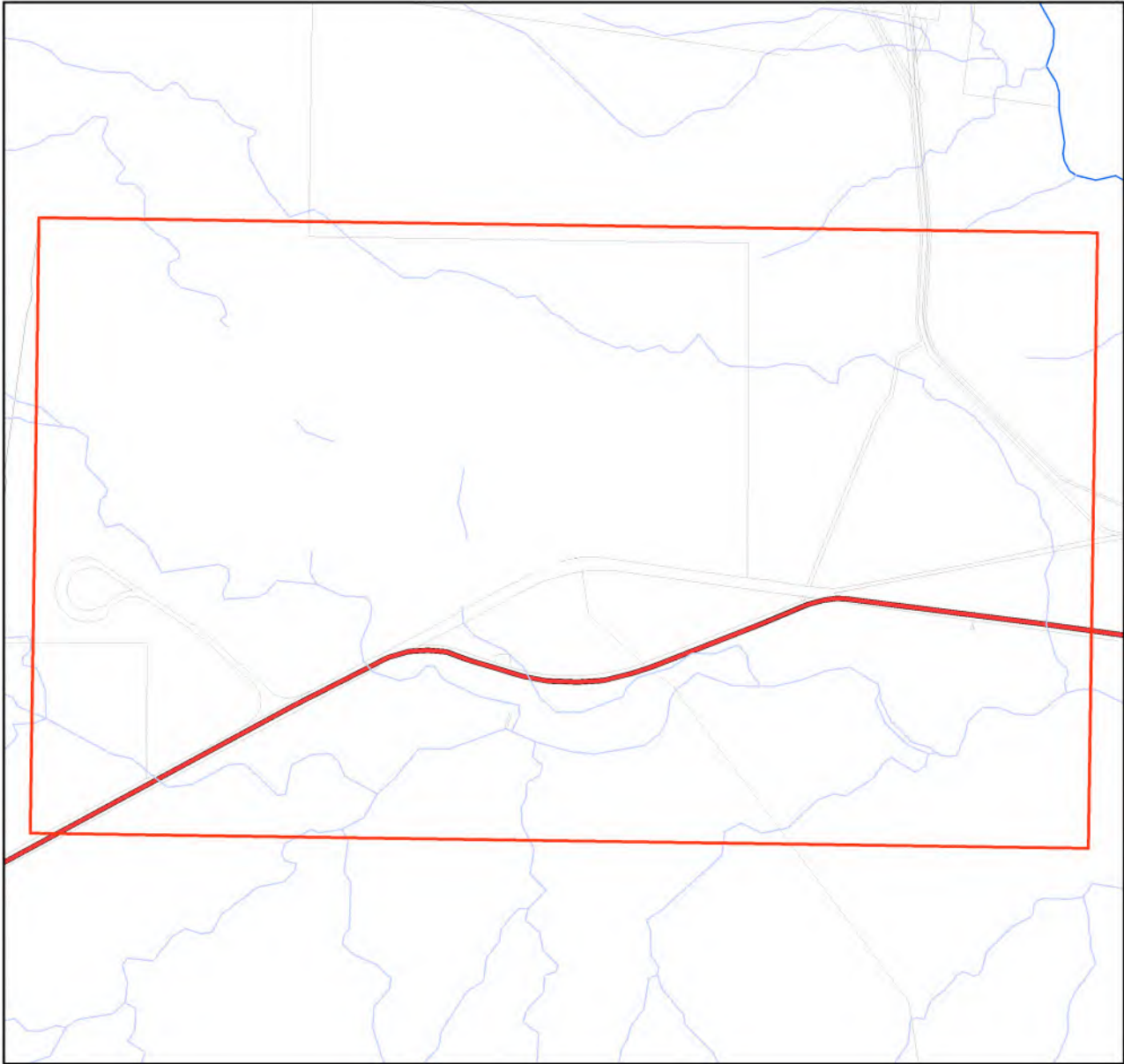


Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

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Legend

- polygon
- Towns
- Cadastral boundaries
- Highways
- Roads
- Sub-basin
- Riverine System Drainage Lines**
- Major
- Minor
- Protected Areas**
- National Park
- National Park (Scientific)
- National Park (CYPAL)
- Conservation Park
- Resources Reserve
- Forest Reserve
- State Forest
- Timber Reserve
- Marine Parks**
- General Use Zone
- Habitat Protection Zone
- Estuarine Conservation Zone
- Conservation Park Zone
- Buffer Zone
- Scientific Research Zone
- Marine National Park Zone
- Preservation Zone

Queensland Protected Area Map



Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

This map was produced by the Queensland Wetlands Program, Department of Environment and Science, November 2023.

For further information contact: wetlands@des.qld.gov.au

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Wetland habitat types in the AOI. Total area: 1845.58ha

Wetland Class	Habitat type	Area (ha)
CPA	NOA	1309.75
RIV	NOA	396.99
LAC	NOA	138.84

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

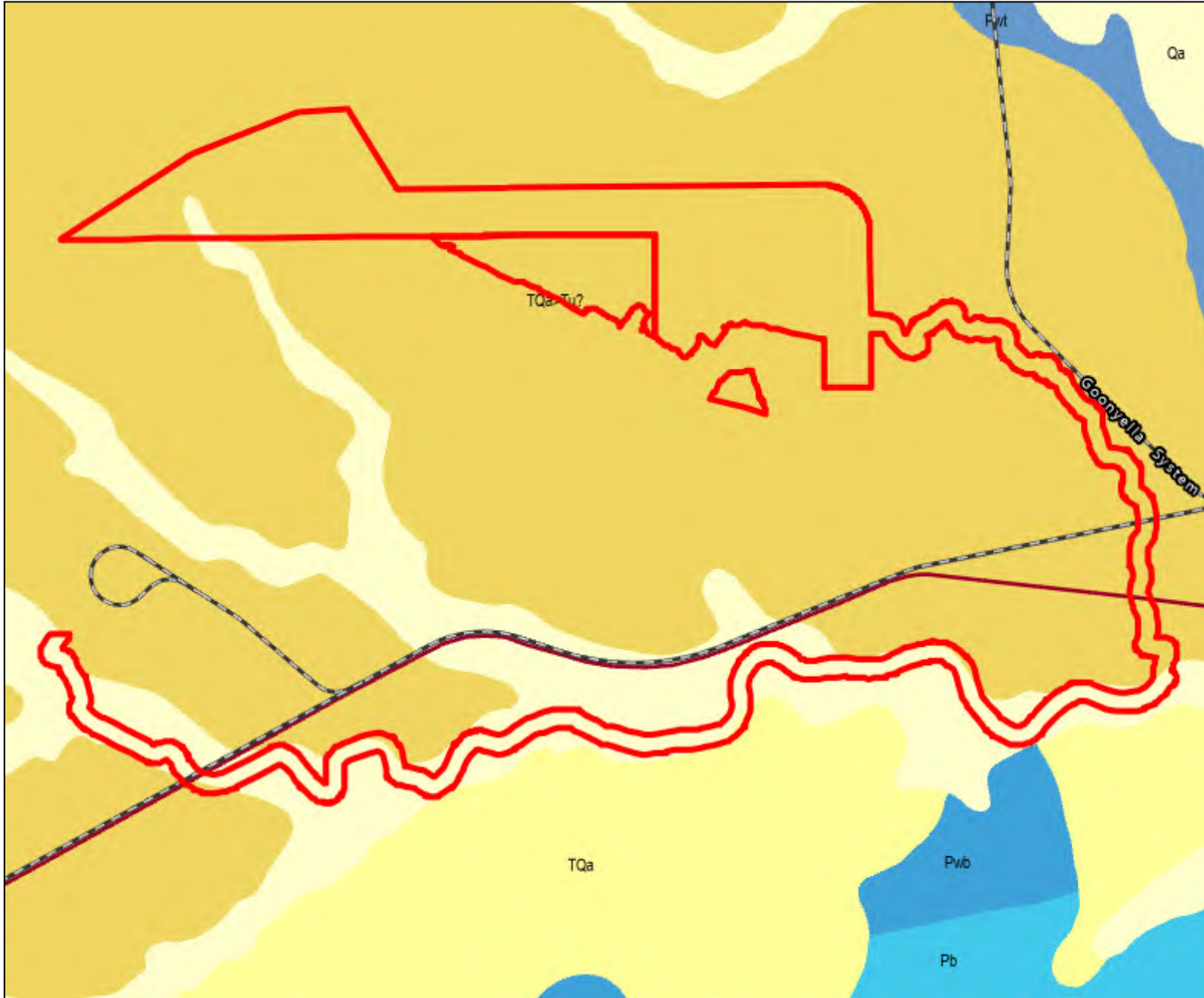
Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps

Wetland name	Conceptual model	Wetland profile
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes



21°48'32"S 148°23'44"E

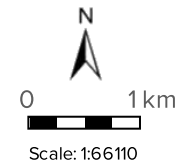
21°48'32"S 148°31'10"E



21°54'12"S 148°23'44"E

21°54'12"S 148°31'10"E

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

Not suitable for accurate measurement.
Projection: Web Mercator EPSG 102100 (3857)

For more information, visit
<https://qldglobe.information.qld.gov.au/help-info/Contact-us.html>

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 Legend

-  Qa-QLD (Qa)
-  TQa-QLD (TQa)
-  TQa-QLD>Suttor
Formation? (TQa>Tu?)

 Attribution

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami erebus</i>	glossy black-cockatoo (northern)		V		4
animals	birds	Columbidae	<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)		V	V	14
animals	mammals	Emballonuridae	<i>Taphozous australis</i>	coastal sheathtail bat		NT		1
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		E	E	41
animals	mammals	Pseudocheiridae	<i>Petauroides volans volans</i>	southern greater glider		E	E	52
animals	reptiles	Elapidae	<i>Denisonia maculata</i>	ornamental snake		V	V	5
plants	land plants	Capparaceae	<i>Capparis humistrata</i>			E		1/1
plants	land plants	Combretaceae	<i>Macropteranthes leiocaulis</i>			NT		1/1
plants	land plants	Euphorbiaceae	<i>Bertya pedicellata</i>			NT		14/7
plants	land plants	Poaceae	<i>Dichanthium queenslandicum</i>			V	E	2/2
plants	land plants	Poaceae	<i>Digitaria porrecta</i>			NT		1/1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*.

The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

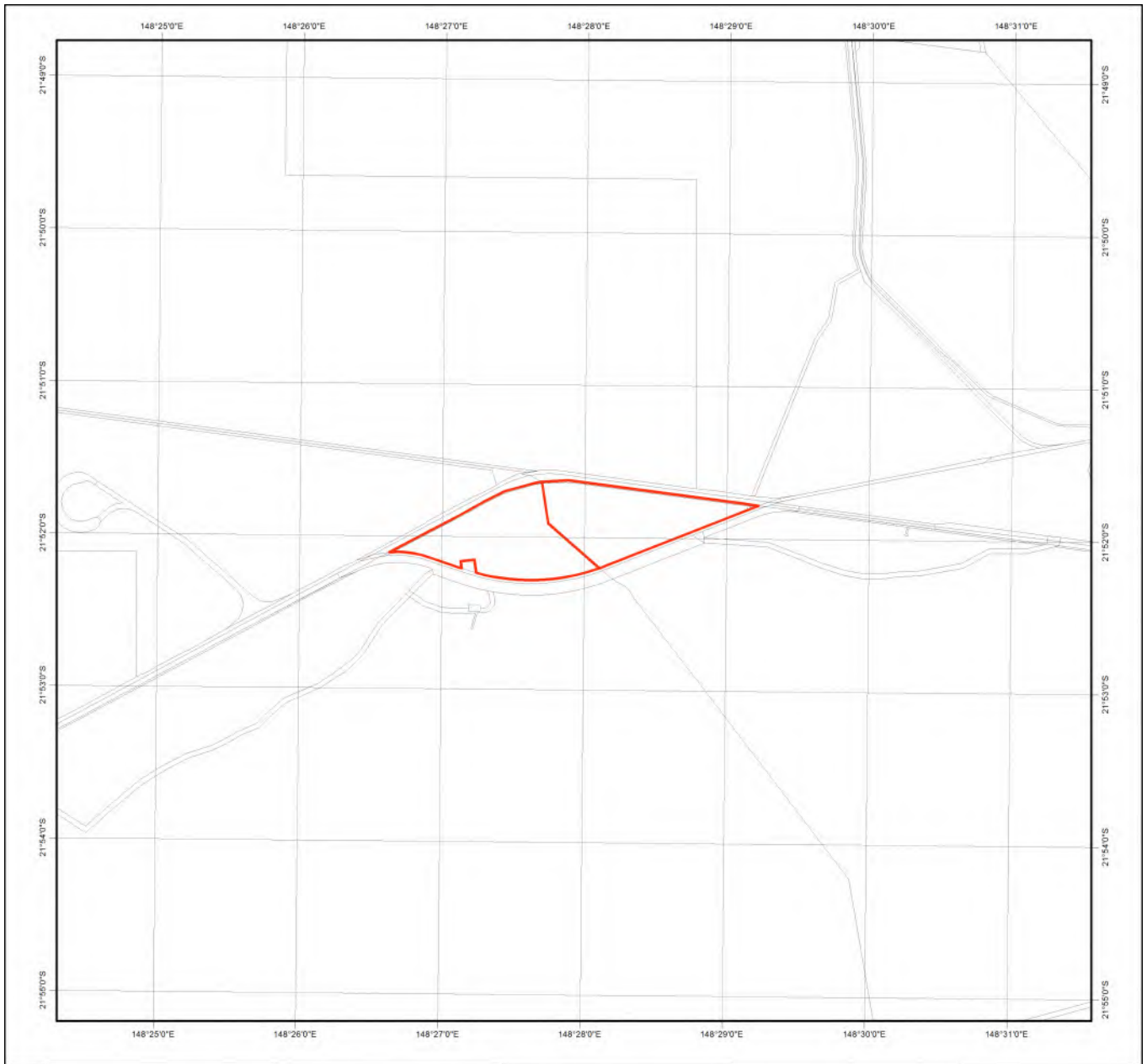
A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*.

The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).




Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).

This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.



Map of Great Barrier Reef Wetland Protection Areas

-  Selected Lot and Plan
-  Cadastral Boundary
-  Wetland in a wetland protection area
-  Great Barrier Reef wetland protection area



This product is projected into GDA 1994 MGA Zone 55

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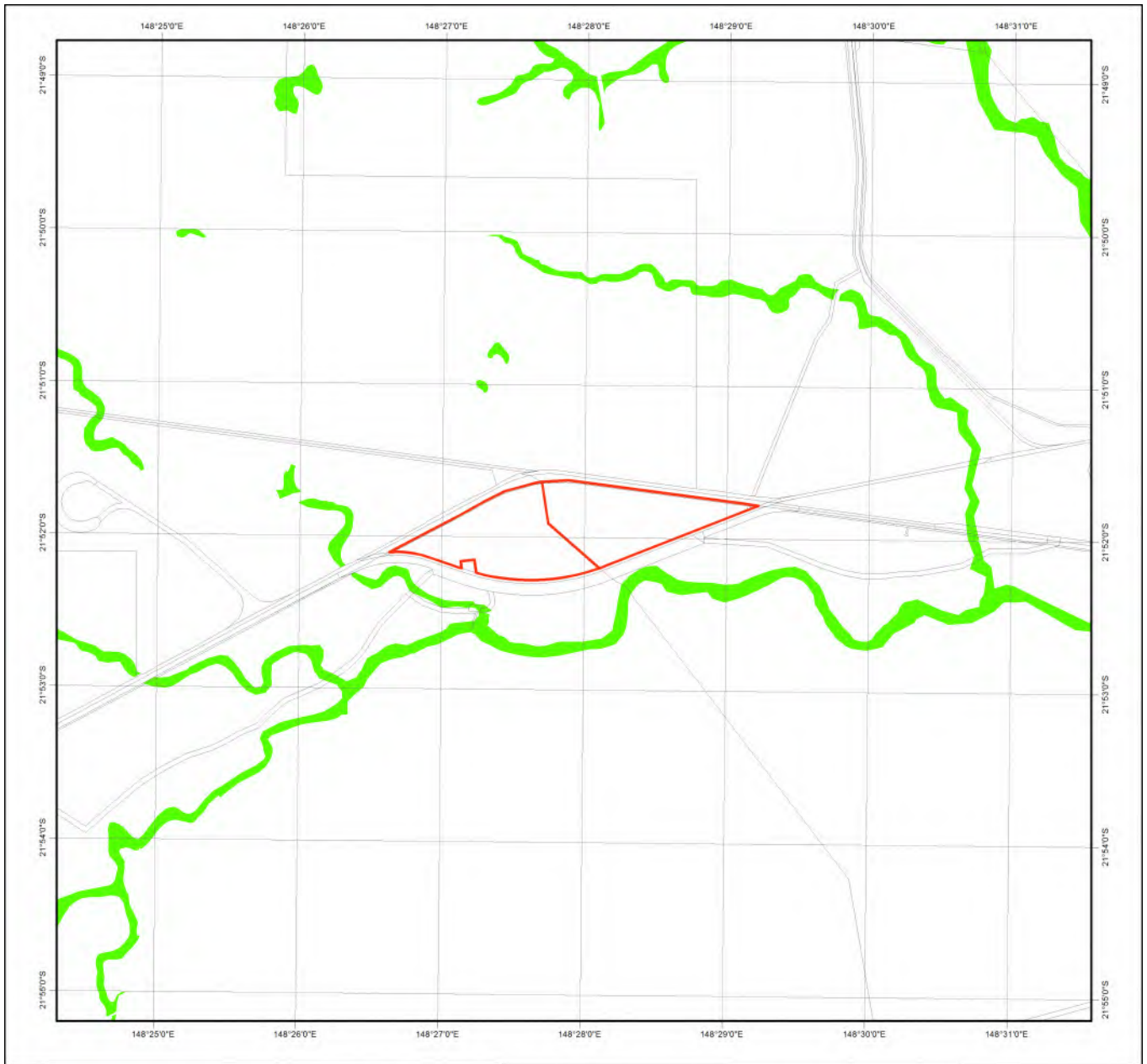
Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

The Department of State Development, Manufacturing, Infrastructure and Planning is the State Assessment Referral Agency (SARA) under Schedule 7 of the Sustainable Planning Regulation 2009 for assessable development involving high impact earthworks within wetland protection areas. The Department of Environment and Science is a technical agency.

The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) *State Code 9 : Great Barrier Reef Wetland Protection Areas*.

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.



Map of Queensland Wetland Environmental Values

- Selected Lot and Plan
- Cadastral Boundary
- High ecological values waters management intent
- Wetlands assessed under section 7
 - GBR wetland of high ecological significance
 - Wetland of high ecological significance
 - Wetland of general ecological significance

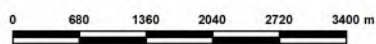


Note:
This map shows the location of wetlands on the Map of Queensland Wetland Environmental Values under the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. The map also shows high ecological value waters management intent under Schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

Wetlands are assessed for ecological significance using the environmental values for wetlands in section 7 of the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. Wetlands are considered either High Ecological Significance (HES) or of General Ecological Significance (GES) for the purposes of the environmental values.

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

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Vegetation management report

For Lot: 1 Plan: SP107309

31/10/2023

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Recent changes

Updated mapping

On September 6 2023, the Department of Environment and Science updated the Protected Plant Flora Survey Trigger Map to include recent species classification changes and Queensland Herbarium scientific updates. The updated map is included in Section 5 of the following report.

Updated vegetation mapping was released on 8 September 2022 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;

- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 1 Plan: SP107309, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
1	SP107309	Freehold	35,060,000

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 1 Plan: SP107309, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Isaac Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Northern Bowen Basin

Catchment(s)
Fitzroy

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the *Vegetation Management Regulation 2012*, the *Planning Act 2016* and the *Planning Regulation 2017*, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the *Vegetation Management Regulation 2012*; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions>.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes>

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at

<https://apps.dnrm.qld.gov.au/vegetation/>

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans>

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

<https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development>

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit <https://www.resources.qld.gov.au/?contact=vegetation> to submit an online enquiry.

