Ausgold Katanning Gold Project Terrestrial Fauna Monitoring and Management Plan

Prepared for:
Ausgold Exploration Pty Ltd

Prepared by:
Katie Cox
Michelle Davies

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Stantec Australia Pty Ltd

Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
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Prepared by: 

Katie Cox

Reviewed by: 

Michelle Davies

Approved by: 

Peter Tapsell

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Executive Summary

Table ES-0-1 summarises the purpose of the Terrestrial Fauna Monitoring and Management Plan (TFMMP) within the context of the Western Australian Environmental Protection Authority (EPA) objectives for the key environmental factor of Terrestrial Fauna (EPA 2016a). The TFMMP also aligns with the Environmental Management Plan Instructions and Guidelines (Commonwealth of Australia 2014; EPA 2024). The TFMMP has been prepared for the Ausgold for the Katanning Gold Proposal. This Plan specifically addresses the Terrestrial Fauna environmental factors associated with the Proposal.

Summary **Table ES-0-1** below presents the environmental outcomes and objectives for the environmental factor to be met through implementation of this TFMMP, as well as the environmental criteria and management targets to measure achievement of the associated environmental outcomes and objectives.

Table ES-0-1:Summary and Purpose of the Terrestrial Fauna Monitoring and Management Plan

Item	Description
Proposal Title	Ausgold Gold Mine
Proponent Name	Ausgold Exploration Pty Ltd
Ministerial Statement number	TBA - Under Assessment
Key Environmental Factor and Objectives	Terrestrial Fauna: The Environmental Protection Authority (EPA) Objective for Terrestrial Fauna is 'to protect terrestrial fauna so that biological diversity and ecological integrity are maintained' (EPA 2016a). The proponent shall manage the operations of the Proposal to meet the following Outcome-based and Objective-based management provisions.
Purpose of TFMMP	Development of a framework to control the potential impacts on terrestrial fauna (including significant fauna) from the Proposal to the maximum extent practicable by: • Identifying the risks and potential impacts from the Proposal on significant terrestrial fauna within the Development Envelope. • Outline management provisions of significant fauna, to avoid and minimise potential impacts to populations within the Development Envelope. • Provide Monitoring Plans for significant fauna. • Propose corrective actions if triggers and thresholds are exceeded to avoid impact on populations attributed to the Proposal.
Outcome-based Management Provisions	• **Outcome 1**: The condition and structure of habitat for Red-Tailed Phascogale and Carnaby's Black-Cockatoos within the adjacent Wurgubup State Reserves remains stable over the operations stage of the Proposal. • **Outcome 2**: No Proposal- related increase feral predators in the Wurgubup Reserves compared to baseline levels during the life of the Proposal.

	• **Outcome 3**: No Proposal- related increase in weed species in the Wurgubup Reserves compared to baseline levels during the life of the Proposal.
Objective-based Management Provisions	• **MO1:** Minimise Proposal-related direct interactions per year (e.g., vehicle strike) to significant fauna resulting in injury or mortality. • **MO2:** No Proposal-related adverse impacts to terrestrial fauna (including significant fauna) or its natural habitat within the Development Envelope or adjacent proximity of the Proposal area from project-related unplanned fire events. • **MO3:** No adverse Proposal-related impacts to significant fauna or its natural habitat from project related introduction or proliferation of weed species from and within the Development Envelope. • **MO4:** No adverse Proposal-related impacts to significant fauna or its natural habitat from dust, noise, and vibration. • **MO5:** No adverse Proposal-related impacts to significant fauna or its natural habitat from hydrocarbon or chemical spill. • **MO6:** No adverse Proposal-related impacts to significant fauna or its natural habitat from project related artificial light spill.
Condition Clauses	TBA – Under Assessment
Key Components of the TFMMP	Key provisions are detailed in **Section 3.5**
Proposed Construction Date	TBA
TFMMP required pre-construction?	Yes

Corporate endorsement

I hereby certify that to the best of my knowledge, the provisions within this Ausgold Katanning Gold Project Terrestrial Fauna Monitoring and Management Plan are true and correct.

Name: Signed:

Designation: Environment Manager: Date:

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
ACAR	Annual Compliance Assessment Report
AER	Annual Environmental Reports
BC Act	*Biodiversity Conservation Act 2016*
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DE	Development Envelope
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
DMEP	Department of Mines, Petroleum and Exploration
DWER	Department of Water and Environmental Regulation
EP Act	Environmental Protection Act 1986
EPA	Environmental Protection Authority
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EMP	Environmental Protection Authority
ha	hectare
IF	Indicative Footprint
KGM	Katanning Gold Mine
km	Kilometre
MNES	Matters of National Environmental Significance
Mtpa	Million tonnes per annum
PAPP	para-aminopropiophenone
ROM	Run of Mine
RPA	Remotely Piloted Aircraft
SOP	Standard Operating Procedure
SBMP	Site-based Environmental Management Plan
TFMMP	Terrestrial Fauna Monitoring and Management Plan
TOs	Traditional Owners
TSF	Tailings Storage Facility
WA	Western Australia
WAOL	Western Australian Organism List

Glossary

Term	Definition
Adaptive management	Adaptive management whereby monitoring and data collection are incorporated into the management plan with the express purpose to improve the understanding of the systems in a structured, systematic way. A goal of adaptive management is to reduce the uncertainty in the decision-making process over time (DCCEEW 2024a).
Migratory species	Species that move from one habitat to another following a seasonal cycle, driven by external factors such as food availability and temperature or internal factors such the need to access breeding grounds.
Trigger criteria	• A predefined **threshold**, typically a given mortality level, that when reached or exceeded triggers a management response DCCEEW (2024a). • Measures set at a conservative level (trigger criteria), to forewarn the approach of threshold criteria and ensure trigger level response actions are implemented well in advance of an environmental outcome being compromised EPA (2024).
Threshold Criteria	Framed to represent the limit of acceptable impact beyond which there is likely to be a significant effect on the environment. This indicates there is risk that the environmental outcome will not be met (EPA 2024):.

1 Context, Scope and Rationale

1.1 Proposal Background

Ausgold Exploration Pty Ltd (Ausgold) proposes to develop and operate a gold mine in Katanning (the Proposal), approximately 36 kilometres (km) north-east of the town of Katanning (**Figure 1-1**). The mine has been held in care and maintenance since it ceased its last operation in 1997.

The Proposal involves Open Cut Pits that extend below water table, Run-of-Mine (ROM) Pad, a Processing Plant, Tailings Storage Facility (TSF), as well as providing capacity for waste rock storage elsewhere through the creation of several waste rock landforms. Supporting infrastructure will also be constructed at the site, including a Mine Services Area, Balancing Water Storage Pond and Hybrid Power Plant and storage of topsoil in stockpiles. Mining will be by conventional open cut operation using dump trucks and excavators mining approximately 30 million tonnes per annum (Mtpa) total material. Ore will be processed using single stage crushing, grinding and conventional gold processing Carbon in Leach technology to produce gold bullion which will be sold to a gold refinery for further processing.

The Proposal will mine and process a reserve of 1.25 million contained ounces of gold and facilitate an annual average production rate of 3.6 Mtpa operation over a 10-year Life of Mine. Gold doré will be transported to the Perth Mint and refined into high-purity gold.

The following terms are applicable to this Terrestrial Fauna Monitoring and Management Plan (TFMMP):

- **Study Area** - refers to the boundary within which all investigations and field surveys were undertaken (31415.51 ha), extending beyond the Proposal Area.
- **Proposal Area** - The combined area in which the Development Envelopes is contained.
- **Development Envelop**e (DE) - the boundary within which the elements of the Proposal are situated. The DE occur entirely within the Study Area and has an area of up to 1,619.02 hectares (ha)
- **Indicative Footprint** (IF) - the area that is proposed to be directly disturbed and developed by the Proposal (957.318 ha). The majority of the IF has been previously disturbed with no more than 50 ha of native vegetation proposed to be cleared. The layout of the IF may change; however, the total disturbance will not exceed the maximum disturbance for the DE.

1.2 Land Use and Tenure

The current existing land use in the Proposal is farming/agricultural, with two State Reserves in close proximity: Wurgubup Rifle Range (Reserve 12423) and Woorgabup Nature Reserve (Reserve 24072), - hereafter collectively termed as the 'Wurgubup Reserves' (Figure 1-1). While mining tenements co-occur through certain intersections with the State Reserves, none of that is proposed to be used for mining or to be cleared. There is a legacy mining operation (managed in care & maintenance) which occurs on a number of the mining tenements; the last mining there was conducted in early 1997. To the west of the Proposal is the Coblinine Nature Reserve that is made up of multiple parcels of land and in the east is the Chinocup Nature Reserve that incorporates multiple salt lakes.

The Proposal is located on WA Mining Act tenure held by Ausgold and includes tenements: M 70/211, L 70/32, L 70/33, G 70/85, L 70/13, G 70/84, M 70/1426, M 70/1427, M 70/488 and M 70/210. Note

tenements L 70/32 and L 70/33 are not included in the DE, although these tenements will continue to be held and are contiguous with the aforementioned tenements.

The vast majority of the area for the Proposal is located on freehold land with the remainder located on road reserves held by Shire of Katanning. The land is not subject to Native Title. The Jinker/Jinka Hill Registered Site 5353 (Camp/historical/traditional structure/modified tree) overlays the DE however has a Section 18 in place.

Two areas of avoidance (Exclusion Zones) have been included as part of the design and layout of the Proposal. Wurgubup Reserves (89 ha coincident with Ausgold mining tenure) and a 20-ha parcel of significant intact vegetation on Ausgold's freehold land (M70/1426) has been entirely avoided, with a buffer zone from all infrastructure to ensure the presence and function of remnant vegetation. Ausgold has engaged in consultation with the local landholders and intends to acquire all properties that will be subject to development resulting from the Proposal.

1.3 Key Environmental Factors

The EPA objective for Terrestrial Fauna is '*to protect terrestrial fauna so that biological diversity and ecological integrity are maintained*' (EPA 2016a). Comprehensive surveying identified five significant terrestrial fauna species (two possible and three confirmed) as occurring within the Study Area (Terrestrial Ecosystems 2025). Several of the fauna species are Matters of National Environmental Significance (MNES), listed at the Commonwealth and/or State level. Of the significant fauna recorded in the Study Area, the following are of note due to their conservation status, relative abundance and/or potential to be impacted by the Proposal:

- Red-tailed Phascogale (*Phascogale calura*) listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and specially protected species (conservation dependent) under the *Biodiversity Conservation Act 201*6 (BC Act).
- Carnaby's Black-Cockatoo (*Zanda latirostris*) listed as Critically Endangered under the EPBC Act and BC Act.

The EPA's mitigation hierarchy (avoid, minimise, and rehabilitate), was applied where possible to reduce impacts to the terrestrial fauna from the Proposal, including listed species. This TFMMP includes associated monitoring programs for these species, presented in **Appendix A** and **Appendix B**, which comprise part of the mitigation measures to avoid impacts. These monitoring programs will be used to evaluate the effectiveness of the management provisions outlined in the TFMMP and will inform adaptive management where required over the life of the Proposal (11 years).

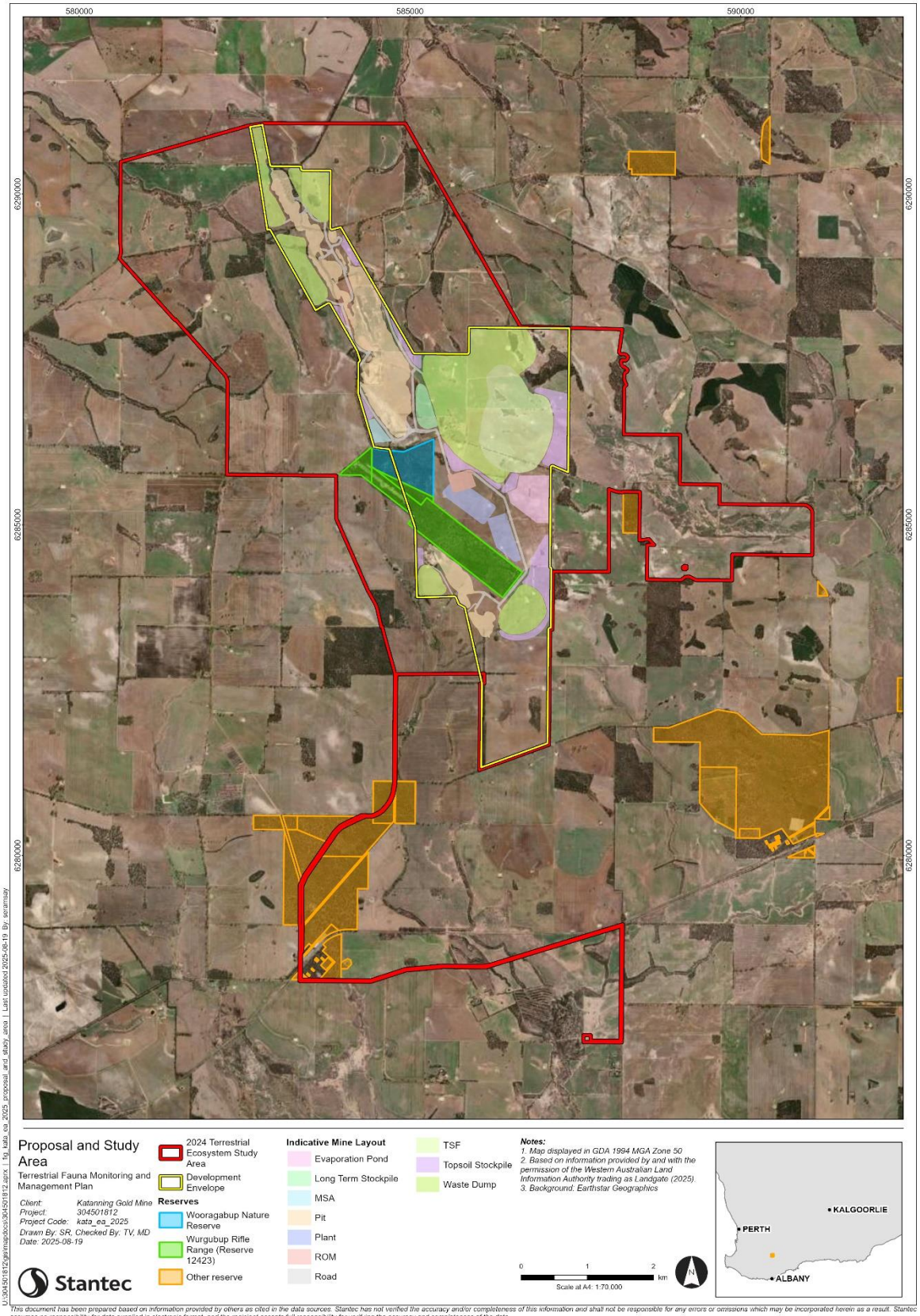

Figure 1-1: Development Envelope and Study Area.

1.4 Purpose and Framework

The purpose of the TFMMP is to:

- Ensure that the Proposal is carried out in a manner that minimises indirect impacts to terrestrial fauna inhabiting the Wurgubup Reserves within the DE.

This will be addressed by controlling vectors that risk potential impacts to terrestrial fauna from the Proposal to the maximum extent practicable by:

- Identifying the risks and potential indirect impacts from the Proposal on terrestrial fauna.
- Outlining management provisions for terrestrial fauna, to avoid or otherwise minimise potential in direct impacts to significant fauna populations.
- Preparing and implementing monitoring programs for populations recorded within the Wurgubup Reserves and regional reference locations.
- Proposing corrective and response actions if triggers and thresholds are exceeded to avoid impact to significant fauna populations.

1.5 Duration of the Environmental Management Plan (EMP)

The TFMMP will be implemented for the duration of the Proposal (11 years being for construction and operation).

1.6 Regulatory Conditions

The Proposal is currently being assessed by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). The Proposed Action will also be referred under Part IV of the State *Environmental Protection Act 1986* (EP Act) to the WA Environmental Protection Authority (EPA).

2 Legislation Policy and Guidance

This TFMMP has been written in accordance with Western Australian and Commonwealth policies and guidance, including:

- Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016; (EPA 2021a).
- Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans; (EPA 2024).
- Environmental Impact Assessment (Divisions 1 and 2) Procedures Manual (EPA 2021b).
- Environmental Management Plan Guidelines (Commonwealth of Australia 2014).
- Outcomes-based conditions policy (DoE 2016a).
- Outcomes-based conditions guidance (DoE 2016b).
- Environmental Factor Guideline – Terrestrial Fauna (EPA 2016a).
- *Biosecurity and Agriculture Management Act 2007* (WA).

- *Biodiversity Conservation Act 2016* (WA).
- *Rights in Water and Irrigation Act 1914* (WA).
- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

The following management plans and strategies are also relevant to the TFMMP, specific to the Proposal and include:

- Flora and Vegetation Monitoring and Management Plan (FVMMP).

