



# Targeted Chuditch, Quokka, and Woylie Survey

## Huntly Mine – Myara Region

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01	17 June 2024	K. Griffith	E. Webb	E. Webb

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Alcoa of Australia Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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## Executive Summary

Alcoa of Australia Ltd commissioned SLR Consulting Australia Pty Ltd to undertake a fauna desktop assessment and targeted Chuditch (*Dasyurus geoffroii*), Quokka (*Setonix brachyurus*), and Woylie (*Bettongia penicillata*) survey for the Huntly Mine Myara region as part of its Mining and Management Program assessment by the Mining and Management Program Liaison Group. The survey was undertaken within a defined area that consists of approximately 1,240 individual polygons (the Survey Area) that covers 928.6 hectares and is located approximately 20 km northeast of the Pinjarra townsite, in the Jarrah Forest bioregion of Western Australia.

The objective of the survey was to identify key fauna values targeting Chuditch, Quokka, and Woylie within the Survey Area as part of the MMP assessment process.

The targeted fauna survey used a variety of detection methods including camera trapping, spotlighting, active searches, and opportunistic observations. Fauna habitat mapping was based on a combination of field observations, vegetation mapping, fauna habitat assessment data, and aerial imagery.

Two naturally occurring fauna habitats were mapped within the Survey Area; Jarrah-Marri Forest and Drainage Line. The Drainage Line habitat provides the most value for targeted taxa as it is core habitat for Chuditch, Quokka, and Woylie. The Jarrah-Marri Forest also provides value for targeted taxa as core habitat for Chuditch and Woylie, and as supporting habitat for the Quokka. These habitats are typical of the Jarrah Forest region and are widespread outside of the Survey Area. A third habitat type, Rehabilitation, was mapped within the Survey Area but currently provides negligible value for targeted taxa because it is still young and occupied by seedlings. It is likely that the value of this habitat will increase with age as vegetation matures.

Two targeted taxa were recorded during the survey; the Chuditch was recorded 52 times and spot analysis identified a minimum of 14 individuals occurring within the Survey Area. The Quokka was recorded 18 times and was detected within both the Jarrah-Marri Forest and Drainage Line habitats via camera trapping. The Woylie was not detected during the current survey; however, it has previously been recorded within 80 m of the Survey Area.

In addition to the two targeted fauna taxa, six significant taxa were recorded during the fauna survey in Jarrah-Marri Forest and Drainage Line habitats:

- Baudin's Cockatoo (*Zanda baudinii*).
- Carnaby's Cockatoo (*Zanda latirostris*).
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*).
- Wambenger Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*).
- Quenda (*Isoodon fusciventer*).
- Western Brush Wallaby (*Notamacropus irma*).

A further five significant fauna taxa were assessed as having a high likelihood, three significant fauna taxa were assessed as having a medium likelihood, and 29 significant fauna taxa were assessed as having a low likelihood of occurring within the Survey Area.

Five introduced taxa were recorded during the survey: Laughing Kookaburra (*Dacelo novaeguineae*), Red Fox (*Vulpes vulpes*), Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*), and Pig (*Sus scrofa*).



# Table of Contents

<b>Basis of Report</b> .....	<b>i</b>
<b>Executive Summary</b> .....	<b>ii</b>
<b>Acronyms and Abbreviations</b> .....	<b>vi</b>
<b>1.0 Introduction</b> .....	<b>1</b>
1.1 The Project .....	1
1.2 Objective and Scope .....	1
<b>2.0 Background</b> .....	<b>2</b>
2.1 Statutory and Regulatory Framework .....	2
2.2 Existing Environment.....	2
2.2.1 Climate .....	2
2.2.2 Interim Biogeographic Regionalisation of Australia .....	3
2.2.3 Soil Landscape Mapping .....	3
2.2.4 Hydrography .....	5
2.2.5 Pre-European Vegetation .....	6
2.2.6 Conservation Areas.....	6
2.2.7 Environmentally Sensitive Areas .....	6
2.2.8 Land Use .....	6
<b>3.0 Methods</b> .....	<b>7</b>
3.1 Desktop Assessment.....	7
3.1.1 Literature Review .....	7
3.1.2 Database Searches.....	7
3.1.3 Likelihood of Occurrence.....	8
3.2 Field Surveys .....	8
3.2.1 Survey Timing.....	8
3.2.2 Field Personnel and Licences.....	8
3.2.3 Habitat Assessment and Mapping .....	9
3.2.4 Camera Traps.....	9
3.2.5 Spotlighting .....	9
3.2.6 Opportunistic Observations .....	10
3.2.7 Active Searches .....	10
3.3 Limitations.....	10
<b>4.0 Results</b> .....	<b>12</b>
4.1 Desktop Assessment.....	12
4.2 Fauna Habitat .....	12
4.3 Recorded Fauna .....	15
4.4 Significant Fauna .....	19
<b>5.0 Discussion</b> .....	<b>32</b>
5.1 Fauna Habitat .....	32



5.2	Significant Fauna .....	32
5.2.1	Recorded within the Survey Area .....	32
5.2.2	High likelihood of occurrence within the Survey Area.....	34
5.2.3	Medium likelihood of occurrence within the Survey Area.....	35
<b>6.0</b>	<b>Conclusion .....</b>	<b>37</b>
<b>7.0</b>	<b>References .....</b>	<b>38</b>
<b>8.0</b>	<b>Feedback .....</b>	<b>41</b>

## Tables in Text

Table 1:	Soil landscape systems within the Survey Area.....	4
Table 2:	Hydrographic features in the vicinity of the Survey Area .....	5
Table 3:	Database search details.....	7
Table 4:	Likelihood of occurrence criteria.....	8
Table 5:	Survey timing.....	8
Table 6:	Field personnel .....	8
Table 7:	Limitations and constraints associated with the survey .....	10
Table 8:	Fauna habitats recorded within the Survey Area .....	13
Table 9:	Fauna recorded within the Survey Area.....	16
Table 10:	Significant fauna likelihood of occurrence within the Survey Area.....	21

## Graphs in Text

Graph 1:	Climate summary of Karnet Weather Station.....	3
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## Figures in Text

Figure 1:	Chuditch recorded by camera trap 5890-CAM-36-EW within Jarrah-Marri Forest (-32.4526566, 116.0859871). .....	20
Figure 2:	Quokka recorded by camera trap 5937-CAM-13-PW within Blackbutt Forest (-32.47335379, 116.1646422). .....	20

## Maps

Map 1:	Survey Area.....	A-1
Map 2:	Soil Landscape Mapping.....	A-2
Map 3:	Hydrography .....	A-3
Map 4:	Pre-European Vegetation.....	A-4
Map 5:	Conservation Areas and ESAs.....	A-5
Map 6:	Previous Surveys in the Locality.....	A-6
Map 7:	Survey Effort.....	A-7
Map 8:	Significant Fauna Database Search Results.....	A-8



Map 9: Fauna Habitat and Significant Fauna Records.....A-9

## **Appendices**

<b>Appendix A</b>	<b>Maps</b>
<b>Appendix B</b>	<b>Literature Review Summary</b>
<b>Appendix C</b>	<b>Licences and Permits</b>
<b>Appendix D</b>	<b>Fauna Desktop Assessment Results</b>
<b>Appendix E</b>	<b>Fauna Site Sheets</b>
<b>Appendix F</b>	<b>Significant Fauna Records</b>
<b>Appendix G</b>	<b>Chuditch Spot Analysis</b>



## Acronyms and Abbreviations

°C	Degree Celsius
BC Act	<i>Biodiversity Conservation Act 2016</i>
BoM	Bureau of Meteorology
CR	Critically Endangered
DAWE	Department of Agriculture Water and Environment
DFAT	Department of Foreign Affairs and Trade
DFCE	Department of Finance and Consumer Affairs
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEE	Department of the Environment and Energy
Desktop Study Area	The area that was studied during the desktop assessment encompassing the Survey Area and surrounds
DMIRS	Department of Mines, Industry Regulation and Safety
DoE	Department of the Environment
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EIA	Environmental Impact Assessment
EN	Endangered
EP Act	<i>Environmental Protection Act 1986</i>
EPA	Environmental Protection Authority
EPBC Act	<i>Environment Protection Biodiversity and Conservation Act 1999</i>
ESA	Environmentally Sensitive Area
GIS	Geographic Information System
GPS	Global Positioning System
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IBSA	Index of Biodiversity Surveys for Assessments
km	Kilometres
Lat	Latitude
Long	Longitude
m	Metres
MA	Marine
mm	Millimetres
MMP	Mining and Management Program
MMPLG	Mining and Management Planning Liaison Group
MNES	Matters of National Environmental Significance



OS	Other Specially Protected Fauna
P	Priority
PMST	Protected Matters Search Tool
Alcoa	Alcoa of Australia Ltd
SLR	SLR Consulting Australia
Survey Area	The area that was surveyed
T	Threatened
TEC	Threatened Ecological Community
VU	Vulnerable
WA	Western Australia
WAM	Western Australian Museum



## 1.0 Introduction

### 1.1 The Project

Alcoa of Australia Ltd (Alcoa) commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake a fauna desktop assessment and targeted Chuditch (*Dasyurus geoffroii*), Quokka (*Setonix brachyurus*), and Woylie (*Bettongia penicillata*) survey for the Huntly Mine Myara region (the Project) as part of its Mining and Management Program (MMP) assessment by the Mining and Management Planning Liaison Group (MMPLG). The survey was undertaken within a defined area that consists of approximately 1,240 individual polygons (the Survey Area) that covers 928.6 hectares and is located approximately 20 km northeast of the Pinjarra townsite, in the Jarrah Forest bioregion of Western Australia (**Map 1**). All maps are provided in **Appendix A**.

### 1.2 Objective and Scope

The objective of the survey was to identify key fauna values targeting Chuditch, Quokka, and Woylie within the Survey Area as part of the MMP assessment process for the Project. The following scope of work was completed:

- A desktop assessment of the Huntly Mine Myara region including an overview of fauna habitat, inventory, and likelihood of species present and background environmental information.
- A targeted survey for Chuditch, Quokka, and Woylie.
- A technical biological report.



## 2.0 Background

### 2.1 Statutory and Regulatory Framework

Western Australian fauna is governed by the following legislative measures:

- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). (Commonwealth of Australia, 1999).
- *Biodiversity Conservation Act 2016* (WA) (BC Act) (Government of Western Australia, 2016).
- *Environmental Protection Act 1986* (WA) (EP Act) (Government of Western Australia, 1986).

In addition to these legislative measures, the following non-legislative lists are considered on a case-by-case basis:

- WA Department of Biodiversity Conservation and Attractions (DBCA) Priority lists for fauna, flora, and ecological communities.
- Recognition of locally significant populations by DBCA.

The EIA process is supported by guidance documents published by the Environmental Protection Authority (EPA), DBCA and the Department of Climate Change, Energy, the Environment and Water (DCCEE).

#### Western Australia

- *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (Environmental Protection Authority, 2020).
- *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016).

#### Commonwealth

- *Matters of National Environmental Significance – Significant Impact Guidelines 1.1* (DoE, 2013).
- *Survey guidelines for Australia's threatened mammals* (DSEWPaC, 2011).

## 2.2 Existing Environment

### 2.2.1 Climate

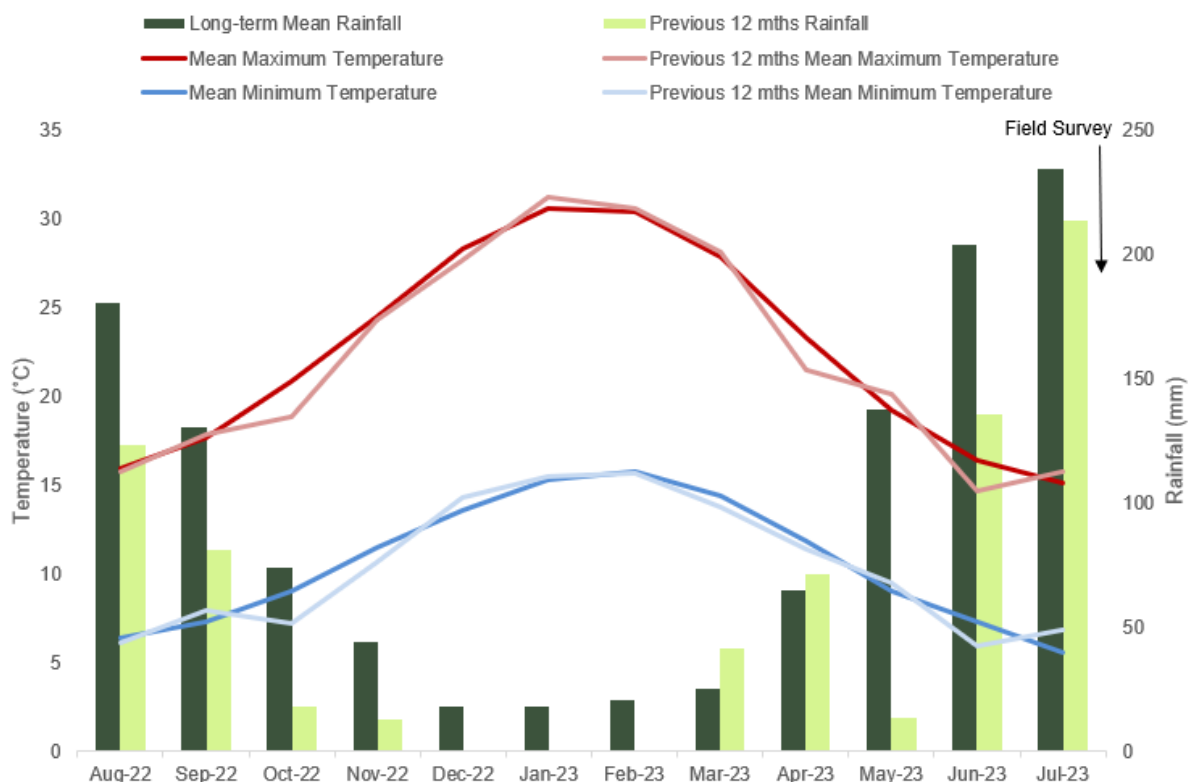
The closest long-term Bureau of Meteorology (BoM) weather station with a complete dataset is Karnet Weather Station (Station 9111), located within site, approximately 0.3 km from the closest polygon of the Survey Area.

Climate statistics were calculated using data from the most current climate normal, which is defined as a 30-year interval where possible. A climate normal is a period long enough to include year-to-year variations while avoiding the influence of longer-term changes in climate (BoM, 2007).

The long-term (1965 to 2024) mean minimum temperature for Karnet Weather Station ranges from 6.3°C (July) to 15.8°C (February) and the long-term mean maximum temperature ranges from 15.1°C (July) to 30.6°C (January) (BoM, 2024) (**Graph 1**).

The Karnet Weather Station recorded 710.4 mm of rainfall in the 12 months prior to the survey (August 2022 to July 2023), which is 410 mm below the long-term (1964 to 2024) average of 1120.4 mm (BoM, 2024). In the three months prior to the survey (May 2023 to July 2023), 362.5 mm of rainfall was recorded, which is 213.7 mm below the long-term average of 576.2 mm for the same period (BoM, 2024). Rainfall data from 2023 was the lowest recorded within the 60 years of rainfall data from Karnet Weather Station.





**Graph 1: Climate summary of Karnet Weather Station**

### 2.2.2 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological, geographical, and geological attributes. These bioregions are subdivided into 419 subregions as part of a refinement of the IBRA framework (DEE, 2016). The Survey Area occurs within the Jarrah Forest bioregion and the Northern Jarrah Forest (JAF01) subregion.

The Northern Jarrah Forest subregion overlays Archaean granite and metamorphic rocks with an average elevation of 300 m, capped by extensive lateritic duricrust and interrupted by later drainage and dissected by occasional granite hills. In the east the laterite becomes greatly separated until it compresses isolated remnants. Vegetation comprises of Jarrah-Marri Forest in the west with Bullich and Blackbutt in the valleys grading to Wandoo and Marri woodlands in the east with Powder bark on breakaways. A common understorey of heath is found on granite rocks in the north and east forests and woodlands. The lower slopes, where rapid changes in the site conditions occur, support most of the diversity in the communities. The subregional area is 2,255,904 ha (Williams and Mitchell, 2001).

### 2.2.3 Soil Landscape Mapping

Soil landscape mapping of Western Australia consists of a compilation of various surveys at different scales varying between 1:20,000 and 1:3,000,000 (DPIRD, 2022). The mapping comprises a nested hierarchy of levels, with each level a subdivision of the preceding level. Soil landscape mapping provides an indication of potential vegetation types and fauna habitats within the Survey Area and has been described below to the highest level of detail available for the Survey Area.

The Survey Area occurs across five soil landscape subsystems and seven soil landscape phases (Table 1; Map 2).



**Table 1: Soil landscape systems within the Survey Area**

Subsystem or phase		Description	Area and percentage within Survey Area
Name	Code		
Cooke Subsystem	255DpCO	Crests and upper slopes dominated by granite outcrop and very shallow yellow duplex soils, and yellow and brown massive earths	178.5 ha 19.2%
Dwellingup Subsystem	255DpDW	Divides, lower to upper slopes and hillcrests. Duplex sandy gravels and loamy gravels with minor areas of shallow gravels, deep sandy gravels, yellow deep sands, and yellow and pale deep sands, often gravelly	557.5 ha 60.0%
Hester Subsystem	255DpHR	Ridges and hill crests on laterite and gneiss, relief 5-40 m, slopes 5-15%. Soils are sandy gravels, loamy gravels, and loamy earths	10.7 ha 1.2%
Yarragil Subsystem	255DpYG	Shallow, narrow, upper valleys of the deeply dissected Murray, Bindoon, and Helena units. Alluvial, clay and loam soils, moderately well drained, often gravelly, with some sands and loams. Salt prone. Woodland of <i>E. wandoo</i> , <i>E. accedens</i>	106.1 ha 11.4%
Yarragil DpYGh Phase	255DpYGh	Very gentle to moderately inclined (<20%) concave valley sideslopes. Moderately well drained yellow duplex soils and yellow and brown massive earths	24.7 ha 2.7%
Yarragil Swamp Phase	255DpYGsw	Level to very gently inclined valley floors. Swampy river flats and terraces in granitic rocks; loamy and sandy duplex, wet soils, non-cracking clays, and loams	2.9 ha 0.3%
Murray Subsystem	255MvMY	Deeply incised valley of the Murray River; red and yellow earths and minor duplex soils; occasional rock outcrops; narrow sandy terrace	39.5 ha 4.3%
Murray Valleys DR1 Phase	255MvDR1	Gentle to moderate slopes of scarp face (5-25%) with red and yellow gradational earths and duplex soils with variable depth and common rock outcrop	4.1 ha 0.4%
Forrestfield disturbed land, mine phase	213FoX_MINE	Mine. Disturbed land.	0.7 ha 0.08%
Forrestfield F1a Phase	213Fo__F1a	1-15% lower slopes with well drained shallow to moderately deep, very gravelly acidic yellow duplex soils and common laterite	0.5 ha 0.06%
Forrestfield F2a Phase	213Fo__F2a	Low slopes and foot slopes up to 5-10% with well drained shallow to moderately deep, very gravelly acidic yellow duplex soils and common laterite	2.0 ha 0.2%
Forrestfield F4 Phase	213Fo__F4	Low slopes and foot slopes up to 5-10% with well drained shallow to moderately deep, very gravelly acidic yellow duplex soils and common laterite	1.4 ha 0.15%
<b>Total area and percentage within Survey Area</b>			<b>928.6 ha 100.00%</b>



## 2.2.4 Hydrography

A total of three hydrographic features intersect the southern polygons of the Survey Area along the proposed conveyor line. A total of 21 named hydrographical features occur within a 5 km radius of the Survey Area. Hydrographic features intersecting and occurring within the vicinity of the Survey Area are listed below in **Table 2**, and shown in **Map 3** (DWER, 2018).

**Table 2: Hydrographic features in the vicinity of the Survey Area**

Feature name	Feature type	Distance from Survey Area
Barritt Brook	Major Tributary	0.5 km north
Big Brook	Major River	80 m north
Cameron East	Minor Tributary	7.8 km south-southeast
Cameron West	Minor Tributary	8.1 km south-southeast
Conjurunup Creek	Significant Stream	Intersects southern polygon of the Survey Area
Cornish Gully	Minor Tributary	3.4 km northwest
Dirk Brook	Significant Stream	57 m northwest
Karnet Brook	Significant Stream	3.5 km northwest
Marrinup Brook	Minor River	4.5 km south
Myara Brook	Major Tributary	3 km west
Nambeelup Brook	Significant Stream	5.1 km west
North Dandalup Dam	Infrastructure	1 km west
North Dandalup Dam Spillway	Infrastructure	4.4 km west
North Dandalup Reservoir	Minor River	4.5 km west
North Dandalup River	Minor River	Intersects southern polygon of the Survey Area
South Dandalup River	Major River	Intersects southern polygon of the Survey Area
Oakley Brook	Major Tributary	0.3 km south
O'Neil Brook	Major Tributary	1.5 km south-southeast
Serpentine Pipehead Dam	Mainstream	2.7 km north
Serpentine Reservoir	Mainstream	0.9 km north
Serpentine River	Mainstream	0.2 km east
South Dandalup Dam	Infrastructure	0.5 km south
South Dandalup Pipehead	Major River	3.7 km west
South Dandalup Reservoir	Major River	0.8 km south



## 2.2.5 Pre-European Vegetation

The major source of data for pre-European vegetation mapping in Western Australia is the published and unpublished mapping of J. S. Beard at 1:250,000 scale. These vegetation types were later refined by Shepherd, Beeston, and Hopkins (2002), resulting in 819 Vegetation Association-level units, and a subsequent reclassification resulted in the creation of over 2,175 finer-scale System Associations (Beard *et al.*, 2013). Two System Associations are mapped within the Survey Area (**Map 4**):

- WEST DARLING\_3: Comprises Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*).
- WEST DARLING\_4: Comprises Jarrah, Marri, and Wandoo; *Eucalyptus marginata*, *Corymbia calophylla*, and *Eucalyptus wandoo*.

## 2.2.6 Conservation Areas

Conservation areas consist of areas protected for the purpose of conservation, including but not limited to National Parks, Nature Reserves, Conservation Parks, and Regional Parks. The Survey Area intersects three conservation areas (DBCA, 2023a, 2023b) which are listed below and shown in **Map 5**:

- Jarrahdale State Forest, intersects the northern portion of the Survey Area and is vested under Conservation Commission of WA.
- Marrinup State Forest, intersects the southern portion of the Survey Area and is vested under Conservation Commission of WA.
- Dwellingup State Forest, intersects the southern portion of the Survey Area and is vested under Conservation Commission of WA.

Additionally, Serpentine National Park is located 0.8 km north of the Survey Area and is vested under Conservation Commission of WA.

## 2.2.7 Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared by the Department of Water and Environmental Regulation (DWER) to prevent the degradation of important environmental values such as Threatened flora, Threatened Ecological Communities (TECs), or significant wetlands. The Survey Area does intersect six mapped ESAs, all of which are geomorphic wetlands (DWER, 2021). There are 79 ESAs within a 5 km radius of the Survey Area, comprising:

- 62 geomorphic wetlands.
- Nine Threatened flora.
- One TEC.
- Three areas on the Register of National Estate, two of which are also geomorphic wetlands.

ESAs are shown in **Map 5**.

## 2.2.8 Land Use

No pastoral leases apply to the Survey Area. The Survey Area is under one mining tenement, Alcoa of Australia Ltd (AML7000001) (DMIRS, 2024).



## 3.0 Methods

The surveys documented in this report were undertaken in accordance with relevant EPA and DCCEEW guidelines (see **Section 2.1**).

### 3.1 Desktop Assessment

#### 3.1.1 Literature Review

Background information on the Survey Area and surrounds (the Desktop Study Area) was compiled prior to the field survey. The literature review considered a selection of relevant reports detailing assessments undertaken in the region that were either publicly available from sources such as the Index of Biodiversity Surveys for Assessments (IBSA) website, the EPA Consultation Hub, or internet searches, or provided by Alcoa. These reports are listed below, summarised in **Appendix B**, and their locations in relation to the current Survey Area, as represented by their nearest point, are shown in **Map 6**:

- *Chuditch Pre-mine Survey, Myara* (Way, 2013), intersects the Survey Area.
- *Vertebrate Fauna Survey of Planned Mining Areas at Alcoa’s Willowdale Larego Mining Region* (Environmental Management and Research Consultants, 2006), intersects the Survey Area.
- *Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Myara North* (GHD, 2021b), 1 km north of the Survey Area.
- *Black Cockatoo Habitat Assessment - Pinjarra Racecourse* (Harewood, 2019), 6 km west of the Survey Area.
- *Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Holyoake* (GHD, 2021a), 8 km south of the Survey Area.
- *Report for Rail Reserves in the Shire of Serpentine Jarrahdale - Spring Flora and Vegetation Survey and Fauna and Habitat Assessment* (GHD, 2012), 10 km north of the Survey Area.
- *Fauna Assessment Pinjarra - Williams Road (SLK 14 – 67)* (Harewood, 2017), 17.5 km south of the Survey Area.

#### 3.1.2 Database Searches

Database searches were undertaken to compile a list of flora and fauna known to occur in the Desktop Study Area and identify significant flora, fauna, and ecological communities with potential to occur within the Survey Area (**Table 3**).

**Table 3: Database search details**

Database name	Date received	Search target	Buffer around the Survey Area
Threatened and Priority Fauna database search (DBCA, 2023c)	08 June 2023	Threatened and Priority fauna	20 km
Protected Matters Search Tool (PMST) (DCCEEW, 2023)	14 July 2023	Threatened flora, fauna, and ecological communities	20 km
NatureMap (DBCA, 2023d)	07 June 2023	Fauna	20 km



### 3.1.3 Likelihood of Occurrence

Significant fauna taxa identified during the desktop assessment were assessed to determine the likelihood of their occurrence within the Survey Area before and after the field survey. The assessment used the likelihood of occurrence criteria presented in **Table 4**.

Taxa listed as Marine only under the EPBC Act were not considered to be significant taxa because the Marine listing does not constitute MNES under the EPBC Act. Additionally, erroneous records (i.e. records that occur well outside a taxon's known distribution) were excluded from consideration. Only taxa that have been recorded within the Survey Area or were assessed as having a high or medium likelihood of occurrence are discussed in detail.

**Table 4: Likelihood of occurrence criteria**

Rank	Criteria
Recorded	The taxon was recorded within the Survey Area during the current survey.
Previously Recorded	The taxon has been previously recorded within the Survey Area according to database search or literature review results.
High (Likely to occur)	The taxon has been recorded within the Desktop Study Area more than once in the last 15 years and suitable habitat is present within the Survey Area.
Medium (May occur)	There are existing records of the taxon within the Desktop Study Area, however the taxon has not been recorded within the Desktop Study Area in the last 15 years or suitable habitat within the Survey Area is marginal or limited in extent.
Low (Unlikely to occur)	Suitable habitat is not present within the Survey Area, or the taxon is very infrequently recorded in the locality despite reasonable previous search effort, or the taxon is believed to be extinct or locally extinct.

## 3.2 Field Surveys

### 3.2.1 Survey Timing

The field surveys were undertaken across two field trips as shown in **Table 5**.

**Table 5: Survey timing**

Survey trip	Tasks completed	Dates	Person field days
1	Active searches, deployment of camera traps, habitat assessment, spotlighting.	22 <sup>nd</sup> August – 26 <sup>th</sup> August 2023	20
2	Collection of camera traps	9 <sup>th</sup> September – 11 <sup>th</sup> September 2023	10

### 3.2.2 Field Personnel and Licences

Details of field personnel, including their level of experience and role for each field trip are detailed in **Table 6**. Fieldwork was completed under Fauna Taking (Biological Assessment) License – Regulation 27 (08-005511-1) (**Appendix C**).

**Table 6: Field personnel**

Personnel	Experience	Role	Trips
Dr Michael Lohr	11 years	Principal Zoologist	1 and 2



Personnel	Experience	Role	Trips
Evan Webb	7 years	Associate Zoologist	1 and 2
Poppy Walker	5 years	Senior Zoologist	1 and 2
Lewis Berry	2 years	Ecologist	1 and 2

### 3.2.3 Habitat Assessment and Mapping

Habitat assessments were undertaken in representative areas of fauna habitat within the Survey Area to record habitat values. A habitat assessment was recorded at each camera trap site, and two additional standalone habitat assessments were recorded. Habitat assessment locations are shown in **Map 7**.

The following information was collected at each habitat assessment locations using a GPS-enabled handheld device:

- Site photo.
- Landform.
- Soil type and colour.
- Rock types, surface stone cover, and size classes.
- Key habitat and microhabitat features including leaf litter, logs, burrows, rocky outcrops, rock crevices, hollows, and water sources.
- Habitat quality, fire history, and evidence of disturbance.
- General description of vegetation structure.

Fauna habitat mapping was based on a combination of field observations, habitat assessment data, aerial imagery, and vegetation mapping (Mattiske and Havel, 1998). Polygons were digitised using GIS software.

### 3.2.4 Camera Traps

A total of 80 motion sensitive camera traps were deployed during the field survey. Each camera trap was deployed for a minimum of 16 nights and total survey effort consisted of 1,413 trap nights. Cameras were placed in areas of suitable habitat for target taxa (Chuditch, Quokka, and Woylie) and non-target taxa (Wambenger Brush-tailed Phascogale, Quenda, and Western Brush Wallaby) and were baited with universal bait (rolled oats, peanut butter, and sardines) and chopped apples. Camera trap locations are shown in **Map 7**.

#### 3.2.4.1 Chuditch Spot Analysis

Unique spot patterns of Chuditch were used to determine the number of individuals recorded by camera trap. Photographs where Chuditch spot patterns were clearly visible were examined and distinguishable groupings of spots were noted. Where possible, new individuals were differentiated from recaptures.

### 3.2.5 Spotlighting

Spotlighting was undertaken on two nights during the field survey. Spotlighting commenced approximately one hour after sunset and consisted of traversing areas of suitable habitat, generally near stream crossings, on foot for a duration of two hours. A total of 16 person hours was completed during the field survey. Spotlighting was also undertaken opportunistically from the vehicle while



travelling to and from the spotlighting location. Spotlighting was undertaken at the following locations (**Map 7**):

- 5890-CAM-11-PW
- 5890-CAM-13-PW
- 5890-CAM-51-EW/5890-CAM-65-EW
- 5890-CAM-68-EW

### 3.2.6 Opportunistic Observations

Opportunistic observations of fauna were recorded throughout the Survey Area, including primary evidence (direct sightings, calls) and secondary evidence (tracks, scats, diggings, remains).

### 3.2.7 Active Searches

Untimed active searches were undertaken at each camera trap site. These searches included flipping rocks and logs and raking leaf litter in search of direct sightings, scats, tracks, and other traces of fauna, with a particular focus on Chuditch (scats, dens in hollow logs or burrows), Quokka (scats, runnels in sedges), Woylie (scats, diggings, nests), and Numbat (scats, diggings).

## 3.3 Limitations

Limitations and constraints of the fauna survey are detailed below in **Table 7**.

**Table 7: Limitations and constraints associated with the survey**

Variable	Degree of limitation	Potential constraints on survey outcomes
<b>Availability of data and information</b>	No	Sufficient data and information, including regional and local contextual information, was available to complete the scope of the survey.
<b>Competency and experience of the survey team</b>	No	The survey was undertaken by a team with extensive experience undertaking similar scopes within the bioregion. <ul style="list-style-type: none"> <li>• Principal Zoologist Dr Michael Lohr – 11 years' experience.</li> <li>• Associate Zoologist Evan Webb – 7 years' experience.</li> <li>• Senior Zoologist Poppy Walker – 5 years' experience.</li> <li>• Ecologist Lewis Berry – 2 years' experience.</li> </ul>
<b>The proportion of fauna identified, recorded, or collected</b>	No	All targeted fauna taxa were able to be identified to species level with a high degree of confidence.
<b>Scope of the survey</b>	No	The scope of the survey was limited to terrestrial vertebrate fauna targeting threatened marsupials. No further exclusions were made within this group.
<b>Adequacy of the survey intensity and proportion of survey achieved</b>	No	Sufficient time and effort were allocated to the survey given the size and complexity of the Survey Area and the expected level of survey intensity.
<b>Access problems</b>	Partial	The majority of the Survey Area was sufficiently accessed by vehicle and on foot. Due to logistical constraints, a 62.9 ha portion of the Survey Area consisting of thin linear polygons along the conveyor belt was not surveyed.



Variable	Degree of limitation	Potential constraints on survey outcomes
<b>Timing and season</b>	No	Targeted Chuditch, Quokka, and Woylie surveys can be undertaken at any time of year.
<b>Disturbance that may have affected the results of survey</b>	No	Areas of disturbance associated with mining activities, historical logging, and bushfires were present within the Survey Area but were not a limitation on the results of the survey.
<b>Problems with data and analysis, including sampling biases</b>	No	Survey effort for significant fauna taxa was concentrated in preferred habitats. This may introduce bias where the use of non-preferred habitat is underrepresented, however, this is not considered a limitation on the survey outcomes.



## 4.0 Results

### 4.1 Desktop Assessment

The database searches and literature review identified 218 terrestrial vertebrate fauna taxa occurring within the Desktop Study Area, of which 36 are significant (Threatened or Priority):

- 156 birds, of which 31 are significant.
- 30 mammals, of which 12 are significant.
- 22 reptiles, of which 2 are significant.
- 10 amphibians, of which none are significant.



Key findings of the literature review are summarised in **Appendix B**, a complete list of fauna taxa recorded within the Desktop Study Area is presented in **Appendix D**, and DBCA database search results are displayed in **Map 8**.

### 4.2 Fauna Habitat

Three fauna habitats (excluding cleared and unsurveyed areas) were identified and mapped within the Survey Area. Fauna habitats are presented in **Map 9**, described below in **Table 8**, and site sheets for each habitat assessment are provided in **Appendix E**. Small discrepancies in fauna habitat extents (i.e., not adding up to the exact area extent of the Survey Area) are due to rounding.



**Table 8: Fauna habitats recorded within the Survey Area**

Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Jarrah-Marri Forest	849.8 ha, 91.5%	<p>Undulating plains and hills over clay loam soils and laterite rock. Vegetation consists of Jarrah (<i>Eucalyptus marginata</i>) and Marri (<i>Corymbia calophylla</i>) open forest with patchy <i>Allocasuarina Fraseriana</i> over a mixed midstorey typically dominated by <i>Bossiaea aquifolium</i>, <i>Xanthorrhoea preissi</i>, and <i>Macrozamia fraseri</i>, over sedges and bracken.</p> <p>Disturbances consisted primarily of historic logging and bushfire. Microhabitats present within this habitat include hollows in trees and logs, leaf litter and woody debris.</p> <p>This habitat is core habitat Chuditch and supporting habitat for Woylie and Quokka. The canopy is core habitat for black cockatoos.</p>	
Drainage Line	15.6 ha, 1.7%	<p>Areas of drainage over clay loam soils, often with thin channels of surface water present. Vegetation consists of a closed mosaic upperstorey of Bullich (<i>E. megacarpa</i>), Blackbutt (<i>E. patens</i>), and Flooded Gum (<i>E. rudis</i>), forest over a closed mixed shrubland of <i>Melaleuca</i> sp., <i>B. aquifolium</i>, and other <i>Myrtaceae</i> sp. and <i>Acacia</i> sp., over tall sedgeland.</p> <p>This habitat typically had low levels of disturbance. Microhabitats present within this habitat include tree and log hollows, woody debris, peeling bark and leaf litter.</p> <p>Drainage Line habitat is core habitat Chuditch, Woylie, and Quokka, and the canopy constitutes core habitat for black cockatoos. This habitat is analogous to Blackbutt, Bullich, and Flooded Gum fauna habitats recorded by GHD (2021b, 2021a).</p>	



Fauna habitat	Total area, percentage of Survey Area	Habitat description	Representative photograph
Rehabilitation	0.3 ha, 0.03%	Former mine pits that have been ripped and replanted, currently occupied by seedlings.	
Unsurveyed	62.9 ha, 6.7%	Unsurveyed portion of Survey Area along conveyor belt corridor.	
Cleared	<0.01 ha, <0.01%	Cleared land for existing tracks/roads. Low/negligible fauna habitat value.	
<b>Total</b>	<b>928.6 ha, 100%</b>		



### 4.3 Recorded Fauna

The basic terrestrial vertebrate fauna survey recorded 61 fauna taxa from 38 families, comprising three amphibian taxa, 35 bird taxa, 13 mammal taxa, and 10 reptile taxa. Of the taxa recorded, eight were significant (see **Section 4.4**). Five introduced taxa were recorded, the Laughing Kookaburra (*Dacelo novaeguineae*), Red Fox (*Vulpes vulpes*), Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*), and Pig (*Sus scrofa*).

An inventory of fauna recorded during the field survey is provided below in **Table 9**.



**Table 9: Fauna recorded within the Survey Area**

Family	Scientific Name	Common Name	Conservation Status		Call	Camera trap	Digging	Foraging evidence	Scat	Sighting	Sighting - overhead	Total
			State	Common wealth								
<b>Amphibians</b>												
Myobatrachidae	<i>Crinia georgiana</i>	Quacking Frog	-	-	1							1
Myobatrachidae	<i>Crinia glauerti</i>	Clicking Frog	-	-	2							2
Pelodyadidae	<i>Litoria adelaidensis</i>	Slender Tree Frog	-	-						1		1
<b>Birds</b>												
Acanthizidae	<i>Acanthiza apicalis</i>	Inland Thornbill	-	-						1		1
Acanthizidae	<i>Acanthiza inornata</i>	Western Thornbill	-	-		2				2		4
Acanthizidae	<i>Gerygone fusca</i>	Western Gerygone	-	-	4							4
Acanthizidae	<i>Sericornis maculatus</i>	Spotted Scrubwren	-	-		7						7
Acanthizidae	<i>Smicronis brevirostris</i>	Weebill	-	-	2							2
Accipitridae	<i>Lophoictinia isura</i>	Square-tailed Kite	-	-							1	1
Alcedinidae	<i>*Dacelo novaeguineae</i>	Laughing Kookaburra	-	-	1							1
Anatidae	<i>Anas superciliosa</i>	Pacific Black Duck	-	-						2		2
Artamidae	<i>Artamus cyanopterus</i>	Dusky Woodswallow	-	-						1		1
Artamidae	<i>Strepera versicolor</i>	Grey Currawong	-	-		14				4		18
Cacatuidae	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU				13	3	78	16	110
Cacatuidae	<i>Zanda baudinii</i>	Baudin's Cockatoo	EN	EN				2				2
Cacatuidae	<i>Zanda latirostris</i>	Carnaby's Cockatoo	EN	EN						40	10	50
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckooshrike	-	MA						2		2
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu	-	-		2				1		3
Climacteridae	<i>Climacteris rufus</i>	Rufous Treecreeper	-	-	1							1
Columbidae	<i>Phaps elegans</i>	Brush Bronzewing	-	-		2						2
Corvidae	<i>Corvus coronoides</i>	Australian Raven	-	-	2	16						18
Cuculidae	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	-	MA	1	1						2
Maluridae	<i>Malurus elegans</i>	Red-winged Fairywren	-	-		22						22



Family	Scientific Name	Common Name	Conservation Status		Call	Camera trap	Digging	Foraging evidence	Scat	Sighting	Sighting - overhead	Total
			State	Common wealth								
Meliphagidae	<i>Acanthorhynchus superciliosus</i>	Western Spinebill	-	-		1				2		3
Meliphagidae	<i>Anthochaera lunulata</i>	Western Wattlebird	-	-	1							1
Meliphagidae	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	-	-						1		1
Pachycephalidae	<i>Pachycephala fuliginosa</i>	Western Whistler	-	-						1		1
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler	-	-	1							1
Pardalotidae	<i>Pardalotus punctatus</i>	Spotted Pardalote	-	-		1						1
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote	-	-	2							2
Petroicidae	<i>Eopsaltria griseogularis</i>	Western Yellow Robin	-	-		4						4
Petroicidae	<i>Petroica boodang</i>	Scarlet Robin	-	-		1				1		2
Petroicidae	<i>Quoyornis georgianus</i>	White-breasted Robin	-	-		1						1
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth	-	-						1		1
Psittaculidae	<i>Barnardius zonarius</i>	Australian Ringneck	-	-						2		2
Psittaculidae	<i>Platycercus icterotis</i>	Western Rosella	-	-						1		1
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail	-	-	1	1						2
Turnicidae	<i>Turnix varius</i>	Painted Buttonquail	-	-		5						5
<b>Mammals</b>												
Canidae	* <i>Vulpes vulpes</i>	Red Fox	-	-		1						1
Dasyuridae	<i>Antechinus flavipes leucogaster</i>	Yellow-footed Antechinus, Mardo	-	-		563						563
Dasyuridae	<i>Dasyurus geoffroii</i>	Chuditch	VU	VU		52						52
Dasyuridae	<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD	-		24						24
Leporidae	* <i>Oryctolagus cuniculus</i>	Rabbit	-	-		3						3
Macropodidae	<i>Macropus fuliginosus melanops</i>	Western Grey Kangaroo	-	-		24				1		25
Macropodidae	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-		27				8		35
Macropodidae	<i>Setonix brachyurus</i>	Quokka	VU	VU		18						18
Muridae	* <i>Rattus rattus</i>	Black Rat	-	-		8						8
Peramelidae	<i>Isoodon fusciventer</i>	Quenda	P4	-		55	1					56



Family	Scientific Name	Common Name	Conservation Status		Call	Camera trap	Digging	Foraging evidence	Scat	Sighting	Sighting - overhead	Total
			State	Common wealth								
Phalangeridae	<i>Trichosurus vulpecula hypoleucus</i>	Common Brushtail Possum, Koomal	-	-		2						2
Suidae	* <i>Sus scrofa</i>	Pig	-	-		5	2		5			12
Tachyglossidae	<i>Tachyglossus aculeatus acanthion</i>	Short-beaked Echidna	-	-		31			3			34
<b>Reptiles</b>												
Carphodactylidae	<i>Underwoodisaurus milii</i>	Southern Barking Gecko	-	-						5		5
Elapidae	<i>Pseudonaja affinis</i>	Dugite	-	-		1						1
Gekkonidae	<i>Christinus marmoratus</i>	Marbled Gecko	-	-						2		2
Pygopodidae	<i>Aprasia pulchella</i>	Pretty Worm-lizard	-	-						1		1
Scincidae	<i>Cryptoblepharus buchananii</i>	Buchanan's Snake-eyed Skink	-	-		5				3		8
Scincidae	<i>Ctenotus labillardieri</i>	Red-legged Ctenotus	-	-						1		1
Scincidae	<i>Egernia kingii</i>	King's Skink	-	-		13						13
Scincidae	<i>Egernia napoleonis</i>	South-western Crevice-skink	-	-		41						41
Scincidae	<i>Tiliqua rugosa</i>	Bobtail	-	-		3				1		4
Varanidae	<i>Varanus gouldii</i>	Bungarra or Sand Goanna	-	-						1		1

\* = introduced species



## 4.4 Significant Fauna

Eight significant fauna taxa were recorded within the Survey Area during the field survey. These are listed below, and locations are presented in **Map 9** and **Appendix F**:

- Baudin's Cockatoo (*Zanda baudinii*) – EN (BC Act; EPBC Act), recorded two times within Jarrah-Marri Forest and Drainage Line habitats.
- Carnaby's Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act), recorded 50 times within Jarrah-Marri Forest and Drainage Line habitats.
- Forest Red-tailed Cockatoo (*Calyptorhynchus banksii naso*) – VU (BC Act; EPBC Act), recorded 110 times within Jarrah-Marri Forest and Drainage Line habitats.
- Chuditch (*Dasyurus geoffroyi*) – VU (BC Act; EPBC Act), recorded 52 times at 18 different locations within Jarrah-Marri Forest habitat (**Figure 1**). Spot analysis identified a minimum of 14 individuals occurring within the Survey Area. Chuditch spot analysis is presented in **Appendix G**.
- Quokka (*Setonix brachyurus*) – VU (BC Act; EPBC Act), recorded 18 times at six different locations within Jarrah-Marri Forest and Drainage Line habitats (**Figure 2**).
- Wambenger Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – CD (BC Act), recorded 24 times within Jarrah-Marri Forest habitat.
- Quenda (*Isodon fusciventer*) – P4 (DBCA), recorded 56 times within Jarrah-Marri Forest habitat.
- Western Brush Wallaby (*Notamacropus irma*) – P4 (DBCA), recorded 35 times within Jarrah-Marri Forest habitat.

Five significant fauna taxa were assessed as having a high likelihood of occurrence within the Survey Area:

- Woylie (*Bettongia penicillata ogilbyi*) - CR, EN (BC Act; EPBC Act).
- Numbat (*Myrmecobius fasciatus*) – EN (BC Act; EPBC Act).
- Peregrine Falcon (*Falco peregrinus*) – OS (DBCA).
- Western False Pipistrelle (*Falsistrellus mackenziei*) – P4 (DBCA).
- Dell's Ctenotus (*Ctenotus delli*) – P4 (DBCA).

Three significant fauna taxa were assessed as having a medium likelihood of occurring within the Survey Area:

- Malleefowl (*Leipoa ocellata*) – VU (BC Act; EPBC Act).
- Rakali (*Hydromys chrysogaster*) – P4 (DBCA).
- Southern Death Adder (*Acanthophis antarcticus*) – P4 (DBCA).

The complete results of the significant fauna likelihood of occurrence assessment including justification for the assessment outcome for each taxon is provided in **Table 10**.





**Figure 1: Chuditch recorded by camera trap 5890-CAM-36-EW within Jarrah-Marri Forest (-32.4526566, 116.0859871).**



**Figure 2: Quokka recorded by camera trap 5937-CAM-13-PW within Blackbutt Forest (-32.47335379, 116.1646422).**



**Table 10: Significant fauna likelihood of occurrence within the Survey Area**

Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
<b>Birds</b>						
Acanthizidae	<i>Aphelocephala leucopsis</i> Southern Whiteface	-	VU	Sparse open forest/woodland; inland scrubs e.g. mallee, mulga cypress pine; saltbush, dead trees, stumps, black box/lignum flats (Pizzey and Knight, 2001).	No nearby records identified.	Low
						No nearby records and limited suitable habitat within the Survey Area.
Accipitridae	<i>Elanus scriptus</i> Letter-winged Kite	P4	-	Open country and grasslands of arid and semi-arid interior (Morcombe, 2003).	No DBCA records, one record from literature 10 km north of the Survey Area in 2011 (GHD, 2012).	Low
						No suitable habitat within the Survey Area.
Anatidae	<i>Oxyura australis</i> Blue-billed Duck	P4	-	Densely vegetated freshwater lakes, swamps, dams (Morcombe, 2003).	Eighteen DBCA records within 20 km of the Survey Area, including six records 13 km west of the Survey Area in 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.
Ardeidae	<i>Botaurus poiciloptilus</i> Australasian Bittern	EN	EN	Freshwater wetlands with heavy vegetation, shrubbery, reedbeds, sedges (Morcombe, 2003).	No nearby records identified.	Low
						No nearby records, limited suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Atrichornithidae	<i>Atrichornis clamosus</i> Noisy Scrubbird	EN	EN	Dense heaths, rushes, tall sedges, under stunted trees in coastal hills, coastal swamps (Morcombe, 2003).	One undated historical DBCA record 19 km south of the Survey Area (DBCA, 2023c).	Low No recent nearby records and limited suitable habitat within the Survey Area. Individuals were translocated to the northern Jarrah forest in 1997 – 2003 but are now considered locally extinct (GHD, 2021b, 2021a).
Cacatuidae	<i>Calyptorhynchus banksii naso</i> Forest Red-tailed Black Cockatoo	VU	VU	Tall eucalypt forest, woodland, feeds on seeds of large-fruited eucalypts (Morcombe, 2003).	352 DBCA records within 20 km of the Survey Area, including one record within 600 m east of the Survey Area in 2005 (DBCA, 2023c).	Recorded Recorded during the current survey.
Cacatuidae	<i>Zanda baudinii</i> Baudin's Cockatoo	EN	EN	Forests, farm trees; feeds on Marri and wood-boring insects (Morcombe, 2003).	153 DBCA records within 20 km of the Survey Area, including 300 m west of the Survey Area in 2005 (DBCA, 2023c).	Recorded Recorded during the current survey.
Cacatuidae	<i>Zanda latirostris</i> Carnaby's Cockatoo	EN	EN	Forests, woodlands, heathlands, farms; feeds on Banksias and Hakeas, pine plantations (Morcombe, 2003).	717 DBCA records within 20 km of the Survey Area, including three records within the Survey Area in 2007, 2008 and 2009 (DBCA, 2023c).	Recorded Recorded during the current survey.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Cacatuidae	<i>Cacatua pastinator pastinator</i> Muir's Corella	CD	-	Wheat and sheep farming country, with remnant native forest, woodland, scrub, sandplain heath (Pizzey and Knight, 2001).	Two DBCA records 8 km north of the Survey Area (DBCA, 2023c).	Low
						Restricted to the surrounding areas of Lake Muir.
Charadriidae	<i>Charadrius leschenaultii</i> Greater Sand Plover	VU	VU, MI, MA	Tidal flats, beaches (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Charadriidae	<i>Charadrius mongolus</i> Lesser Sand Plover	EN	EN, MI, MA	Tidal flats (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedeidae	<i>Diomedea exulans</i> Wandering Albatross	VU	VU, MI, MA	Breeds on South Georgia and sub-Antarctic Island of Indian Ocean with circumpolar distribution in Southern Ocean (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedeidae	<i>Diomedea epomophora</i> Southern Royal Albatross	VU	VU, MI, MA	Breeds on NZ sub-Antarctic islands with circumpolar distribution in Southern Ocean south, rare off Southwestern Australia (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Diomedidae	<i>Thalassarche impavida</i> Campbell Island Albatross	VU	VU, MI, MA	Oceanic (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedidae	<i>Thalassarche cauta steadi</i> White-capped Albatross	VU	VU, MI, MA	Inshore and offshore waters (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedidae	<i>Thalassarche melanophris</i> Black-browed Albatross	EN	VU, MI, MA	Oceanic (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedidae	<i>Diomedea sanfordi</i> Northern Royal Albatross	EN	EN, MI, MA	Breeds on Chatham Island, some NZ sub-Antarctic Islands and South Island, NZ with circumpolar distribution mostly in Pacific sector of Southern Ocean (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Diomedidae	<i>Diomedea dabbenena</i> Tristan Albatross	CR	EN, MI, MA	Oceanic (Pizzey and Knight, 2001).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Diomedeidae	<i>Diomedea amsterdamensis</i> Amsterdam Albatross	CR	EN, MI, MA	Oceanic (Pizzey and Knight, 2001).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Falconidae	<i>Falco hypoleucos</i> Grey Falcon	VU	VU	Open plains with treed watercourses in arid inland (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low
						No nearby records, and no suitable habitat within the Survey Area.
Falconidae	<i>Falco peregrinus</i> Peregrine Falcon	OS	-	Most environments with suitable nest sites: cliff faces preferred, including man-made ones, commonly uses stick nests built by other species (Menkhorst <i>et al.</i> , 2019).	Eleven DBCA records within 20 km of the Survey Area, including 7.2 km north of the Survey Area in 2010 (DBCA, 2023c).	High
						Records <10 km from the Survey Area and may use the Survey Area for hunting.
Laridae	<i>Sternula nereis</i> Fairy Tern	VU	VU	Coastal, bays, inlets, beaches, salt ponds and lakes (Morcombe, 2003).	Four DBCA records 17.6 km east of the Survey Area between 1990 to 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Megapodiidae	<i>Leipoa ocellata</i> Malleefowl	VU	VU	Unburned mallee and woodland with abundant litter and low scrub (Morcombe, 2003).	Eighteen DBCA records within 18 km of the Survey Area, including a 2018 sighting of an individual 7 km east of the Survey Area, and six records within the 500 m of the Survey Area as recently as 2004 (DBCA, 2023c).	Medium Outside known distribution, however, taxon has been sighted near the Survey Area. Furthermore, individuals were translocated to the nearby Dryandra Woodland, 67 km southeast of the Survey Area, within the last five years (Traill, 2019).
Procellariidae	<i>Macronectes halli</i> Northern Giant Petrel	MI	VU, MI, MA	Sheltered estuaries, salt marsh lagoons, salt lakes, salty edges of waterways, brackish pools, claypans (Morcombe, 2003).	No nearby records identified.	Low No nearby records, and no suitable habitat within the Survey Area.
Procellariidae	<i>Macronectes giganteus</i> Southern Giant Petrel	MI	EN, MI, MA	Southern oceans, bays, harbours (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low No nearby records, and no suitable habitat within the Survey Area.
Rostratulidae	<i>Rostratula australis</i> Australian Painted Snipe	EN	EN, MA	Well vegetated surrounds and shallows of wetlands (Morcombe, 2003).	No nearby records identified.	Low No nearby records, and no suitable habitat within the Survey Area.
Scolopacidae	<i>Tringa brevipes</i> Grey-tailed Tattler	MI, P4	MI, MA	Coastal, tidal flats, rocky shorelines (Menkhorst <i>et al.</i> , 2019).	No nearby records identified.	Low No nearby records, and no suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Scolopacidae	<i>Calidris canutus</i> Red Knot	EN	EN, MI, MA	Coastal, extensive firm tidal flats (Menkhorst <i>et al.</i> , 2019).	Two DBCA records 17.6 km west of the Survey Area in 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.
Scolopacidae	<i>Calidris ferruginea</i> Curlew Sandpiper	CR	CR, MI, MA	Inter-tidal mudflats of estuaries, lagoons, mangrove channels, dams, floodwaters, flooded saltbush surrounds of inland lakes (Morcombe, 2003).	Two DBCA records 17.6 km west of the Survey Area in 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.
Scolopacidae	<i>Calidris tenuirostris</i> Great Knot	CR	CR, MI, MA	Coastal, tidal flats, beaches (Menkhorst <i>et al.</i> , 2019).	Four DBCA records 17.3 km west of the Survey Area between 1990 to 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.
Scolopacidae	<i>Limosa lapponica menzbieri</i> Bar-tailed Godwit	CR	CR	Coastal tidal flats (Menkhorst <i>et al.</i> , 2019).	Two DBCA records 17.6 km west of the Survey Area in 1991 (DBCA, 2023c).	Low
						No suitable habitat within the Survey Area.
<b>Mammals</b>						
Dasyuridae	<i>Dasyurus geoffroii</i> Chuditch	VU	VU	Sclerophyll forest or drier woodland, heath, and mallee shrubland (Van Dyck and Strahan, 2008).	190 DBCA records within 20 km of the Survey Area, of which 31 are within 500 m of the Survey Area (DBCA, 2023c).	Recorded
						Recorded during the current survey.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Dasyuridae	<i>Phascogale calura</i> Red-tailed Phascogale	CD	VU	Allocasuarina woodlands with hollow-containing eucalypts e.g. <i>Eucalyptus wandoo</i> and <i>Gastrolobium</i> spp.; prefers vegetation not burnt for at least 20 years (Van Dyck and Strahan, 2008).	No nearby records identified.	Low No nearby records.
Dasyuridae	<i>Phascogale tapoatafa wambenger</i> Wambenger Brush-tailed Phascogale	CD	-	Mature rough-barked trees, large logs, dead standing trees (Van Dyck and Strahan, 2008).	Twenty DBCA records within 20 km of the Survey Area, including 650 m south of the Survey Area in 2018 (DBCA, 2023c).	Recorded Recorded during the current survey.
Macropodidae	<i>Setonix brachyurus</i> Quokka	VU	VU	Dense wet ground cover in forest or swampy flats (Van Dyck and Strahan, 2008).	Sixty-six DBCA records within 15 km of the Survey Area, including four records within the 500 m of the Survey Area in 2017 (DBCA, 2023c).	Recorded Recorded during the current survey.
Macropodidae	<i>Notamacropus irma</i> Western Brush Wallaby	P4	-	Open forest and woodland, open seasonally wet flats (Van Dyck and Strahan, 2008).	Forty DBCA records within 20 km of the Survey Area, including one record 160 m from the Survey Area in 1999 (DBCA, 2023c).	Recorded Recorded during the current survey.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Macropodidae	<i>Notamacropus eugenii derbianus</i> Tamar Wallaby	P4	-	Coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland (Van Dyck and Strahan, 2008).	One DBCA record 20 km northwest of the Survey Area in 2015 (DBCA, 2023c).	Low
						Infrequently recorded in the locality despite reasonable previous search effort.
Muridae	<i>Hydromys chrysogaster</i> Rakali	P4	-	Permanent fresh to brackish water bodies (Van Dyck and Strahan, 2008).	Seven DBCA records within 20 km of the Survey Area, including 12 km north of the Survey Area in 2014 (DBCA, 2023c).	Medium
						Recorded less than 15 km from the Survey Area, limited habitat within the Survey Area.
Myrmecobiidae	<i>Myrmecobius fasciatus</i> Numbat, Walpurti	EN	EN	Jarrah forests, Wandoo woodlands; requires hollow logs and branches for shelter and termites for food (Van Dyck and Strahan, 2008).	Thirty-six records within 20 km of the Survey Area, including 5 km northwest of the Survey Area in 1997, and two records 14 km north in 2013 (DBCA, 2023c).	High
						Several recent, nearby records and suitable habitat within the Survey Area. While only known from two naturally occurring populations located at Dryandra Woodland and Perup Nature Reserve, Numbats appear capable of dispersing away from sites where they have been released (DSEWPac, 2011). Dryandra Woodland is 67 km southeast of the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Commonwealth			
Peramelidae	<i>Isodon fusciventer</i> Quenda	P4	-	Sandy soils with dense heathy vegetation (Van Dyck and Strahan, 2008).	134 DBCA records within 20 km of the Survey Area, including one record within 300 m south of the Survey Area in 2012 (DBCA, 2023c).	Recorded
						Recorded during the current survey.
Potoroidae	<i>Bettongia penicillata ogilbyi</i> Brush-tailed Bettong, Woylie	CR	EN	Areas dominated by <i>Gastrolobium</i> thickets (Van Dyck and Strahan, 2008).	Nine DBCA records within 11 km of the Survey Area, including one record within 80 m of the Survey Area in 2010 (DBCA, 2023c).	High
						Previously recorded within 80 m of the Survey Area, and suitable habitat within the Survey Area.
Pseudocheiridae	<i>Pseudocheirus occidentalis</i> Western Ringtail Possum	CR	CR	<i>Agonis</i> forest and woodland, Tuart Forest with <i>Agonis</i> mid storey (Van Dyck and Strahan, 2008).	Two DBCA records within 13 km of the Survey Area, including 11 km north in 1991 and 12.8 km south in 2020 (DBCA, 2023c).	Low
						Survey Area is outside of the taxon's distribution. Recent nearby records may be associated with nearby translocations at the Lane Poole Reserve and other sites.
Vespertilionidae	<i>Falsistrellus mackenziei</i> Western False Pipistrelle	P4	-	Mature Karri forests, wetter stands of Jarrah and Tuart, and woodlands on Swan Coastal Plain (Van Dyck and Strahan, 2008).	294 DBCA records within 20 km of the Survey Area, including within 500 m south in 2011 (DBCA, 2023c).	High
						Records within 500 m of the Survey Area, and suitable habitat within the Survey Area.



Family	Scientific Name and Common Name	Conservation Status		Habitat	Previous Records	Likelihood of Occurrence
		State	Common wealth			
<b>Reptiles</b>						
Elapidae	<i>Acanthophis antarcticus</i> Southern Death Adder	P3	-	Habitats range from rainforest to shrublands and heath (Wilson and Swan, 2021).	Four DBCA records within 20 km of the Survey Area, including 8.2 km northeast in 1982 (DBCA, 2023c).	Medium
						Record <10 km from the Survey Area, and suitable habitat within the Survey Area.
Scincidae	<i>Ctenotus delli</i> Dell's Ctenotus	P4	-	Restricted to the Darling range; Jarrah and Marri woodlands over shrubs on lateritic, sandy, and clay soils (Wilson and Swan, 2021).	Thirteen DBCA records within 20 km of the Survey Area, including 1.6 km south in 2009 and 2010 (DBCA, 2023c).	High
						One record 1.6 km from the Survey Area, and suitable habitat within the Survey Area.



## 5.0 Discussion

### 5.1 Fauna Habitat

The two naturally occurring fauna habitats recorded within the Survey Area, Jarrah-Marri Forest, and Drainage Line, are typical of the Jarrah Forest bioregion. These habitats are consistent with the habitats previously recorded in studies in the region (**Appendix B**) and extend outside the Survey Area to form larger ecosystems which are widespread within the surrounding region. Connectivity at a regional level is relatively intact, as the Survey Area occurs within a landscape that retains large areas of natural vegetation. At a local level, habitats within and surround the immediate vicinity of the Survey Area are fragmented due to mining activities. More than 218.2 ha (23.5%) of the Survey Area consists of patches of remnant vegetation that have been cleared on all sides and lack connectivity to the broader region.

The Drainage Line habitat provides the most value to significant fauna and the overall fauna assemblage within the Survey Area. It is core habitat for all three targeted fauna taxa and often has surface water present which is a vital resource for the local fauna assemblage. A wide variety of fauna taxa will use this habitat as a dispersal corridor due to the linear nature of the habitat and the presence of dense understory vegetation. Drainage Lines require relatively uninterrupted connectivity to allow fauna movement and dispersal, therefore, the Drainage Line habitat within the Survey Area is important to maintain this ecosystem function.

Both habitats contain tree hollows and hollow logs which are important microhabitats for hollow-dependent species. Hollow logs are often used by Chuditch for denning. The canopy of both habitats comprises valuable foraging and roosting habitat for birds such as black cockatoos, and the multitude of microhabitats (leaf litter, hummocks, woody debris, logs, and stones) provide refuge and feeding opportunities for a wide array of fauna species, particularly herpetofauna and small mammals.

The Rehabilitation habitat currently provides little to no habitat value for targeted fauna taxa because it is still young and occupied by seedlings. It is restricted to areas adjacent to mining activities within and near the Survey Area. It is likely that the value of this habitat will increase with age as vegetation matures.

### 5.2 Significant Fauna

#### 5.2.1 Recorded within the Survey Area

##### **Baudin's Cockatoo (*Zanda baudinii*) – EN (BC Act; EPBC Act)**

The Baudin's Cockatoo is distributed through the south-west WA from the northern Darling Range and adjacent far east of the Swan Coastal Plain (south of the Swan River), south to Bunbury and across to Albany (Johnstone and Kirkby, 2011). The taxon rarely occurs near coastal communities north of Mandurah, and rarely occurs north of the Swan River (Johnstone and Storr, 1998; Johnstone and Kirkby, 2008). The species forages primarily in eucalypt forest, where it feeds on Marri seeds, flowers, nectar, and buds. They also feed on a wide range of seeds of *Eucalyptus* spp., *Banksia* spp., *Hakea* spp., and *Pinus* spp., as well as fruiting apples and pears and beetle larvae from under the bark of trees (Johnstone and Storr, 1998; Johnstone and Kirkby, 2008). Baudin's Cockatoo forages at all levels of the forest from the canopy to the ground, often feeding in the understorey on proteaceous trees and shrubs (especially *Banksia*) and in orchard trees within the canopy and on fallen fruit.

Secondary evidence of Baudin's Cockatoo was recorded during the survey, however direct sightings did not occur. The species can be cryptic due to its similarity in appearance to Carnaby's Cockatoos, and it can often be misidentified as such (Birdlife Australia, 2016). Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the Baudin's Cockatoo because of their value for breeding, roosting, and foraging. The taxon is likely to use the Survey Area for nesting and raising chicks in the breeding season and may use the habitats during the wintering season as core roosting and foraging habitat.



### **Carnaby's Cockatoo (*Zanda latirostris*) – EN (BC Act; EPBC Act)**

Carnaby's Cockatoos nest in the hollows of a wide range of *Eucalyptus* trees, with a preference for smooth barked trees such as Salmon Gum (*E. salmonophloia*) and Wandoo (*E. wandoo*) but also rough barked *Eucalyptus* and *Corymbia* trees such as Red Morrell (*E. longicornis*), York Gum (*E. loxophleba*), Marri (*Corymbia calophylla*) and Tuart (*E. gomphocephala*) (Johnstone and Storr, 1998). Carnaby's Cockatoos feed on seeds, nuts, and flowers of a variety of native and exotic plants, including *Banksia* spp., Pine trees (*Pinus* spp.), Marri, Jarrah (*E. marginata*), *Grevillea* spp., *Allocasuarina* spp., and *Hakea* spp. (Shah, 2006).

The Carnaby's Cockatoo was recorded within the Survey Area during the survey, often in large flocks of up to 40 individuals at a time. Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the Carnaby's Cockatoo because of their value for breeding, roosting, and foraging. The taxon is likely to use the Survey Area for nesting and raising chicks in the breeding season and may occasion the habitats during the non-breeding season for roosting and foraging.

### **Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – VU (BC Act; EPBC Act)**

The Forest Red-tailed Black Cockatoo is distributed through the southwest of WA from Gingin through the Darling Ranges to the south-west from Bunbury to Albany. The Forest Red-tailed Black Cockatoo inhabits dense Jarrah, Karri (*E. diversicolor*), and Marri forests and feeds primarily on the fruit of Marri and Jarrah trees (Johnstone and Kirkby, 1999).

The Forest Red-tailed Black Cockatoo was recorded in large numbers within the Survey Area, where it uses Jarrah-Marri Forest and Drainage Line habitats for foraging and roosting. Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the Forest Red-tailed Black Cockatoo because of their value for breeding, roosting, and foraging. The taxon is likely to use the Survey Area for nesting and raising chicks during the breeding season and may use the habitats during the wintering season as core roosting and foraging habitat.