3. Vegetation management framework for Lot: 1 Plan: SP107309

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 3505.79ha

Vegetation category	Area (ha)
Category B	1966.3
Category R	5.5
Category X	1533.9

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2012/004643

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/>

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
11.3.25	Least concern	B	53.54	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Sparse
11.3.25	Least concern	R	3.27	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Sparse
11.3.27	Least concern	B	10.27	Freshwater wetlands	Other
11.3.4	Of concern	B	110.45	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Sparse
11.4.9	Endangered	B	98.48	Acacia harpophylla shrubby woodland with Terminalia oblongata on Cainozoic clay plains	Sparse
11.4.9	Endangered	R	0.37	Acacia harpophylla shrubby woodland with Terminalia oblongata on Cainozoic clay plains	Sparse
11.5.3	Least concern	B	1,467.50	Eucalyptus populnea +/- E. melanophloia +/- Corymbia clarksoniana woodland on Cainozoic sand plains and/or remnant surfaces	Sparse
11.5.3	Least concern	R	1.71	Eucalyptus populnea +/- E. melanophloia +/- Corymbia clarksoniana woodland on Cainozoic sand plains and/or remnant surfaces	Sparse
11.5.8	Least concern	B	5.12	Melaleuca spp., Eucalyptus crebra, Corymbia intermedia woodland on Cainozoic sand plains and/or remnant surfaces	Sparse
11.7.2	Least concern	B	221.01	Acacia spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone	Sparse
11.7.2	Least concern	R	0.19	Acacia spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone	Sparse
non-rem	None	X	1,533.92	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

Vegetation management wetlands are present on this property and are shown on the vegetation management supporting map in section 4.2 of this report.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

- 1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
- 2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
483	Denisonia maculata	ornamental snake	V	Riparian woodland/open forest and shrub/woodland including Brigalow Acacia harpophylla; into drier habitats in summer.	100-450m.	Cracking clay with gilgai/soil crack microrelief and sandy loam substrates.	Near freshwater waterholes/creeks and low lying poorly drained areas that are frequently inundated by freshwater.

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
1785	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	Dry eucalypt woodland (including poplar box, spotted gum, yellow box, acacia and callitris), with sparse short grass, often on sandy areas near to permanent water; grassy eucalypt woodlands. Nest on ground near or under grass tussock, log or low bush.	None	None	Gravelly ridges, traprock and river flats.
2455	Petauroides armillatus	central greater glider	E	Tall mature open wet and dry eucalypt forest (Eucalyptus &/or Corymbia spp.) to low open eucalypt woodland; presence of hollow-bearing trees.	Sea level to 1300m.	Usually on soils of relatively high fertility.	None

Label	Regional Ecosystem (mandatory unless otherwise specified)
483	10.3.2, 10.3.3, 10.3.4, 10.3.7, 10.3.13, 10.3.14, 10.3.15, 10.3.16, 10.3.27, 10.3.30, 10.3.31, 10.4.1, 10.4.2, 10.4.3, 10.4.4, 10.4.5, 10.4.6, 10.4.7, 10.4.8, 10.5.5, 10.9.1, 10.9.6, 10.9.7, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.6, 11.3.9, 11.3.10, 11.3.12, 11.3.15, 11.3.21, 11.3.23, 11.3.24, 11.3.25, 11.3.27, 11.3.28, 11.3.31, 11.3.34, 11.3.37, 11.3.38, 11.3.40, 11.4.2, 11.4.3, 11.4.4, 11.4.6, 11.4.7, 11.4.8, 11.4.9, 11.4.11, 11.5.2, 11.5.3, 11.5.16, 11.8.11, 11.9.1, 11.9.2, 11.9.3, 11.9.5, 11.9.7, 11.9.11, 11.9.12, 11.9.14, 11.11.15, 11.12.6

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	<p>4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 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1785	<p>8.2.1, 8.2.7, 8.2.8, 8.2.12, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.13, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.9.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.12.6, 8.12.7, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.9, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.18, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.23, 9.4.1, 9.4.2, 9.4.3, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.16, 9.7.1, 9.7.2, 9.7.3, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.4, 9.8.5, 9.8.6, 9.8.9, 9.8.10, 9.8.11, 9.10.1, 9.10.3, 9.10.6, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.11, 9.11.12, 9.11.13, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.23, 9.11.26, 9.11.28, 9.11.29, 9.11.31, 9.11.32, 9.12.1, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.26, 9.12.28, 9.12.30, 9.12.31, 9.12.33, 9.12.35, 9.12.37, 9.12.39, 10.3.1, 10.3.2, 10.3.3, 10.3.4, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.19, 10.3.20, 10.3.27, 10.3.28, 10.3.30, 10.3.31, 10.4.3, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.2, 10.7.3, 10.7.5, 10.7.11, 10.7.12, 10.9.1, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.6, 11.3.7, 11.3.8, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.23, 11.3.25, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.5, 11.4.8, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.4, 11.7.6, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.9, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.2, 11.9.3, 11.9.7, 11.9.9, 11.9.14, 11.10.1, 11.10.4, 11.10.6, 11.10.7, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.15, 11.11.16, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.11, 11.12.12, 11.12.13, 11.12.14, 11.12.17, 11.12.20, 12.2.5, 12.2.6, 12.2.7, 12.2.10, 12.2.11, 12.3.3, 12.3.6, 12.3.10, 12.3.12, 12.3.14, 12.3.18, 12.3.19, 12.5.1, 12.5.2, 12.5.4, 12.5.5, 12.5.7, 12.5.8, 12.5.11, 12.5.12, 12.7.1, 12.7.2, 12.8.14, 12.8.16, 12.8.17, 12.8.19, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.12, 12.9-10.13, 12.9-10.25, 12.9-10.26, 12.9-10.28, 12.11.5, 12.11.7, 12.11.8, 12.11.14, 12.11.15, 12.11.20, 12.11.21, 12.11.22, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.7, 12.12.8, 12.12.9, 12.12.12, 12.12.14, 12.12.21, 12.12.22, 12.12.23, 12.12.24, 12.12.25, 12.12.27, 13.3.1, 13.3.4, 13.3.7, 13.11.1, 13.11.3, 13.11.4, 13.11.8, 13.12.2, 13.12.3, 13.12.5, 13.12.8, 13.12.9, 13.12.10.</p>
2455	<p>2.10.2, 2.10.3, 2.5.24, 7.3.19, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.5.2, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.35, 7.12.21, 7.12.22, 7.12.24, 7.12.27, 7.12.29, 7.12.30, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.61, 7.12.63, 8.3.2, 8.3.5, 8.3.6, 8.3.8, 8.11.3, 8.11.8, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.20, 8.12.23, 8.12.31, 8.12.32, 9.3.1, 9.3.3, 9.3.8, 9.3.15, 9.3.16, 9.5.5, 9.7.3, 9.8.1, 9.8.4, 9.8.9, 9.11.2, 9.11.4, 9.11.10, 9.11.14, 9.11.16, 9.12.1, 9.12.2, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.22, 9.12.23, 9.12.26, 10.3.13, 11.3.3, 11.3.4, 11.3.7, 11.3.9, 11.3.14, 11.3.23, 11.3.25, 11.3.26, 11.3.27, 11.3.29, 11.3.35, 11.3.36, 11.3.38, 11.3.39, 11.4.8, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.8, 11.5.9, 11.5.12, 11.5.20, 11.5.21, 11.7.4, 11.7.6, 11.7.7, 11.8.1, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.9.2, 11.9.9, 11.9.13, 11.10.1, 11.10.2, 11.10.4, 11.10.5, 11.10.7, 11.10.13, 11.11.1, 11.11.3, 11.11.4, 11.11.7, 11.11.10, 11.11.15, 11.12.1, 11.12.2, 11.12.3, 11.12.6, 11.12.13, 12.3.2, 12.3.3, 12.3.6, 12.3.7, 12.3.9, 12.3.11, 12.3.14, 12.3.15, 12.5.1, 12.5.2, 12.5.3, 12.5.4, 12.5.6, 12.5.7, 12.5.11, 12.5.12, 12.8.1, 12.8.8, 12.8.10, 12.8.11, 12.8.14, 12.8.16, 12.8.20, 12.8.24, 12.8.25, 12.9-10.1, 12.9-10.2, 12.9-10.3, 12.9-10.4, 12.9-10.5, 12.9-10.7, 12.9-10.11, 12.9-10.12, 12.9-10.14, 12.9-10.17, 12.9-10.18, 12.9-10.19, 12.9-10.20, 12.9-10.21, 12.9-10.23, 12.9-10.24, 12.9-10.26, 12.9-10.27, 12.11.2, 12.11.3, 12.11.5, 12.11.6, 12.11.7, 12.11.9, 12.11.14, 12.11.15, 12.11.16, 12.11.17, 12.11.18, 12.11.19, 12.11.22, 12.11.23, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.12.2, 12.12.7, 12.12.8, 12.12.9, 12.12.12, 12.12.3, 12.12.4, 12.12.5, 12.12.6, 12.12.7, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.20, 12.12.22, 12.12.23, 12.12.24, 12.12.25, 12.12.27, 12.12.28, 13.11.3, 13.11.5, 13.11.6, 13.11.8, 13.12.1, 13.12.2</p>

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Non Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

Class B (with urban areas masked as per SPP): 5.15ha

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 1 Plan: SP107309.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:

<https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form>

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new [property maps of assessable vegetation \(PMAV\)](#).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

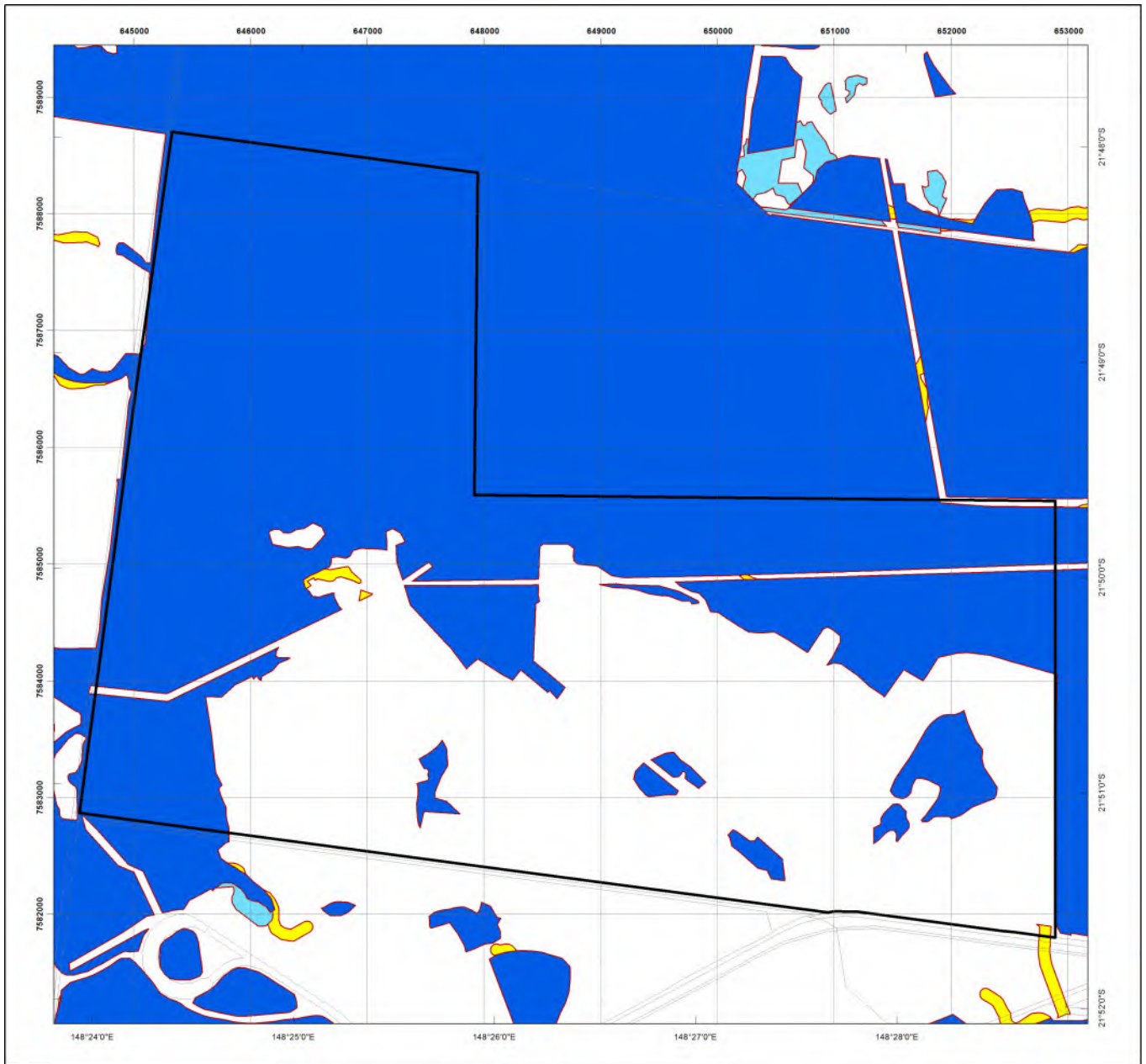
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

4.1 Regulated vegetation management map



Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 55

Disclaimer:

While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

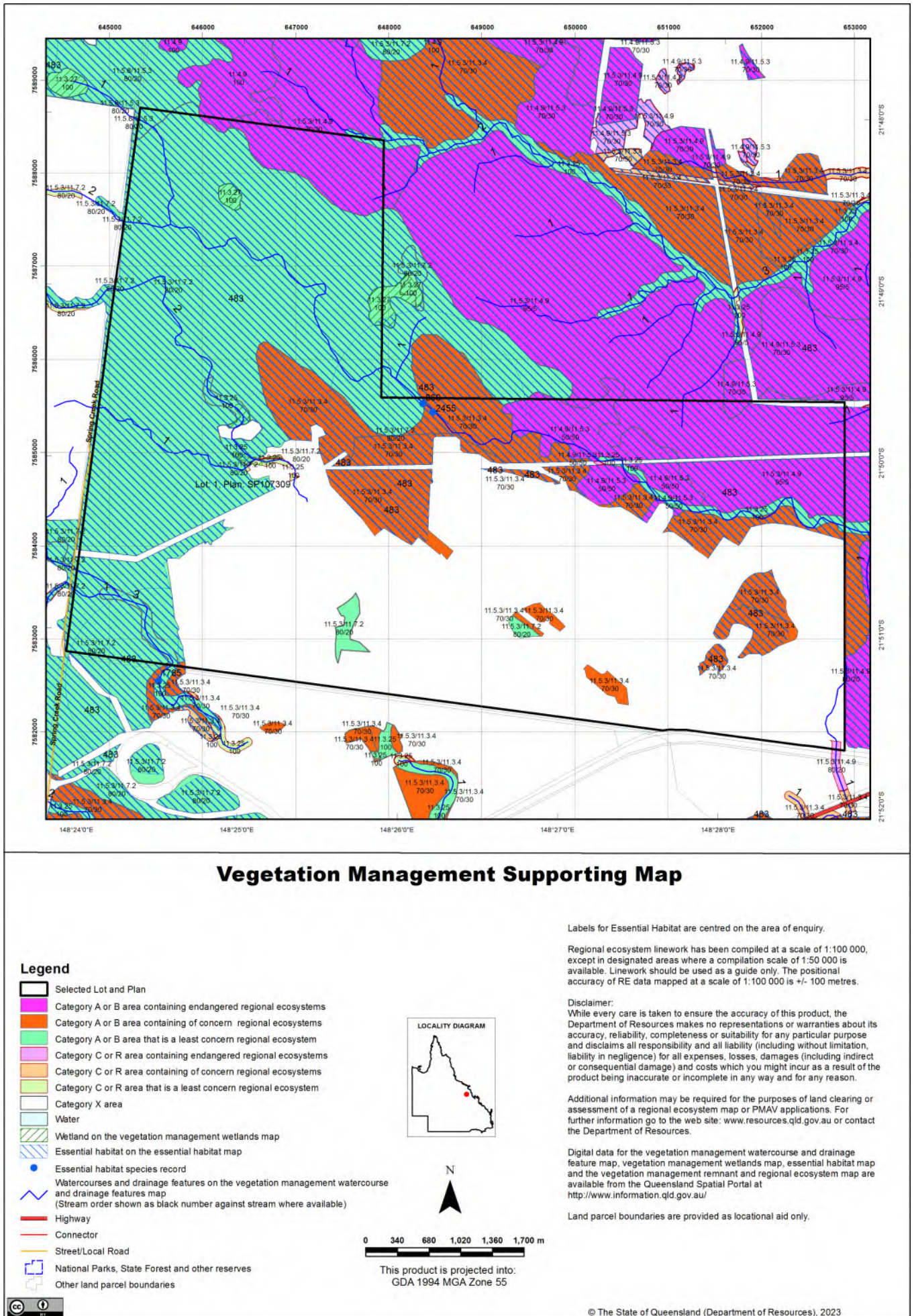
Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

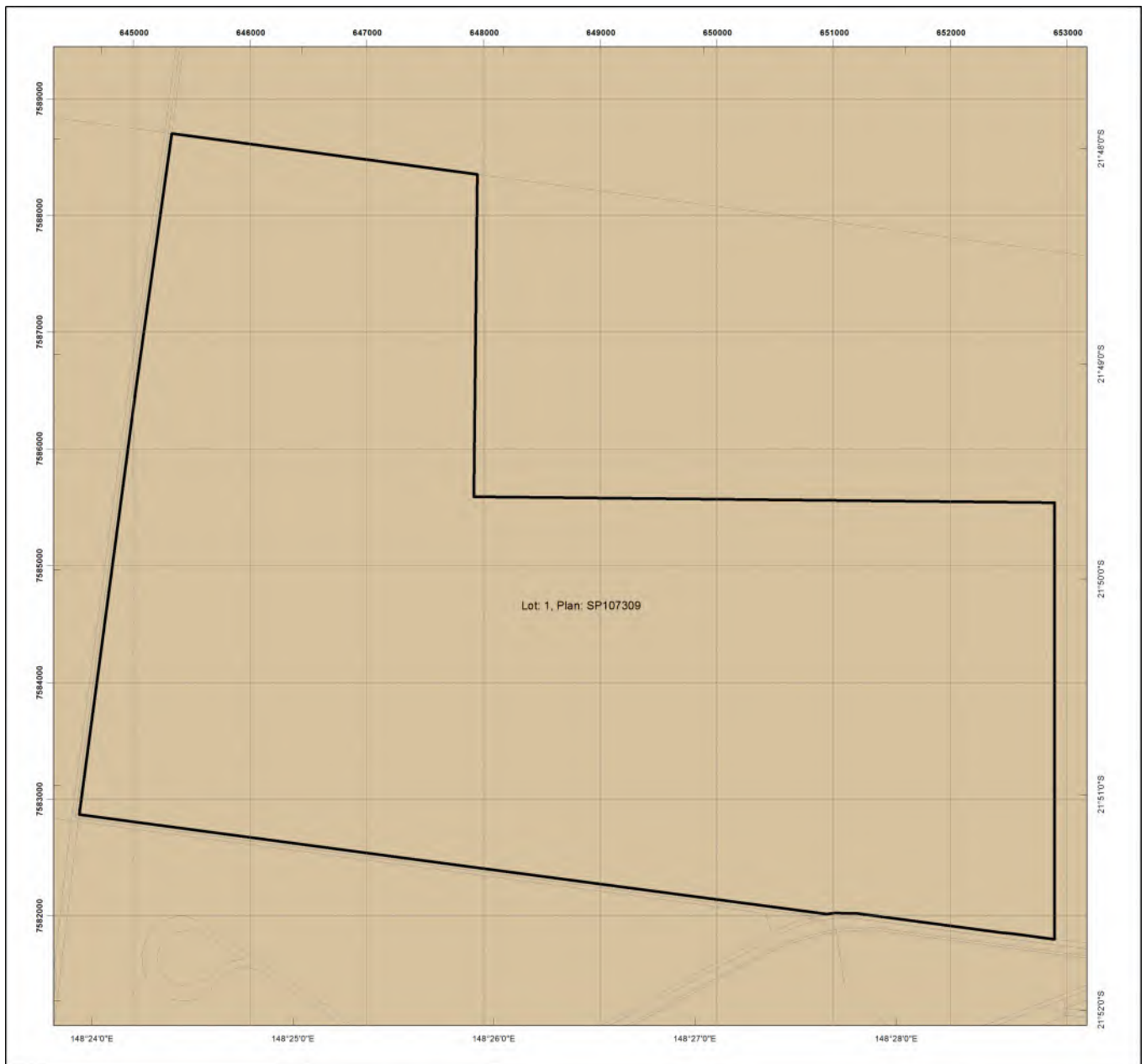
Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

4.2 Vegetation management supporting map







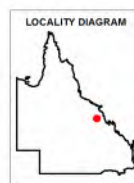
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Legend

-  Selected Lot and Plan
-  Coastal
-  Non Coastal
-  Other land parcel boundaries