State and Commonwealth plans and management prescriptions that are relevant to the terrestrial fauna include:

- Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth of Australia 2013).
- The Action Plan for Australian Mammals 2012 (Woinarski et al. 2014).
- Survey Guidelines for Australia's Threatened Birds (DEWHA 2010).
- Referral Guideline for 3 WA Threatened Black-Cockatoo Species (DAWE 2022).
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan (DPaW 2013).
- Conservation Advice for *Phascogale calura* (TSSC 2016).
- Draft referral guideline for 14 birds listed as migratory species under the EPBC Act (DoE 2015a).
- Draft referral guideline for 14 migratory birds listed under the EPBC Act (DoE 2015c).
- Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits (DEE 2016);
- Threat Abatement Plan for Predation by Feral Cats (DoE 2015b)
- Threat Abatement Plan for Predation by the European Red Fox (DEWHA 2008).

3 Terrestrial Fauna

3.1 Surveys and Findings

A summary of the surveys undertaken by Ausgold and the findings of these surveys are shown in **Table 3-1.**

Table 3-1: Summary of Terrestrial Fauna Surveys conducted for the Proposal.

Studies and Surveys	Area	Scope and Timing	Survey/Study Effort	Key Findings	Consistency with Guidance and Limitation
Basic and Targeted Vertebrate Fauna Survey and Risk Assessment (Terrestrial Ecosystems 2025)	~4,366 ha	• Basic and targeted vertebrate fauna survey • November 2024	• 144 camera traps (non-reward) • Targeted Black-Cockatoo habitat tree assessment within 12km of the Proposal Area. • 3-hour nocturnal survey	• 8,247 significant Black-Cockatoo trees in the study area. • 740 were assessed to have at least one hollow that could potentially be used as a nesting site for Black-Cockatoos. • Within a 12km radius of the survey area, there is more than 6,700 ha of good quality nesting habitat and 360 ha of foraging habitat.	• Survey was consistent with guidelines • Limitations included access restrictions to some sites and lack of recent, detailed trapping data in similar habitats in the region.
Basic and Targeted Vertebrate Fauna Survey and Risk assessment for the Katanning Gold Project (Terrestrial Ecosystems 2024)	~2,709 ha	• Targeted Surveys and assessments of Black-Cockatoo foraging and breeding habitat (Visual) • Camera traps •	• 75 camera traps (non-reward) deployed in the Woorgabup and Rifle Range Reserve (30 days). Seven in the Jinkas area, three in the Olympia area, 10 in the Jackson area (40 days). 15 on the Harris farm and 11 on the Ramm farm (42 days). • 3-hour nocturnal survey	• 8,247 significant trees in the project area. • 737 were assessed to have at least one hollow that could potentially be used as a nesting site for Black-Cockatoos. • Within a 12 km radius of the project area there is 6,706 ha of good quality nesting habitat and 364 ha of foraging habitat.	• Survey was consistent with guidelines • Limitations include an absence of recent detailed trapping data in similar habitats in the region.

Katanning Gold Project: Detailed Flora and Basic Fauna Assessment (Botanica Consulting, 2024)	2,600 ha	• Literature review and database search
		• Detailed Flora and Vegetation Survey 11th -14th September 2023
		• Basic Fauna Survey
			• 54 quadrats (10m x 10m) were traversed via 4WD and on foot.
			• Fauna habitat types were identified based on broad major vegetation groups and associated landforms. Likelihood of potential occurrence assessment carried out.
				• Desktop searches identified 1,502 vascular flora species as occurring within 40- km of the survey area, representing 389 genera from 89 families.
				• The desktop review identified 40 introduced flora (weed) species, representing 16 families, as potentially occurring within the vicinity of the survey area. Of these are four listed as a Declared Pest on the Western Australian Organism List (WAOL).
				• Database searches identified the Eucalypt Woodlands of the Western Australia Wheatbelt (CR) Threatened Ecological Community (TEC) as occurring within the survey area.
				• The likelihood of occurrence assessment identified three significant fauna species as potentially occurring in the survey area;
				  ○ Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) (EN)
				  ○ Chuditch, Western Quoll (*Dasyurus geoffroii*) (VU)
				  ○ Red-tailed Phascogale (*Phascogale calura*) (VU)
					• Survey was consistent with guidelines
					• Limitations included minor access problems with access not permitted on the Woorgabup Nature Reserve portion of the survey area.

Basic and Targeted Vertebrate Fauna Survey and Risk Assessment (Terrestrial Ecosystems 2023)	1,451.8 ha	• Basic and targeted vertebrate fauna survey • August 2021	• 93 camera traps (non-reward) • Targeted Black-Cockatoo habitat tree assessment within 12km of the Proposal Area • 3-hour nocturnal survey	• Within a radius of 12km there is 6,706.9ha of habitat that provides mature trees, some of which would provide suitable nesting hollows • 5,673.3ha that provide poor quality nesting habitat. • 364.4ha of vegetation that would provide suitable foraging habitat.	• Survey was consistent with guidelines • Limitations included access restrictions to some sites and lack of recent, detailed trapping data in similar habitats in the region
Black-Cockatoo tree assessment and camera trapping for the Olympia project area (Terrestrial Ecosystems, February 2022).	~2.8 ha	• Black-Cockatoo tree assessment and camera trapping • September – November 2021	• Three camera traps (non-reward) for 40 days • Targeted Black-Cockatoo habitat tree assessment	• 13 trees were marked as being significant (two were Wandoo, 10 were Mallet, one was Red Morell). • No trees contained a suitable breeding hollow. • No Carnaby's Black-Cockatoo were recorded nesting in the project area.	• Survey was consistent with guidelines • No limitations were listed

				• Camera traps recorded multiple species with the Australian Raven and at least one fox recorded on all three cameras. • No Red-tailed Phascogales (*Phascogale calura*) were recorded in the project area.	
Black-Cockatoo tree assessment and camera trapping for the Jinkas project area (Terrestrial Ecosystems, February 2022)	~4.5 ha	• Black-Cockatoo tree assessment and camera trapping • September – November 2021	• Seven camera traps (non-reward) for 40 days • Targeted Black-Cockatoo habitat tree assessment	• The cat, fox, Australian Raven, rabbit and Common Brushtail Possum were the most common species that the Camera Traps recorded. • No Red-tailed Phascogales (*Phascogale calura*) were recorded in the Project Area. • 15 trees were marked as being significant (three were Mallet, nine were Red Morell, two were dead and one was a Wandoo). • One marked tree has two hollows that maybe suitable for a nesting site for Carnaby's Black-Cockatoo • No Carnaby's Black-Cockatoo were recorded nesting in the project area.	• Survey was consistent with guidelines • No limitations were listed
Katanning Gold Project Level 1 Vertebrate Fauna Survey and Carnaby's Black-Cockatoo Habitat Survey, (Western Wildlife 2018)	176.1 ha	• Level 1 Vertebrate Fauna Survey and Carnaby's Black-Cockatoo Habitat Survey • October 2017	• Identify fauna habitats present • Opportunist records of fauna • Targeted search for significant species	• Four fauna habitats were identified • Survey Area has the potential to support 9 frogs, 43 reptiles, 119 birds and 19 native mammal species • Carnaby's Black Cockatoos were recorded breeding and foraging	• Survey was consistent with guidelines • No limitations were listed

3.2 Fauna Habitat

Fauna habitats in the Study Area are highly variable, from native vegetation in Good to Excellent condition to long cleared farmland. Mature trees with hollows, including along roadside verges, may support arboreal mammals and provide nesting opportunities for birds (Terrestrial Ecosystems 2023). Within the Wurgubup Reserves, four fauna habitat types have been identified (Terrestrial Ecosystems 2025), these are:

- Wandoo woodland.
- York Gum woodland.
- Mallet woodland.
- Banksia heath.

Multiple ephemeral creeks that run mostly in a north-westly direction are present within the Survey Area. Many of these creeks have remnant native vegetation along both banks. There are previously disturbed areas within the Survey Area which include a mining pit in care and maintenance and multiple farming houses and sheds (Terrestrial Ecosystems 2025).

3.3 Fauna Assemblages

Due to the Study Area being largely cleared with remnant patches of native bushland and foxes and cats recorded in the area, the species diversity was low. (Terrestrial Ecosystems 2025). Camera traps recorded ten species of mammals (**Table 3-2**), 22 species of birds (**Table 3-3**), and six species of reptiles (**Table 3-4**).

Table 3-2: Mammal records from motion-sensing cameras traps (Terrestrial Ecosystems 2025).

Common Name	Scientific Name
Cat	*Felis catus*
Fox	*Vulpes vulpes*
Rabbit	*Oryctolagus cuniculus*
Red-tailed Phascogale	*Phascogale calura*
Possum	*Trichosurus spp. / Pseudocheirus spp.*
Western Pygmy Possum	*Cercartetus concinnus*
Yellow-footed Antechinus	*Antechinus flavipes*
House Mouse	*Mus musculus*
Black Rat	*Rattus rattus*
Western Grey Kangaroo	*Macropus fuliginosus*
Possum	*Trichosurus spp. / Pseudocheirus spp.*
Western Pygmy Possum	*Cercartetus concinnus*

Table 3-3: Aves recorded from motion-sensing cameras (Terrestrial Ecosystems 2025).

Common Name	Scientific Name
Australian Raven	*Corvus coronoides*
Magpie	*Gymnorhina tibicen*
Common Bronzewing	*Phaps chalcoptera*

Australian Ringneck	*Barnardius zonarius*
Parrot	*Psittaciformes spp.*
Grey Currawong	*Strepera versicolor*
Galah	*Eolophus roseicapillus*
Willie Wagtail	*Rhipidura leucophrys*
Yellow-throated Miner	*Manorina flavigula*
Grey Butcherbird	*Cracticus torquatus*
Red Wattlebird	*Anthochaera carunculata*
Magpie-lark	*Grallina cyanoleuca*
White-browed Babbler	*Pomatostomus superciliosus*
Australian Owlet-nightjar	*Aegotheles cristatus*
Crested Pigeon	*Ocyphaps lophotes*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Australian Pipit	*Anthus australis*
Carnaby Black-Cockatoo	*Zanda latirostris*[1]
Gray Shrike-thrush	*Colluricincla harmonica*
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*
Owl sp.	*Strigiformes* spp.

Table 3-4: Reptiles recorded from motion sensing cameras (Terrestrial Ecosystems 2025).

Common Name	**Scientific Name**
Bobtail	*Tiliqua rugosa*
Gould's Goanna	*Varanus gouldii*
Dugite	*Pseudonaja affinis*[2]**
Skink	*Scincidae* spp.
Carpet Python	*Morelia spilota*
Dwarf Bearded Dragon	*Pogona minor*

[1] *Carnaby Black-Cockatoo (Zanda latirostris) – recorded on Woorgabup Nature Reserve, Rifle Range Reserve, the remnant bushland in Jackson, Jinkas and Olympia and large native vegetation blocks on Harris and Ramm farms*

[2] *Dugite (Pseudonaja affinis)- Priority 4 (Rare, Near Threatened) recorded on large vegetation blocks on Harris and Ramm farms.*

3.4 Significant Fauna

Fauna species which are protected under State or Commonwealth legislation which were recorded or have the potential to be present within the Study Area are listed in

Table 3-5.

Table 3-5: Significant Fauna considered confirmed or likely to occur within the Study Area.

Scientific Name	Common Name	Likelihood of Occurrence	EPBC Act	BC Act
Mammalia				
Phascogale calura	Red-tailed Phascogale	Recorded	Vulnerable	Conservation dependent
Aves				
Zanda latirostris	Carnaby's Black-Cockatoo	Recorded	Endangered	Endangered
Apus pacificus	Fork-tailed Swift	Possible - it may infrequently be seen flying in the region.	Migratory	Migratory
Platycercus icterotis xanthogenys	Western Rosella (inland form)	Recorded		P4
Falco peregrinus	Peregrine Falcon	Possible - it may be seen very infrequently in the Proposal Area.		Other specially protected fauna

Management Actions and Methods for monitoring population dynamics focus on the Red-Tailed Phascogale and Carnaby's Black-Cockatoo which are both Federally protected and were recorded in the survey are detailed in **Section 5.**

3.4.1 Red-Tailed Phascogale (*Phascogale calura*)

The Red-tailed Phascogale Vulnerable under the EPBC Act and conservation dependent under the BC Act. Red-tailed Phascogale were recorded in the bushlands at the Wurgubup Reserves, and other smaller bushland fragments on M70/1426 and E70/3952. In the Wurgubup Reserves, the Red-tailed Phascogales were recorded in or very near *E. wandoo* and *Banksia* woodland as they could be using a variety of vegetated areas where trees contain suitable-sized retreats and nesting hollows. Individual recordings of Red-tailed Phascogale and suitable habitat have been recorded within the Survey Area (**Figure 3-1**).

This species is dependent on the use of hollows in trees for breeding habitat. The Proposal will impact 82 trees with hollows and may impinge on foraging habitat for this species. Indirect impacts may include changes to population distribution resulting from light and noise emitted from the Proposal and changes to habitat from weed impacts.

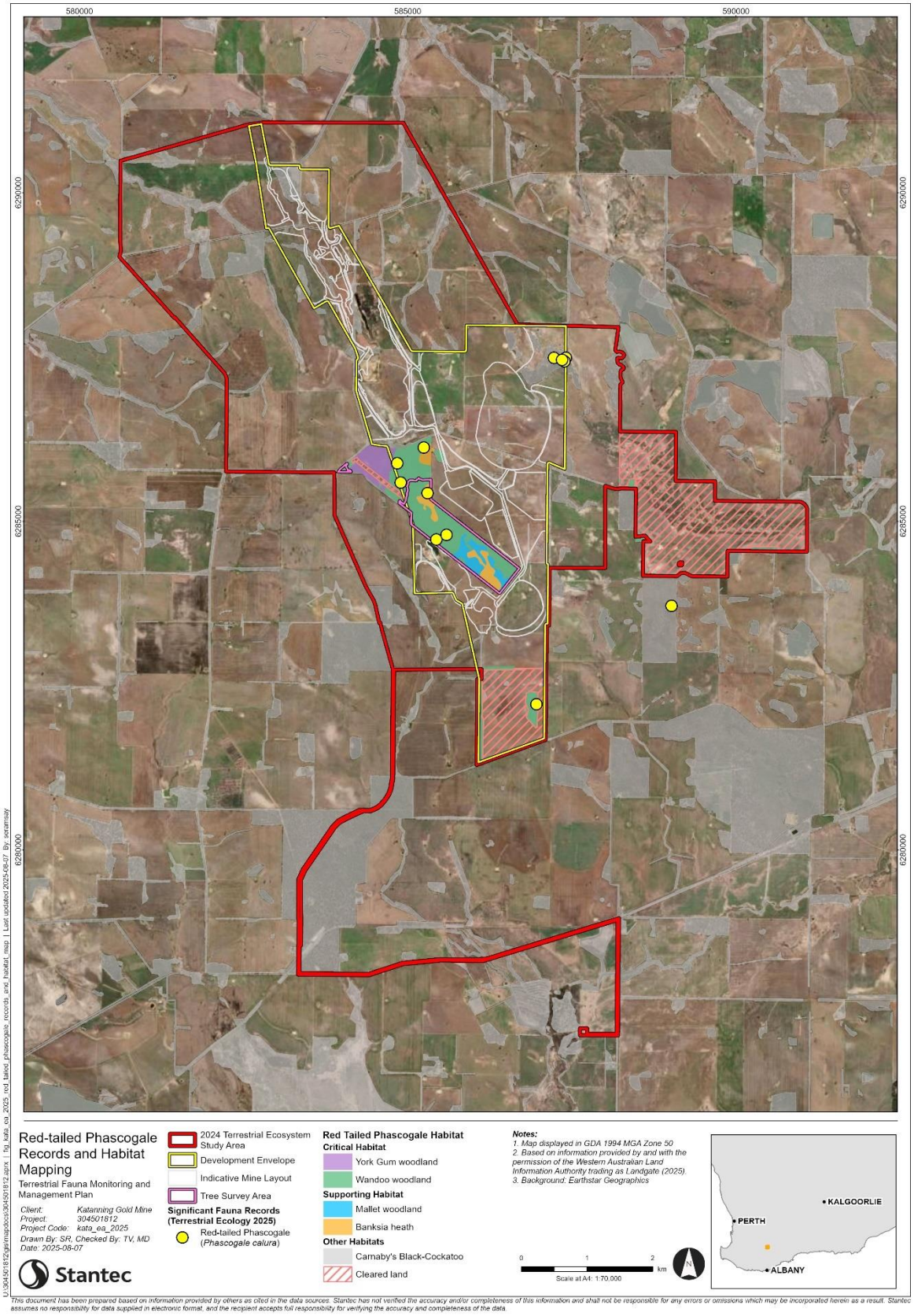

Figure 3-1: Red-tailed Phascogale records and habitat mapping within the Survey Area.