### **Chuditch (*Dasyurus geoffroii*) – VU (BC Act; EPBC Act)**

The Chuditch inhabits areas dominated by sclerophyll forest or drier woodland, heath, and mallee shrubland (Van Dyck and Strahan, 2008). The species is generally highly mobile and uses bush remnants as corridors (Woinarski, Burbidge and Harrison, 2012). The Chuditch is a largely nocturnal animal, feeding on a carnivorous diet of mammals, birds, lizards, and frogs. They have been recorded foraging during the day such as during the breeding season or when cold and wet weather restricts their nocturnal movements (Van Dyck and Strahan, 2008). Most diurnal denning sites in sclerophyll forest consist of hollow logs or earth burrows, although Quenda nests and hollow tree bases may be used (Van Dyck and Strahan, 2008). The Chuditch was abundant prior to European settlement, and it is now largely restricted to the south-west of Western Australia, with small numbers in the Midwest, Wheatbelt and South Coast Regions (DBCA, 2017a).

The Chuditch was recorded by camera trap during the current survey, primarily within the Jarrah-Marri Forest habitat. Chuditch records were relatively evenly spread throughout the Survey Area. Of the 18 camera locations at which Chuditch was recorded, one camera (5890-CAM-36-EW) recorded three individuals, two cameras (5890-CAM-59-EW and 5890-CAM-75-EW) recorded two individuals, and the remaining 15 cameras recorded one individual each.

The Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the Chuditch because of their value for denning and foraging. The Drainage Line habitat is of particular importance as it provides water sources and dispersal corridors. A breeding population of Chuditch was previously recorded in the northwest of the Survey Area (Way, 2013) and it is likely that this population continues to persist.

### **Quokka (*Setonix brachyurus*) – VU (BC Act; EPBC Act)**

The Quokka is a small macropod found on two offshore islands (Rottnest and Bald Island) and several mainland sites in south-west Western Australia (Van Dyck and Strahan, 2008; DBCA, 2017a). The distribution of the Quokka is severely fragmented and there is little to no migration between populations. Mainland populations of the Quokka favour dense riparian vegetation; however, they also make use of heath and shrubland, swamp Peppermint, and swampy shrublands as well as Karri Forest regrowth (Van Dyck and Strahan, 2008; DBCA, 2017a). The populations of Quokkas on the



mainland are largely restricted to areas of high rainfall of 1,000 mm or more (Van Dyck and Strahan, 2008).

The Quokka was recorded during the survey by camera trap within the Drainage Line and Jarrah-Marri Forest habitats. The Drainage Line habitat constitutes core habitat for the Quokka due to the dense understorey vegetation. The Jarrah-Marri habitat constitutes supporting habitat for the taxon. A breeding population of Quokka has previously been recorded in the northeast of the Survey Area (GHD, 2021b) and it is likely that the individuals recorded during the current survey are part of the same population.

#### **Wambenger Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – CD (BC Act)**

The Wambenger Brush-tailed Phascogale is a rat-sized, arboreal, carnivorous marsupial, characterised by a tuft of black hair on its tail (Van Dyck and Strahan, 2008). Typically, the species has been observed in dry sclerophyll forests and open woodlands containing hollow-bearing trees with a sparse ground cover. The distribution of the Wambenger Brush-tailed Phascogale is widespread but fragmented, stemming from habitat destruction and predation by cats and foxes (Van Dyck and Strahan, 2008). In the south-west of Australia, the species is thought to have declined within the last 10 years given the lower number of records despite an increase in survey effort (Van Dyck and Strahan, 2008).

The Wambenger Brush-tailed Phascogale was recorded during survey the by camera trap within the Jarrah-Marri Forest habitat. The Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for this species because of their value for shelter, foraging, and dispersal.

#### **Quenda (*Isoodon fusciventer*) – P4 (DBCA)**

Quenda are nocturnal and omnivorous, feeding on insects, spiders, worms, and plant roots and are typically found in dense vegetation, including wetland fringes, forest, woodland, shrub, and heath communities (Van Dyck and Strahan, 2008; DBCA, 2012). They are found only in the southwestern corner of Western Australia, where these regions generally display a combination of sandy soils with dense heathy vegetation in the lower stratum (Van Dyck and Strahan, 2008; DBCA, 2012).

The Quenda was recorded during the survey by camera trap and diggings. Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the taxon because of their value for shelter, foraging, and dispersal. The Drainage Line habitat is of particular importance as provides water sources and dense understorey for shelter.

#### **Western Brush Wallaby (*Notamacropus irma*) – P4 (DBCA)**

The Western Brush Wallaby occurs in the south-west of Western Australia and closely resembles a larger kangaroo (Van Dyck and Strahan, 2008). Its preferred habitat consists of open forest or woodland, particularly favouring open and seasonally wet flats with low grasses and open scrubby thickets (Van Dyck and Strahan, 2008). The Western Brush Wallaby was a common species during the early days of settlement, however, ongoing clearing and fragmentation of bushland in the Wheatbelt as well as the dramatic increase in fox numbers within the south-west of Western Australia has led to this species' decline (Van Dyck and Strahan, 2008).

The Western Brush Wallaby was recorded during the survey by both camera trap and direct sighting. Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the taxon because of their value for foraging and dispersal. The Drainage Line habitat is of particular importance as the taxon may rely on the seasonal wet flats within this habitat for the grasses and scrubby thickets for foraging and shelter.

## **5.2.2 High likelihood of occurrence within the Survey Area**

#### **Woylie (*Bettongia penicillata ogilbyi*) – CR (BC Act); EN (EPBC Act)**

The Woylie is known primarily from three remnant populations at Dryandra Woodland, Tutanning Nature Reserve, and the Kingston/Perup Forest, all characterised by the presence thickets of the plant genus *Gastrolobium* (Van Dyck and Strahan, 2008). Fox predation is considered the driving factor in the Woylie's distribution contraction, with habitat destruction and disease also impacting populations to be rare and scattered (Van Dyck and Strahan, 2008). The Woylie primarily eats fungus and supplements its diet with seed kernels of the Desert Quandong (*Santalum acuminatum*), various tubers, bulbs, and invertebrates (Van Dyck and Strahan, 2008).



Within the Survey Area, the Jarrah-Marri Forest and Drainage Line habitats constitute core habitat for the Woylie because of their value for shelter and foraging. The Drainage Line habitat is of particular significance to the taxon as this habitat contains valuable water sources and dense thickets which provide refuge from predators.

#### **Numbat (*Myrmecobius fasciatus*) – EN (BC Act; EPBC Act)**

The Numbat is a small marsupial with a distinctive striped appearance that formerly occupied a range of habitats across the southern half of Australia (DBCA, 2017b). The Numbat is now restricted to a few populations of Jarrah Forest and Wandoo woodland. Fox predation has caused a significant decline for the species, bringing their total numbers to as low as a few hundred in the 1980s (Van Dyck and Strahan, 2008). Numbat activity changes throughout the year, corresponding to termite activity in the upper layer of the soil. In winter, Numbat activity peaks during the middle of the day, while in summer activity peaks during the morning and afternoon (Van Dyck and Strahan, 2008; DBCA, 2017a). Numbats feed near the cover of shrubs, hollows, and burrows, which they use as refuge from predators and as resting places during the day (DBCA, 2017b).

A known population of Numbat occurs at Dryandra Woodland, located 67 km southeast of the Survey Area and, more importantly, Numbats have been recorded near the Survey Area and in vegetation that maintains connectivity to the Survey Area as recently as 2013. Numbats also appear to be capable of dispersing away from sites where they have been released (DSEWPaC, 2011). Jarrah-Marri Forest habitat constitutes core habitat for the taxon due to the presence of hollow logs and termites.

#### **Peregrine Falcon (*Falco peregrinus*) – OS (DBCA)**

The Peregrine Falcon is an uncommon but wide-ranging bird across Australia (Barrett *et al.*, 2003). It occurs along rivers and ranges as well as wooded watercourses and lakes. It nests primarily on cliffs, granite outcrops and quarries, although it is also known to occupy existing raptor and corvid stick nests (Menkhorst *et al.*, 2019). The diet of the Peregrine Falcon has been well studied and primarily includes flocking species such as parrots, pigeons and on the east coast, European Starlings (Olsen and Fuentes, 2008).

Peregrine Falcon was not observed during the survey; however, this species has been previously recorded within the region flying over similar Jarrah-Marri Forest (GHD, 2021a). In the absence of cliff ledges, Peregrine Falcons will use trees for nesting (Morcombe, 2003). The Jarrah-Marri Forest within the Survey Area and surrounds may provide suitable nesting and hunting habitat to support this species.

#### **Western False Pipistrelle (*Falsistrellus mackenziei*) – P4 (DBCA)**

The Western False Pipistrelle is endemic to the south-western region of Western Australia, making use of high rainfall forests dominated by Jarrah, Karri, Marri, and Tuart. The species is a specialist of tall mature forest, foraging within the canopy and roosting in tree hollows (Van Dyck and Strahan, 2008).

Western False Pipistrelle was not targeted during the surveys and so presence was not detected; however, this taxon is widely documented within the area and the Survey Area contains core Jarrah-Marri Forest and Drainage Line habitat which provides high value foraging habitat and roost sites which are associated with hollows in *Eucalyptus* (Baker and Gynther, 2023).

#### **Dell's Ctenotus (*Ctenotus delli*) – P4 (DBCA)**

Dell's Ctenotus is endemic to the north Darling Range, south-western Australia, inhabiting dry sclerophyll forest on stony hills and ranges (Cogger, 2014).

This taxon may use the Jarrah-Marri Forest with lateritic clay substrate within the Survey Area which provides suitable foraging and breeding habitats.

### **5.2.3 Medium likelihood of occurrence within the Survey Area**

#### **Malleefowl (*Leipoa ocellata*) – VU (BC Act; EPBC Act)**

The Malleefowl is found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee or *Acacia*. A sandy substrate and abundance of leaf litter are required for breeding (DEE, 2018). Densities of the birds are generally greatest in areas of higher rainfall and on more fertile soils where habitats tend to be thicker and there is an abundance of food plants. Much of



the best habitat for Malleefowl has already been cleared or has been modified by grazing via Sheep, Cattle, Rabbits, and Goats (Benshemesh, 2007). The species nests in large mounds of dirt and leaf litter, up to five metres wide and one metre tall (Menkhorst *et al.*, 2019).

A Malleefowl was sighted 7 km east of the Survey Area in 2018, and six sightings were recorded within 500 m of the Survey Area as recently as 2004 (DBCA, 2023c). Furthermore, individuals were translocated to the nearby Dryandra Woodland, 67 km southeast of the Survey Area, within the last five years (Traill, 2019). The Jarrah-Marri Forest and Drainage Line habitats have the potential to support this species, though no evidence of foraging or nesting was recorded during the survey. Malleefowl are often cryptic and nest in areas of dense shrubland, making detection of the species difficult without LiDAR mapping of potential nesting mounds.

#### **Rakali (*Hydromys chrysogaster*) - P4 (DBCA)**

The Rakali (also known as the Water Rat) is a native rodent species that lives in burrows on the banks of rivers, lakes, and estuaries and is an opportunistic predator feeding on aquatic insects, fish, crustaceans, mussels, snails, frogs, birds' eggs, and water birds (Atkinson, Lund, and Morris, 2008). The species can be found in permanent water systems in Australia, New Guinea, and offshore islands, with a home range of approximately 19 ha in coastal wetlands and streams of south-western Australia, individuals will establish sedentary territories where resident male and female ranges will overlap (Van Dyck and Strahan, 2008).

This taxon may use Drainage Line habitat within the Survey Area. Drainage Line habitat constitutes core habitat for this species and the habitat within the survey area is important for connectivity.

#### **Southern Death Adder (*Acanthophis antarcticus*) – P4 (DBCA)**

The Southern Death Adder is found in Southwest and South Australia to Eastern and Central Queensland where, due to habitat destruction and altered fire regimes, populations are in decline (Cogger, 2014; Wilson and Swan, 2021). Habitats range from rainforest to shrublands and heath (Wilson and Swan, 2021).

The Survey Area falls within distribution of the Southern Death Adder and microhabitats within the Jarrah-Marri Forest and Drainage Line habitats have the potential to be used by the taxon for shelter and hunting.



## 6.0 Conclusion

Two naturally occurring fauna habitats were mapped within the Survey Area; Jarrah-Marri Forest and Drainage Line. The Drainage Line habitat provides the most value for targeted taxa as it is core habitat for Chuditch, Quokka, and Woylie. The Jarrah-Marri Forest also provides value for targeted taxa as core habitat for Chuditch and Woylie, and as supporting habitat for the Quokka. These habitats are typical of the Jarrah Forest region and are widespread outside of the Survey Area. A third habitat type, Rehabilitation, was mapped within the Survey Area but currently provides negligible value for targeted taxa because it is still young and occupied by seedlings. It is likely that the value of this habitat will increase with age as vegetation matures.

Two targeted taxa were recorded during the survey:

- The Chuditch was recorded 52 times and spot analysis identified a minimum of 14 individuals occurring within the Survey Area. The taxon was recorded in both the Jarrah-Marri Forest and Drainage Line habitats via camera trapping.
- The Quokka was recorded 18 times and was detected within both the Jarrah-Marri Forest and Drainage Line habitats via camera trapping.

The Woylie was not detected during the current survey; however, it has previously been recorded within 80 m of the Survey Area in 2010.

In addition to the two targeted fauna taxa, six significant taxa were recorded during the fauna survey within the Jarrah-Marri Forest and Drainage Line habitats:

- Baudin's Cockatoo – EN (BC Act; EPBC Act).
- Carnaby's Cockatoo – EN (BC Act; EPBC Act).
- Forest Red-tailed Cockatoo – VU (BC Act; EPBC Act).
- Wambenger Brush-tailed Phascogale – CD (BC Act).
- Quenda – P4 (DBCA).
- Western Brush Wallaby – P4 (DBCA).

A further five significant fauna taxa were assessed as having a high likelihood, three significant fauna taxa were assessed as having a medium likelihood, and 29 significant fauna taxa were assessed as having have a low likelihood of occurring within the Survey Area.

Five introduced taxa were recorded during the survey: Laughing Kookaburra (*Dacelo novaeguineae*), Red Fox (*Vulpes vulpes*), Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*), and Pig (*Sus scrofa*).



## 7.0 References

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## 8.0 Feedback

At SLR, we are committed to delivering professional quality service to our clients. We are constantly looking for ways to improve the quality of our deliverables and our service to our clients. Client feedback is a valuable tool in helping us prioritise services and resources according to our client needs.

To achieve this, your feedback on the team's performance, deliverables and service are valuable and SLR welcome all feedback via <https://www.slrconsulting.com/en/feedback>. We recognise the value of your time, and we will make a \$10 donation to our 2023 Charity Partner - Lifeline, for every completed form.





# Appendix A Maps

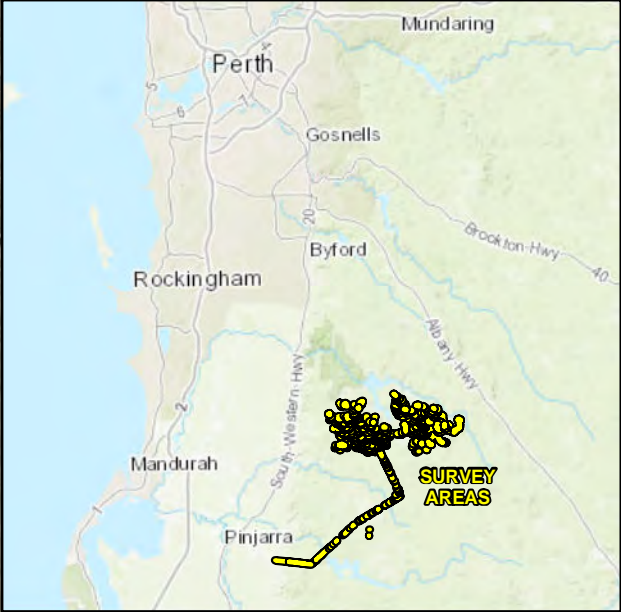
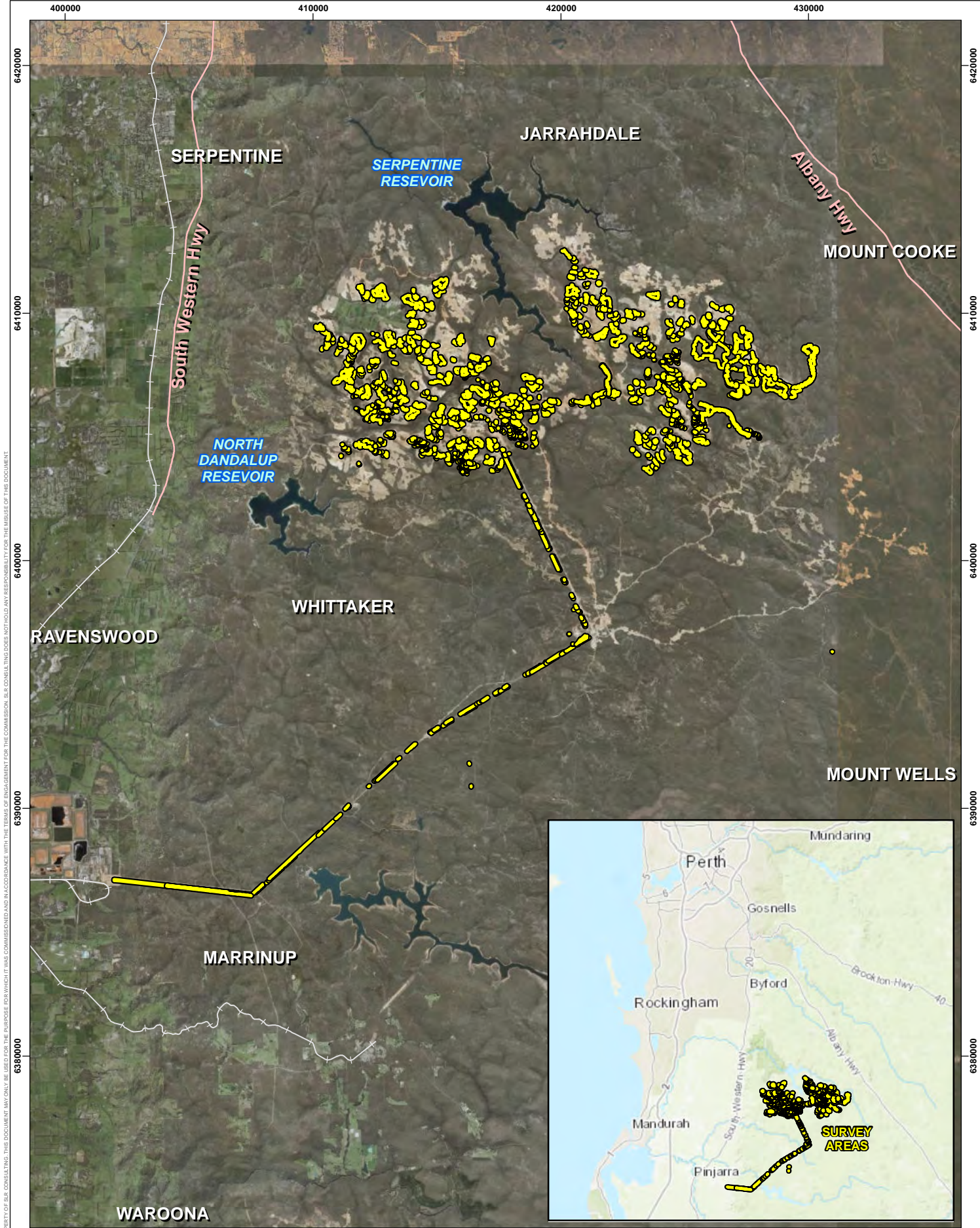
## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024



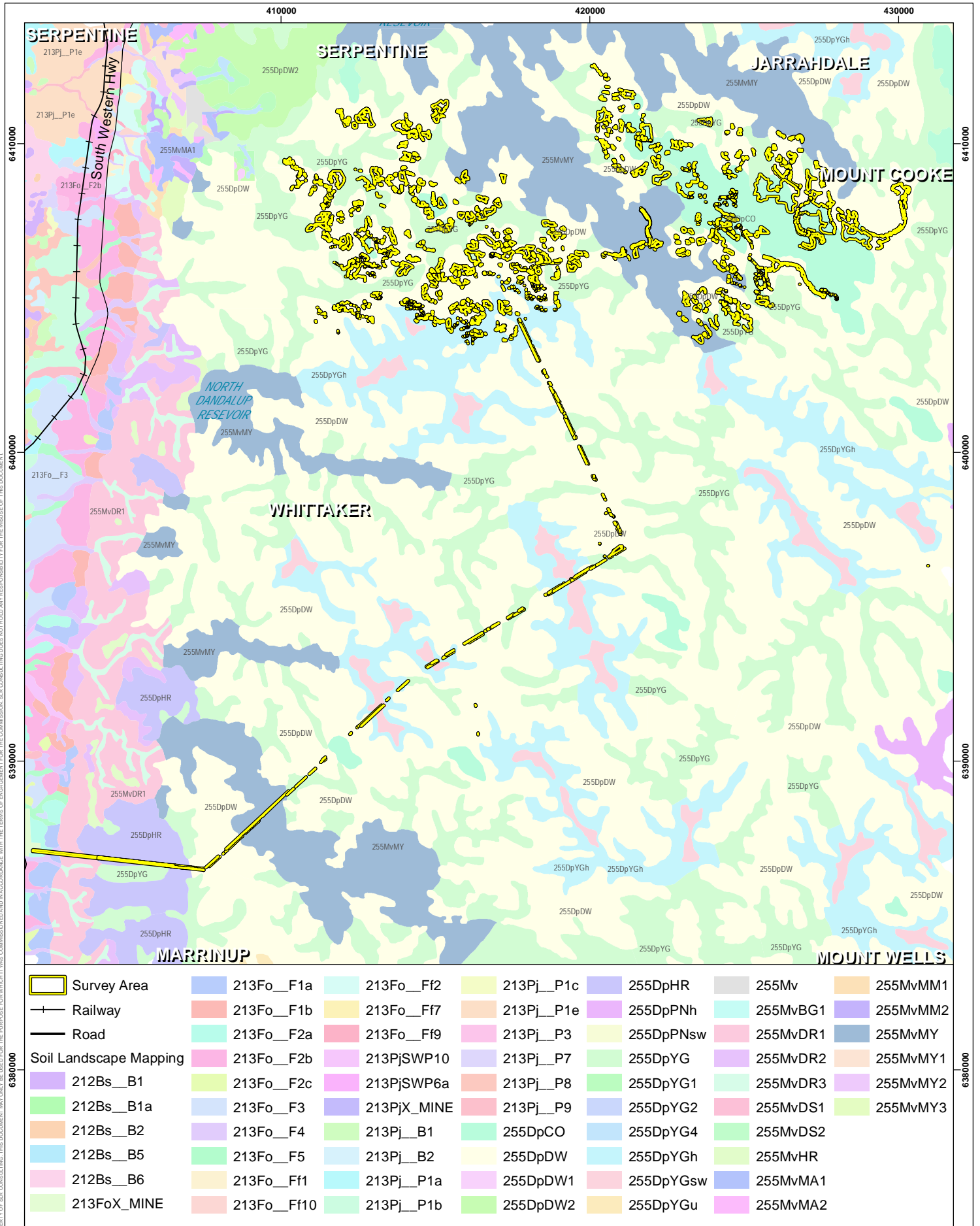
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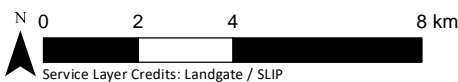
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Area  
 MAP 1

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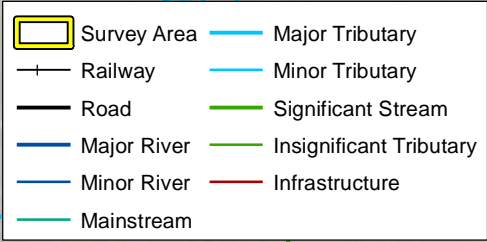
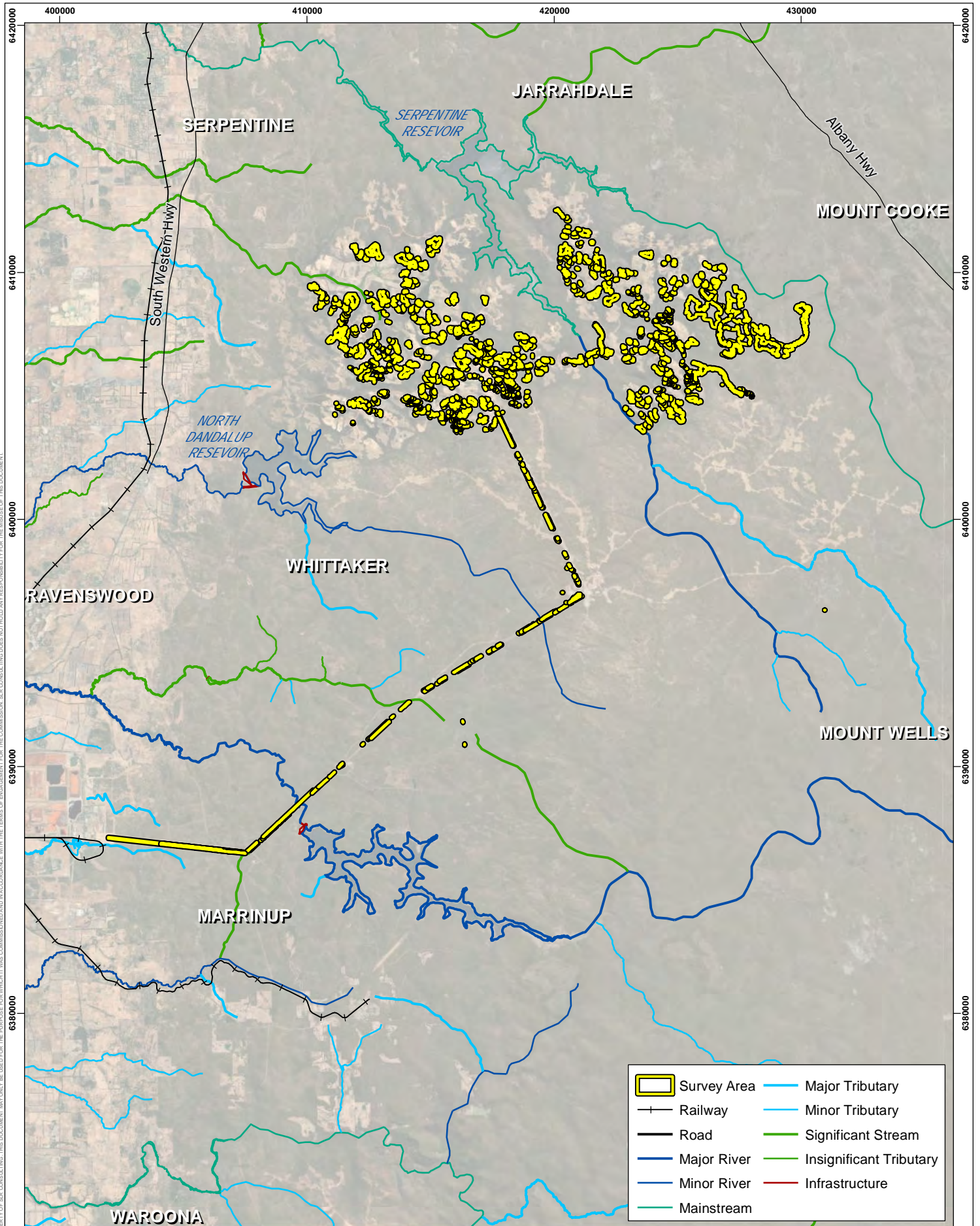
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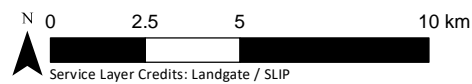
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Soil Landscape Mapping  
 MAP 2



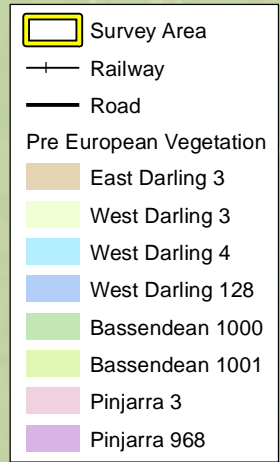
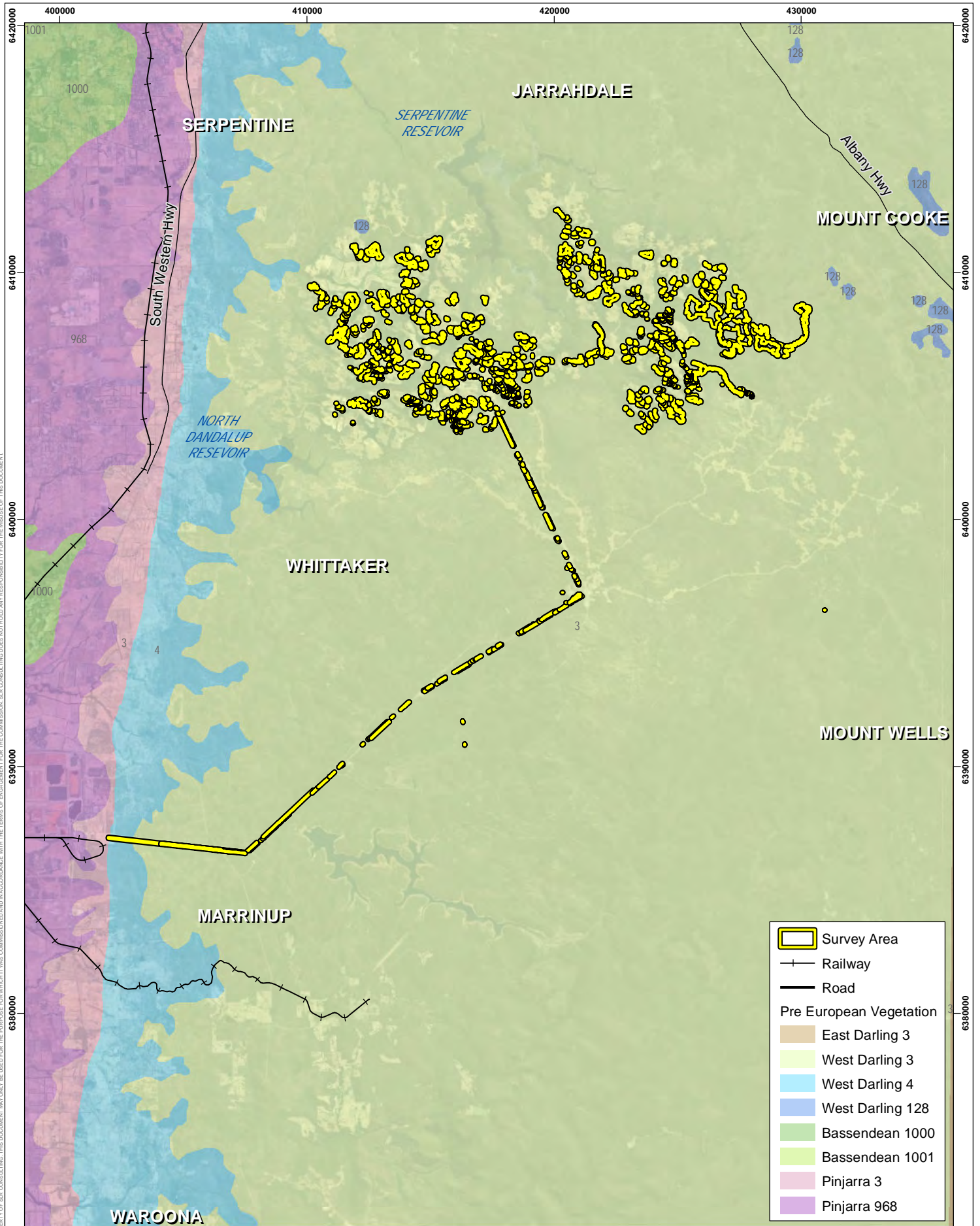
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Hydrography  
 MAP 3



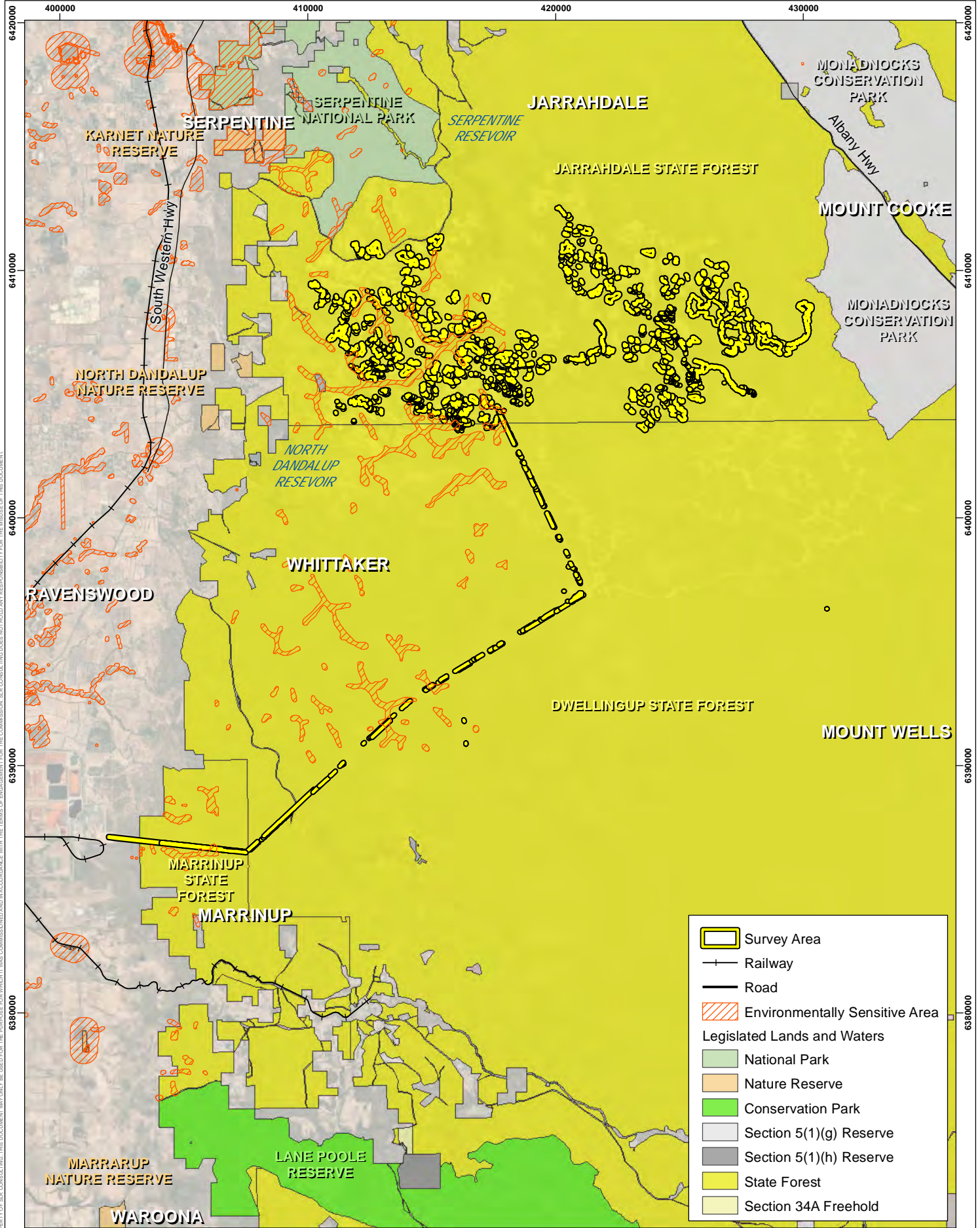
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Drawn By : Environmaps  
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Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

Pre European Vegetation  
MAP 4

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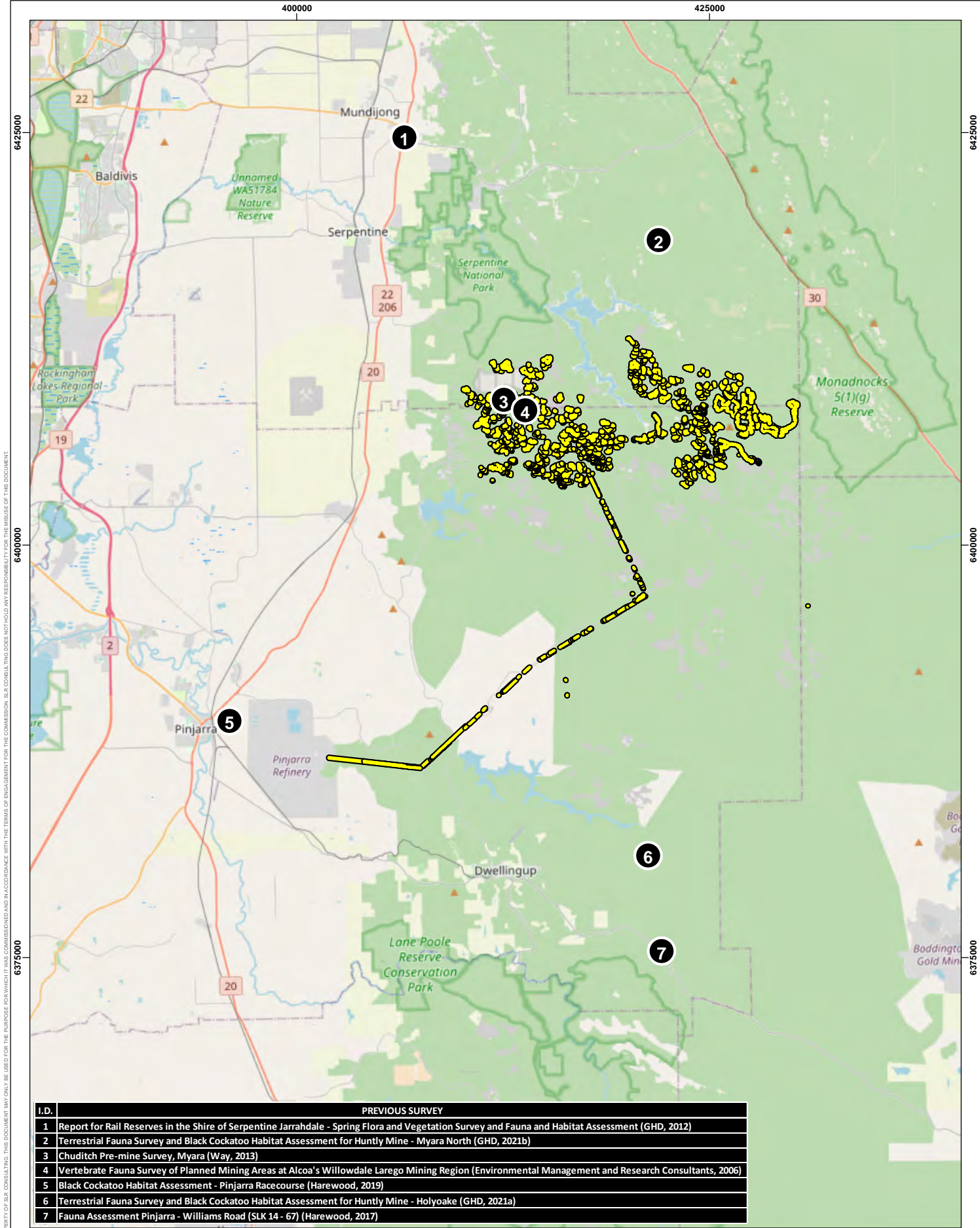
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region  
 Conservation and  
 Environmentally Sensitive Areas  
 MAP 5

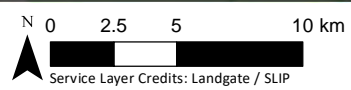


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I.D.	PREVIOUS SURVEY
1	Report for Rail Reserves in the Shire of Serpentine Jarrahdale - Spring Flora and Vegetation Survey and Fauna and Habitat Assessment (GHD, 2012)
2	Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Myara North (GHD, 2021b)
3	Chuditch Pre-mine Survey, Myara (Way, 2013)
4	Vertebrate Fauna Survey of Planned Mining Areas at Alcoa's Willowdale Larego Mining Region (Environmental Management and Research Consultants, 2006)
5	Black Cockatoo Habitat Assessment - Pinjarra Racecourse (Harewood, 2019)
6	Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Holyoake (GHD, 2021a)
7	Fauna Assessment Pinjarra - Williams Road (SLK 14 - 67) (Harewood, 2017)



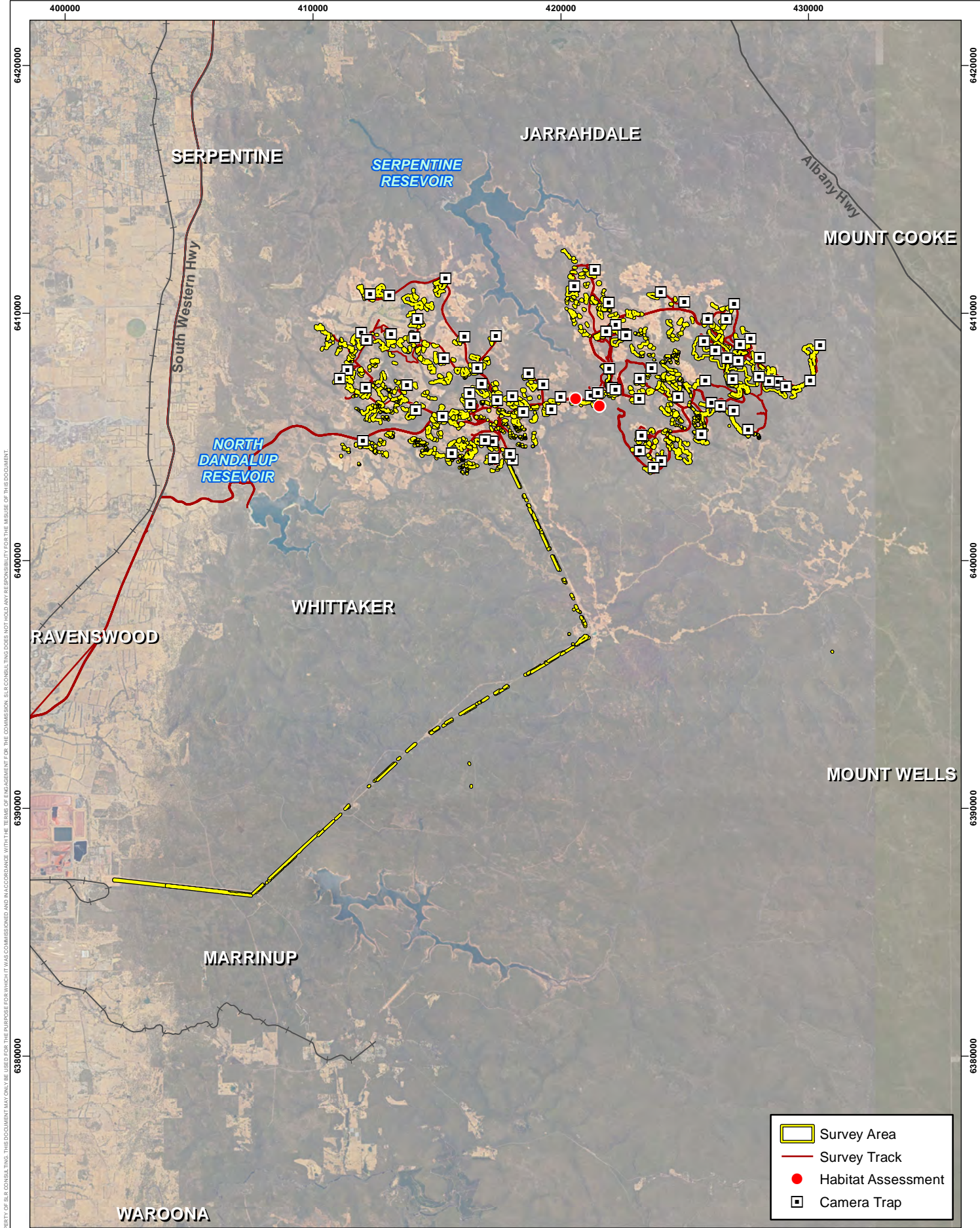
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Previous Surveys in the Locality  
 MAP 6



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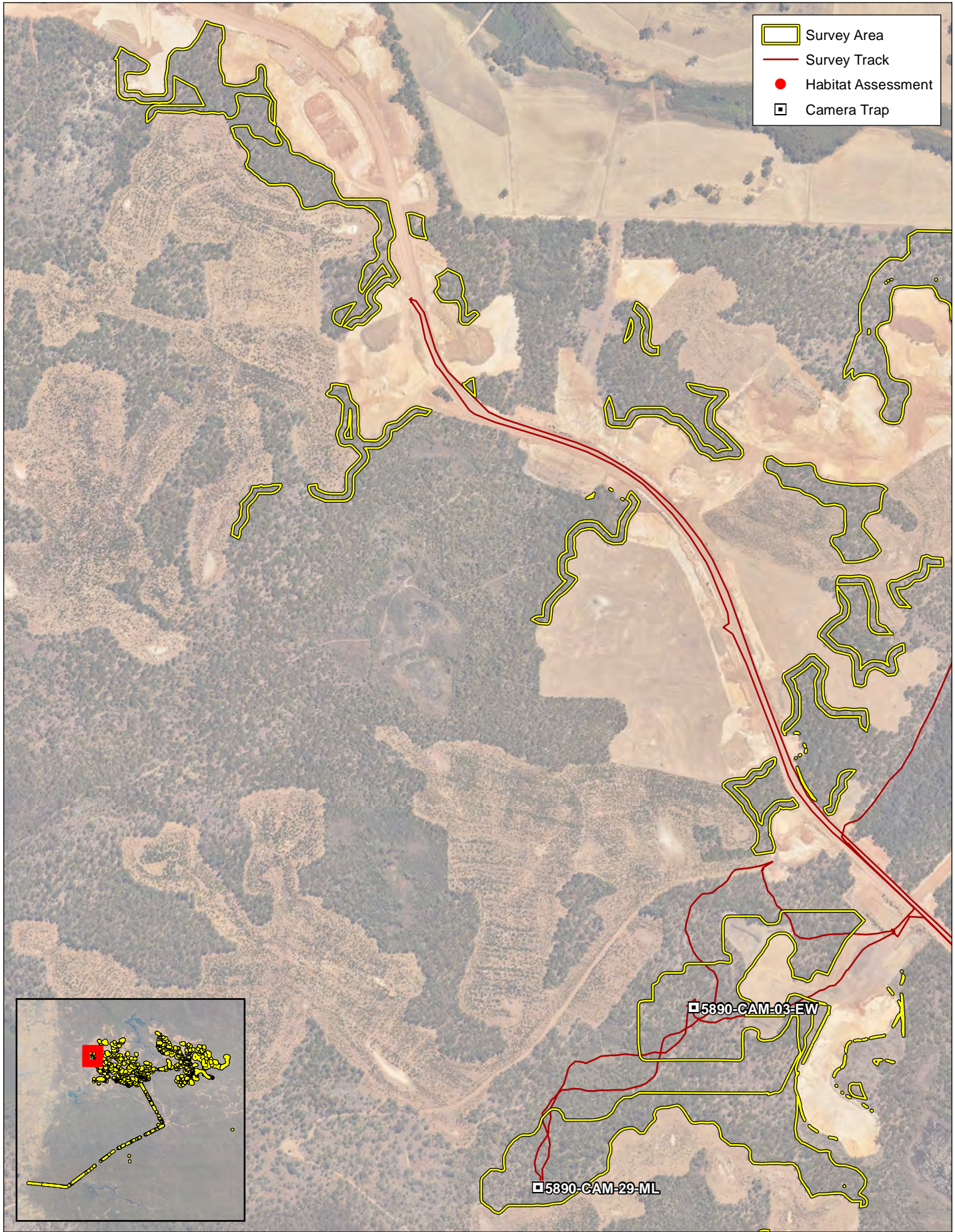
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- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap

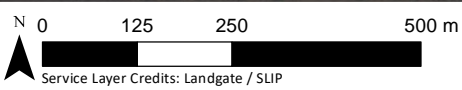
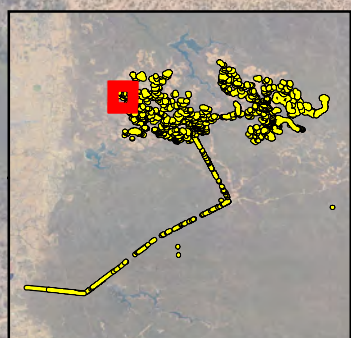
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-1

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	Survey Area
	Survey Track
	Habitat Assessment
	Camera Trap



Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

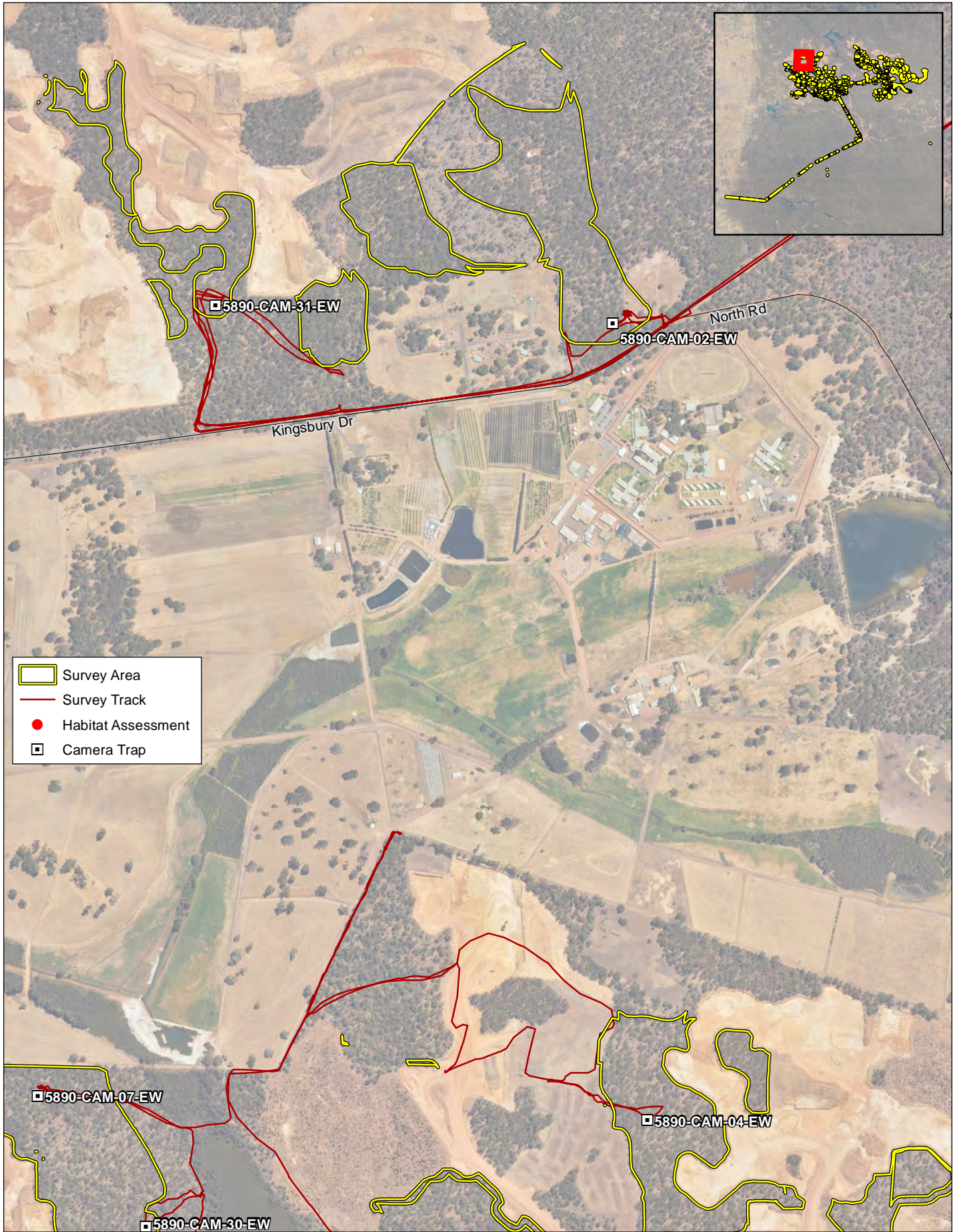






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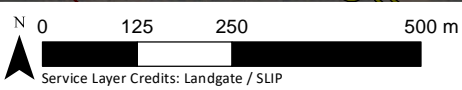
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Survey Effort  
MAP 7-2

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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap




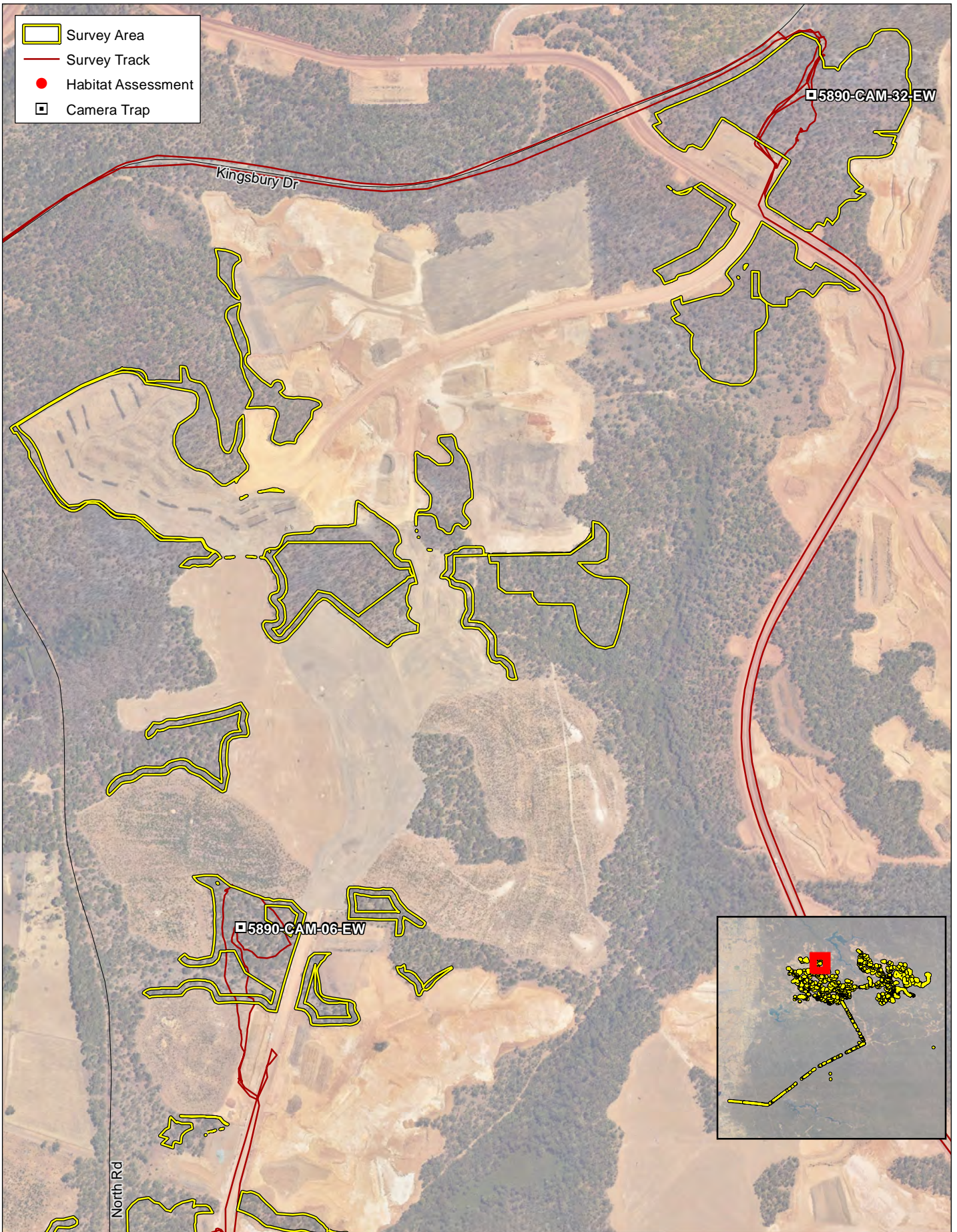
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-3

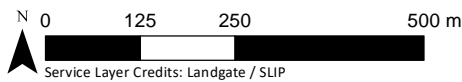
-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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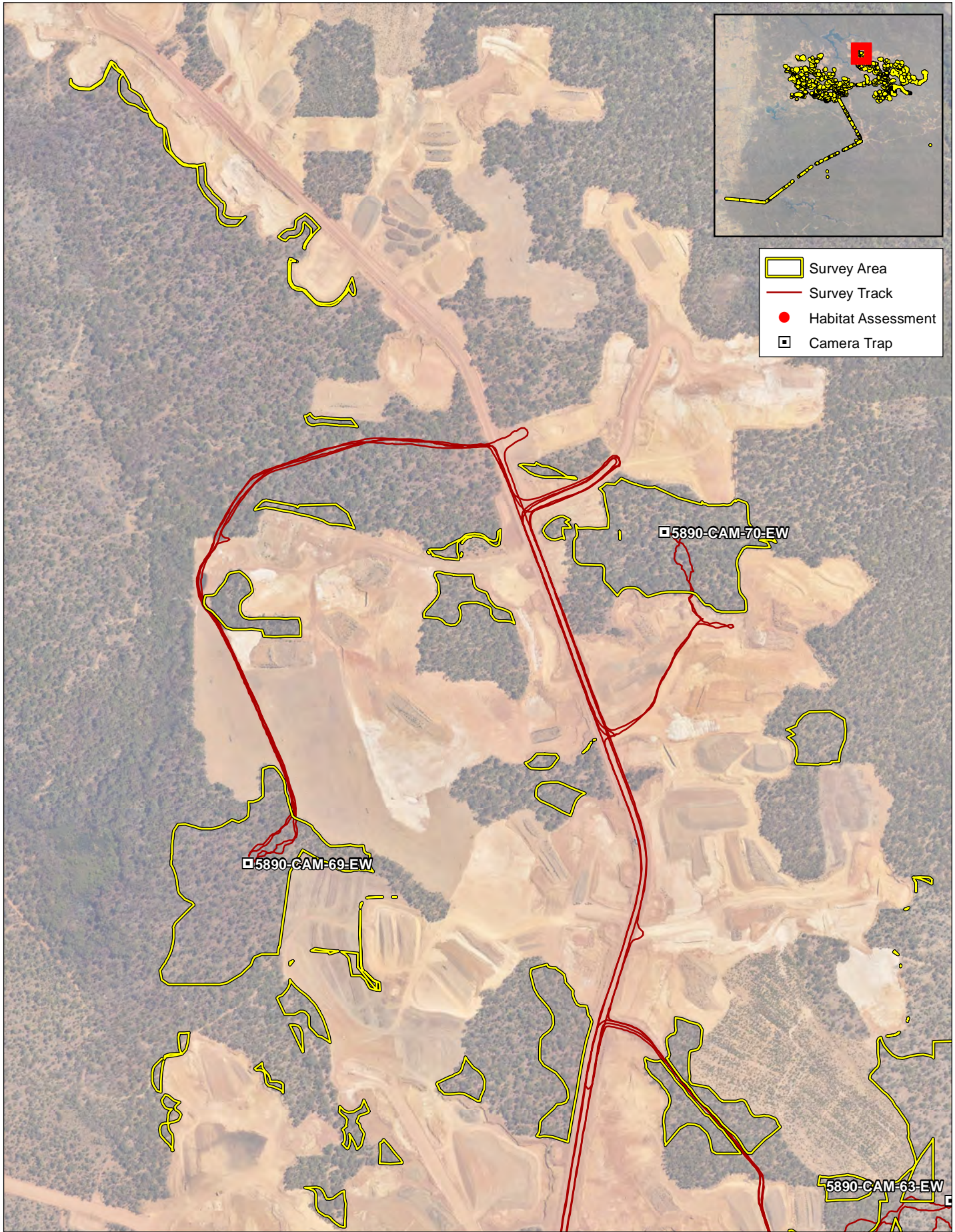


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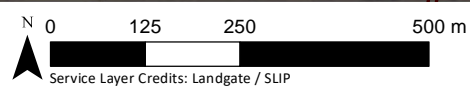
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-4

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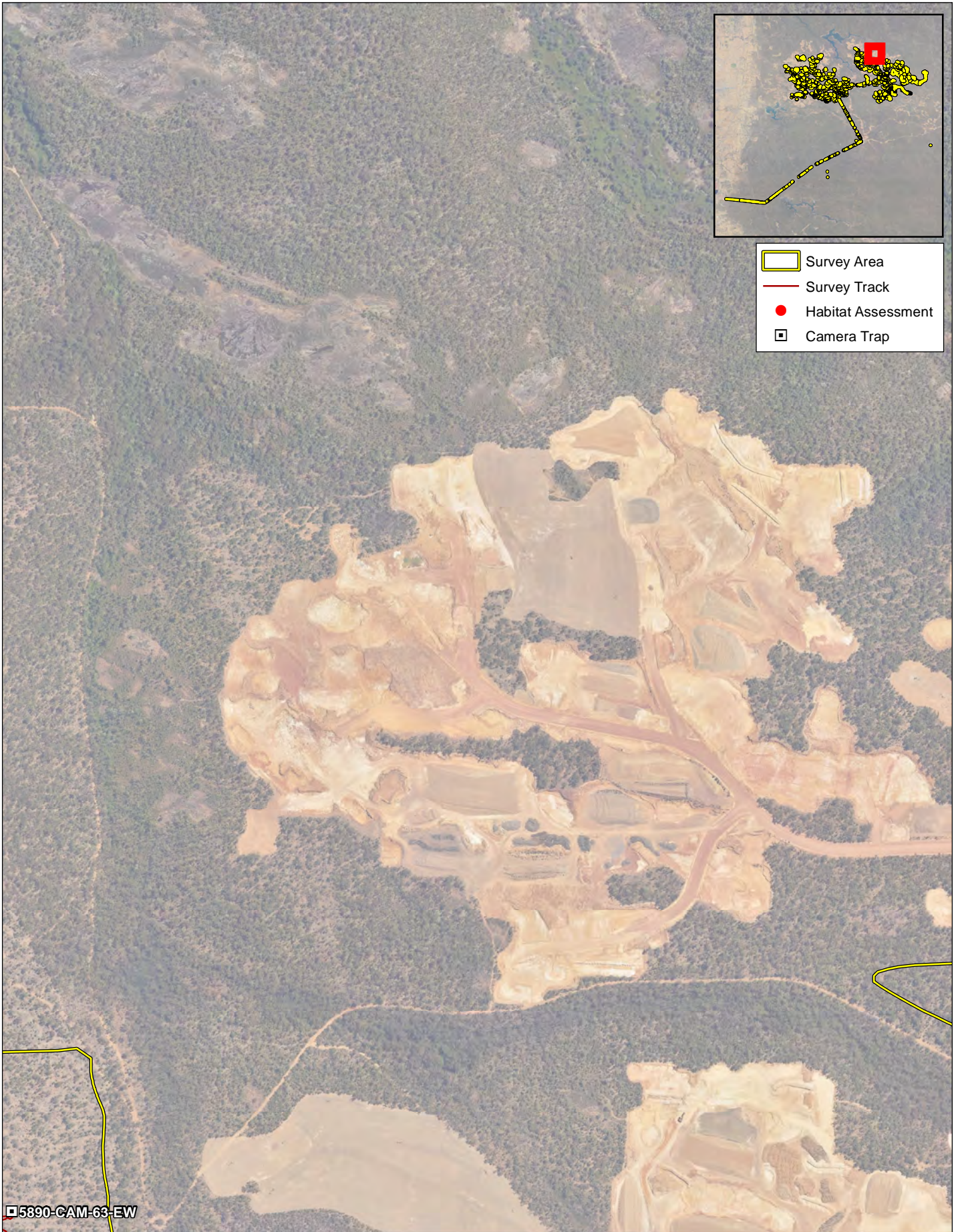
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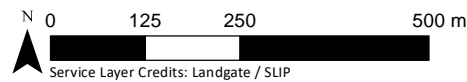
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-5



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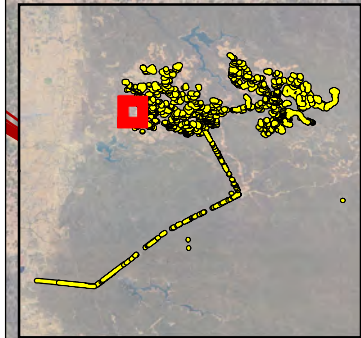
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 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-6

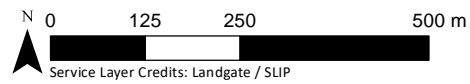
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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



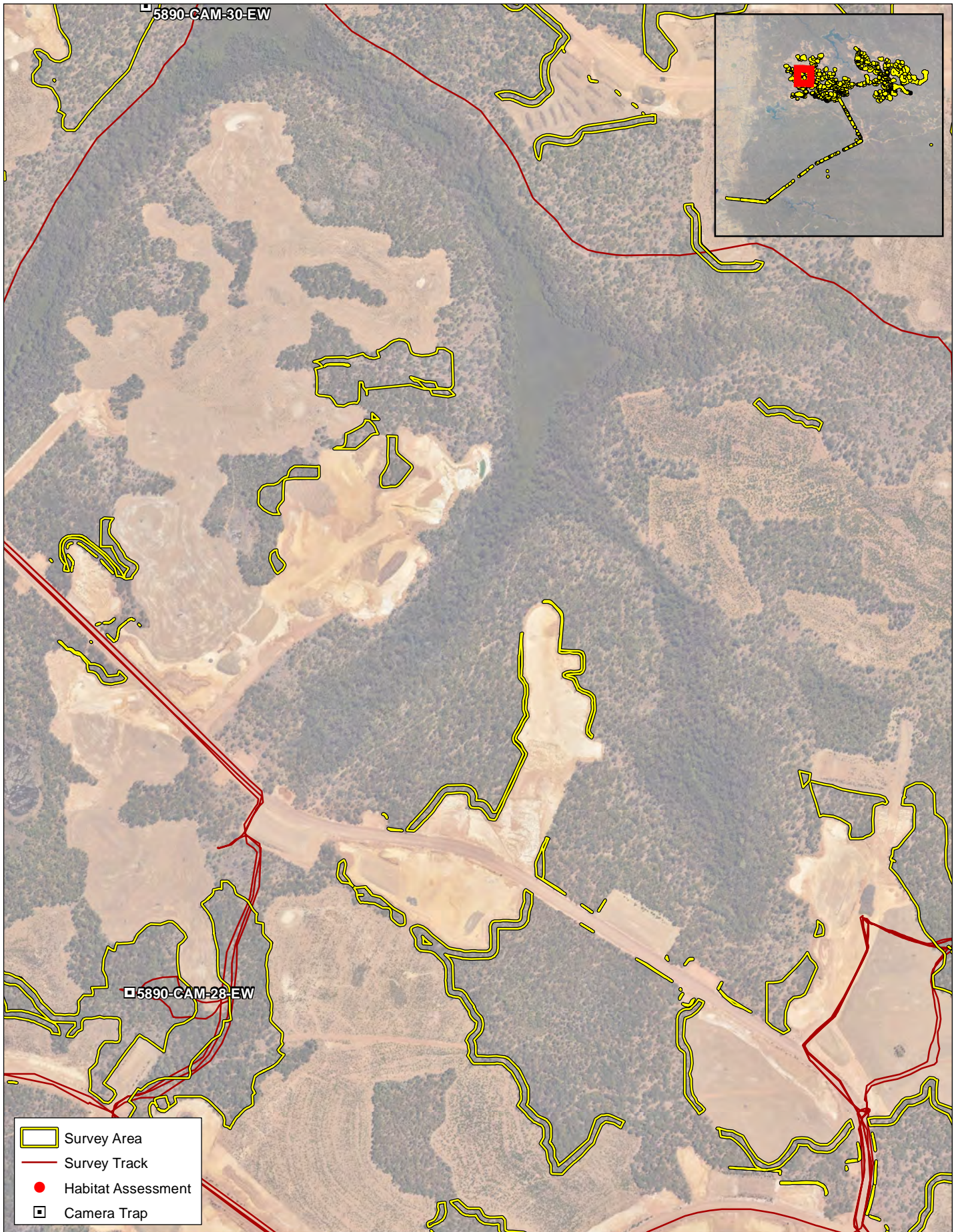
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