This product is projected into:
GDA 1994 MGA Zone 55

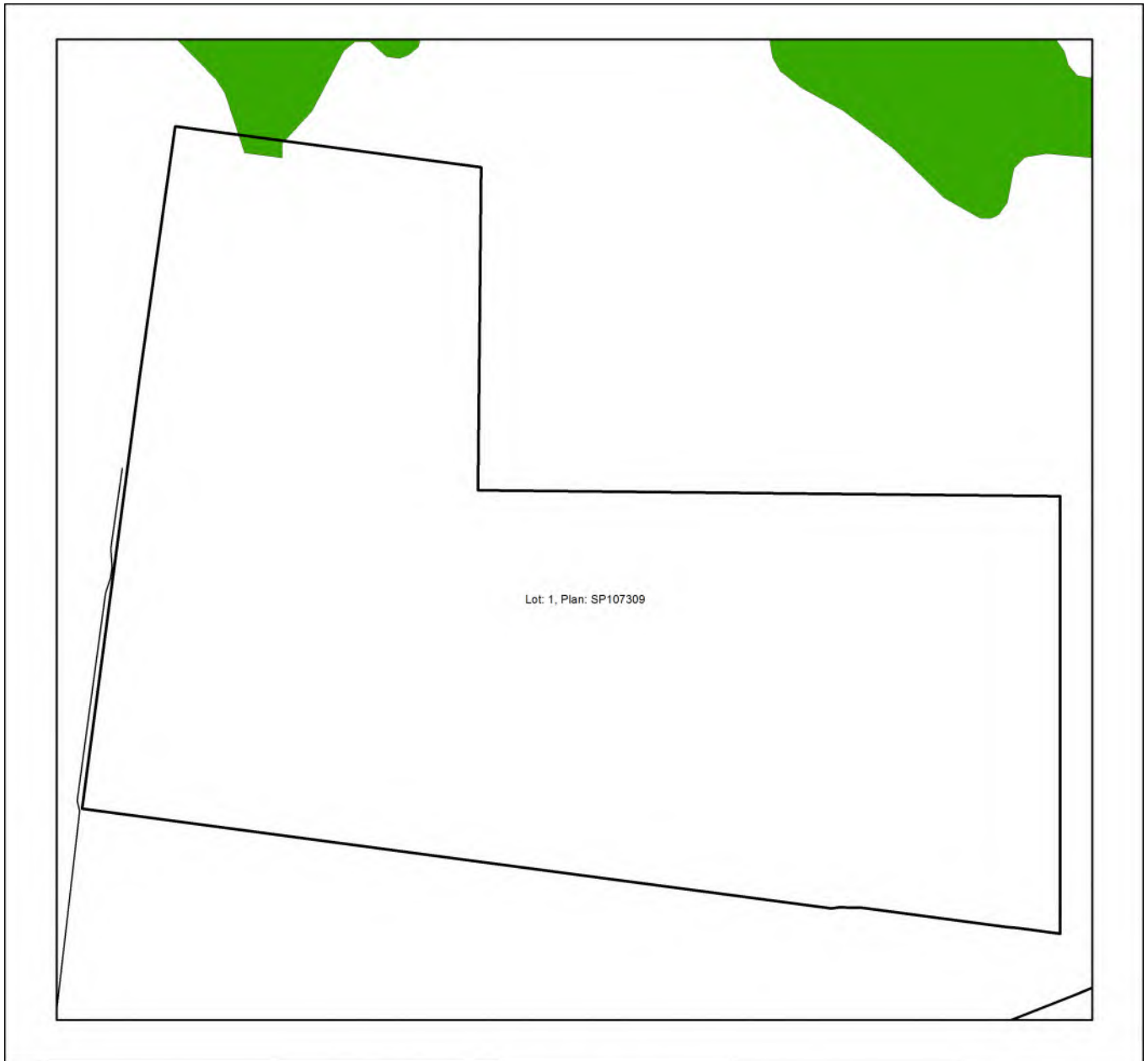
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Land parcel boundaries shown are provided as a locational aid only.



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4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

Legend

- Selected Lot and Plan
- Towns
- Rivers and creeks
- Freeways / motorways; Highways
- Secondary roads; Streets
- Agricultural land class A or B
- A
- B
- Not class A or B



This product is projected into GDA 1994 MGA Zone 55

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5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the [Nature Conservation Act 1992](#) (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see [Operational policy: When a protected plant in Queensland is considered to be 'in the wild'](#)) that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the [Flora survey guidelines](#). The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An [exempt clearing notification form](#) must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the [clearing permit application form](#).

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:

Phone 1300 130 372 (and select option four)

Email palm@des.qld.gov.au

Visit <https://www.qld.gov.au/environment/plants-animals/plants/protected-plants>

5.5 Protected plants flora survey trigger map

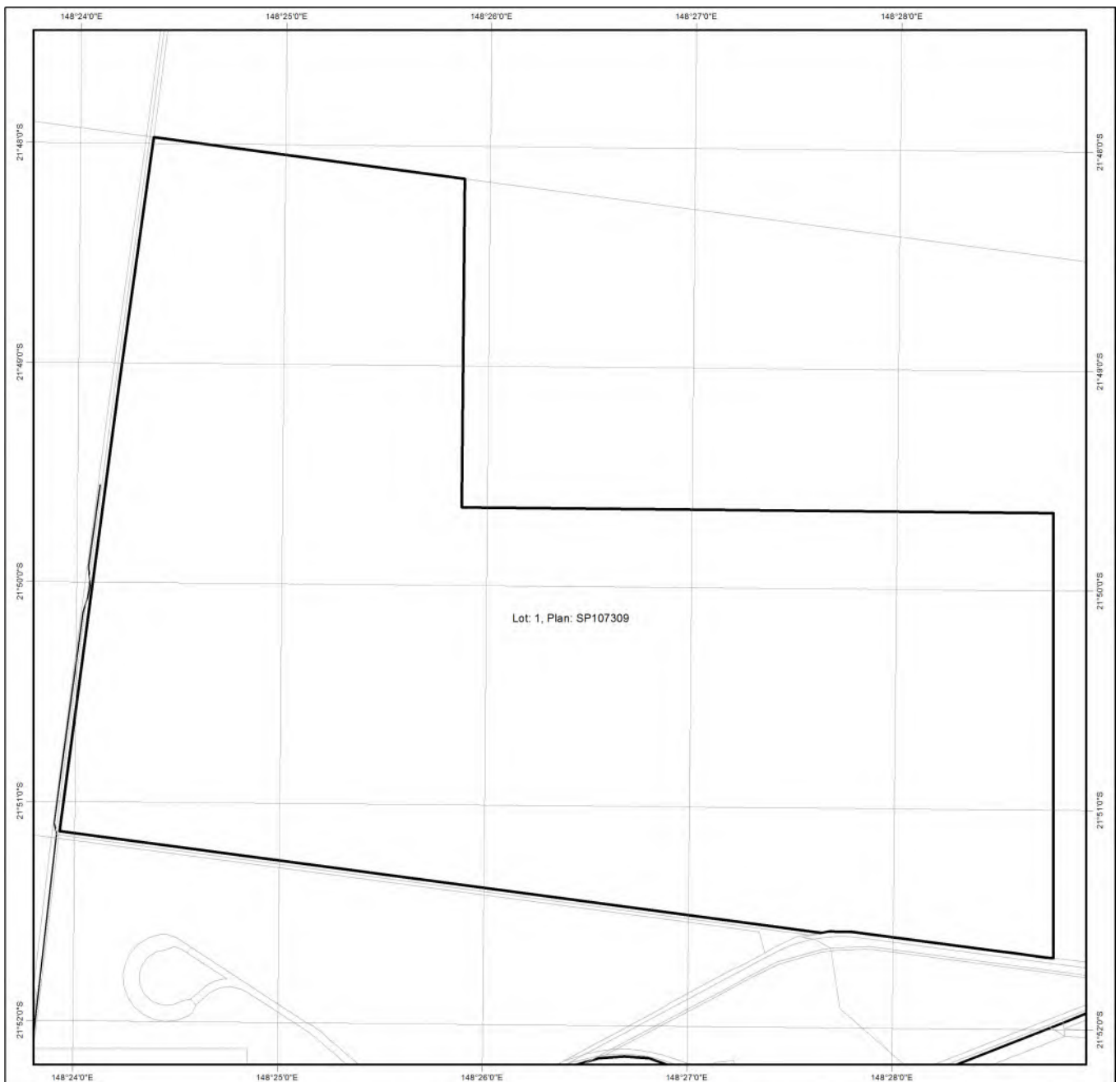
This map included may also be requested individually at: <https://apps.des.qld.gov.au/map-request/flora-survey-trigger/>.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.






Species information

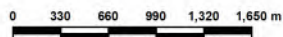
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the [Queensland Spatial Catalogue](#), the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for more information.



Protected Plants Flora Survey Trigger Map

Legend

-  Selected Lot and Plan
-  High risk area
-  Other land parcel boundaries
-  Freeways / motorways / highways
-  Secondary roads / streets



This product is projected into:
GDA 1994 MGA Zone 55

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

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6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document [Spatial modelling in South East Queensland](#).

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document [Guideline - Requests to make, amend or revoke a koala habitat area determination](#).

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps>. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

- 1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
- 2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the [Planning Regulation 2017](#). More information on exempted development can be found here:

<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy>.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
 - the local government planning scheme makes the development assessable;
 - the premises includes an area that is both a koala priority area and a koala habitat area; and
 - the development does not involve interfering with koala habitat (defined above); and
- development in identified koala broad-hectare areas.

The [Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks](#) outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the [Nature Conservation \(Koala\) Conservation Plan 2017](#) prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

For further information on the koala protection framework:

Phone 13 QGOV (13 74 68)

Email koala.assessment@des.qld.gov.au

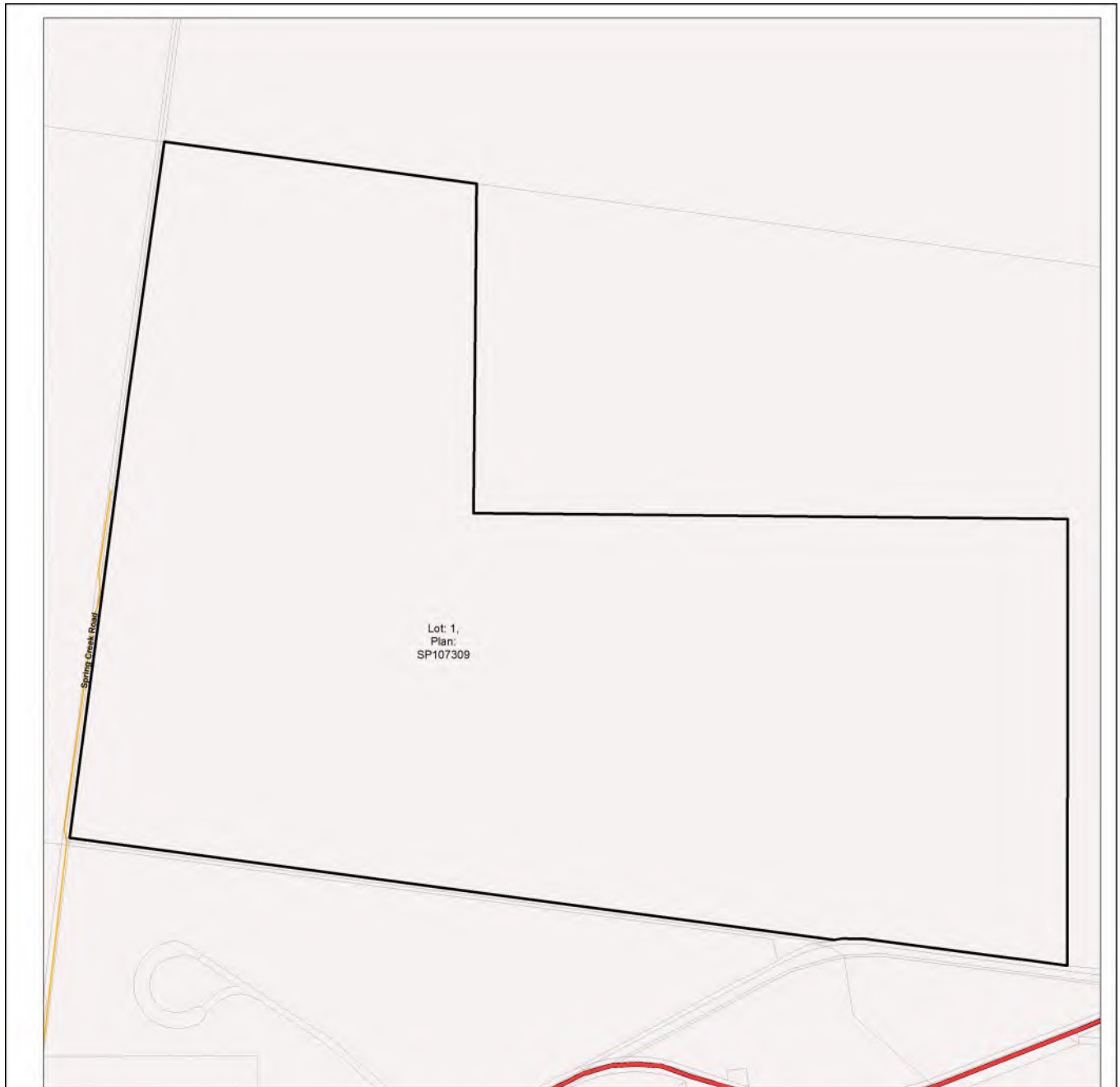
Visit <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

7. Koala protection framework details for Lot: 1 Plan: SP107309

7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map

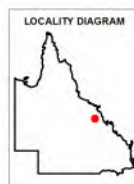


Koala priority area, koala habitat area and identified koala broad-hectare area map

Legend

- Selected Lot and Plan
- Koala habitat area (core)
- Koala habitat area (locally refined)
- Koala priority area
- Identified koala broad-hectare area
- Cadastral Boundaries
- Towns
- Highway
- Connector
- Street/Local Road
- Major rivers/creeks
- Queensland

The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.



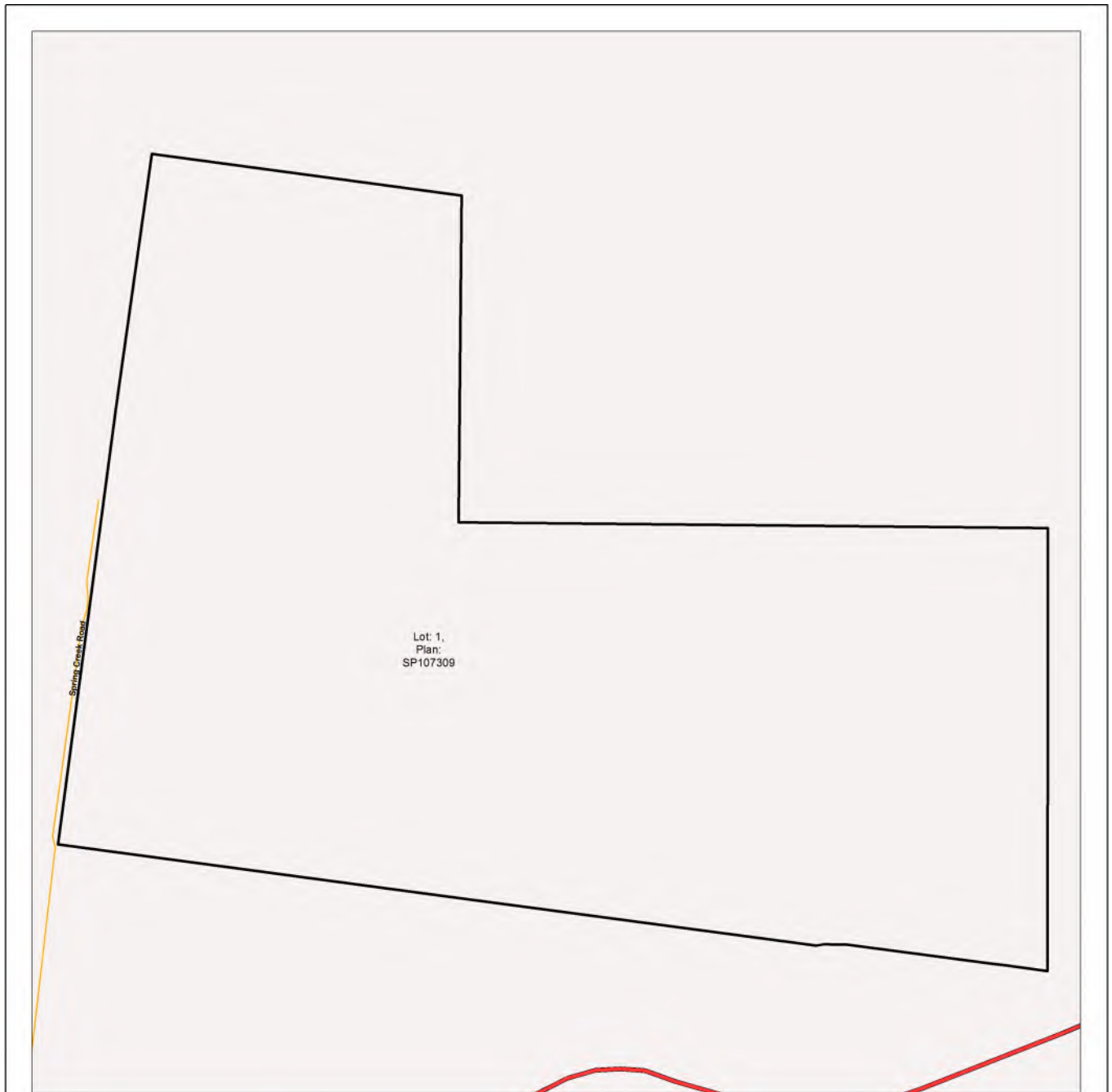
Disclaimer:

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The koala conservation plan maps will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.









In order to ensure that the most recent map for an area of interest can be accessed, prior to the annual update, a register of changes made to koala habitat areas as a result of the map amendment process will be available at:
<https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/>.
 The register will include lot on plan for the change, the date the decision was made and the map issued to the landholder which shows areas determined to be koala habitat areas.

7.3 Koala habitat regional ecosystems for core koala habitat areas



Koala habitat regional ecosystems for core koala habitat areas

Legend

-  Selected Lot and Plan
-  Koala habitat area (core)
-  Towns
-  Highway
-  Connector
-  Street/Local Road
-  Major rivers/creeks
-  Queensland



N



The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.