3.4.2 Carnaby's Black-Cockatoo (*Zanda latirostris*)

Carnaby's Black-Cockatoo is Endangered under the EPBC Act and has been recorded in the Proposal area. Carnaby's Black-Cockatoos are known to breed in the vicinity of the Survey Area, consistent with regional use of Wandoo hollows for nesting. Breeding has also been recorded in Red Morrel and York Gum, both of which also occur in the Survey Area. The Survey Area may also provide roosting habitat for Carnaby's Black-Cockatoo. In the past five years, surveys of the bushland area around the Wurgubup Nature and Rifle Range Reserves have shown to contain an active Carnaby's Black-Cockatoo nest, as well as foraging and roosting opportunities. This species is dependent on the use of hollows in large trees (suitable breeding trees) for breeding. Individual recordings of Carnaby's Black-Cockatoo along with critical and supporting habitat comprising of suitable breeding trees and potential breeding trees have been recorded within the Survey Area and are shown in **Figure 3-2** to **Figure 3-6**.

Within 12 km of DE, there is approximately 6,706.9 ha of 'good' and 'poor' quality habitat which would provide mature Eucalypt trees, some of which would provide suitable nesting hollows (and another 5,673.3 ha that provides poorer quality nesting habitat). In addition, approximately 365 ha of vegetation would provide suitable foraging habitat. The removal of any foraging habitat within the Proposal area will reduce foraging opportunities, as it will require Carnaby's Black-Cockatoo to travel further for food. During their summer habitation and annual breeding in the Eucalypts of the Great Southern's forests, the birds collectively move onto the coastal plains to feed on available seeds in bush and heathlands.

As a culmination of preceding work, Terrestrial Ecosystems (2025) recorded 8,396 "significant" trees (i.e. Eucalypts with > 30cm diameter at chest height) in the survey area. Of those, 7,656 were assessed to be 'potential breeding trees, with no suitable hollows but sufficient diameter. Further, 740 were assessed to be 'suitable breeding trees with at least one hollow that can be used as a nesting site. Suitable breeding trees comprise less than 10% of the total large Eucalypt population. There are 604 significant trees within the proposed DE with the vast majority occurring within the State Reserves, so entirely excluded from direct clearing.

The Proposal intends to clear 82 significant trees and will impact on the area of foraging and nesting habitat for this species. Indirect impacts may include changes to population distribution resulting from light and noise emitted from the Proposal. Indirect impacts may include reduction in habitat health as a result of alterations to fire; or further spread of weeds.

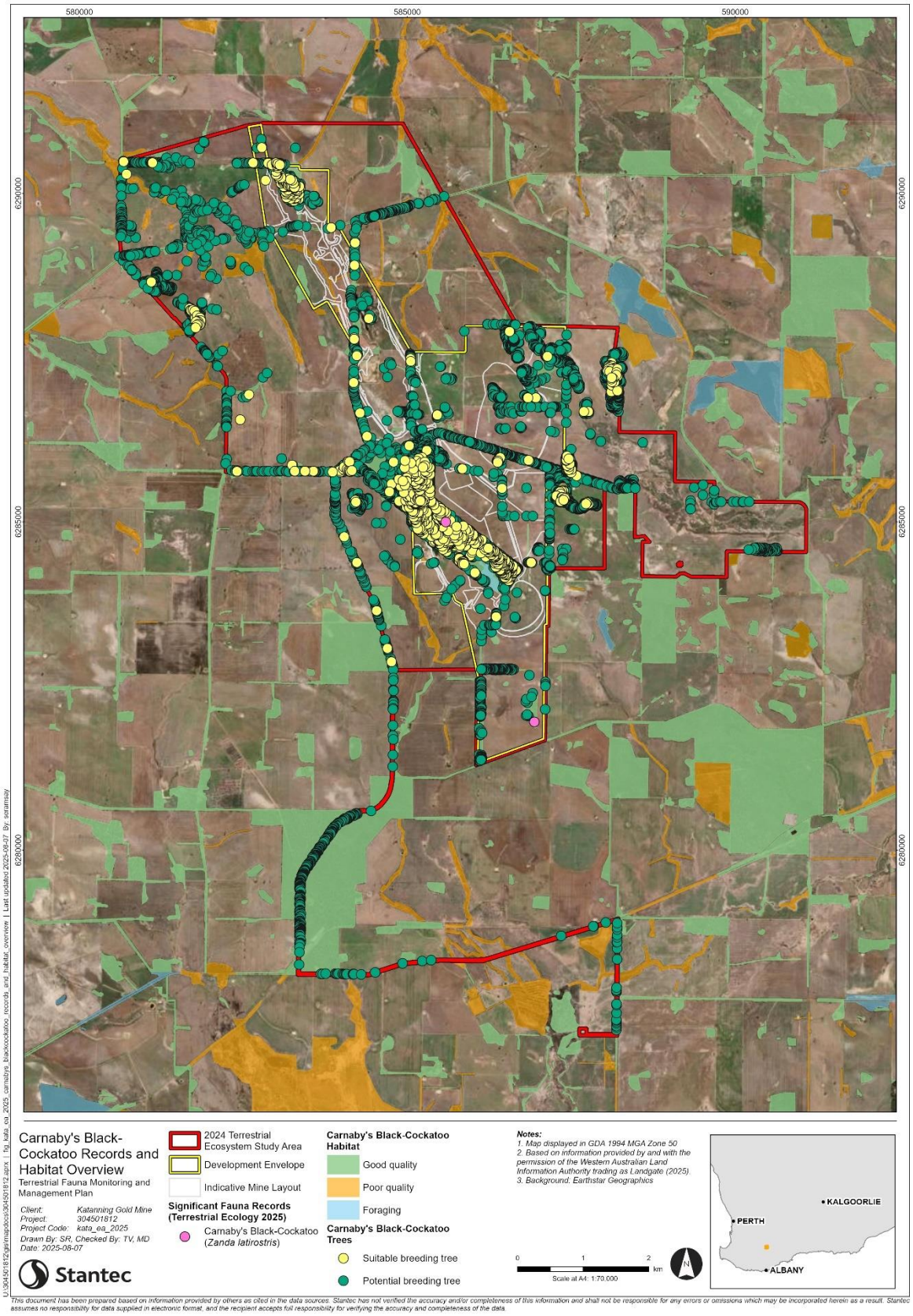

Figure 3-2: Carnaby's Black-Cockatoo Records and habitat mapping within the Survey area.

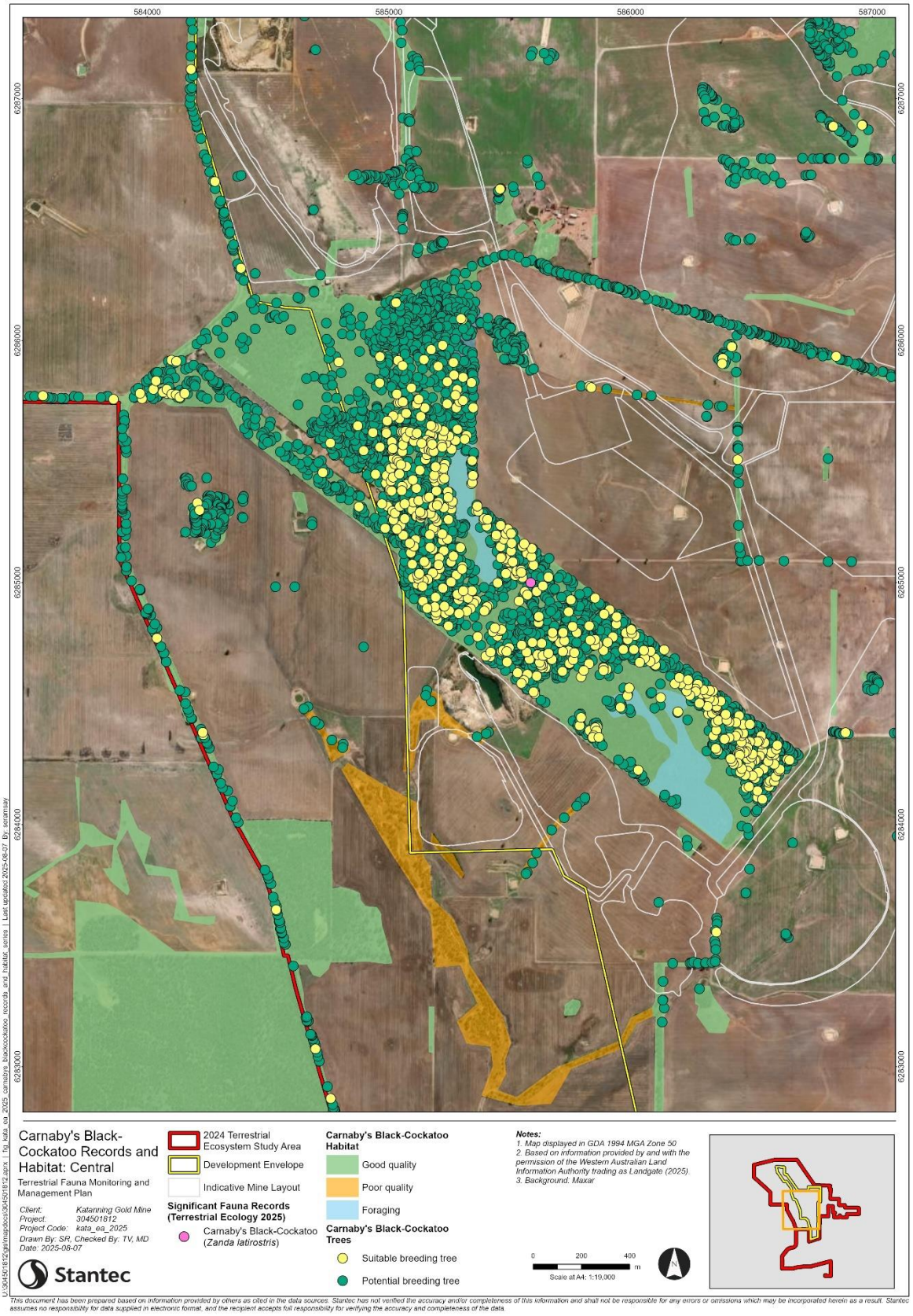

Figure 3-3: Carnaby's Black-Cockatoo Records and habitat mapping within the Central Survey Area.

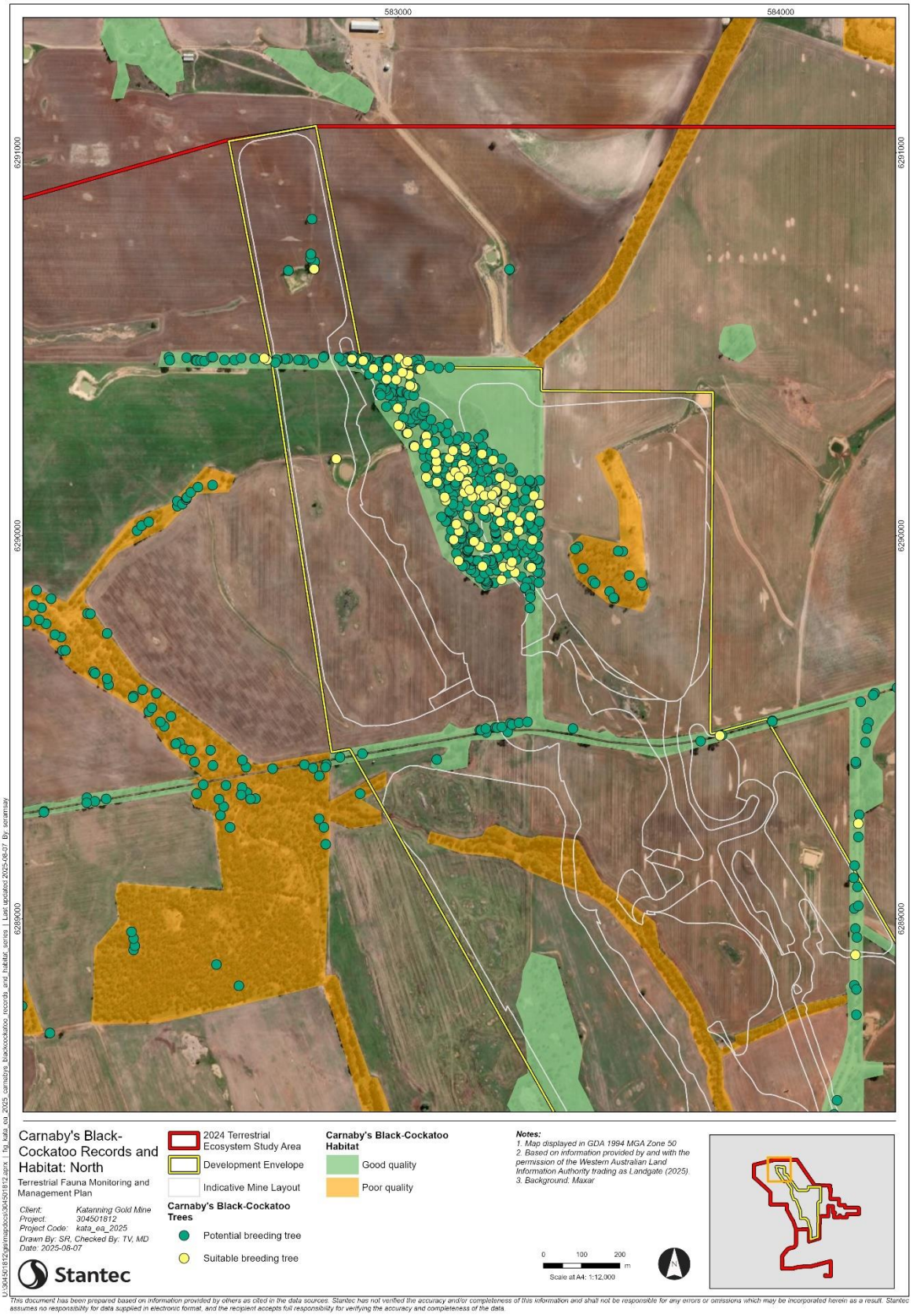

Figure 3-4: Carnaby's Black-Cockatoo Records and habitat mapping within the Northern Survey Area.

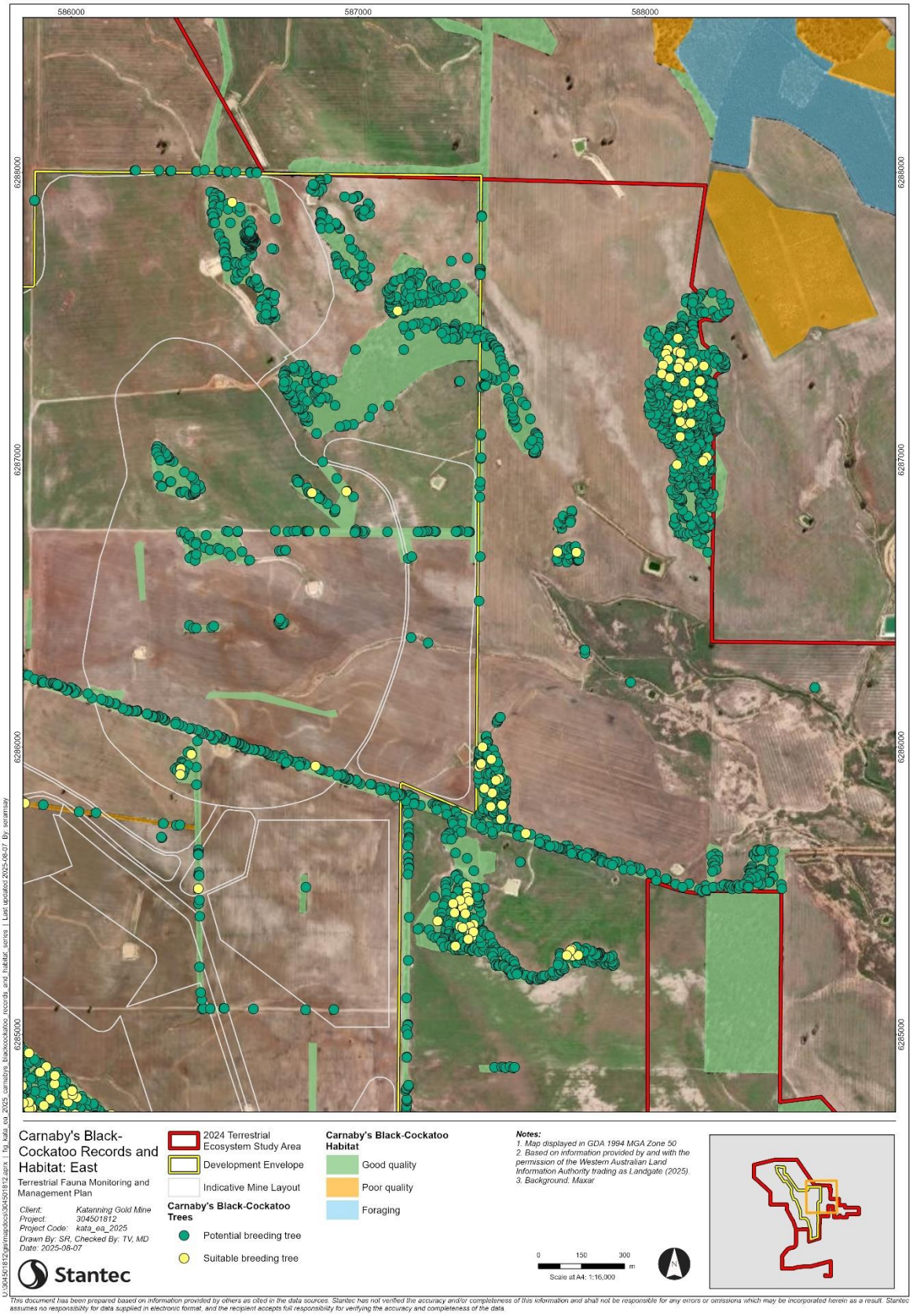

Figure 3-5: Carnaby's Black-Cockatoo Records and habitat mapping within the Eastern Survey Area.