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 Project Number : 675.VX5890.00001  
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

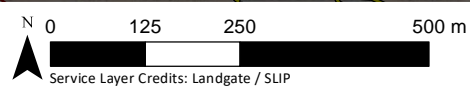
Survey Effort  
 MAP 7-7



	Survey Area
	Survey Track
	Habitat Assessment
	Camera Trap



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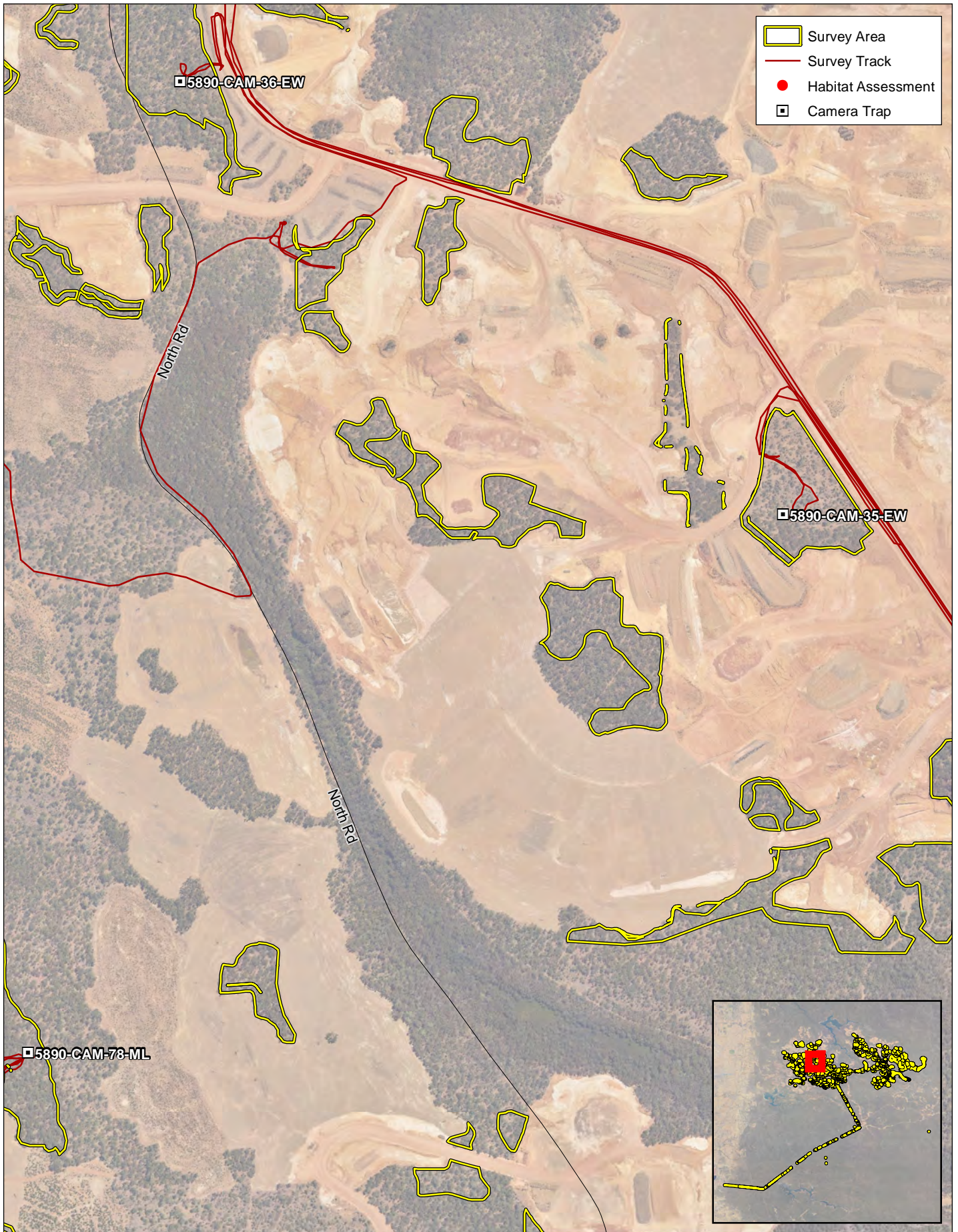


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 Scale : 1:10,000 @ A4  
 Project Number : 675.VX5890.00001  
 Date Drawn : 14/06/2024  
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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-8

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- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap

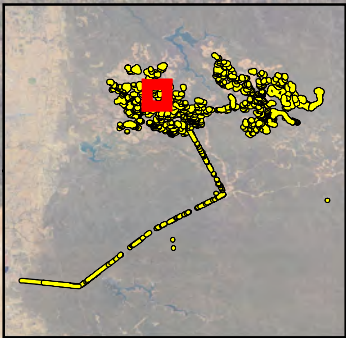
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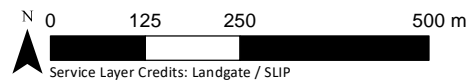
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North Rd

North Rd



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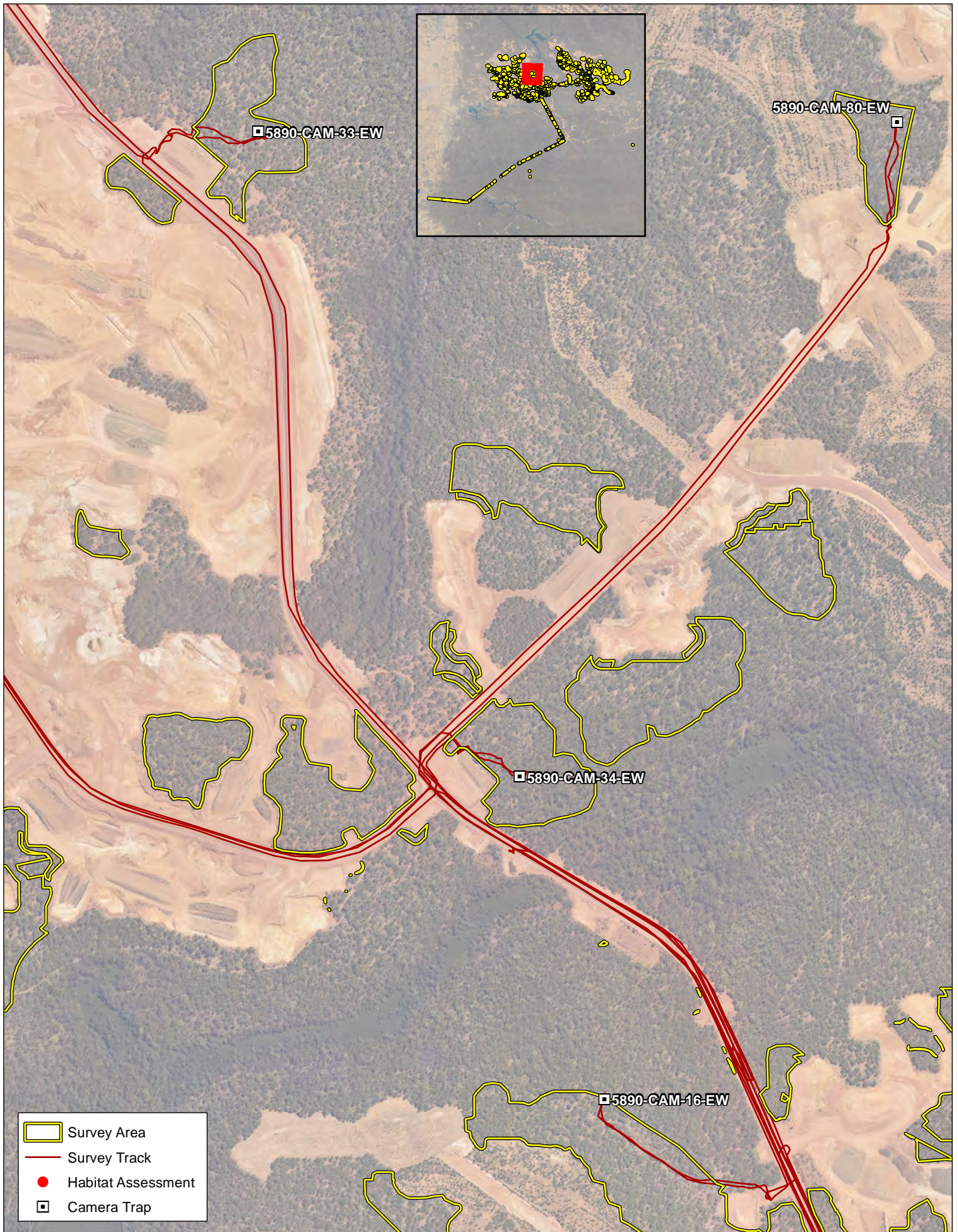
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

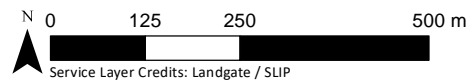
**Survey Effort  
 MAP 7-9**

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





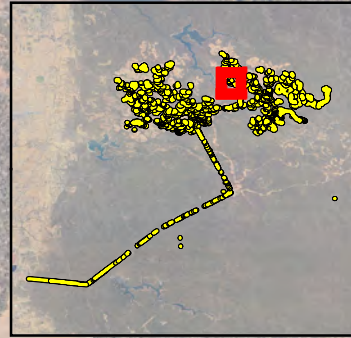
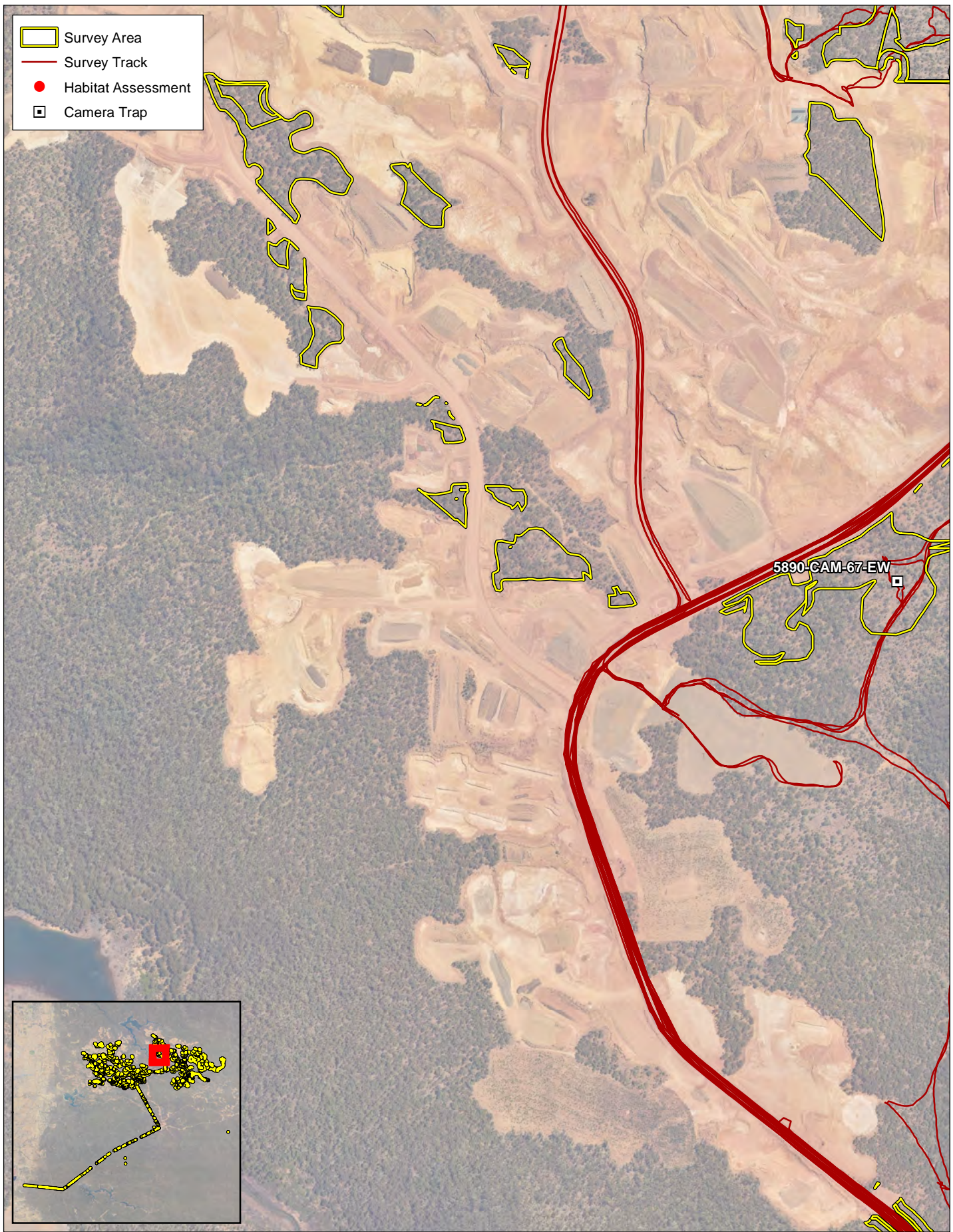
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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

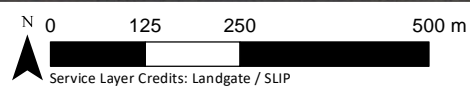
Survey Effort  
 MAP 7-10

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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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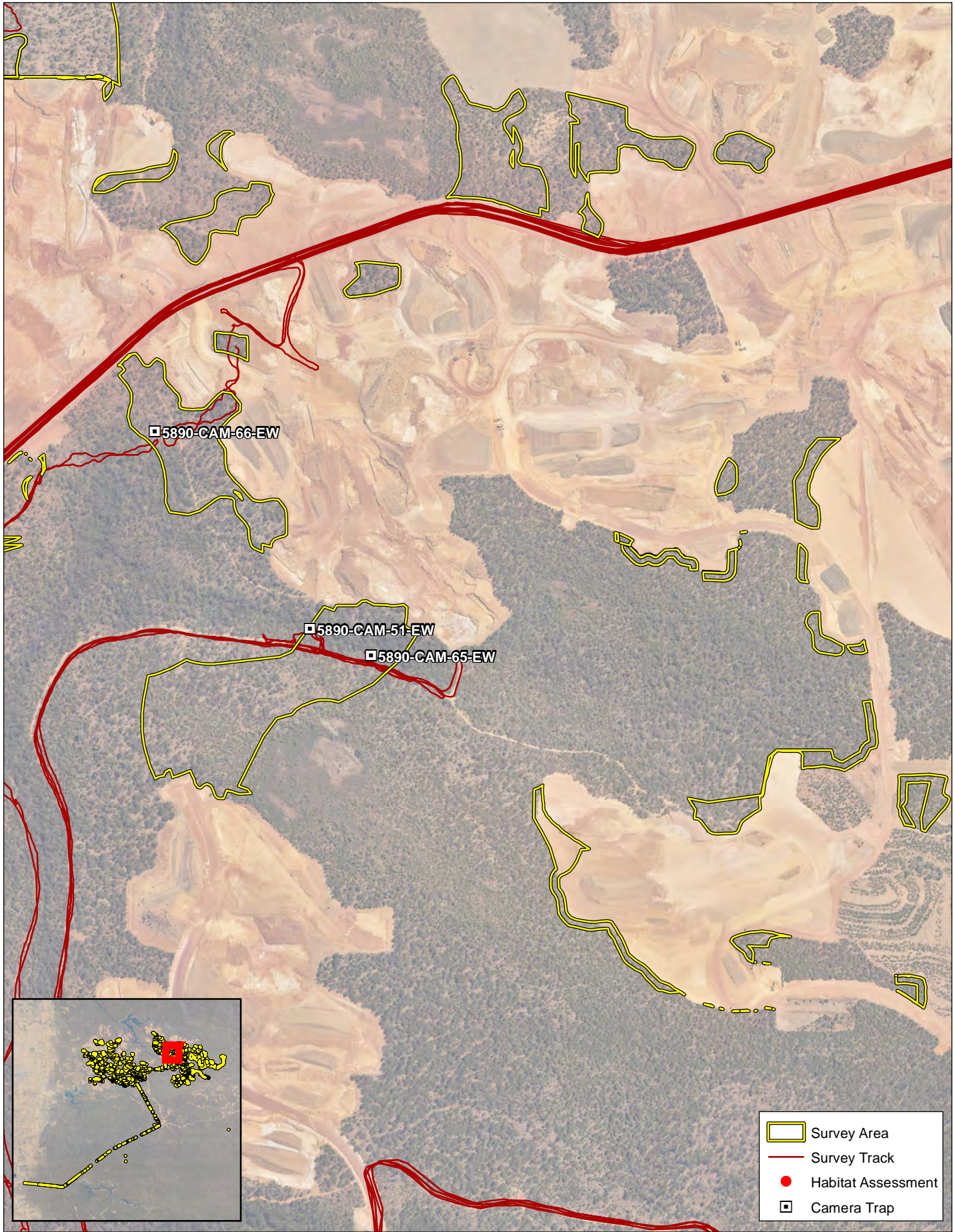


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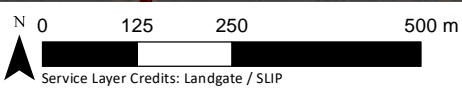
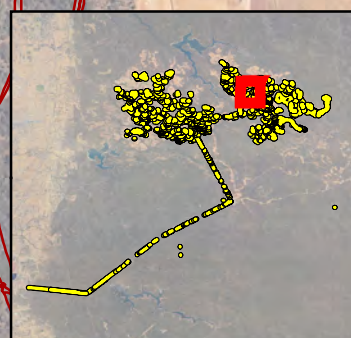
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-11

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- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap



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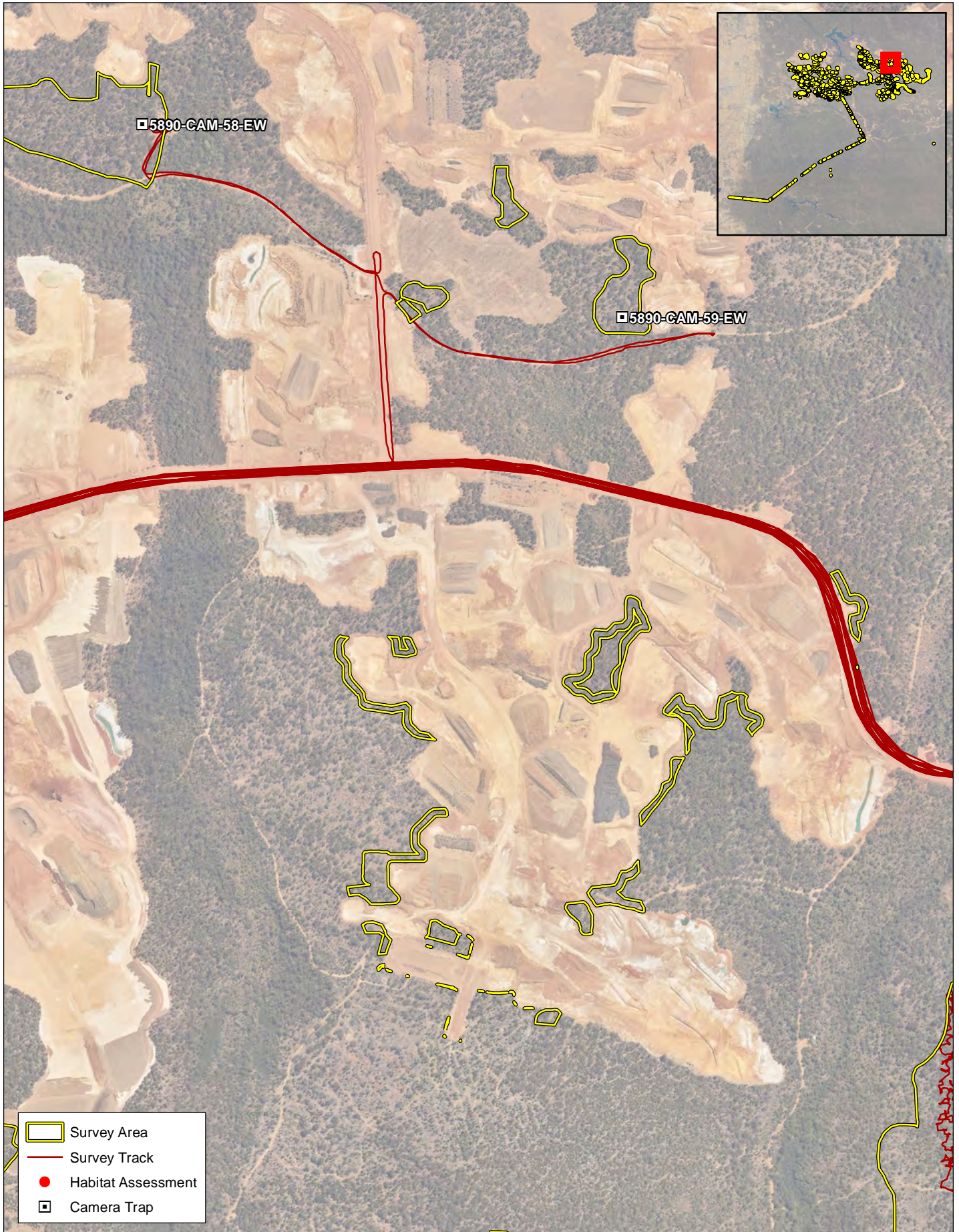
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 Reviewed By : PD





Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

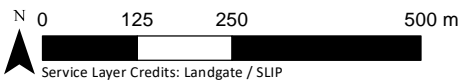
Survey Effort  
 MAP 7-12



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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap







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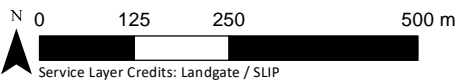
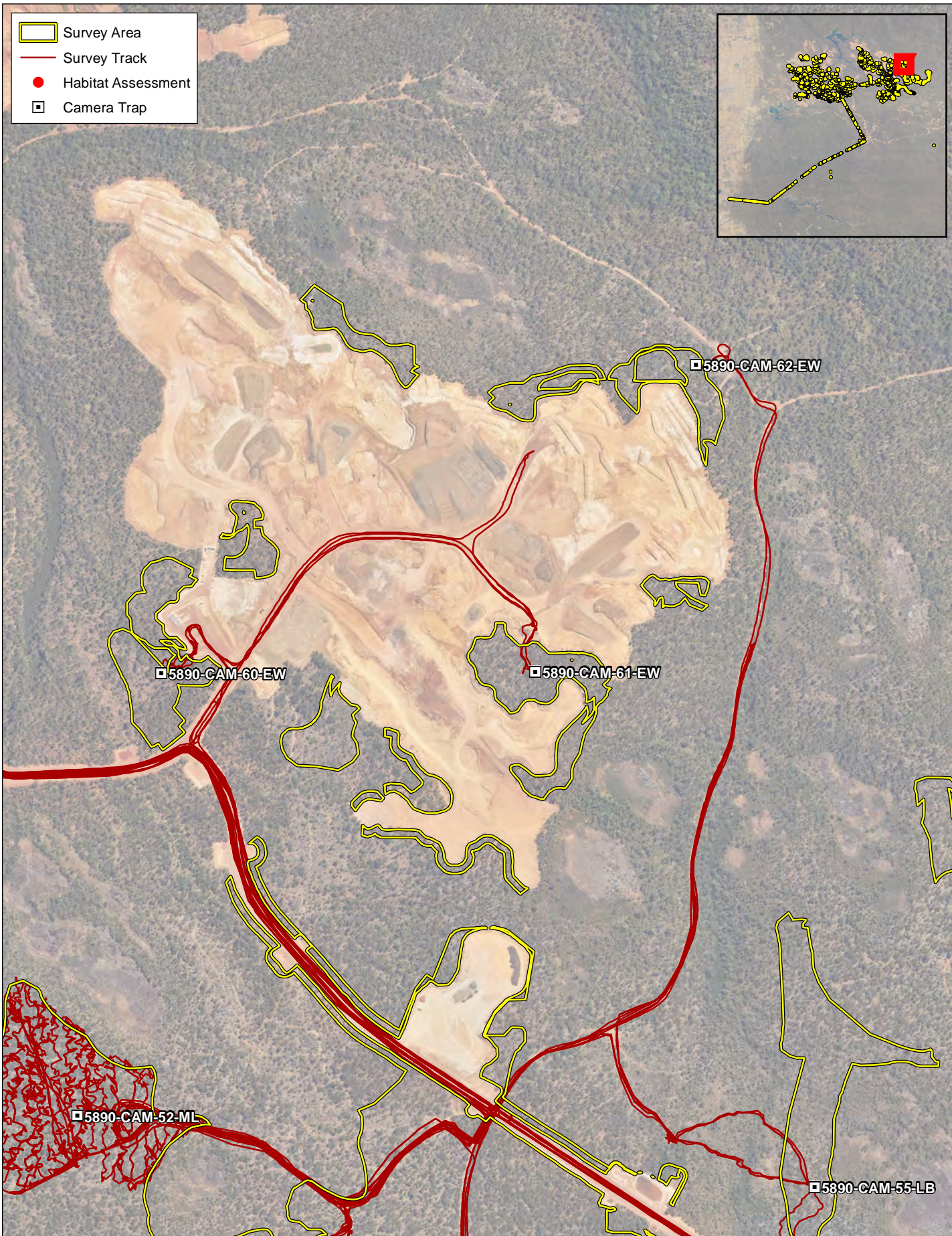
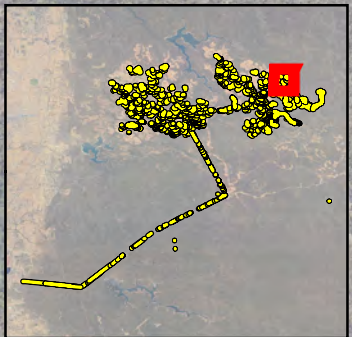
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 Date Drawn : 14/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-13

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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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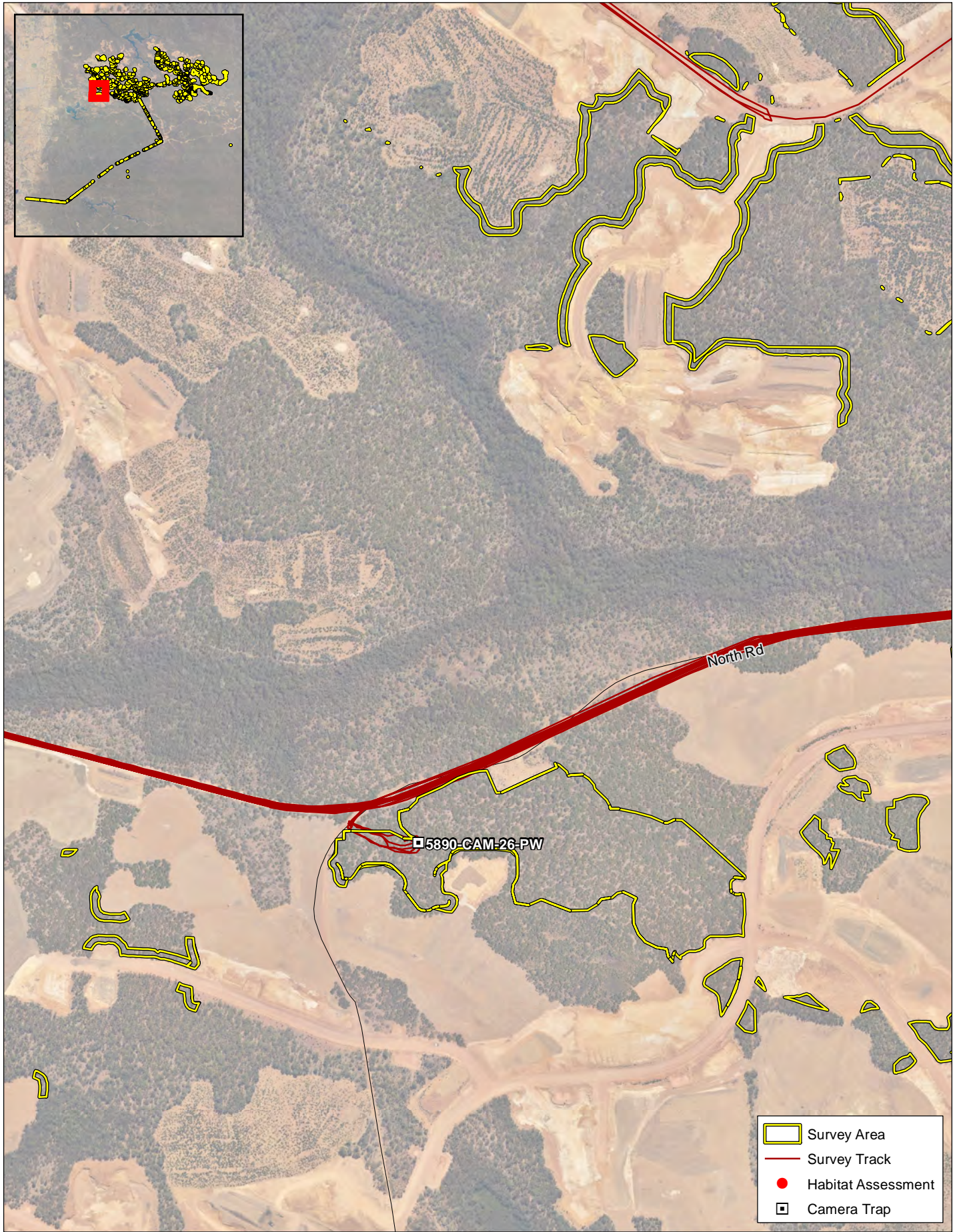
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

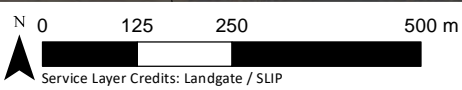
Survey Effort  
 MAP 7-14

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	Survey Area
	Survey Track
	Habitat Assessment
	Camera Trap



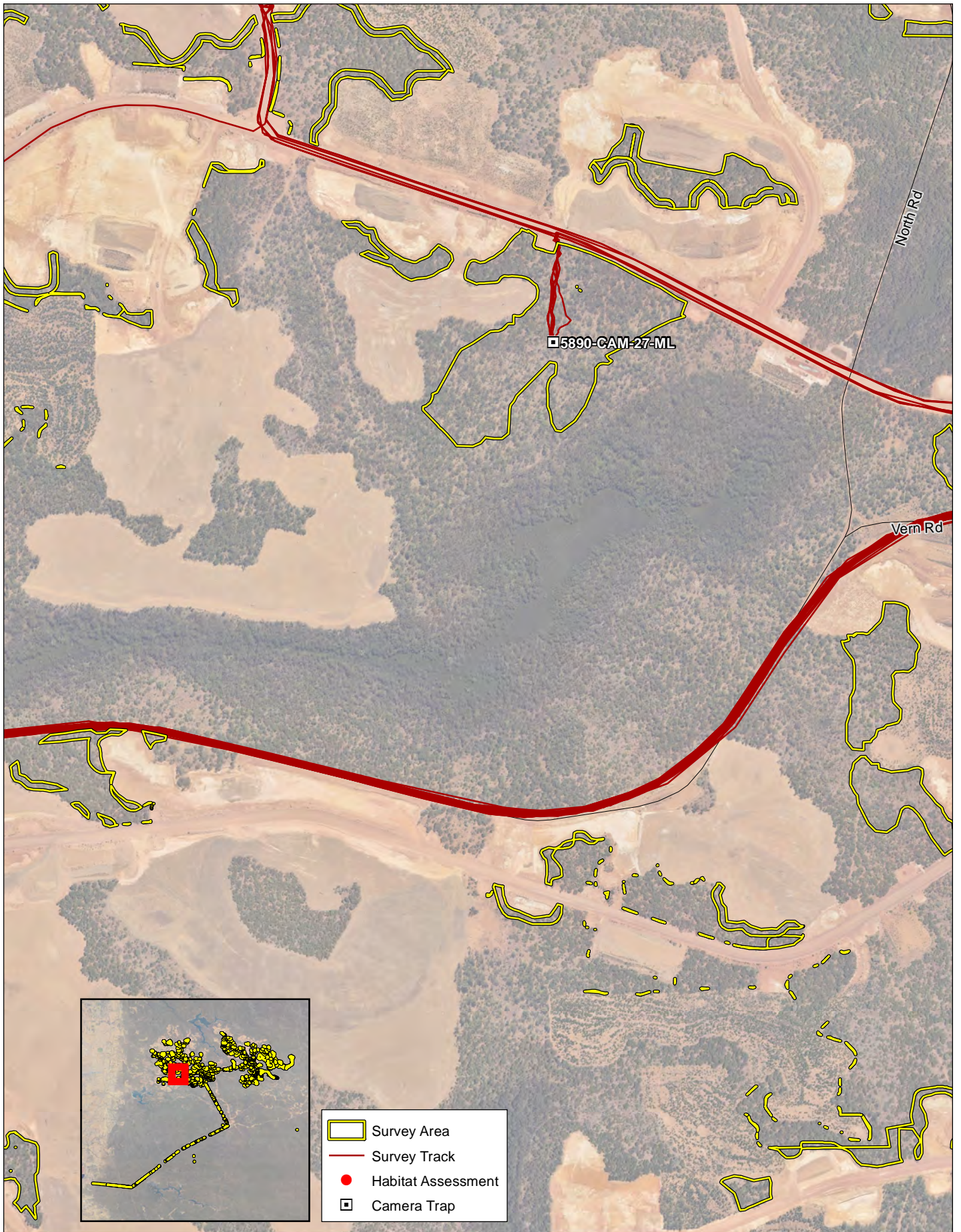
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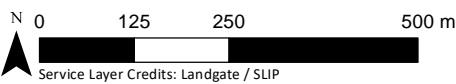
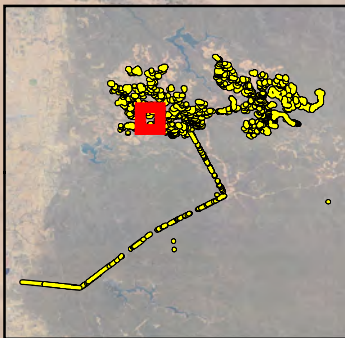
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-15

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	Survey Area
	Survey Track
	Habitat Assessment
	Camera Trap



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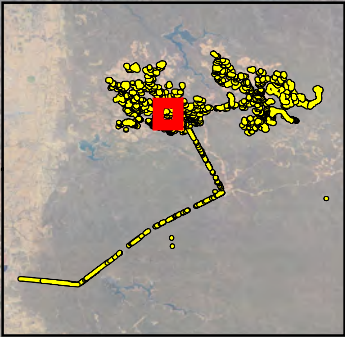
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 Date Drawn : 14/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-16



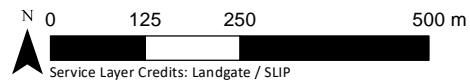
- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap



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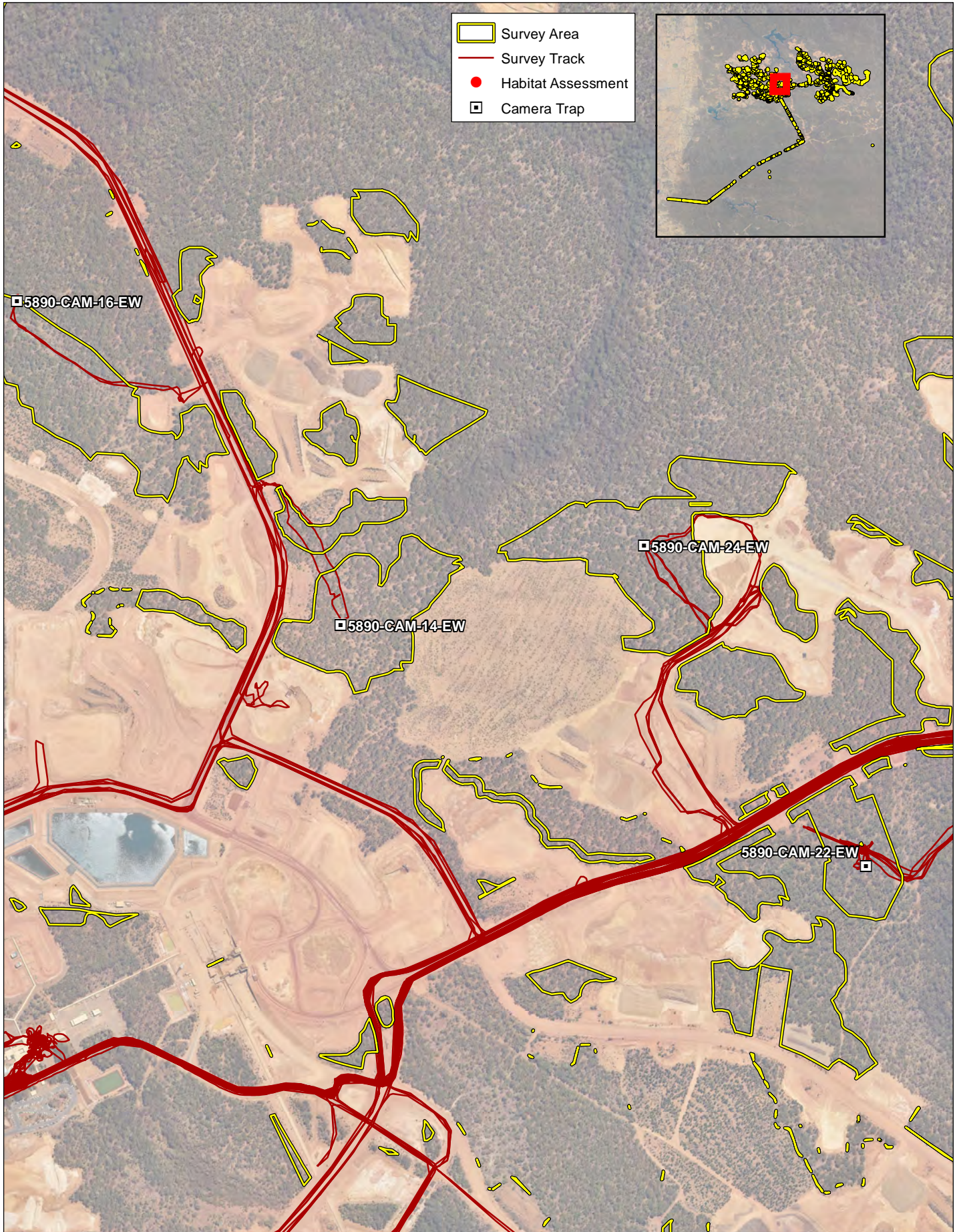
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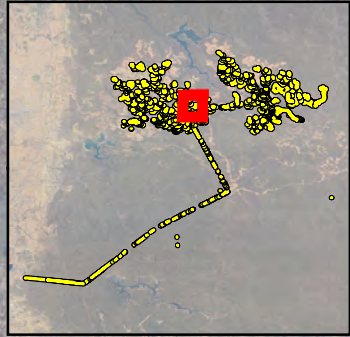
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 Date Drawn : 14/06/2024  
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-17



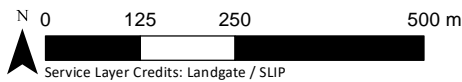
- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap



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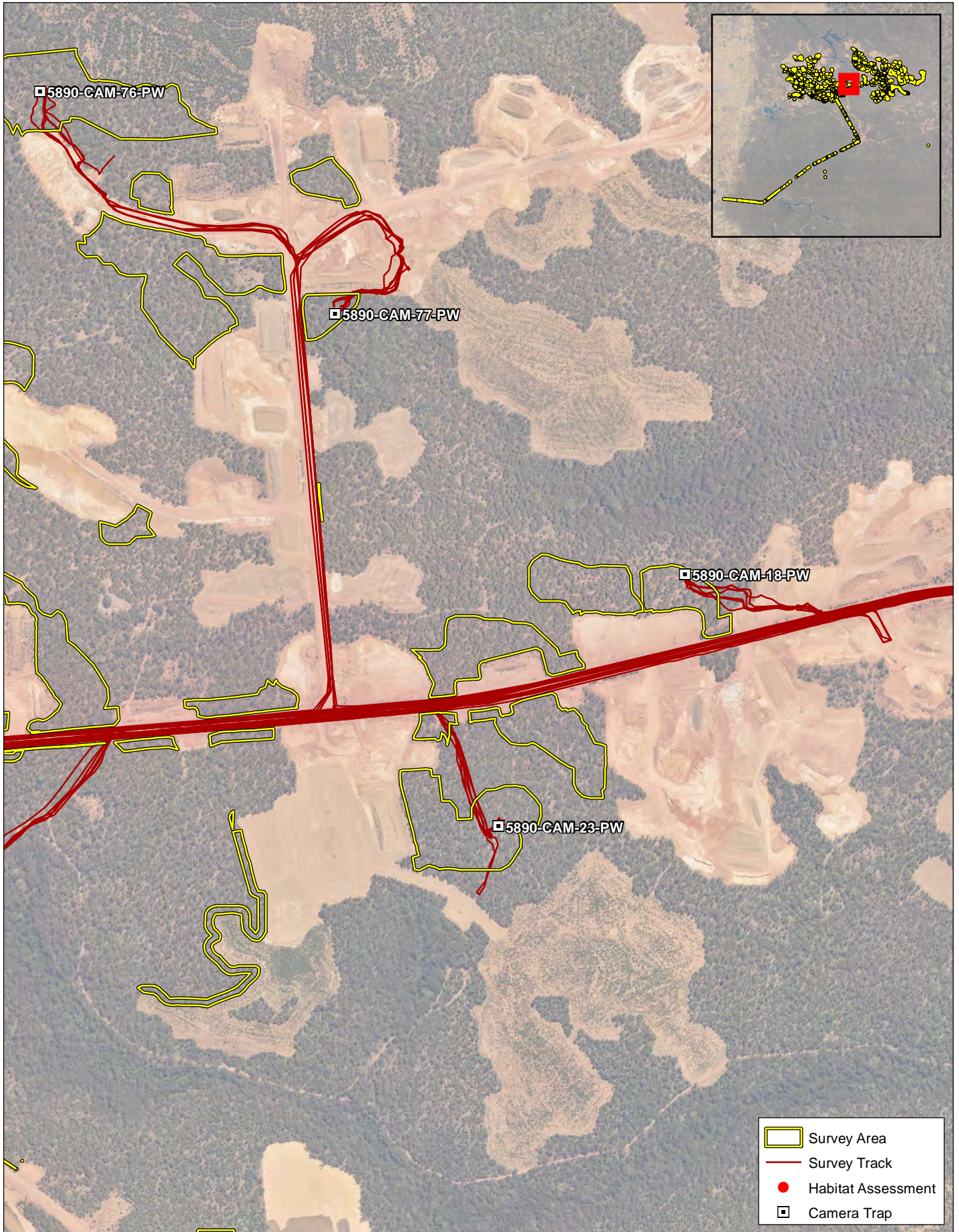
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

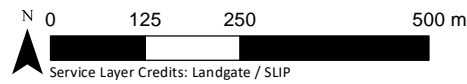
Survey Effort  
 MAP 7-18



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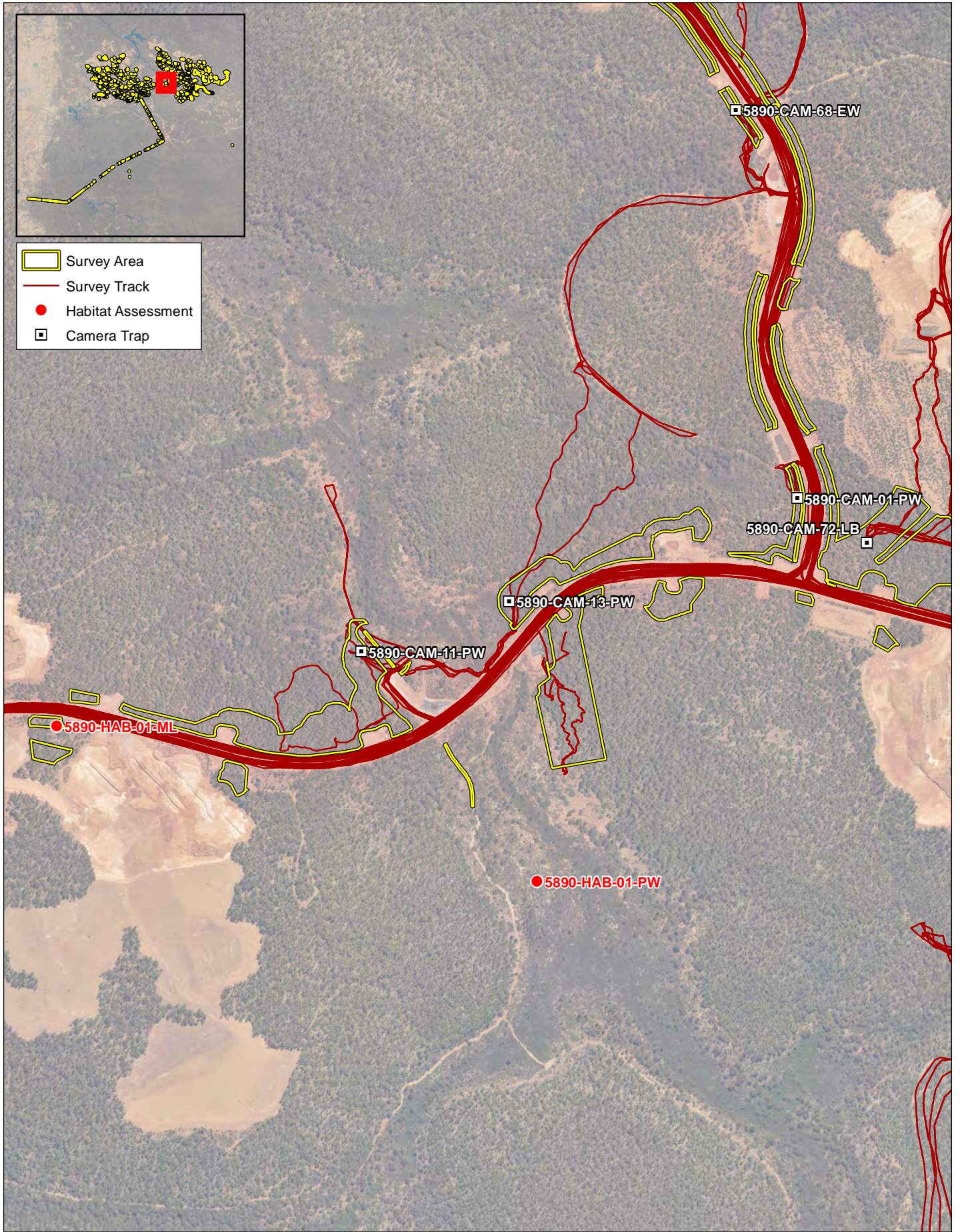


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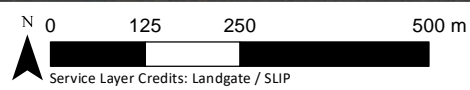
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-19

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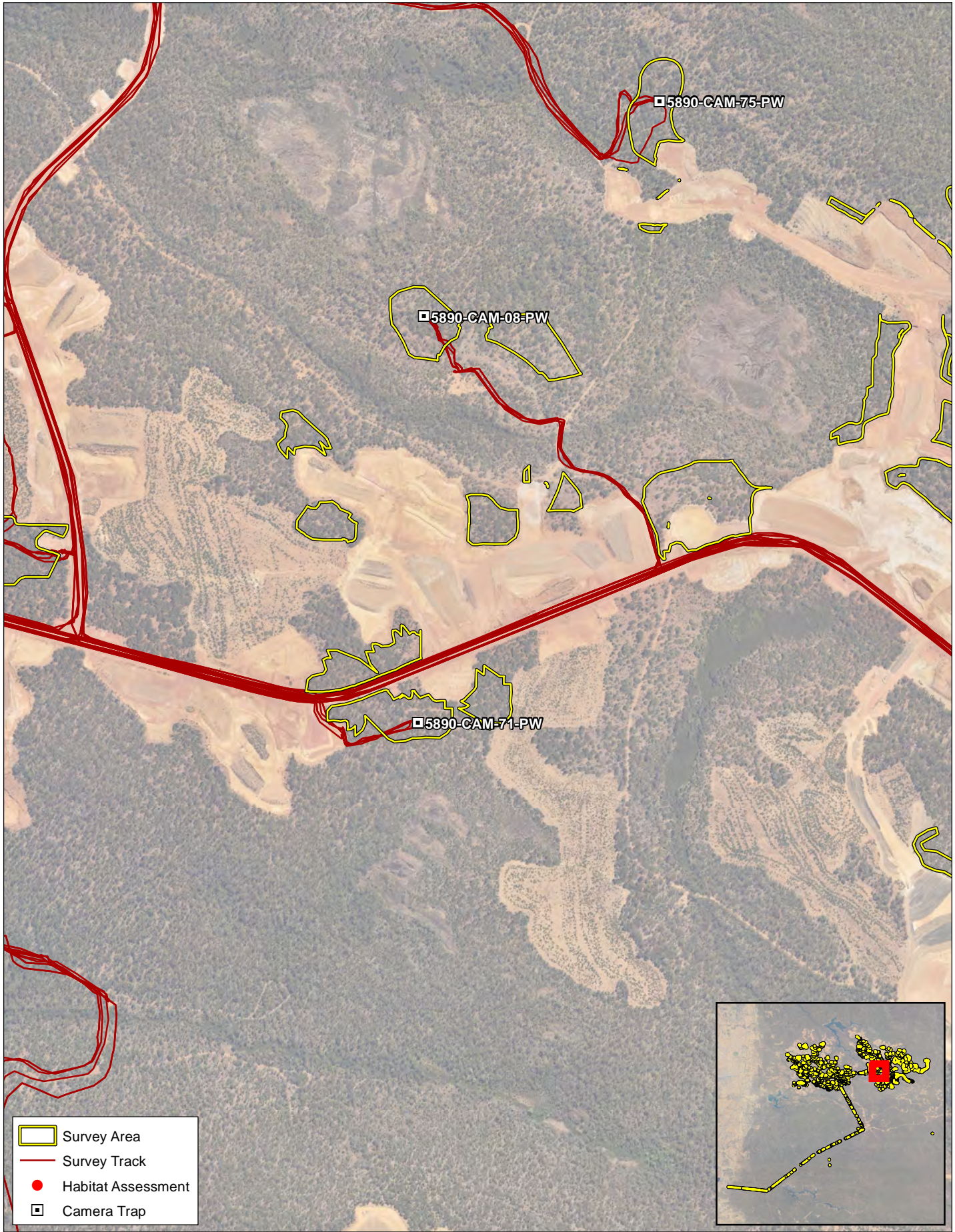






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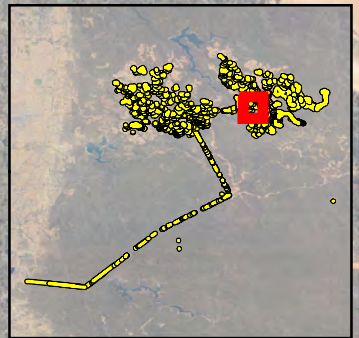
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 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-20

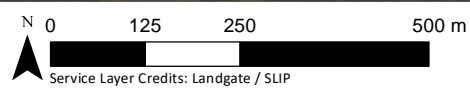
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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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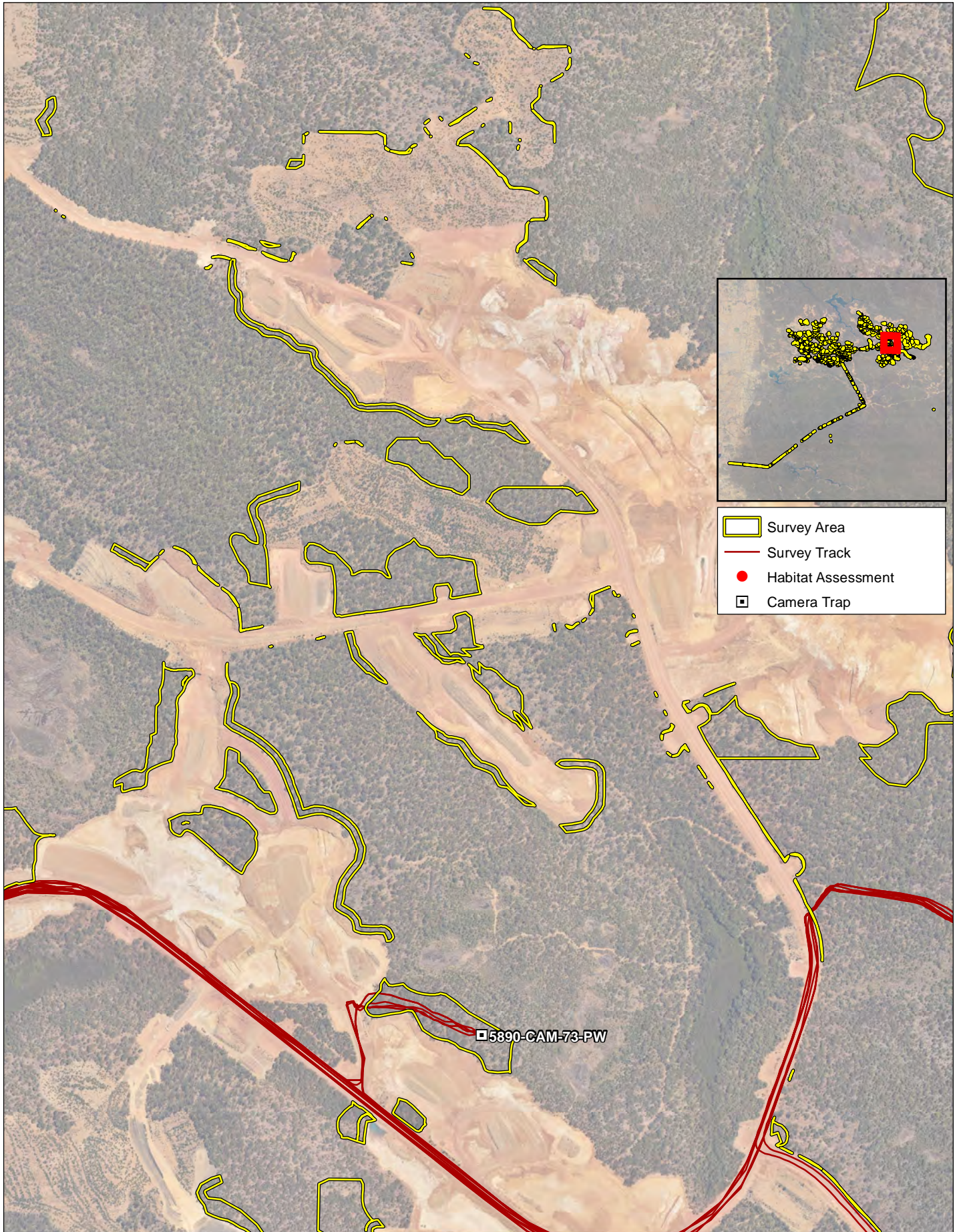






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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

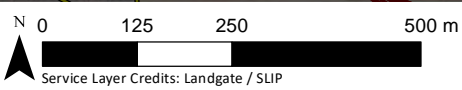
Survey Effort  
 MAP 7-21

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	Survey Area
	Survey Track
	Habitat Assessment
	Camera Trap

5890-CAM-73-PW



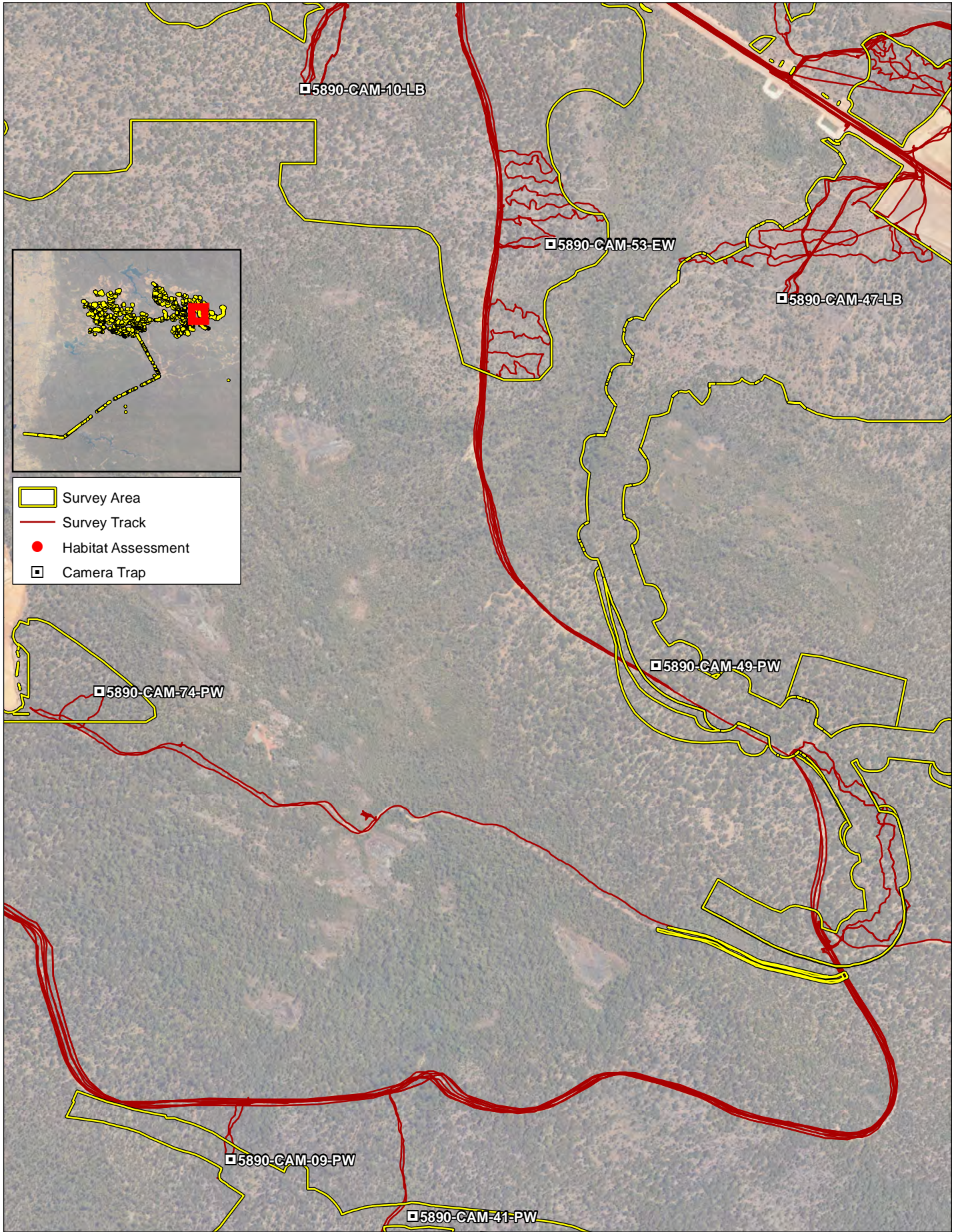
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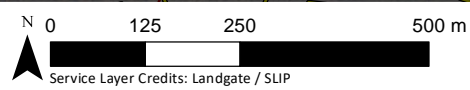
Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

Survey Effort  
MAP 7-22

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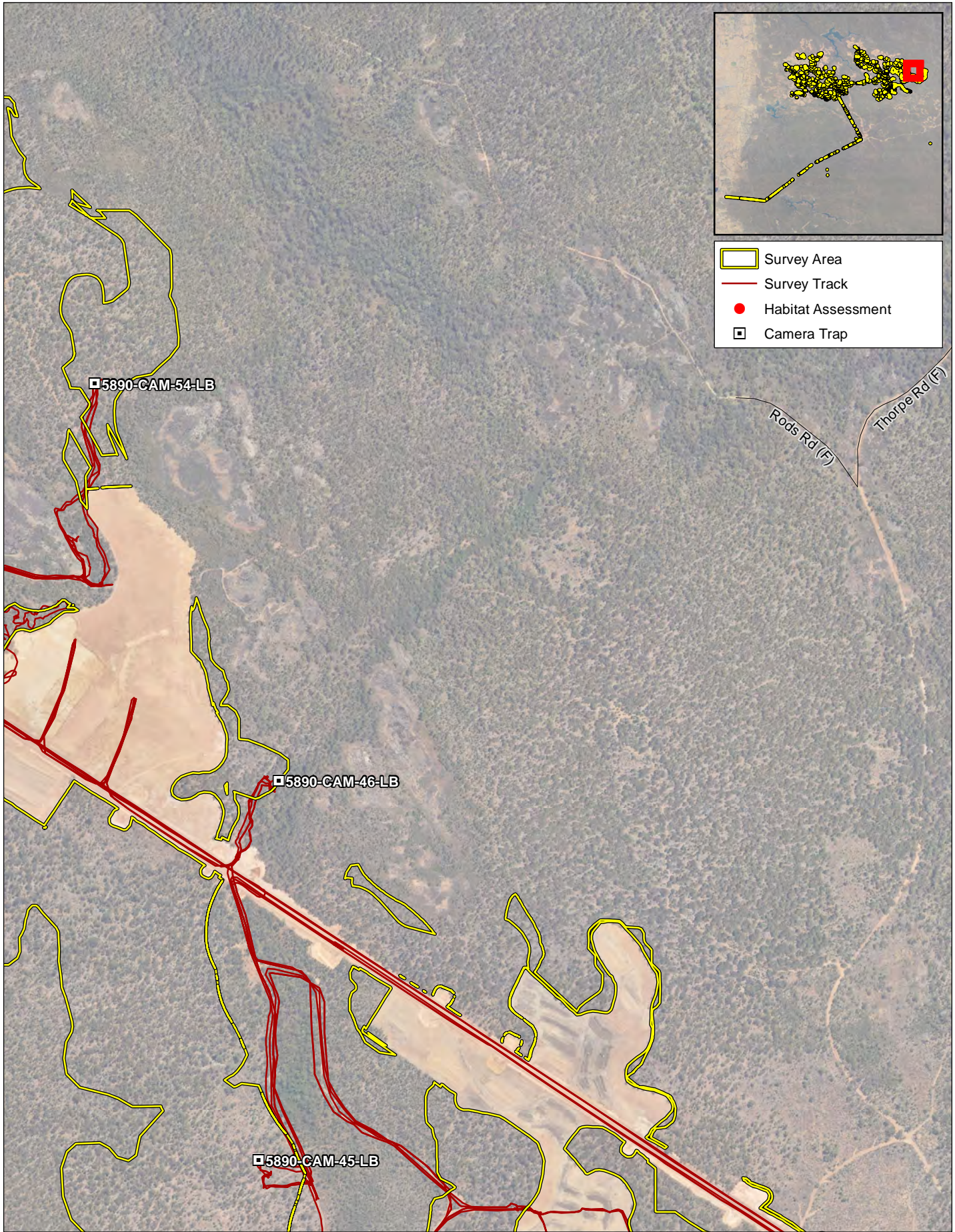


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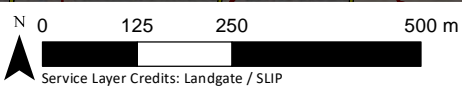
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-23

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Survey Area  
 Survey Track  
● Habitat Assessment  
 Camera Trap