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This product is projected into GDA 1994 MGA Zone 55

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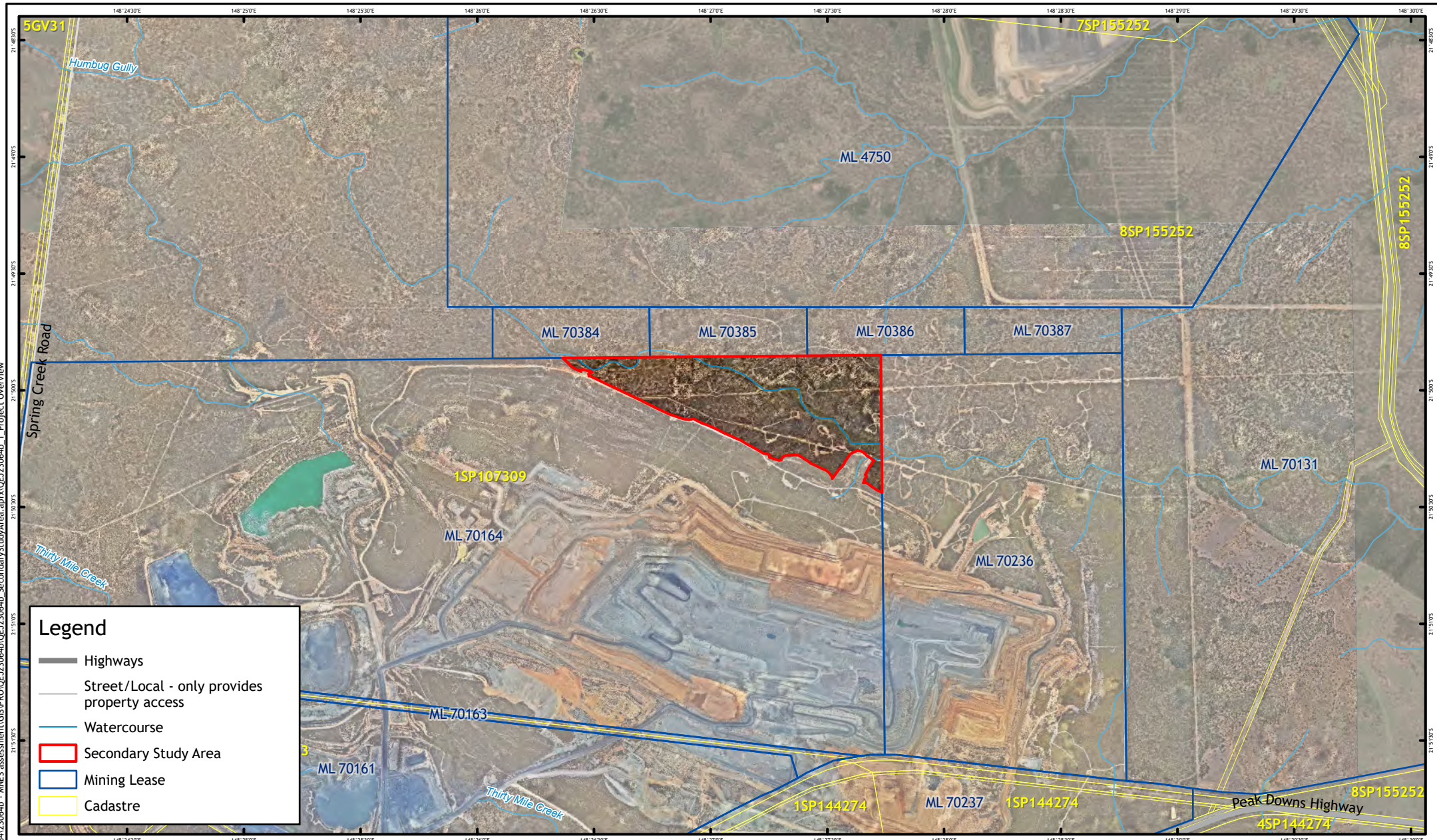
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8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
<ul style="list-style-type: none"> • Interference with overland flow • Earthworks, significant disturbance 	<i>Water Act 2000</i> <i>Soil Conservation Act 1986</i>	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
<ul style="list-style-type: none"> • Indigenous Cultural Heritage 	<i>Aboriginal Cultural Heritage Act 2003</i> <i>Torres Strait Islander Cultural Heritage Act 2003</i>	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
<ul style="list-style-type: none"> • Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues 	<i>Environmental Protection Act 1994</i> <i>Coastal Protection and Management Act 1995</i> <i>Queensland Heritage Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
<ul style="list-style-type: none"> • Protected plants and protected areas 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
<ul style="list-style-type: none"> • Koala mapping and regulations 	<i>Nature Conservation Act 1992</i>	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
<ul style="list-style-type: none"> • Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures 	<i>Fisheries Act 1994</i> <i>Forestry Act 1959</i>	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
<ul style="list-style-type: none"> • Matters of National Environmental Significance including listed threatened species and ecological communities 	<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
<ul style="list-style-type: none"> • Development and planning processes 	<i>Planning Act 2016</i> <i>State Development and Public Works Organisation Act 1971</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
<ul style="list-style-type: none"> • Local government requirements 	<i>Local Government Act 2009</i> <i>Planning Act 2016</i>	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
<ul style="list-style-type: none"> • Harvesting timber in the Wet Tropics of Qld World Heritage area 	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

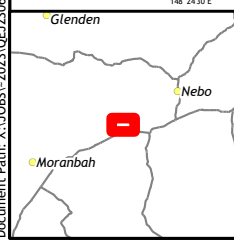


Appendix B Mapping



Legend

- Highways
- Street/Local - only provides property access
- Watercourse
- Secondary Study Area
- Mining Lease
- Cadastre



Scale 1:40,000 (A4)



Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
 Site imagery: © Peabody Energy 2023

Rev	Description	Drawn	Approved	Date
A	Issued for Review	GO	KK	15/01/2024

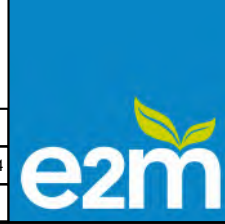
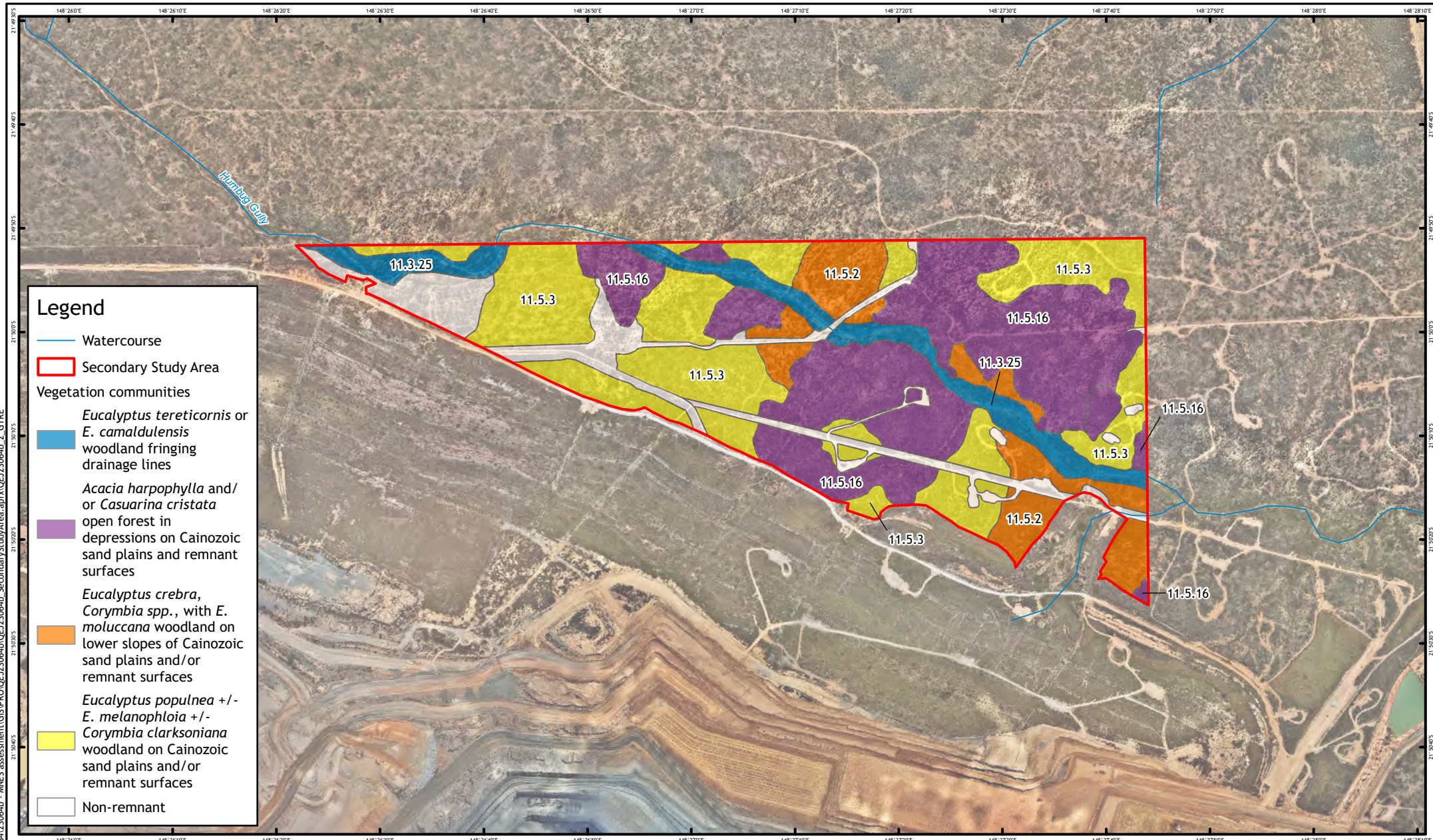


FIGURE 1: PROJECT OVERVIEW

Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

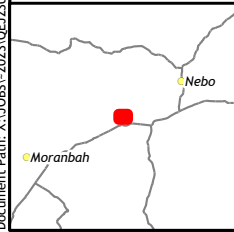
Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



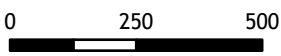
Legend

- Watercourse
- Secondary Study Area
- Vegetation communities**
- Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines
- Acacia harpophylla* and/or *Casuarina cristata* open forest in depressions on Cainozoic sand plains and remnant surfaces
- Eucalyptus crebra*, *Corymbia spp.*, with *E. moluccana* woodland on lower slopes of Cainozoic sand plains and/or remnant surfaces
- Eucalyptus populnea* +/- *E. melanophloia* +/- *Corymbia clarksoniana* woodland on Cainozoic sand plains and/or remnant surfaces
- Non-remnant

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Scale 1:15,000 (A4)



Meters
Coordinate System: GDA2020

Notes:
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Watercourse: © DoR 2024
Road: © DoR 2024
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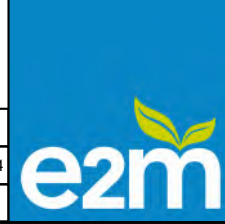
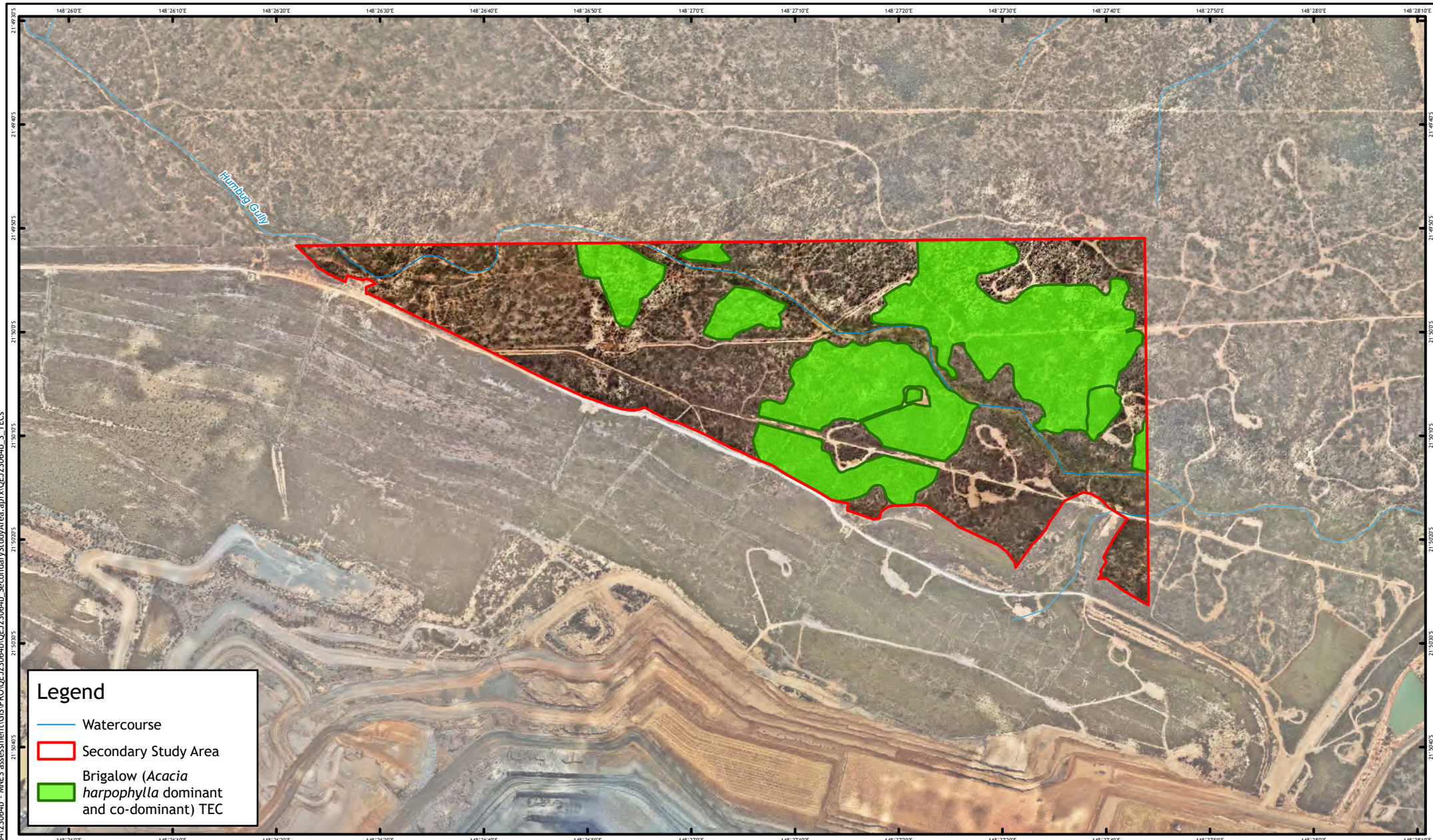


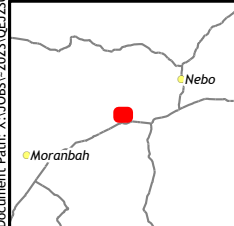
FIGURE 2: GROUND-TRUTHED VEGETATION COMMUNITIES
Coppabella Mine Continuation Project
Secondary Study Area Terrestrial Ecology Report
Peabody Energy

Map Number	Job Number	Rev
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Legend

- Watercourse
- Secondary Study Area
- Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
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 Road: © DoR 2024
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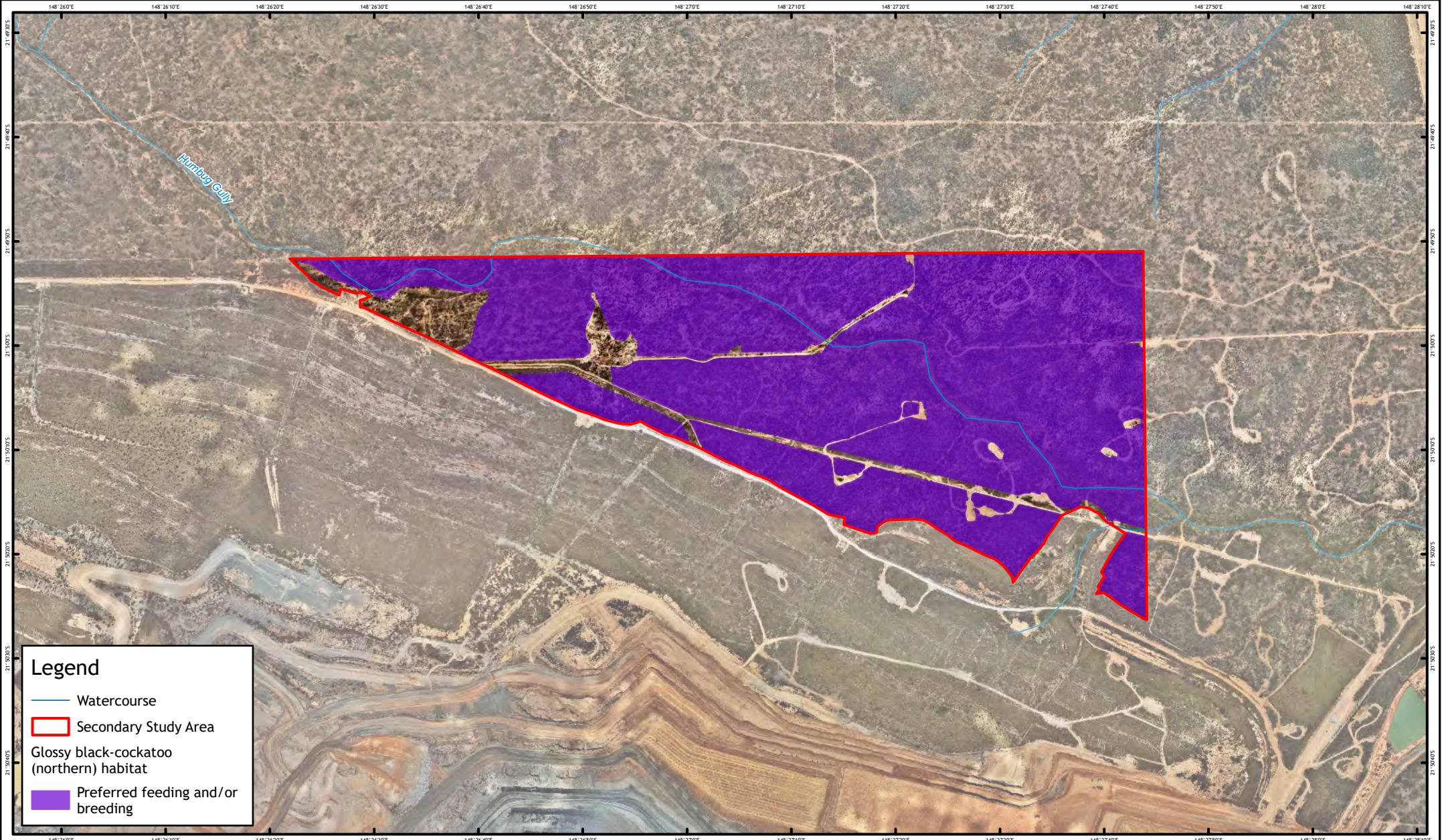


FIGURE 3: BRIGALOW TEC EXTENT

Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

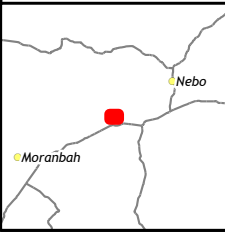
Map Number	Job Number	Rev
1 of 1	QEJ23064b	A

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Legend

- Watercourse
- Secondary Study Area
- Glossy black-cockatoo (northern) habitat
- Preferred feeding and/or breeding



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
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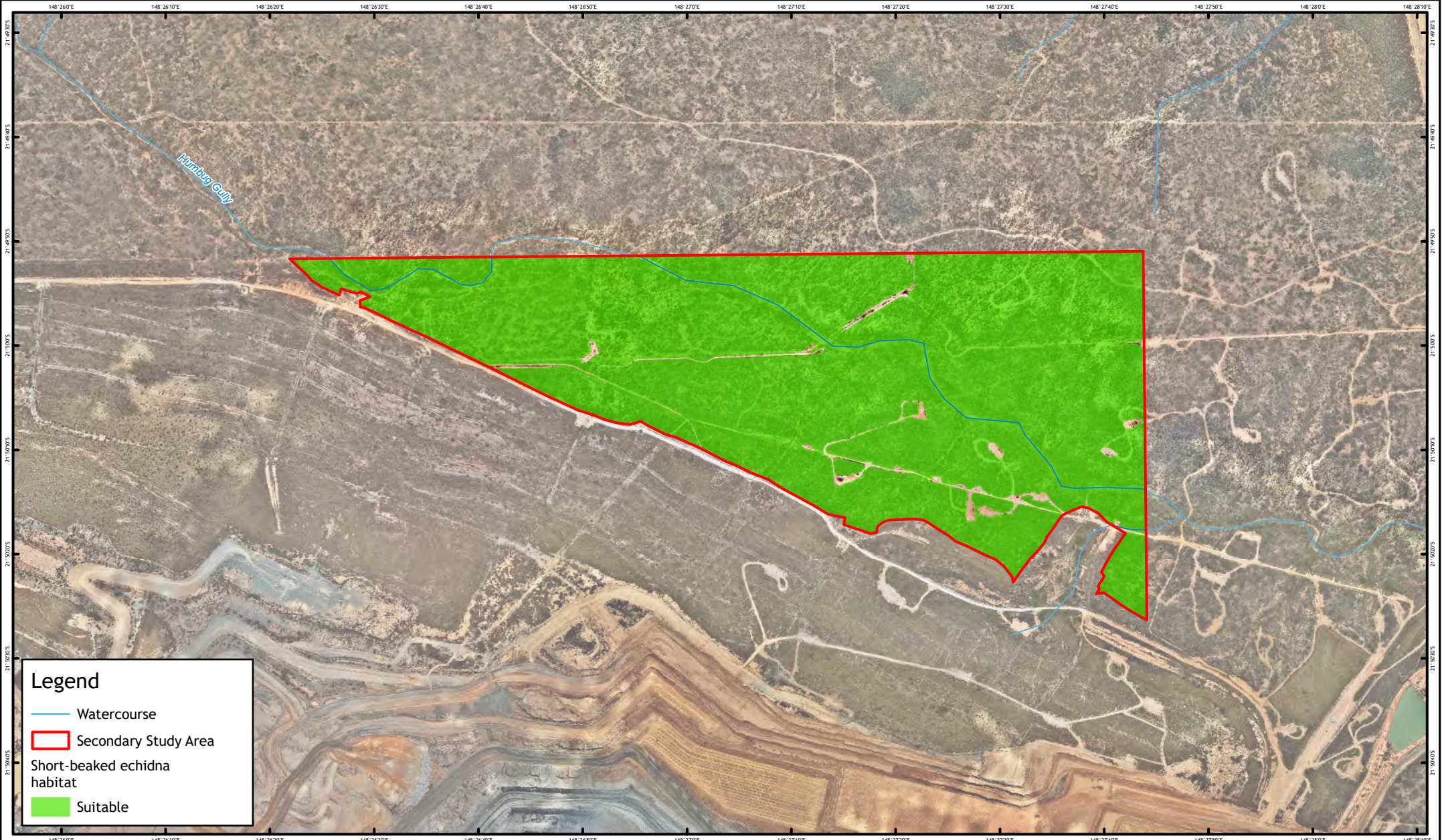
Rev	Description	Drawn	Approved	Date
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FIGURE 4A: GLOSSY BLACK-COCKATOO (NORTHERN) HABITAT EXTENT