Figure 3-6: Carnaby's Black-Cockatoo Records and habitat mapping within the Southern Survey Area.

Table 3-6: Significant Fauna recorded in the Proposal Area – Summary of Key Threats, Proposal Impacts and Survey Findings.

Habitat representation within the Survey and Proposal Area	Ecology and Distribution	Key Threats	Potential Proposal Related Impacts	Key Findings
Carnaby's Black-Cockatoo (*Zanda latirostris*) (En; En)				
The Survey Area contains: • Banksia heathland, wandoo woodland and York gum woodland contain high-quality Carnaby's Black-Cockatoo nesting and foraging habitat. • 7,507 potential and 740 suitable breeding trees. • Potentially two roost trees are located within the Wurgubup Reserves. **Habitat within the Proposal Area:** • The extent of Carnaby's Black-Cockatoo habitat in the Proposal area is shown in **Figure 3-2**.	**Description:** Carnaby's Black-Cockatoo (*Zanda latirostris*) is a large, gregarious cockatoo species (DCCEEW 2024b). It is one of two white-tailed black-cockatoo species and can be differentiated from Baudin's Black-Cockatoo (*Zanda baudinii*) (En; En) by its shorter upper bill and by subtle differences in its call (Menkhorst *et al.* 2019). **Distribution:** Carnaby's Black-Cockatoo is endemic to the south-west of Western Australia (WA), where it is widespread across the Wheatbelt, Swan Coastal Plain and Southern Coast (DCCEEW 2024b). Although most Carnaby's Black-Cockatoo are nomadic after breeding, the Eneabba flock of 300-400 individuals is resident throughout the year (Johnstone and Johnstone 2024). **Ecology:** Carnaby's Black-Cockatoo forages in native vegetation, close to breeding trees during the breeding season and close to roost sites during the non-breeding season. It generally favours proteaceous species in shrubland and heath habitat, and forages on the seeds of these species, but also larvae and insects. (DCCEEW 2024b; Johnstone and Johnstone 2024). In the Wheatbelt during the nesting season Carnaby's Black-Cockatoos occur in uncleared or remnant eucalypt woodlands, predominately salmon gum or white gum (wandoo). They feed in heathland called Kwongan heath, on different types of banksia, grevillea, hakea and dryandra species. They also feed on seeds of eucalyptus species (DCCEEW 2008).	**Threatening processes:** The main threats to the species include: • Extensive clearing of breeding and foraging habitat and a lack of regeneration of suitable breeding trees • Competition for nest hollows with other birds and the feral European honeybee. • Death and injury resulting from vehicle strike. • Inappropriate fire regimes • Illegal shooting by orchardists and pine plantation owners. • Reduced habitat quality through the invasion of weeds, disease and pest species. • Reduced food and water availability due to climate change. • Death and injury resulting from extreme weather events exacerbated by climate change (DCCEEW 2023a).	**Potential Proposal Related Impacts:** • Potential decline or change in the health/composition of Carnaby's Black-Cockatoo habitat arising from dust generated as part of construction and operation activities and the potential spread of weed species, has the potential to degrade Carnaby's Black-Cockatoo habitat and potentially limit availability of food resources. • Artificial light and noise can potentially disturb species natural foraging and nesting behaviour. • Potential degradation of critical and supporting habitat due to alterations in hydrological regimes associated with the Proposal • Increased risk of injury or mortality to Carnaby's Black-Cockatoo due to elevated predation pressure from feral predators associated with the Proposal.	**Records in Proposal Area**: Carnaby's Black-Cockatoo have been recorded within remanent vegetation within the Wurgubup Reserves (**Figure 3-3**).
Red-tailed Phascogale (*Phascogale calura*) (Vu; CD)				
The Survey Area contains: • Red-tailed Phascogale were recorded in the bushland in the Woorgabup Nature Reserve, Rifle Range Reserve, the bushlands area on Ramm's farm and the other remnant patches towards the south of the Survey Area. • In the Wurgubup Reserves, the Red-tailed Phascogale were recorded in or very near wandoo and banksia woodland but could be using a variety of areas where trees contain suitable-sized retreats and nesting hollows. **Habitat within the Proposal Area:** • The extent of Red-tailed Phascogale habitat in the Proposal area is shown in **Figure 3-1**.	**Description:** The Red-tailed Phascogale (*Phascogale calura*) is a nocturnal, arboreal, carnivore that feeds on the ground. It has a distinctive tail with half of it colored reddish-brown and the rest covered in a brush of long black hairs (TSSC 2016). **Distribution:** Red-tailed Phascogale was once widely distributed in WA but is now confined to the southern wheatbelt, less than 1% of its former range (TSSC 2016). **Ecology:** The Red-tailed Phascogale inhabits upland wandoo-rock sheoak vegetation and lowland habitat of riverine fringing vegetation of swamp sheoak (Casuarina obesa), York gum (*E. loxophleba*) and wandoo. Additionally, it has also been recorded in shrublands and various mosaics of scrub-heath. It nests in trees containing suitable-sized retreats and hollows. − this likely provides protection against predation by feral cats and foxes. Like many dasyurids there is a post-mating mortality for male in July. Many females die after weaning their first litter (TSSC 2016).	**Threatening processes:** The main threats to the species include: • Habitat loss and fragmentation. • Habitat loss due to salinity • Predation by European red foxes (*Vulpes vulpes*) and cats (*Felis catus*). • Climate change and droughts. • Inappropriate fire regimes	**Potential Proposal Related Impacts:** • Potential decline or change in the health/composition of Red-tailed Phascogale habitat arising from dust generated as part of construction and operation activities and the potential spread of weed species, has the potential to degrade Red-tailed Phascogale habitat and potentially limit availability of food resources. • Artificial light and noise can potentially disturb species natural foraging and nesting behaviour. • Potential degradation of critical and supporting habitat due to alterations in hydrological regimes associated with the Proposal • Increased risk of injury or mortality to Red-tailed Phascogales due to elevated predation pressure from feral predators associated with the Proposal.	**Records in Proposal Area**: Red-tailed Phascogale have been recorded within the Survey Area in intact bushland parcels notably the Wurgubup Reserves and North-east bushland (**Figure 3-1**).

3.5 Introduced Fauna

A total of five introduced fauna species have been recorded from within the Study Area (Terrestrial Ecosystems 2025), and have the potential to occur in the Proposal Area (**Figure 3-7**) these are:

- Red Fox (Vulpes vulpes).
- Feral Cat (Felis catus).
- Rat (Rattus rattus).
- House mouse (Mus musculus).
- Rabbit (Oryctolagus cuniculus).

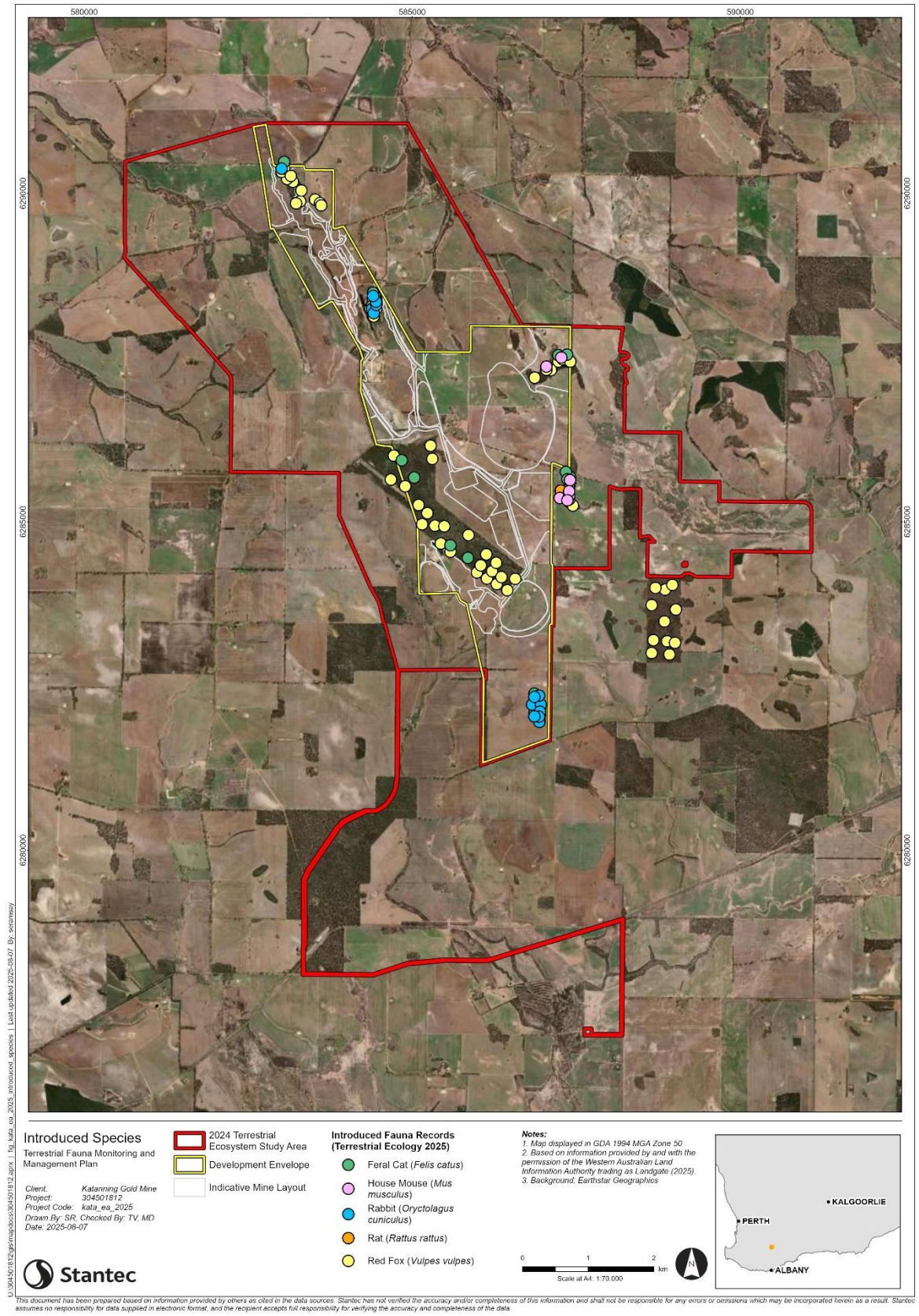

Figure 3-7: Records of Introduced Species within the Survey Area.

4 Management Approach

This section outlines the management approach of the TFMMP. The approach comprises outcome-based and objective-based management provisions, with appropriate indicators developed for environmental objectives and criteria, which are robust and measurable, where possible.

Outcome-based management provisions are applied where a sufficient level of information exists to measurable criteria (EPA 2024), defined to assess performance against the environmental outcome. These include:

- **Trigger Criteria** - Measures set at a conservative level (trigger criteria), to forewarn the approach of threshold criteria and enable trigger level response actions to be implemented well in advance of an environmental outcome being compromised.
- **Threshold Criteria** - Framed to represent the limit of acceptable impact beyond which there is likely to be a significant effect on the environment. This indicates there is risk that the environmental outcome will not be met.

The approach meets the requirements of the (DCCEEW 2024a) interim guidance which defines a **trigger** level as "*A predefined **threshold**, typically a given mortality level, that when reached or exceeded triggers a management response"*.

Objective-based management provisions are applied where a level of uncertainty exists or where performance cannot be measured against outcome-based trigger or threshold criteria. In this case, management targets are established to measure the success of management actions in achieving the environmental objective. Complementary provisions (including both outcome and objective-based) have also been applied to address values where a high level of management is required (determined based on the outcome of the risk assessments for MNES confirmed within the Proposal area and/or where a degree of uncertainty and complexity exists.

4.1 Key Assumptions and Uncertainties

Ausgold is committed to supporting the conservation of terrestrial fauna within the vicinity of the Proposal. The fauna surveys undertaken for the Proposal have contributed substantially to the occurrence and ecology of significant fauna in the region. However, it is acknowledged that there are remaining knowledge gaps, which may better inform the management of potential impacts through the implementation of this TFMMP. The key assumptions and uncertainties that apply to terrestrial fauna are summarised as follows:

- The significant fauna species identified are highly mobile point location records for individuals represent the usage of available foraging/breeding habitat (rather than fixed permanent locations of individuals).
- Based upon local and regional records of the significant fauna species identified, the extent of potentially suitable breeding/foraging habitat is expected to extend beyond the fixed area of the field surveys.
- Areas identified as important for significant fauna during the surveys may change over time i.e. breeding / foraging habitat for the Carnaby's Black-Cockatoo may change in response to foraging resources.
- Records of significant fauna (i.e. roost / nest locations) within or outside the Study Area at the time of surveys in 2025 may not be an accurate reflection of their occurrence at the time of mine operation and construction. This may require future iteration and approval of the plan:

- The impact of fires (unrelated to the Proposal) on fauna habitat quality and significant fauna populations is likely to affect the occurrence/distribution of significant fauna change over time.
- The extent to which climatic factors outside of the proponent's control will impact on the health and extent of populations of significant fauna within the Proposal Area is also an unknown.

4.2 Proposal Impacts

Considering the key assumptions and uncertainties, the potential impacts of the Proposal on terrestrial fauna include the following:

- Potential direct impacts:
  - Direct loss (mortality or injury) from vegetation clearing, site mining operations or vehicle interaction.
  - The direct loss of foraging or breeding habitat through unauthorised clearing of native vegetation within the Wurgubup Reserves.
- Potential indirect impacts:
  - Habitat fragmentation.
  - Increased predation by feral (cats and foxes) and native predators.
  - Degradation of significant fauna (Carnaby's Black-Cockatoo and Red-tailed Phascogale) foraging habitat as a result of:
    - unplanned project-related fire,
    - fugitive dust emissions,
    - spread of weeds,
    - Potential changes to surface hydrology
  - Increased noise and vibration, or light exposure resulting in disruption of fauna behaviour including mating and nesting.

4.3 Application of the Mitigation Hierarchy

The EPA mitigation hierarchy has been applied to avoid and minimise potential project-related impacts to terrestrial fauna within the Proposal Area, through the development of appropriate objectives and targets for management provisions (**Section 5**). This approach has been informed by best practice and experience on similar infrastructure projects in WA. Mitigation measures focus on terrestrial fauna including significant species, where relevant, aligning with the management provisions in this Plan.

The Proposal will **avoid** impacts to terrestrial fauna via the following:

- Mining tenements over the Wurgubup Reserves (Rifle Range and Nature Reserve) has been entirely avoided, with a buffer zone from all infrastructure to ensure the presence and function of remnant vegetation for local MNES.
- Proposed clearing has been minimised as far as practicable to reduce the extent of disturbance areas. Siting of very large infrastructure (particularly the Main Waste rock Landform and TSF) will avoid intact areas of fauna habitat, including a 20-ha bushland parcel on Ausgold's freehold land on M70/1426.

The Proposal will **minimise** impacts to terrestrial native fauna via the following:

- Minimisation of land clearing through location of infrastructure on as much cleared farmland where practicable. The clearing of an intact stand of significant trees is minimised, largely to an area coincident with Eucalypt woodland atop a mine pit (Jackson deposit). The overall clearing, based on mapping Eucalypt canopy, was reduced to less than 50 ha for the 970 ha mine disturbance footprint.
- Clearing to be undertaken in stages as required for operational purposes and in accordance with site ground disturbance permitting procedures.
- Identification of geochemically active ores and potentially hostile waste rocks with appropriate segregation and encapsulation to reduce effects on the receiving environment.
- Site inductions to include training on conservation significant fauna species and terrestrial fauna values with the DE and local area.
- Measures introduced to minimise spread of weeds, including vehicle hygiene procedures and restriction of access where required.
- Dust management procedures are to be implemented.
- Implementation of this TFMMP.
- Implementation of management procedures for luminosity and spectral frequency of mine site lighting.
- Installation of culverts along low points and underneath haul roads to facilitate the movement of fauna.
- Training for crews travelling at dawn or dusk to reduce speed and be aware of crepuscular fauna on the roads
- Access routes are aligned with existing roads, tracks, cleared agricultural areas, and other barriers to avoid entry across the boundaries of broad-scale vegetation associations.
- No pets are permitted.
- All waste and rubbish will be contained in bins and regularly removed from the survey or placed in landfill and suitably covered to exclude access to predator species.
- Feeding of native fauna (including birds; reptiles; marsupials) is prohibited.
- Work with landowners and managers of the Wurgubup Reserves to implement a district wide feral control program
- Appropriate speed limits to be implemented on unsealed access tracks to minimise dust mobilisation.
- All personnel to complete a site induction that will include information on prevention of project-related fires, including designated smoking areas, no fires permitted in workplace, use of extinguishers, hot works procedures.
- All fuel stored on site to be stored securely.
- Fire response equipment maintained at site and in vehicles, machinery.