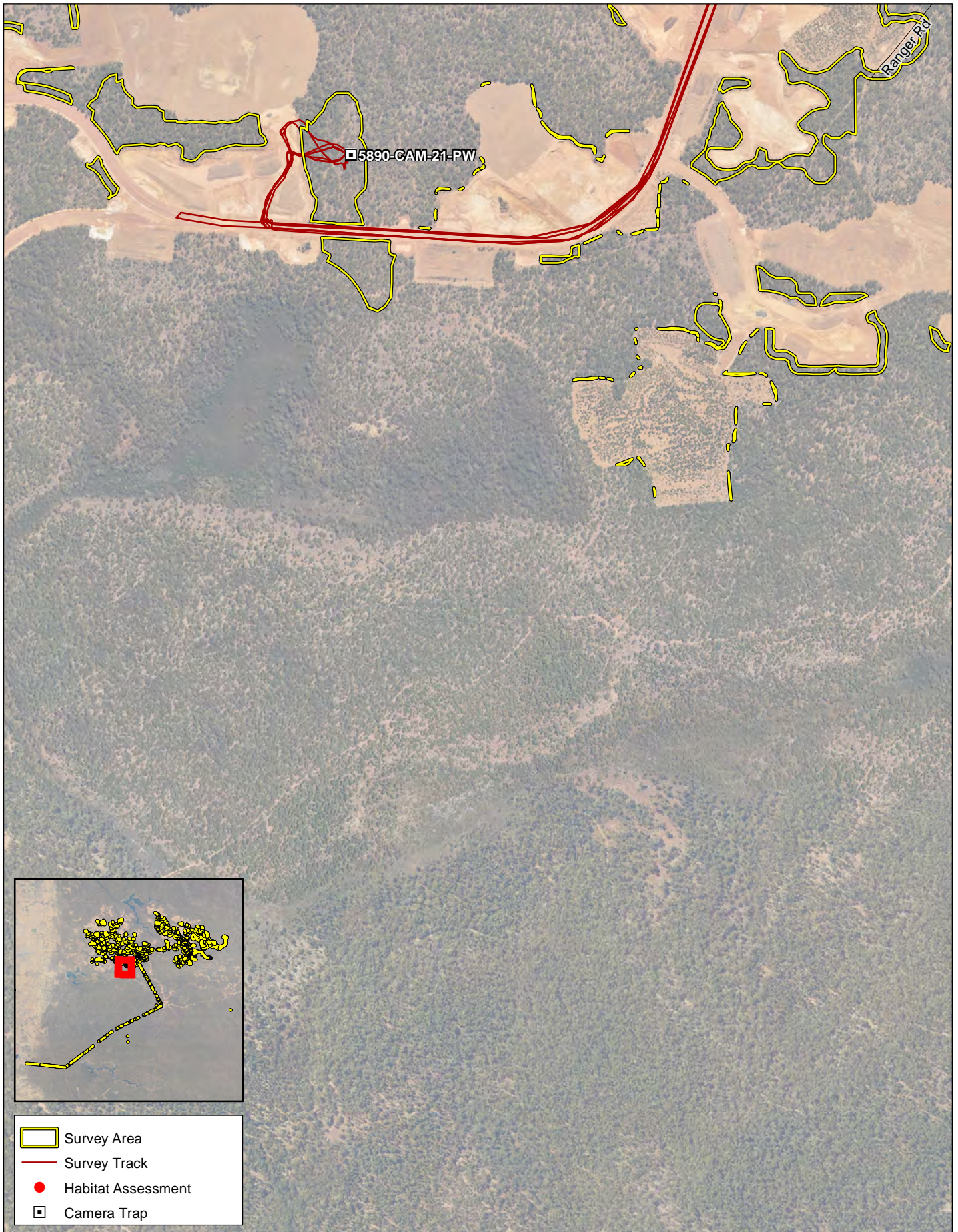
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 Scale : 1:10,000 @ A4  
 Project Number : 675.VX5890.00001  
 Date Drawn : 14/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

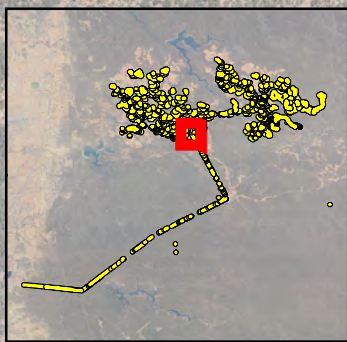
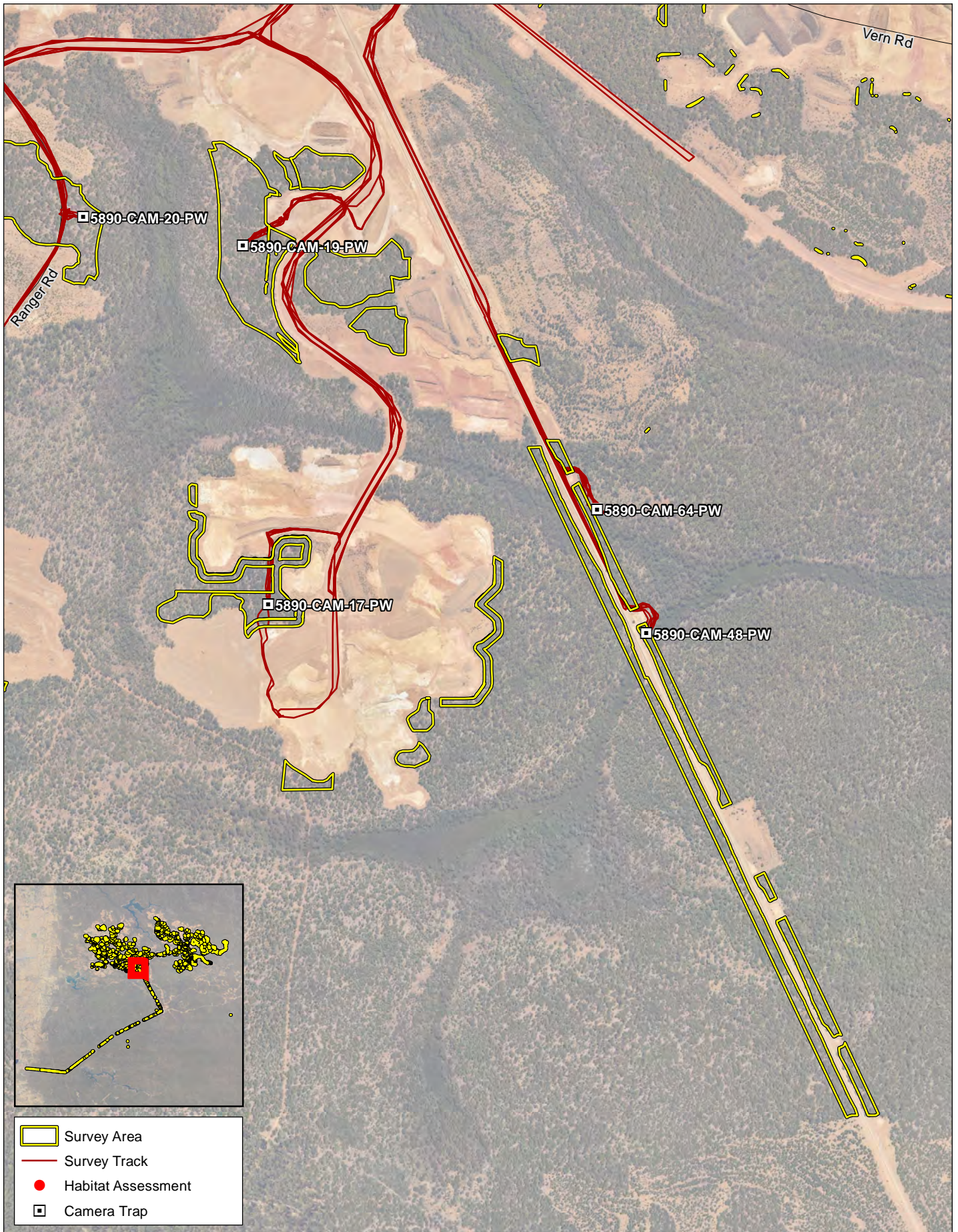
Survey Effort  
MAP 7-24





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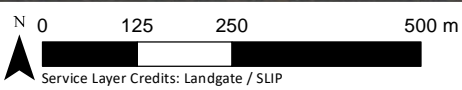


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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-26

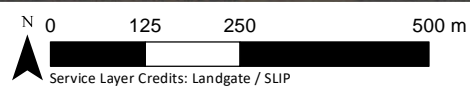
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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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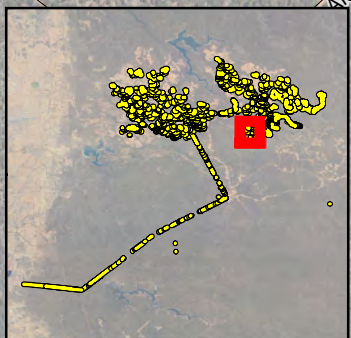
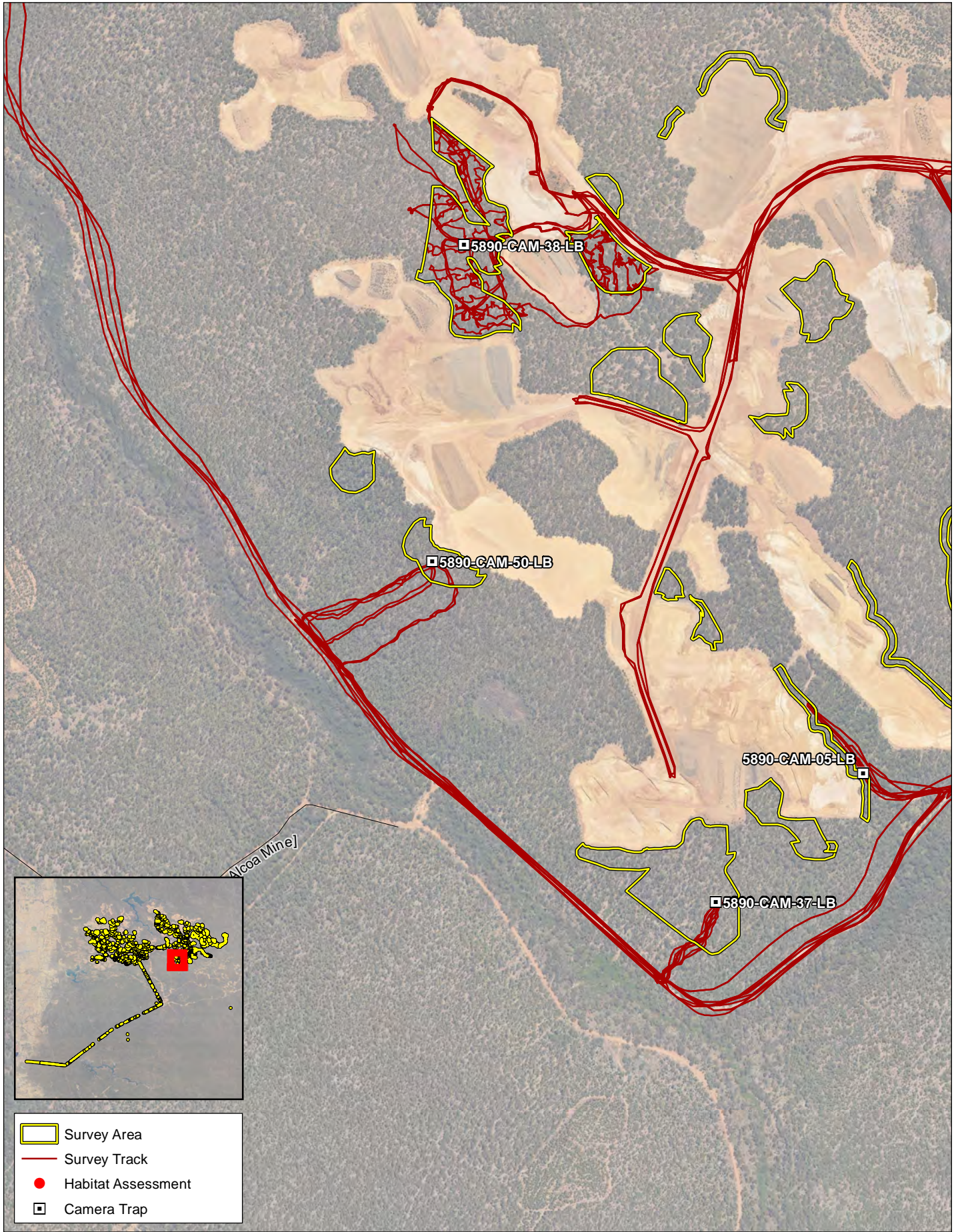


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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-27

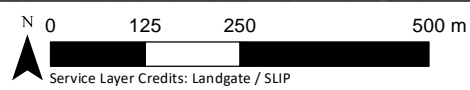
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- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap



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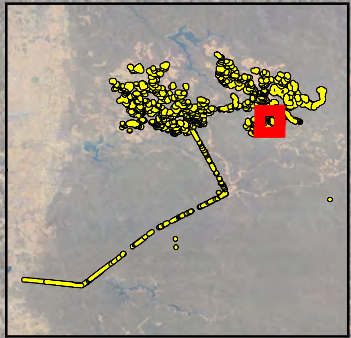
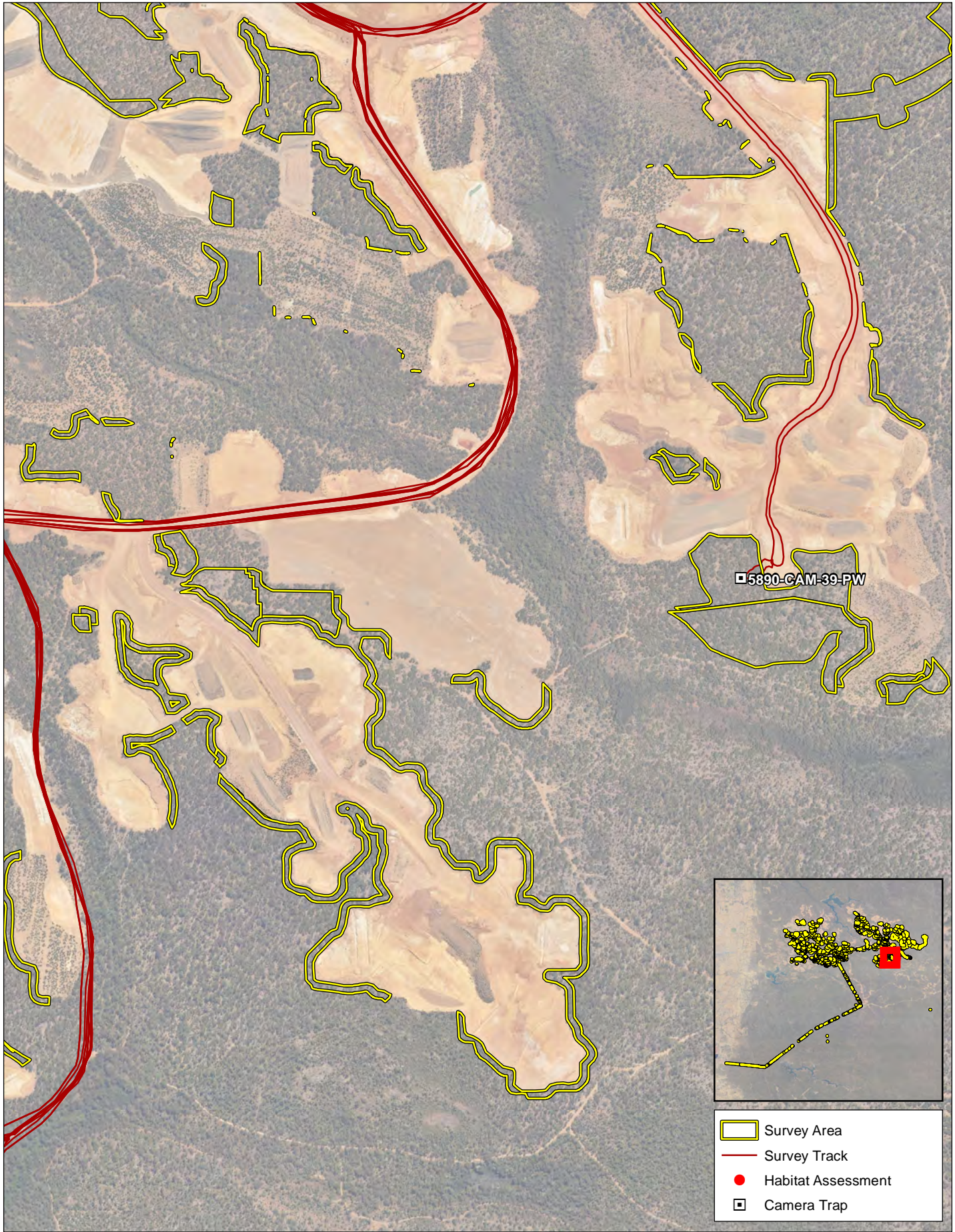






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 Project Number : 675.VX5890.00001  
 Date Drawn : 14/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-28

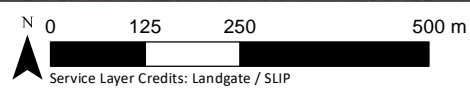
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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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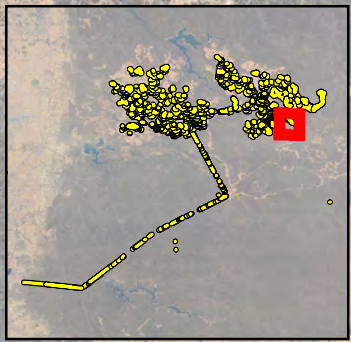
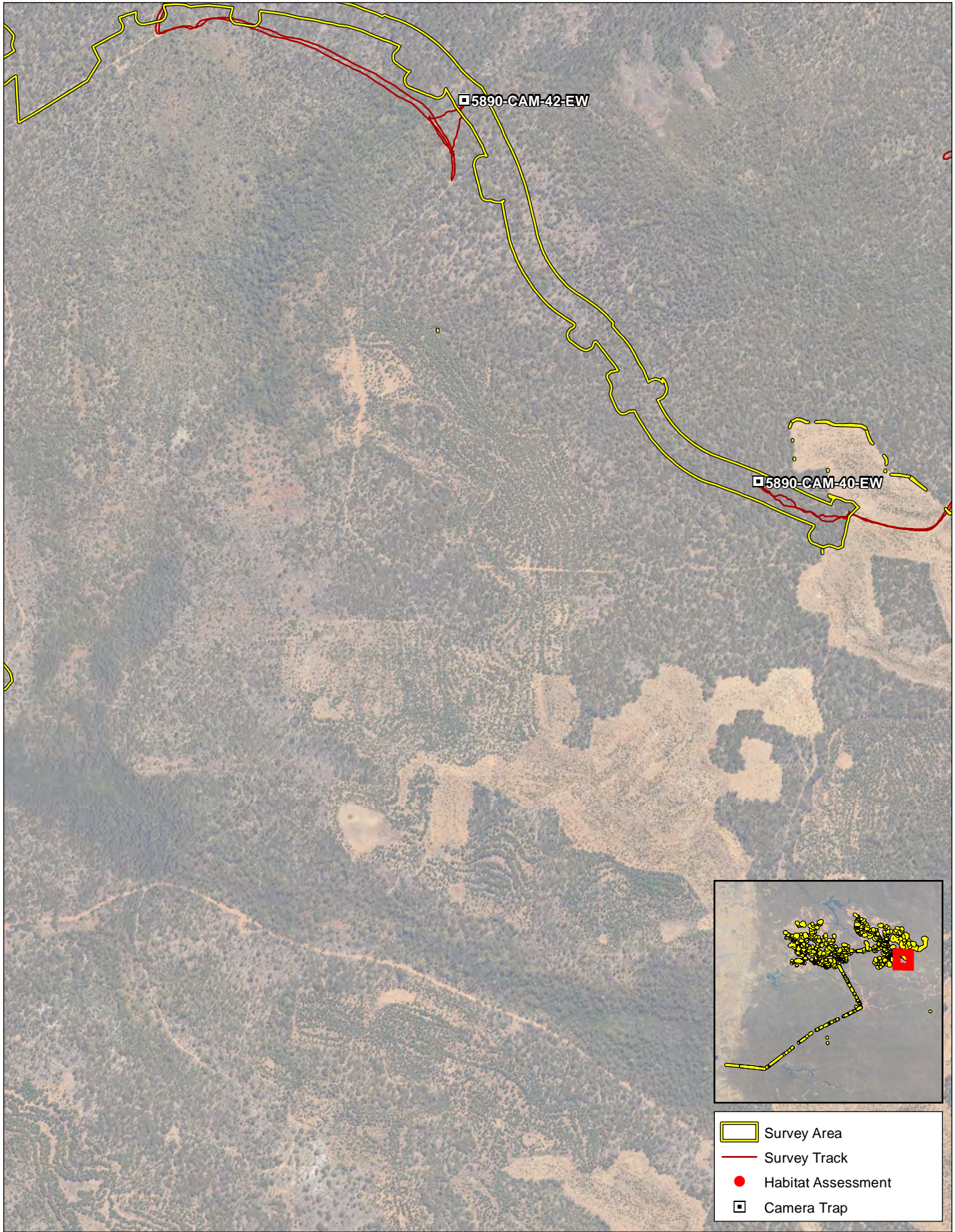
Service Layer Credits: Landgate / SLIP





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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-29

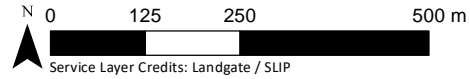
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-  Survey Area
-  Survey Track
-  Habitat Assessment
-  Camera Trap



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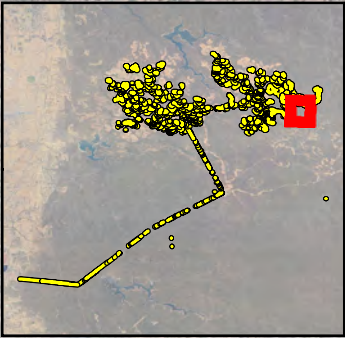
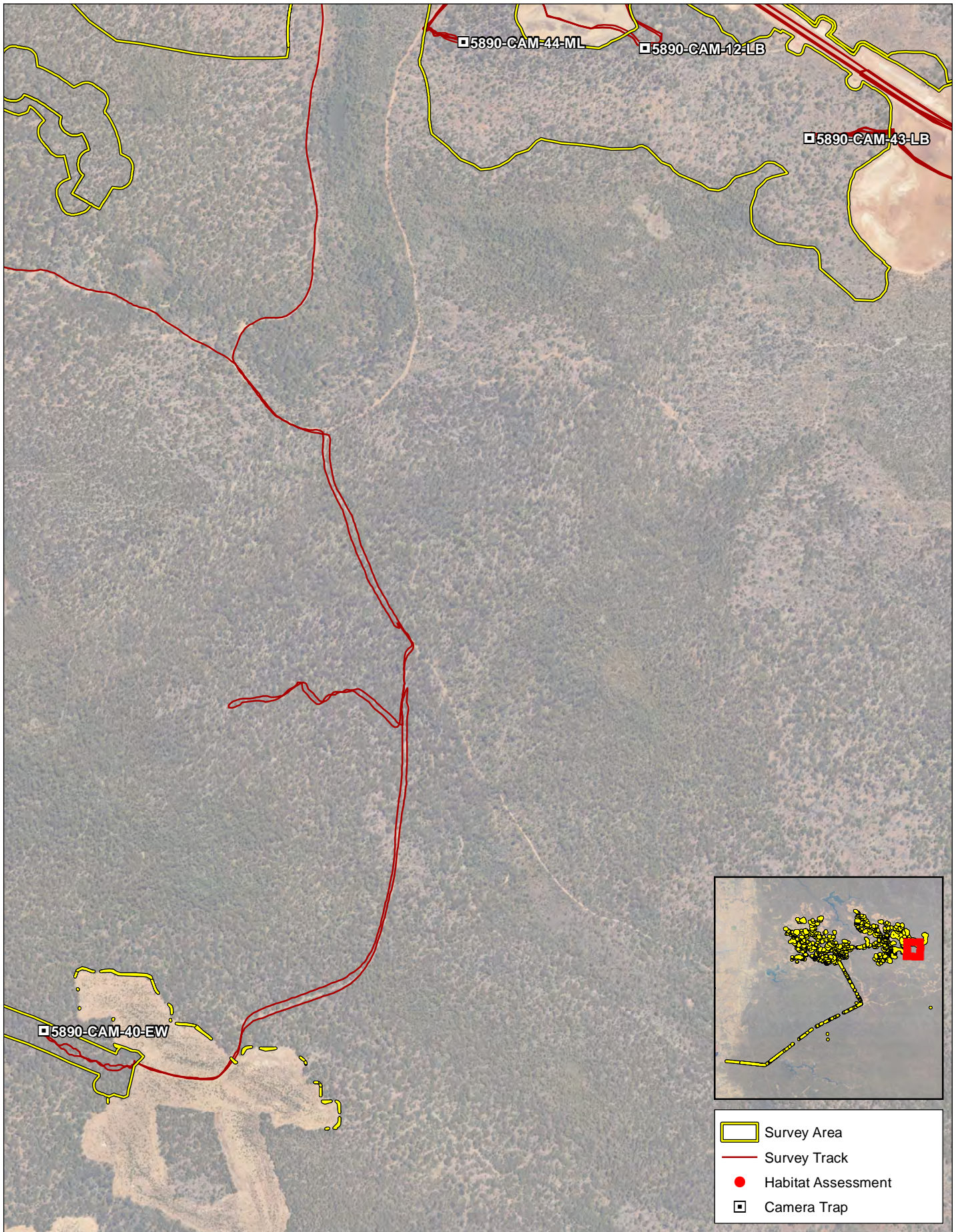


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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-30

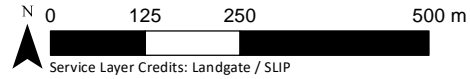
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- Survey Area
- Survey Track
- Habitat Assessment
- Camera Trap



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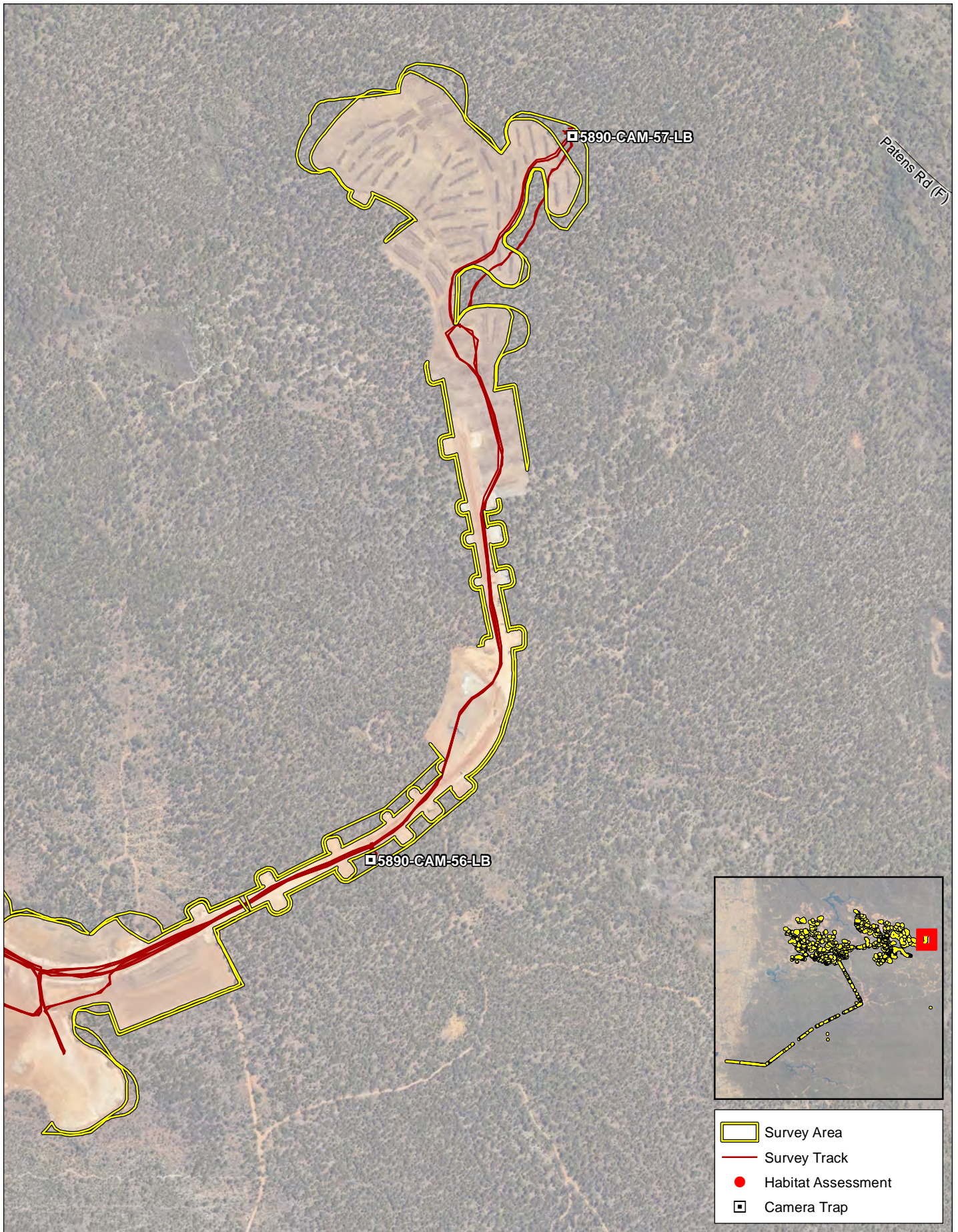


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 Project Number : 675.VX5890.00001  
 Date Drawn : 14/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-31

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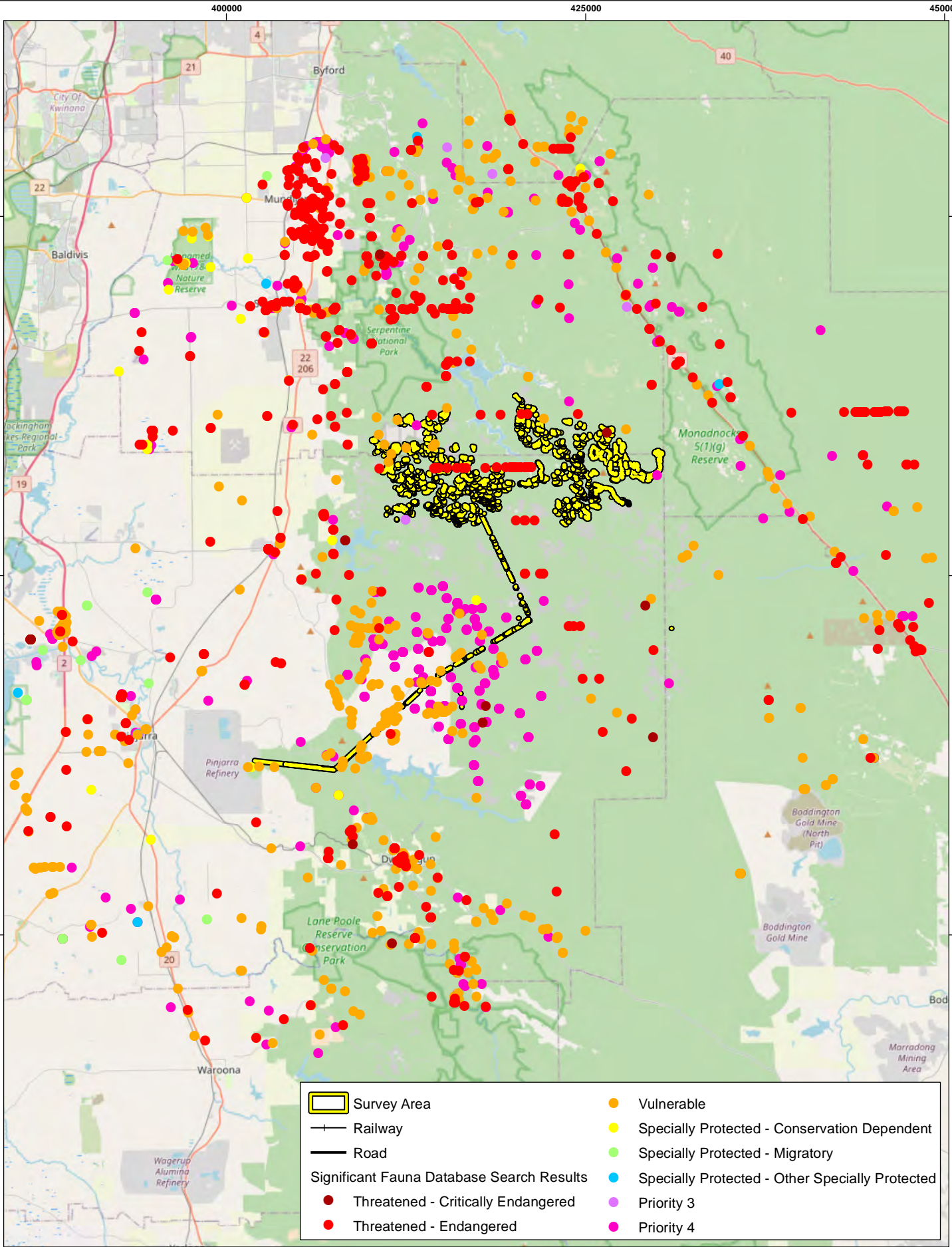
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 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Survey Effort  
 MAP 7-32

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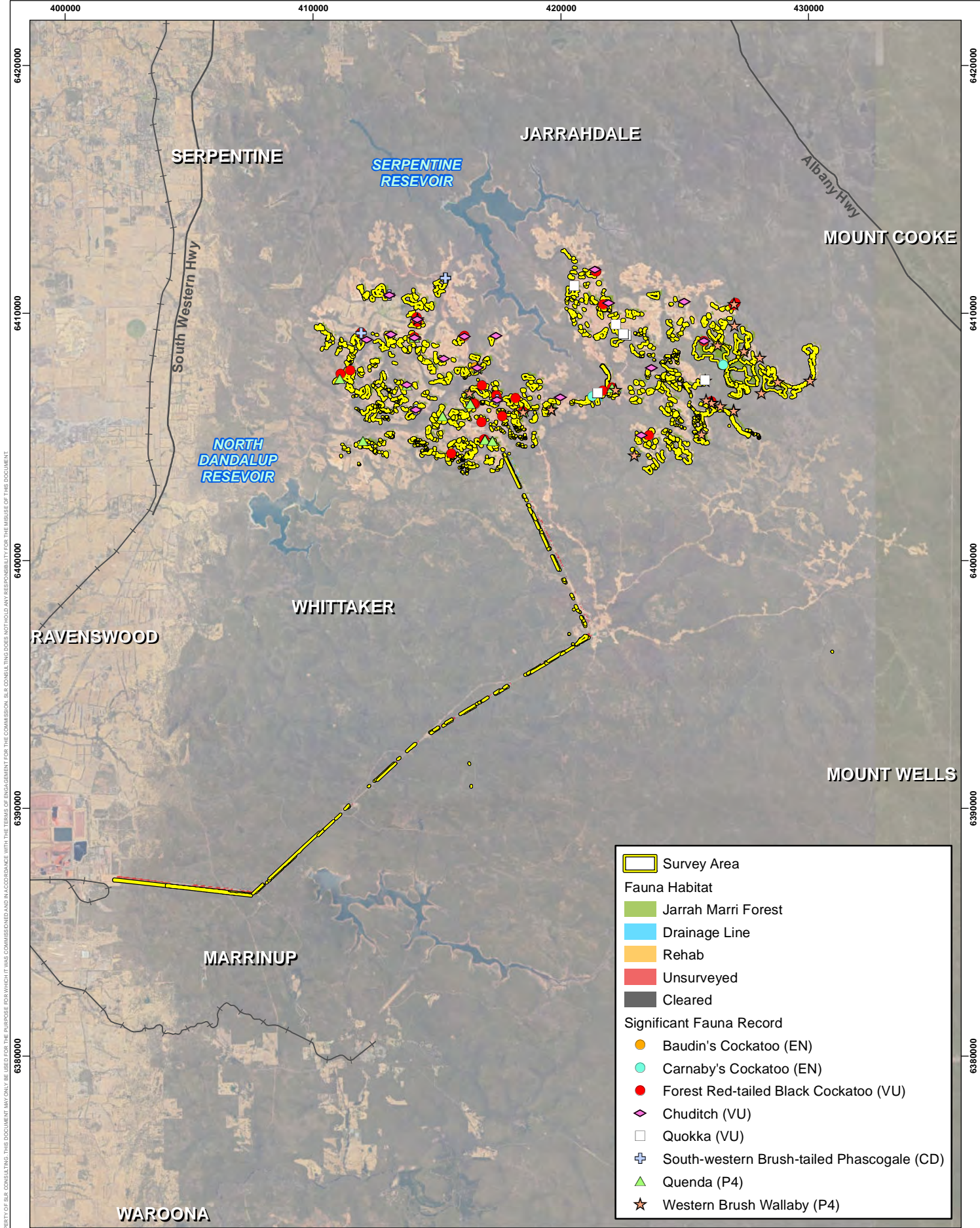


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 Project Number : 675.VX5890.00001  
 Date Drawn : 19/03/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Significant Fauna Database Search Results  
 MAP 8



	Survey Area
<b>Fauna Habitat</b>	
	Jarra Marri Forest
	Drainage Line
	Rehab
	Unsurveyed
	Cleared
<b>Significant Fauna Record</b>	
	Baudin's Cockatoo (EN)
	Carnaby's Cockatoo (EN)
	Forest Red-tailed Black Cockatoo (VU)
	Chuditch (VU)
	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



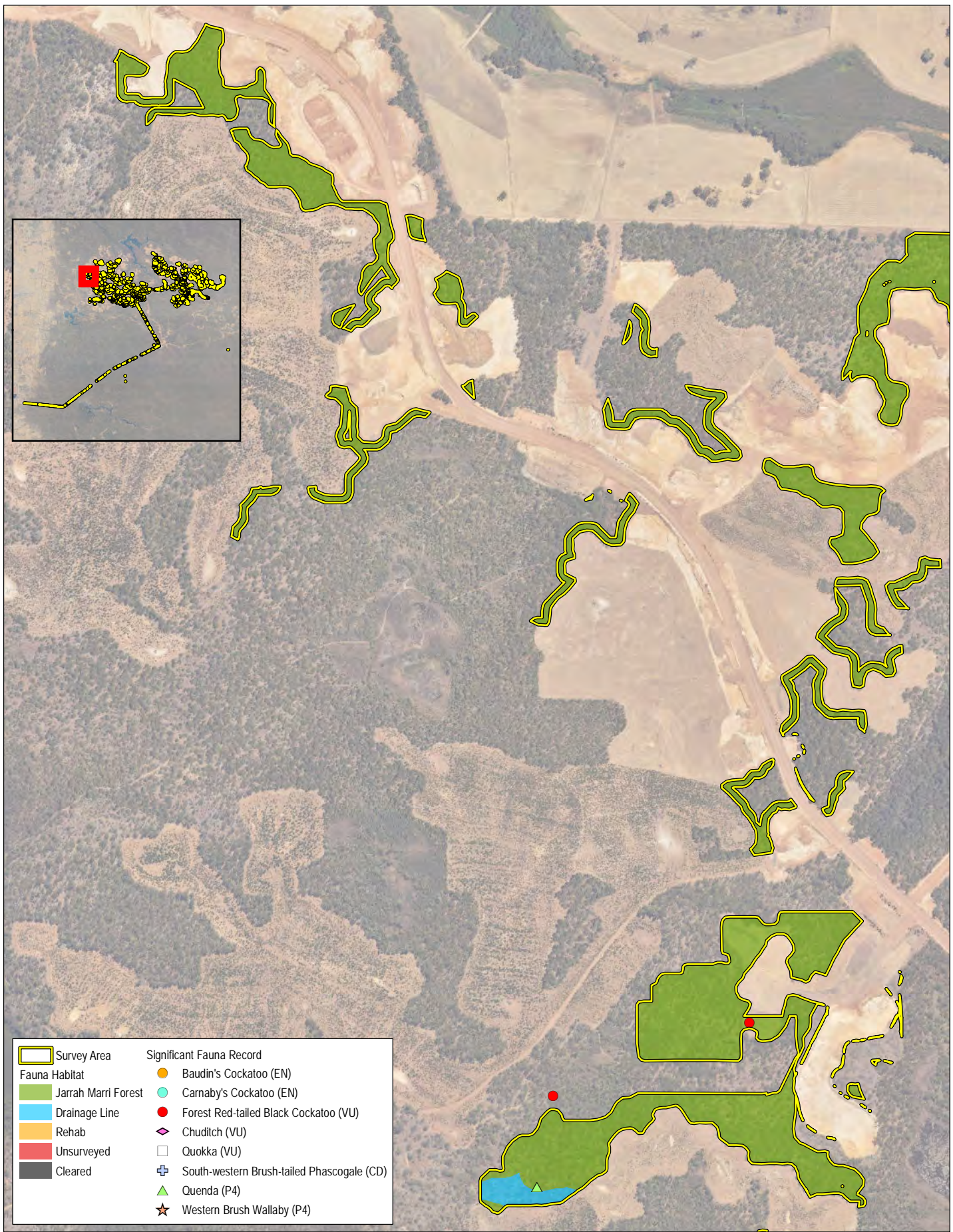
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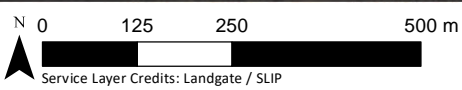
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region  
**Fauna Habitat and  
 Significant Fauna Records**  
 MAP 9-1

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



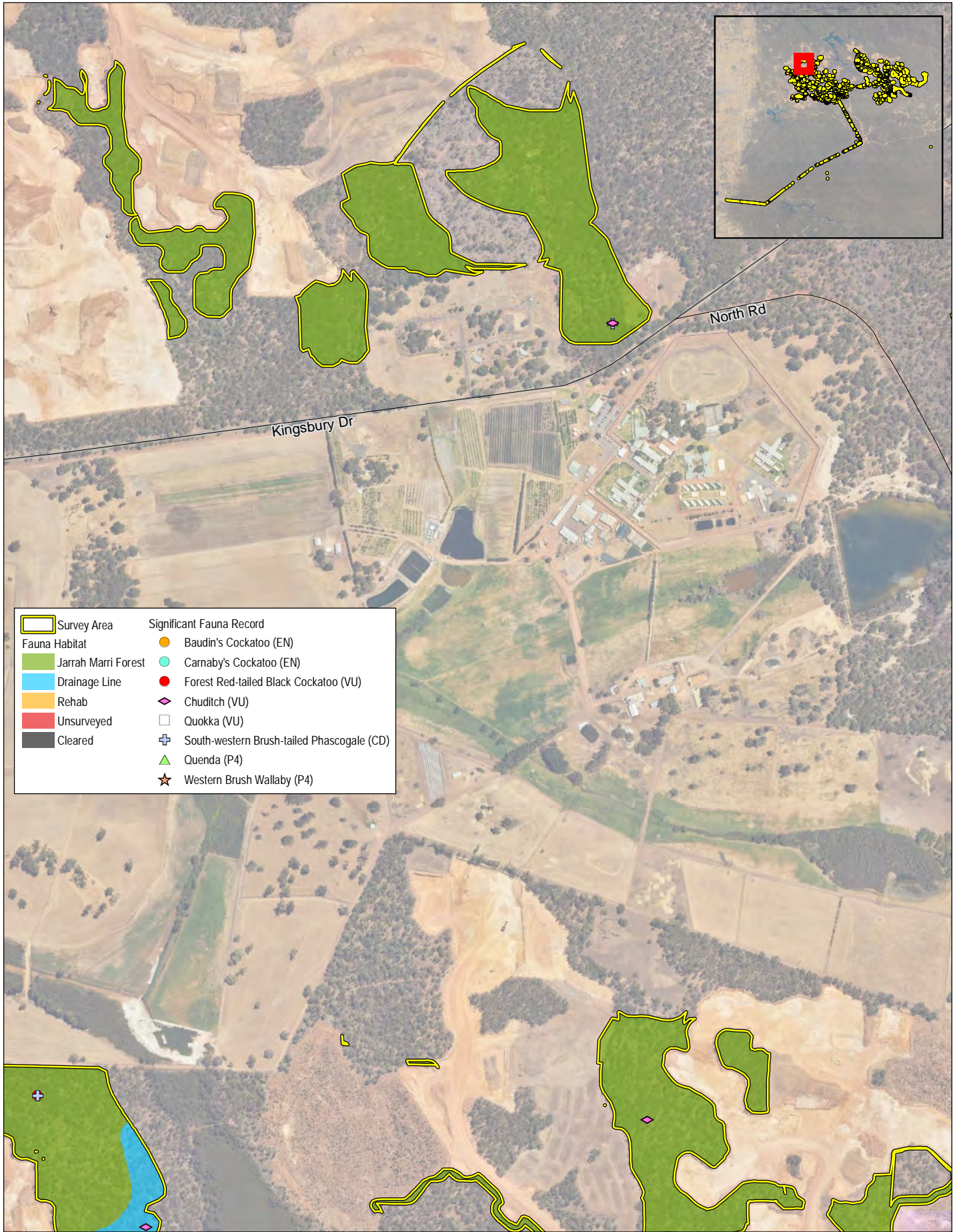
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 Date Drawn : 7/06/2024  
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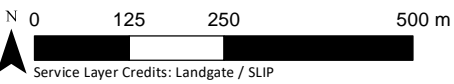
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-2**

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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 Scale : 1:10,000 @ A4  
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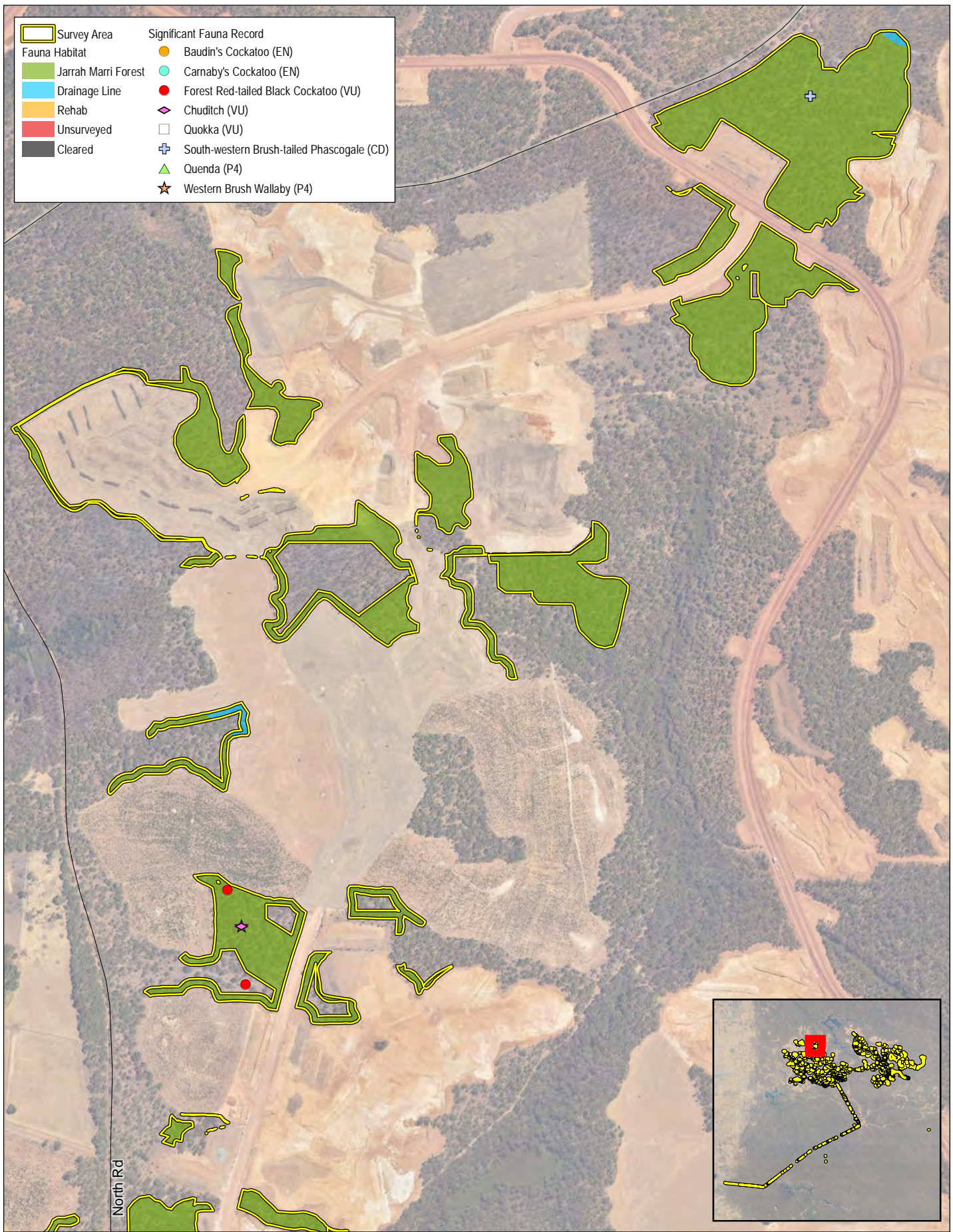
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

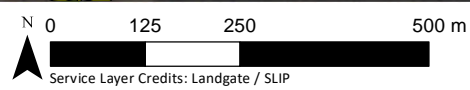
**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-3**

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Survey Area	<b>Significant Fauna Record</b>
<b>Fauna Habitat</b>	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



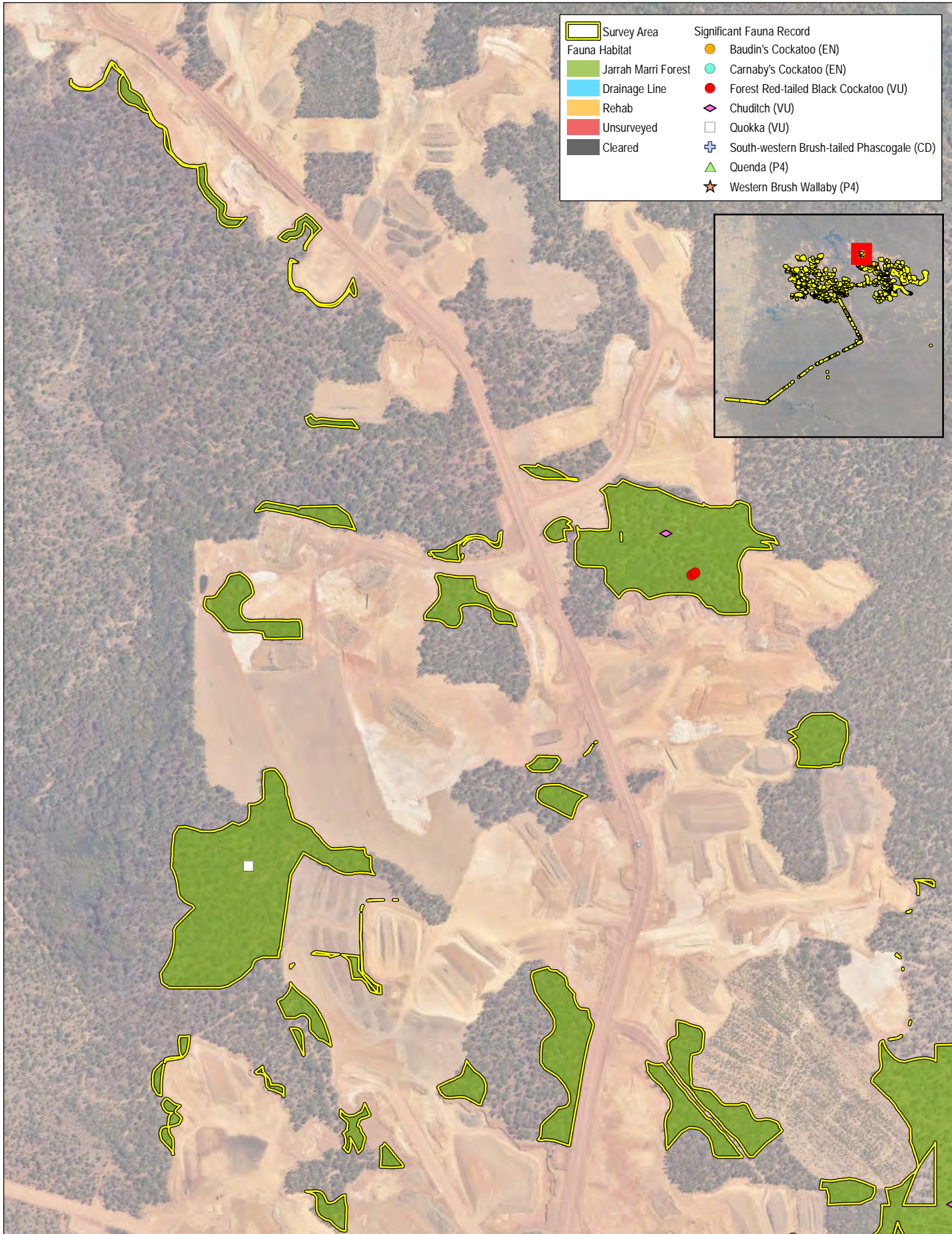
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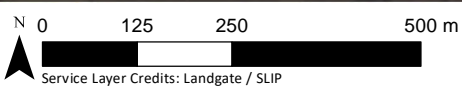
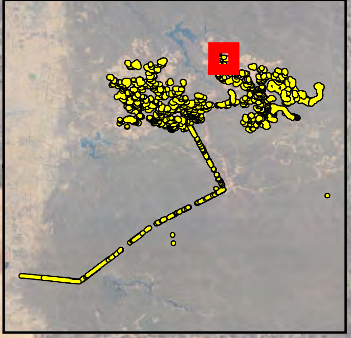
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 Date Drawn : 7/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-4**



Fauna Habitat		Significant Fauna Record	
	Survey Area		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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 Scale : 1:10,000 @ A4  
 Project Number : 675.VX5890.00001  
 Date Drawn : 7/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

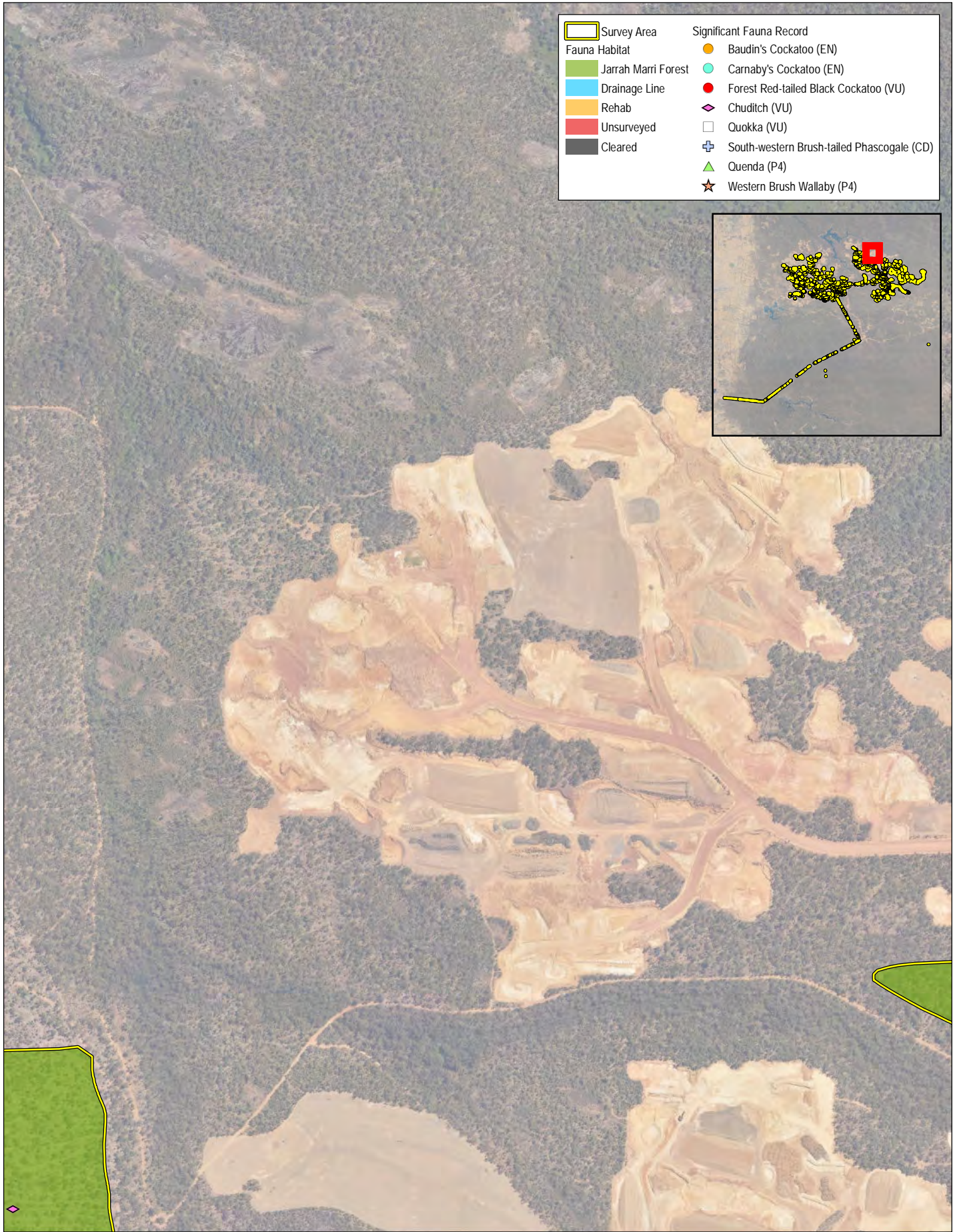
Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-5



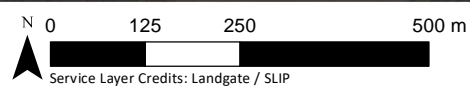
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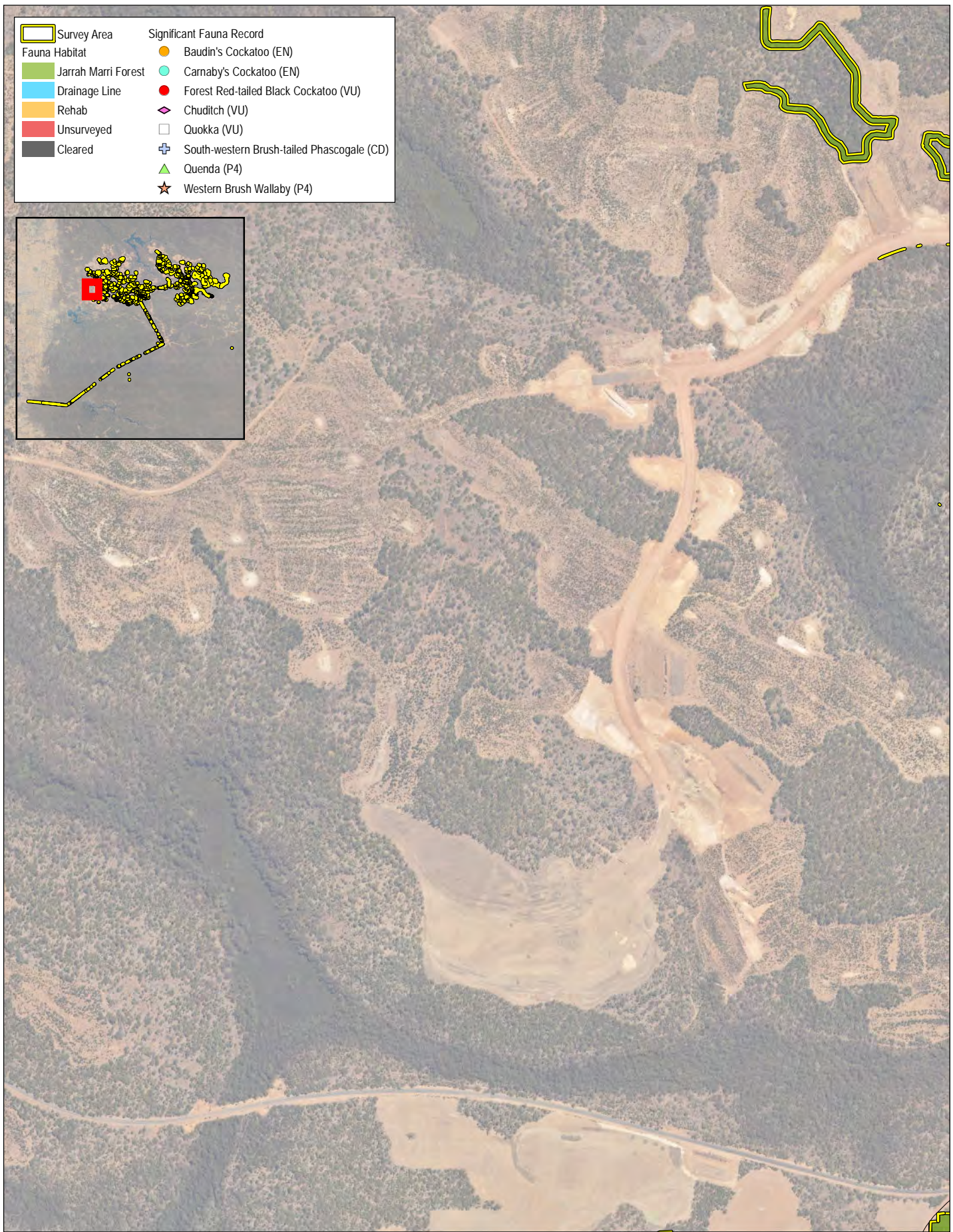
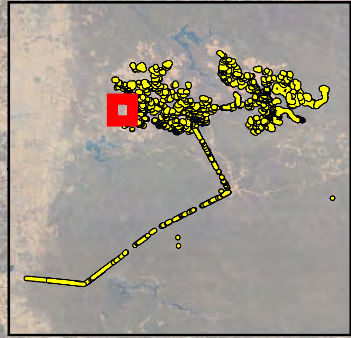
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Date Drawn : 7/06/2024  
Drawn By : Environmaps  
Reviewed By : PD

Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

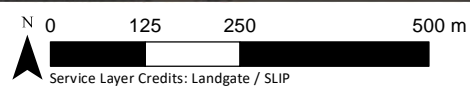
Fauna Habitat and  
Significant Fauna Records  
MAP 9-6

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Survey Area		Significant Fauna Record	
	Survey Area		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



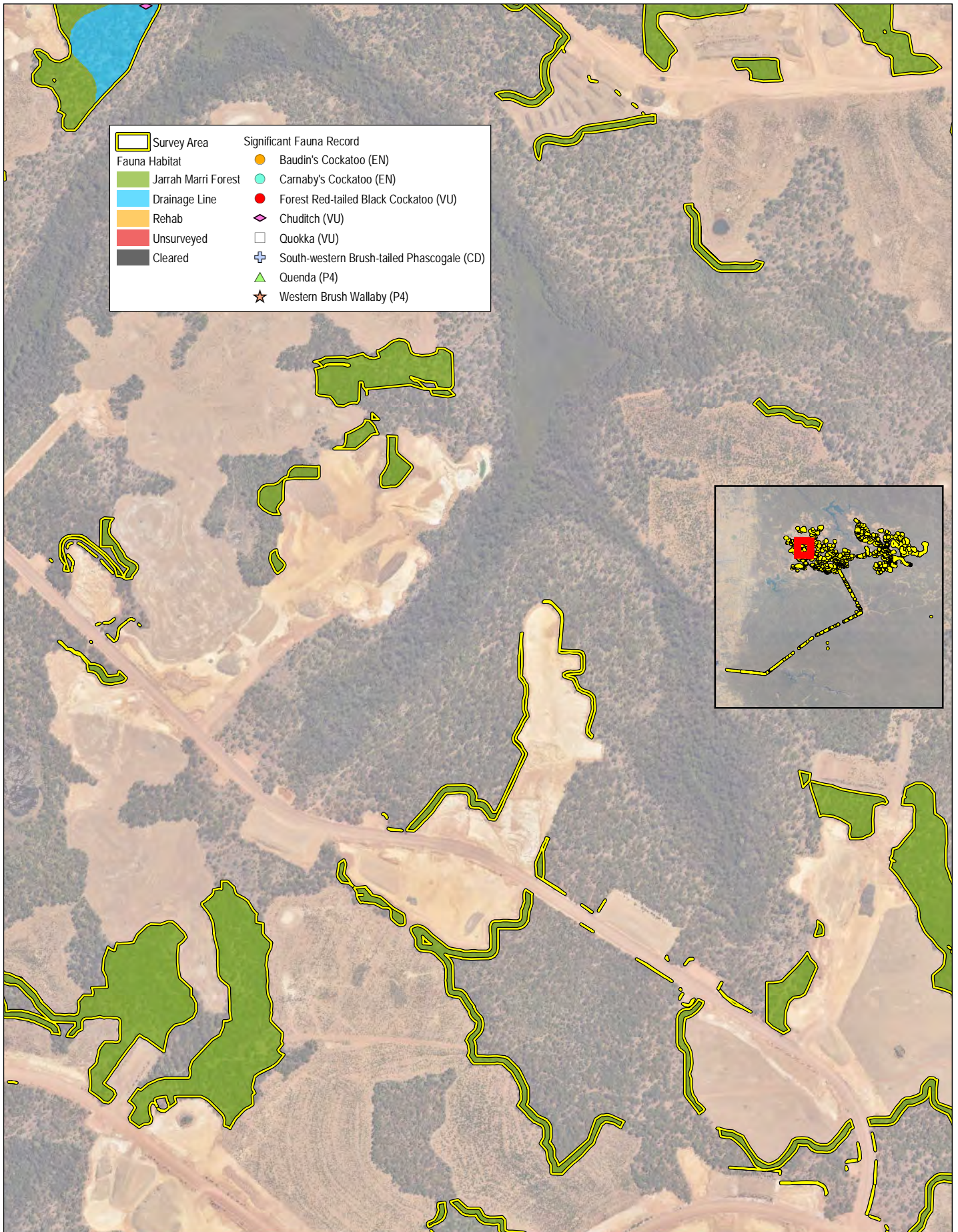
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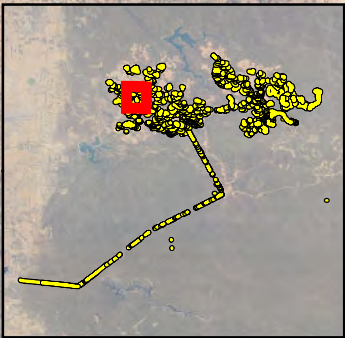
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-7



Fauna Habitat		Significant Fauna Record	
	Jarrah Marri Forest		Baudin's Cockatoo (EN)
	Drainage Line		Carnaby's Cockatoo (EN)
	Rehab		Forest Red-tailed Black Cockatoo (VU)
	Unserved		Chuditch (VU)
	Cleared		Quokka (VU)
			South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