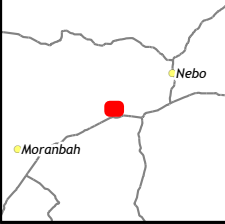
Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



Legend

- Watercourse
- Secondary Study Area
- Short-beaked echidna habitat
- Suitable



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
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 Watercourse: © DoR 2024
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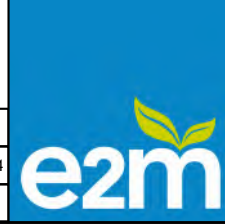
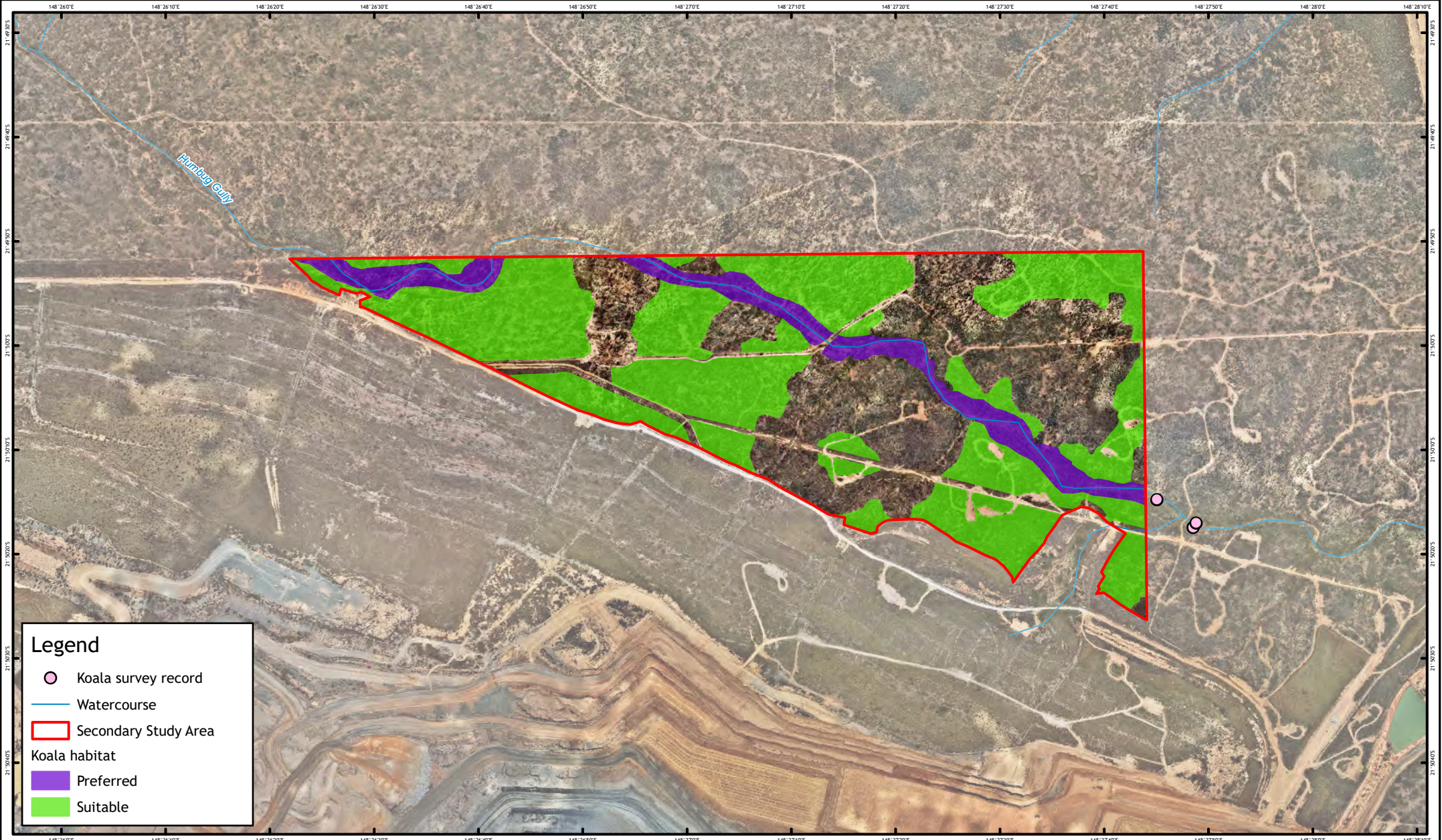


FIGURE 4B: SHORT-BEAKED ECHIDNA HABITAT EXTENT

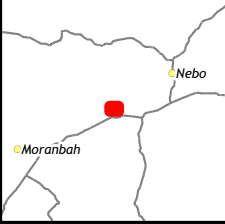
Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
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Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



Legend

- Koala survey record
- Watercourse
- Secondary Study Area
- Koala habitat Preferred
- Koala habitat Suitable



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
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 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
 Site imagery: © Peabody Energy 2023

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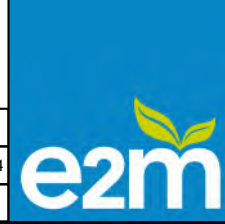
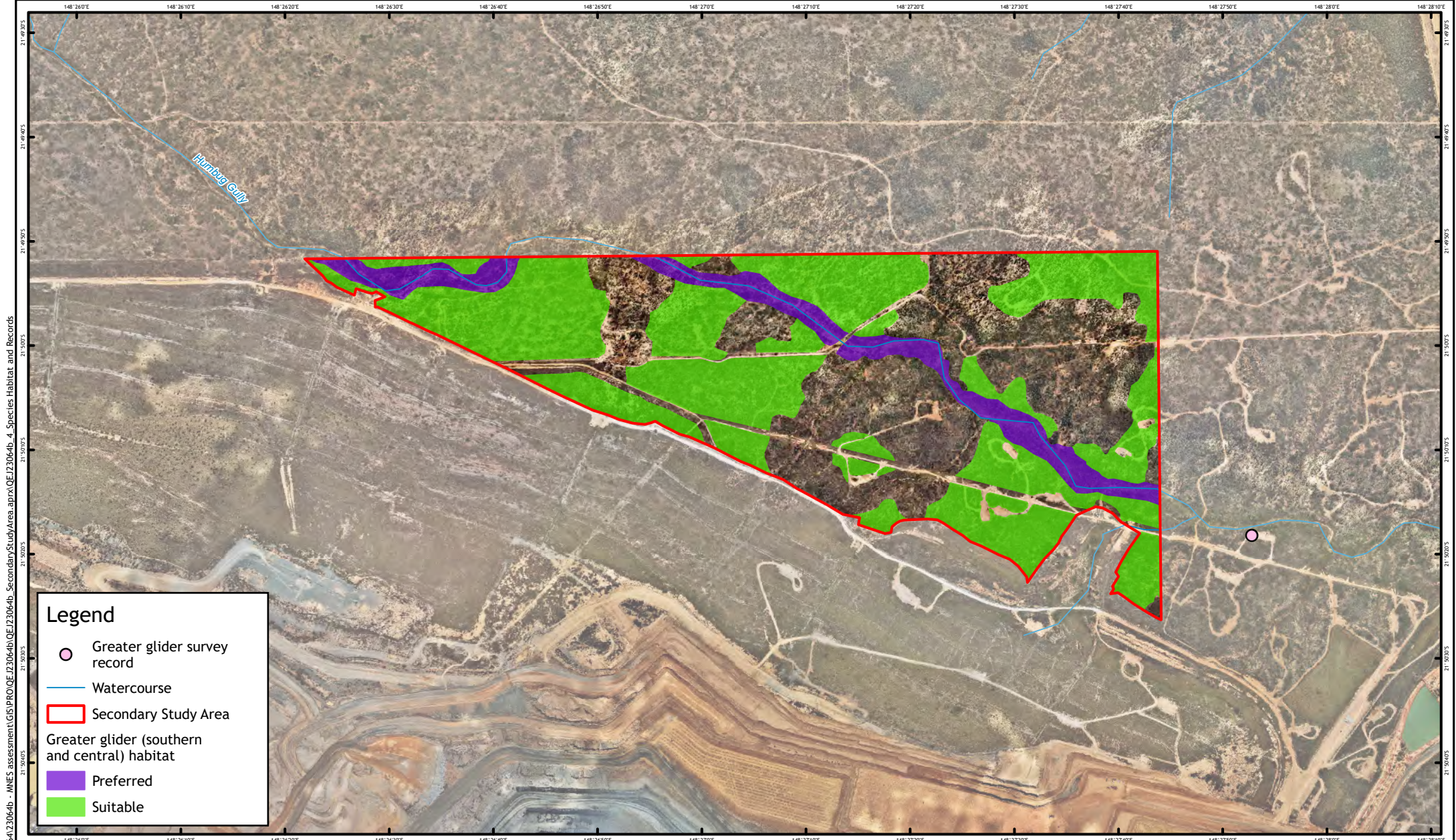


FIGURE 4D: KOALA SURVEY RECORDS AND HABITAT EXTENT

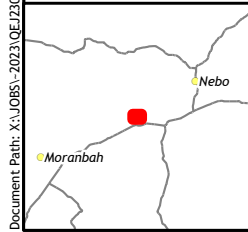
Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
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Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



Legend

- Greater glider survey record
- Watercourse
- Secondary Study Area
- Greater glider (southern and central) habitat
- Preferred
- Suitable



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
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 Road: © DoR 2024
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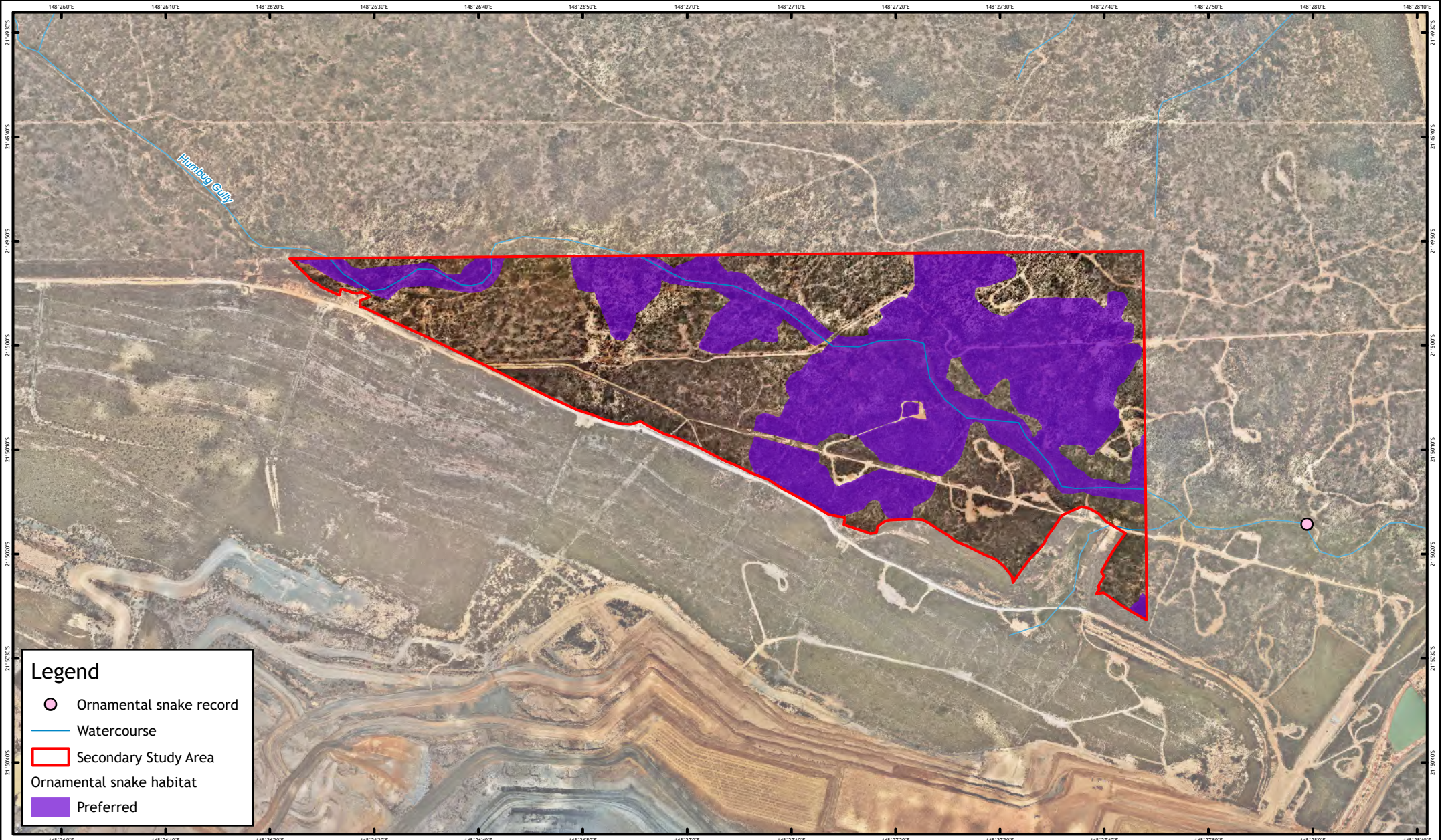
FIGURE 4C: GREATER GLIDER (SOUTHERN AND CENTRAL) SURVEY RECORDS AND HABITAT EXTENT

Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

Map Number	Job Number	Rev
1 of 1	QEJ23064b	A

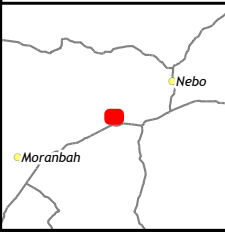
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Legend

- Ornamental snake record
- Watercourse
- Secondary Study Area
- Ornamental snake habitat Preferred



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
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 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
 Site imagery: © Peabody Energy 2023

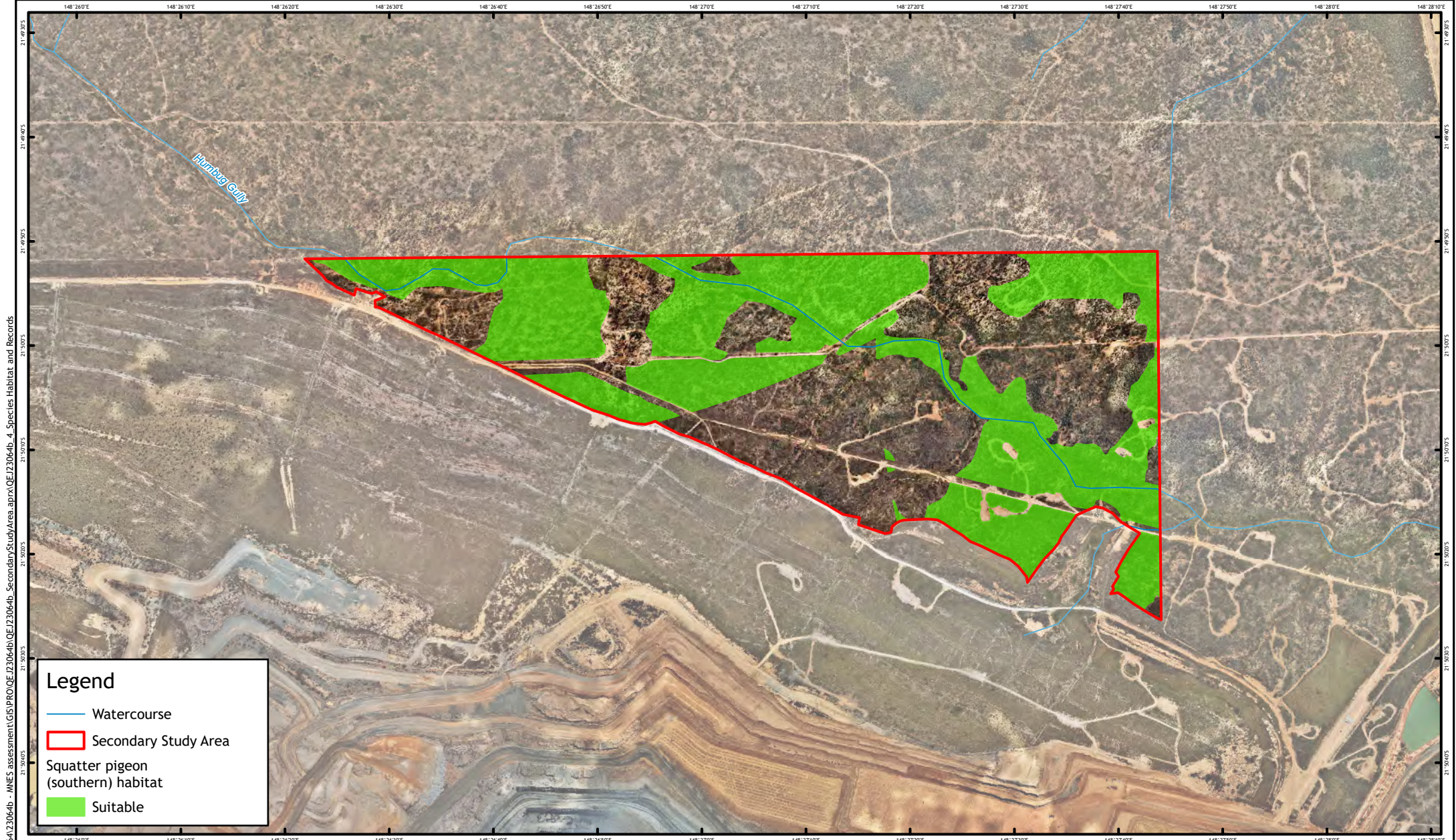
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FIGURE 4E: ORNAMENTAL SNAKE SURVEY RECORDS AND HABITAT EXTENT

Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

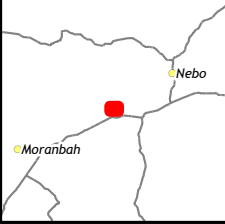
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Legend

- Watercourse
- Secondary Study Area
- Squatter pigeon (southern) habitat
- Suitable



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
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 Road: © DoR 2024
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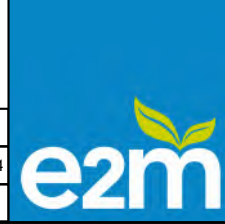
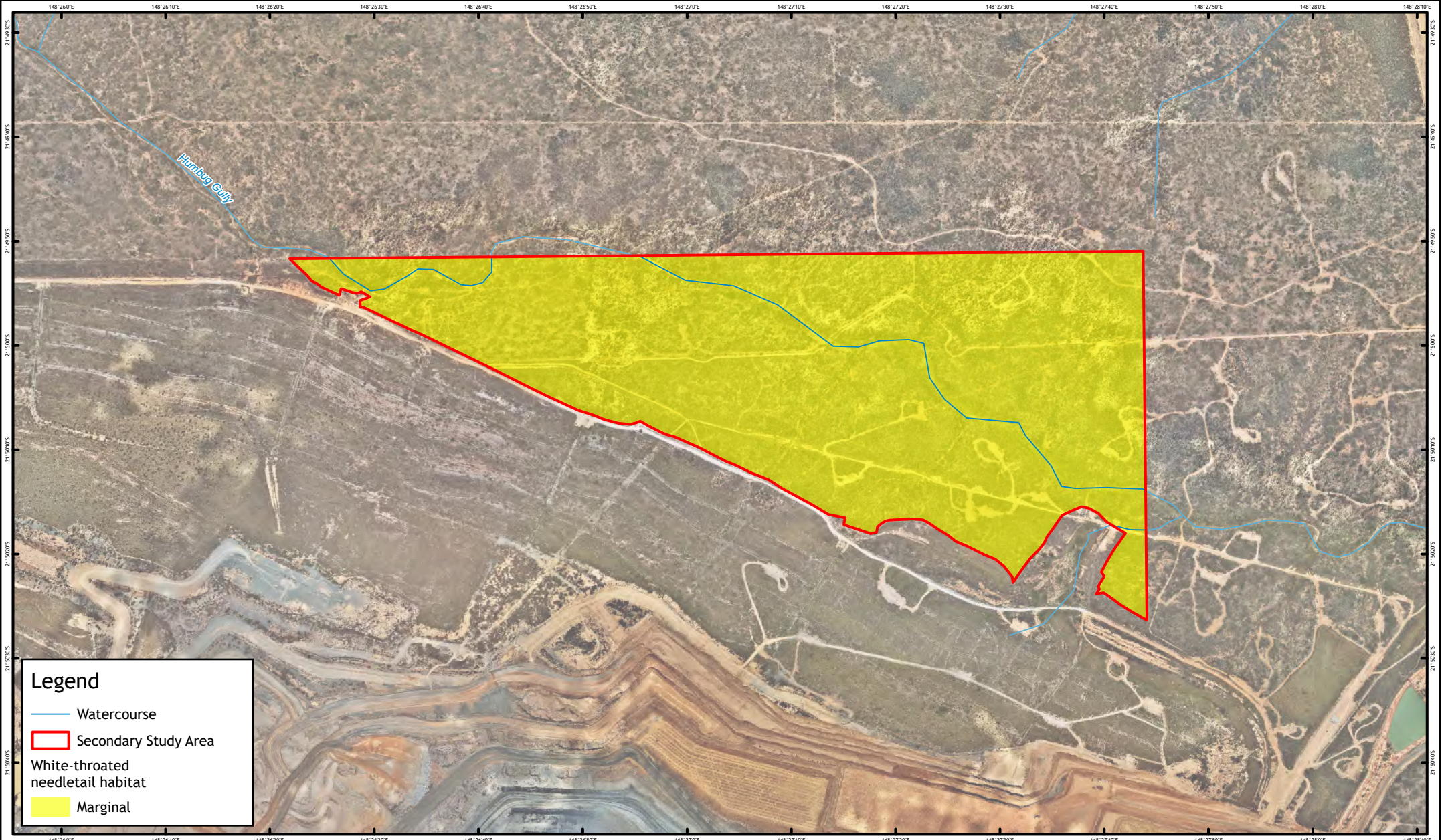