The Proposal will **monitor** impacts to terrestrial fauna via the following:

- The Monitoring Program (Appendix A and Appendix B) will be implemented to evaluate the performance of mitigation and management measures to achieve environmental objectives and outcomes outlined within the TFMMP (**Table 5-1** and **Table 5-2**).
- Evaluate the success of the mitigation measures within the TFMMP and implement appropriate corrective response actions, through the adaptive management process, as required (**Section 9**).

The Proposal will **rehabilitate** impacts to significant fauna via the following:

- Waste Rock Landform to be progressively rehabilitated over the Life of Mine to optimise public amenity and encourage early re-establishment of native vegetation.
- Rehabilitation and restoration to include use of artificial fauna roosts/nests off site and use of eucalypt stags with hollows around the boundary of the tenements.

Measures will be developed and implemented to offset any significant residual impacts on MNES arising from the Proposal.

5 Management Provisions

The subsequent sections identify the management provisions that will be implemented by Ausgold to achieve the environmental objectives, criteria, targets, and outcomes are met. The outcome-based and objective-based management provisions will be reviewed and updated as required using an adaptive management approach.

5.1 Identification of Indicators and Rationale

Source information used to inform the management provisions is detailed below:

- EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's Black-Cockatoo (endangered) *Calyptorhynchus latirostris,* Baudin's cockatoo (vulnerable) *Calyptorhynchus baudini*i and Forest Red-Tailed Black-Cockatoo (vulnerable) *Calyptorhynchus banksii naso* (DAWE 2022) informed the trigger and threshold values for the indirect impacts to Carnaby's Black-Cockatoo,
- EPBC Approved Conservation Advice for the *Phascogale calura* (Red-tailed Phascogale) (TSSC 2016) informed the trigger and threshold values for the indirect impacts to red-tailed phascogale.

The overall management strategy with respect to significant fauna habitat is to maintain the ecological function and viability of the habitat through implementation of monitoring and mitigation measures to minimise impacts. Habitat degradation through contamination or the introduction of weeds could negatively impact upon habitat for significant species. In particular, the proliferation of weeds could increase the risk of fire. Weed hygiene procedures will be implemented to reduce the spread of weeds in the Proposal Area.

5.2 Outcome-based Provisions

The TFMMP focuses on outcome-based provisions, which are performance-based and can be audited. The management provisions developed are measurable, and the success of management actions can be monitored and reported. Outcome-based provisions specify triggers and thresholds (environmental criteria) for direct impacts that are quantifiable and specifically relate to Proposal-related impacts that may affect fauna populations (**Table 5-1**). Three outcome-based provisions have been developed for the TFMMP, with associated triggers and thresholds. Where required, suitable response and corrective actions are also recommended for the environmental criteria. The following three outcome-based management provisions (referred to as Outcome 1 etc.) for terrestrial fauna (**Table 5-1**) have been established as follows:

- **Outcome 1:** The condition and structure of habitat for Red-Tailed Phascogale and Carnaby's Black-Cockatoo within the adjacent Wurgubup State Reserves remains stable over the operations stage of the project.

- **Outcome 2**: No Proposal-related increase feral predators in the Wurgubup Reserves compared to baseline levels during the life of the Proposal.
- **Outcome 3**: No Proposal-related increase in weed species in the Wurgubup Reserves compared to baseline levels during the life of the Proposal.

5.3 Objective-based Provisions

Objective-based provisions relate to environmental management actions that are not specifically measurable. They set out management actions according to management targets, particularly for indirect impacts that are not quantifiable. For terrestrial fauna populations, as ongoing monitoring is undertaken and additional population data is gathered, these management targets will be reviewed, and quantifiable outcome-based provision(s) will be established accordingly, where possible. Six objective-based management provisions have been outlined in (**Table 5-2**) to limit the risk of adverse project-related impacts to terrestrial fauna populations within proximity to the Proposal with appropriate management actions and monitoring actions to be considered as applicable.

The following six objectives-based management provisions (referred to as Management Objective; MO 1, MO 2 etc.) for terrestrial fauna, each with specific and measurable management targets have been established as follows:

- **MO1**: Minimise Proposal-related direct interactions per year (e.g., vehicle strike) to significant fauna resulting in injury or mortality.
- **MO2**: No Proposal-related adverse impacts to terrestrial fauna (including significant fauna) or its natural habitat within the Development Envelope or adjacent proximity of the Proposal area from project- related unplanned fire events.
- **MO3**: No adverse Proposal-related impacts to significant fauna or its natural habitat from project related introduction or proliferation of weed species from and within the Development Envelope.
- **MO4**: No adverse Proposal-related impacts to significant fauna or its natural habitat from dust, noise, and vibration.
- **MO5**: No adverse Proposal-related impacts to significant fauna or its natural habitat from hydrocarbon or chemical spill.
- **MO6**: No adverse Proposal-related impacts to significant fauna or their natural habitat from Proposal related artificial light spill.

Table 5-1: Terrestrial Fauna Outcome-based Provisions.

EPA Factor and Objective	Terrestrial Fauna (TF): '***To protect terrestrial fauna so that biological diversity and ecological integrity are maintained***' (EPA 2016b). Reflected in this management table as specific outcomes (Outcome 1, Outcome 2 etc.).
TFMMP Purpose	Implement the Proposal in a manner that ensures there is no significant adverse project-related direct or indirect impacts to significant fauna populations associated with the Proposal.
Key Impacts and Risks	Potential degradation of significant fauna habitat and the potential for loss of fauna species from the Wurgubup Reserves, as a result of the indirect impacts of the Proposal.
Indicators	Tree health scores, availability of suitable breeding trees with hollows (Carnaby's Black-Cockatoos), Ground cover and understory density (Phascogales), Photo point monitoring comparisons

Outcome – based Management Provisions	**Trigger and Threshold Criteria**		**Trigger and Threshold Response Actions**		**Monitoring**	**Timing/ Frequency of Monitoring**	**Reporting**
	Trigger Criteria	**Threshold Criteria**	**Trigger Level Actions**	**Threshold Criteria and Corrective Actions**			
Outcome 1: The condition and structure of habitat for Red-Tailed Phascogales and Carnaby's Black-Cockatoos within the adjacent Wurgubup State Reserves remains stable over the operations stage of the project.	<u>Visual Health Assessment</u> On-ground data collection[3] • An increase in stress[4] rating (indicated by a decrease in condition score from the tree health assessment) observed in more than 2% of selected Suitable Breeding Trees (repeatable measures) within Wurgubup Reserves, compared to previous sampling rounds, and not observed at either the Badgebup or Kwobrup Reserve reference sites.	<u>Visual Health Assessment</u> On-ground data collection[1] • An increase in stress[2] rating (indicated by a decrease in condition score from the tree health assessment) observed in more than 5% of selected Suitable Breeding trees within Wurgubup Reserves, compared to previous sampling rounds, and not observed at either the Badgebup or Kwobrup Reserve reference sites.	• Conduct targeted tree health inspections • Conduct satellite image spectral analyses for spatial and seasonal changes • Investigate potential causes (e.g. dust, hydrological changes, disease infection). • Increase monitoring in affected areas, • Increase on site mitigation measures for airborne vectors (e.g. freshwater sprays) • Assess cause against reference sites' results to determine if the impact is project-related or natural attrition. • Install artificial nest boxes for listed species as interim mitigation.	• Implement formal incident report • Notify regulatory authorities (EPA) • On-ground investigation to confirm location and extent of impact. • EPA notified within 7 days of detection of threshold exceedance. • Initiate rehabilitation plan if impacted area is deemed suitable.	1. Baseline Vegetation Visual Health assessments in accordance with the Carnaby's Black-Cockatoo Monitoring Program (**Appendix A**) and the Red-tailed Phascogale Monitoring Program (**Appendix B**) 2. Annual monitoring in accordance with the Carnaby's Black-Cockatoo Monitoring Program (**Appendix A**) and the Red-tailed Phascogale Monitoring Program (**Appendix B**).	1. Aerial image capture- or high-resolution satellite imagery (Bi-annually). 2. When required in accordance with the tree health assessment in the FVMMP.	• Survey data. • Monitoring Program reporting (**Appendix A** and **Appendix B**). • Reporting requirements described in **Section 7** apply: – Annual Environmental Reporting (**Section 7.1**) – Threshold exceedance reporting in accordance with **Section 7.2**. – Incident reporting in accordance with **Section 7.3**. • Annual Compliance Assessment Report (ACAR).
Outcome 2: No Proposal- related increase feral predators in the Wurgubup Reserves compared to baseline levels during the life of the Proposal**.**	Total remote camera records on bushland floor of feral predator (fox, cat) are <u>></u>10[5] at a single feral predator monitoring location (impact sites) during a single monitoring event[6]. *Note: feral cats and foxes are likely to continually move into*	A statistically significant increase[3] in the occurrence of feral predator numbers recorded in the Wurgubup Reserves comparative to baseline levels and relative to reference sites (Badgebup and Kwobrup Reserves) over two consecutive monitoring events[4].	• Report internally as an incident in accordance with internal procedures. • Identify potential causes for increased feral animal population, for example: – Poor waste management, – Attraction of feral predators to artificial water sources.	• Report as incident. • Should significant fauna mortality occur report it on the fauna mortality register. • Report non-compliance to DWER and DCCEEW (for matters relating to MNES) within seven (7) days of identification in	1. Monitor feral predators in accordance with the Feral Predator Monitoring and Control Program (**Appendix C)** 2. Record observations of feral predator in accordance with Feral	1. Fauna Monitoring with Camera traps in sensitive Areas (in proximity to significant fauna populations quarterly and in proximity to workforce in Katanning town and landfill: (Monthly) in	• Reporting requirements described in Section 7 apply: – Annual Environmental Reporting (**Section 7.1**) – Threshold exceedance

[3] *On-ground data collection survey methods follow a before-after-control-impact (BACI) design.*
[4] *The definition of 'stress' refers to a sub-optimal state due to changed environmental conditions Bussotti, F. P., M. (2021). Revisiting the concept of stress in forest trees at the time of global change and issues for stress monitoring.. However, as many fauna species may still nest or roost in trees classified as stressed, the stress rating reflects the long-term viability of the habitat, rather than its current habitat value.*
[5] ** Trigger to be reviewed and revised as appropriate (a percentage) of total baseline records following the collation of baseline data (2 years).*

[6] *following implementation of feral predator control commencing proposal development.*

	the areas of control. The objective is to maintain feral cat and fox numbers at low densities (not eradication). *Camera traps recorded foxes at 68 locations and feral cats at 24 locations* (Terrestrial Ecosystems 2025)	– If using, check operational status of traps to ensure in working order (1080 bait cartridges present, solar panels working). – If present, confirm feral predator fencing from artificial water sources is in working order. • Cross reference with Incident Reporting Procedure records for sightings of feral predators. • If increase in presence of feral predators is attributed to Proposal-related activities, undertake a review of procedures to determine if impact can be minimised, develop corrective actions with consideration of the following: – Incident Reporting Procedure to record sightings of feral predators; and – Educate staff on the importance of not feeding feral animals and correct waste disposal as well as reporting all sightings of feral predators. • Conduct a review of waste management practices and improve practices accordingly. • Audit and review of training and staff/contractor inductions (increase staff/contractor training and awareness around feral animal control).	accordance with exceedance reporting requirements **Section 7.2**. • Identify potential causes for increased feral animal population, for example: – poor waste management, – attraction of feral predators to artificial water sources. • If using, check operational status of traps to ensure in working order (1080 bait cartridges present, solar panels working). • Cross reference with Incident Reporting Procedure records for sightings of feral predators • If the threshold exceedance for observation or evidence of single predation event on Red-tailed Phascogale at an impact site occurs: – Review and compare results of increase in feral predator numbers with the results of monitoring for significant fauna species (**Appendix A** and **Appendix B**). – Review potential impact of feral predators (fox or cat) to the significant fauna populations, in consultation with suitably qualified zoologist. • Corrective management actions to be considered include: – Increase frequency and intensity of feral predator control, if required, as per Feral Predator Monitoring and Control Program (**Appendix C**). – Investigate alternative control measures to control feral predator populations according to industry best practice. For example, undertaking targeted baiting in response to the feral predator	Predator Monitoring and Control Program (Appendix C). 3. Monitoring of Internal incident reporting for number of incidents relating to feral predators.	accordance with **Appendix C**). 2. Record observations of feral predator as triggered. 3. Monitoring of Internal incident reporting annual or as triggered.	reporting in accordance with **Section 7.2**. – Incident reporting in accordance with **Section 7.3**. • ACAR. • Inspection Forms - Monthly detection to be included within ACAR.

				presence or consider undertaking targeted feral predator trapping/ culling event where appropriate as per Feral Predator Monitoring and Control Program (**Appendix C**). – Audit and review of training and staff inductions (increase staff training and awareness around feral animal control). – Incident Reporting Procedure to record sightings of feral predators; and • Educate staff/contractors on the importance of not feeding feral animals and correct waste disposal as well as reporting all sightings of feral predators.			
Outcome 3: No Proposal- related increase in weed species in the Wurgubup Reserves compared to baseline levels during the life of the Proposal.	• Detection of a new weed species or population not recorded since baseline survey • Any increase in weed cover and density within the Wurgubup reserves that exceeds baseline levels and is not observed at Badgebup and Kwobrup reserve reference sites.	• Detection of a new population of a new weed species not recorded in baseline surveys. • Or • Weed species identified as high-risk (e.g. declared pests) establishing or spreading in reserve areas. • Evidence of habitat degradation linked to weed invasion attributed to Proposal-related activities and not observed in Badgebup and Kwobrup reserve reference sites	• Conduct a targeted survey for new weed species identified. • Report internally • Identify potential causes for the establishment of a new weed species in the reserves. Determine whether the cause is Proposal related. • Poor weed management • Poor vehicle hygiene	• Report exceedance to regulators and relevant stakeholder within 7 days. • A review of current weed management practices is triggered to identify gaps or failures. • Updates to the Indicative Weed Management Plan (FVMMP) may be required. • Engage ecological specialists for targeted restoration advice	• Baseline and ongoing vegetation health assessments and weed management in accordance with the Vegetation Monitoring Plan and the Indicative Weed Management Plan.	• As triggered • Bi-annually in conjunction with the Indicative Weed Management Plan	• Incident reporting. • ACAR.

Table 5-2: Terrestrial Fauna Objective-based Provisions.

EPA Factor and Objective	Terrestrial Fauna (TF): '***To protect terrestrial fauna so that biological diversity and ecological integrity are maintained***' (EPA 2016b).
TFMMP Purpose and Objective	*To avoid adverse Proposal-related impacts to terrestrial vertebrate fauna including significant fauna and associated habitat.*
Key Impacts and Risks	Potential degradation of significant fauna habitat and the potential for loss of species from the Wurgubup Reserves, as a result of the indirect impacts of the Proposal.
Indicators	Breach of significant fauna avoidance buffer(s), Population change (decrease in abundance of significant fauna species), breach of approved clearing extents impacting significant fauna habitat.

Management Target	Management Actions	Monitoring	Timing/ Frequency of Monitoring	Responsibility	Reporting
MO1: Minimise Proposal-related direct interactions per year (e.g., vehicle strike) to significant fauna resulting in injury or mortality					
1. Implement speed limits within proximity to Carnaby's Black-Cockatoo and Red-tailed Phascogale habitat and supporting. 2. No Proposal-related incidents of vehicles being used off designated roads outside operational areas (unless in the case of unplanned events), that result in significant direct impacts to habitat for significant fauna.	• Signage will be installed along access roads to advise of speed reduction through mine area <40 km/ hour. – Monitoring and enforcement of speed limits through placement of interactive traffic management signs advising acceptable road use (daylight hours and private designation) and road user of compliance against speed limits (encouraging driver lead compliance). – GPS installation to monitoring Ausgold haul trucks and Ausgold vehicles to ensure compliance with speed limits. – Installation of traffic counting measures such as Pneumatic Tubes monitored quarterly to measure vehicle speed and road usage during non-daylight hours. • Where possible, engage high beam headlights when driving at night. • Develop and implement awareness and education programs for all haul road users (including Ausgold workforce) relating to safety and governed use of the road designed to protect fauna. • Install signage to clearly demarcate existing authorised vehicle tracks and existing access tracks. • Design haul road and manage road verges to minimise roadside water sources and foraging opportunities for fauna and maximise visibility of road edges for drivers.	1. Inspection of inductions, training, and awareness material. 2. Record mortality events: establish a baseline to determine future mitigation effectiveness and potential 'hot spots' or periods of increased risk (e.g., mating dispersal) requiring particular focus. 3. Maintain a fauna mortality register to record incidents of collision with a native species. 4. Undertake road signage inspections. 5. Monitoring in accordance with the Site-based Environmental Management Plan (SBMP).	1. When required as inductions, training is completed. 2. As triggered. 3. Ongoing 4. Quarterly signage inspections. 5. In accordance with schedule outlined in the Traffic Management Plan	• Construction. • Operations. • Environment Team.	• ACAR. • Report mortalities to DBCA. • Internal incident reporting. • Annual Monitoring reports.
MO2: No Proposal-related adverse impacts to terrestrial fauna (including significant fauna) or its natural habitat within the Development Envelope or adjacent proximity of the Proposal area from Proposal- related unplanned fire events.					
1. Provision and maintenance of firefighting equipment in accordance with the relevant fire safety standards. 2. Firefighting emergency response plan and procedures are in place.	• Avoid hot works in fire sensitive habitats and along the haul road. • Liaise with Traditional Owners (TOs) about the management of local fire regimes and fire management practices. • Establish Emergency Response Plan and Emergency Response Team. • Require all personnel to complete a site induction that will include information on prevention of Proposal-related fires, including designated smoking areas, no fires permitted in workplace, use of extinguishers, hot works procedures, appropriate waste management. • Adhere to management practices addressed in the Indicative Weed Management Plan. • All fuel stored on site to be in a secure bund.	1. Internal incident reporting and investigation process. 2. Daily wind conditions will be taken into consideration when clearing activities are proposed. 3. Monitor and record the occurrence of fires within the Proposal area through internal reporting system. 4. Comply with FVMMP	1. As triggered 2. Daily during construction. 3. On-going, as triggered. 4. Comply with schedule in the FVMMP	• Construction. • Operations. • Environment Team.	• Incident reporting. • ACAR.