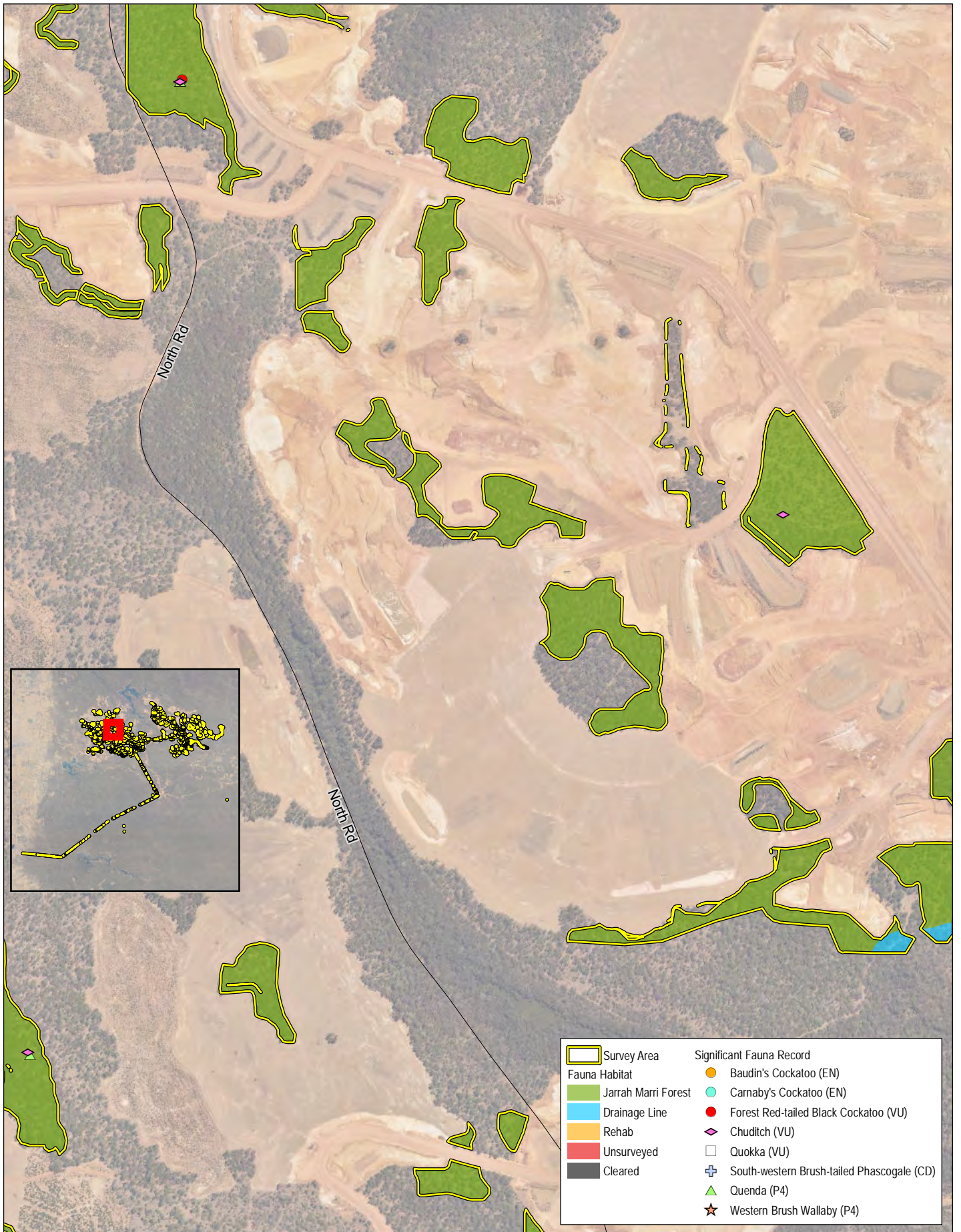
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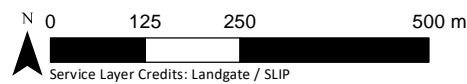
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-8

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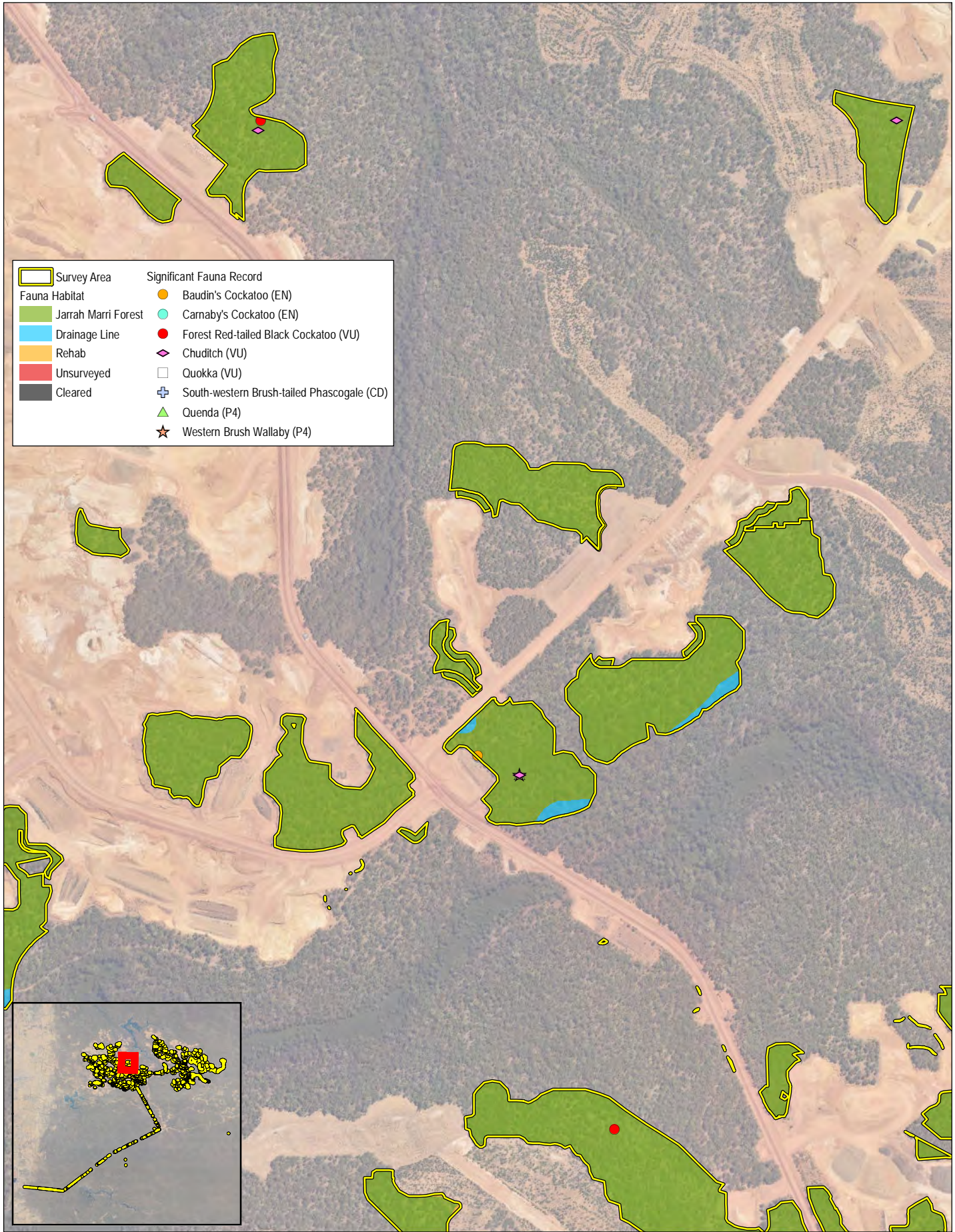


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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-9**

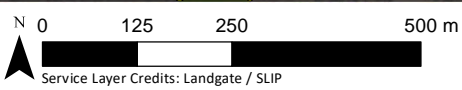
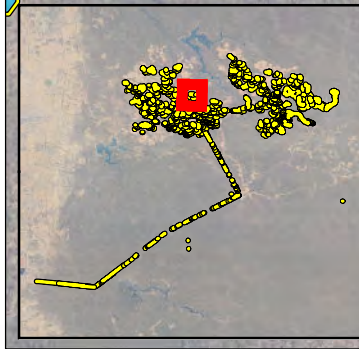
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Survey Area	
	Survey Area
	Fauna Habitat
	Jarra Marri Forest
	Drainage Line
	Rehab
	Unsurveyed
	Cleared

Significant Fauna Record	
	Baudin's Cockatoo (EN)
	Carnaby's Cockatoo (EN)
	Forest Red-tailed Black Cockatoo (VU)
	Chuditch (VU)
	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



Alcoa  
Targeted Chuditch, Quokka, and Woylie  
Surveys Huntly Mine – Myara Region

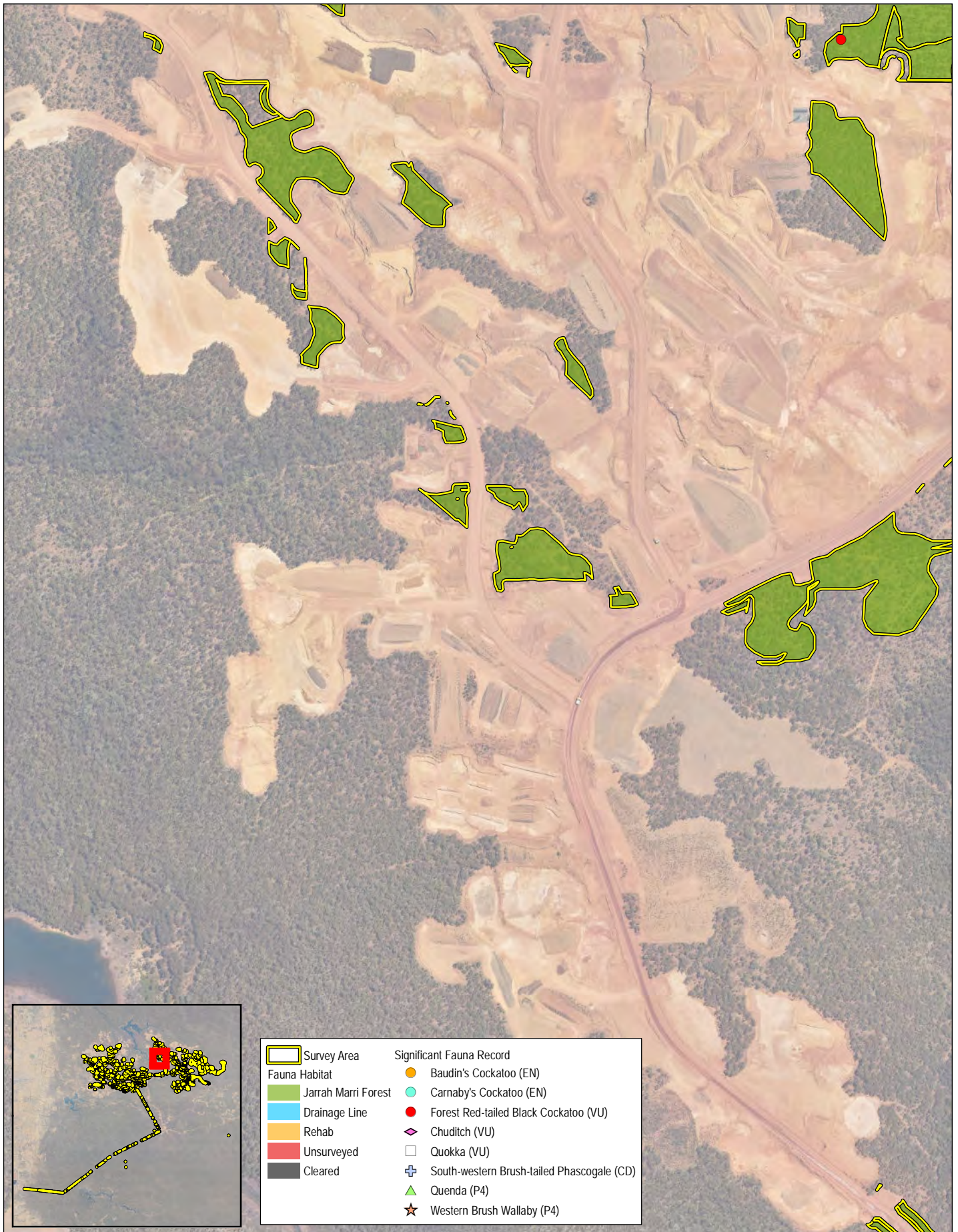
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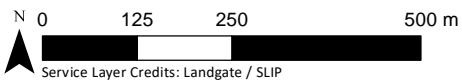
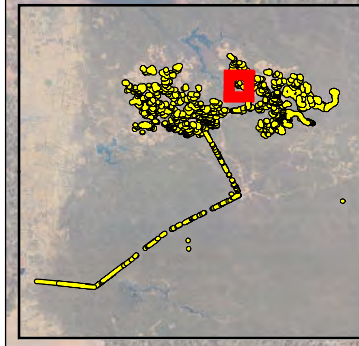
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Fauna Habitat and  
Significant Fauna Records  
MAP 9-10

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unserved	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



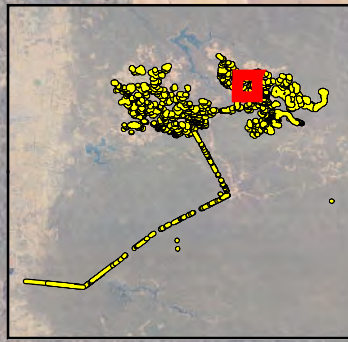
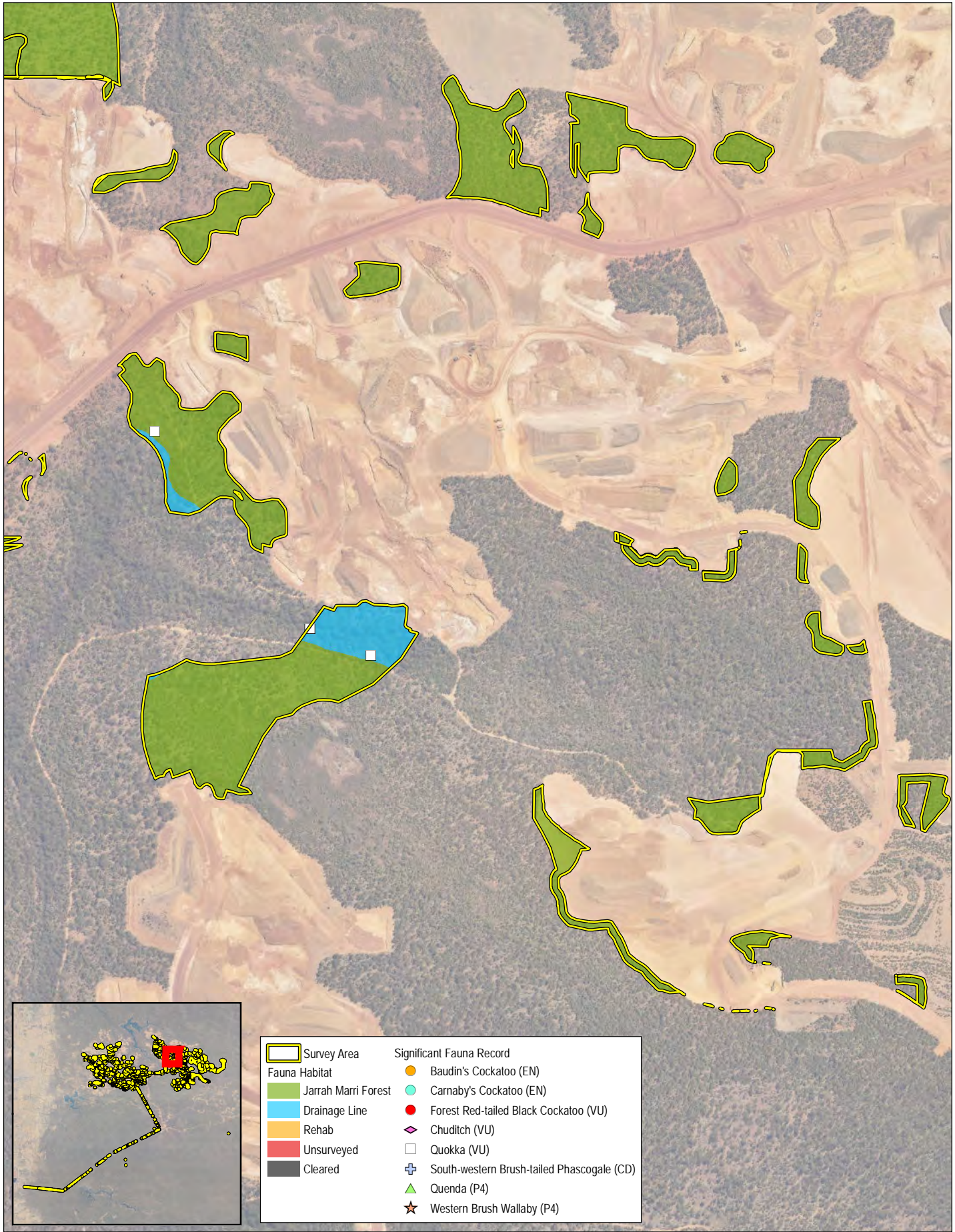
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-11

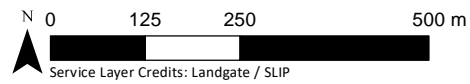
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



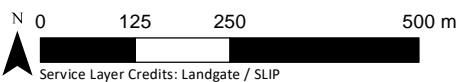
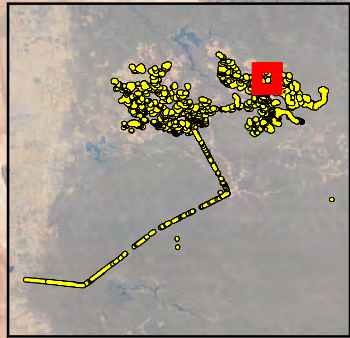
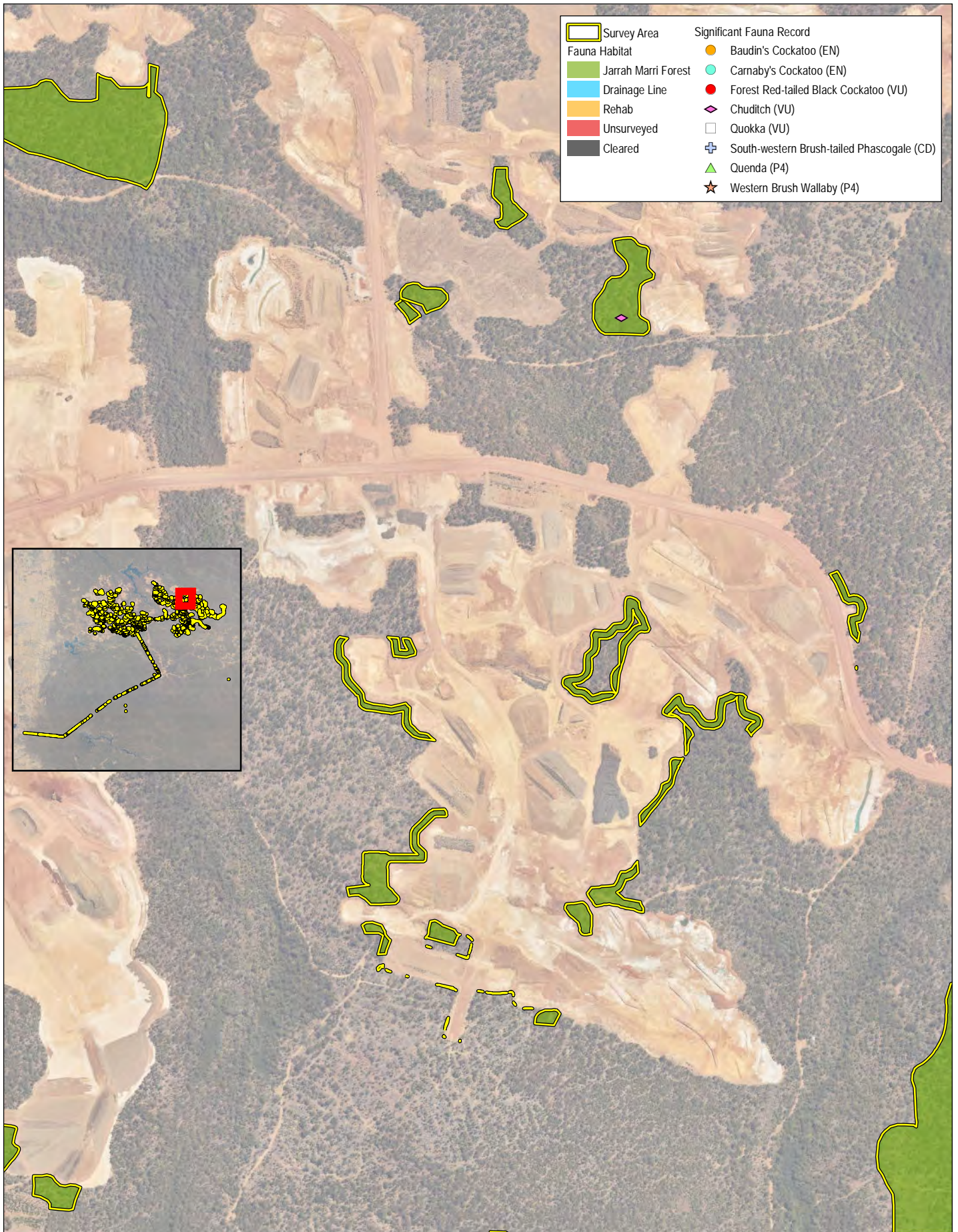
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Alcoa  
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-12



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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

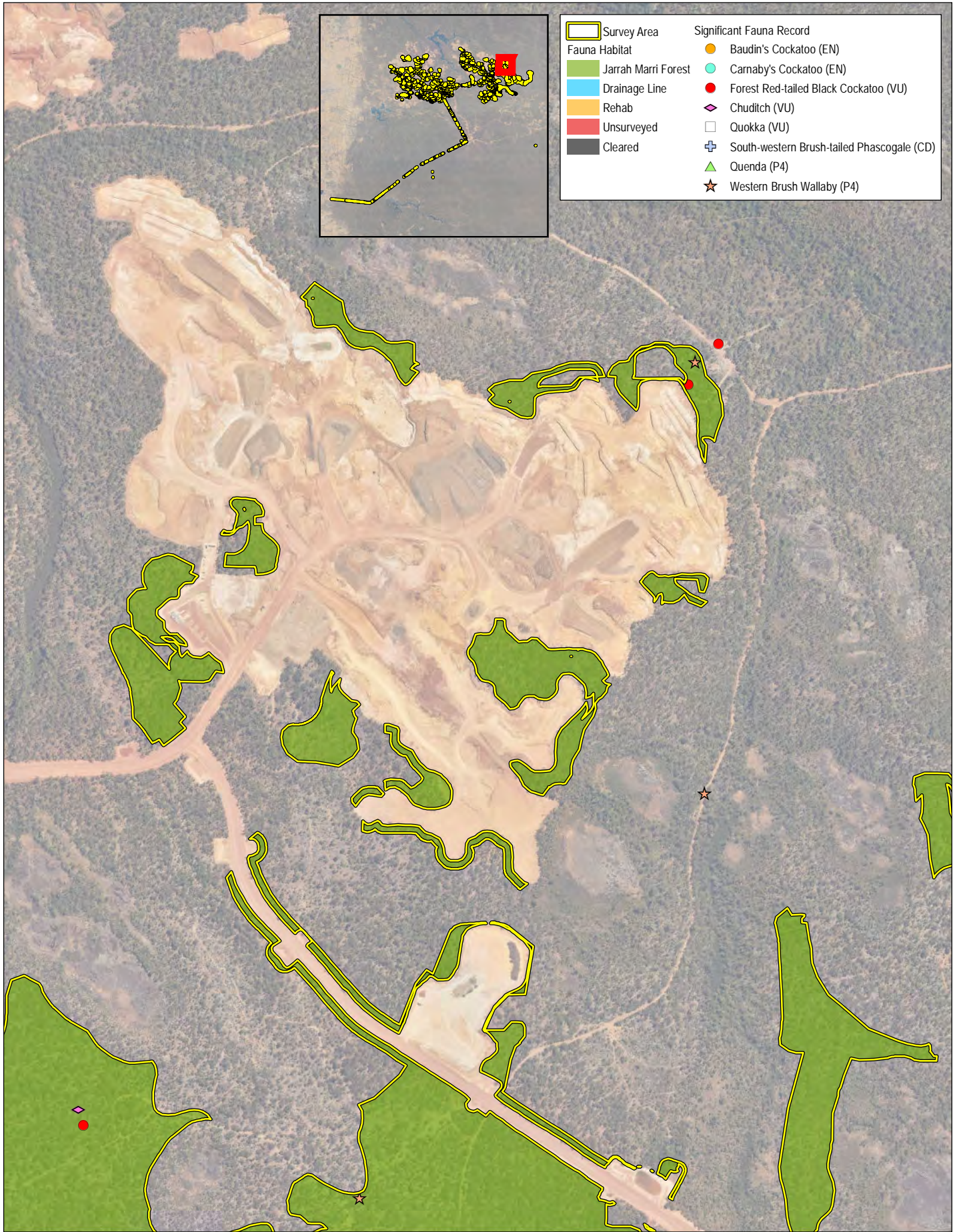
Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-13



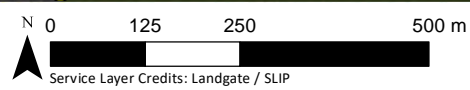
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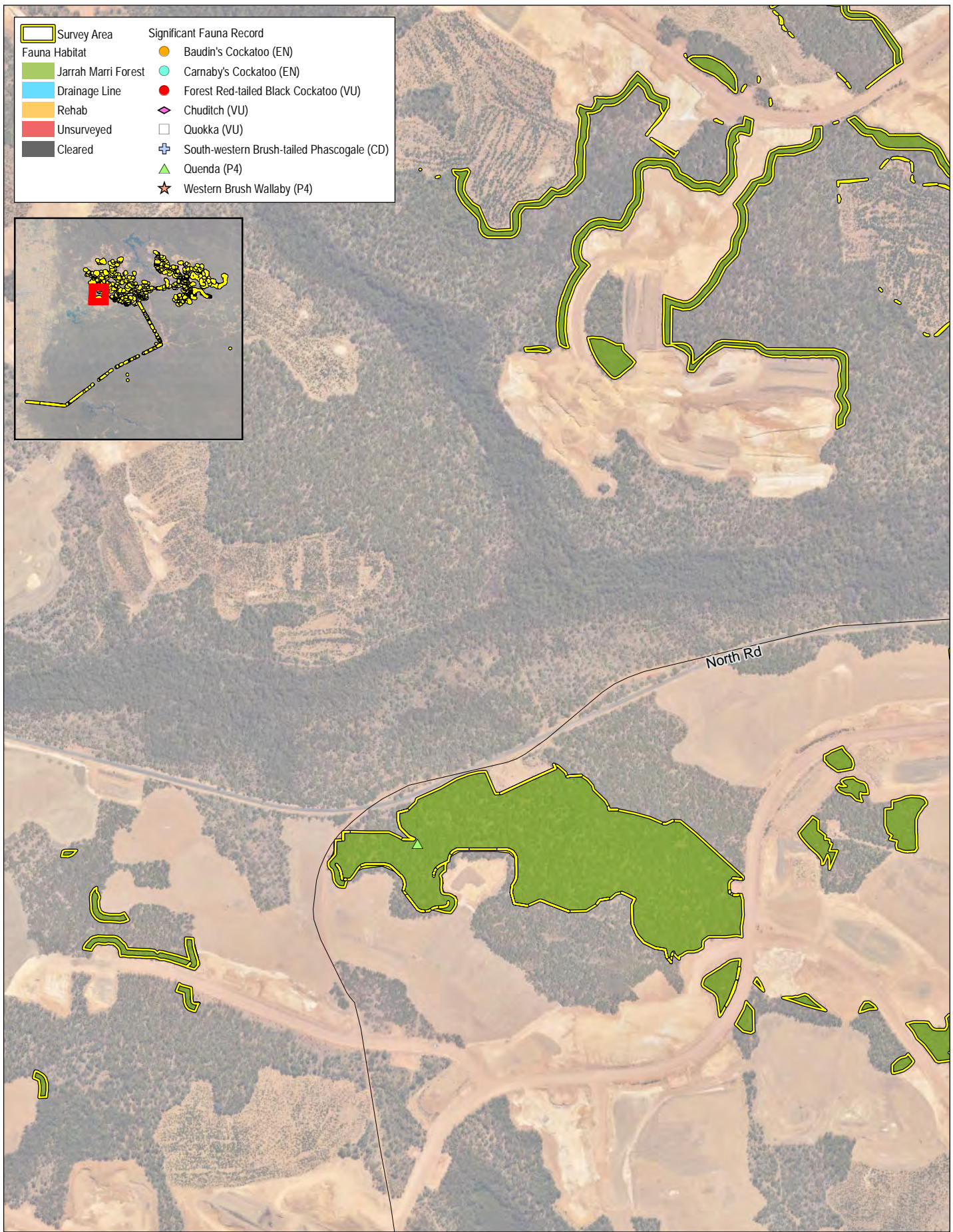
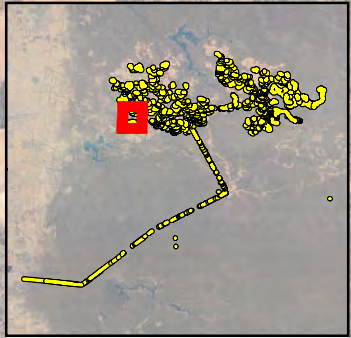


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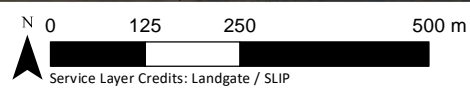
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-14

Survey Area		Significant Fauna Record	
	Fauna Habitat		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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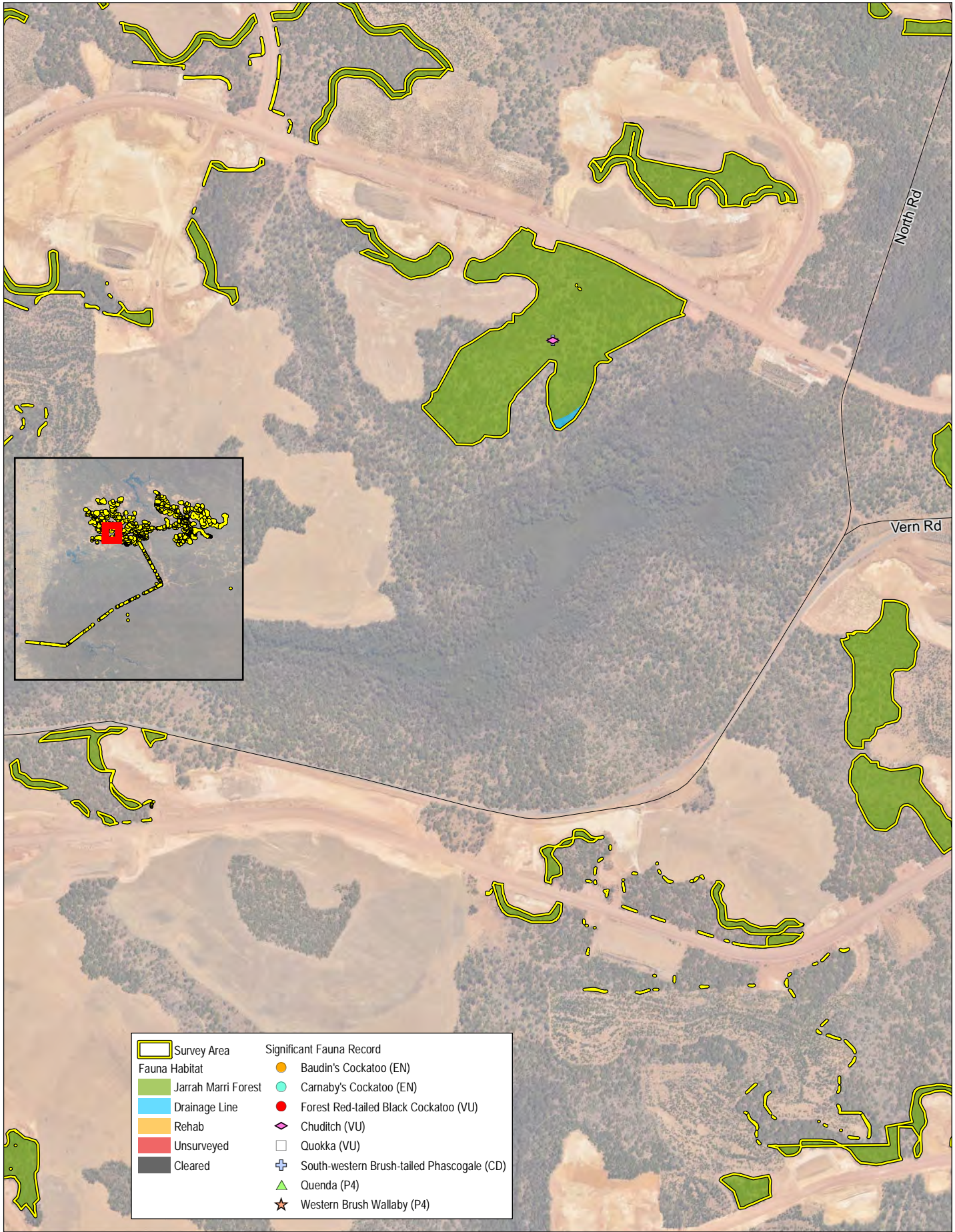
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Alcoa  
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-15

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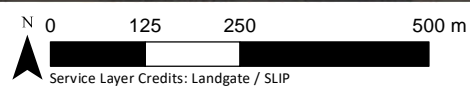
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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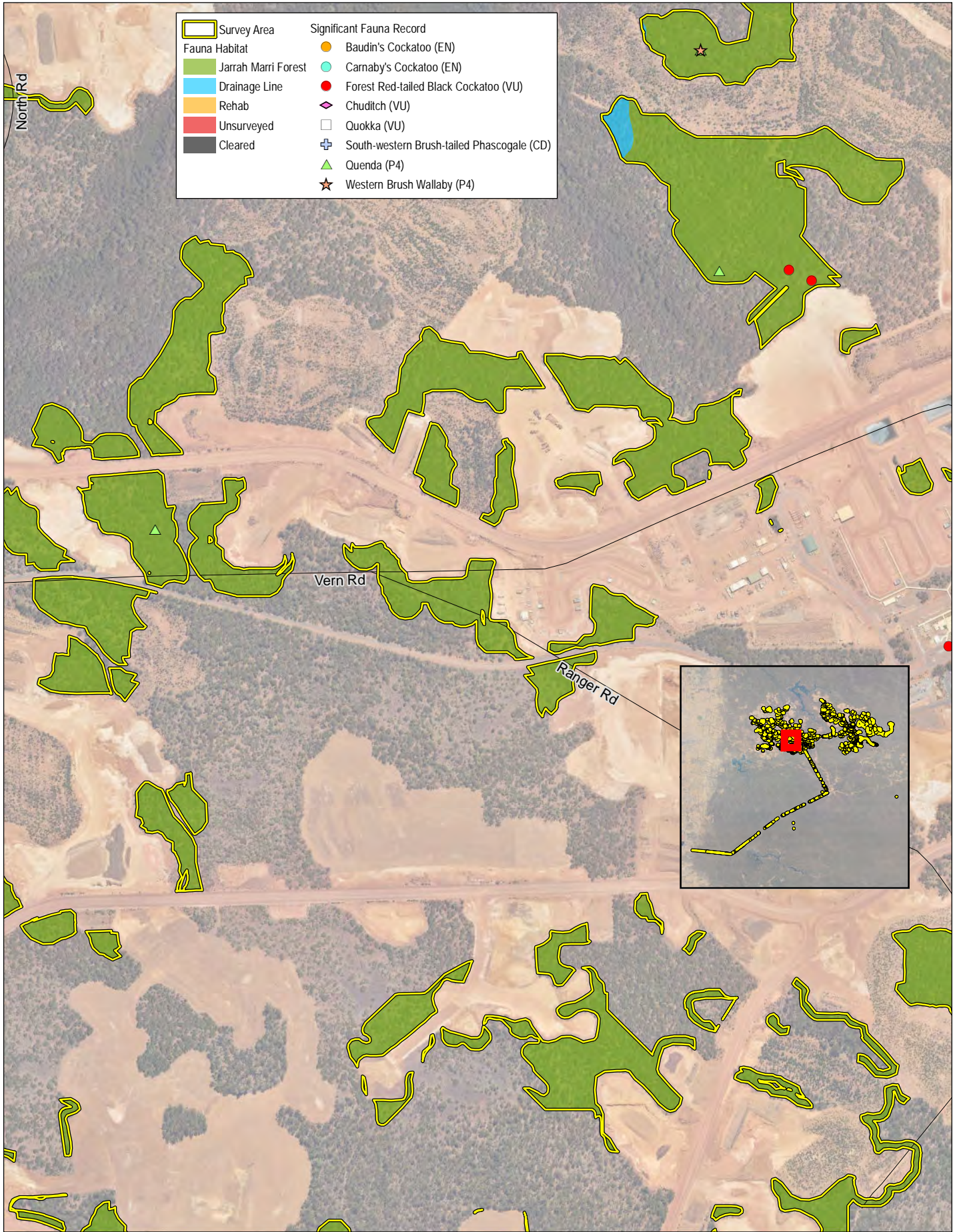


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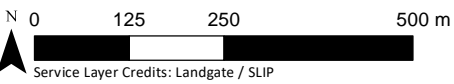
Alcoa  
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-16

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Survey Area	<b>Significant Fauna Record</b>
<b>Fauna Habitat</b>	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unserved	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)

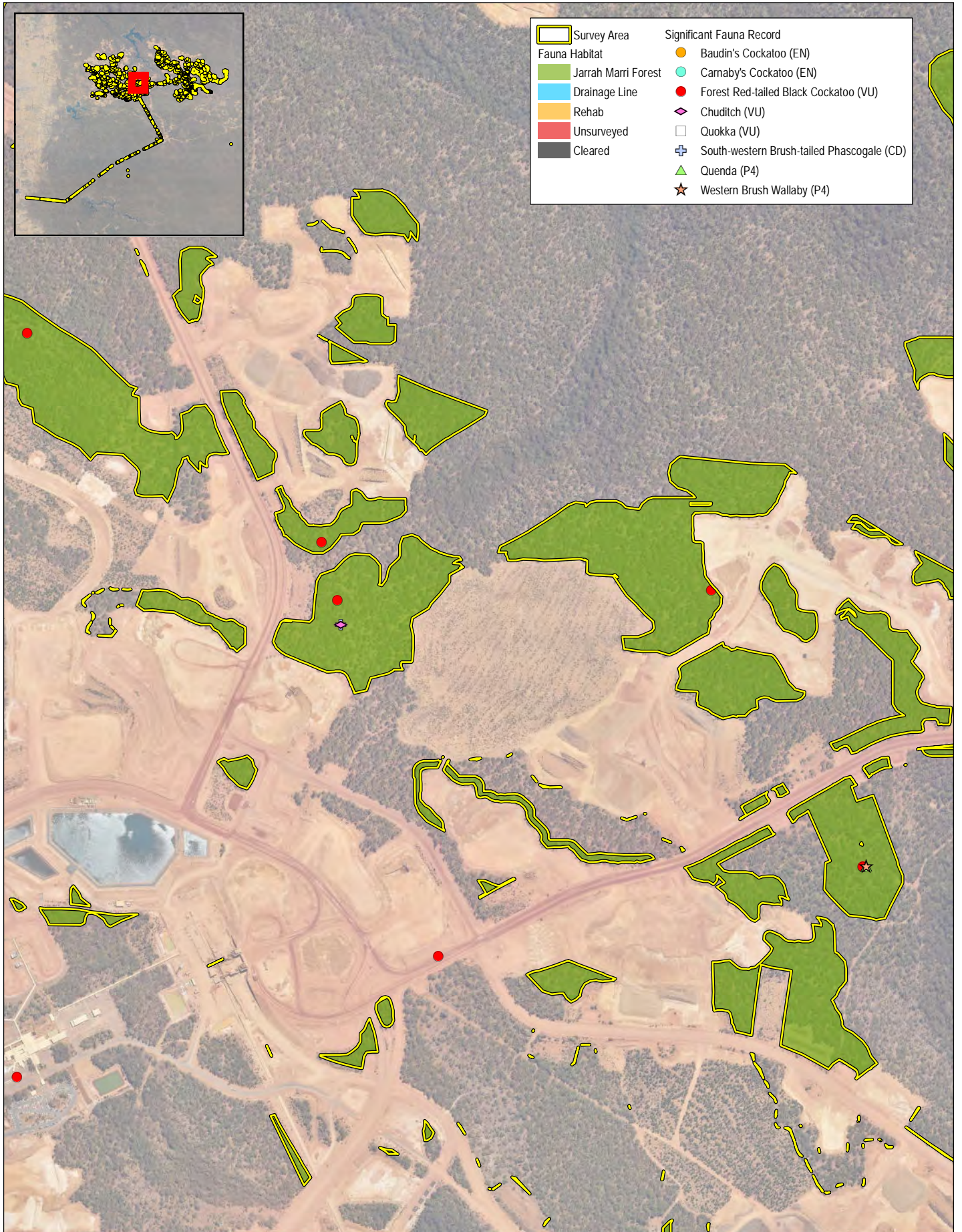


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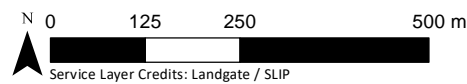
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-17**



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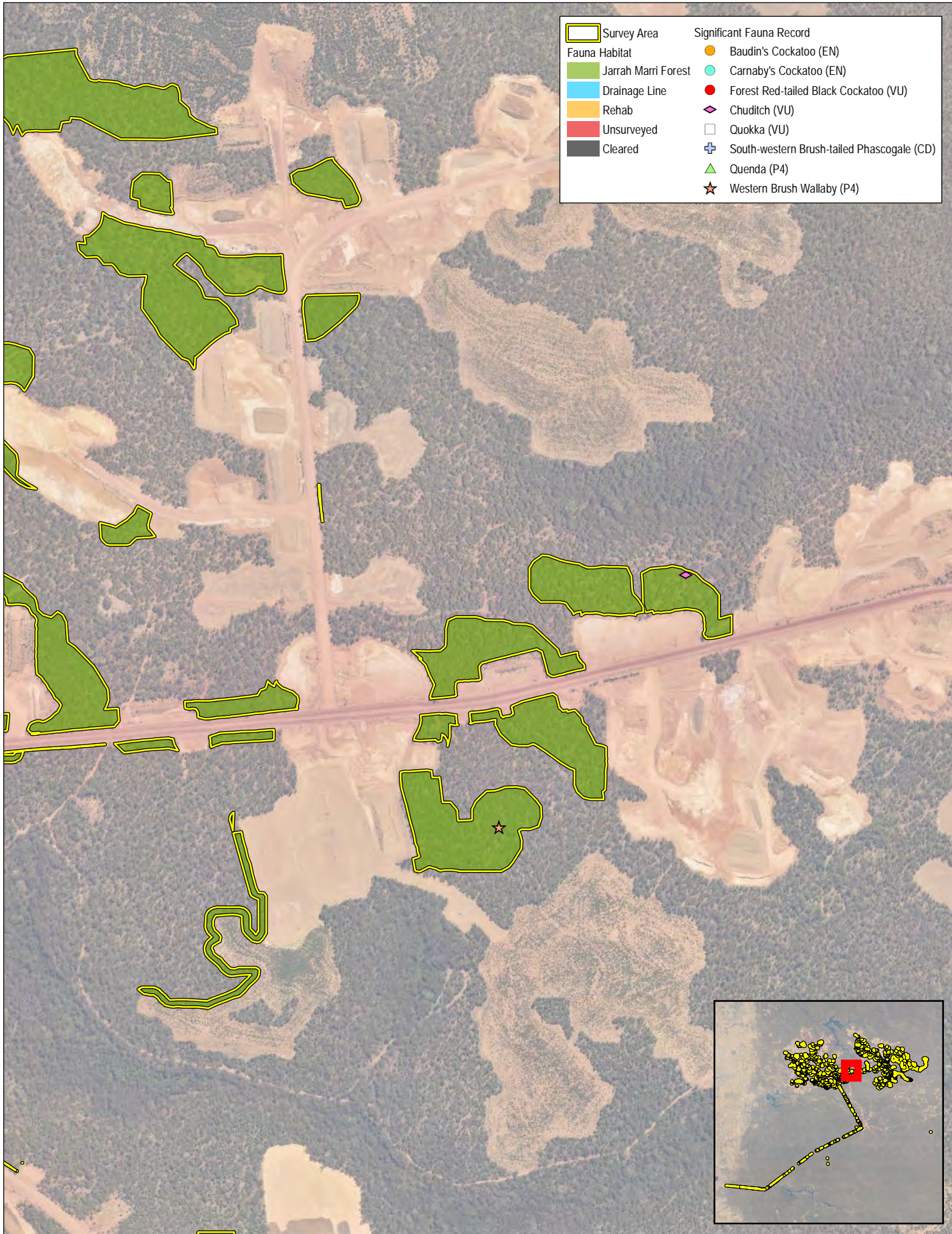


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Alcoa  
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-18

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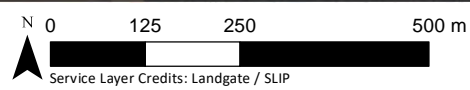


Fauna Habitat		Significant Fauna Record	
[Yellow Outline]	Survey Area	[Orange Circle]	Baudin's Cockatoo (EN)
[Green Area]	Jarrah Marri Forest	[Cyan Circle]	Carnaby's Cockatoo (EN)
[Blue Line]	Drainage Line	[Red Circle]	Forest Red-tailed Black Cockatoo (VU)
[Yellow Area]	Rehab	[Purple Diamond]	Chuditch (VU)
[Red Area]	Unserved	[White Square]	Quokka (VU)
[Black Area]	Cleared	[Blue Cross]	South-western Brush-tailed Phascogale (CD)
		[Green Triangle]	Quenda (P4)
		[Red Star]	Western Brush Wallaby (P4)

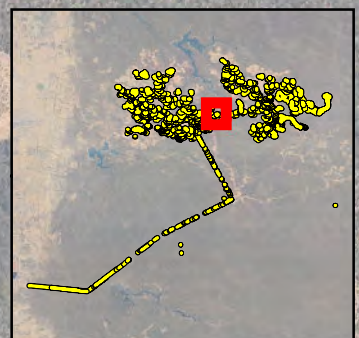
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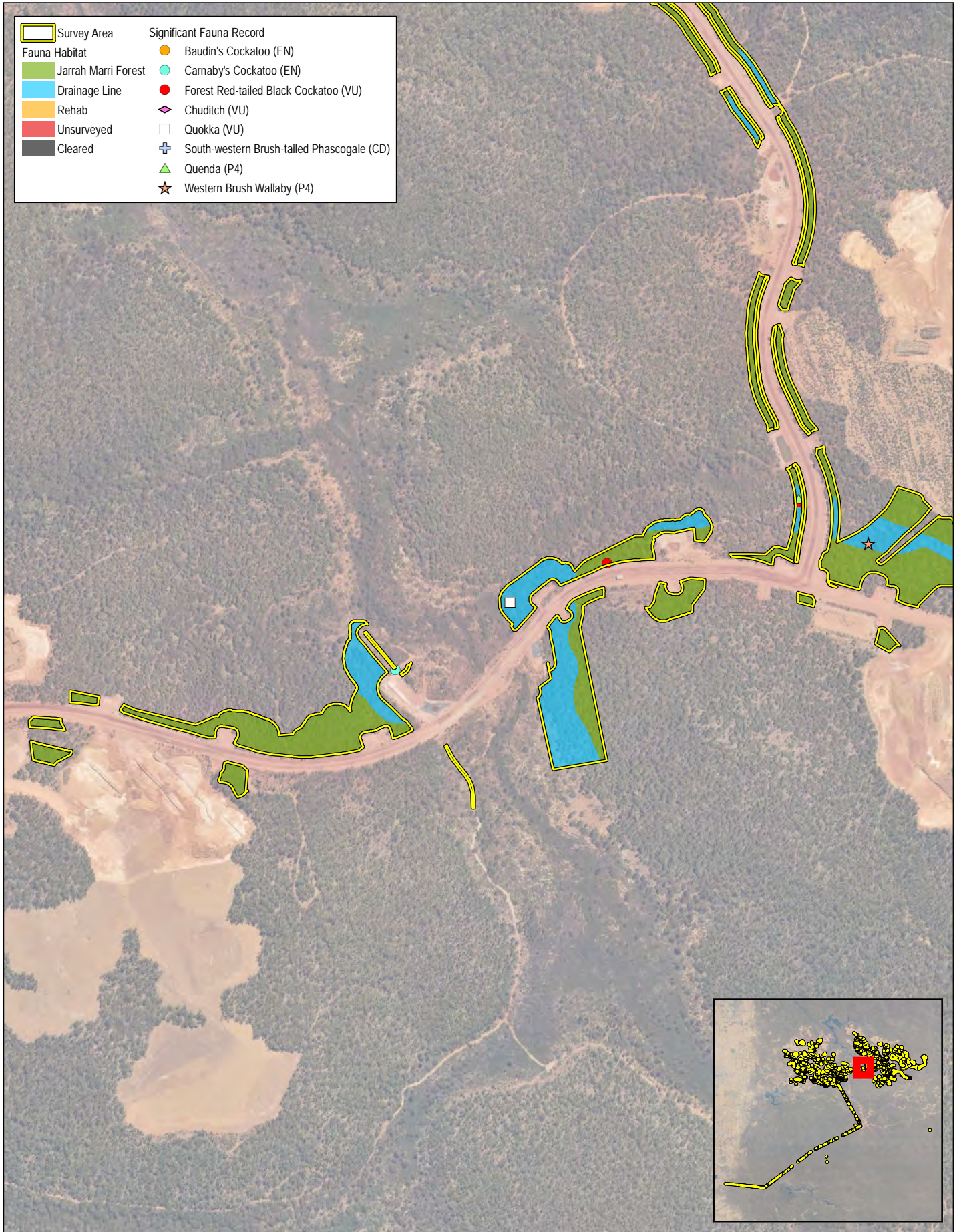


Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

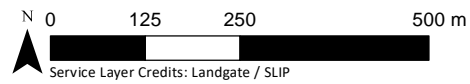
Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-19

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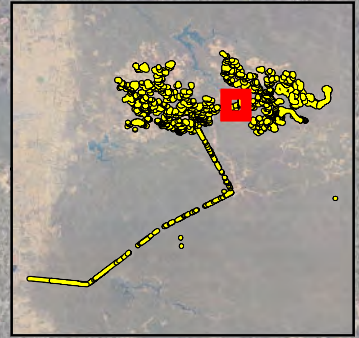
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	Survey Area		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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











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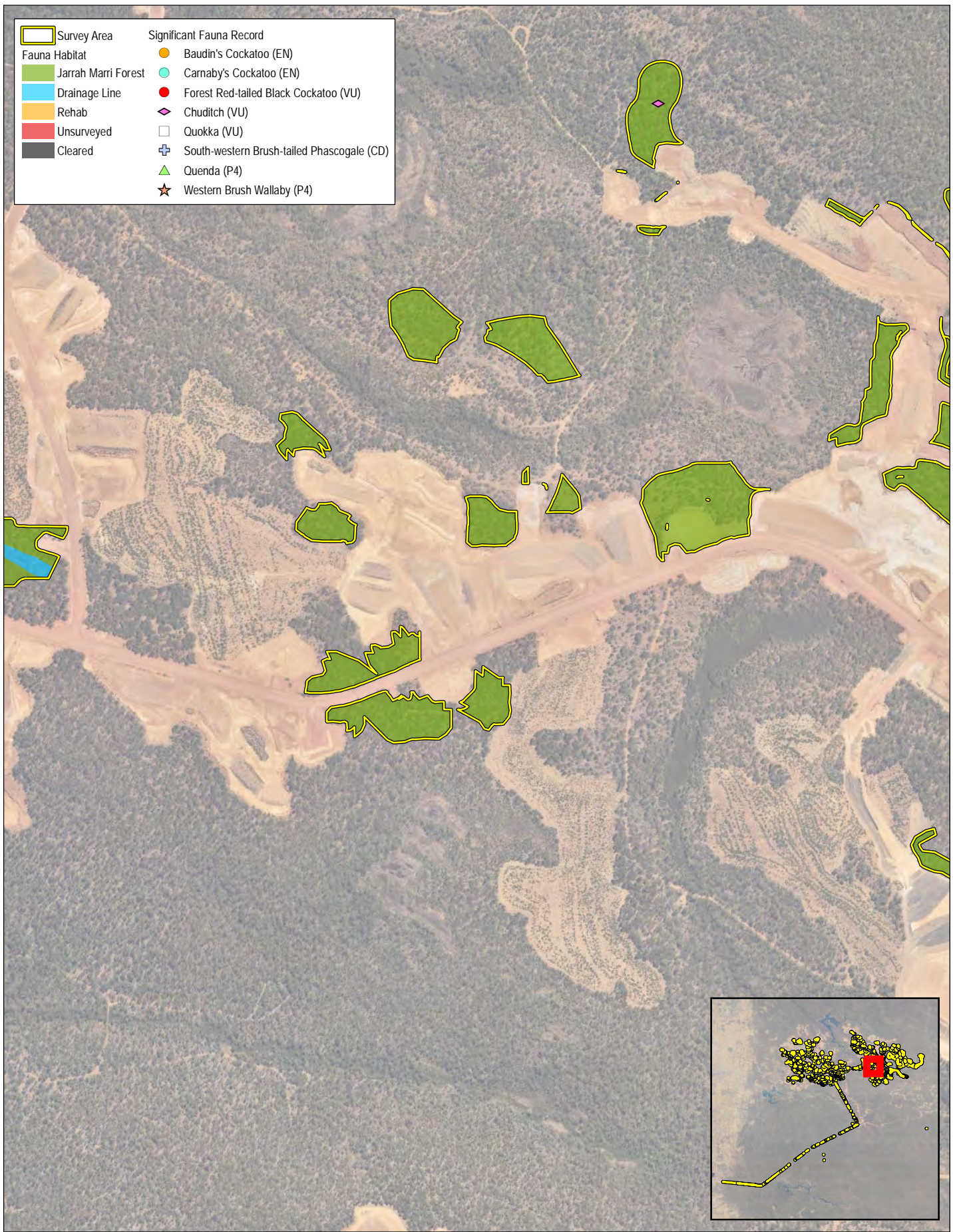


Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

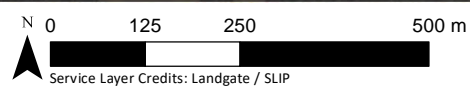
Fauna Habitat and  
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 MAP 9-20

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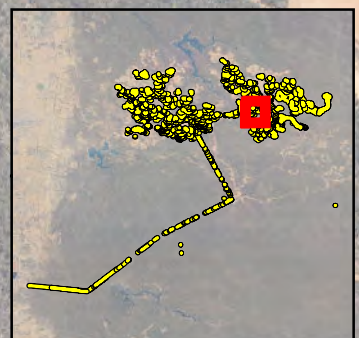
Survey Area		Significant Fauna Record	
	Survey Area		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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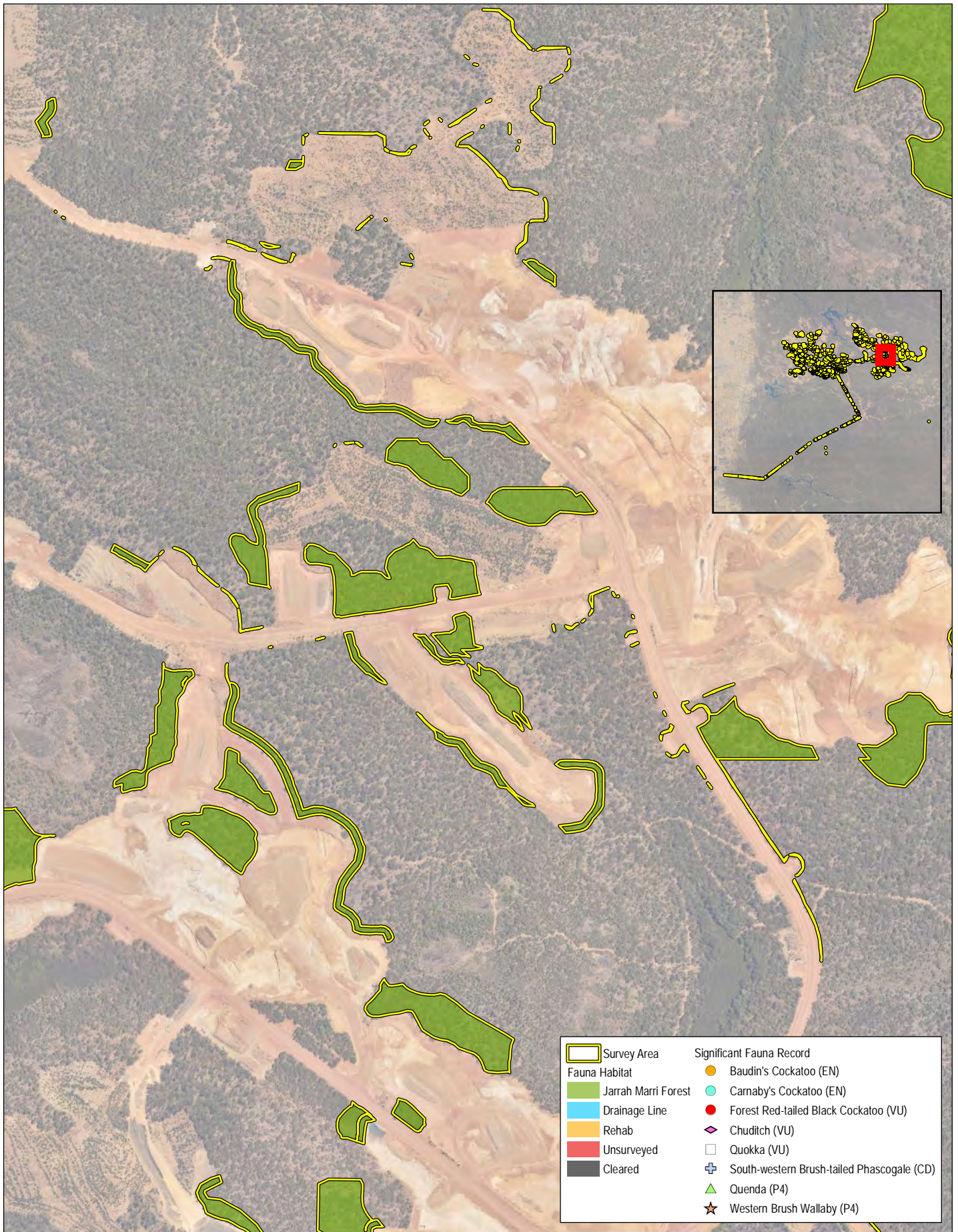
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 Date Drawn : 7/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD



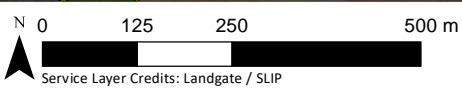
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-21

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



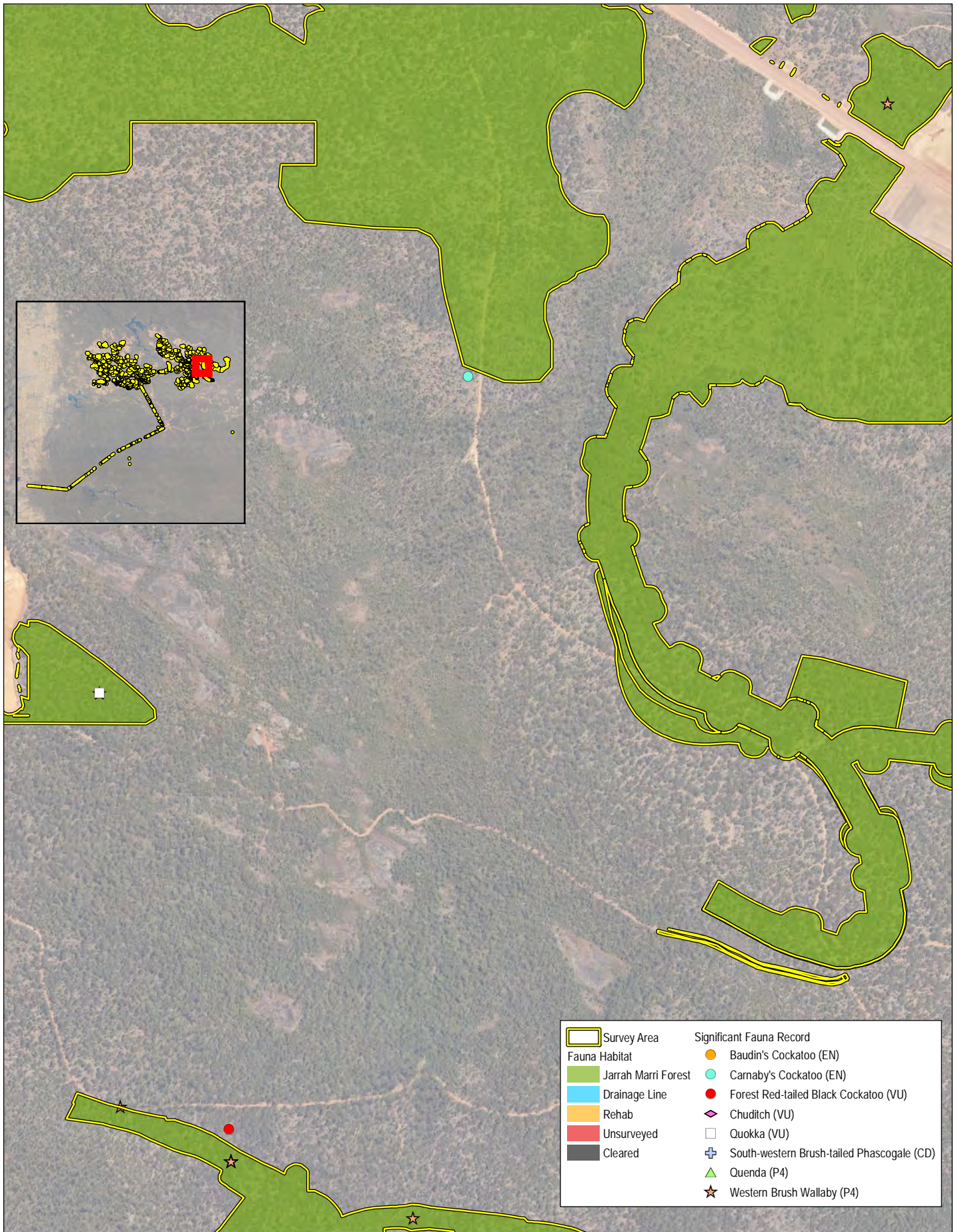
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 Drawn By : Environmaps  
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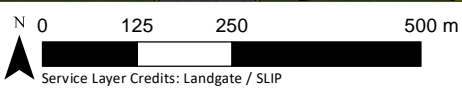
**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-22**

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



Service Layer Credits: Landgate / SLIP

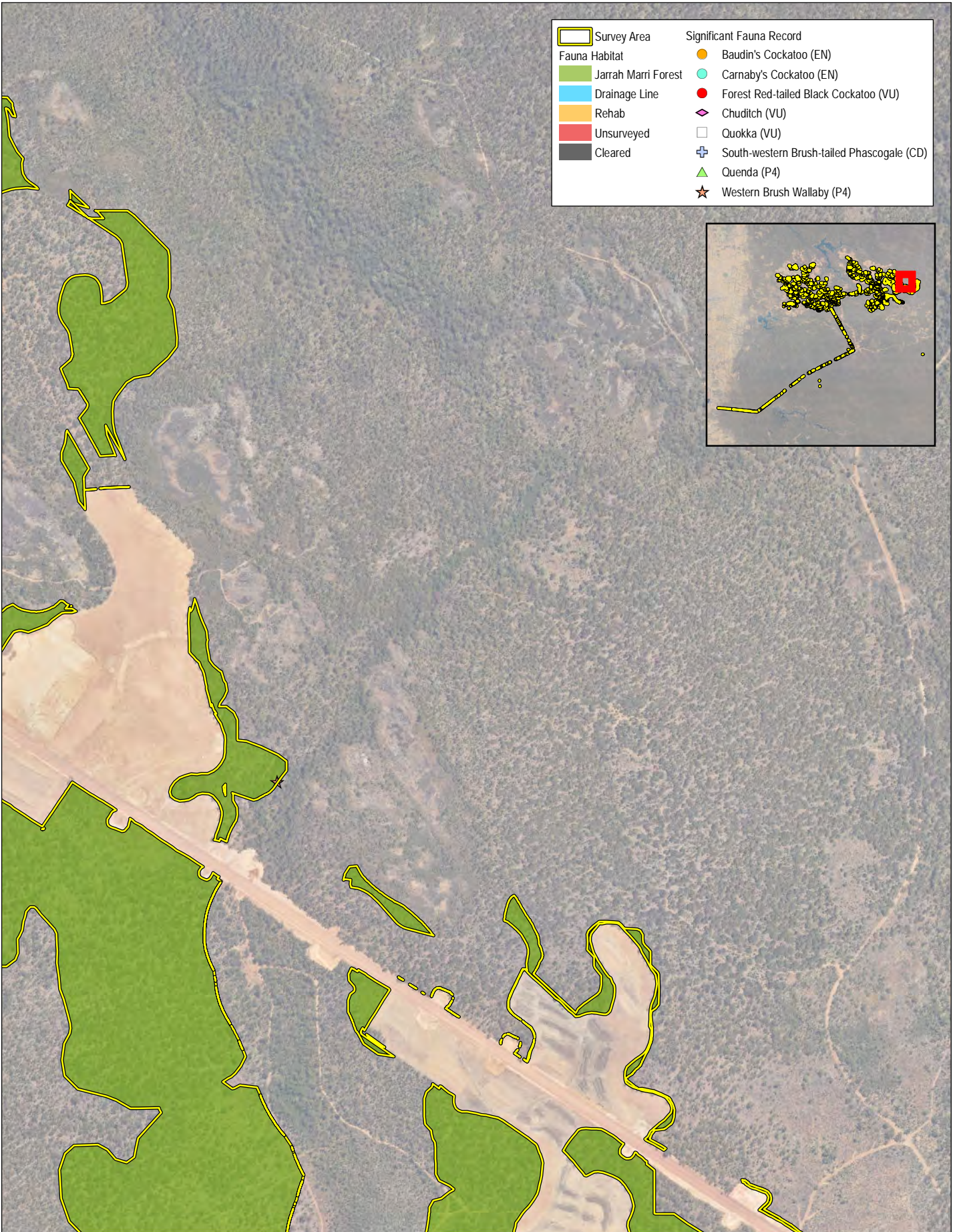
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 Date Drawn : 7/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