FIGURE 4F: SQUATTER PIGEON (SOUTHERN) SURVEY RECORDS AND HABITAT EXTENT

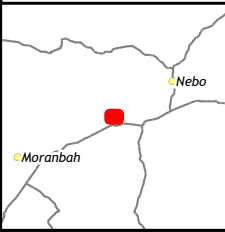
Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

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1 of 1	QEJ23064b	A



Legend

- Watercourse
- Secondary Study Area
- White-throated needletail habitat
- Marginal



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
 Site imagery: © Peabody Energy 2023

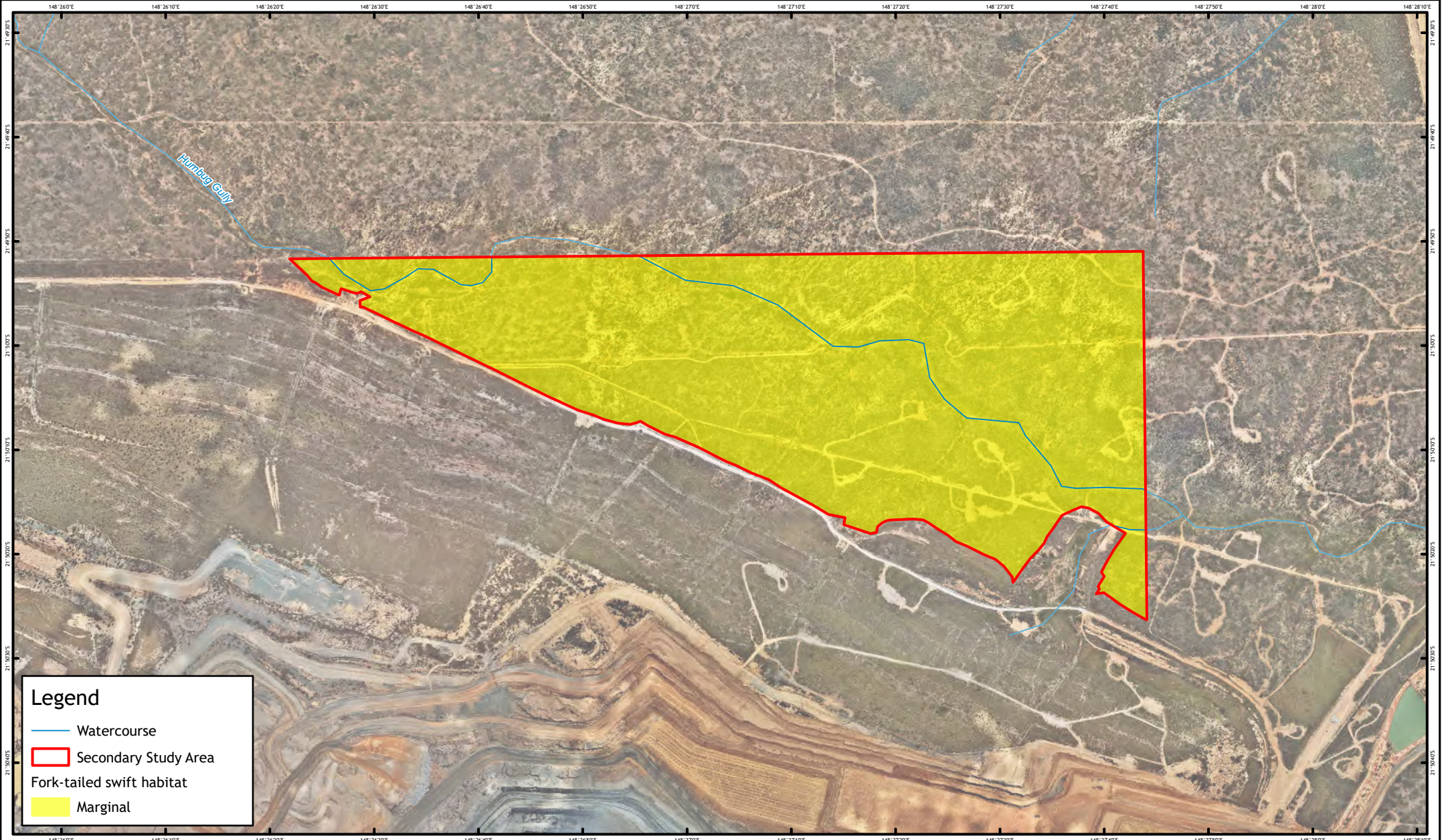
Rev	Description	Drawn	Approved	Date
A	Issued for Review	GO	KK	19/01/2024



FIGURE 4G: WHITE-THROATED NEEDLETAIL HABITAT EXTENT

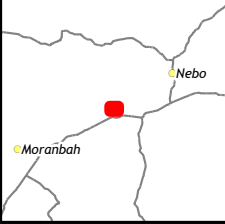
Coppabella Mine Continuation Project
 Secondary Study Area Terrestrial Ecology Report
 Peabody Energy

Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



Legend

- Watercourse
- Secondary Study Area
- Fork-tailed swift habitat
- Marginal



Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
 Road: © DoR 2024
 Site imagery: © Peabody Energy 2023

Rev	Description	Drawn	Approved	Date
A	Issued for Review	GO	KK	19/01/2024

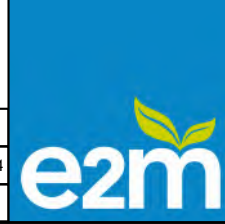
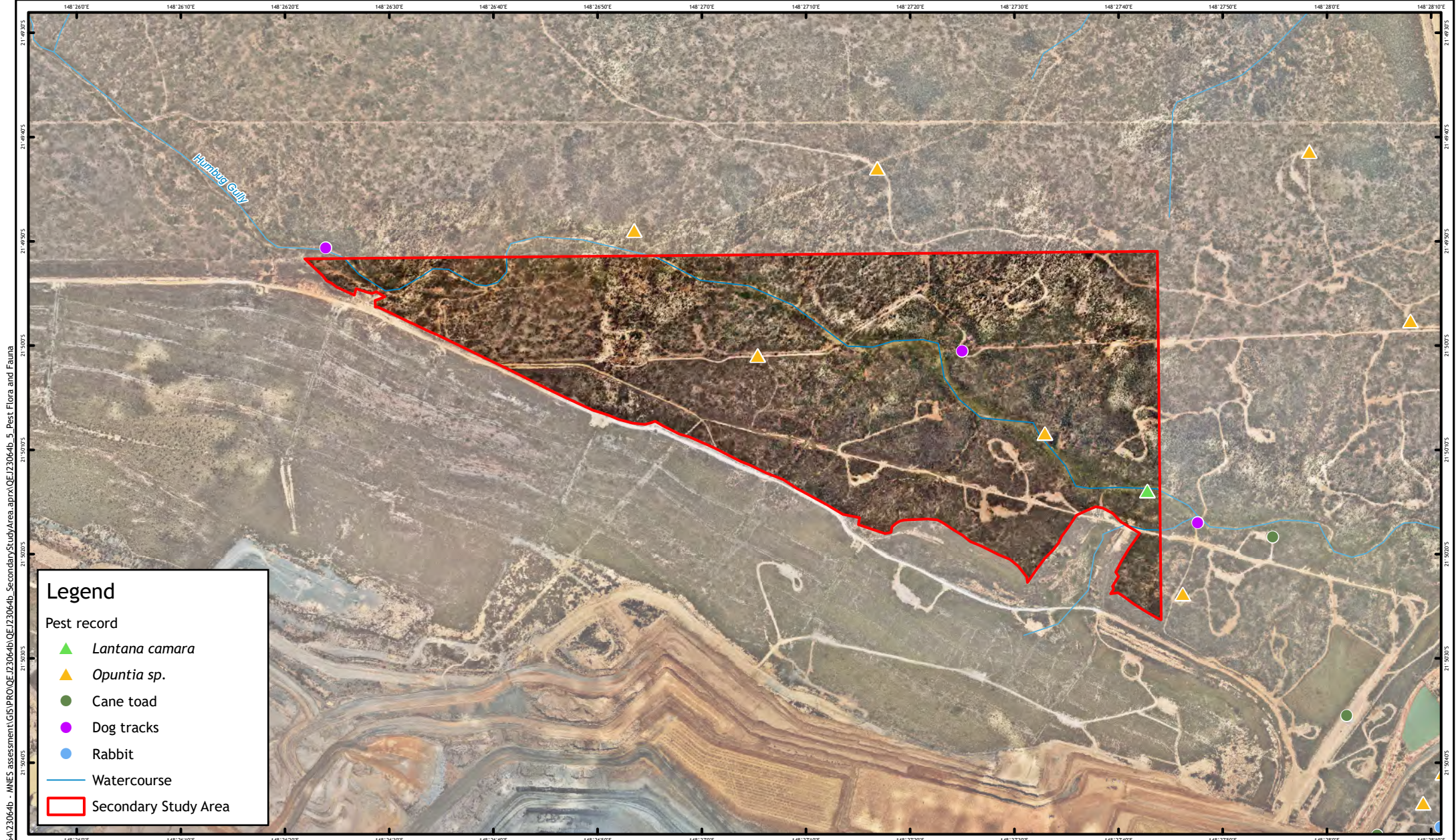


FIGURE 4H: FORK-TAILED SWIFT HABITAT EXTENT

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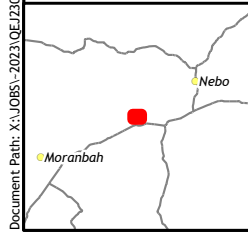
Map Number	Job Number	Rev
1 of 1	QEJ23064b	A



Legend

Pest record

- ▲ *Lantana camara*
- ▲ *Opuntia sp.*
- Cane toad
- Dog tracks
- Rabbit
- Watercourse
- Secondary Study Area



N

Scale 1:15,000 (A4)

0 250 500
Meters

Coordinate System: GDA2020

Notes:
 Aerial Imagery: © ESRI 2024
 Cadastre: © DoR 2024
 Watercourse: © DoR 2024
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Rev	Description	Drawn	Approved	Date
A	Issued for Review	GO	KK	19/01/2024



FIGURE 5: PEST FLORA AND FAUNA SURVEY RECORDS

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Map Number	Job Number	Rev
1 of 1	QEJ23064b	A

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Appendix C Likelihood of Occurrence assessment





Threatened ecological communities

Community name	EPBC Act status	Habitat preference	Desktop assessment results	Likelihood of occurrence
Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant)	Endangered	<p>Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant) (Brigalow TEC) is a woodland ecological community that contains <i>Acacia harpophylla</i> as either a dominant or co-dominant species in the canopy. The Brigalow TEC extends from Charter Towers in northern Queensland to Narrabri in northern New South Wales. The community is usually characterised by an open forest or open woodland structure with a mixture of eucalypts, acacia and casuarina species in the canopy. REs within the brigalow belt bioregion considered analogous to this TEC include; 11.3.1, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.5.16, 11.9.1, 11.9.5, 11.9.6, 11.11.14, and 11.12.21.</p> <p>The vegetation types that make up the Brigalow ecological community tend to occur on acidic and salty clay soils (Butler, 2007); mostly on deep cracking clay soils with a microrelief pattern referred to as gilgai or melon holes, which intermittently fill with water. In Qld, the soils are predominantly cracking clays where <i>Acacia harpophylla</i> is dominant, but texture contrast soils are common where <i>Eucalyptus</i> species are co-dominant. In NSW, brigalow woodlands are typically associated with red, brown and grey clays; red and grey earths; and, red-brown earths.</p>	<p>Patches of remnant RE 11.5.16 and remnant and regrowth RE 11.4.9 >0.5 ha meeting or likely to meet the diagnostic criteria for Brigalow TEC have been previously mapped within the Secondary Study Area.</p> <p>29.36 ha of Brigalow TEC was mapped on MLs 20384-387 and ML70164 (McCollum Environmental Management Services, 2011).</p>	<p>Known to occur</p> <p>47.07 ha of Brigalow TEC was ground-truthed in the Secondary Study Area.</p>



Community name	EPBC Act status	Habitat preference	Desktop assessment results	Likelihood of occurrence
Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin	Endangered	<p>Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin (Natural Grasslands TEC) are predominately composed of perennial grass species on fine textured cracking clays and typically contain <i>Dichanthium</i> spp., <i>Aristida</i> spp., <i>Astrebla</i> spp. and a large diversity of herbs and forbs (DCCEEW, 2023b). REs considered analogous to this TEC include; 11.3.21, 11.4.4, 11.4.11, 11.8.11, 11.9.3, 11.9.12, and 11.11.17.</p> <p>The community is distributed from Collinsville (near Bowen) to Carnarvon National Park in the south (DCCEEW, 2023b). They are found on soils that are fine textured (often cracking clays) derived from either basalt or fine-grained sedimentary rocks, on flat or gently undulating rises. These grasslands occur in areas with relatively high summer rainfall and a tree canopy usually absent, but when present projective crown cover is no more than 10% (DCCEEW, 2023b).</p>	<p>No mapped grasslands occur within the Secondary Study Area and surrounds (Queensland Herbarium, 2023b). No grasslands were identified in previous surveys (McCollum Environmental Management Services, 2011; Wormington, 2015).</p>	<p>Unlikely to occur No grasslands were identified in the Secondary Study Area during this survey.</p>



Community name	EPBC Act status	Habitat preference	Desktop assessment results	Likelihood of occurrence
Poplar Box Grassy Woodland on Alluvial	Endangered	<p>The ecological community typically occurs on paleo and recent depositional soils in flat terrain and occasionally along watercourses in undulating country. The woodland is mainly associated with active and depositional plains and flats including back plains, higher terraces, levees along rivers particularly in Queensland. The Poplar Box Grassy Woodland is sometimes found in close proximity to ephemeral watercourses and depressions. The soils in these watercourses are considered alluvial and the regularity of flow after heavy rain curtails shrub growth (DCCEEW, 2023b). REs considered analogous to this TEC include; 11.3.2, 11.3.17, 11.4.7, 11.4.12, and 12.3.10.</p>	<p>Secondary Study area contains BVG17a, however does not contain any analogous REs (Queensland Herbarium, 2023b). Poplar box woodland has been ground-truthed as 11.5.3. No analogous REs have been identified in previous surveys (McCollum Environmental Management Services, 2011; Wormington, 2015).</p>	<p>Unlikely to occur This TEC was not identified in the Secondary Study Area during this survey. Areas of poplar box woodland within the Secondary Study Area were ground-truthed as sandy undulating plains (RE 11.5.3).</p>



Community name	EPBC Act status	Habitat preference	Desktop assessment results	Likelihood of occurrence
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Semi-Evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (SEVT TEC) is a community composed of dry seasonal subtropical rainforest. The community is distributed from Townsville down to just south of the NSW border. In Queensland remnant vine thicket patches are mostly scattered from coastal dunes and river deltas in the vicinity of Townsville and Ayr through to the south-eastern part of the bioregion between Jandowae and Killarney on the Queensland/New South Wales border. The community is generally floristically diverse, usually consisting of semi-deciduous and microphyll species associated with dry rainforests as well as a diversity of lianas. Fluctuations in the composition and diversity of species can be based on the amount of rainfall received (DCCEEW, 2023b). REs considered analogous to this TEC include; 11.2.3, 11.3.11, 11.4.1, 11.5.15, 11.8.3, 11.8.6, 11.8.13, 11.9.4, 11.9.8, 11.11.18.	No semi-evergreen vine thickets are mapped or documented within the Secondary Study Area and adjacent surrounds (Queensland Herbarium, 2023b). This TEC has not been identified in previous surveys (McCollum Environmental Management Services, 2011; Wormington, 2015).	Unlikely to occur This TEC was not identified in the Secondary Study Area. No analogous REs were ground-truthed in the Secondary Study Area during the survey.



Fauna

Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Birds						
Australian painted snipe <i>(Rostratula australis)</i>	E	E; Marine	<p>Generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. The species has been recorded to utilise areas lined with trees, or that have some scattered fallen or washed-up timber. Breeding occurs in shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby, typically from or near small islands in freshwater wetlands (DCCEEW, 2023b).</p> <p>This species occurs in all states of Australia but is most common in eastern Australia (DCCEEW, 2023b). Well-known from the Murray-Darling basin. Other sightings include the Channel Country and the Fitzroy basin, and recently from the floodwater plains of coastal central and north Qld. Suspected to be regular migrants to coastal floodwater plains, in autumn and winter.</p>	This species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DEWHA, 2010).	Unlikely to occur This species was not identified during the field survey. No habitat for the species is present within the Secondary Study Area.