	• Implement a hot works permit system for high ignition risk work activities. • If hot works adjacent to vegetation can't be avoided, the area immediately surrounding 'hot work' to be dampened with water if vegetated and vegetation is not already naturally damp. • Fire response equipment is maintained at site and in vehicles, machinery and Haul Trucks. • Water trucks to have fire management capabilities (pumps/hoses). • Consider 'no fires' or 'fires prohibited' signage in areas of fire sensitive habitat.				
MO3: No adverse Proposal-related impacts to significant fauna or its natural habitat from Proposal-related introduction or proliferation of weed species from and within the Development Envelope**.**					
1. Weed management programs should be designed in accordance with relevant EPBC Act weed threat abatement plans. 2. Weed management procedures informed by best practice management of the weed species identified during weed baseline surveys. 3. No proliferation or introduction of new weed species rated as high or very high management priority by DBCA in the Proposal Area as a result of the Proposal.	• Weeds management to be undertaken in accordance with the Indicative Weed Management Plan and Monitoring Program (outlined within the FVMMP), including: – Weed management programs will be undertaken in accordance with relevant EPBC Act threat abatement plans and be informed by best practice management of the weed species identified during baseline surveys. – Maintain weed hygiene obligations in contractor contracts. – Timely response for management of any declared weed occurrences. – Limit vehicle and personnel movements outside of approved access and disturbance envelopes. – Train personnel to identify weed species and process for reporting weed locations. – Incident reporting of new weed species and new locations. – Implement weed hygiene procedures for clearing and construction equipment coming into the Proposal Area, and equipment moving between DE in the proposal area. – Establish weed hygiene zones if conducting earthworks near known weed locations. – Weed mitigation to be undertaken in spring. – Undertake weed baseline survey and weed mapping. • Monitor and report weed occurrence within the proposal area in accordance with the Weed Management Plan and Monitoring Program.	1. Weeds management to be undertaken in accordance with the Weed Management Plan and Monitoring Program 2. Annual inspections of cleared and rehabilitated areas to detect presence of new weed species and to determine success of weed mitigation measures. 3. Inspection of inductions, training, and awareness material	1. In accordance with: – FVMMP – Indicative Weed Management Plan: and – Weed Monitoring Program 2. Annual inspection 3. As triggered.	• Construction • Operations • Environment Team	• ACAR. • Internal incident reporting and investigation process. • Weed Monitoring reports.
MO4: No adverse Proposal-related impacts to significant fauna or its natural habitat from dust, noise, and vibration.					
1. Dust management plan in place. 2. Dust suppression measures in place. 3. Implement speed limits on unsealed tracks. 4. Machinery and equipment will be fitted with noise attenuation measures.	• Access roads to be appropriately engineered, with compaction, appropriate bunding and drainage implemented to prevent erosion and sedimentation. • Access roads will be subject to speed restrictions and dust suppression to minimise impacts on fauna. • Dust suppression measures will include good house-keeping practices for vehicles, cleared areas, and active stockpiles. • Use of dust suppression (water carts) during clearing activities and operations.	1. Internal incident reporting and investigation process. 2. If required, monitoring vegetation health in affected areas and adjacent areas. 3. Daily wind conditions (for elevated risk of dust as a result of clearing) will be taken into consideration when clearing activities are proposed. 4. Internal incident reporting and investigation process. 5. Complaints Procedure and Register.	1. As triggered 2. Following dust deposition event, as required. 3. Daily wind monitoring. 4. As triggered 5. Following receipt of a complaint (excessive dust levels, speeding)	• Construction. • Operations. • Environment Team.	• Monitoring data. • ACAR • Internal incident reporting and investigation process

	• Machinery and equipment will be fitted with noise attenuation measures to meet personnel safety requirements. • Implement and enforce speed limits (40 km / hour at night-time) for all traffic in areas near remanent vegetation. • Haul road speed limit to be 80 km per hour during daylight hours. • Speed limit of 60 km per hour on unsealed access tracks.				
MO5: No adverse Proposal-related impacts to significant fauna or its natural habitat from hydrocarbon or chemical spill.					
1. Hazardous Substances Management Plan and Procedure implemented. 2. Spill response training for all personnel and contractors. 3. Spill response equipment is provided for all site vehicles (including all Haul Trucks).	• Hydrocarbon and/or chemical leaks and spills (expected to be rare) will be managed using bunding techniques, leak detection mechanisms and spill kits to restrict impacts. • Spill response equipment available (including on all Haul Trucks). • Spill response training for all personnel and contractors. • Dedicated workshop for maintenance. • Maintain high standard of housekeeping around processing plant. • Bioremediation facility for the treatment of contaminated fill, soils, or sediment. • Management of sites as per the *Contaminated Site Act 2003* (WA). • Develop and implement a Hazardous Substances Management Plan and Procedure.	1. Internal incident reporting and investigation process for spills. 2. If required, sampling of soils to ensure all contaminated material has been removed and in situ soils sediment have been remediated. 3. If required, monitoring vegetation health in affected areas and adjacent areas.	1. As triggered. 2. As required following a spill event. 3. As required in accordance with the schedule in the Vegetation Health Monitoring Program (FVMP).	• Construction. • Operations. • Environment Team.	• ACAR • Internal incident reporting and investigation process.
MO6: No adverse Proposal-related impacts to significant fauna or its natural habitat from Proposal related artificial light spill.					
1. Directional lighting measures implemented in operational areas. 2. No artificial light spill from Proposal into surrounding remnant vegetation).	• Installation of lighting that direct lights toward operational areas to minimise light spill into adjacent Wurgubup bushland vegetation. • Investigate light management options specific to terrestrial mammals with consideration of *National Light Pollution Guidelines for Wildlife* (DCCEEW 2023b): – Keep artificial light intensity as low as possible near terrestrial mammal refuge sites and known foraging areas and commuting routes. – Avoid specific wavelengths that are potentially problematic for the species present. In general, this includes avoiding the use of artificial lights rich in blue wavelengths, which are easily perceived by terrestrial mammals. Longer wavelength artificial light (such as red light) may have less impact on terrestrial mammal species	1. Undertake regular inspections for light spill beyond operational boundaries	1. Monthly during construction and operations	• Construction. • Operations. • Environment Team.	• Monitoring data. • ACAR • Internal incident reporting and investigation process.

6 Monitoring

A monitoring schedule has been developed with performance targets to assess the effectiveness of the management measures outlined in this TFMMP (**Section 5**). The performance targets have been aligned with the outcomes-based objectives and associated environmental criteria, with associated measurement parameters, monitoring frequencies and responsibilities (**Table 6-1**).

Monitoring has been developed to achieve the following objectives:

- Monitor the success of mitigation and management measures in the TFMMP and detect potential impacts to significant fauna and habitat.
- Evaluate effectiveness and monitor for exceedance against trigger, threshold, and management target criteria (management provisions).
- Assess the effectiveness of the environmental criteria to inform adaptive management and revision where required.

In addition to the monitoring schedule, the following Monitoring Programs have been developed for the significant species:

- Carnaby's Black-Cockatoo Monitoring Program (**Appendix A**).
- Red-tailed Phascogale Monitoring Program (**Appendix B)**.

Table 6-1: Monitoring Schedule

Management Targets	Monitoring Event	Monitoring Action	Timing	Responsibility
No clearing of vegetation shall occur outside of the approved, demarcated clearing area(s) during construction or operation.	Clearing inspections	Visual inspections for evidence of: • adherence to boundary demarcation compliance. • unauthorised access or clearing (e.g., observations of vehicles or machinery, vehicle tracks, damage to fencing or vegetation).	During clearing, construction, pre-clearing and post-clearing activities.	• Manager Environment. • Staff and contractors.
		Monitoring of clearing register for compliance to approvals: • pre-clearance and post-clearance photographs of cleared vegetation. • on-ground measurement (by surveyor) of clearing locations and extents within four weeks of any clearing event. • quarterly land disturbance reconciliation (ha and spatial footprint).	Annual aerial imagery analysis to monitor clearing extent.	
		Analysis of clearing undertaken via aerial imagery survey to assess whether any unauthorised clearing has occurred.	Annual.	
		Internal incident reporting and investigation process	As triggered.	
Implement speed limits within proximity to Carnaby's Black-Cockatoo and Red-tailed Phascogale habitat and supporting. No Proposal related incidents of vehicles being used off designated roads outside operational areas (unless in the case of unplanned events), that result in significant direct impacts to habitat for significant fauna.	Signage	Undertake periodic compliance checks with site speed limits.	Quarterly signage inspections.	• Manager Environment. • All staff and contractors. • Suitably qualified zoologist, as required.
	Fauna mortality or injury register	In the event that fauna is injured during clearing, construction or operations, the animal shall be taken to an authorised veterinarian or trained wildlife carer, or if not possible, humanely euthanised in accordance with Standard Operating Procedure: Humane Killing Of Animals Under Field Conditions (Department of Biodiversity Conservation and Attractions 2018)	As triggered	
	Trench inspections	Check trenches for trapped fauna and ensuring egress points are functional.	Twice daily trench inspection	

	Feral fauna monitoring	Record and monitor the presence and abundance of feral fauna compared to baseline presence and abundance to determine the effectiveness of control programs.	Baseline monitoring undertaken over 2 consecutive years prior to and during early construction activities.	• Manager Environment. • Environment Team. • Suitably qualified zoologist, as required.
	Feral fauna control	Implement feral fauna control at seasonally appropriate time	In accordance with **Appendix C**.	
	Introduced fauna register	Maintain a register of all introduced fauna sightings.	Opportunistically (i.e. when observed).	
Minimise Proposal related decline to fauna habitat due to dust, hydrocarbon or chemical leaks and altered hydrological regimes.	Dust monitoring	Monitoring of daily wind conditions will be taken into consideration when planning clearing or blasting activities.	Daily.	• Manager Environment. • Environment Team.
	Weed monitoring	Bi-annual monitoring of the presence and abundance of weeds compared to baseline presence and abundance to determine the effectiveness of control programs.	Biannual.	
	Surface and groundwater monitoring	Implement surface and groundwater monitoring as required in accordance with the Surface Water Management Plan (SWMP) and Ground Water Operating Strategy (GWOS).	In accordance with schedule in the SWMP and GWOS.	
Provision and maintenance of firefighting equipment in accordance with the relevant fire safety standards. Firefighting emergency response plan and procedures are in place	Routine fire inspection	Inspection and maintenance of fire breaks in accordance with the local government firebreak notice under s. 33 of the *Bush Fires Act 1954*.	As required in accordance with the local government firebreak notice under s. 33 of the *Bush Fires Act 1954*.	• Manager Environment. • Environment Team.
		Regular inspection of vehicles and fire response equipment shall be undertaken.	Quarterly.	

6.1 Environmental Audits

An audit of implementation of this TFMMP will be completed annually. The key requirements of this audit include:

- Assessment of compliance of all TFMMP components.
- Evaluation of performance against TFMMP provisions.
- Assessment of adequacy of management actions, response actions and monitoring.
- Review of management actions, response actions and monitoring as required in order to meet the purpose and objectives of this TFMMP.
- Additional audit(s) in response to significant incidents of non-conformance.

TFMMP audits shall be conducted by personnel trained and competent in the use of the audit tool and have expertise in the area being audited. Results of all audits will be communicated and discussed at project management review meetings.

6.2 Capture and Release

Should capture and release be required, it is important that any capture and release is undertaken by qualified licensed personal in accordance with relevant DBCA standard operating procedures (SOPs) such as:

- Transport and temporary holding of wildlife SOP No: SC22-11 (DBCA 2023b)
- Cage traps for live capture of terrestrial vertebrates SOP No: SC22-07(DBCA 2023c)
- Animal handling and restraint using soft containment SOP No: SC22-12
- Hand capture of wildlife SOP No: SC22-12 (DBCA 2022c)(DBCA 2022)
- Hand restraint of wildlife (DBCA 2017c)
- Care of evicted pouch young SOP No.SC22-16 (DBCA 2023a)
- An appropriate DBCA fauna license will be required to undertake capture and release.

6.3 Injured Fauna Management

In unlikely event that an injured significant fauna individual is found, the following management actions should be undertaken in accordance with the Injured Terrestrial Fauna Management Procedure. The following management actions for injured fauna management should be undertaken by a fauna handler:

- An assessment if the fauna approach is safe and capture is necessary.
- Capture of the injured animal will be undertaken by a suitably qualified fauna handler.
- If handling is the preferred method, safely confine (wrap the animal in towel and place in cardboard box) ensuring the animal can breathe.
- Keep box closed but not sealed to allow for ventilation and place box in a dry, warm, dark and quiet place.
- The DBCA (2023b) - SOP Transport and Temporary Holding of Wildlife procedure should be adhered to if the injured animal is to be transported:
    - Where transportation of the injured animal is to occur on foot or vehicle.
    - Individuals shall be kept within a box with ventilation for secure transport; and
    - Temperature of vehicle will not exceed 25 degrees Celsius during transportation.

- First response wound management will be undertaken in accordance with DBCA (2017b) - SOP First aid for animals:
    - Due to the regional location of the Proposal any medical attention required to the animal is to be assessed on a case-by-case basis in consultation with the fauna handler, a veterinarian and the Environment Manager.
    - In the event the animal is injured (or is dependent young) and is not able to be re-released (based on veterinarian advice), the DBCA shall be consulted for rehabilitation options.
    - No relocation of nests or rehabilitated fauna individuals is to occur (unless in extenuating circumstances where prior consultation has occurred with EPA, DCCEEW and DBCA and approval and a permit to handle and move significant fauna has been granted).
    - Euthanasia of an animal to be undertaken under the instruction of a veterinarian or under conditions specified in DBCA (2018) - SOP Human Killing of Animals under Field Conditions, where appropriate and in accordance with the SOP.

7 Reporting

7.1 Annual Reporting

Ausgold Pty Ltd will prepare an Annual Environmental Reports (AER) for submission to the DWER and DBCA (where applicable). An ACAR will be prepared for submission to:

- DWER/ EPA; and
- DCCEEW annually for MNES related values

The format and contents of these reports will align with the conditions and requirements stipulated by the individual authorities and demonstrate compliance.

7.2 Exceedance Reporting

In the event that a threshold within this plan is exceeded, the DWER, EPA and DBCA will be notified, as required within 7 days of identification of the exceedance in accordance with **Section 5** (**Table 5-1**).

For matters regulated under the EP Act:

- The Proponent will report a non-compliance to DWER within 7 days of identification.
- The Proponent will provide an investigation report to be submitted to DWER with remediation actions proposed within 28 days of incident report.

For matters relating to MNES:

- Proponent will report to DCCEEW in the event that monitoring, surveys or investigations indicate exceedance of threshold criteria, the exceedance will be reported in writing to the DCCEEW within seven (7) business days of the exceedance being identified.
- The Proponent will provide a report to the CEO within twenty-one (21) days and to the DCCEEW within twenty-one (21) business days of the exceedance being reported

7.3 Incident Reporting

All environmental incidents, regardless of the scale and nature of the incident, will be reported in accordance with the internal incident reporting procedure to the Environment Manger as soon as practicable. The following procedure will be adhered to:

- All environmental near misses and incidents will be recorded within an incident management system. Incidents will be recorded internally by the person/s who cause or identify the event, within 24 hours of the incident occurring.
- The area supervisor or Superintendent will determine the need for corrective actions and level of investigation required dependent on severity of the incident. Investigations will be conducted in accordance with the Investigation Management Procedure and recorded within the incident reporting system within two weeks of the incident occurring, or as instructed by the Environment Manager
- Where applicable, environmental incidents will be reported to the relevant regulatory authorities by the Environment Manager.

- In the event of a non-compliance, the cause of the non-compliance will be investigated and reported as an incident. Corrective actions will be developed and recorded, and outcomes monitored, as required. Non-compliance and incident reports will be closed out by the Environment Manager.