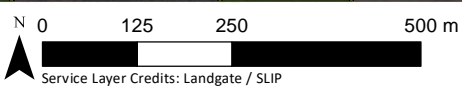
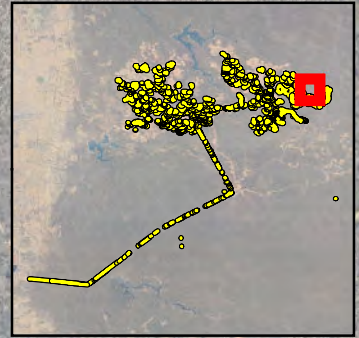
**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-23**



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Survey Area		Significant Fauna Record	
[Yellow Outline]	Survey Area	[Orange Circle]	Baudin's Cockatoo (EN)
[Green Area]	Jarrah Marri Forest	[Cyan Circle]	Carnaby's Cockatoo (EN)
[Blue Line]	Drainage Line	[Red Circle]	Forest Red-tailed Black Cockatoo (VU)
[Orange Area]	Rehab	[Purple Diamond]	Chuditch (VU)
[Red Area]	Unsurveyed	[White Square]	Quokka (VU)
[Grey Area]	Cleared	[Blue Cross]	South-western Brush-tailed Phascogale (CD)
		[Green Triangle]	Quenda (P4)
		[Black Star]	Western Brush Wallaby (P4)



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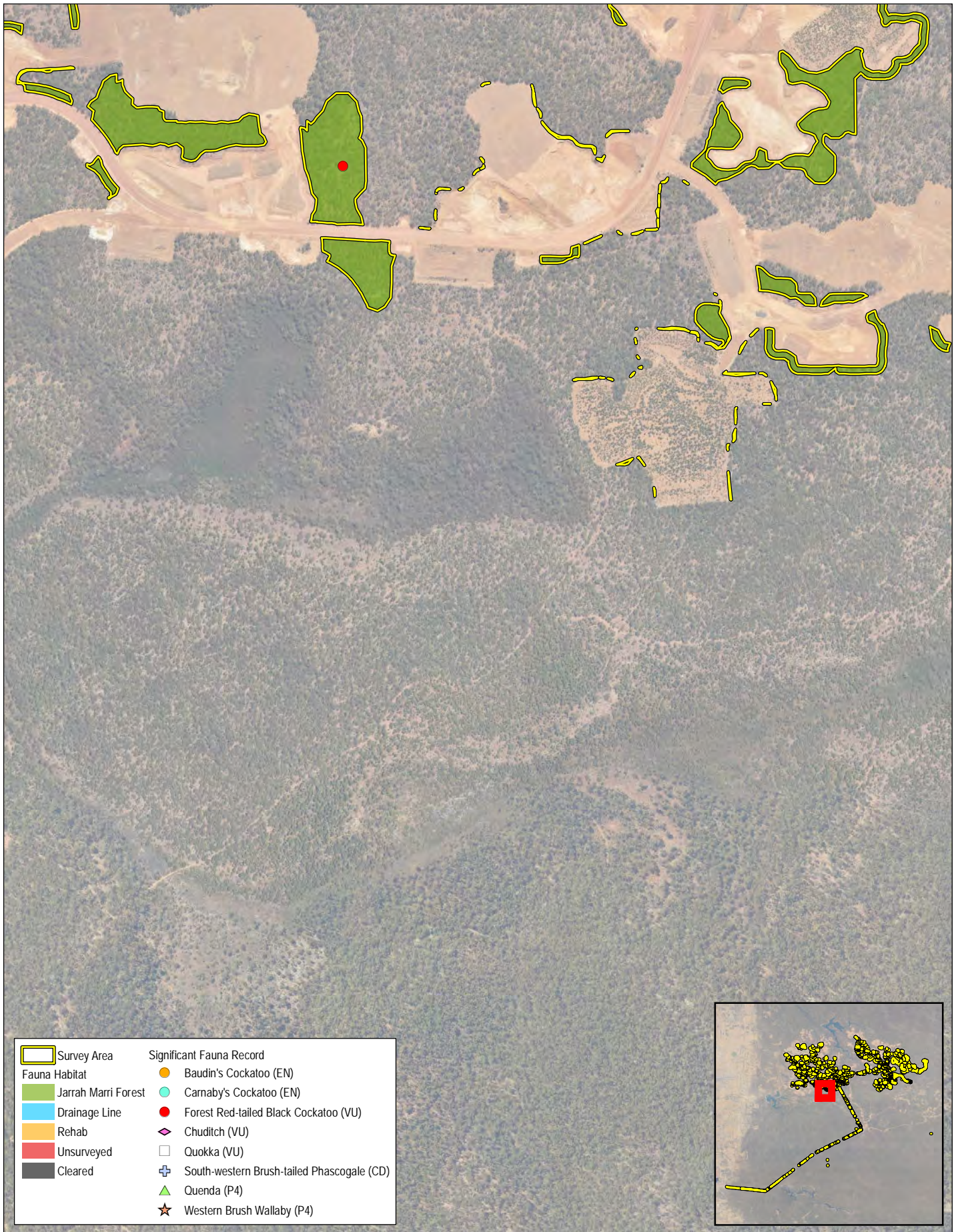
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 Date Drawn : 7/06/2024  
 Drawn By : Environmaps  
 Reviewed By : PD

Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

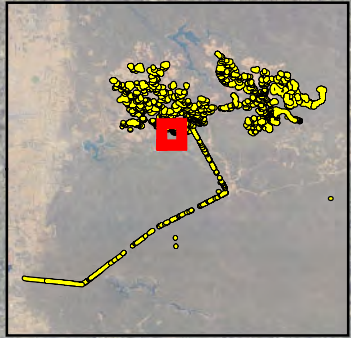
Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-24

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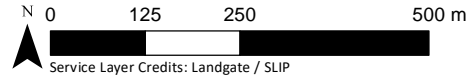
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Survey Area		Significant Fauna Record	
	Jarrah Marri Forest		Baudin's Cockatoo (EN)
	Drainage Line		Carnaby's Cockatoo (EN)
	Rehab		Forest Red-tailed Black Cockatoo (VU)
	Unsurveyed		Chuditch (VU)
	Cleared		Quokka (VU)
			South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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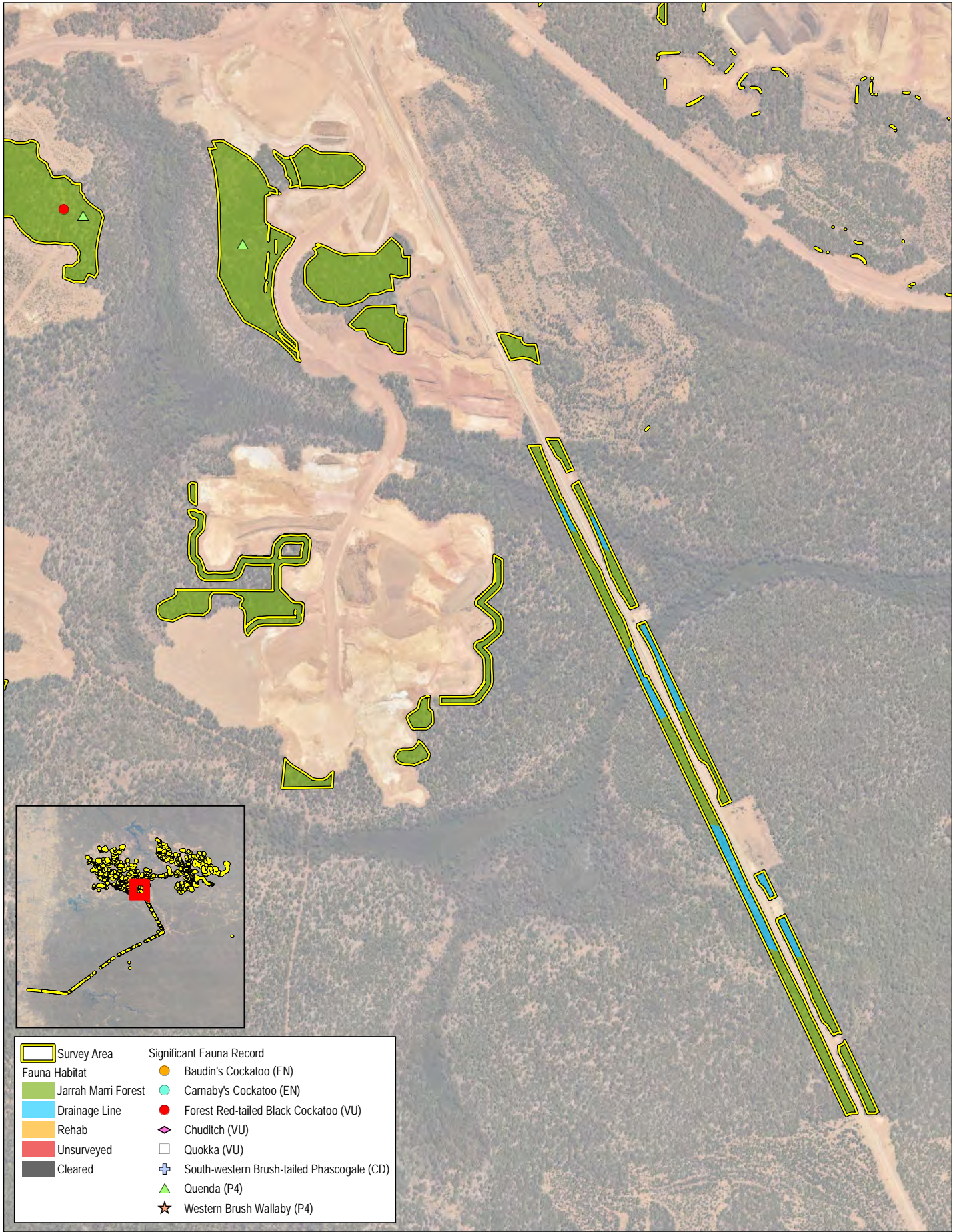


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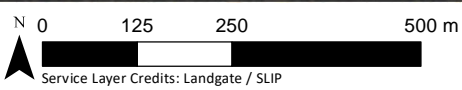
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-25

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



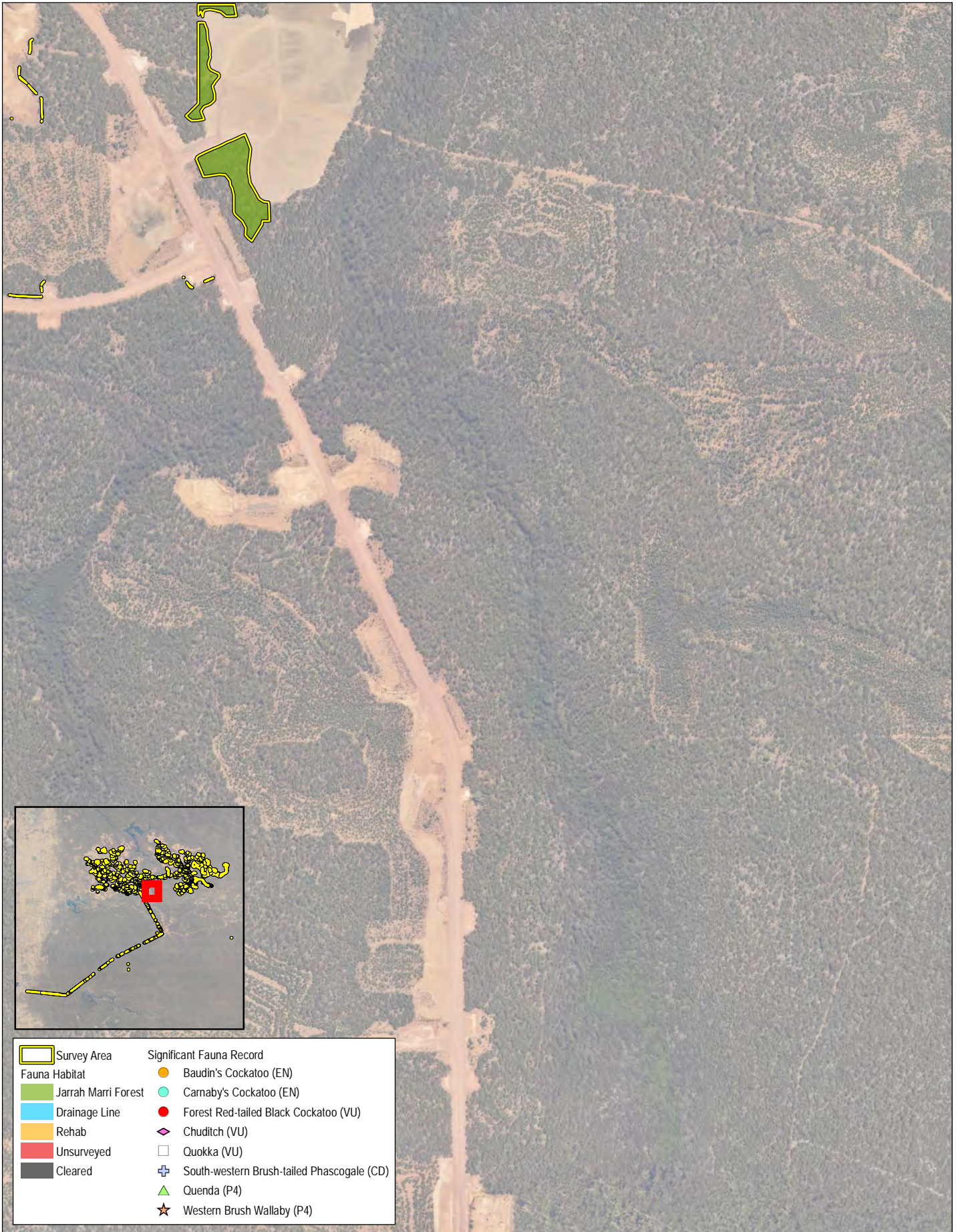
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-26

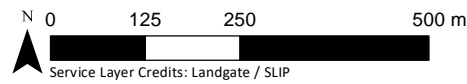
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Survey Area		Significant Fauna Record	
	Jarrah Marri Forest		Baudin's Cockatoo (EN)
	Drainage Line		Carnaby's Cockatoo (EN)
	Rehab		Forest Red-tailed Black Cockatoo (VU)
	Unsurveyed		Chuditch (VU)
	Cleared		Quokka (VU)
			South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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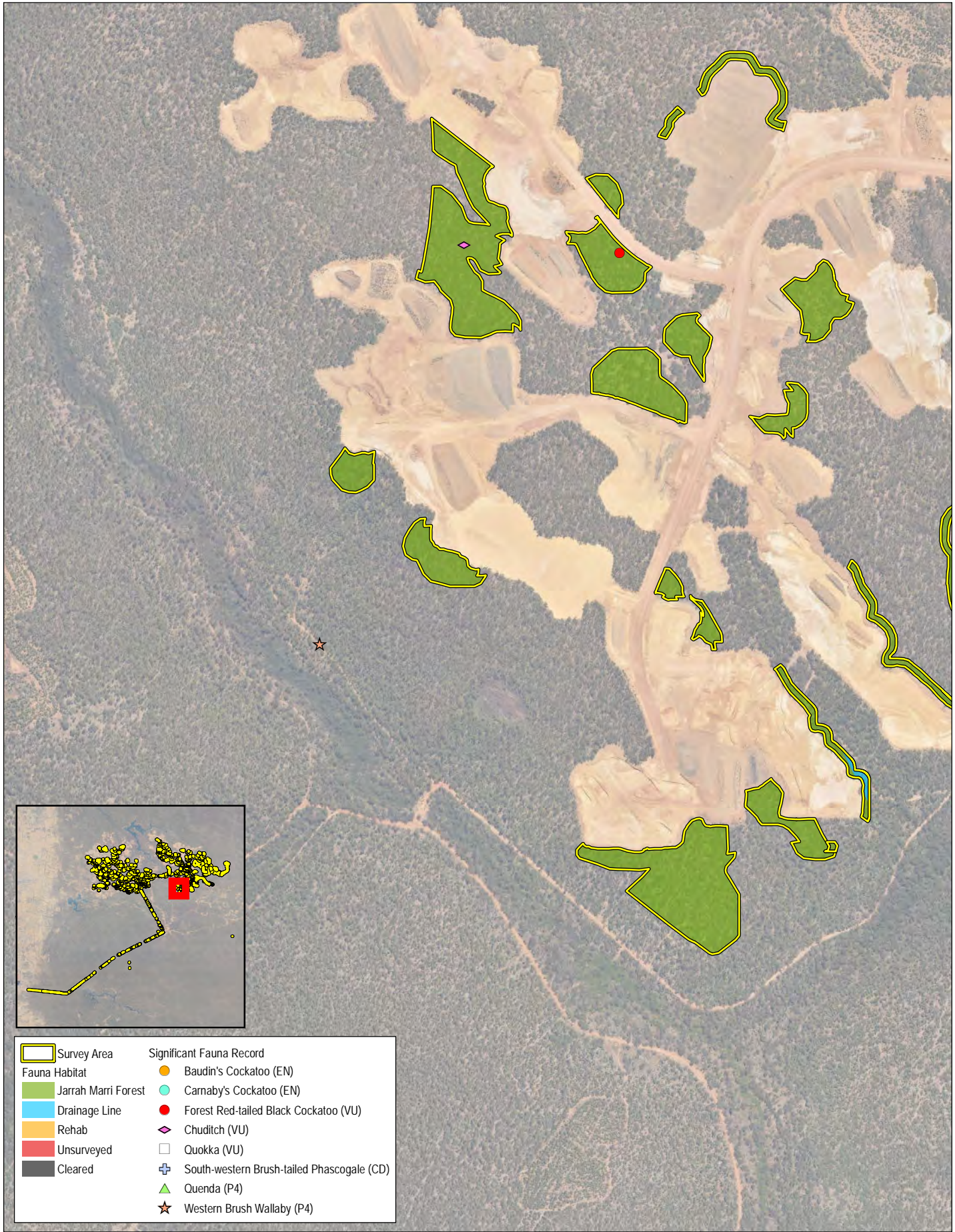


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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-27

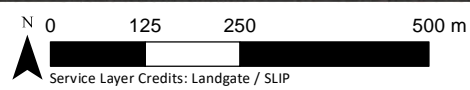
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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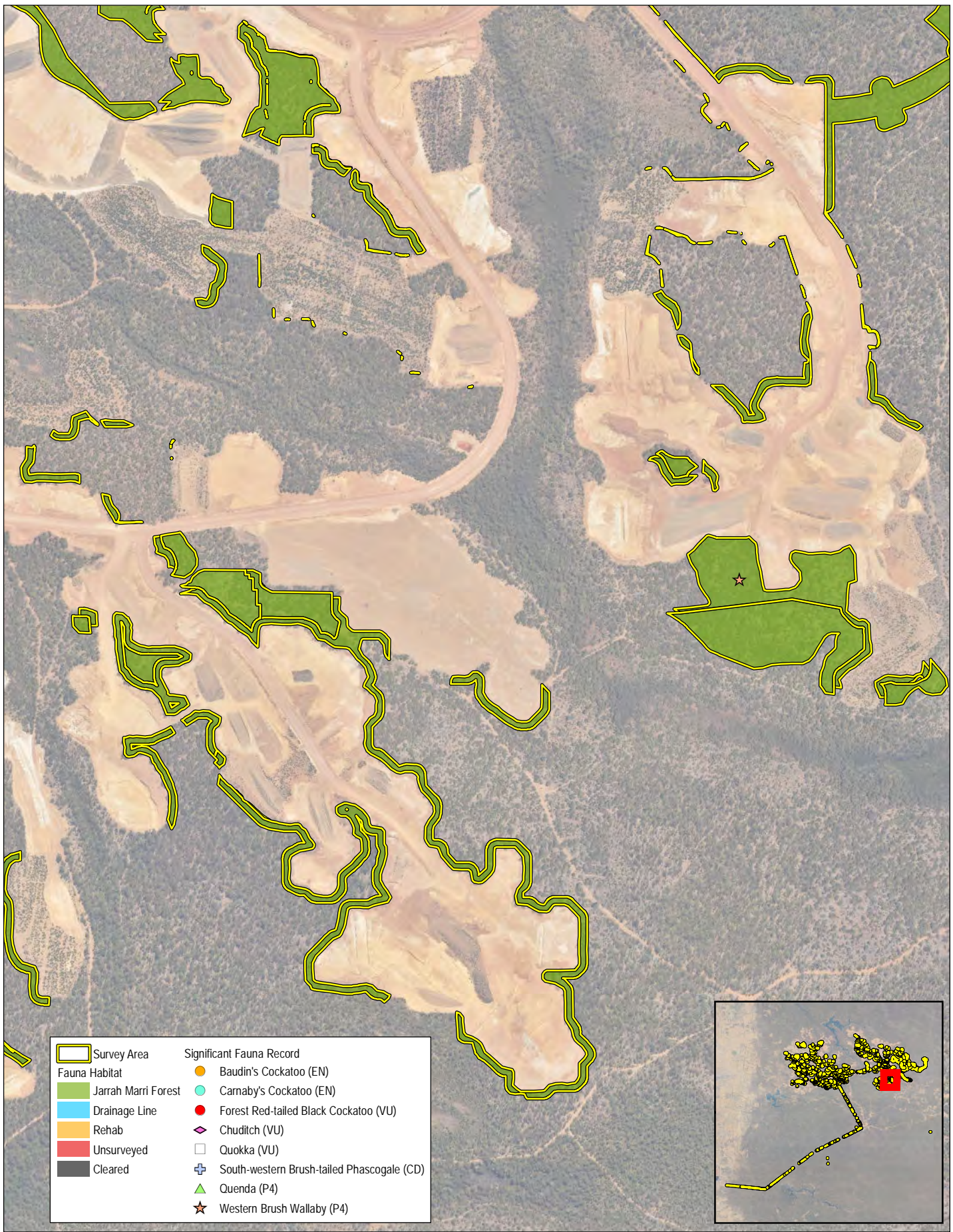


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 Date Drawn : 7/06/2024  
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-28

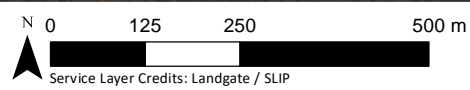
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unserved	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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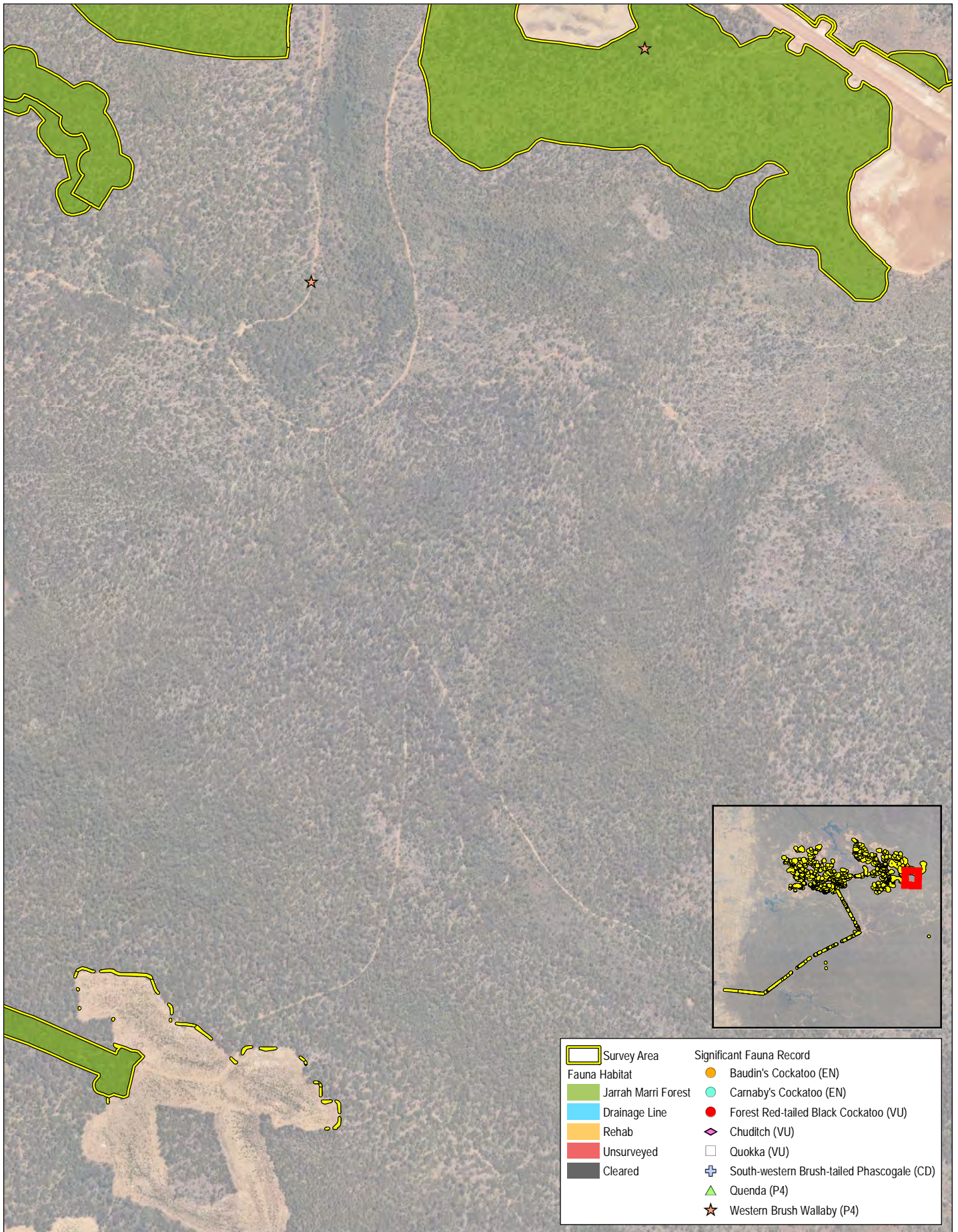


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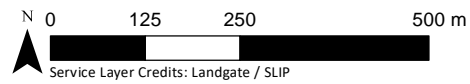
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-29

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unserved	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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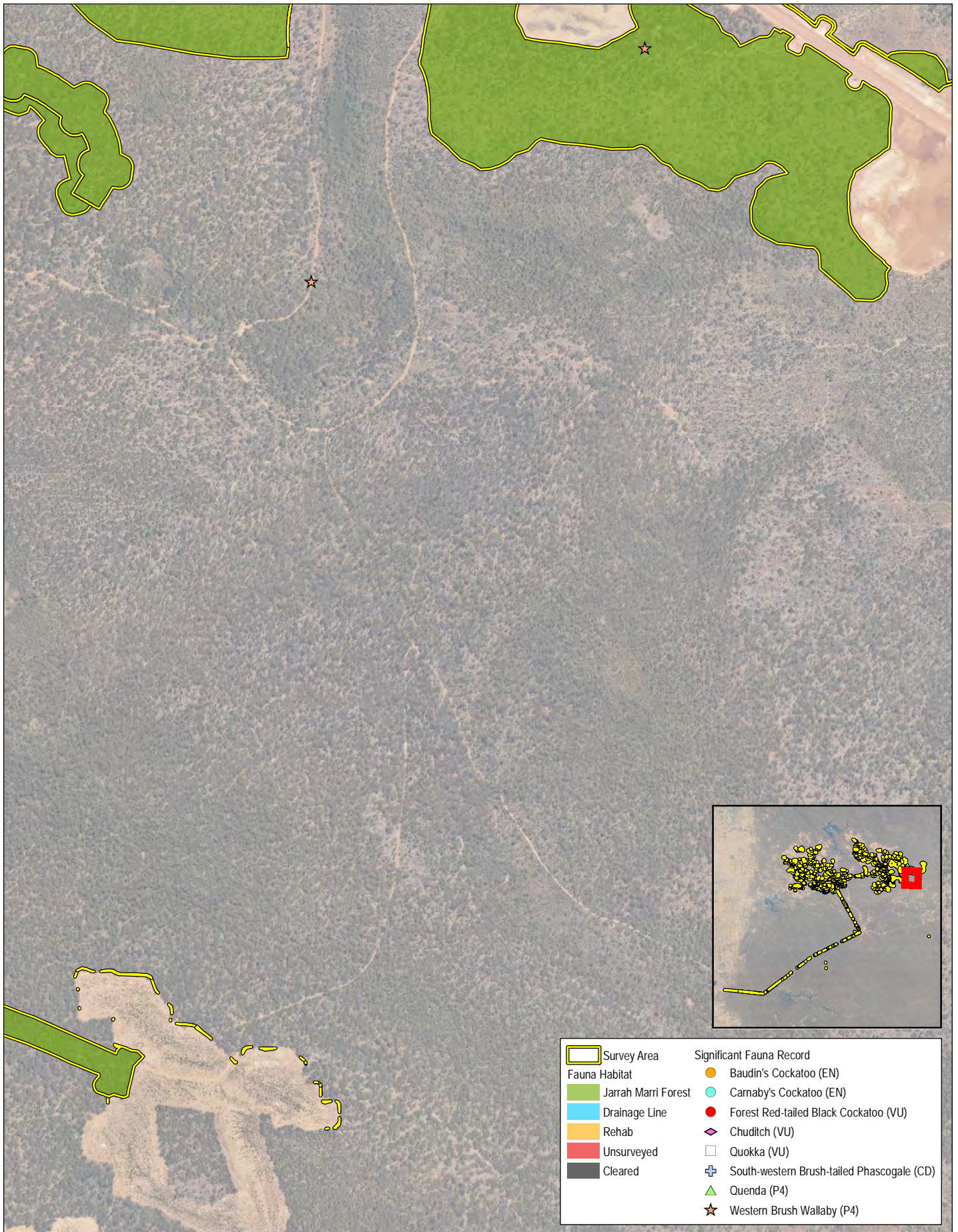
**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-30**

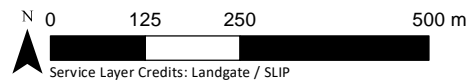


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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



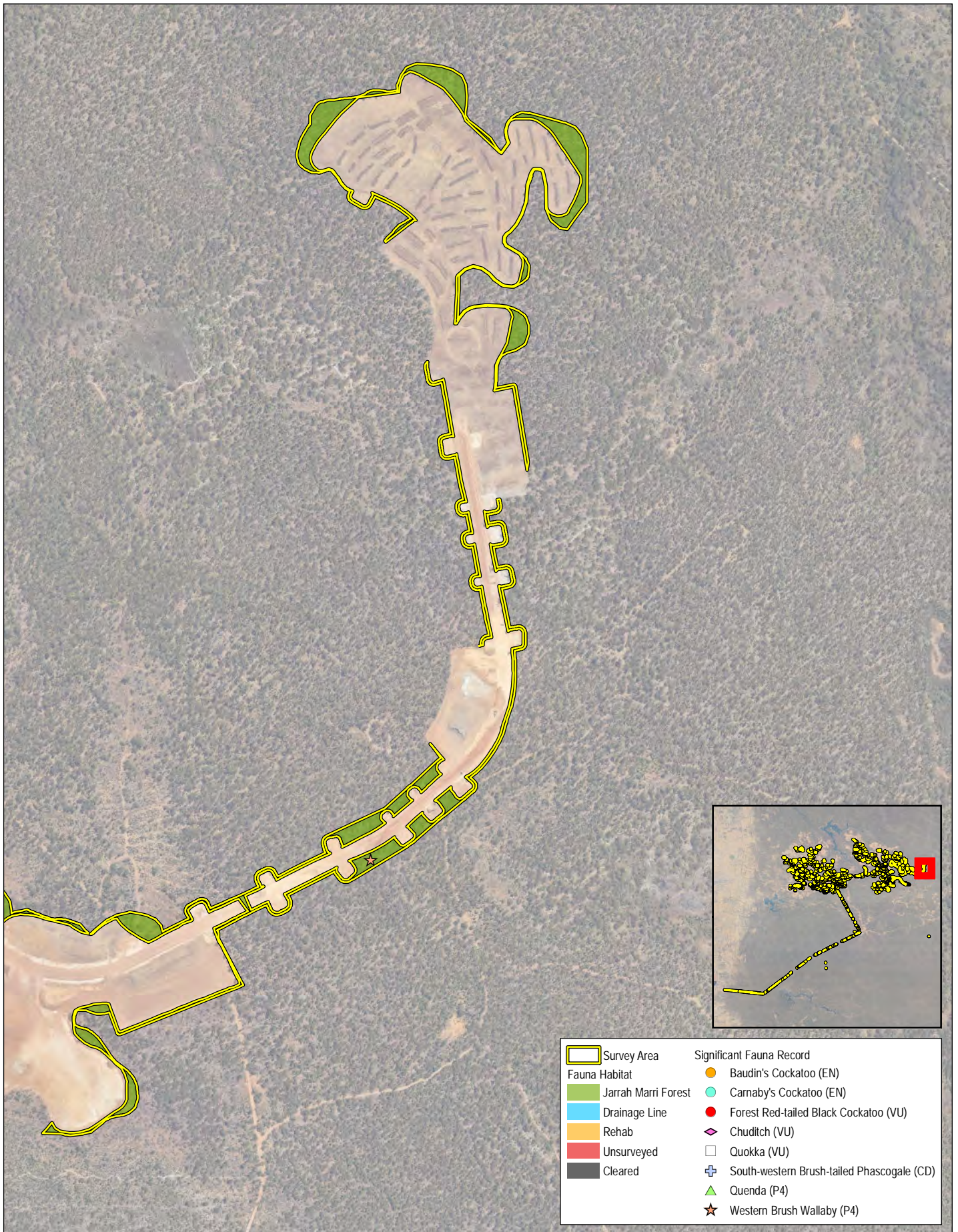
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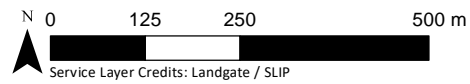
**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-31**

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



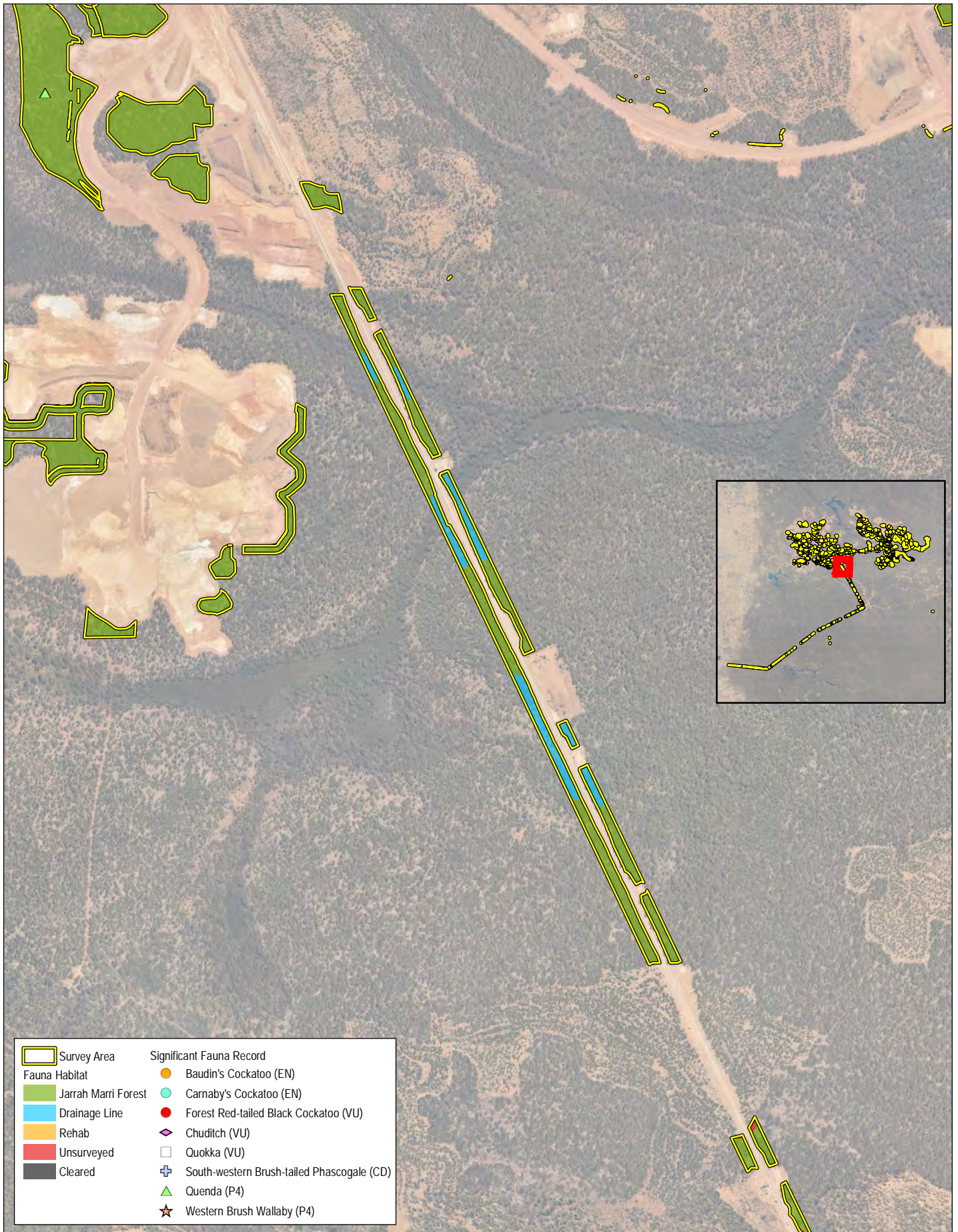
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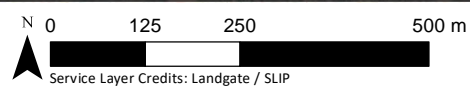
**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-32**

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Survey Area		Significant Fauna Record	
[Yellow outline]	Survey Area	[Orange circle]	Baudin's Cockatoo (EN)
[Green fill]	Jarrah Marri Forest	[Cyan circle]	Carnaby's Cockatoo (EN)
[Blue fill]	Drainage Line	[Red circle]	Forest Red-tailed Black Cockatoo (VU)
[Orange fill]	Rehab	[Purple diamond]	Chuditch (VU)
[Red fill]	Unserved	[White square]	Quokka (VU)
[Grey fill]	Cleared	[Blue cross]	South-western Brush-tailed Phascogale (CD)
		[Green triangle]	Quenda (P4)
		[Red star]	Western Brush Wallaby (P4)



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 Coordinate System: GDA 1994 MGA Zone 50 @ A4  
 Scale : 1:10,000 @ A4  
 Project Number : 675.VX5890.00001  
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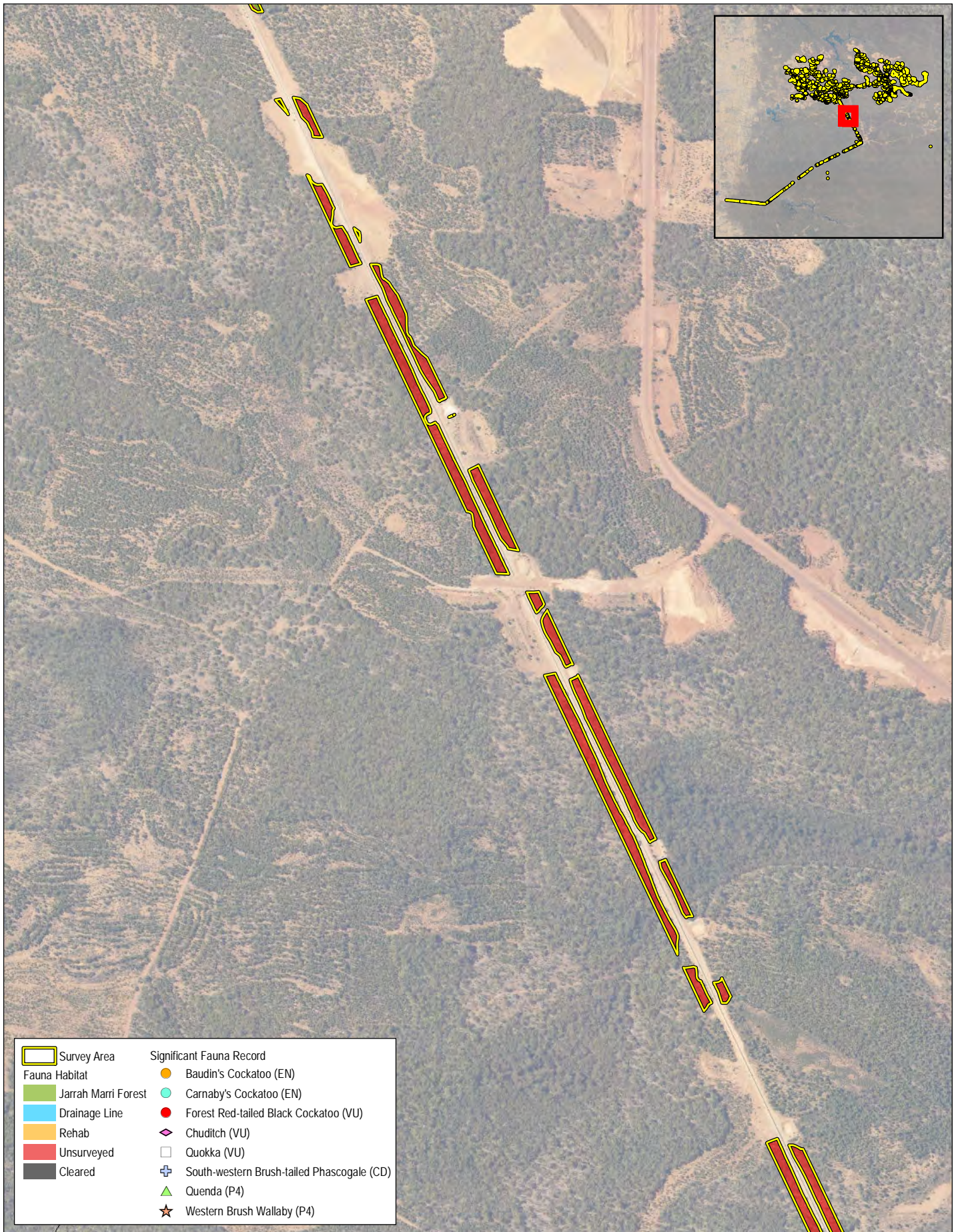


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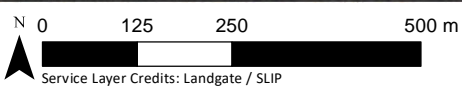
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-33

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Survey Area		Significant Fauna Record	
[Yellow outline]	Survey Area	[Orange circle]	Baudin's Cockatoo (EN)
[Green fill]	Jarrah Marri Forest	[Light blue circle]	Carnaby's Cockatoo (EN)
[Blue outline]	Drainage Line	[Red circle]	Forest Red-tailed Black Cockatoo (VU)
[Orange fill]	Rehab	[Purple diamond]	Chuditch (VU)
[Red fill]	Unsurveyed	[White square]	Quokka (VU)
[Black fill]	Cleared	[Blue cross]	South-western Brush-tailed Phascogale (CD)
		[Green triangle]	Quenda (P4)
		[Star]	Western Brush Wallaby (P4)



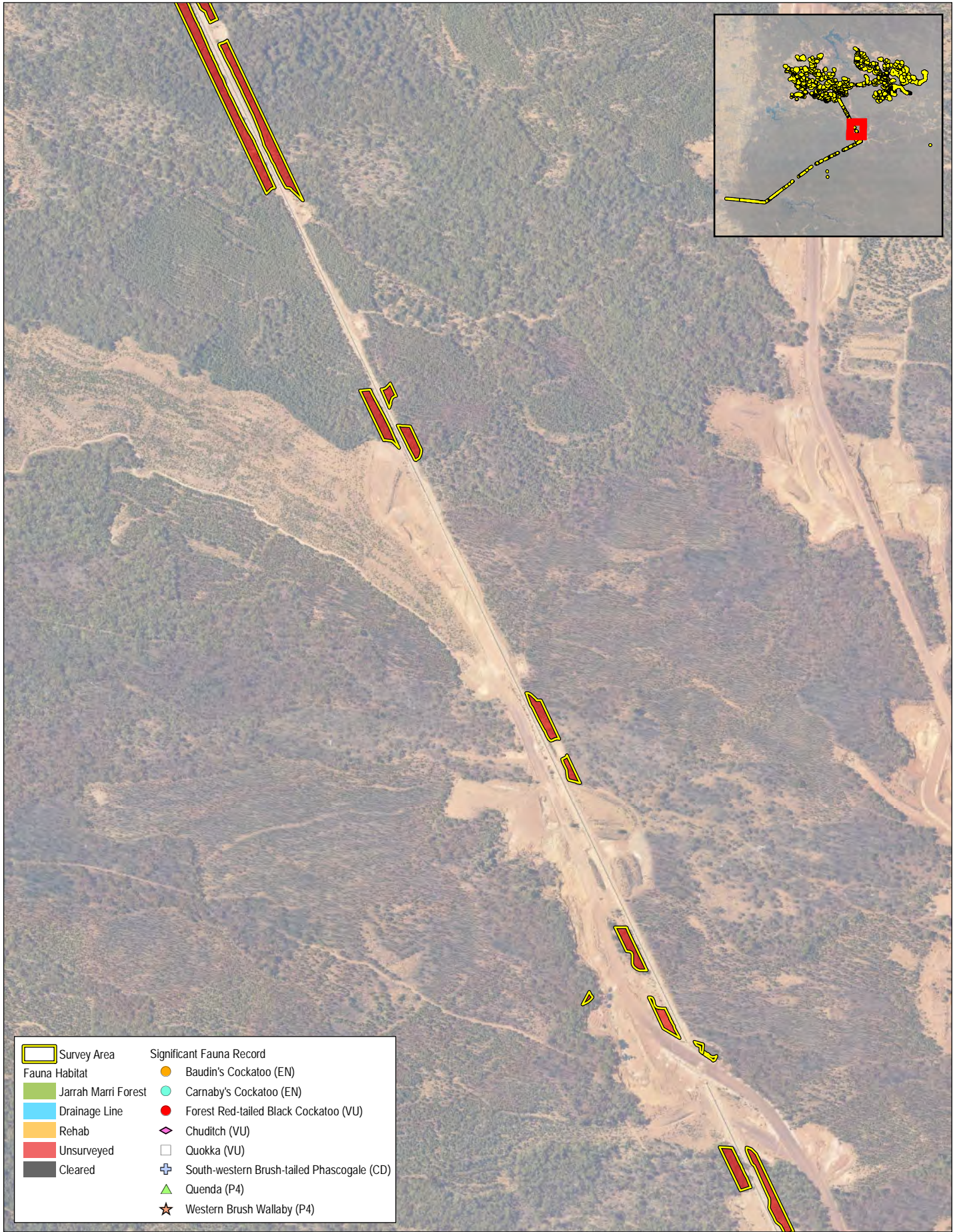
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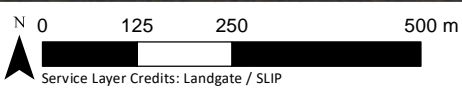
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-34

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



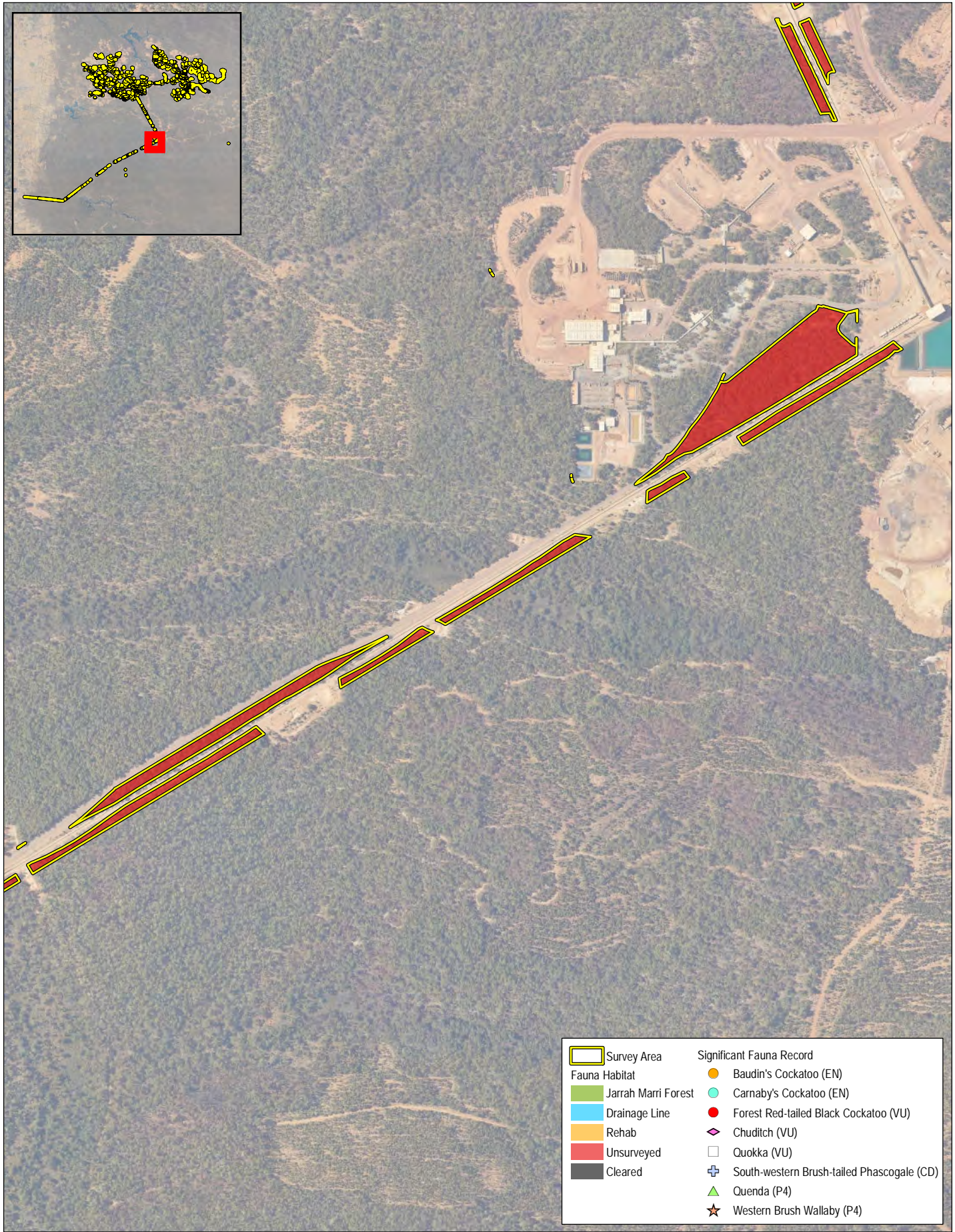
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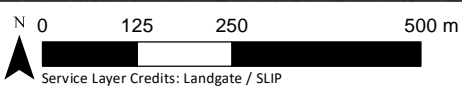
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 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-35

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)

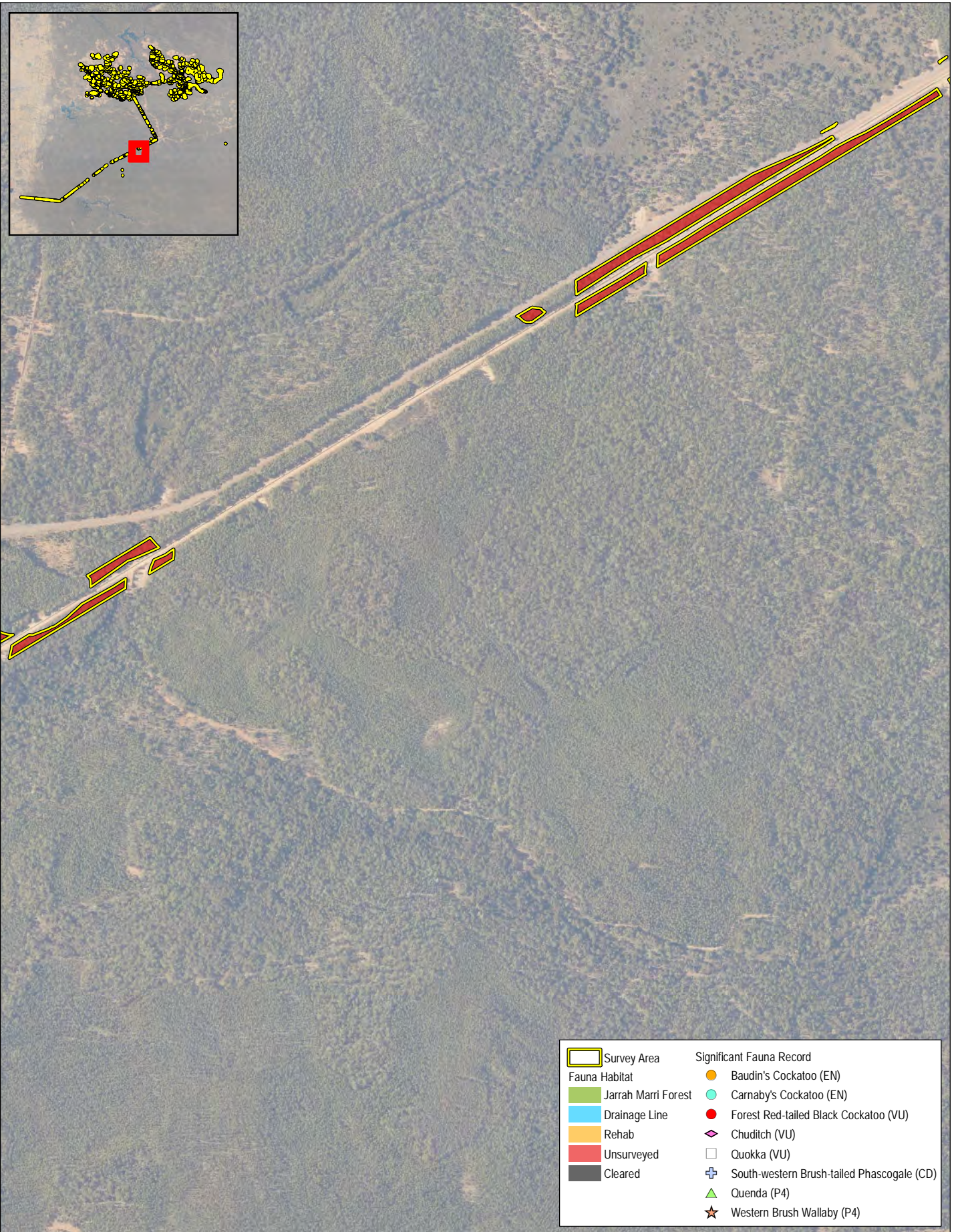


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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

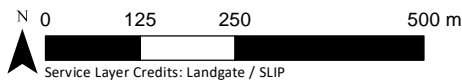
**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-36**



Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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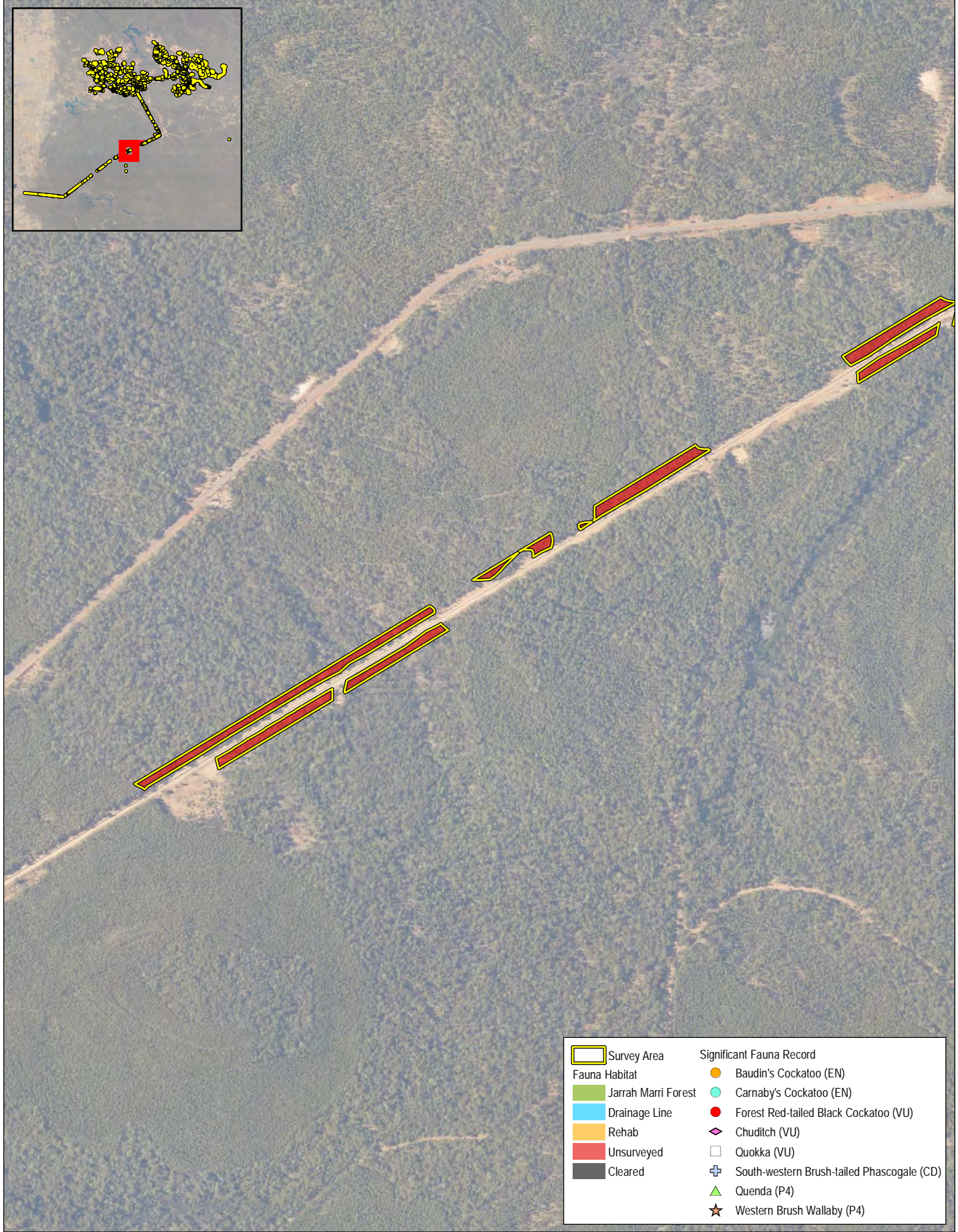
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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

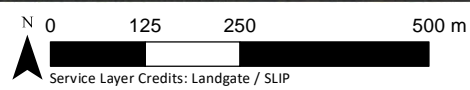
**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-37**

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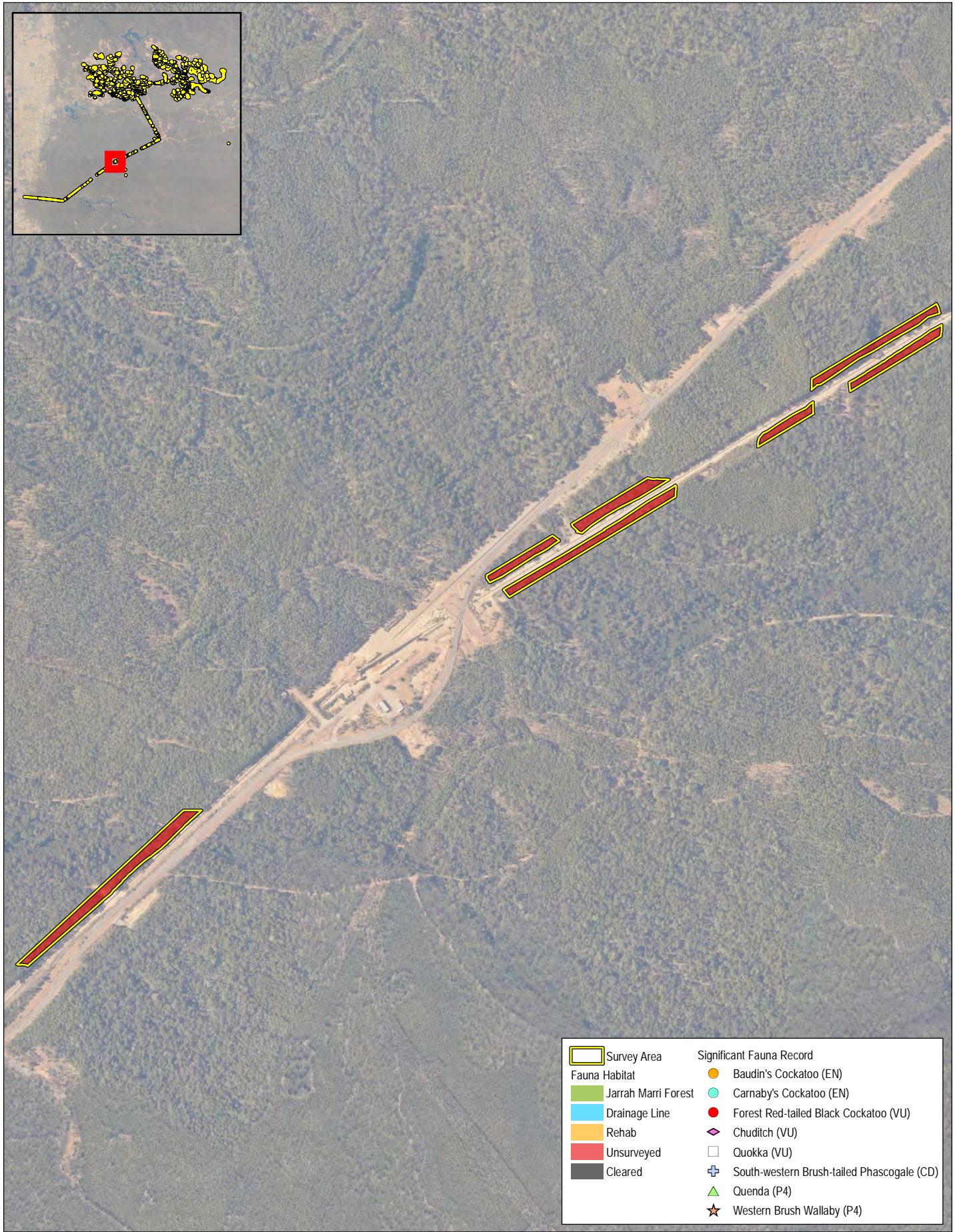


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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-38**

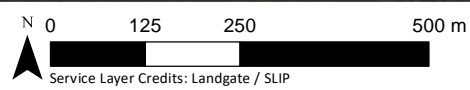
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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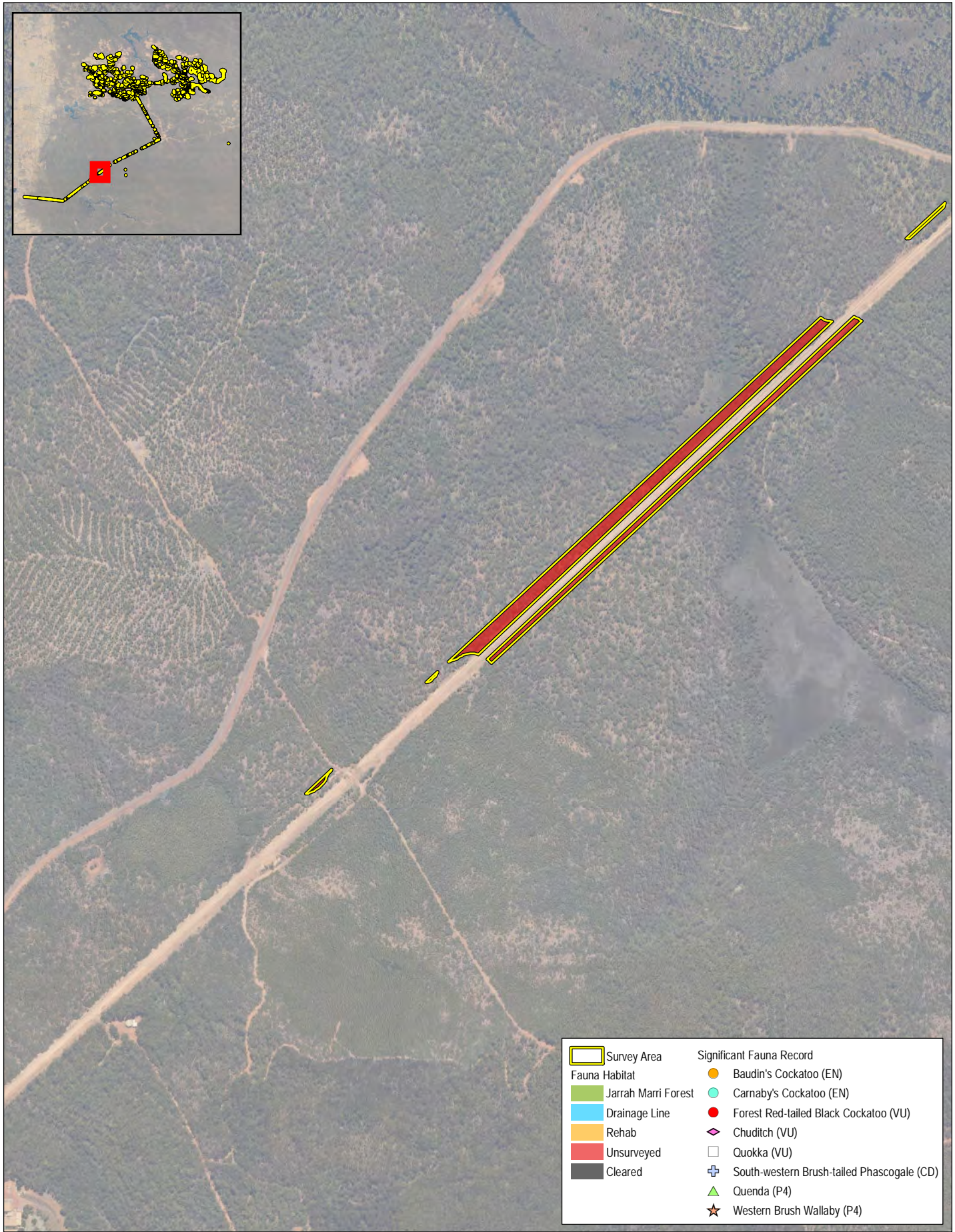