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Black-faced monarch (<i>Monarcha melanopsis</i>)	SL	Marine; Migratory (Bonn)	<p>The species mainly occurs in rainforest ecosystems, including semi-deciduous vine-thickets, tropical rainforest, subtropical rainforest and cool temperate rainforest (DCCEEW, 2023b). Also known from gullies in mountain areas or coastal foothills, softwood scrub dominated by <i>Acacia harpophylla</i>, coastal scrub dominated by <i>Banksia integrifolia</i> and occasionally among mangroves. Sometimes occurs in suburban parks and gardens, and selectively logged, 20–30 year old regrowth rainforest (DCCEEW, 2023b).</p> <p>In Queensland, it is widespread from the islands of the Torres Strait and on Cape York Peninsula, south along the coasts (occasionally including offshore islands) and the eastern slopes of the Great Divide, to the New South Wales border. The species also occasionally occurs further inland, for example, at Forty Mile Scrub in April 1976, and Eight Mile Plain in October 1991; a single vagrant was recorded at Windorah, south-western Queensland in March 1989. Specific locations where breeding has been recorded include: the Atherton Region in Queensland (Wet Tropics) - Julatten south to the Paluma Range and inland to the Atherton Tableland; and from 26° S in south-eastern Queensland to near Lakes Entrance, Victoria (DCCEEW, 2023b).</p>	This species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b). In Queensland, the species migrates north between February and May to north-east Queensland and Papua New Guinea for the winter (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and suitable habitat was not identified in the Secondary Study Area. This species is more commonly associated with coastal mesic environments east of the Great Diving Range.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Common sandpiper (<i>Actitis hypoleucos</i>)	SL	Marine; Migratory (Bonn, CA MBA, JAM BA, ROKA MBA)	<p>The species has been recorded from a wide range of wetland habitats, of varying levels of salinity. The species typically forages in shallow water and on bare soft mud at the edges of wetlands (DCCEEW, 2023b).</p> <p>Common sandpiper is found along all coastlines of Australia, including several areas inland, but is concentrated to northern and western Australia. In Queensland, areas of national importance occur in southeastern Gulf of Carpentaria and the Cairns foreshore. The south-eastern Gulf of Carpentaria is also a site of international importance (DCCEEW, 2023b).</p>	This species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area.</p>
Curlew sandpiper (<i>Calidris ferruginea</i>)	CR	CE; Marine; Migratory (Bonn, CA MBA, JAM BA, ROKA MBA)	<p>This species usually forages and roosts in intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (DCCEEW, 2023b).</p> <p>Curlew Sandpipers commonly occur around the Australian coastline. Queensland records indicate that this species is more widespread in coastal areas south of Cairns. In Queensland, scattered records occur in the Gulf of Carpentaria also. There are sparsely scattered records inland (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	August - March (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Diamond firetail (<i>Stagonopleura guttata</i>)	V	V	<p>Occurs in eucalypt, acacia or casuarina woodlands and open forests. They are also found in farmlands, grasslands with scattered trees or other lightly timbered habitats. Habitat critical to the survival of the diamond firetail includes areas of eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats, low tree density, few large logs, and little litter cover but high grass cover for foraging, roosting and breeding and Drooping she-oak (<i>Allocasuarina verticillata</i>) within the Mt Lofty Ranges (DCCEEW, 2023b).</p> <p>The species is found on the south-east mainland of Australia from south-east Queensland to Eyre Peninsula, South Australia and 300km inland from coastal areas. Formerly extending to north Queensland, their range has greatly retracted and they now occur only in the very south of the state (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and the Secondary Study Area is outside the species' current known distribution.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Fork-tailed swift (<i>Apus pacificus</i>)	SL	Marine; Migratory (CAMBA, JAMBA, R OKAMBA)	<p>The species is predominantly aerial and occurs over inland areas and occasionally above the foothills in coastal areas with dry and open habitat. The species can also occur over low scrub, heathland, saltmarsh and riparian woodlands and are associated with low pressure systems that favour the occurrence of insect prey (DCCEEW, 2023b).</p> <p>The Fork-tailed Swift is a non-breeding visitor to all states and territories of Australia. Scattered records in the Gulf Country, and a few records on Cape York Peninsula. In the north-east region there are many records east of the Great Divide, from near Cooktown and south to Townsville. They are also widespread but scattered in coastal areas from 20° S, south to Brisbane and in much of the south south-eastern region. They are more widespread west of the Great Divide and are commonly found west of the line joining Chinchilla and Hughenden. They are found to the west between Richmond and Winton, Longreach, Gowan Range, Maraila National Park and Dirranbandi. They are rarely found further west to Windorah and Thargomindah (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	October - mid-April (DCCEEW, 2023b).	<p>Likely to occur</p> <p>A flock of 20-40 fork-tailed swifts was observed high in the airspace above Humbug Gully during the field survey adjacent to the Secondary Study Area. The species is likely to utilise airspace over the Secondary Study Area for foraging.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Glossy black-cockatoo (Northern) (<i>Calyptorhynchus lathami erebus</i>)	V	-	<p>Glossy black cockatoos (northern) are distributed from the Dawson-Mackenzie-Isaac Rivers basin, north to the Connors-Clarke Ranges (Pierce, 1984), south to Dawes and Many Peaks Ranges, and inland to the Expedition, Peak and Denham Ranges, including the Blackdown Tableland (Schodde et al., 1993).</p> <p>They occur in woodland and coastal areas where they feed exclusively on species of she-oak (<i>Allocasuarina</i> and <i>Casuarina</i>). The species' demonstrates preference for certain species across their range. In addition to foraging resources, habitat attributes considered critical to the species survival includes large hollows in both living and dead eucalypt trees to accommodate nesting (DCCEEW, 2023b). Potential nest hollows are typically more than 15 cm diameter at the entrance and located > 8 m above ground and located in branches >30 cm in diameter (DCCEEW, 2023b).</p>	<p>This species has been recorded within 20 km of the Secondary Study Area (ALA, 2024); (DES, 2023a). Records are from Dipperu National Park (Scientific).</p>	<p>No optimal survey period specified, however seasonal movements may be more prevalent in areas where resources (feeding and breeding requirements) are more dispersed (DCCEEW, 2023b).</p>	<p>Likely to occur</p> <p>This species was not identified during field surveys; however, suitable habitat was identified within the Secondary Study Area as woodlands dominated or containing <i>Casuarina cristata</i> adjacent to remnant vegetation with large hollow bearing trees.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Grey falcon (<i>Falco hypoleucos</i>)	V	V	<p>Habitat for the species is generally timbered lowland plains that are crossed by tree-lined watercourses, and adjacent to treeless areas, grasslands and open woodlands that are used for foraging. Key habitat is identified as Acacia shrublands that are crossed by tree-lined watercourses (Garnett et al., 2011).</p> <p>Grey falcon is poorly known and is considered to be Australia's rarest falcon and rarest <i>Falco</i> species in the world (Schoenjahn, 2013). Resident or nomadic visitor to inland parts of all mainland states. Also recorded from most of Australia except Cape York Peninsula and Southeast Qld. Mainly occurs where annual rainfall is <500 mm (Garnett et al., 2011). Can occur in the Murray-Darling Basin, Eyre Basin, and central Australia.</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>Grey falcon was not identified during the survey. This species is associated with more arid environments and is considered a rare vagrant to areas of central eastern Queensland.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Latham's snipe, Japanese snipe (<i>Gallinago hardwickii</i>)	SL	V; Marine; Migratory (Bonn, JA MBA, ROK AMBA)	<p>In Australia the species typically occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. Various other freshwater habitats can be used including bogs, waterholes, billabongs, lagoons, lakes, creek or river margins, river pools and floodplains (DCCEEW, 2023b).</p> <p>Known from all east coast areas. Extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South Wales. Occasionally recorded in south-western Queensland (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	October - February (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the field survey and no habitat was identified within the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Oriental cuckoo, Horsfield's cuckoo (<i>Cuculus optatus</i>)	SL	Marine; Migratory (CAMBA, JAMBA, R OKAMBA)	<p>Inhabits monsoon forest, rainforest edges, isolated trees in paddocks, river flats, roadsides, mangroves, islands (Pizzey and Knight, 2007). Also occurs in woodlands and open forest associated with riparian areas.</p> <p>The species is a regular nonbreeding migrant to coastal northern and eastern Australia (Pizzey and Knight, 2007). The species occurs in the Gulf of Carpentaria and Cape York Peninsular to the QLD-NSW border, including inland areas of eastern Queensland.</p>	The species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	September-May (DoE 2015).	<p>Possibly occurring</p> <p>This species was not identified during the survey but suitable habitat was identified in the Secondary Study Area. However, this species is more commonly associated with coastal mesic environments east of the Great Diving Range.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Osprey (<i>Pandion haliaetus cristatus</i>)	SL	Marine; Migratory (EPBC, Bonn)	<p>The species inhabits littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands (DCCEEW, 2023b). The species has been recorded within a variety of wetland habitats including swamps and marshes; margins of rivers and lakes; damp or flooded grasslands, pastures or agricultural lands; reservoirs; sewage treatment ponds; drainage channels; salt pans and salt lakes; salt marshes; estuarine mudflats, tidal streams; mangrove swamps; coastal lagoons; and offshore reefs (DCCEEW, 2023b).</p> <p>The species occurs along the coast around the entirety of Australia, with the breeding range extending from the south-west coast of Western Australia, up and around through Queensland, ending at to Lake Macquarie in NSW (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the field survey and no habitat was identified within the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Pectoral sandpiper <i>(Calidris melanotos)</i>	SL	Marine; Migratory (Bonn, JA MBA, ROK AMBA)	<p>Typical habitat for the species comprises shallow fresh to saline wetlands, including coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally further inland. Also recorded in swamp overgrown with lignum(DCCEEW, 2023b).</p> <p>In Queensland, most records for the Pectoral Sandpiper occur around Cairns. There are scattered records elsewhere, mainly from east of the Great Divide between Townsville and Yeppoon. Records also exist in the south-east of the state as well as a few inland records at Mount Isa, Longreach and Oakey (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	September to June (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the field survey and no suitable habitat is present within the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Red goshawk (<i>Erythrorchis radiatus</i>)	E	V	<p>The species prefers landscapes containing a mosaic of habitats including coastal and sub-coastal tall open forest, woodland and rainforest edges. Forests of intermediate density are particularly favoured, as are ecotones between variably dense habitats. Habitat utilisation is influenced by the location of large populations of birds (primary prey). It is rarely encountered over agricultural land as it avoids open habitats. Nesting occurs in tall trees within one kilometre of permanent water, generally in open, biologically rich forest or woodland. The species is sparsely dispersed across 15% of coastal and sub-coastal Australia (DCCEEW, 2023b). The species prefers a large intact woodland or forest landscape to support the species (DCCEEW, 2023b).</p> <p>The range of the red goshawk has significantly retracted in recent years towards northern Australia and is now considered locally extinct in Southern Queensland and NSW. It appears the species is no longer present or is present at critically low levels in Brigalow Tropical Savannah ecoregions in coastal and sub-coastal eastern Australia (MacColl et al., 2023). Recent records in Queensland suggest that the species is existing in National Parks or State forests with a stronghold in north-east Queensland and eastern Cape York Peninsula (DERM, 2012).</p>	There are no contemporary records within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DEWHA, 2010).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area. The species is thought to be absent or at critically low levels in this region.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Rufous fantail (<i>Rhipidura rufifrons</i>)	SL	Marine; Migratory (Bonn);	<p>In east and south-east Australia, the species usually inhabits wet sclerophyll forests usually with a dense shrubby understorey often including ferns. It can also be found in subtropical and temperate rainforests, and occasionally in drier sclerophyll forests during migration. In the north, it occurs in tropical rainforest and monsoon rainforests, including semi-evergreen mesophyll vine forests, semi-deciduous vine thickets or thickets of paperbarks (<i>Melaleuca</i> spp.). They occasionally occur in secondary regrowth, following logging or disturbance in forests or rainforests (DCCEEW, 2023b).</p> <p>The species occurs in and near coastal areas of northern and eastern Australia, with breeding populations present in Queensland east of the Great Divide, all the way from the NSW border to north of Cairns.</p>	The species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	September - November (DCCEEW, 2023b).	<p>Possibly occurring</p> <p>This species was not identified during the survey and the Secondary Study Area is outside of the mapped distribution area. However, records do exist within the 20 km search radius, and marginal habitat exists in the form of dry eucalypt woodland that may be utilised during transit to areas of suitable or preferred habitat.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Satin flycatcher (<i>Myiagra cyanoleuca</i>)	SL	Marine; Migratory (Bonn)	<p>The species mainly inhabit eucalypt forests, often near wetlands or watercourses. They generally occur in moister, taller forests than the leaden flycatcher, often occurring in gullies. They also occur in eucalypt woodlands with open understorey and grass ground cover and are generally absent from rainforest (DCCEEW, 2023b).</p> <p>The species is widespread in eastern Australia. In Queensland, it is widespread but scattered in the east, being recorded on passage on a few islands in the western Torres Strait. It is patchily recorded on Cape York Peninsula, from the Cape south to a line between Aurukun and Coen. The species is more widespread farther south, though still scattered, from Musgrave Station south to c. 24° S, mostly in coastal areas, but also on the Great Divide, and occasionally further west. Satin Flycatchers are widespread in south-eastern Queensland, in the area from Fraser Island, west to Goombi and south to the NSW border (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	May-September (DoE 2015).	<p>Possibly occurring</p> <p>This species was not identified during the survey but suitable habitat was identified in the Secondary Study Area. This species is mostly associated with more coastal mesic environments.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)	SL	V, Marine; Migratory (Bonn, CA MBA, JAM BA, ROKA MBA)	<p>The species typically inhabits 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, salt pans and hypersaline salt-lakes inland. The species may use flooded paddocks, sedgeland and other ephemeral wetlands, but vacate these habitats during dry conditions. Marine habitats for the species include intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. Sometimes occur on rocky shores and rarely on exposed reefs (DCCEEW, 2023b).</p> <p>In Queensland, they are recorded in most regions, being widespread along much of the coast and are very sparsely scattered inland, particularly in central and south-western regions (Higgins and Davies, 1996). There are 39 international important sites across Australia, four of which are in Queensland: south-east Gulf of Carpentaria, Lake Machattie, Lake Yamma Yamma, and Lake Numalla (DCCEEW, 2023b).</p>	The species has been recorded within 20 km of the Secondary Study Area (DES, 2023a)	September - April (DoE 2015).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Southern black-throated finch (<i>Poephila cincta cincta</i>)	E	E	<p>Occurs mainly in grassy, open woodlands and forests, typically dominated by <i>Eucalyptus</i>, <i>Corymbia</i> and <i>Melaleuca</i>, and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water (DCCEEW, 2023b). Almost all recent records of the finch from south of the tropics have been in riparian habitat (Black-throated Finch Recovery Team, 2004). The subspecies is thought to require a mosaic of different habitats in which it can find seed during the wet season (DCCEEW, 2023b).</p> <p>This subspecies historically contacted the northern subspecies near Mareeba. The current distribution of the Black-throated Finch (southern) has now largely contracted and is only locally common in Queensland at sites near Townsville and Charters Towers, with small flocks scattered throughout the Brigalow Belt North and Desert Uplands bioregions (Black-throated Finch Recovery Team et al., 2007). Very few records occur south of Rockhampton after the 1970s. No populations are known to occur on conservation reserves. There are no modern records (since 2000) in the Northern Bowen Basin (DCCEEW, 2023b).</p>	This species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	Late dry season (DEWHA, 2010).	<p>Unlikely to occur</p> <p>This species was not identified during the survey and the Secondary Study Area is outside the species current known distribution.</p>



<p>Squatter pigeon (southern) (<i>Geophaps scripta</i>)</p>	V	V	<p>The species is locally abundant within the northern part of its range (i.e. Brigalow Belt (North) and Desert Uplands Bioregions). It is considered to be common in grazing country north of the Tropic of Capricorn. The species occurs in a wide range of habitats wherever there is a grassy understorey of an open eucalypt woodland (and less often savannas). It is often found within close proximity of water bodies (DCCEEW, 2023b).</p> <p>Potential distribution extends south from the Burdekin-Lynd divide in the southern region of Cape York Peninsula to south-east Queensland, south-west to Stanthorpe, near the Queensland-NSW border, south to the NSW border, and north-westwards through Goondiwindi and the Brigalow Belt in Queensland to Charleville. Extends from the east coast to Hughenden, Longreach and Charleville. Known distribution is estimated to occur within the latitudes, 17° to 30° S, and the longitudes, 141° to 153° 30' E. Known to occur within the following natural resource management regions: Desert Channels, Burdekin, Mackay Whitsunday, Fitzroy, Burnett Mary, South East Queensland, Condamine, Border Rivers and Maranoa-Balonne and South West Queensland (DCCEEW, 2023b).</p>	<p>Six squatter pigeons were observed within Mining Lease 70164 in 2015 outside the current Study Area (Wormington, 2015). 16 sightings have been recorded within approximately 20 km of the Secondary Study Area (DES, 2023).</p>	<p>May to October (DCCEEW 2023b).</p>	<p>Likely to occur</p> <p>Squatter pigeon (southern) was observed eight times during the broader field survey; however, no observations were made within the Secondary Study Area. Most records were from an area to the west along Spring Creek Road in association with cattle troughs adjacent to the road. The species was also recorded along Harrybrandt Ccreek. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within</p>
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Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Star finch (eastern), Star finch (southern) (<i>Neochmia ruficauda ruficauda</i>)	E	E	<p>The species occurs mainly in grasslands and grassy woodlands that are located close to bodies of fresh water. It also occurs in cleared or suburban areas such as along roadsides and in towns (DCCEEW, 2023b).</p> <p>The distribution of the star finch is poorly known but is thought to only occur in central Queensland. The distribution is thought to be from Bowen in the north, to Winton in the west and Wowan in the south. It is possible that the distribution extends farther north to Mount Surprise and the Cloncurry-Mount Isa region, but records from these locations could relate to the subspecies <i>N. r. subclarescens</i> (DCCEEW, 2023b). Recent studies estimate the total population at 50 individuals or as being possibly extinct (DCCEEW, 2023b).</p>	There are no contemporary records of this species within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DEWHA, 2010).	<p>the Secondary Study Area.</p> <p>Unlikely to occur</p> <p>This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area. This species has not been sighted in this region in recent history.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
White-throated needletail (<i>Hirundapus caudacutus</i>)	V	V; Marine; Migratory (CAMBA, JAMBA, R OKAMBA)	The species is almost exclusively aerial in Australia. It breeds in Siberia from April to August. In the non-breeding season, the species can occur over most habitat types. The species is most often recorded above wooded areas including open forest, closed forest and rainforest. The species is recorded from ground level up to 1000m. The species is commonly observed high on storm fronts feeding exclusively on insects. The species has been recorded roosting in hollows in Australia. Roosting habitat has been recorded as hollow-bearing trees on cliffs, ridges, edges of clearing areas and emergents (DCCEEW, 2023b).	The species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	October and April (DoE 2015).	Likely occurring This species was not identified in the Secondary Study Area during the survey, however suitable foraging habitat exists above the Secondary Study Area. Potential roosting habitat in the Secondary Study Area is limited to distinct edges of woodland adjacent to open, cleared areas.



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Yellow wagtail (<i>Motacilla flava</i>)	SL	Marine; Migratory (CAMBA, JAMBA, R OKAMBA)	The species typically inhabits short grass and bare ground; swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land and town lawns. The species is regularly recorded as a summer migrant to coastal northern Australia (Pizzey and Knight, 2007). Eastern populations of the species mainly migrate to South Asia with some moving to Africa (BirdLife International, 2019).	There are no contemporary records within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023b).	Unlikely to occur This species was not identified during the survey and no suitable habitat was identified in the Secondary Study Area. The species is considered a rare vagrant to Queensland.



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Mammals						
Coastal sheath-tail Bat <i>(Taphozous australis)</i>	NT	-	<p>The species is distributed in a thin band along the north-east Queensland coast from Shoalwater Bay to Cape York (DES, 2023d). The species depends on coastal roosts, preferring sea caves and rocky clefts. Also known to roost in disused mines, boulder piles, rock fissures, concrete bunkers, and occasionally in buildings. Roost conditions vary from warm (26-28°C) and humid (84-92%) in the north to cool and airy with cave temperatures below outside air temperatures in the south. In the Central Queensland Coast Bioregion <i>T. australis</i> utilises airy boulder sea caves with multiple openings located on the rocky foreshore of peninsulas, < 50 m of the Highest Astronomical Tide. The species forages above the canopy in areas of coastal dune scrubland, melaleuca swamps, open eucalypt forest, grasslands, coastal heathland, monsoon forests, and mangroves on lowlands and foothills. It has also been recorded foraging around lights in urban areas adjacent to native vegetation.</p>	<p>The species has been recorded within 20 km of the Secondary Study Area (DES, 2023a).</p>	<p>No optimal survey period specified (DES, 2023d).</p>	<p>Unlikely to occur This species was not identified during the survey and no suitable roosting habitat was identified in the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Corben's long-eared bat, South-eastern long-eared bat <i>(Nyctophilus corbeni)</i>	V	V	<p>The species is found in a wide range of inland woodland vegetation types, these include box/ironbark/cypress pine woodlands, Buloke woodlands, Brigalow woodland, Belah woodland, smooth-barked apple woodland, river red gum forest, black box woodland, and various types of tree mallee. The species is more abundant in extensive stands of vegetation in comparison to smaller woodland patches. Studies have found that the south-eastern long-eared bat roosts solitarily, mainly in dead trees or dead spouts of live trees (DCCEEW, 2023).</p> <p>The south-eastern long-eared bat is found in southern central Queensland, central western New South Wales, north-western Victoria and eastern South Australia, where it is patchily distributed, with most of its range in the Murray Darling Basin. Most records are from inland of the Great Dividing Range. The species is uncommon within this distribution and is rarely recorded, except in some areas including the Nandewar and Brigalow Belt South bioregions in New South Wales and Queensland (DCCEEW, 2023).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified (DCCEEW, 2023).	Unlikely to occur This species was not identified during the survey and the Secondary Study Area is outside the species current known distribution.



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Short-beaked echidna (<i>Tachyglossus aculeatus</i>)	SL	-	The short-beaked echidna is widespread and occurs throughout Australia in a broad variety of habitats where there is a supply of ants and termites upon which it feeds (Van Dyck and Strahan, 2008). The species also utilises microhabitat features such as thick bushes, hollow logs and debris piles for shelter (Van Dyck and Strahan, 2008).	The species has been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified	Likely to occur Short-beaked Echidna remains were identified during survey of the broader landscape, approximately 4 km from the Secondary Study Area relevant to this report. Due to their habitat versatility, they are likely to also occur within the Secondary Study Area.