8 Roles and Responsibilities

The key personnel involved in implementation of the TFMMP and their roles and responsibilities are listed in **Table 8-1**.

Table 8-1: Roles and responsibilities for implementation of the TFMMP.

Habitat	Description
Ausgold	• Ausgold have the overall responsibility for implementation of the TFMMP • Audit and compliance • Engagement with key stakeholders
Manager Environment (may delegate all or part responsibility to an appropriately qualified person)	• Obtain relevant approvals from regulatory agencies for vegetation clearing and ground disturbance as required. • Undertake monitoring for significant fauna as detailed in **Section 6** of this Plan. • Monitor and report incidents. • Maintain clearing register to ensure compliance with approvals. • Undertake internal audits and inspections of clearing areas and compliance with TFMMP. • Implement and maintain the TFMMP, review its effectiveness and review the implementation as required. • Undertake training and inductions of site personnel in accordance with the TFMMP. • Liaise with stakeholders and technical experts for advice and resolution of management aspects/objectives as required. • Engagement with TOs • Report as required to regulating authorities.
All KGP personnel (including contractors)	• Complete induction prior to commencement of work on site. • Toolbox • Training • Comply with requirements in TFMMP. • Report any incidents through the incident management system within 24 hours.
Third Party Contractor (specialist consultant)	• Specialist consultant to undertake monitoring according to terrestrial fauna monitoring programs as specified in **Appendix A**, **Appendix B** and **Appendix C** of this TFMMP.

9 Adaptive Management and Review

The TFMMP has been designed to be adaptive and should be updated over the life of the Proposal. It is expected that additional information from the Monitoring Program (**Appendix A**, **Appendix B** and **Appendix C**) will be used to revise environmental criteria and response actions in the TFMMP, as required. Changes that may prompt the revision of the TFMMP include:

- Addressing items identified during incident investigations.
- Audits or inspections.
- Additional information or data becomes available.

Suitable adaptive management actions may include:

- Adjusting the activity causing the impact,
- Implementing a mitigation measure (Contingency measures detailed in **Table 5-1** and **Table 5-2**).

The TFMMP will be reviewed and revised every three years throughout the life of the Proposal, or as deemed necessary. Any revisions by Ausgold will be undertaken in consultation with DWER, DCCEEW and/or DBCA (where appropriate). The review process will include:

- **Periodic review and evaluation of monitoring data or methodology** – to determine whether monitoring results indicate that management provisions and environmental objectives are suitable and management targets can be achieved.
- **Increased understanding of this factor and habitat requirements of biota** – as additional information is received, which may be used to better inform environmental criteria, management or response actions.
- **Proposal changes** (such as design and processing, or technical advances and innovation) – consider the relevance and effectiveness of management provisions will be considered following any significant changes to the Proposal.

10 EMP Changes

This TFMMP (v1) is the original version submitted to the EPA and DCCEEW for review prior to assessment. All changes to the TFMMP post-assessment must be provided separate to compliance reports and submitted to DWER and DCCEEW (for matters relating to MNES) for approval with changes summarised in **Table 10-1**.

Table 10-1: Changes to TFMMP.

Complexity of Changes	**Minor Revisions** ☐	**Moderate Revisions** ☐	**Major Revisions** ☐	
Number of Key Environmental Factors	**One** ☐	**Two – Three** ☐	**> Three** ☐	
Date Revision submitted to EPA: DD/MM/YYYY				
Proponent's Operational Requirement Timeframe for approval of revision	**< One Month** ☐	**< Six Months** ☐	**> Six Months** ☐	**None** ☐ **Reason for Timeframe:**
Item No.	**EMP Section No.**	**EMP Page No.**	**Summary of Change**	**Reason for Change**

11 Stakeholder Consultation

Ausgold's stakeholder engagement process aims to provide a measurable and positive impact to social, economic and environmental aspects. Ausgold continues to recognise the nature, types and risks of impacts and benefits of its business and is increasingly confident it possesses the capabilities to provide strong social performance based on guidance of community and government guidance. As the Proposal develops, training and support will be provided to the workforce to develop an understanding and awareness of Ausgold's stakeholder engagement framework.

In 2024, Ausgold developed a comprehensive Stakeholder Engagement Management Plan for the Proposal. Plan elements, mechanisms and processes listed below support strategic and effective engagement to yield insights and exchange information relevant to different stakeholder groups.

The purpose of the Plan is to:

- Provide relevant background information on the Proposal including local context.
- Summarise past engagement.
- Identify and analyse social risks and provide mitigation strategies for each.
- Identify and analyse key stakeholders.
- Outline key messages for communications and engagement.
- Provide a draft engagement implementation plan, which includes the format of each activity.

Several key stakeholder groups have been identified for the Katanning Gold Proposal. Whilst engagement continues, some of the key stakeholders with respect to the Proposal include:

- State Government agencies, including the EPA, DWER, DBCA, Department of Mines, Petroleum and Exploration (DMEP), Department of Planning, Lands and Heritage (DPLH), and the Department of Primary Industries and Regional Development (DPIRD).
- The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).
- Local Government agencies including the Shire of Katanning, Kent and Dumbleyung.
- TOs and Heritage representative groups, including the Wagyl Kaip Southern Noongar Aboriginal Corporation, Badgebup Aboriginal Corporation and the Southwest Aboriginal Land and Sea Council.
- Environmental groups including the Conservation Council of WA, Katanning Landcare Group and Southwest Natural Resource Management.
- Wurgubup Rifle Club.
- Community representatives including members of the Rotary Club and Katanning Regional Business Association.
- Land owners with properties that will be subjected to direct and indirect impacts from the Proposal and will be purchased by Ausgold.

Ausgold has set up a Katanning Gold Project Community Reference Group to identify effects and help develop initiatives that support biodiversity, land management and community resilience and prosperity. The Reference Group is enabling an exchange of information between Ausgold and members from community, business, and government on:

- Municipal and community infrastructure, services and assets.
- Regional economic development.
- Land, vegetation and water.
- Environmental and community impact management (including offsets).

Ausgold maintains a Stakeholder Engagement Register that includes specific consultation with stakeholders and a detailed response to issues is provided. Stakeholder engagement will continue through the construction and operation of the Proposal and reported through revisions of Environmental Management Plans. Stakeholder consultation will continue to be monitored and reported following revision of the FVMMP as the document is finalised and implemented.

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Appendices

Appendix A Carnaby's Black-Cockatoo Monitoring Program

A.1 Background

Habitat used for the survival of Carnaby's Black-Cockatoo (*Zanda latirostris*), reflects the distinct, but equally important, behavioural components during the breeding and non-breeding seasons. The long-term survival of a robust population of Carnaby's Black-Cockatoos depends on the availability of suitable woodland breeding habitat and tree hollows, and foraging habitat capable of providing enough food to sustain the population. More recently, night roost sites have been recognised as important components of the non-breeding habitat (DPaW 2013).

Critical breeding and foraging habitat for Carnaby's Black-Cockatoo (*Zanda latirostris*) can be summarised as (DPaW 2013):

- The Eucalypt woodlands that provide nest hollows used for breeding, together with nearby vegetation that provides feeding, roosting and watering habitat that supports successful breeding (within 12 km).
- Woodland sites known to have supported breeding in the past and which could be used in the future, provided adequate nearby food and/or water resources are available or are re-established.
- In the non-breeding season, the vegetation that provides food resources as well as the sites for nearby watering and night roosting that enable the cockatoos to effectively utilise the available food resources.

A.2 Objectives and Duration of Monitoring

The objective of the Carnaby's Black-Cockatoo Monitoring Program is to monitor and measure the success of management provisions (outcome-and objective-based) outlined in the TFMMP. To address this objective the following will be undertaken:

- Monitor changes in population activity within the Wurgubup Reserves over time in comparison to environmental factors or potential impacts from the Proposal.
- Monitor the presence and behaviors of individuals in the Wurgubup Reserves in response to resources, environmental factors or potential indirect impacts from the Proposal.
- Evaluate the results of the monitoring against trigger and threshold criteria, and management measures outlined in the TFMMP, to demonstrate Carnaby's Black-Cockatoo populations are maintained during the life of the Proposal.

The Carnaby's Black-Cockatoo Monitoring Program is proposed to be completed over a 10-year timeframe to align with the estimated life of the Proposal.

A.3 Overview and Monitoring

A.3.1 Timing

Surveys are to be carried out annually in spring, ideally during September to capture peak breeding season (DBCA 2017d). Daily surveys to be conducted during peak activity periods (early morning or late afternoon).

A.3.2 Monitoring Sites

A.3.2.1 Potential Impact site

The two State reserves adjacent to the proposal integrating both Wurgabup Rifle Range Reserve and Woorgabup Nature Reserve (Wurgubup Reserves).

A.3.2.2 Reference Site

Suggested reference sites include:

- Badgebup Reserve located Southwest of the KGP
- Kwobrup Reserve located Southeast of the KGP

A.3.3 Baseline Survey

- Systematically select 300 trees from the 549 suitable breeding trees across both the Wurgubup Reserves.
- Ensure spatial distribution across the Eucalypt woodland to capture habitat variability.
- Conduct baseline surveying in accordance with the methods in the Visual Health Assessment (FVMMP – Appendix A).

A.3.4 Methods

A.3.4.1 Observational monitoring

With the use of Cameras and Observational skills, assess the 300 selected trees for utilisation and occupancy of Carnaby's Black-Cockatoos. Observations can be recorded adhering to the following metrics:

- Date and time.
- Presence of Carnaby's Black-Cockatoos (Present in flight / Present in monitoring tree / Absent)
    - If present, record the count of Carnaby's Black-Cockatoos.
- Observed behaviour (Foraging, Breeding/Nesting, In-flight, Injured, Other).
- Sexual maturity (adult male/female, juvenile).
- Photographic evidence using cameras (motion-triggered or handheld).

A.3.4.2 Tree Health Assessment

The on-ground tree health assessment is to be conducted in accordance with the Vegetation Health Monitoring Program, Appendix A of the Ausgold Katanning Gold Project – Flora and Vegetation Monitoring and Management Plan (FVMMP). This assessment is to be conducted during the Spring sampling period (September) of the Visual Health Assessment component of the FVMMP to survey during peak Cockatoo breeding season.

A.3.5 Reporting

Results will be analysed and reported on within annual survey reports to monitor presence, behaviour and tree health.

A.3.6 Personnel and Licensing Requirements

The Carnaby's Black-Cockatoo monitoring program will be undertaken by a suitably qualified zoologist. Current licence requirements comprise a DBCA Fauna taking (scientific or other purposes) licence to take or disturb native fauna and a Section 40 Authorisation, to take or disturb threatened species. These licenses will be obtained prior to commencement of monitoring.

Appendix B Red-tailed Phascogale Monitoring Program

B.1 Background

The Red-tailed Phascogale (*Phascogale calura*) is a small arboreal, carnivorous marsupial. It has a distinctive tail that grows up to 14.5 cm long with half coloured reddish-brown, and the other half coloured black with brush-like hairs. This species is classified as Vulnerable under the EPBC Act and conservation dependent under the BC Act The red-tailed phascogale is known to prefer habitat consisting of dense, taller climax vegetation communities of Eucalyptus wandoo, Mallee and heath where they nest. Where preferred nesting habitat is not available, they have been found to nest in artificial refuges and other vegetation types at lower densities.

Its distribution has increasingly become patchy and fragmentated due to agricultural activities extensive clearing activities. In addition to habitat loss and fragmentation, another severe threatening factor for this species is predation by feral cats (*Felis catus*). Predation by foxes is also a threat, however as a lower consequence rating of Mild – Moderate (TSSC 2016).

B.2 Objectives and Duration of Monitoring

The objective of the Red-tailed Phascogale Monitoring Program is to monitor and measure the success of management provisions (outcome-and objective-based) outlined in the TFMMP. To address this objective the following will be undertaken:

- Monitor changes in population activity over time in comparison to environmental factors or potential impacts from the Proposal.
- Monitor the movement of individuals in the landscape in response to resources, environmental factors or potential indirect impacts from the Proposal.
- Evaluate the results of the monitoring against trigger and threshold criteria, and management measures outlined in the TFMMP, to demonstrate Red-tailed Phascogale populations are maintained during the life of the Proposal.
- Monitor the use of artificial nest boxes, which are to be installed as part of the approved OMP. Monitoring will commence two years post-installation to allow time for phascogales to locate and begin using the boxes. Nest boxes will be inspected annually between June and July, aligning with the species' activity and breeding period.

The Red-tailed Phascogale Monitoring Program is proposed to be completed over a 10-year timeframe to align with the estimated life of the Proposal.

B.3 Overview and Monitoring

The Red-tailed Phascogale monitoring program is to assess:

- presence (not abundance) - to monitor species survival, see feral predator monitoring program (**Appendix C**).
- Habitat health

B.3.1 Overview and Timing

To monitor presence, the following is suggested:

- Conduct monitoring in April or thereabouts (when males are still alive, and before females' den).
- Monitoring period conducted for the duration of one month maximum (lures would need to be replaced after this time).
- Use non-reward bait cannisters.

B.3.2 Monitoring Sites

The following methodology is suggested to set up the monitoring sites:

- Base of 'Suitable Breeding Trees' (trees with hollows)
- Down-facing cameras located at base of Sheoak (*Allocasuarina* sp.) and old Eucalyptus (Wandoo and York Gum) trees.
- 10-15 cameras across the total study area, 200 m apart.

B.3.3 Methods

B.3.3.1 Presence Assessment

If Red-tailed Phascogale roost locations are confirmed, visit at sunrise on at least two days and at sunset on at least two days during the monitoring period. The following data needs to be recorded on each visit:

- Presence or absence of Red-tailed Phascogale utilising the roost.
- Count of individuals observed.
- Date and time.
- Foraging or breeding behaviour observed.
- Results will be analysed and reported on within annual survey reports to monitor roosting success.

Camera footage is to be reviewed after each sampling period and record observations to identify presence.

B.3.3.2 Tree Health Assessment

The on-ground tree health assessment is to be conducted in accordance with the Vegetation Health Monitoring Program, **Appendix A** of the Ausgold Katanning Gold Project - FVMMP. This assessment is to be conducted during the Winter sampling period (July) of the Visual Health Assessment component of the FVMMP, to survey during peak phascogale breeding season.

B.3.4 Personnel and Licensing Requirements

The Red-tailed Phascogale monitoring program will be undertaken by a suitably qualified zoologist. Current licence requirements comprise a DBCA Fauna taking (scientific or other purposes) licence to take or disturb native fauna and a Section 40 Authorisation, to take or disturb threatened species. These licenses will be obtained prior to commencement of monitoring.

Appendix C Feral Predator Monitoring Program

C.1 Background

Feral and pest fauna, specifically feral cats and foxes have been implicated in the significant decline of multiple species of vertebrate fauna in Australia (DoE 2015b). Feral predators have direct negative impacts on native fauna through predation as well as indirect effects on native predators through competition for dietary resources. Predation by feral predators is listed as a key threatening process for several significant species that have been recorded in the vicinity of the Proposal including:

- Red-tailed Phascogale (*Phascogale calura*, Vu, CD)
- Carnaby's Black-Cockatoos (*Zanda latirostris,* CE)

Feral predators, particularly foxes are already known to occur within the vicinity of the Proposal. However, the operation of the Proposal could attract and lead to an increased abundance of feral predators in the vicinity of the Proposal through an increase of available foraging resources and increased access to these resources via roads (Raiter et al. 2018). Foraging resources may include access to putrescible wastes and landfill, artificial freshwater sources, and access to carcasses from road strike. The TFMMP provisions appropriate management and mitigation measures to reduce the potential for any increase in feral predator numbers as a result of the Proposal e.g. fencing of the landfill. However, given that cats and foxes may utilise linear corridors such as the haul road for dispersal, and the sensitivity of the area for significant fauna, Ausgold has taken the conservative approach of implementing feral predator control to further reduce the risk of feral predators to significant species.

C.1.1 Objectives and Duration of Monitoring and Control

The Feral Predator Monitoring and Control Program is comprised of the Feral Predator Monitoring Program and the Feral Predator Control Program. These programs have separate but related objectives. The objective of the Feral Predator Monitoring Program is to monitor and measure the success of management provisions (outcome- and objective-based) outlined in the TFMMP. To address this objective the following will be undertaken:

- Monitor changes in detection of feral predators over time in comparison to environmental factors or potential impacts from the Proposal.
- Monitor the movement of individuals in the landscape in response to resources, environmental factors or potential impacts from the Proposal.
- Evaluate the results of the monitoring against trigger and threshold criteria, and management measures outlined in the TFMMP and Feral Predator Control Program (**Section C.5**), to demonstrate that feral predator populations are not increasing because of the Proposal during the life of the Proposal.

The objective of the Feral Predator Control Program is to ensure there is no increase in feral predator numbers attributed to the Proposal with the aim to reduce the number of feral predators in proximity to key significant species populations in the vicinity of the Proposal.

To address this objective the following will be undertaken:

- Feral Predator Control Program is to commence when clearing is undertaken.
- Ongoing annual monitoring and control of feral predators in the vicinity of the Proposal.
- Targeted approach for feral predator control in proximity to known significant fauna populations and key infrastructure areas known to attract feral predators (e.g. waste landfill).