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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-39**

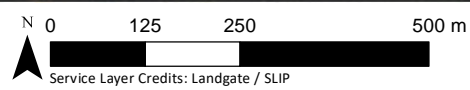
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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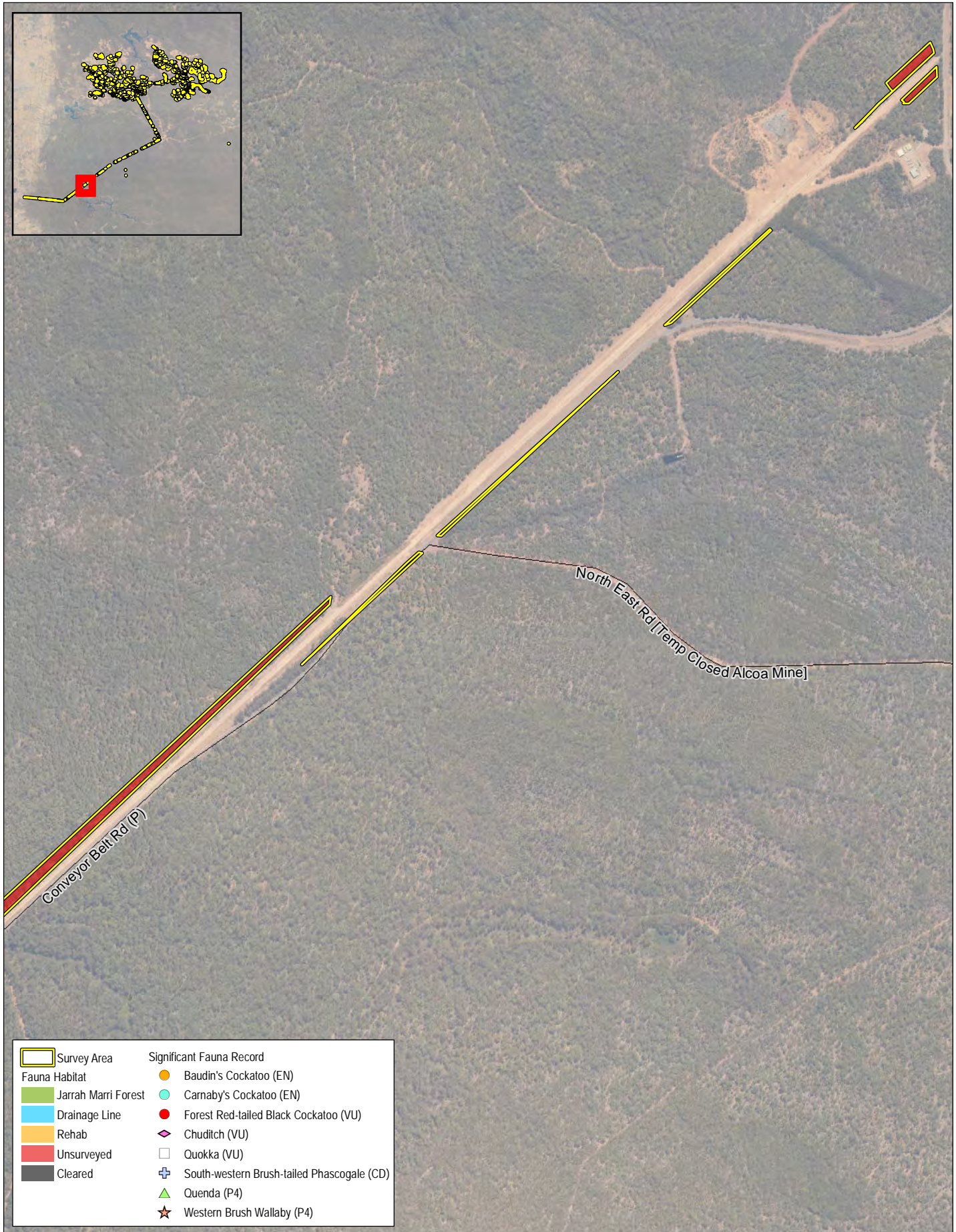


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 Project Number : 675.VX5890.00001  
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**Alcoa**  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

**Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-40**

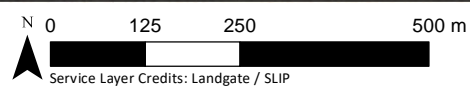
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Survey Area		Significant Fauna Record	
	Survey Area		Baudin's Cockatoo (EN)
	Jarrahdale Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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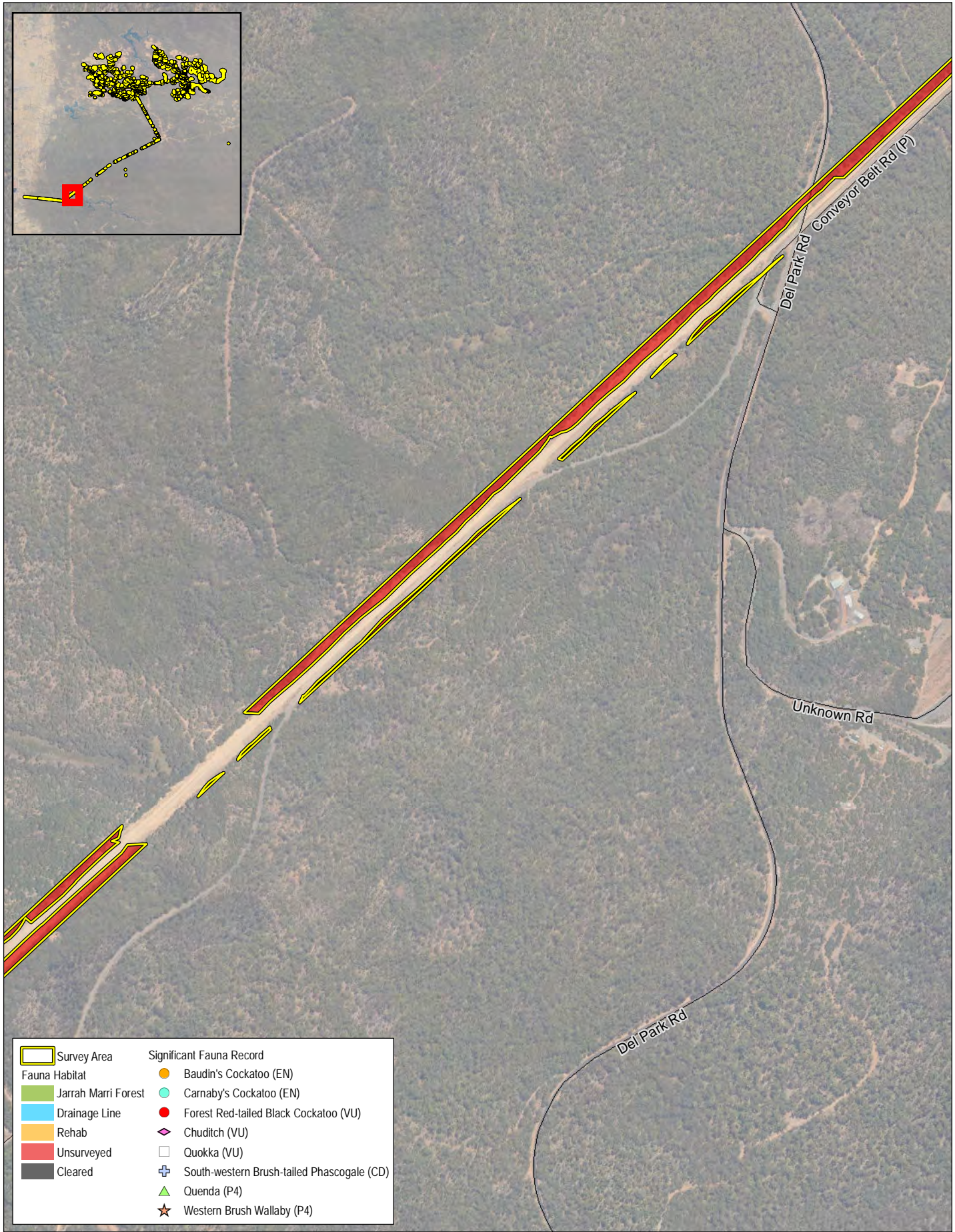


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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-41

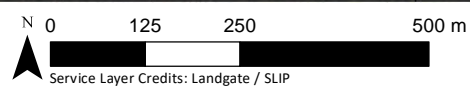
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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unserved	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



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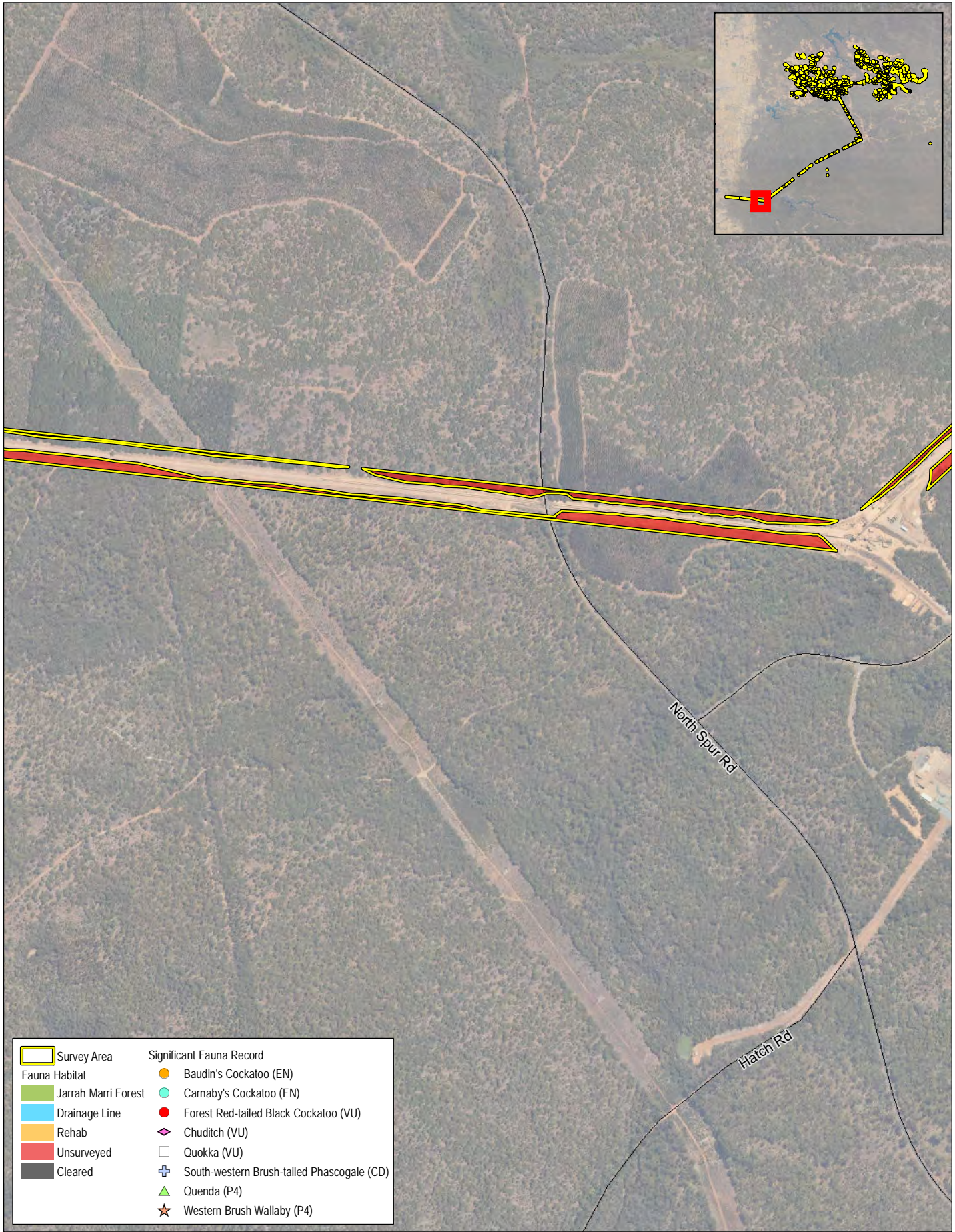


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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-42

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Survey Area	<b>Significant Fauna Record</b>
Jarrah Marri Forest	Baudin's Cockatoo (EN)
Drainage Line	Carnaby's Cockatoo (EN)
Rehab	Forest Red-tailed Black Cockatoo (VU)
Unsurveyed	Chuditch (VU)
Cleared	Quokka (VU)
	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



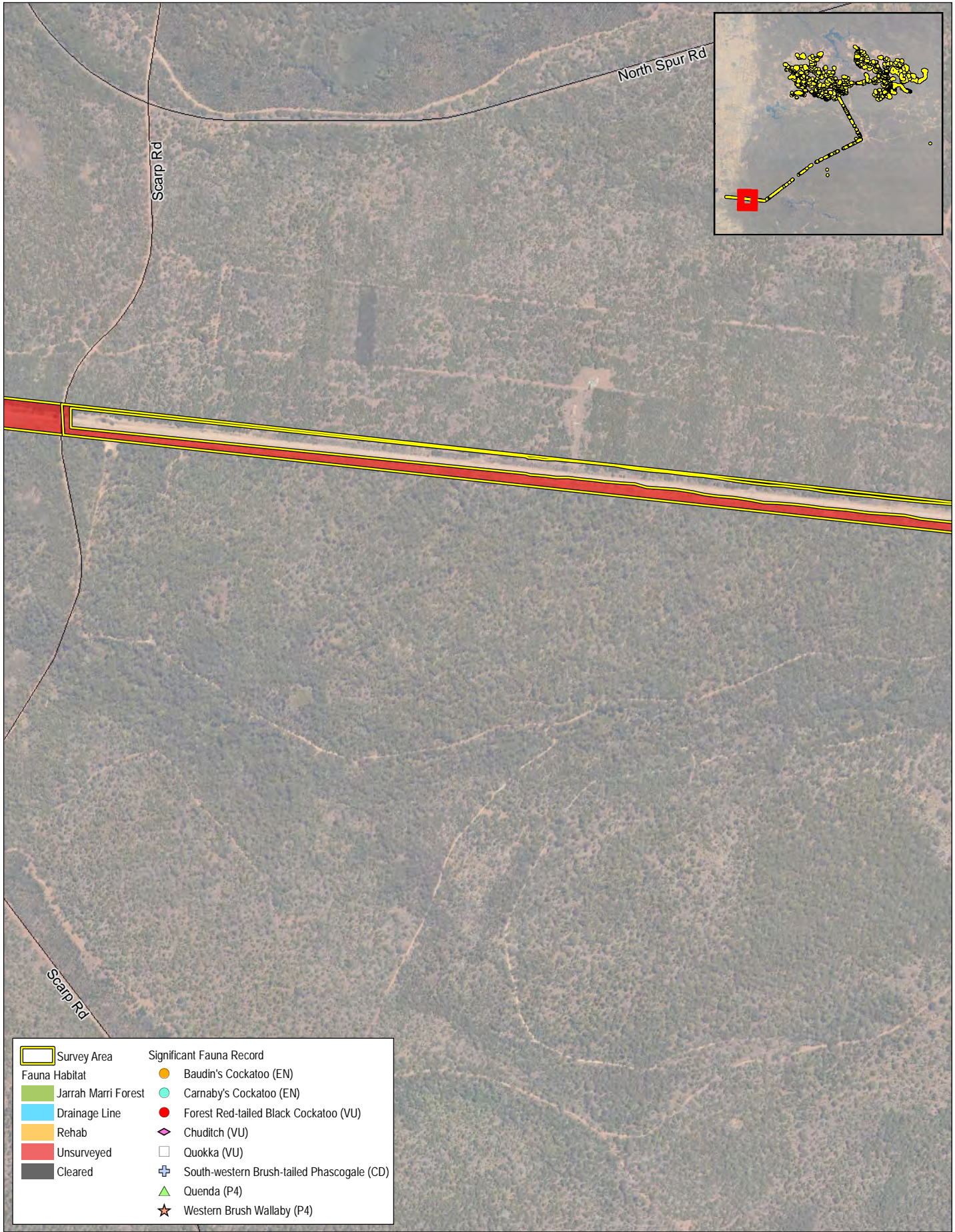
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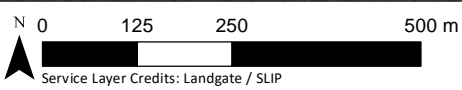
Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-43

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Survey Area	<b>Significant Fauna Record</b>
Fauna Habitat	Baudin's Cockatoo (EN)
Jarrah Marri Forest	Carnaby's Cockatoo (EN)
Drainage Line	Forest Red-tailed Black Cockatoo (VU)
Rehab	Chuditch (VU)
Unsurveyed	Quokka (VU)
Cleared	South-western Brush-tailed Phascogale (CD)
	Quenda (P4)
	Western Brush Wallaby (P4)



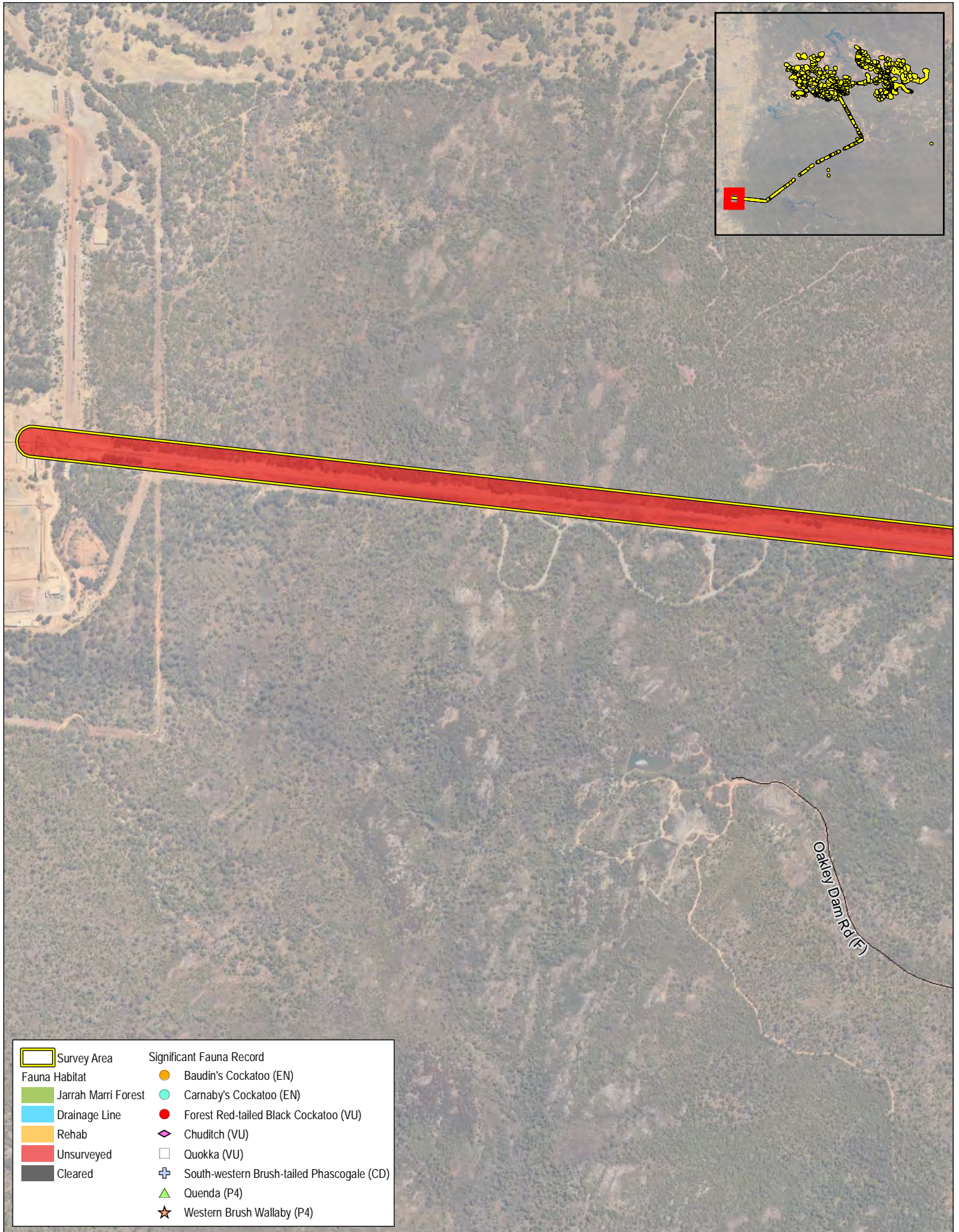
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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-44

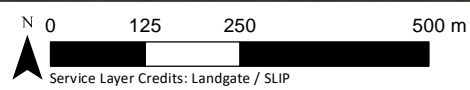
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Survey Area		Significant Fauna Record	
	Survey Area		Baudin's Cockatoo (EN)
	Jarrah Marri Forest		Carnaby's Cockatoo (EN)
	Drainage Line		Forest Red-tailed Black Cockatoo (VU)
	Rehab		Chuditch (VU)
	Unsurveyed		Quokka (VU)
	Cleared		South-western Brush-tailed Phascogale (CD)
			Quenda (P4)
			Western Brush Wallaby (P4)



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Alcoa  
 Targeted Chuditch, Quokka, and Woylie  
 Surveys Huntly Mine – Myara Region

Fauna Habitat and  
 Significant Fauna Records  
 MAP 9-45



# Appendix B Literature Review Summary

## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024

ID	Report	Survey location	Survey timing	Survey type	Significant fauna recorded during the survey	Fauna habitats recorded during the survey
Lit A	<i>Chuditch Pre-mine Survey, Myara</i> (Way, 2013)	Overlaps Survey Area	March – April 2013	Targeted Chuditch Survey	<ul style="list-style-type: none"> <li>Chuditch (<i>Dasyurus geoffroii fortis</i>) - Listed at Vulnerable under the BC Act and EPBC Act</li> </ul>	<p>Two fauna habitats were identified:</p> <ul style="list-style-type: none"> <li>Jarrah forest</li> <li>Drainage line</li> </ul>
Lit B	<i>Vertebrate Fauna Survey of Planned Mining Areas at Alcoa's Willowdale Larego Mining Region</i> (Environmental Management and Research Consultants, 2006)	Overlaps Survey Area	1996-2006	Long Term Fauna Monitoring Program	<ul style="list-style-type: none"> <li>Quokka (<i>Setonix brachyurus</i>) – Listed as Vulnerable under the BC Act and EPBC Act</li> <li>Baudin's Cockatoo (<i>Zanda baudinii</i>) – Listed as Endangered under the BC Act and EPBC Act</li> <li>Noisy Scrubbird (<i>Atrichornis clamosus</i>) – Listed as Endangered under the BC Act and EPBC Act</li> </ul>	No fauna habitats were recorded.
Lit C	<i>Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Myara North</i> (GHD, 2021b)	1 km north of Survey Area	August 2021	Targeted Forest Red-tailed Black Cockatoo, Carnaby's Cockatoo, Baudin's Cockatoo, Chuditch, Quokka, and other Priority species	<ul style="list-style-type: none"> <li>Baudin's Cockatoo (<i>Zanda baudinii</i>) – Listed as Endangered under the BC Act and EPBC Act</li> <li>Carnaby's Cockatoo (<i>Zanda latirostris</i>) - Listed as Endangered under the BC Act and EPBC Act</li> <li>Forest Red-tailed Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Listed at Vulnerable under the BC Act and EPBC Act</li> <li>Quokka (<i>Setonix brachyurus</i>) – Listed as Vulnerable under the BC Act and EPBC Act</li> </ul>	<p>Eight fauna habitats were identified:</p> <ul style="list-style-type: none"> <li>Jarrah-Marri forest</li> <li>Bullich forest</li> <li>Granite outcrop</li> <li>Blackbutt forest</li> <li>Flooded Gum woodland</li> <li>Melaleuca dampland</li> <li>Mine rehabilitation</li> <li>Pine plantation</li> </ul>

ID	Report	Survey location	Survey timing	Survey type	Significant fauna recorded during the survey	Fauna habitats recorded during the survey
					<ul style="list-style-type: none"> <li>• Chuditch (<i>Dasyurus geoffroii fortis</i>) - Listed at Vulnerable under the BC Act and EPBC Act</li> <li>• Peregrine Falcon (<i>Falco peregrinus</i>) – Listed as Special Protection under the BC Act</li> <li>• Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) – Listed as Conservation Dependent By DBCA</li> <li>• Masked Owl Southwest (<i>Tyto novaehollandiae</i>) – Listed as Priority 3 by the DBCA</li> <li>• Western False Pipistrelle (<i>Falsistrellus mackenziei</i>) - Listed as Priority 3 by the DBCA</li> <li>• Southern Death Adder (<i>Acanthophis antarcticus</i>) – Listed as Priority 3 by the DBCA</li> <li>• Rakali (<i>Hydromys chrysogaster</i>) – Listed as Priority 4 by the DBCA</li> <li>• Quenda (<i>Isodon fusciventer</i>) - Listed as Priority 4 by the DBCA</li> <li>• Western Brush Wallaby (<i>Notamacropus irma</i>) - Listed as Priority 4 by the DBCA</li> </ul>	

ID	Report	Survey location	Survey timing	Survey type	Significant fauna recorded during the survey	Fauna habitats recorded during the survey
Lit D	<i>Black Cockatoo Habitat Assessment - Pinjarra Racecourse</i> (Harewood, 2019)	6 km west of the Survey Area	2019	Targeted Black Cockatoo Habitat Assessment	<ul style="list-style-type: none"> <li>• Forest Red-tailed Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Listed at Vulnerable under the BC Act and EPBC Act</li> </ul>	No fauna habitats were identified. However, 34 habitat trees consisting of Flooded Gum, Tuart, Marri and introduced eucalypts were identified.
Lit E	<i>Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Holyoake</i> (GHD, 2021a)	8 km south of the Survey Area	August 2021	Targeted Forest Red-tailed Black Cockatoo, Carnaby's Cockatoo, Baudin's Cockatoo, Chuditch, Quokka, Carters's Freshwater Mussel, and other Priority species	<ul style="list-style-type: none"> <li>• Baudin's Cockatoo (<i>Zanda baudinii</i>) – Listed as Endangered under the BC Act and EPBC Act</li> <li>• Carnaby's Cockatoo (<i>Zanda latirostris</i>) - Listed as Endangered under the BC Act and EPBC Act</li> <li>• Forest Red-tailed Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Listed at Vulnerable under the BC Act and EPBC Act</li> <li>• Quokka (<i>Setonix brachyurus</i>) – Listed as Vulnerable under the BC Act and EPBC Act</li> <li>• Chuditch (<i>Dasyurus geoffroii fortis</i>) - Listed at Vulnerable under the BC Act and EPBC Act</li> <li>• Peregrine Falcon (<i>Falco peregrinus</i>) – Listed as Special Protection under the BC Act</li> <li>• Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) – Listed as</li> </ul>	<p>Seven fauna habitats were identified:</p> <ul style="list-style-type: none"> <li>• Bullich forest</li> <li>• Granite outcrop</li> <li>• Blackbutt forest</li> <li>• Flooded Gum woodland</li> <li>• Jarrah-Marri forest</li> <li>• Mine rehabilitation</li> <li>• Pine plantation</li> </ul>

ID	Report	Survey location	Survey timing	Survey type	Significant fauna recorded during the survey	Fauna habitats recorded during the survey
					Conservation Dependent By DBCA <ul style="list-style-type: none"> <li>• Western False Pipistrelle (<i>Falsistrellus mackenziei</i>) - Listed as Priority 3 by the DBCA</li> <li>• Quenda (<i>Isoodon fusciventer</i>) - Listed as Priority 4 by the DBCA</li> <li>• Western Brush Wallaby (<i>Notamacropus irma</i>) - Listed as Priority 4 by the DBCA</li> </ul>	
Lit F	<i>Report for Rail Reserves in the Shire of Serpentine Jarrahdale - Spring Flora and Vegetation Survey and Fauna and Habitat Assessment</i> (GHD, 2012)	10 km north of the Survey Area	November 2011	Level 1 Fauna and Habitat Assessment	<ul style="list-style-type: none"> <li>• Forest Red-tailed Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Listed at Vulnerable under the BC Act and EPBC Act</li> <li>• Baudin’s Cockatoo (<i>Zanda baudinii</i>) – Listed as Endangered under the BC Act and EPBC Act</li> <li>• Western Brush Wallaby (<i>Notamacropus irma</i>) - Listed as Priority 4 by the DBCA</li> <li>• Quenda (<i>Isoodon fusciventer</i>) - Listed as Priority 4 by the DBCA</li> <li>• Letter-winged kite (<i>Elanus scriptus</i>) – Listed as Priority 4 the DBCA</li> </ul>	Five fauna habitats were identified: <ul style="list-style-type: none"> <li>• Melaleuca wetlands</li> <li>• Swampland</li> <li>• Jarrah/Marri forest</li> <li>• <i>Banksia/Allocasuarina</i> woodlands</li> <li>• Dense shrublands on clay flats</li> </ul>

ID	Report	Survey location	Survey timing	Survey type	Significant fauna recorded during the survey	Fauna habitats recorded during the survey
Lit G	<i>Fauna Assessment Pinjarra - Williams Road (SLK 14 – 67) (Harewood, 2017)</i>	17.5 km south of Survey Area	August 2011	Basic Fauna Assessment and Black Cockatoo Habitat Assessment	<ul style="list-style-type: none"> <li>• Baudin's Cockatoo (<i>Zanda baudinii</i>) – Listed as Endangered under the BC Act and EPBC Act</li> <li>• Forest Red-tailed Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Listed at Vulnerable under the BC Act and EPBC Act</li> <li>• Carnaby's Cockatoo (<i>Zanda latiostris</i>) - Listed as Endangered under the BC Act and EPBC Act</li> <li>• Western Brush Wallaby (<i>Notamacropus irma</i>) - Listed as Priority 4 by the DBCA</li> </ul>	<p>Four fauna habitats were identified:</p> <ul style="list-style-type: none"> <li>• Remnant native vegetation</li> <li>• Plantations</li> <li>• Existing cleared areas</li> <li>• River and ephemeral streams</li> </ul>



# Appendix C Licences and Permits

## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024



**Wildlife Conservation Act 1950**  
**REGULATION 17**

**Fauna taking (scientific or other purposes) licence (Fauna taking (scientific or other purposes) licence)**

**The undermentioned person may take fauna for research or other scientific purposes and where authorised, keep it in captivity, subject to the following and attached conditions, which may be added to, suspended or otherwise varied as considered fit.**

**Director General**

**Conditions**

- 1 The licensee must comply with the provisions of the Wildlife Conservation Act 1950, Wildlife Conservation Regulations 1970 and any Notices in force under this legislation.
- 2 The licensee shall take fauna only in the manner stated on the endorsed Regulation 17 licence application form and endorsed related correspondence.
- 3 Unless specifically authorised in the conditions of this Licence or otherwise in writing by the Director General, species of fauna declared as likely to become extinct, rare or otherwise in need of special protection shall not be taken.
- 4 Any by-catch of fauna, which is declared to be rare, likely to become extinct, or otherwise in need of special protection shall be released immediately at the point of capture. Where such fauna taken under this licence is injured or deceased, the licensee shall contact the Department's Wildlife Licensing Section for advice on disposal. Records must be kept of any such fauna so captured and details are to be included in the report required under further condition below.
- 5 Any interaction involving Gazetted Threatened Fauna that may be harmful to the fauna and/or invasive may require approval from the Commonwealth Department of the Environment ph 02 6274 1111. Interaction with such species is controlled by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and Environment Protection and Biodiversity Conservation Regulations 2000 as well as the Wildlife Conservation Act 1950 and Wildlife Conservation Regulations 1970.
- 6 No fauna shall be taken in areas where it would impinge on pre-existing scientific research programs.
- 7 Except in the case of approved lethal traps, the licensee shall ensure that measures are taken in the capture and handling of fauna to prevent injury or mortality resulting from that capture or handling. Where traps or other mechanical means or devices are used to capture fauna these shall be deployed so as to prevent exposure of trapped animals to ants and debilitating weather conditions and inspected at regular intervals throughout each day of their use. At the conclusion of research all markers used, and signs and structures erected by the licensee shall be removed and the environment returned to its original condition.
- 8 Not more than ten specimens of any one protected species of fauna shall be taken and removed from any location less than 20km apart. Where exceptional circumstances make it necessary to take a larger number of specimens from a particular location in order to obtain adequate statistical data, the collector must proceed with circumspection and justify their actions to the Director General in advance.
- 9 The licensee shall not release any fauna or their progeny in any area where it does not naturally occur, nor hand such fauna over to any other person or authority unless approved by the Director General, nor dispose of the remains of such fauna in any manner likely to confuse the natural or present day distribution of the species.
- 10 Bioprospecting involving the removal of sample aquatic and terrestrial organisms for chemical extraction and bioactivity screening shall not be conducted without specific written approval by the Director General.
- 11 No fauna is to be taken from any CALM land, as defined in the Conservation and Land Management Regulations 2002, without prior written approval of the Director General. No fauna is to be taken from any public land without the prior written approval of the Government Authority managing that land.
- 12 The licensee must not enter upon any private property or pastoral lease for the purposes of this licence, nor take any fauna from any private land or pastoral lease without the prior consent in writing of the owner or occupier. Similarly, in the case of Aboriginal lands, the licensee must not enter upon or take fauna from such lands without the written approval of the Department of Aboriginal Affairs and/or the relevant native title holders or applicants.
- 13 Copies of this licence and any written approval or consent required by conditions of this licence must be carried by the licensee and any person/s authorised under the licence at all times when conducting activities relevant to the licence

# DEPARTMENT OF PARKS AND WILDLIFE



Department of  
Parks and Wildlife



Enquiries: 17 DICK PERRY AVE, KENSINGTON, WESTERN AUSTRALIA  
Telephone: 08 9219 9000  
Facsimile: 08 9219 8242  
Web Site: <https://wildlifelicensing.dpaw.wa.gov.au>  
Correspondance: **Locked Bag 30**  
**Bentley Delivery Centre WA 6983**

**PAGE** 2  
**NO.** 08-005511-1

and must be presented to an authorised officer of the Department upon request.

- 14 All holotypes and syntypes and a half share of paratypes of species or subspecies permitted to be permanently taken under this licence shall be donated to the Western Australian Museum. Duplicates (one pair in each case) of any species collected, which represents a significant extension of geographic range shall upon request be donated to the Western Australian Museum.
- 15 To prevent any unnecessary collecting in this State, all specimens and material taken and retained under the authority of this license shall, upon request, be loaned to the Western Australian Museum. Any unused portion or portions of any specimen collected under the authority of this license shall be offered to the Western Australian Museum for inclusion in its collection or made available to other scientific workers if so required.
- 16 Within one month of the expiration of this licence, the holder shall submit an electronic return into the department's Wildlife Licensing System, detailing the locality, site, geocode, date and number of each species of fauna captured, sighted or vouchered during the currency of the licence. A copy of any paper, report or thesis resulting from the research shall upon completion be lodged with the Director General.

## Purpose

TFA 2324-0024 & BA27000875

## Authorised Person

Surname	Given name(s)
Walker	Christina
Crossley	Lachlan
Girando	Simon
Geidans	Lukas
Li	Yanlin
Berry	Lewis
Lohr	Michael
Hickling	Alex
Fintan	Angel
Constanza	Lutz
Hill	Chloe

**Date of Issue** 10/07/2023  
**Valid From** 10/07/2023  
**Date of Expiry** 10/07/2023

**Licensee:** Mr Evan Nicholas Webb  
**Address** PO Box 14  
West Perth WA 6872  
Australia

Issued by a Wildlife Licensing Officer of the Department of Parks and Wildlife under delegation from the Minister for Environment pursuant to section 133(1) of the Conservation and Land Management Act 1984.



# **Appendix D Fauna Desktop Assessment Results**

## **Targeted Chuditch, Quokka, and Woylie Survey**

**Huntly Mine – Myara Region**

**Alcoa of Australia Ltd**

SLR Project No.: 675.VX5890.00001

17 June 2024

**Conservation Status:**

State - Listed under Biodiversity Conservation Act 2016 or Department of Biodiversity, Conservation and Attractions Conservation, Commonwealth - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, CD - Conservation Dependent fauna, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

**Database:**

NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, Field - Recorded during the current field survey.

**Literature:**

A - *Chuditch Pre-mine Survey, Myara* (Way, 2013)

B - *Vertebrate Fauna Survey of Planned Mining Areas at Alcoa's Willowdale Larego Mining Region* (Environmental Management and Research Consultants, 2006)

C - *Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Myara North* (GHD, 2021b)

D - *Black Cockatoo Habitat Assessment - Pinjarra Racecourse* (Harewood, 2019)

E - *Terrestrial Fauna Survey and Black Cockatoo Habitat Assessment for Huntly Mine - Holyoake* (GHD, 2021a)

F - *Report for Rail Reserves in the Shire of Serpentine Jarrahdale - Spring Flora and Vegetation Survey and Fauna and Habitat Assessment* (GHD, 2012)

G - *Fauna Assessment Pinjarra - Williams Road (SLK 14 – 67)* (Harewood, 2017)

Family	Scientific name	Common name	Conservation status		Database			Field	Literature														
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G								
<b>Amphibians</b>																							
Limnodynastidae	<i>Heleioporus albopunctatus</i>	Western Spotted Frog									x												
	<i>Heleioporus eyrei</i>	Moaning Frog									x	x			x								
	<i>Heleioporus inornatus</i>	Whooping Frog									x												
Myobatrachidae	<i>Crinia georgiana</i>	Quacking Frog						x			x	x			x	x	x						
	<i>Crinia glauerti</i>	Clicking Frog						x			x				x	x	x						
	<i>Crinia insignifera</i>	Squelching Froglet															x						
	<i>Crinia pseudinsignifera</i>	Bleating Froglet									x	x			x		x						
	<i>Geocrinia leai</i>	Ticking Frog									x	x			x								
Pelodyadidae	<i>Litoria adelaidensis</i>	Slender Tree Frog						x			x	x			x		x						
	<i>Litoria moorei</i>	Motorbike Frog													x								
<b>Birds</b>																							
Acanthizidae	<i>Acanthiza apicalis</i>	Inland Thornbill, Broad-tailed Thornbill							x		x	x			x		x						
	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill									x	x			x		x						

Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
	<i>Acanthiza inornata</i>	Western Thornbill						x		x	x					x
	<i>Aphelocephala leucopsis</i>	Southern Whiteface		VU		x										
	<i>Gerygone fusca</i>	Western Gerygone						x		x						x
	<i>Sericornis maculatus</i>	Spotted Scrubwren						x		x	x		x			x
	<i>Smicromnis brevirostris</i>	Weebill						x		x			x	x		x
Accipitridae	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk								x			x			
	<i>Accipiter fasciatus</i>	Brown Goshawk		MA						x	x					
	<i>Aquila audax</i>	Wedge-tailed Eagle								x	x		x	x		x
	<i>Elanus scriptus</i>	Letter-winged Kite	P4													x
	<i>Haliastur sphenurus</i>	Whistling Kite		MA						x			x	x		
	<i>Hieraaetus morphnoides</i>	Little Eagle								x						
	<i>Lophoictinia isura</i>	Square-tailed Kite						x		x						
	<i>Milvus migrans</i>	Black Kite														x
Aegothelidae	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar									x		x			x
Alcedinidae	<i>Dacelo novaeguineae</i>	Laughing Kookaburra						x		x	x		x	x		x
	<i>Todiramphus sanctus</i>	Sacred Kingfisher		MA						x	x		x	x		
Anatidae	<i>Anas superciliosa</i>	Pacific Black Duck						x		x	x		x			x
	<i>Chenonetta jubata</i>	Australian Wood Duck, Wood Duck, Maned Duck									x		x			x
	<i>Cygnus atratus</i>	Black Swan											x			
	<i>Oxyura australis</i>	Blue-billed Duck	P4		x		x									
	<i>Tadorna tadornoides</i>	Australian Shelduck, Mountain Duck								x						x
Apodidae	<i>Apus pacificus</i>	Pacific Swift, Fork-tailed Swift	MI	MI, MA		x										
Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	EN		x										
Artamidae	<i>Artamus cinereus</i>	Black-faced Woodswallow									x					
	<i>Artamus cyanopterus</i>	Dusky Woodswallow						x		x	x					x
	<i>Cracticus nigrogularis</i>	Pied Butcherbird											x			

Family	Scientific name	Common name	Conservation status		Database			Field	Literature						
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G
	<i>Cracticus torquatus</i>	Grey Butcherbird									x		x	x	x
	<i>Gymnorhina tibicen</i>	Australian Magpie								x	x		x	x	x
	<i>Strepera versicolor</i>	Grey Currawong						x		x	x		x		x
Atrichornithidae	<i>Atrichornis clamosus</i>	Noisy Scrubbird	EN	EN	x	x	x			x					
Cacatuidae	<i>Cacatua pastinator pastinator</i>	Muir's Corella	CD		x		x								
	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	x	x	x	x		x	x	x	x	x	x
	<i>Eolophus roseicapilla</i>	Galah									x			x	
	<i>Zanda baudinii</i>	Baudin's Cockatoo	EN	EN	x	x	x	x		x	x		x	x	x
	<i>Zanda latirostris</i>	Carnaby's Cockatoo	EN	EN	x	x	x	x			x		x		x
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckooshrike		MA				x		x	x		x	x	x
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu						x		x	x		x		x
Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU	VU, MI, MA	x	x									
	<i>Charadrius mongolus</i>	Lesser Sand Plover	EN	EN, MI, MA		x									
	<i>Pluvialis fulva</i>	Pacific Golden Plover	MI	MI, MA	x	x									
	<i>Pluvialis squatarola</i>	Grey Plover	MI	VU, MI, MA	x		x								
	<i>Vanellus tricolor</i>	Banded Lapwing									x				
Climacteridae	<i>Climacteris rufus</i>	Rufous Treecreeper						x		x	x		x		
Columbidae	<i>Columba livia</i>	Domestic Pigeon, Rock Dove												x	
	<i>Phaps chalcoptera</i>	Common Bronzewing									x			x	x
	<i>Phaps elegans</i>	Brush Bronzewing						x		x	x				
	<i>Spilopelia chinensis</i>	Spotted Turtle Dove												x	
	<i>Spilopelia senegalensis</i>	Laughing Turtle Dove												x	
Corvidae	<i>Corvus bennetti</i>	Little Crow									x				
	<i>Corvus coronoides</i>	Australian Raven						x		x			x	x	x
Cuculidae	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo		MA				x		x	x				x

Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
	<i>Chalcites basalis</i>	Horsfield's Bronze Cuckoo		MA						x				x		
	<i>Chalcites lucidus</i>	Shining Bronze Cuckoo		MA						x	x					
Dicaeidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird									x					
Diomedeidae	<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	CR	EN, MI, MA		x										
	<i>Diomedea dabbenena</i>	Tristan Albatross	CR	EN, MI, MA		x										
	<i>Diomedea epomophora</i>	Southern Royal Albatross	VU			x										
	<i>Diomedea exulans</i>	Wandering Albatross	VU	VU, MI, MA		x										
	<i>Diomedea sanfordi</i>	Northern Royal Albatross	EN	EN, MI, MA		x										
	<i>Thalassarche cauta steadi</i>	White-capped Albatross	VU	VU, MI, MA		x										
	<i>Thalassarche impavida</i>	Campbell Island Albatross	VU	VU, MI, MA		x										
	<i>Thalassarche melanophris</i>	Black-browed Albatross	EN	VU, MI, MA		x										
Estrildidae	<i>Stagonopleura oculata</i>	Red-eared Firetail								x	x					
Falconidae	<i>Falco cenchroides</i>	Nankeen Kestrel		MA												x
	<i>Falco hypoleucos</i>	Grey Falcon	VU	VU		x										
	<i>Falco peregrinus</i>	Peregrine Falcon	OS		x		x				x		x			
Hirundinidae	<i>Hirundo neoxena</i>	Welcome Swallow		MA												x
	<i>Petrochelidon ariel</i>	Fairy Martin									x		x	x		
	<i>Petrochelidon nigricans</i>	Tree Martin		MA						x	x		x			
Laridae	<i>Anous stolidus</i>	Common Noddy, Brown Noddy	MI	MI, MA		x										
	<i>Hydroprogne caspia</i>	Caspian Tern	MI	MI, MA	x		x									
	<i>Sternula nereis nereis</i>	Fairy Tern	VU	VU	x	x	x									
	<i>Thalasseus bergii</i>	Greater Crested Tern, Crested Tern	MI	MI, MA	x		x									
Locustellidae	<i>Cincloramphus cruralis</i>	Brown Songlark									x		x			
	<i>Cincloramphus mathewsi</i>	Rufous Songlark											x			
Maluridae	<i>Malurus elegans</i>	Red-winged Fairywren						x		x	x		x			

Family	Scientific name	Common name	Conservation status		Database			Field	Literature						
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G
	<i>Malurus leucopterus</i>	White-winged Fairywren											x		
	<i>Malurus pulcherrimus</i>	Blue-breasted Fairywren											x		
	<i>Malurus splendens</i>	Splendid Fairywren								x	x		x	x	x
	<i>Stipiturus malachurus</i>	Southern Emu-wren									x				
Megapodiidae	<i>Leipoa ocellata</i>	Malleefowl	VU	VU	x	x	x								
Meliphagidae	<i>Acanthorhynchus superciliosus</i>	Western Spinebill						x		x	x		x		x
	<i>Anthochaera carunculata</i>	Red Wattlebird								x	x		x	x	x
	<i>Anthochaera lunulata</i>	Western Little Wattlebird, Western Wattlebird						x		x	x		x		x
	<i>Gavicalis virescens</i>	Singing Honeyeater								x	x			x	
	<i>Lichmera indistincta</i>	Brown Honeyeater								x	x		x	x	x
	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater								x	x		x		
	<i>Melithreptus chloropsis</i>	Western White-naped Honeyeater								x	x		x		x
	<i>Phylidonyris niger</i>	White-cheeked Honeyeater								x			x	x	
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater						x		x	x		x	x	x
	<i>Ptilotula ornata</i>	Yellow-plumed Honeyeater											x		
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater		MA							x	x		x	
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark		MA								x		x	x
	<i>Myiagra inquieta</i>	Restless Flycatcher									x	x		x	
Motacillidae	<i>Anthus australis australis</i>	Australian Pipit		MA							x				
	<i>Motacilla cinerea</i>	Grey Wagtail	MI	MI, MA		x									
Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella									x			x	
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrikethrush									x			x	

Family	Scientific name	Common name	Conservation status		Database			Field	Literature						
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G
	<i>Pachycephala fuliginosa</i>	Western Whistler						x		x	x		x		x
	<i>Pachycephala rufiventris</i>	Rufous Whistler						x		x				x	
Pandionidae	<i>Pandion haliaetus</i>	Osprey	MI	MI, MA	x	x	x								
	<i>Pardalotus punctatus</i>	Spotted Pardalote						x		x	x				x
	<i>Pardalotus striatus</i>	Striated Pardalote						x		x	x				x
Petroicidae	<i>Eopsaltria griseogularis</i>	Western Yellow Robin						x		x	x		x		
	<i>Microeca fascinans</i>	Jacky Winter												x	
	<i>Petroica boodang</i>	Scarlet Robin						x		x	x		x		
	<i>Quoyornis georgianus</i>	White-breasted Robin						x		x	x		x		
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth						x		x	x				x
Pomatostomidae	<i>Pomatostomus superciliosus</i>	White-browed Babbler											x		
Procellariidae	<i>Macronectes giganteus</i>	Southern Giant Petrel	MI	EN, MI, MA		x									
	<i>Macronectes halli</i>	Northern Giant Petrel	MI	VU, MI, MA		x									
	<i>Pachyptila turtur subantarctica</i>	Fairy Prion		VU		x									
Psittaculidae	<i>Barnardius zonarius</i>	Australian Ringneck						x		x	x		x	x	x
	<i>Neophema elegans</i>	Elegant Parrot									x		x		
	<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet								x	x		x		
	<i>Platycercus icterotis</i>	Western Rosella						x		x	x		x		
	<i>Polytelis anthopeplus</i>	Regent Parrot											x		
	<i>Psittacula krameri</i>	Rose-ringed Parakeet, Indian Ringnecked Parrot									x				
	<i>Purpureicephalus spurius</i>	Red-capped Parrot								x	x		x	x	x
	<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet									x			x	
Rallidae	<i>Fulica atra</i>	Eurasian Coot									x				x
	<i>Hypotaenidia philippensis</i>	Buff-banded Rail		MA									x		
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail						x		x	x		x		x
	<i>Rhipidura leucophrys</i>	Willie Wagtail								x				x	



Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
	<i>Tringa stagnatilis</i>	Marsh Sandpiper	MI	MI, MA	x	x										
	<i>Tringa totanus</i>	Common Redshank	MI	MI, MA		x										
Strigidae	<i>Ninox boobook</i>	Boobook Owl		MA						x	x			x		x
Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI, MA	x		x									
	<i>Threskiornis spinicollis</i>	Straw-necked Ibis		MA							x				x	
Turnicidae	<i>Turnix varius</i>	Painted Button-quail						x		x	x			x		
Tytonidae	<i>Tyto javanica</i>	Eastern Barn Owl												x		
Tytonidae	<i>Tyto novaehollandiae</i>	Australian Masked Owl, Masked Owl	P3								x					
Zosteropidae	<i>Zosterops lateralis</i>	Grey-breasted White-eye, Silvereye		MA						x	x			x		x
<b>Mammals</b>																
Burramyidae	<i>Cercartetus concinnus</i>	Western Pygmy-possum, Mundarda												x		
Canidae	<i>Canis familiaris</i> *	Dingo / Dog													x	
	<i>Vulpes vulpes</i> *	Red Fox						x			x				x	
Dasyuridae	<i>Antechinus flavipes leucogaster</i>	Yellow-footed Antechinus, Mardo						x			x			x		
	<i>Dasyurus geoffroii fortis</i>	Western Quoll, Chuditch	VU	VU	x	x	x	x	x		x			x		
	<i>Phascogale calura</i>	Red-tailed Phascogale	CD	VU		x										
	<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		x		x	x			x			x		
	<i>Sminthopsis gilberti</i>	Gilbert's Dunnart									x			x		
Felidae	<i>Felis catus</i> *	Cat									x			x	x	x
Leporidae	<i>Oryctolagus cuniculus</i> *	Rabbit						x			x			x	x	
Macropodidae	<i>Macropus fuliginosus melanops</i>	Western Grey Kangaroo						x			x			x	x	x
	<i>Notamacropus eugenii derbianus</i>	Tammar Wallaby	P4		x		x									
	<i>Notamacropus irma</i>	Western Brush Wallaby	P4		x		x	x			x			x	x	x
	<i>Setonix brachyurus</i>	Quokka	VU	VU	x	x	x	x			x			x		

Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
Molossidae	<i>Austronomus australis</i>	White-striped Free-tailed Bat									x		x			
	<i>Ozimops kitcheneri</i>	Western Free-tailed Bat									x		x			
Muridae	<i>Hydromys chrysogaster</i>	Water Rat, Rakali	P4		x		x				x					
	<i>Mus musculus*</i>	House Mouse									x					
	<i>Rattus rattus*</i>	Black Rat						x			x		x			
Myrmecobiidae	<i>Myrmecobius fasciatus fasciatus</i>	Numbat, Walpurti	EN	EN	x	x	x									
Peramelidae	<i>Isoodon fusciventer</i>	Quenda	P4		x		x	x			x		x	x		
Phalangeridae	<i>Trichosurus vulpecula hypoleucus</i>	Common Brushtail Possum, Koomal									x		x			
Potoroidae	<i>Bettongia penicillata ogilbyi</i>	Brush-tailed Bettong, Woylie	CR	EN	x	x	x									
Pseudocheiridae	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR	CE	x	x	x									
Suidae	<i>Sus scrofa*</i>	Pig						x			x		x		x	
Tachyglossidae	<i>Tachyglossus aculeatus acanthion</i>	Short-beaked Echidna						x			x		x		x	
Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat									x		x			
	<i>Chalinolobus morio</i>	Chocolate Wattled Bat									x		x			
	<i>Falsistrellus mackenziei</i>	Western False Pipistrelle	P4		x		x				x		x			
	<i>Vespadelus regulus</i>	Southern Forest Bat									x		x			
<b>Reptiles</b>																
Agamidae	<i>Ctenophorus ornatus</i>	Ornate Crevice Dragon									x	x				
	<i>Pogona minor</i>	Dwarf Bearded Dragon									x	x		x	x	
Carphodactylidae	<i>Underwoodisaurus milii</i>	Southern Barking Gecko						x			x		x			
Diplodactylidae	<i>Diplodactylus lateroides</i>	Speckled Stone Gecko									x					
	<i>Diplodactylus polyophthalmus</i>	Spotted Sandplain Gecko									x					
Elapidae	<i>Acanthophis antarcticus</i>	Southern Death Adder	P3		x		x				x					

Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
	<i>Notechis scutatus</i>	Tiger Snake								x	x			x		
	<i>Pseudonaja affinis</i>	Dugite						x		x				x	x	
	<i>Suta nigriceps</i>	Mitchell's Short-tailed Snake									x			x		
Gekkonidae	<i>Christinus marmoratus</i>	Marbled Gecko						x			x					
Pygopodidae	<i>Aprasia pulchella</i>	Pretty Worm-lizard						x		x	x					
	<i>Delma fraseri</i>	Fraser's Delma												x		
Pythonidae	<i>Morelia spilota</i>	Carpet Python								x	x			x		
Scincidae	<i>Acritoscincus trilineatus</i>	Western Three-lined Skink								x	x			x		
	<i>Cryptoblepharus buchanani</i>	Buchanan's Snake-eyed Skink						x			x				x	
	<i>Cryptoblepharus plagiocephalus</i>	Péron's Snake-eyed Skink								x						
	<i>Ctenotus delli</i>	Dell's Ctenotus	P4		x		x			x						
	<i>Ctenotus labillardieri</i>							x		x	x			x		
	<i>Egernia kingii</i>	King's Skink						x		x	x					
	<i>Egernia napoleonis</i>	South-western Crevice-skink						x		x	x			x		
	<i>Hemiergis initialis initialis</i>	Southwestern Earless Snake								x	x			x		
	<i>Lerista distinguenda</i>	Dwarf Four-toed Slider								x	x			x		
	<i>Lerista microtis microtis</i>	Southwestern Slider								x						
	<i>Menetia greyii</i>	Common Dwarf Skink								x	x			x		
	<i>Morethia obscura</i>	Shrubland Morethia Skink								x	x			x		
	<i>Tiliqua rugosa</i>	Bobtail						x		x	x			x	x	
Typhlopidae	<i>Anilius australis</i>	Southern Blind Snake								x	x			x		
Varanidae	<i>Varanus gouldii</i>	Bungarra Or Sand Goanna						x		x	x			x		
	<i>Varanus rosenbergi</i>	Heath Goanna								x	x			x	x	x

Family	Scientific name	Common name	Conservation status		Database			Field	Literature							
			State	Common wealth	NM	PMST	DBCA		A	B	C	D	E	F	G	
	<i>Varanus tristis</i>	Racehorse Goanna										x				



# Appendix E Fauna Site Sheets

## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024

### 5890-CAM-01-PW

<b>Project:</b> 5890			
<b>Date:</b> 23-08-2023		<b>Sample Type:</b> Terrestrial vertebrate fauna	
<b>Zone:</b> 50	<b>Easting:</b> 422074	<b>Northing:</b> 6406992	
<b>Landform and Soil</b>		<b>Rock</b>	
<b>Landform:</b> Mid slope	<b>Rock type/s:</b> Laterite		
<b>Aspect:</b> West	<b>Surface stone cover:</b> 0 - 5%		
<b>Soil type:</b> Sandy loam	<b>Surface stone size classes present:</b> Stones (2 - 6 cm), Small Rocks (6 - 20 cm)		
<b>Soil colour:</b> Brown, Grey, Red			
<b>Condition</b>		<b>Habitat Features</b>	
<b>Quality:</b> Disturbed	<b>Water Source:</b> Absent		
<b>Fire History:</b> Little or no fire evidence (>5 years)	<b>Microhabitats:</b> Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris		
<b>Disturbance:</b> Infrastructure, Vehicle tracks			
<b>Introduced fauna:</b> Pig	<b>Ground Cover:</b> 76-100%		
<b>Vegetation</b>			
<b>Upper stratum:</b> Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Blackbutt</i>	
<b>Mid stratum:</b> Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Bossiaea, Xanthorrhoea</i>	
<b>Ground stratum:</b> Mid (0.5-1 m)	Isolated ferns (<0.25%)	<i>Macrozamia</i>	



**Fulcrum photo ID** 7763c684-3f09-483b-9308-7ed4f34e6457,f4fbc3bd-2cbb-4ae4-

### 5890-CAM-02-EW

<b>Project:</b> 5890			
<b>Date:</b> 23-08-2023		<b>Sample Type:</b> Terrestrial vertebrate fauna	
<b>Zone:</b> 50	<b>Easting:</b> 413083	<b>Northing:</b> 6410728	
<b>Landform and Soil</b>		<b>Rock</b>	
<b>Landform:</b> Plain	<b>Rock type/s:</b> Laterite		
<b>Aspect:</b> Southwest	<b>Surface stone cover:</b> 5 - 25%		
<b>Soil type:</b> Loam	<b>Surface stone size classes present:</b> Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)		
<b>Soil colour:</b> Black, Brown			
<b>Condition</b>		<b>Habitat Features</b>	
<b>Quality:</b> Good	<b>Water Source:</b> Absent		
<b>Fire History:</b> Burnt (1-5 years)	<b>Microhabitats:</b> Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Rock crevices, Woody debris		
<b>Disturbance:</b> Clearing, Vehicle tracks			
<b>Introduced fauna:</b> None observed	<b>Ground Cover:</b> 76-100%		
<b>Vegetation</b>			
<b>Upper stratum:</b> Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina</i>	
<b>Mid stratum:</b> Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Bossiaea, other mixed shrubs</i>	
<b>Ground stratum:</b> Mid (0.5-1 m)	Open rushland and/or sedgeland (20-50%)		



**Fulcrum photo ID** 969b2df8-5ae7-4c91-8161-ac1854f4342b

### 5890-CAM-03-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023			Zone	50
Zone	50	Easting	411385	Northing	6407715
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Southeast		Surface stone cover	5 - 25%	
Soil type	Loam		Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)	
Soil colour	Brown,Grey				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	None observed		Vegetation		
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina</i>		
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia</i>		
Ground stratum	Mid (0.5-1 m)	Open rushland and/or sedgeland (20-50%)			



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### 5890-CAM-04-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023			Zone	50
Zone	50	Easting	413151	Northing	6409147
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	West		Surface stone cover	5 - 25%	
Soil type	Loam		Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri</i>		
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Macrozamia</i>		
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)			



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### 5890-CAM-05-LB

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	424048
		Northing	6404024
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	None
Aspect	Negligible	Surface stone cover	
Soil type	Loam	Surface stone size classes present	
Soil colour	Black		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, Leaf litter, Woody debris
Disturbance	Clearing		
Introduced fauna	None observed	Ground Cover	11-25%
Vegetation			
Upper stratum	Low (<10 m)	Woodland (20-50%)	<i>Jarrah</i>
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia, Xanthorrhoea</i>
Ground stratum	Tall (1-2 m)	Open hummock grassland (20-50%)	<i>Mixed shrubs</i>



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### 5890-CAM-06-EW

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	414210
		Northing	6409754
Landform and Soil		Rock	
Landform	Upper slope	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)
Soil colour	Black, Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, tree hollows, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Closed forest (>80%)	<i>Allocasuarina, Jarrah, Marri</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Banksia grandis, Bossiaea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



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### 5890-CAM-07-EW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	411944
		Northing	6409195
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	South	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	Vehicle tracks		
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Allocasuarina, Marri, Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Macrozamia, small shrubs</i>
Ground stratum	Low (>0.5 m)	Sparse forbland (0.25-20%)	



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### 5890-CAM-08-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	423192
		Northing	6407353
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	None
Aspect	South	Surface stone cover	
Soil type	Sandy loam	Surface stone size classes present	
Soil colour	Brown,Grey		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Banksia, Allocasuarina</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Bossiaea, Banksia, Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, low isolated Macrozamia</i>



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### 5890-CAM-09-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	426085
		Northing	6406367
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	0 - 5%
Soil type	Sandy loam	Surface stone size classes present	Small Rocks (6 - 20 cm)
Soil colour	Black		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Allocasuarina, Marri</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Bossiaea</i>
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)	<i>Sedges, Macrozamia</i>



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### 5890-CAM-10-LB

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	426232
		Northing	6408492
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	North	Surface stone cover	0 - 5%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	High quality	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Peeling bark,Woody debris
Disturbance	None observed		
Introduced fauna	None observed	Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Banksia</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Macrozamia, mixed shrubs</i>



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### 5890-CAM-11-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	421209
		Northing	6406687
Landform and Soil		Rock	
Landform	Lower slope	Rock type/s	Laterite
Aspect	Northeast	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Soil colour	Brown,Red		
Condition		Habitat Features	
Quality	Disturbed	Water Source	
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - trees, Leaf litter, Logs > 10 cm, Woody debris
Disturbance	Clearing, Vehicle tracks		
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Banksia</i>
Ground stratum	Low (>0.5 m)	Isolated rushes and/or sedges (<0.25%)	<i>Sedges</i>



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### 5890-CAM-12-LB

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	428759
		Northing	6407237
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Northeast	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Pebbles (<0.6 cm), Small Rocks (6 - 20 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Burnt (1-5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Peeling bark, Woody debris
Disturbance	Clearing		
Introduced fauna		Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah, Allocasuarina</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Banksia, Allocasuarina</i>
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Acacia, sedges, low banksia, mixed shrubs</i>



Fulcrum photo ID 5b36e529-d23b-4fdc-8883-d38b4c6f083a, 6641ae96-f273-4e17-

### 5890-CAM-13-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	421502
		Northing	6406787
Landform and Soil		Rock	
Landform	Drainage line	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	0 - 5%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)
Soil colour	Brown		
Condition		Habitat Features	
Quality	Good	Water Source	
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - trees,Leaf litter,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Blackbutt</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Mixed shrubs, Hakea</i>
Ground stratum	Absent		



Fulcrum photo ID 19d76158-a665-48e7-a6e8-69c238d6c40e,79ec3599-ef49-4f68-

### 5890-CAM-14-EW

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	417439
		Northing	6406496
Landform and Soil		Rock	
Landform	Upper slope	Rock type/s	Laterite
Aspect	Northeast	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Marri, Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Macrozamia, Bossiaea</i>
Ground stratum	Mid (0.5-1 m)	Sparse fernland (0.25-20%)	<i>Bracken</i>



Fulcrum photo ID 3f98271c-ddd4-4ec6-8625-f6dddaa4df10,be1bf458-3290-426c-

### 5890-CAM-15-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	416306	Northing	6406784
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	25 - 50%	
Soil type	Sandy loam		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance	Litter		Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Jarrah</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Xanthorrhoea, Bossiaea</i>	
Ground stratum	Low (>0.5 m)	Isolated rushes and/or sedges (<0.25%)		<i>Sedges, isolated low Macrozamia</i>	



Fulcrum photo ID aadb96d9-b5ed-44a3-a9bf-6d99432db1db,65a21858-2f19-4ac3-

### 5890-CAM-16-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	416798	Northing	6407138
Landform and Soil			Rock		
Landform	Plain		Rock type/s	Laterite	
Aspect	East		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	High quality		Water Source	Present	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Marri, Jarrah</i>	
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Xanthorrhoea, Macrozamia, mixed shrubs</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID dab0d5a5-244a-4429-9954-6861d79d2211,691eaf4a-dfa5-42de-

### 5890-CAM-17-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	417303
		Northing	6404120
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	Laterite
Aspect	South	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Soil colour	Brown, Yellow		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Allocasuarina, Banksia</i>
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Banksia, Bossiaea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, Macrozamia</i>



Fulcrum photo ID a22099a2-77d3-4c3a-ba31-3072b07e537a,5023e02a-a199-40ac-

### 5890-CAM-18-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	419986
		Northing	6406608
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	North	Surface stone cover	25 - 50%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)
Soil colour	Brown, Red		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris
Disturbance	Clearing, Infrastructure, Vehicle tracks		
Introduced fauna	Pig	Ground Cover	51-75%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea, Bossiaea</i>
Ground stratum	Tall (1-2 m)	Open fernland (20-50%)	<i>Macrozamia, Bracken</i>



Fulcrum photo ID f00650af-e562-48d5-8126-4433d53a0b11,42a85249-b518-4ce8-

### 5890-CAM-19-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	417253
		Northing	6404832
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Northwest	Surface stone cover	50 - 75%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	Clearing,Vehicle tracks		
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea, Bossiaea</i>
Ground stratum	Low (>0.5 m)	Isolated forbs (<0.25%)	<i>Macrozamia, mixed shrubs, isolated low sedges</i>



Fulcrum photo ID ceafc228-2d38-4d22-9dda-87456772c709,e139000f-1f24-4fc5-

### 5890-CAM-20-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	416936
		Northing	6404889
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	75 - 100%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)
Soil colour	Brown		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	Vehicle tracks		
Introduced fauna	None observed	Ground Cover	51-75%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Marri, Jarrah</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Bossiaea, Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, Macrozamia</i>



Fulcrum photo ID 98012f3c-36f6-4d3e-a3cc-d865473e82e7,5f25b753-6fdb-4e40-9f1a-

### 5890-CAM-21-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	415598	Northing	6404340
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Southeast		Surface stone cover	25 - 50%	
Soil type	Sandy loam		Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance	Litter, Vehicle tracks				
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri, Banksia</i>	
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Xanthorrhoea, Banksia, Bossiaea</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Sedges</i>	