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Ghost bat (<i>Macroderma gigas</i>)	E	V	<p>The species occurs across a range of habitats, from arid Pilbara to tropical savanna woodlands and rainforests. During the daytime they roost in caves, rock crevices and old mines. Roost sites used permanently are generally deep natural caves or disused mines with a relatively stable temperature of 23°–28°C and a moderate to high relative humidity of 50–100 percent. The average foraging distance is approximately 2 km from the daytime roost (DCCEEW, 2023).</p> <p>The species' current range is discontinuous, with geographically disjunct colonies occurring in the Pilbara, Kimberley (including several islands), northern Northern Territory (including Groote Eylandt), the Gulf of Carpentaria, coastal and near coastal eastern Queensland from Cape York to near Rockhampton, and western Queensland (including Riversleigh and Cammowéal districts (DCCEEW, 2023).</p>	<p>This species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024). There are no contemporary records of the species in the area.</p>	<p>No optimal survey period specified (DCCEEW, 2023).</p>	<p>Unlikely to occur This species was not identified during the survey and no suitable roosting habitat was identified in the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Greater glider (southern and central) <i>(Petauroides volans/ Petauroides armillatus)</i>	E	E	<p>The greater glider (southern and central) is an arboreal nocturnal marsupial, predominantly solitary and largely restricted to eucalypt forests and woodlands of eastern Australia. The distribution may be patchy even in continuous areas of habitat. The probability of occurrence of the species is positively correlated with the availability of tree hollows, which is a key limiting resource. Greater Gliders (southern and central) can be found in regrowth forest provided sufficient hollows are present, and conversely are absent when there are insufficient hollows. In southern Qld, the species appears to require at least 2-4 live den trees for every 2 ha of suitable forest habitat (DCCEEW, 2023b) In central and eastern Queensland they are often reliably found along watercourses dominated by <i>Eucalyptus tereticornis</i> and <i>Eucalyptus camaldulensis</i>.</p> <p>The greater glider (southern and central) occurs in eastern Australia, where it has a broad distribution from around Proserpine in Qld, south through NSW and the ACT, to Wombat State Forest in central Victoria. It occurs across an elevational range of 0–1200 m above sea level (DCCEEW, 2023b).</p>	There are 59 sightings within approximately 20 km of the Secondary Study Area (DES 2023c).	No optimal survey period specified (DCCEEW, 2023b).	<p>Likely to occur</p> <p>During field surveys, no observations of greater glider (southern and central) were observed within the Secondary Study Area. However, 16 observations of greater gliders were observed in remnant eucalypt woodland in nearby areas, with one directly adjacent the Secondary Study Area. Due to the presence of the species in the adjoining landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.</p>



<p>Koala (<i>Phascolarctos cinereus</i>)</p>	<p>E</p>	<p>E</p>	<p>Koalas in Queensland inhabit the moist coastal forests, southern and central western subhumid woodlands, and a number of eucalypt woodlands adjacent to waterbodies in the semi-arid western parts of the state. In many locations, koala populations are of low density, widespread and fragmented. Surveys in north-western Queensland found that koalas were patchily distributed, associated with creek-lines, areas of higher tree species richness, with higher abundance correlating with leaf-moisture content. Koalas are reported to utilise more than 400 different species of tree for their food and habitat requirements with different tree species varying by habitat type and location across their range. Primary food species differ across habitats and may be as few as two at a particular location (DAWE, 2022).</p> <p>The listed population of the koala has a wide but patchy distribution that spans the coastal and inland areas of Queensland north to the Herberton area, extending westwards into hotter and dryer semi-arid climates of central Queensland, New South Wales and the Australian Capital Territory. Koalas are widespread across Queensland, occurring in patchy and often low-density populations across the different bioregions.</p>	<p>A survey at the Coppabella Coal Mine reported koala scratches on trees in Humbug Gully within the current Study Area (Wormington, 2015). 47 sightings records are reported within approximately 20 km of the site (DES, 2023).</p>	<p>No optimal survey period specified (DAWE, 2022).</p>	<p>Likely to occur</p> <p>There were no observations of koala within the Secondary Study Area. However, nine koala observations were recorded during the field survey in the broader landscape. Two of these were directly adjacent the Secondary Study Area in Humbug Gully. Multiple scratches and scats were recorded along Humbug Gully and Harrybrandt Creek. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.</p>
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Northern quoll (<i>Dasyurus hallucatus</i>)	-	E	<p>The species diverse range of habitats includes eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert. The species is also known to occupy non-rocky lowland habitats such as beachscrub communities in central Queensland. Northern quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are usually of high relief, often rugged and dissected but can also include tor fields or caves in low lying areas. Eucalypt forest or woodland habitats usually have a high structural diversity containing large diameter trees, termite mounds or hollow logs for denning purposes. Dens are made in rock crevices, tree holes or occasionally termite mounds (DCCEEW, 2023b).</p> <p>The northern quoll occurs in five regional populations across northern Australia, including Queensland, the Northern Territory, Western Australia and offshore islands. In Queensland, the Northern Quoll is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa in Queensland and extends as far west into central Queensland to the vicinity of Carnarvon Range National Park. There are occasionally records as far south in Queensland as Maleny. Recent records in central Queensland come from around Proserpine, Midge Point, Eungella and Cape Upstart. In northern Queensland recent records exist from Mareeba, Mount Carbine, Tolga, Weipa and around Cooktown (DCCEEW, 2023b).</p>	This species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period specified for reconnaissance survey (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey. No denning habitat was identified within the Secondary Study Area. No adjacent areas of suitable denning habitat were identified during desktop and field assessments.</p>
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Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Reptiles						
Allan's lerista, retro slider (<i>Lerista allanae</i>)	E	E	<p>Found in association with <i>Eucalyptus orgadophila</i>/<i>E. erythrophloia</i> open woodlands and <i>Melaleuca bracteata</i>. It is currently associated with altered landscapes that have areas with leaf litter and friable surface soils beneath trees and shrubs. These sites were characterised by dark chocolate non-cracking clay-based soils which are mapped as Regional Ecosystem 11.8.5 and 11.8.11 (DCCEEW, 2023b).</p> <p>Allan's Lerista is only known from black soil downs in the Brigalow Belt North Bioregion in Queensland, between Clermont and Capella (DCCEEW, 2023b).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	Late September - late March (DSEWPC, 2011).	<p>Unlikely to occur</p> <p>This species was not identified in the Secondary Study Area. The Secondary Study Area is outside the species' current known distribution.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Dunmall's snake (<i>Furina dunmalli</i>)	V	V	<p>The species range of habitats includes forests and woodlands on black alluvial cracking clay and clay loams dominated by <i>Acacia harpophylla</i> (brigalow), other wattles (<i>A. burowii</i>, <i>A. deanii</i>, <i>A. leiocalyx</i>), <i>Callitris spp.</i> or <i>Allocasuarina luehmannii</i>; and <i>Corymbia citriodora</i>, <i>Eucalyptus crebra</i>, <i>E. melanophloia</i>, <i>Callitris glaucophylla</i> and bullock open forest and woodland associations on sandstone derived soils (DCCEEW, 2023).</p> <p>Dunmall's snake is found from near the Queensland border throughout the Brigalow Belt South and Nandewar bioregions, and as far south as Ashford in New South Wales. In Queensland, it occurs primarily in the Brigalow Belt region in the south-eastern interior. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Tarong Power Station, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park (DCCEEW, 2023).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	Late September - late March (DSEWPC, 2011).	<p>Unlikely to occur</p> <p>This species was not identified during the survey in the Secondary Study Area, and the area is also outside the species' current known distribution.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Grey snake (<i>Hemiaspis damelii</i>)	E	E	<p>The grey snake favours woodlands (typically brigalow <i>Acacia harpophylla</i> and belah <i>Casuarina cristata</i>), usually on heavier, cracking clay soils, particularly in association with water bodies or in areas with small gullies and ditches. It shelters under rocks, logs and other debris as well as in soil cracks (DCCEEW, 2023b).</p> <p>Grey snake distribution extends from central inland New South Wales, north to several isolated populations near Rockhampton in Queensland. Within Queensland, records are known from near Goondiwindi and the adjacent Darling-Riverine Plain, from the Darling Downs and from the Lockyer Valley. The core area is in the Brigalow Belt south of the Great Dividing Range, between Dalby and Glenmorgan. Grey Snakes occur in Lake Broadwater Conservation Park, Southwood National Park, Currawinya National Park, and Erringibba National Park (DCCEEW, 2023b). A single reliable record (captured, no specimen collected) is known from Currawinya National Park in western Queensland.</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	January - March (Rowland, 2012).	<p>Unlikely to occur</p> <p>This species was not identified during the survey. The Secondary Study Area is outside the species' current known distribution.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Ornamental snake <i>(Denisonia maculata)</i>	V	V	<p>The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions in Queensland Regional Ecosystem Land Zone 4, but also lake margins and wetlands. Gilgai formations are found where deep-cracking alluvial soils with high clay contents occur (DCCEEW, 2023b).</p> <p>The Ornamental snake is only known from the Brigalow Belt North, and parts of the Brigalow Belt South Bioregions. The stronghold of this species is within the Fitzroy and Dawson River catchments, particularly in the area surrounding Moranbah (DCCEEW, 2023b).</p>	<p>An ornamental snake was sighted during nocturnal surveys within the Secondary Study Area in poplar box woodland in RE 11.5.3 adjacent to Humbug Gully on Mining Lease 70384 (McCollum Environmental Management Services, 2011). 7 sightings within approximately 20 km of the Secondary Study Area have been reported (DES, 2023a). The snake has been observed within close proximity to Coppabella Mine in RE 11.3.4 and RE 11.5.16 (Wormington, 2015).</p>	<p>January to mid-March (DCCEEW, 2023b).</p>	<p>Likely to occur</p> <p>While no individuals were identified within the Secondary Study Area, one ornamental snake was identified adjacent to the Secondary Study Area during the field survey. Based on the presence in the local landscape together with the suitability of habitat within the Secondary Study Area, this species is considered likely to occur within the Secondary Study Area.</p>



Fauna species	NC Act status	EPBC Act status	Habitat and distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Yakka skink (<i>Egernia rugosa</i>)	V	V	<p>The species is known to occur in open dry sclerophyll forest, woodland and scrub, including on Land Zones 3, 4, 5, 7, 9 and 10 (DCCEEW, 2023b). Common woodland and open forest types include <i>Acacia harpophylla</i>, <i>A. aneura</i>, <i>A. catenulata</i>, <i>A. shirleyi</i>, <i>Casuarina cristata</i>, <i>Eucalyptus populnea</i>, <i>Eucalyptus spp.</i> and <i>Callitris glaucophylla</i> (DCCEEW, 2023b). This species will often take refuge among dense ground vegetation, large hollow logs, cavities in soil-bound root systems of fallen trees and beneath rocks (DCCEEW, 2023b). The species also utilises coarse woody debris and rabbit warrens (DCCEEW, 2023b).</p> <p>The Yakka skink is endemic to Queensland where its distribution is patchy. Isolated populations occur throughout subhumid areas in the interior of Queensland from St George in the south, to Coen and Cape York in the north. In the southern half of the Brigalow Belt it occurs near Rockhampton, south to St George and west to Chesterton Range National Park (DCCEEW, 2023b).</p>	<p>The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024). A previous ecological survey at Coppabella Mine reported no sighting of the species during targeted surveys and a lack of suitable habitat (Wormington, 2015). Another survey also did not detect this species during targeted surveys but reported moderate areas of suitable habitat (McCollum Environmental Management Services, 2011).</p>	<p>Late September - late March (DSEWPC, 2011).</p>	<p>Unlikely to occur</p> <p>This species and signs of this species was not observed during the survey. Limited shelter opportunities are available in the Secondary Study Area due to the low density of large hollow logs, rocks, coarse woody debris and rabbit warrens.</p>

CR/CE - critically endangered, E - endangered, V - vulnerable, SL - special least concern



Flora

Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
<i>Bertya pedicellata</i>	NT	-	<p>The species has been recorded on rocky hillsides in eucalypt forest or woodland, Acacia woodland or shrubland and open heathland or vine thicket communities (DES, 2023d). Associated species include <i>Corymbia trachyphloia</i>, <i>Dodonaea filifolia</i>, <i>Acacia catenulata</i>, <i>A. curvinervia</i>, <i>A. shirleyi</i>, <i>A. rhodoxylon</i>, <i>A. sparsiflora</i>, <i>E. crebra</i>, <i>Acacia harpophylla</i> and <i>E. decorticans</i> (DES, 2023d).</p> <p>This species is confined to central and south-east Queensland, from near Aramac eastwards to Rockhampton and South to near Biggenden with an isolated record from the Warwick district (DES, 2023d).</p>	This species has been recorded within 20 km of the Secondary Study Area (DES, 2023a).	Flowering from March to December (DES, 2023d).	<p>Unlikely to occur</p> <p>This species was not identified during the survey. While records of the species do exist within the 20 km search radius, there was no woodland rocky hillside habitats within the Secondary Study Area.</p>



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Black ironbox (<i>Eucalyptus raveretiana</i>)	-	V	<p>This species grows along watercourses and occasionally on river flats. It occurs in open forest or woodland communities. The species prefers sites with moderately fertile soil and adequate sub-soil moisture. The alluvial soils in which it grows are sands, loams, light clays or cracking clays (DES, 2023d).</p> <p>This species occurs in scattered and disjunct populations in central coastal and sub-coastal Queensland, from Charters Towers and Ayr, and south to Rockhampton (DCCEEW, 2023b).</p>	<p>The species has been recorded within 20 km of the Secondary Study Area (ALA, 2024). The species has not been recorded in previous targeted surveys at the mine (McCollum Environmental Management Services, 2011; Wormington, 2015). However, these surveys targeted limited riparian habitat.</p>	<p>No optimal survey period is specified as this is a perennial species.</p>	<p>Unlikely to occur</p> <p>This species was not identified during the survey. Due to the abundance at which this species occurs and the high level of detectability, suitable habitat within the Secondary Study Area was sufficiently searched to deem this species as unlikely to occur.</p>



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Bluegrass (<i>Dichanthium setosum</i>)	-	V	<p>This species is associated with heavy basaltic black soils and red-brown loams with clay subsoil. Associated species include <i>Eucalyptus melanophloia</i>, <i>Myoporum debile</i>, <i>Aristida ramosa</i>, <i>Themeda triandra</i>, <i>Bothriochloa decipiens</i>, <i>Medicago minima</i>, <i>Ajuga australis</i>, and <i>Calotis hispidula</i>. This species is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. It is often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched (DES, 2023d).</p> <p>This species occurs in inland NSW and Queensland, as well as in Western Australia and Tasmania. In Queensland, it has been reported from the Leichhardt, Morton, North Kennedy and Port Curtis regions, and in the Mistake Range, in Main Range National Park, and possibly on Glen Rock Regional Park, adjacent to the national park (DCCEEW, 2023).</p>	<p>The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024). The species has not been recorded in a previous survey (Wormington, 2015).</p>	<p>Summer when flowering (DCCEEW, 2023).</p>	<p>Unlikely to occur This species was not identified during the survey and basaltic black soils or red-brown loams with clay subsoil was not identified in the Secondary Study Area.</p>



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
<i>Capparis humistrata</i>	E	-	This species grows in eucalypt woodland with shrubby understorey, on stony hard ridges and serpentinite soil (DES, 2023d). This species is endemic to central-eastern Queensland between Marlborough and Bouldercombe, although is also recorded further North in Central Queensland (DES, 2023d).	This species has been recorded within 20 km of the Secondary Study Area (DES, 2023a).	Flowering March, April and December (DES, 2023d)	Unlikely to occur This species was not identified during the survey. While records of the species do exist within the 20 km search radius, there were no serpentine or granitic soils recorded within the Secondary Study Area.
Finger panic grass (<i>Digitaria porrecta</i>)	NT	-	This species occurs in tussock grassland or open woodland and is specific to occurrence on heavy, cracking clays, sometimes of alluvial origin (DES, 2023d). This species occurs in four independent areas extending over 1000km. This includes of 41 sites within Queensland occurring in the Nebo district, south-west of Mackay; the Central Highlands between Springsure and Rolleston; and from Jandowae south to Warwick, and 33 sites within NSW occurring from Graman and Croppa Creek (near Inverell), south to the Liverpool Plains near Coonabarabran and Werris Creek (DES, 2023d).	This species has been recorded within 20 km of the Secondary Study Area (DES, 2023a).	No optimal survey period is specified as this is a perennial species (DES, 2023d).	Unlikely to occur This species was not identified during the survey and black clay soil was not identified in the Secondary Study Area.



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
King blue-grass (<i>Dichanthium queenslandicum</i>)	V	E	<p>This species occurs on black cracking clay in tussock grasslands mainly in association with other species of blue grasses (<i>Dichanthium</i> spp. and <i>Bothriochloa</i> spp.). It is mostly confined to natural grassland on the heavy black clay soils (basalt downs, basalt cracking clay, open downs) on undulating plains. Other communities where <i>Dichanthium queenslandicum</i> can be found include <i>Acacia salicina</i> thickets in grassland and eucalypt woodlands (i.e. <i>Corymbia dallachiana</i>, <i>C. erythrophloia</i>, <i>E. orgadophila</i>) (DES, 2023d).</p> <p>This species occurs from near Dalby north to about 90 km north of Hughenden and west as far as Clermont. The main concentration of populations in central Queensland in the Emerald region. It is found in Gemini Peaks National Park north-east of Clermont and Alpinia National Park near Rolleston (DES, 2023d).</p>	Two sightings have been recorded within 20 km of the Secondary Study Area (DES, 2023a). Previous ecological surveys found suitable habitat is not present at Coppabella Mine (McCollum Environmental Management Services, 2011; Wormington, 2015).	Flowering from March (DES, 2023d).	Unlikely to occur This species was not identified during the survey and black clay soil was not identified in the Secondary Study Area.



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Large-fruited denhamia (<i>Denhamia megacarpa</i>)	E	-	<p>The species is known from three subpopulations that occur on tablelands in association with REs 11.5.9b and 11.7.2. These subpopulations are on the Mackenzie tableland, the Junee tableland and the Newlands tableland.</p> <p>The habitat for the species is only known from a few sandy and gravelly sites mentioned above that support open eucalypt woodland or acacia forest (REs 11.5.9b and 11.7.2).</p>	No records of the species occur within 20 km of the Secondary Study Area.	No optimal survey period is described. The species is easily identifiable in the field from vegetative structures (DES, 2023d).	<p>Unlikely to occur</p> <p>The species was not identified during the survey, the Secondary Study Area does not support habitat associated with this species and the Secondary Study Area does not occur near any known populations.</p>
<i>Macropteranthes leiocaulis</i>	NT	-	<p>This species grows in deciduous vine thickets, semi-evergreen vine thickets and araucarian microphyll vine forests on red eucrozems or sandstone talus (DES, 2023d). This species occurs in Central East Queensland, known from Mingela Bluff south of Townsville to Binjour Plateau west of Maryborough in dry rainforest and vine thicket communities (DES, 2023d).</p>	This species has been recorded within 20 km of the Secondary Study Area (DES, 2023a).	Flowering from December to January (DES, 2023d)	<p>Possible to occur</p> <p>While the species was not identified during the survey, low quality habitat is present in the form of scrubby, dry rainforest.</p>



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
<i>Omphalea celata</i>	V	V	<p><i>Omphalea celata</i> is known from three sites in central east Queensland. Locations include Hazlewood Gorge, near Eungella; Gloucester Island, near Bowen; and Cooper Creek in the Homevale Station area, north-west of Nebo (DCCEEW, 2023b).</p> <p>At Hazelwood gorge, habitat for this species includes fragmented semi-evergreen vine thicket along a watercourse on weathered metamorphics in a steep-sided gorge at an altitude of 560 m (DCCEEW, 2023b). On Gloucester Island, plants grow in a rocky granitic gully near <i>Araucaria microphyll</i> vineforest (DCCEEW, 2023b). At Cooper Creek, plants grow in the creek bed and adjacent bank (BRI collection records, n.d.).</p>	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period is specified as this is a perennial species. The species flowers from June to December and fruiting from December to February (DCCEEW, 2023b).	<p>Unlikely to occur</p> <p>This species was not identified during the survey. Suitable habitat for this species was sufficiently searched to determine this species is unlikely to occur within the Secondary Study Area. This species does not require flowering or fruiting to be identified.</p>



Flora Species	NC Act Status	EPBC Act Status	Habitat & Distribution	Desktop assessment results	Optimal survey timing	Likelihood of occurrence
Quassia (<i>Samadera bidwillii</i>)	V	V	The species commonly occurs in lowland rainforest often with <i>Araucaria cunninghamii</i> or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude (DES, 2023d). Commonly associated trees in the open forest and woodlands include <i>Corymbia citriodora</i> , <i>Eucalyptus propinqua</i> , <i>E. acmenoides</i> , <i>E. tereticornis</i> , <i>C. intermedia</i> , <i>E. siderophloia</i> , <i>E. moluccana</i> , <i>E. cloeziana</i> and <i>E. fibrosa</i> (DCCEEW, 2023b). Quassia is endemic to Queensland and is currently known to occur in several localities between Scawfell Island, near Mackay, and Goomboorian, north of Gympie (DCCEEW, 2023b).	The species has not been recorded within 20 km of the Secondary Study Area (ALA, 2024).	No optimal survey period is specified as this is a perennial species.	Unlikely to occur This species was not identified during the survey. Suitable habitat for this species was sufficiently searched to determine this species is unlikely to occur within the Secondary Study Area. This species does not require flowering or fruiting to be identified.

E - endangered, V - vulnerable, NT - near threatened