The Feral Predator Monitoring and Control Program is proposed to be completed over a 10-year timeframe to align with the estimated life of the Proposal.

C.2 Feral Predator Monitoring Program

C.2.1 Overview and Timing

The approach for the Feral Predator Monitoring Program is summarised in **Table C-12-1** which also shows the relevant trigger and threshold criteria (outcome-based) and objective-based management provisions. Survey design should follow a before-after-control-impact (BACI) design. The BACI design is considered optimal to isolate potential effects of the Proposal on feral predator activity before and after construction for the Proposal and feral predator control has commenced. Prior to clearing being undertaken for the Proposal, adequate baseline monitoring data on feral predators (prior to potential impacts), will be collected for a two-year period. The Feral Predator Monitoring Program will be undertaken on a half-yearly basis.

It is anticipated that annual population monitoring of introduced fauna will consist of the following:

- Deployment of cameras to establish baseline numbers. The Proponent proposes to establish baseline feral animal abundance over a period prior to and during early construction, primarily within bushland areas within the DE.
- Quantitative and systematic recording of introduced animals undertaken through the deployment of cameras on star pickets at permanent locations within the DE of the Proposal Area will be identified as follows:
    - Monitoring for feral animal presence will be undertaken on a half-yearly basis for a month at a time.
    - Feral animal monitoring will be undertaken at the Wurgubup State Reserves (potentially indirectly impacted by the Proposal) and reference locations (not impacted by the Proposal). Areas with the potential to attract feral animals such as waste storage facilities and key infrastructure areas will be a focus for monitoring.
    - Opportunistic visual observations whereby site personnel and contractors will be required to record sightings of feral animals observed at the site, including date, time, location and species. Those observations will be considered in relation to the annual monitoring results, to inform management of site activities.

The methods outlined follow standard survey techniques recommended for detection of feral cats and feral foxes including those presented in Pest animal monitoring techniques (PestSmart 2021) and A guide to surveying red foxes and feral cats in Australia (Hradsky et al. 2021). Monitoring will be conducted in accordance with relevant guidance for terrestrial fauna surveys (EPA 2016b; 2020).

Table C-12-1: Indicative Feral Predator Monitoring Program Summary.

Personnel	Timing	Number of Monitoring Sites	Survey Effort	Monitoring Parameters	Outcome-based Management Objectives	Trigger Criteria	Threshold Criteria
• Qualified zoologists (establishment of the program) and KGP environmental staff	• Cameras to be deployed and visited half-yearly	• Two potential impact sites (one in each of the Wurgubup State reserves) • Two reference sites (one in each of the Badgebup and Kwobrup reserves)	• 5 to 10 non-baited, forward facing motion cameras per impact/reference site spaced approximately 500m apart.	• Detection rate of feral predators	• No Proposal- related increase in feral predators from baseline levels during the life of the Proposal. • No adverse impacts to Red-tailed Phascogale as a result of Proposal-related increase in feral animal abundance relative to the reference sites (Badgebup and Kwobrup reserves)	• Total remote camera records of feral predator (fox, cat) are >10 [7] at a single feral predator monitoring location (impact sites) during a single monitoring event[8].	• A statistically significant increase[7] in the occurrence of feral predator numbers recorded at impact sites comparative to baseline levels and relative to reference sites over two consecutive monitoring events[8]

[7] *Trigger to be reviewed and revised as appropriate (a percentage) of total baseline records following the collation of baseline data (2 years).*

[8] *Following implementation of feral predator control commencing during clearing.*

C.3 Monitoring Sites

Within the Feral Predator Monitoring Program, impact sites and reference sites are defined in accordance with *How to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans: Instructions* (EPA 2024), as follows:

- **Impact Sites**: Sites where native species including Red-tailed Phascogale and Carnaby's Black-Cockatoo have been previously recorded and where suitable habitat is known to occur but intersected by the Development Envelope of the Proposal and therefore where significant species may be subjected to ongoing predation pressure.
- **Reference Sites**: Sites where native species including Red-tailed Phascogale and Carnaby's Black-Cockatoo have been previously recorded and where suitable habitat is known/likely to occur, but at locations that are likely to experience similar natural environmental conditions as the impact sites which are being managed for potential impacts of the Proposal. These reference sites are in areas that will not be impacted by Katanning Gold Project.

Feral predator monitoring will be undertaken at two potentially impacted sites (within the Wurgubup State Reserves) and two reference sites, focusing on areas known to support Red-tailed Phascogales that are particularly vulnerable to predation (See **Figure 3-1** for locations of Red-Tailed Phascogale records to guide locations of monitoring sites).

C.4 Methods

The Feral Predator Monitoring Program will use motion cameras to detect presence of feral predators at impact sites and reference sites. This method is suitable for monitoring long-term population trends through calculation of an average detection rate (the number of feral predators detected on each camera each quarter divided by the total camera trap nights) (Moseby et al. 2021). At each impact and reference site, 10 motion cameras will be deployed approximately every 500 m on star pickets at permanent locations. Additionally, five motion cameras will be deployed across key infrastructure areas such as the waste landfill to assess the effectiveness of feral predator mitigation and exclusion measures. Motion cameras will be powered with long lasting lithium batteries and visited quarterly to exchange SD cards and batteries. Motion camera data will be analysed quarterly by a suitably qualified zoologist to measure changes in the feral predator detection rate over time. Additionally, analysis will include monitoring for changes in feral rabbit detections over time to detect any potential changes as a result of the feral predator control program.

In addition, any secondary signs of feral predators (e.g. scats, tracks) observed during quarterly visits to download data from remote cameras will be recorded. Any opportunistic visual observations of feral predators by site personnel or contractors will be recorded including date, time, location, and species in accordance with the TFMMP. Secondary evidence and opportunistic sightings of feral predators (e.g. scats, tracks) will be reviewed in context of the feral Predator Monitoring Program and to inform the Feral Predator Control Program.

C.4.1 Survey Personnel and Licensing Requirements

The Feral Predator Monitoring Program will be undertaken by suitably qualified zoologists trained in the methods described in **Section C.5.4** site personnel, and/or knowledgeable. The participation of TO ranger groups in the Monitoring Program will also provide for meaningful engagement and contribute to two-way knowledge sharing for feral predator detection and eradication. There are currently no license requirements for deploying unbaited cameras for feral predator monitoring.

C.4.2 Data and Statistical Analyses

Statistical tests will be used to interrogate the data collected from feral predator monitoring as appropriate, for example unpaired t-tests, ANOVA or linear models. Final selection of statistical tests will depend on the qualities of the data collected. Data analysis will be undertaken to measure any significant changes in the feral predator detection rate (e.g. number of independent detections/ numbers of camera trap nights) observed at the impact sites over time, relative to baseline data and reference sites. This will inform whether trigger or threshold criteria are being exceeded, and the effectiveness of management actions outlined within the TFMMP.

C.4.3 Reporting

A standalone technical report will be submitted to Ausgold at the conclusion of each annual monitoring period, presenting the key findings of the Feral Predator Monitoring Program. The report will include assessment against relevant management provisions, including outcome- and objective-based criteria, and specifically trigger and threshold criteria presented in **Table 5-1** of the TFMMP. In the event that trigger, or threshold criteria are exceeded, these will be reported in accordance with **Section 7.2** of the TFMMP and contingency actions will be provided for consideration. The technical report will be summarised within or appended to the Annual Environmental Report (AER) and the Annual Compliance Assessment Report (ACAR), to be submitted to the DWER, DCCEEW, and EPA, respectively, aligning with **Section 7.1** of the TFMMP.

C.4.3.1 Reporting Considerations

There are several considerations associated with this Feral Predator Monitoring Program, which will be considered when interrogating the data recorded and for interpretation and reporting:

- The quality of habitat may naturally change over time due to environmental factors unrelated to the Proposal e.g., feral predators are attracted to recently burnt areas due to improved foraging opportunities (McGregor et al. 2016). The impact of fires (unrelated to the Proposal) is likely to affect the occurrence/distribution of feral predator change over time.
- The feral predator detection rate is likely to decrease following baseline monitoring once feral predator control is undertaken as per the Feral Predator Control Program.

C.5 Feral Predator Control Program

C.5.1 Overview and Timing

The Feral Predator Control Program will be informed by the findings of the Feral Predator Monitoring Program and undertaken in accordance with the *Threat abatement plan for predation by feral cats* (DoE 2015b) and the *Threat abatement plan for predation by the European Red Fox* (DEWHA 2008). Specific control methods and control sites will be selected following collection of two years of baseline monitoring data, however proposed control sites and methods are presented in **Sections C.5.2** and **C.5.3**.

Feral predator control will be undertaken according to the following:

- Reducing cat populations through resource modification by the control of non-native prey such as the rabbit. Resource modification should be undertaken to coincide with direct cat population control methods to minimise the hazards and effects of hyper-predation toward native animals (Commonwealth of Australia 2015).
- Rabbit controls will be carried out using 1080 baiting and follow-up techniques of warren fumigation techniques to control repopulation rates. As suggested in the Threat Abatement Plan for predation by feral cats (DoE 2015b).Rabbit control should coincide with 1080 baiting to target cats. Carrying out both rabbit and cat control methods at the same time minimise the hazards and effects of hyper predation toward native animals.
- In substantive remanent patches of vegetation that support foxes, dried meat baits containing 1080 will be dispersed within eight weeks of vegetation clearing commencing. If foxes and cats persist after the baiting program, then additional baiting, night shooting and or a trapping program will be implemented.
- Annually as part of the annual Feral Predator Control Program.
- In response to a trigger or threshold exceedance as per the TFMMP, where required.

C.5.2 Sites of Predator Control

The feral predator control will be undertaken within the Wurgubup Reserves, with a focus on:

- Areas where significant native species including Red-tailed Phascogales and Carnaby's Black-Cockatoo have been recorded in proximity to the Proposal Area and within the DE.
- Areas generally along the proposed haul road alignments as feral predators are known to utilise linear corridors (Raiter et al. 2018).
- Key infrastructure areas (e.g., waste landfills).

C.5.3 Methods

Appropriate feral predator control methods will be selected based on predator density and control site characteristics. Appropriateness of various control methods as per McLeod and Harris (2020), Johnston and Algar (2020), DEWNR (2014), and DBCA (2017a), and how they may be ultilised in the Feral Predator Control Program are presented in **Table C-12-2**.

Table C-12-2: Summary of advantages, disadvantages and potential uses of feral animal control methods.

Control Method	Advantages	Disadvantages	Potential Use in Feral Predator Control Programd
Grooming traps (e.g. Felixers)	• Selective and target specific. • Sentinel control tool capable of removing multiple feral cats.	• Must be secured to ensure the poison (1080 cartridges) is inaccessible. • Higher cost per unit. • Limited feral predator population reduction across broadscale areas.	• Felixers are an appropriate control method to be deployed at areas where Red-tailed Phascogale have been recorded in proximity to the Proposal and at areas known to attract feral predators such as key infrastructure areas (e.g. waste landfills). • Deployment of Felixers will create a 'sink' for feral cats in the vicinity of the Proposal and reduce overall predation pressure on native fauna in the surrounding area. • Given the low density of feral cats expected at control areas, the potential control area is approximately one trap per 40km^2 of Red-tailed Phascogale habitat at the known populations. • DBCA requires Felixers to be deployed for a 6-week non-toxic trial period before they can become operational. Once operational Felixers must be visited quarterly to load 1080 cartridges and download SD cards.
Curiosity® Baiting para-aminopropiophenone (PAPP)	• Minimises hazard exposure to non-target species through exploiting differences in the dentition and feeding behaviours of cats and native wildlife. • PAPP is suitable for control of foxes and cats • Hazard associated from secondary poisoning is virtually nil due to no accumulation of PAPP in the tissue of the poisoned animal.	• Cannot be used for Ariel baiting programmes in WA, • Not suitable for the control of rabbits • Can have reduced efficacy when alternative prey resources are abundant • Native animals have a much lower tolerance to PAPP compared to 1080. Should be used in areas where Feral animals are active, and native fauna are not present or at the very least, not active. • Cost per unit	• Targeted baiting along the haul road may be appropriate in specific impact areas, however further consultation with DBCA is required. Any potential baiting program would involve an evaluation of effectiveness and implications through comparisons with baseline data and unbaited reference sites. • Should a baiting program be implemented appropriate measures such as signage and ongoing communication and consultation with DBCA regarding the timing, location and extent of the baiting program being undertaken is required. • Baiting should coincide with fox and rabbit control methods.
1080 Baiting (e.g. Eradicat)	• Can be applied on a broadscale by aircraft.	• Can be hazardous to domestic animals and some native wildlife species.	• Targeted baiting along the haul road may be appropriate in specific impact areas, however further consultation with DBCA is required. Any potential baiting program would

	• Can be applied via a targeted approach along linear corridors by vehicle. • Low-cost relative to the area to be treated. • Most native animals have a degree of tolerance to 1080	• Can have reduced efficacy when alternative prey resources are abundant. • Health and safety considerations: Native fauna (e.g. varanids) are known to consume baits.	involve an evaluation of effectiveness and implications through comparisons with baseline data and unbaited reference sites. • Should a baiting program be implemented appropriate measures such as signage and ongoing communication and consultation with DBCA regarding the timing, location and extent of the baiting program being undertaken is required.
1080 Baiting (Rabbit Variation)	• Can be applied on a broadscale by aircraft. • Can be applied via a targeted approach along linear corridors by vehicle. • Low-cost relative to the area to be treated.	• Can be hazardous to domestic animals and some native wildlife species. • Can have reduced efficacy when alternative prey resources are abundant. • Health and safety considerations: Native fauna (e.g. varanids) are known to consume baits.	• Rabbits make up a significant proportion of feral cat diets. Resource control of rabbits is expected and estimated to reduce cat populations (Dorph *et al.* 2024) • Baiting for rabbits with 1080 should be carried out to coincide with cat control methods and follow up techniques such as warren fumigation ((DEE 2016)
Warren Fumigation	• Cost effective method for low numbers.	• Labour-intensive • Rabbits can easily recolonise warrens as the structure remains intact. • Aluminium phosphide is a scheduled 7 poison and is a danger to other species and can harm the person laying the bait.	• Before carrying out warren fumigation, confirm the warren is being utilised by rabbits (via camera) • This method should be carried out as a follow-up technique post baiting methods to reduce harbour and slow-recolonisation.
Trapping	• Can be used in areas where baiting is not appropriate. • Can be targeted and will confirm removal of specific individual feral predators.	• A proportion of feral animals will not enter traps. • Difficult and increased cost to implement over a larger area. • Ethical considerations for non-target fauna species.	• Trapping may be an appropriate method in proximity to infrastructure areas (e.g. waste landfill).
Shooting	• Selective and target specific.	• High level technical ability required. • Time consuming • Health and safety considerations relating to use of firearms.	• To be used for targeted control for cats and foxes if populations persist after baiting. • To be carried out with DBCA approval.

C.5.4 Survey Personnel and Licencing Requirements

Feral predator control will be undertaken by specialist contractors in consultation with DBCA. Depending on the method of feral predator control, different licenses and permits will be required. This may include, but is not limited to:

- Department of Health 1080 landholder application and permit.
- DPIRD Wildlife Animal Ethics Committee animal ethics permit.
- DBCA Fauna License approval.
- DBCA 1080 risk assessment and non-toxic trial (Grooming traps).

Specific permits for substances used to control animal populations are also likely to be required depending on the substance being used for control.

C.5.5 Measurable outcomes

The success of the Feral Predator Control Program will be measured by changes (decrease) in feral predator presence recorded over time as per the Feral Predator Monitoring Program. It is anticipated that the Feral Predator Control Program will reduce predation pressure of foxes and feral cats within proximity to the Proposal and it is expected to see an increase in the abundance of Red-tailed Phascogales.

C.5.6 Reporting

The specialist contractors undertaking feral and pest animal reduction will submit a technical report to Ausgold at the conclusion of each control period. This report will quantify the outcomes of feral predator control undertaken. The technical report will be summarised within or appended to the AER and the Annual Compliance Assessment Report (ACAR), to be submitted to the DWER, DCCEEW, and EPA, respectively, aligning with **Section 7.1** of the TFMMP.

C.6 Adaptive Management and Review

Results obtained from the Feral Predator Monitoring Program may inform adaptive management measures for the TFMMP and guide the Feral Predator Control Program. The review of data and information gathered during monitoring may increase understanding of the species or the environment in a regional context. This may inform management and mitigation measures to review and refine the Feral Predator Monitoring and Control Program for compliance and against regulatory conditions.

A review of this Feral Predator Monitoring and Control Program will be undertaken every five years, in response to adaptive management, as new technology becomes available, or as required by to achieve the environmental outcomes associated with the TFMMP. Any revisions of the Feral Predator Monitoring and Control Program will be submitted to the relevant State (DWER, DBCA) and Commonwealth Government (DCCEEW) for approval, or in accordance with relevant regulatory conditions or requirements.

Section 2

Stantec

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Stantec Australia Pty Ltd
Ground Floor, 226 Adelaide Terrace
Perth WA 6000
AUSTRALIA
ABN 17 007 820 322
stantec.com