Fulcrum photo ID 7993b8eb-936e-4c52-9eaf-8df942c587a1,660bd39e-b090-4271-

### 5890-CAM-22-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	418479	Northing	6406018
Landform and Soil			Rock		
Landform	Upper slope		Rock type/s	Laterite	
Aspect	Southeast		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Soil colour	Black, Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri, Banksia grandis</i>	
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Acacia, Bossiaea, Bracken</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 5bc59be0-50b1-4519-82fd-9e0d60feb79a

### 5890-CAM-23-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	419617
		Northing	6406108
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)
Soil colour	Brown		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	Vehicle tracks		
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Banksia</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia</i>
Ground stratum	Mid (0.5-1 m)	Sparse fernland (0.25-20%)	<i>Bracken, Macrozamia</i>



Fulcrum photo ID f5e746bf-a1fb-4501-8868-5053e7d4cc9a,3eb24fbf-20ee-4f91-a715-

### 5890-CAM-24-EW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	418039
		Northing	6406653
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite,None
Aspect	Northwest	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia, Bossiaea, Macrozamia, Xanthorrhoea, Bracken</i>
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID c9001425-5821-4262-b090-0b830142a881

### 5890-CAM-25-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023				
Zone	50	Easting	416342	Northing	6406347
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Jarrah, Marri</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Bossiaea, Xanthorrhoea</i>	
Ground stratum	Low (>0.5 m)	Isolated rushes and/or sedges (<0.25%)		<i>Sedges, low sparse Macrozamia, low sparse mixed shrubs</i>	



Fulcrum photo ID 7c6de4b4-4b66-4eba-a5eb-8ce55c12ab71,b6179da9-ffc2-4500-

### 5890-CAM-26-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023				
Zone	50	Easting	412014	Northing	6404851
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	North		Surface stone cover	25 - 50%	
Soil type	Loam		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Xanthorrhoea, mixed shrubs</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Mixed shrubs, Bracken</i>	



Fulcrum photo ID 62447c7c-a2fe-4214-a989-9a80c97f89ef,2094f766-3e3d-4435-

### 5890-CAM-27-ML

Project:	5890			Sample Type	Terrestrial vertebrate fauna	
Date	22-08-2023		Easting	414147	Northing	6406080
Zone	50					
Landform and Soil			Rock			
Landform	Mid slope		Rock type/s	Laterite		
Aspect	Southeast		Surface stone cover	0 - 5%		
Soil type	Loam		Surface stone size classes present	Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)		
Soil colour	Brown					
Condition			Habitat Features			
Quality	Good		Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Peeling bark,Woody debris		
Disturbance			Ground Cover	11-25%		
Introduced fauna	None observed		Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina</i>			
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea, sparse Acacia</i>			
Ground stratum	Low (>0.5 m)	Sparse tussock grassland (0.25-20%)	<i>Sedges</i>			



Fulcrum photo ID 4babd54f-5e2d-470f-b430-0051d54f948f,b6906bb5-1683-4b80-

### 5890-CAM-28-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna	
Date	23-08-2023		Easting	412126	Northing	6406980
Zone	50					
Landform and Soil			Rock			
Landform	Mid slope		Rock type/s	Laterite		
Aspect	East		Surface stone cover	0 - 5%		
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm)		
Soil colour	Black,Brown					
Condition			Habitat Features			
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris		
Disturbance			Ground Cover	76-100%		
Introduced fauna	Pig		Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina</i>			
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Banksia grandis</i>			
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)				



Fulcrum photo ID 304cca3c-2cbf-4bb5-8c15-fd5eb6a01f3d

### 5890-CAM-29-ML

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	411076
		Northing	6407358
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	None
Aspect	Southwest	Surface stone cover	
Soil type	Loam	Surface stone size classes present	
Soil colour	Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	None observed	Ground Cover	11-25%
Introduced fauna	Pig	Vegetation	
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Allocasuarina</i>
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia grandis, Woody Pear</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges and Xanthorrhoea</i>



Fulcrum photo ID 92fe33a8-bbc0-4bb6-997d-bfc44ebe9657,7bba9027-85fa-46fd-

### 5890-CAM-30-EW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	412158
		Northing	6408936
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Southeast	Surface stone cover	25 - 50%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance		Ground Cover	76-100%
Introduced fauna	None observed	Vegetation	
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Marri, Allocasuarina, Bullich</i>
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Xanthorrhoea, Macrozamia, Banksia grandis</i>
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 36169c64-862f-46cf-ae0b-d7a351aaf256

### 5890-CAM-31-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	412295	Northing	6410764
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	5 - 25%	
Soil type	Loam		Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance	Vehicle tracks				
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Allocasuarina, Jarrah, Marri</i>	
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Myrtaceae shrubs</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID    cb1fe5b7-0af4-4cd3-9d5d-17c1eff9231b

### 5890-CAM-32-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	415341	Northing	6411406
Landform and Soil			Rock		
Landform	Plain		Rock type/s	Laterite	
Aspect	West		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Marri, Jarrah</i>	
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)		<i>Banksia sessilis</i>	
Ground stratum	Mid (0.5-1 m)	Open rushland and/or sedgeland (20-50%)			



Fulcrum photo ID    0b07ea2b-ad2c-4a9c-833d-50c3ff369de

### 5890-CAM-33-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	416112	Northing	6409057
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Northeast		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri</i>	
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Bossiaea, Macrozamia, Xanthorrhoea, Bracken</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 3bd1e218-6305-403a-8cf7-c4836dcd2ee5

### 5890-CAM-34-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	416630	Northing	6407778
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Tall (>30 m)	Open forest (50-80%)		<i>Marri, Jarrah</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Xanthorrhoea, Macrozamia</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID c46cbd3f-b2d6-40c1-ad83-6e0f4d942f13,26df2056-2030-4776-88df-

### 5890-CAM-35-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023				
Zone	50	Easting	415285	Northing	6408162
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	North		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Disturbed		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance	Clearing,Vehicle tracks				
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Marri, Jarrah</i>		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia, Macrozamia, Bossiaea</i>		
Ground stratum	Mid (0.5-1 m)	Sparse fernland (0.25-20%)	<i>Bracken</i>		



Fulcrum photo ID 854aa245-f405-41b0-8eee-80baffc5910a,363a5ea6-c76b-451b-

### 5890-CAM-36-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023				
Zone	50	Easting	414091	Northing	6409021
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Northeast		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance	None observed				
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Tall (>30 m)	Open forest (50-80%)	<i>Jarrah, Marri</i>		
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia grandis</i>		
Ground stratum	Mid (0.5-1 m)	Open fernland (20-50%)	<i>Bracken</i>		



Fulcrum photo ID f95c592e-5016-4136-b7fe-48f8413c9e48,c35d1c8d-71ef-4f94-98dd-

### 5890-CAM-37-LB

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	423756
		Northing	6403770
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	South	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm)
Soil colour	Black,Orange		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	
Disturbance	None observed		
Introduced fauna	None observed	Ground Cover	11-25%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah</i>
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia, Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Mixed shrubs</i>



Fulcrum photo ID ea83a00a-e4b7-4894-b42a-9c3d549a4ca9

### 5890-CAM-38-LB

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	423256
		Northing	6405073
Landform and Soil		Rock	
Landform	Plain	Rock type/s	None
Aspect	Negligible	Surface stone cover	
Soil type	Sandy loam	Surface stone size classes present	
Soil colour	Black		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Peeling bark,Woody debris
Disturbance	Clearing		
Introduced fauna		Ground Cover	11-25%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Jarrah, Banksia</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Mixed shrubs</i>



Fulcrum photo ID dd751155-9d7e-402f-85c6-64025933a29d

### 5890-CAM-39-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	425674
		Northing	6405102
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Southwest	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)
Soil colour	Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	51-75%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Marri</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Bossiaea, mixed shrubs</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, low Macrozamia</i>



Fulcrum photo ID 600eb4d8-3130-419b-a819-5e22b7900d79,c19f79ca-c3fd-4a0f-

### 5890-CAM-40-EW

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	427568
		Northing	6405288
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Northwest	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Marri, Allocasuarina, Banksia grandis</i>
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)	<i>Bossiaea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 7c611136-f4d4-4ce3-8ca0-e6901d8ddd04

### 5890-CAM-41-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna	
Date	23-08-2023		Easting	426446	Northing	6406254
Zone	50	Easting	426446	Northing	6406254	
Landform and Soil			Rock			
Landform	Drainage line		Rock type/s	Laterite		
Aspect	South		Surface stone cover	25 - 50%		
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)		
Soil colour	Brown,Orange					
Condition			Habitat Features			
Quality	High quality		Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris		
Disturbance	None observed		Ground Cover	51-75%		
Introduced fauna	None observed					
Vegetation						
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Marri, Allocasuarina</i>			
Mid stratum	Low (0.5-1 m)	Open shrubland and/or heathland (20-50%)	<i>Mixed shrubs, Banksia, Bossiaea, Xanthorrhoea</i>			
Ground stratum	Absent					



Fulcrum photo ID 1f34b905-e757-40b1-a38d-0f1e996c2248,426715fa-0da2-4cd7-

### 5890-CAM-42-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna	
Date	25-08-2023		Easting	426984	Northing	6406045
Zone	50	Easting	426984	Northing	6406045	
Landform and Soil			Rock			
Landform	Drainage line		Rock type/s	Laterite		
Aspect	Southwest		Surface stone cover	0 - 5%		
Soil type	Clay loam		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)		
Soil colour	Black,Brown					
Condition			Habitat Features			
Quality	Very good		Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris		
Disturbance	None observed		Ground Cover	76-100%		
Introduced fauna	None observed					
Vegetation						
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Marri, Jarrah</i>			
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)	<i>Bossiaea, Xanthorrhoea, other mixed shrubs</i>			
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)				



Fulcrum photo ID bf84367a-0bcb-459c-b038-be583d080904

### 5890-CAM-43-LB

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	25-08-2023			Zone	50
	Eastings	429086	Northings	6407057	
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	North		Surface stone cover	25 - 50%	
Soil type	Sandy loam		Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Soil colour	Black				
Condition			Habitat Features		
Quality	Disturbed		Water Source	Absent	
Fire History	Burnt (1-5 years)		Microhabitats	Hollows - logs, Hollows - trees, Peeling bark, Woody debris	
Disturbance	Clearing		Ground Cover		
Introduced fauna					
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia</i>		
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Low Banksia, sedges</i>		



Fulcrum photo ID a4c15c2c-d300-42a7-821e-82fefca1a456

### 5890-CAM-44-ML

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023			Zone	50
	Eastings	428400	Northings	6407249	
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Northwest		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Burnt (1-5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance	None observed		Ground Cover		
Introduced fauna	None observed				
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah, Allocasuarina</i>		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Banksia grandis, Grevillea, Hibbertia, Xanthorrhoea</i>		
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, prostrate Banksia, mixed low shrubs</i>		



Fulcrum photo ID 9d94cc3d-33c1-41df-ad12-ef9a62309037, bc189d67-f8fd-4eac-94e3

### 5890-CAM-45-LB

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	427995
		Northing	6407445
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Northeast	Surface stone cover	0 - 5%
Soil type	Sandy loam	Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Black		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Burnt (1-5 years)	Microhabitats	Hollows - logs, Hollows - trees, Peeling bark
Disturbance	Clearing		
Introduced fauna		Ground Cover	26-50%
Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)	<i>Low Banksia, sedges</i>



Fulcrum photo ID b7555f84-72fc-4a07-ae19-af1e85020849

### 5890-CAM-46-LB

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	428035
		Northing	6408197
Landform and Soil		Rock	
Landform	Drainage line	Rock type/s	None
Aspect	East	Surface stone cover	
Soil type	Sandy loam	Surface stone size classes present	
Soil colour	Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Present
Fire History	Burnt (1-5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Peeling bark, Woody debris
Disturbance	None observed		
Introduced fauna		Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Closed shrubland and/or heathland (>80%)	<i>Gastropodium</i>
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)	<i>Sedges, mixed shrubs</i>



Fulcrum photo ID 4081cb6b-0af8-4504-a44b-a7f7f11964ec

### 5890-CAM-47-LB

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023			Zone	50
	Easting	427178	Northing	6408075	
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	North		Surface stone cover	0 - 5%	
Soil type	Sandy loam		Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm)	
Soil colour	Black				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Burnt (1-5 years)		Microhabitats	Exfoliating rock, Hollows - logs, Hollows - trees, Leaf litter, Peeling bark, Woody debris	
Disturbance	Clearing		Ground Cover	51-75%	
Introduced fauna					
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah, Allocasuarina</i>		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Allocasuarina, Xanthorrhoea</i>		
Ground stratum	Low (>0.5 m)	Rushland and/or sedgeland (50-80%)	<i>Grevillea</i>		



Fulcrum photo ID 1c2d6583-6461-4db3-9f6e-e96f9e09dda7

### 5890-CAM-48-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023			Zone	50
	Easting	418052	Northing	6404063	
Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	Laterite	
Aspect	Southeast		Surface stone cover	50 - 75%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)	
Soil colour	Black, Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - trees, Leaf litter, Peeling bark, Woody debris	
Disturbance	Infrastructure		Ground Cover	76-100%	
Introduced fauna	Pig				
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah, Eucalyptus rudis</i>		
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)	<i>Mixed shrubs</i>		
Ground stratum	Low (>0.5 m)	Sparse forbland (0.25-20%)	<i>Mixed</i>		



Fulcrum photo ID b9c64bc0-5ab0-4f3a-8012-53e1aeb71ee5, ee8acffb-6be1-4b73-

### 5890-CAM-49-PW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	426929
		Northing	6407348
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Northeast	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah, Marri, Banksia</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Bossiaea, Xanthorrhoea, mixed shrubs</i>
Ground stratum	Low (>0.5 m)	Isolated rushes and/or sedges (<0.25%)	<i>Sedges, low isolated Macrozamia</i>



Fulcrum photo ID 1bc7eb7e-a4b3-40d8-99ab-0c160553203d,5c49a7c5-7f3e-40fe-

### 5890-CAM-50-LB

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	423194
		Northing	6404446
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	East	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm)
Soil colour	Black		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Rock crevices,Woody debris
Disturbance	Clearing		
Introduced fauna	None observed	Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Gastrolopium, Jarrah, Banksia</i>
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)	<i>Mixed shrubs</i>



Fulcrum photo ID 3017fda8-3c2a-45fe-8540-a6e7c7d40115

### 5890-CAM-51-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	25-08-2023				
Zone	50	Easting	422527	Northing	6409154
Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	None	
Aspect	Northeast		Surface stone cover		
Soil type	Clay loam		Surface stone size classes present		
Soil colour	Brown				
Condition			Habitat Features		
Quality	High quality		Water Source	Present	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Bullich, Marri, Jarrah</i>	
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)		<i>Melaleuca and other Myrtaceae sp,</i>	
Ground stratum	Tall (1-2 m)	Rushland and/or sedgeland (50-80%)			



Fulcrum photo ID 902db352-5d59-4dd4-9a5b-2ecdacc1ccc1

### 5890-CAM-52-ML

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023				
Zone	50	Easting	425776	Northing	6408886
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	West		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Peeling bark,Woody debris	
Disturbance	None observed				
Introduced fauna	None observed		Ground Cover	26-50%	
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Jarrah</i>	
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)		<i>Gastrolibia, Jarrah, Xanthorrhoea</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Mixed shrubs</i>	



Fulcrum photo ID 54ff9002-5c16-4dd3-a678-da8dbc40af73,c3d72fb0-51e9-4deb-bfff-

### 5890-CAM-53-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	25-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	426719	Northing	6408184
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	East		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Grey				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Allocasuarina, Banksia grandis</i>		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Myrtaceae, Gastrolobium, Kingia</i>		
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID aa4a04d3-1d8c-46d3-8e65-fa998b54a502

### 5890-CAM-54-LB

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	427670	Northing	6408985
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Northeast		Surface stone cover	0 - 5%	
Soil type	Sand		Surface stone size classes present	Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Peeling bark,Woody debris	
Disturbance	None observed		Ground Cover	26-50%	
Introduced fauna	None observed		Vegetation		
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea, Jarrah</i>		
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, mixed shrubs, Macrozamia</i>		



Fulcrum photo ID 47c2585f-b5db-496f-b7b7-8470f7cbb6ae

### 5890-CAM-55-LB

Project:		5890	
Date		24-08-2023	
Sample Type		Terrestrial vertebrate fauna	
Zone	50	Easting	427233
Northing		6408745	
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	Laterite
Aspect	West	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)
Soil colour	Black, Brown		
Condition		Habitat Features	
Quality	High quality	Water Source	Absent
Fire History	Burnt (1-5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Peeling bark, Woody debris
Disturbance	None observed		
Introduced fauna	None observed	Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)	<i>Xanthorrhoea, Bossiaea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Macrozamia, mixed shrubs</i>



Fulcrum photo ID 11ce7f26-c5cd-463a-ba29-2061165a18bf

### 5890-CAM-56-LB

Project:		5890	
Date		24-08-2023	
Sample Type		Terrestrial vertebrate fauna	
Zone	50	Easting	430071
Northing		6407275	
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	Laterite
Aspect	North	Surface stone cover	5 - 25%
Soil type	Sandy loam	Surface stone size classes present	Pebbles (<0.6 cm), Rocks (20 - 60 cm)
Soil colour	Black, Brown		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Burnt (1-5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Peeling bark, Woody debris
Disturbance	Clearing, Vehicle tracks		
Introduced fauna	None observed	Ground Cover	
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Jarrah</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	<i>Sedges, low Banksia</i>



Fulcrum photo ID 877724e5-600a-4421-982c-16aea780643a

### 5890-CAM-57-LB

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	430472	Northing	6408711
Landform and Soil			Rock		
Landform	Undulating plain			Rock type/s	Laterite
Aspect	Northeast			Surface stone cover	0 - 5%
Soil type	Sandy loam			Surface stone size classes present	Rocks (20 - 60 cm)
Soil colour	Brown,Orange				
Condition			Habitat Features		
Quality	Disturbed			Water Source	Absent
Fire History	Burnt (1-5 years)			Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Peeling bark,Woody debris
Disturbance	Clearing				
Introduced fauna	None observed			Ground Cover	11-25%
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Jarrah</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Banksia grandis, Macrozamia</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Sedges, low Banksia, mix low shrubs</i>	



Fulcrum photo ID 0539fe77-7044-4a25-a77f-f8609b9701b6

### 5890-CAM-58-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	424039	Northing	6410846
Landform and Soil			Rock		
Landform	Mid slope			Rock type/s	Laterite
Aspect	Southeast			Surface stone cover	5 - 25%
Soil type	Loam			Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good			Water Source	Present
Fire History	Little or no fire evidence (>5 years)			Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance					
Introduced fauna	Pig			Ground Cover	76-100%
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Allocasuarina, Jarrah, Marri, Banksia sessilis, B. grandis</i>	
Mid stratum	Low (0.5-1 m)	Open shrubland and/or heathland (20-50%)		<i>Bossiaea, Myrtaceae, other mixed shrubs</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 15f94c0e-7c52-4623-9592-b49e527059e7,954d4f3a-69ad-42a3-

### 5890-CAM-59-EW

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	424989
		Northing	6410464
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	Southeast	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Allocasuarina, Marri, Jarrah, Banksia grandis</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Mixed shrubs, Myrtaceae, Hakea, Macrozamia</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID fc9b10fa-a390-4e57-ac51-4e85a68cf76f

### 5890-CAM-60-EW

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	425941
		Northing	6409761
Landform and Soil		Rock	
Landform	Upper slope	Rock type/s	Laterite
Aspect	South	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Marri, Allocasuarina</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Bossiaea, Xanthorrhoea, Macrozamia</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 9143e45f-3ea8-4d43-bdcd-9ab7617e2cb9

### 5890-CAM-61-EW

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	426681
		Northing	6409764
Landform and Soil		Rock	
Landform	Plain	Rock type/s	Granite, Laterite
Aspect	Negligible	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Black, Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Marri, Jarrah</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia, Xanthorrhoea</i>
Ground stratum	Mid (0.5-1 m)	Open rushland and/or sedgeland (20-50%)	<i>Sedges and Banksia groundcover</i>



Fulcrum photo ID 5f1ea2c7-a400-4ab1-b8e7-c8d9ce0b26f1

### 5890-CAM-62-EW

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	426998
		Northing	6410371
Landform and Soil		Rock	
Landform	Upper slope	Rock type/s	Laterite
Aspect	North	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)
Soil colour	Black, Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Banksia grandis</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia, Bossiaea, Xanthorrhoea, Macrozamia</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 5cac0509-dc98-4491-a1cc-f06aab794a24

### 5890-CAM-63-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	421939	Northing	6410430
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Northeast		Surface stone cover	50 - 75%	
Soil type	Sandy loam		Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Soil colour	Brown, Grey				
Condition			Habitat Features		
Quality	Disturbed		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance	Clearing, Vehicle tracks				
Introduced fauna	Pig		Ground Cover	26-50%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)		<i>Jarrah, Marri, Allocasuarina</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Banksia sessilis, Hakea</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 15158e27-e2dd-4dc5-a2d6-75219a7fed01

### 5890-CAM-64-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023			Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	417955	Northing	6404309
Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	Laterite	
Aspect	Southeast		Surface stone cover	50 - 75%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance	Infrastructure				
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)		<i>Jarrah, Eucalyptus rudis</i>	
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)		<i>Acacia, banksia, Xanthorrhoea</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Sedges</i>	



Fulcrum photo ID 54aad59d-d420-4bfc-972c-c3f69fbc4ff3,2c7f432e-89c4-46bf-a9ea-

### 5890-CAM-65-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	422649	Northing	6409101
Landform and Soil			Rock		
Landform	Drainage line		Rock type/s	Laterite	
Aspect	Northwest		Surface stone cover	0 - 5%	
Soil type	Clay loam		Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)	
Soil colour	Brown,Red				
Condition			Habitat Features		
Quality	High quality		Water Source	Present	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Bullich, Marri</i>	
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)		<i>Xanthorrhoea, Bracken, mixed shrubs</i>	
Ground stratum	Tall (1-2 m)	Rushland and/or sedgeland (50-80%)			



Fulcrum photo ID 3137beae-0c26-40ff-82e7-35df654e0112

### 5890-CAM-66-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	422220	Northing	6409545
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance			Ground Cover	76-100%	
Introduced fauna	Pig		Vegetation		
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Allocasuarina, Marri, Jarrah</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Xanthorrhoea, mixed shrubs</i>	
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 67cbeda9-79dc-4b95-a9e8-20f858353a31

### 5890-CAM-67-EW

Project:	5890		
Date	24-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	421841
		Northing	6409254
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	South	Surface stone cover	5 - 25%
Soil type	Loam	Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Marri, Jarrah, Allocasuarina</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 245def45-420d-4631-89ce-cab10b15fe02

### 5890-CAM-68-EW

Project:	5890		
Date	22-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	421952
		Northing	6407763
Landform and Soil		Rock	
Landform	Drainage line	Rock type/s	None
Aspect	Southwest	Surface stone cover	
Soil type	Clay loam	Surface stone size classes present	
Soil colour	Brown,Red		
Condition		Habitat Features	
Quality	Very good	Water Source	Present
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Marri, Jarrah</i>
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)	<i>Acacia, Hakea, Xanthorrhoea, Bossiaea, Myrtaceae</i>
Ground stratum	Tall (1-2 m)	Rushland and/or sedgeland (50-80%)	



Fulcrum photo ID 5c651e6a-c770-4942-b000-917ba9ec0f0a,b45481df-0ff8-4f61-ac63-

### 5890-CAM-69-EW

Project:		5890	
Date		24-08-2023	
Sample Type		Terrestrial vertebrate fauna	
Zone	50	Easting	420546
Northing		6411099	
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	West	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Marri, Banksia grandis</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Xanthorrhoea, Macrozamia</i>
Ground stratum	Mid (0.5-1 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 9241922b-40d9-4b55-bab8-542844dfef7f

### 5890-CAM-70-EW

Project:		5890	
Date		24-08-2023	
Sample Type		Terrestrial vertebrate fauna	
Zone	50	Easting	421371
Northing		6411757	
Landform and Soil		Rock	
Landform	Mid slope	Rock type/s	Laterite
Aspect	North	Surface stone cover	0 - 5%
Soil type	Loam	Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance			
Introduced fauna	Pig	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Woodland (20-50%)	<i>Jarrah, Marri, Banksia grandis</i>
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Xanthorrhoea, Macrozamia, Bossiaea</i>
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)	



Fulcrum photo ID 9f182e93-572b-44da-b184-9a986d066f64

### 5890-CAM-71-PW

Project:	5890		
Date	23-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	423180
		Northing	6406547
Landform and Soil		Rock	
Landform	Plain	Rock type/s	None
Aspect	South	Surface stone cover	
Soil type	Sandy loam	Surface stone size classes present	
Soil colour	Brown		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris
Disturbance	Vehicle tracks		
Introduced fauna	None observed	Ground Cover	76-100%
Vegetation			
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)	<i>Jarrah, Allocasuarina, Banksia</i>
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Xanthorrhoea, Acacia, mixed shrubs</i>
Ground stratum	Low (>0.5 m)	Open rushland and/or sedgeland (20-50%)	<i>Sedges, low isolated Macrozamia</i>



Fulcrum photo ID 19eb0125-56d0-4cf9-85e5-c49e58340e0a,91d40a8d-3a53-4604-

### 5890-CAM-72-LB

Project:	5890		
Date	25-08-2023	Sample Type	Terrestrial vertebrate fauna
Zone	50	Easting	422212
		Northing	6406903
Landform and Soil		Rock	
Landform	Undulating plain	Rock type/s	Laterite
Aspect	East	Surface stone cover	0 - 5%
Soil type	Sandy loam	Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm),Stones (2 - 6 cm)
Soil colour	Black,Brown		
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Hollows - logs,Hollows - trees,Peeling bark,Woody debris
Disturbance	Clearing,Erosion		
Introduced fauna	Pig,None observed	Ground Cover	26-50%
Vegetation			
Upper stratum	Mid (10-30 m)	Open forest (50-80%)	<i>Jarrah</i>
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Jarrah</i>
Ground stratum	Mid (0.5-1 m)	Open hummock grassland (20-50%)	



Fulcrum photo ID 892eb777-d953-4e7b-9a23-d60c28b59dfd

### 5890-CAM-73-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	424726	Northing	6406616
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Big Rocks (60 cm - 2 m)	
Soil colour	Brown,Grey				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris	
Disturbance					
Introduced fauna	None observed		Ground Cover	51-75%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)		<i>Jarra</i>	
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Xanthorrhoea, mixed shrubs</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Sedges</i>	



Fulcrum photo ID 6285a4a1-8273-410a-b346-10fee934ccd0,9a12e905-55e9-46e4-

### 5890-CAM-74-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	425824	Northing	6407296
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	West		Surface stone cover	25 - 50%	
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris	
Disturbance	Vehicle tracks				
Introduced fauna	None observed		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)		<i>Jarra</i>	
Mid stratum	Mid (1-2 m)	Shrubland and/or heathland (50-80%)		<i>Xanthorrhoea, Bossiaea, mixed shrubs</i>	
Ground stratum	Low (>0.5 m)	Sparse forbland (0.25-20%)		<i>Hibbertia, Macrozamia</i>	



Fulcrum photo ID 4122824c-de8e-4ad6-9581-e06f5ddf3e3b,392bedf8-e959-47ec-

### 5890-CAM-75-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	423659	Northing	6407780
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	50 - 75%	
Soil type	Sand		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Brown, Yellow				
Condition			Habitat Features		
Quality	Disturbed		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - trees,Leaf litter,Logs > 10 cm,Woody debris	
Disturbance	Clearing,Vehicle tracks				
Introduced fauna	None observed		Ground Cover	26-50%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open woodland (0.25-20%)		<i>Allocasuarina, Jarrah, Banksia</i>	
Mid stratum	Low (0.5-1 m)	Open shrubland and/or heathland (20-50%)		<i>Bossiaea, Banksia, mixed shrubs</i>	
Ground stratum	Low (>0.5 m)	Isolated rushes and/or sedges (<0.25%)		<i>Sedges</i>	



Fulcrum photo ID 2531df38-0311-4099-8cfe-7e8b14684e56,89089b33-7982-4036-

### 5890-CAM-76-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	418709	Northing	6407565
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Southwest		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, banksia</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Bossiaea</i>	
Ground stratum	Mid (0.5-1 m)	Sparse fernland (0.25-20%)		<i>Macrozamia, Bracken, low isolated sedges</i>	



Fulcrum photo ID c1b20fc4-ef28-46dd-bd40-1155608e34bf,66eb64c7-5374-425c-

### 5890-CAM-77-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	419294	Northing	6407124
Landform and Soil			Rock		
Landform	Mid slope		Rock type/s	Laterite	
Aspect	Northeast		Surface stone cover	5 - 25%	
Soil type	Sandy loam		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri</i>	
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Mixed shrubs</i>	
Ground stratum	Mid (0.5-1 m)	Open fernland (20-50%)		<i>Ferns, Macrozamia</i>	



Fulcrum photo ID ac39f65f-2bc2-4430-83c1-5b413257478d,d28fd9c8-99fc-4715-b99b-

### 5890-CAM-78-ML

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	23-08-2023				
Zone	50	Easting	413790	Northing	6407095
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Negligible		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Rocks (6 - 20 cm)	
Soil colour	Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs, Hollows - trees, Leaf litter, Logs > 10 cm, Peeling bark, Woody debris	
Disturbance					
Introduced fauna	None observed		Ground Cover	11-25%	
Vegetation					
Upper stratum	Mid (10-30 m)	Closed forest (>80%)		<i>Jarrah, Marri</i>	
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Banksia grandis, Macrozamia</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)		<i>Sedges</i>	



Fulcrum photo ID 325f3ec9-ff18-404a-9b17-af8bd914ebde,7d994e1e-fe42-468f-9758-

### 5890-CAM-79-PW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	22-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	415224	Northing	6405833
Landform and Soil			Rock		
Landform	Undulating plain		Rock type/s	Laterite	
Aspect	Northwest		Surface stone cover	5 - 25%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarrah, Marri</i>	
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Bossiaea</i>	
Ground stratum	Mid (0.5-1 m)	Sparse fernland (0.25-20%)		<i>Macrozamia, low sparse sedges</i>	



Fulcrum photo ID 29f5f5b8-487e-4945-9910-71834c7f5c4a,736a9741-6f33-4edd-

### 5890-CAM-80-EW

Project:	5890			Sample Type	Terrestrial vertebrate fauna
Date	24-08-2023		Sample Type	Terrestrial vertebrate fauna	
Zone	50	Easting	417378	Northing	6409077
Landform and Soil			Rock		
Landform	Upper slope		Rock type/s	Laterite	
Aspect	West		Surface stone cover	0 - 5%	
Soil type	Loam		Surface stone size classes present	Small Stones (0.6 - 2 cm),Stones (2 - 6 cm),Small Rocks (6 - 20 cm),Rocks (20 - 60 cm)	
Soil colour	Black,Brown				
Condition			Habitat Features		
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - logs,Hollows - trees,Leaf litter,Logs > 10 cm,Peeling bark,Woody debris	
Disturbance					
Introduced fauna	Pig		Ground Cover	76-100%	
Vegetation					
Upper stratum	Mid (10-30 m)	Woodland (20-50%)		<i>Jarrah, Marri</i>	
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Banksia grandis, Macrozamia, Persoonia</i>	
Ground stratum	Low (>0.5 m)	Sparse rushland and/or sedgeland (0.25-20%)			



Fulcrum photo ID 8ddfd16f-cc2b-4183-9da3-90d45e10d4b0

### 5890-HAB-01-ML

Project:		5890		Sample Type		Terrestrial vertebrate fauna	
Date		22-08-2023		Northing		6406539	
Zone	50	Easting	420605				
Landform and Soil				Rock			
Landform	Upper slope		Rock type/s	Laterite			
Aspect	East		Surface stone cover	0 - 5%			
Soil type	Clay loam		Surface stone size classes present	Small Rocks (6 - 20 cm),Rocks (20 - 60 cm),Big Rocks (60 cm - 2 m)			
Soil colour	Brown						
Condition				Habitat Features			
Quality	Very good		Water Source	Absent			
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hollows - trees,Leaf litter,Peeling bark,Woody debris			
Disturbance			Ground Cover				
Introduced fauna	Pig						
Vegetation							
Upper stratum	Mid (10-30 m)	Open forest (50-80%)		<i>Jarraah, Marri</i>			
Mid stratum	Low (0.5-1 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Acacia, Banksia, Bracken</i>			
Ground stratum	Absent						



Fulcrum photo ID eeebf140-9355-48c3-869d-82bc34b7cd85

### 5890-HAB-01-PW

Project:		5890		Sample Type		Terrestrial vertebrate fauna	
Date		6-07-2023		Northing		6406231	
Zone	50	Easting	421558				
Landform and Soil				Rock			
Landform	Undulating plain		Rock type/s	Laterite			
Aspect	Negligible		Surface stone cover	0 - 5%			
Soil type	Sandy clay		Surface stone size classes present	Pebbles (<0.6 cm),Small Stones (0.6 - 2 cm)			
Soil colour	Brown						
Condition				Habitat Features			
Quality	Good		Water Source	Absent			
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Leaf litter,Woody debris			
Disturbance	None observed		Ground Cover	<10%			
Introduced fauna	Pig,Rabbit						
Vegetation							
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)		<i>Blackbutt</i>			
Mid stratum	Mid (1-2 m)	Closed shrubland and/or heathland (>80%)		<i>Banksia</i>			
Ground stratum	Absent						



Fulcrum photo ID e90fdb9-6b2d-4ff0-a4f9-5eca7ec052ec,8da1576f-c061-45f7-a7cc-



# Appendix F    Significant Fauna Records

## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Zanda baudinii</i>	Baudin's Cockatoo	EN	EN	1	23-08-2023	- 32.4637	116.1120	Foraging evidence
<i>Zanda baudinii</i>	Baudin's Cockatoo	EN	EN	1	24-08-2023	- 32.4521	116.1758	Foraging evidence
<i>Zanda latirostris</i>	Carnaby's Cockatoo	EN	EN	40	26-08-2023	- 32.4635	116.2185	Sighting
<i>Zanda latirostris</i>	Carnaby's Cockatoo	EN	EN	10	10-09-2023	- 32.4746	116.1622	Sighting - overhead
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	02-09-2023	- 32.4889	116.1832	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	03-09-2023	- 32.4700	116.0826	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	02-09-2023	- 32.4405	116.1696	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	03-09-2023	- 32.4405	116.1696	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	25-08-2023	- 32.4749	116.1485	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	25-08-2023	- 32.4749	116.1485	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	25-08-2023	- 32.4749	116.1485	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	26-08-2023	- 32.4749	116.1485	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	31-08-2023	- 32.4749	116.1485	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	03-09-2023	- 32.4285	116.1637	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	04-09-2023	- 32.4285	116.1637	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	07-09-2023	- 32.4285	116.1637	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	08-09-2023	- 32.4605	116.0986	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	29-08-2023	- 32.4533	116.0654	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	30-08-2023	- 32.4533	116.0654	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	27-08-2023	- 32.4514	116.0760	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	27-08-2023	- 32.4514	116.0760	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	28-08-2023	- 32.4514	116.0760	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	29-08-2023	- 32.4514	116.0760	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	07-09-2023	- 32.4404	116.2020	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	09-09-2023	- 32.4404	116.2020	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	09-09-2023	- 32.4404	116.2020	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	01-09-2023	- 32.4646	116.1877	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	02-09-2023	- 32.4646	116.1877	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	05-09-2023	- 32.4646	116.1877	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	01-09-2023	- 32.4524	116.1210	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	06-09-2023	- 32.4524	116.1210	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	22-08-2023	- 32.4527	116.0860	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	22-08-2023	- 32.4527	116.0860	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	23-08-2023	- 32.4527	116.0860	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	23-08-2023	- 32.4527	116.0860	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	23-08-2023	- 32.4527	116.0860	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	24-08-2023	- 32.4527	116.0860	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	04-09-2023	- 32.4525	116.1075	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	27-08-2023	- 32.4372	116.0754	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	28-08-2023	- 32.4372	116.0754	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	23-08-2023	- 32.4461	116.0873	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	23-08-2023	- 32.4461	116.0873	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	24-08-2023	- 32.4461	116.0873	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	26-08-2023	- 32.4461	116.0873	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	30-08-2023	- 32.4461	116.0873	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	30-08-2023	- 32.4757	116.1214	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	30-08-2023	- 32.4757	116.1214	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	02-09-2023	- 32.4757	116.1214	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	28-08-2023	- 32.4547	116.2103	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	29-08-2023	- 32.4547	116.2103	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	29-08-2023	- 32.4547	116.2103	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	04-09-2023	- 32.4547	116.2103	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	24-08-2023	- 32.4641	116.1129	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	25-08-2023	- 32.4641	116.1129	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	01-09-2023	- 32.4792	116.0863	Camera trap
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	1	01-09-2023	- 32.4792	116.0863	Camera trap
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	30	22-08-2023	- 32.4509	116.0631	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	11	22-08-2023	- 32.4526	116.0860	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	9	22-08-2023	- 32.4658	116.0541	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	8	22-08-2023	- 32.4772	116.1116	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	7	22-08-2023	- 32.4952	116.1014	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	7	22-08-2023	- 32.4900	116.1155	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	6	23-08-2023	- 32.4727	116.1667	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	4	23-08-2023	- 32.4751	116.1292	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	4	23-08-2023	- 32.4816	116.1234	Sighting - overhead
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	3	23-08-2023	- 32.4471	116.0874	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	2	23-08-2023	- 32.4837	116.1145	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	2	23-08-2023	- 32.4769	116.2133	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4716	116.1707	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4801	116.1323	Scat
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4801	116.1323	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4523	116.1075	Scat

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4454	116.0870	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4704	116.1148	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4752	116.1213	Scat
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	23-08-2023	- 32.4742	116.1210	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	24-08-2023	- 32.4418	116.2233	Sighting
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	24-08-2023	-32.4411	116.2239	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	24-08-2023	- 32.4414	116.1673	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	24-08-2023	- 32.4293	116.1642	Sighting - overhead
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	24-08-2023	- 32.4292	116.1643	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	26-08-2023	- 32.4550	116.2104	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	09-09-2023	- 32.4645	116.0583	Sighting - overhead
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	10-09-2023	- 32.4770	116.1112	Foraging evidence
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	11-09-2023	- 32.4891	116.1864	Foraging evidence
<i>Setonix brachyurus</i>	Quokka	VU	VU	6	30-08-2023	- 32.4526	116.1770	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	3	02-09-2023	- 32.4526	116.1770	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	3	03-09-2023	- 32.4526	116.1770	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	3	10-09-2023	- 32.4691	116.2107	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	08-09-2023	- 32.4485	116.1725	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	26-08-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	29-08-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	29-08-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	30-08-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	2	31-08-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	02-09-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	08-09-2023	- 32.4521	116.1757	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	25-08-2023	- 32.4344	116.1548	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	26-08-2023	- 32.4734	116.1646	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	26-08-2023	- 32.4734	116.1646	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	27-08-2023	- 32.4734	116.1646	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	30-08-2023	- 32.4734	116.1646	Camera trap
<i>Setonix brachyurus</i>	Quokka	VU	VU	1	09-09-2023	- 32.4734	116.1646	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	23-08-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	24-08-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	25-08-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	26-08-2023	- 32.4372	116.0754	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	27-08-2023	- 32.4372	116.0754	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	28-08-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	29-08-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	01-09-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	04-09-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	06-09-2023	- 32.4509	116.0631	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	08-09-2023	- 32.4509	116.0631	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	08-09-2023	- 32.4312	116.0995	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	09-09-2023	- 32.4509	116.0631	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	09-09-2023	- 32.4792	116.0863	Camera trap
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	CD		1	09-09-2023	- 32.4757	116.1214	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	22-08-2023	- 32.4700	116.0826	Digging
<i>Isoodon fusciventer</i>	Quenda	P4		1	24-08-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	25-08-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	25-08-2023	- 32.4769	116.1097	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4769	116.1097	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4901	116.1159	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4527	116.0860	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4716	116.1707	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	26-08-2023	- 32.4674	116.0538	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	27-08-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	27-08-2023	- 32.4801	116.1324	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	27-08-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	28-08-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	28-08-2023	- 32.4801	116.1324	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	28-08-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	28-08-2023	- 32.4527	116.0860	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	29-08-2023	- 32.4674	116.0538	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	30-08-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	30-08-2023	- 32.4901	116.1159	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	31-08-2023	- 32.4901	116.1159	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	31-08-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	31-08-2023	- 32.4907	116.1192	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	01-09-2023	- 32.4907	116.1192	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		4	01-09-2023	- 32.4901	116.1159	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		3	02-09-2023	- 32.4901	116.1159	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Isoodon fusciventer</i>	Quenda	P4		3	02-09-2023	- 32.4907	116.1192	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		2	03-09-2023	- 32.4907	116.1192	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		2	03-09-2023	- 32.4901	116.0635	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	03-09-2023	- 32.4641	116.1129	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	04-09-2023	- 32.4801	116.1324	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	04-09-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	04-09-2023	- 32.4527	116.0860	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	05-09-2023	- 32.4730	116.1093	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	05-08-2023	- 32.4901	116.1159	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	06-09-2023	- 32.4815	116.0978	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	08-09-2023	- 32.4907	116.1192	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	09-09-2023	- 32.4901	116.0635	Camera trap
<i>Isoodon fusciventer</i>	Quenda	P4		1	09-09-2023	- 32.4730	116.1093	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		3	24-08-2023	- 32.4641	116.1129	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		3	24-08-2023	- 32.4461	116.0873	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		2	24-08-2023	- 32.4695	116.2559	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		2	24-08-2023	- 32.4491	116.2235	Sighting
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		2	25-08-2023	- 32.4739	116.2348	Sighting

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	25-08-2023	- 32.4586	116.2274	Sighting
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	25-08-2023	- 32.4563	116.2162	Sighting
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	25-08-2023	- 32.4804	116.2229	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	25-08-2023	- 32.4801	116.1324	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	25-08-2023	- 32.4785	116.2172	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	26-08-2023	- 32.4730	116.1093	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	26-08-2023	- 32.4414	116.2234	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	27-08-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	28-08-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	28-08-2023	- 32.4698	116.2419	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	29-08-2023	- 32.4888	116.2089	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	29-08-2023	- 32.4691	116.2107	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	30-08-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	31-08-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	03-09-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	04-09-2023	- 32.4724	116.1722	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	05-09-2023	-32.4611	116.2343	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	06-09-2023	- 32.4793	116.1445	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	08-09-2023	- 32.4804	116.2229	Camera trap

Scientific name	Common name	Conservation status		Abundance	Date	Latitude	Longitude	Record type
		State	Common wealth					
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	09-09-2023	- 32.4775	116.2134	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	10-09-2023	- 32.4793	116.1445	Camera trap
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	11-09-2023	- 32.4961	116.1801	Sighting
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		1	11-09-2023	- 32.4765	116.2110	Sighting



# Appendix G Chuditch Spot Analysis

## Targeted Chuditch, Quokka, and Woylie Survey

Huntly Mine – Myara Region

Alcoa of Australia Ltd

SLR Project No.: 675.VX5890.00001

17 June 2024

## Chuditch Spot Analysis 2023

675.VX5890.00001 Huntly Mine – Myara Region

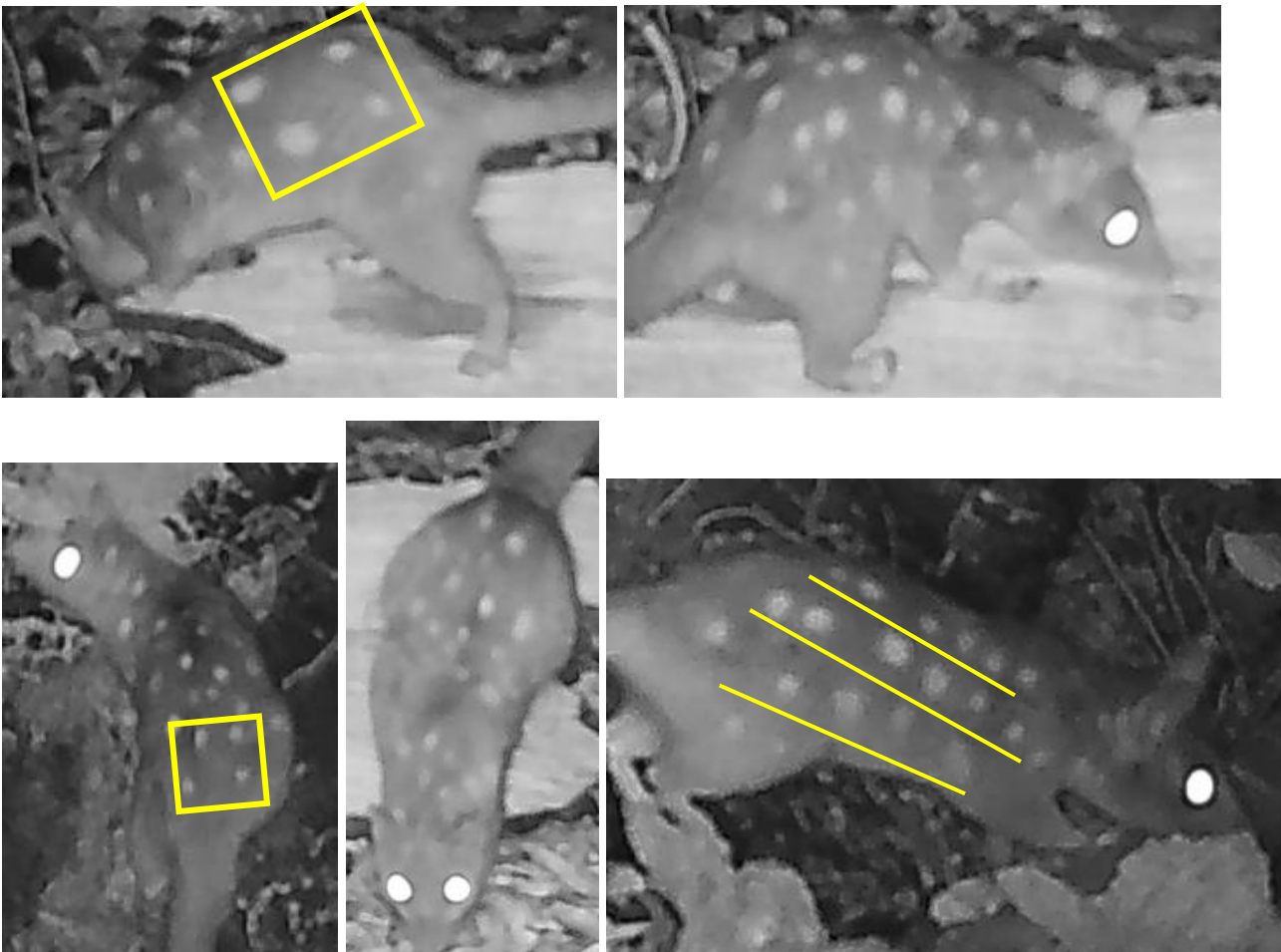
### 1: DOT TO DOT

Three spots L hind quarter, two lines of spots R hind quarter. Site 5890-CAM-63-EW.



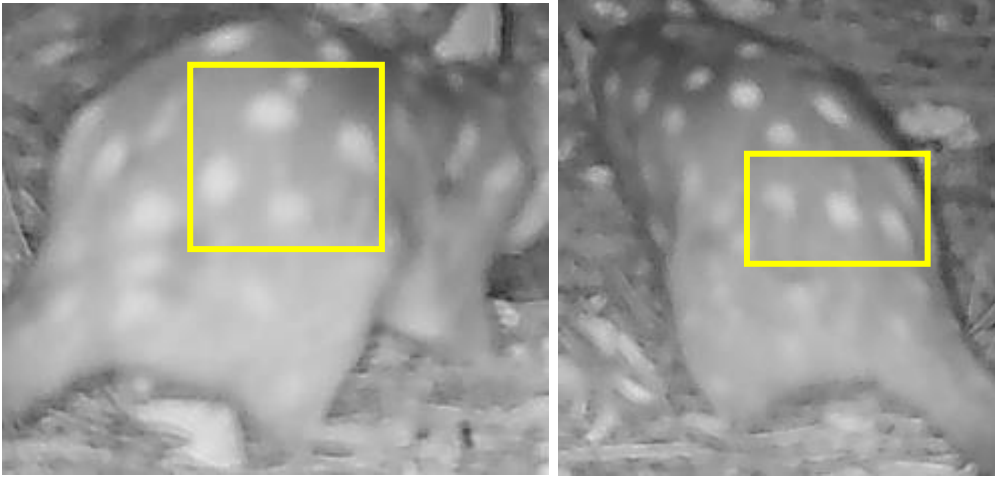
### 2: SQUARE BUM

Square of four spots on L hind quarter and square of four spots on bum, three lines of spots down R side. Sites 5890-CAM-04-EW and 5890-CAM-06-EW.



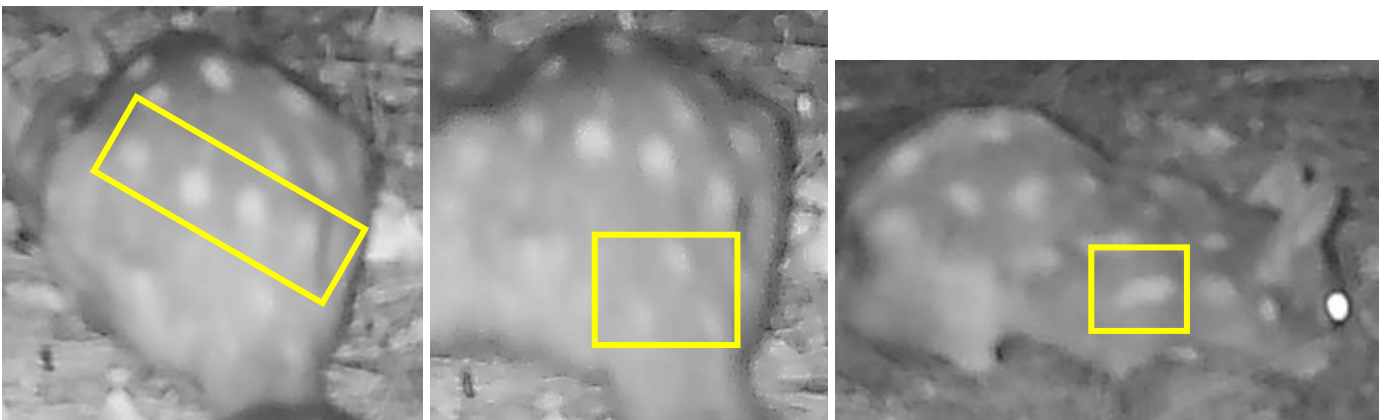
### 3: FOUR DICE

Square of spots R hind quarter, line of three spots on bum. Site 5890-CAM-59-EW.



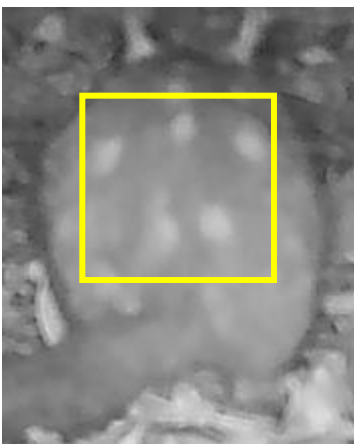
### 4: SPOT THE DIFFERENCE

Four dice spots on R hind quarter, line of four spots across bum, triangle of spots base of tail, smudged spot on R shoulder. Site 5890-CAM-59-EW.



## 5: PENTAGON BUM

Six dice spots on R hind quarter, four dice spots on L hind quarter, five spots on bum. Site 5937-CAM-18-PW.



## 6: SPOT-IFY

Four spot line L hind quarter. Site 5890-CAM-70-EW.



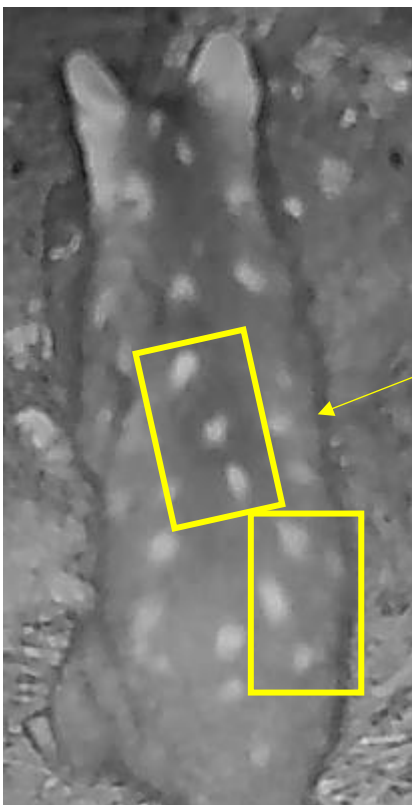
**7: DIAMOND BUM**

Five dice spots L side, diamond spot at base of tail. Site 5890-CAM-30-EW.

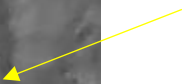


## 8: PAWPRINT

Four dice spots and three dice spots L hind quarter, pawprint spots R side, line of three spots on back. Site 5890-CAM-75-PW.

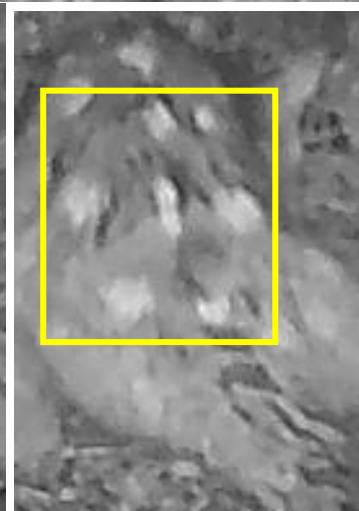


Pawprint spots



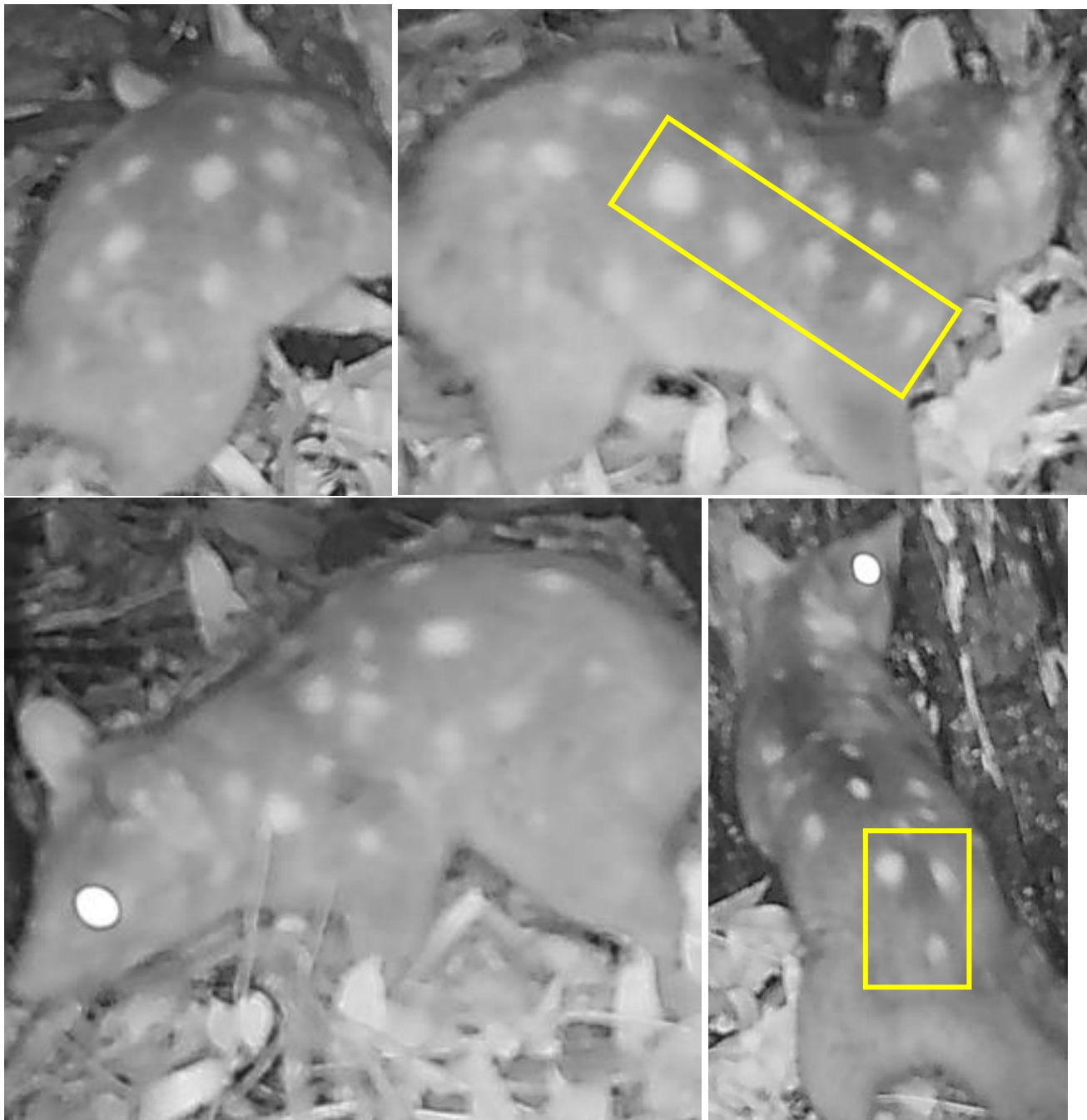
**9: SPOT FUZZ**

Very spotty younger individual, large five dice on L hind quarter, pentagon of large spots on bum. Site 5890-CAM-75-PW.



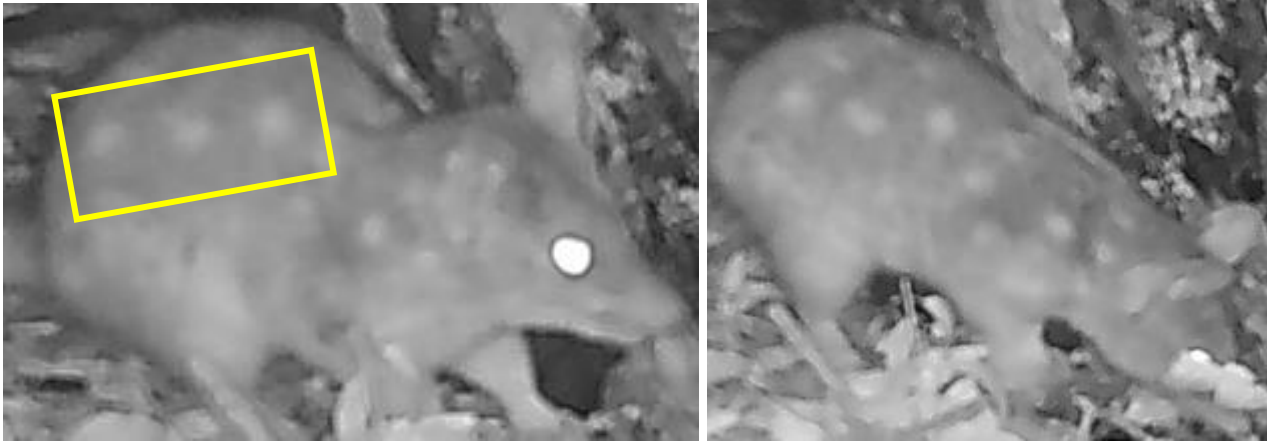
**10: BOWLING BALL BUM**

Line of five spots on R side, three bowling ball spots on bum. Site 5890-CAM-36-EW.



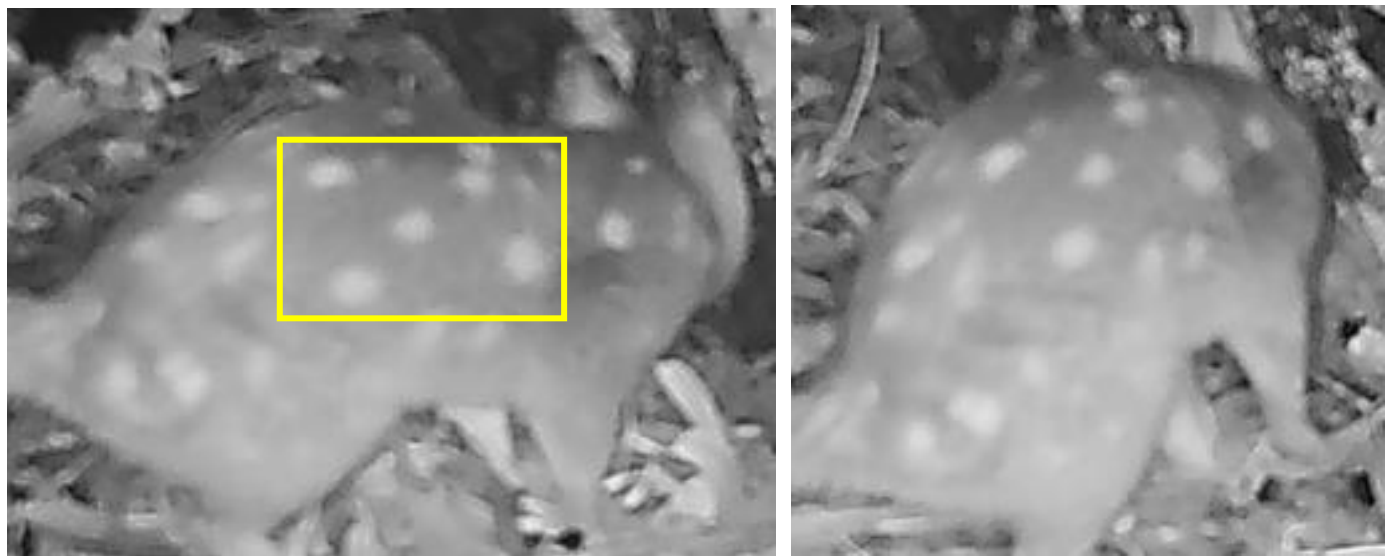
**11: THREE DICE**

Three dice spots R hind quarter. Site 5890-CAM-36-EW.



**12: FIVE-A-SIDE**

Five dice spots R side. Site 5890-CAM-36-EW.



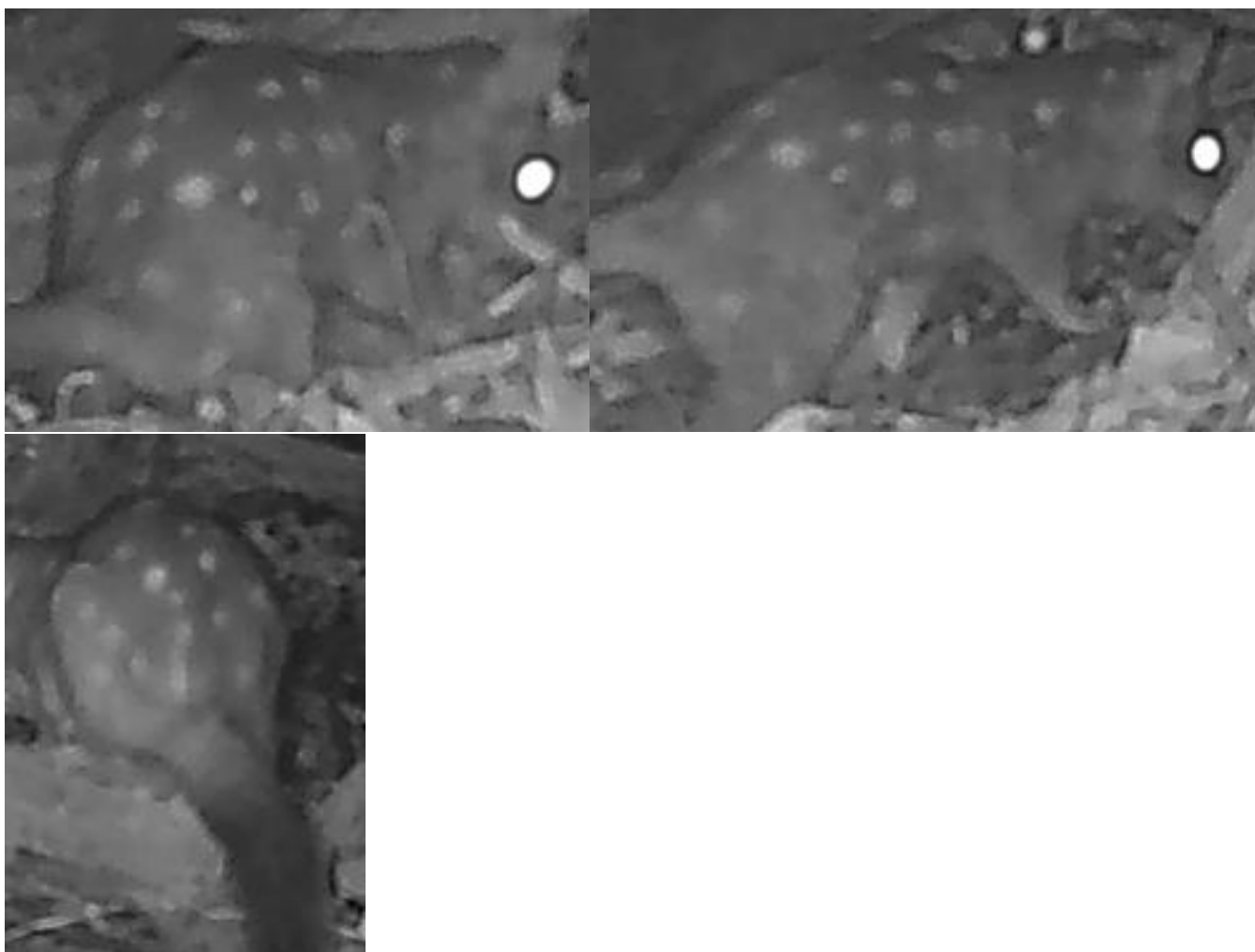
### 13: TRIANGLE BUM

Three dice spots R hind quarter, triangle of spots base of tail, very spotty. Site 5890-CAM-02-EW.



### 14: SPOTICUS

Very spotty, images not clear. Site 5890-CAM-14-EW.



**15: SWEET SPOT**

Triangle of spots L hind quarter, four dice spots on bum. Site 5937-CAM-78-ML.

