2024 MT HOLLAND CHUDITCH MONITORING

Covalent Lithium

ecoscape

Revision	Author	QA Reviewer	Approved	Date
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ACKNOWLEDGEMENTS

Ecoscape would like to acknowledge the Covalent staff for their assistance with the project.

SUMMARY

Ecoscape was engaged by Covalent Lithium to provide the following services as part of the annual fauna monitoring:

- undertake and complete Chuditch (*Dasyurus geoffroii*) monitoring, specifically:
  - establish and monitor three control sites more than 5 kilometres outside of the development envelope
  - establish and monitor three impact sites within the development envelope
- record all Chuditch captures in a monitoring database including morphometrics; location of capture; health status and breeding status (e.g. number of pouch young; lactation)
- undertake monitoring within the Chuditch breeding season (May to July).

The results of the 2024 monitoring has provided data that can be used to compare future monitoring results for Covalent Lithium's Earl Grey Lithium Project (EGLP) site:

- no Chuditch were captured or recorded during the 2024 monitoring period
- Feral Cats were only recorded at the impact site during the 2024 monitoring period.

The 2024 Chuditch monitoring was the sixth annual monitoring survey undertaken during the Chuditch breeding season. Ecoscape recommends that ongoing monitoring of the Chuditch population, within and outside of the development envelope, should continue in 2025.

ACRONYMS AND ABBREVIATIONS

Table 1: Acronyms and abbreviations

Acronyms	
BACI	before-after-control-impact
BC Act	Western Australian *Biodiversity Conservation Act 2016*
BoM	Bureau of Meteorology
DBCA	Western Australian Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DE	Development Envelope
DEC	Western Australian Department of Environment and Conservation (2006-2013, now DBCA)
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts (2007-2010, now DCCEEW)
DSEWPaC	Commonwealth Department of Sustainability, Environment, Water, Population and Communities (2010-2013, now DCCEEW)
EN	Endangered (listed under Commonwealth EPBC Act and/or Western Australian BC Act)
Ecoscape	Ecoscape (Australia) Pty Ltd
EGLP	Earl Grey Lithium Project
EP Act	Western Australian *Environmental Protection Act 1986*
EPA	Western Australian Environmental Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
GDA 94	Geographic Datum of Australia 1994
GPS	Global Positioning System
GWW	Great Western Woodlands
ha	hectare/hectares
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for Conservation of Nature
km	kilometre/kilometres
m	metre/metres
MNES	Matters of National Environmental Significance
TFEMP	Terrestrial Fauna Environmental Management Plan
VU	Vulnerable

1 INTRODUCTION

1.1 PROJECT PURPOSE

Covalent Lithium Pty Ltd (Covalent) is developing the Earl Grey Lithium Project (EGLP) located at Mt Holland which includes the construction and operation of a fully integrated mine, concentrator and refinery in Western Australia. The project is centred on the Earl Grey hard-rock lithium deposit 105 km south of Southern Cross in Western Australia and approximately 500 km east of Perth. It is owned by a 50-50 joint venture (JV) between subsidiaries of Wesfarmers Pty Ltd (WES:ASX) and Sociedad Química y Minera de Chile S.A. (SQM: NYSE). Covalent is the manager for the JV and is responsible for the development and operation of the project (**Figure 1**).

The survey area includes the habitats of two conservation-listed fauna species: Malleefowl *(Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*). Both species are listed as vulnerable (VU) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Western Australian *Biodiversity Conservation Act 2016*, and are considered Matters of National Environmental Significance (MNES).

The purpose of the project is to continue Chuditch monitoring prior to, during, and post-construction of the mine and associated infrastructure, to determine Chuditch population density or abundance and determine their distribution in the local region.

1.1.1 PROJECT SCOPE

The project scope was to undertake a monitoring program for the Chuditch using a before-after-control-impact (BACI) design adapted to Chuditch ecology through consultation with the Department of Biodiversity Conservation and Attractions (DBCA).

Ecoscape was engaged to provide the following services for the project:

- undertake and complete Chuditch monitoring for 2024, specifically:
  - establish and monitor three control sites more than 5 kilometres (km) outside of the development envelope
  - establish and monitor three impact sites within the development envelope
- record all Chuditch captures in a monitoring database including morphometrics; location of capture; health status and breeding status (e.g. number of pouch young; lactation)
- undertake monitoring within the Chuditch breeding season (May to July).

1.2 SURVEY AREA

The survey area is in the Shire of Yilgarn in the Goldfields region of Western Australia, approximately 105 km south of Southern Cross. The Development Envelope (DE) is within the Great Western Woodlands (GWW) and is approximately 1,984 ha in extent (**Figure 1**). The GWW is a 16 million ha area extending from the wheatbelt to the edge of the deserts and is the largest intact area of Mediterranean Woodland on earth (DEC 2010). The GWW includes open Eucalypt woodlands (63%), Mallee Eucalypt woodlands, shrublands and grasslands. Less common habitats in the GWW include granite outcrops, banded ironstone formations, salt lakes and freshwater wetlands (Fox et al. 2016).

The DE is in the Southern Cross Subregion of the Coolgardie Bioregion of the Interim Biogeographic Regionalism for Australia (IBRA) classification system (Department of Agriculture Water and the Environment [DAWE] 2020). The dominant land-uses in this bioregion are Crown Reserves and Unallocated Crown Land (66.7%), grazing on native pastures (17%), conservation (11.5%) and dryland agriculture (2.3%) (Cowan 2001; Cowan et al. 2001). The greenstone hills, alluvial valleys and broad plains of calcareous earths support diverse Eucalypt woodlands. The uplands support Mallee woodlands and scrub-heaths on sandplains, gravelly sandplains and lateritic breakaways. Chains of salt lakes with dwarf shrublands of samphire occur in the valleys (Cowan et al. 2001).

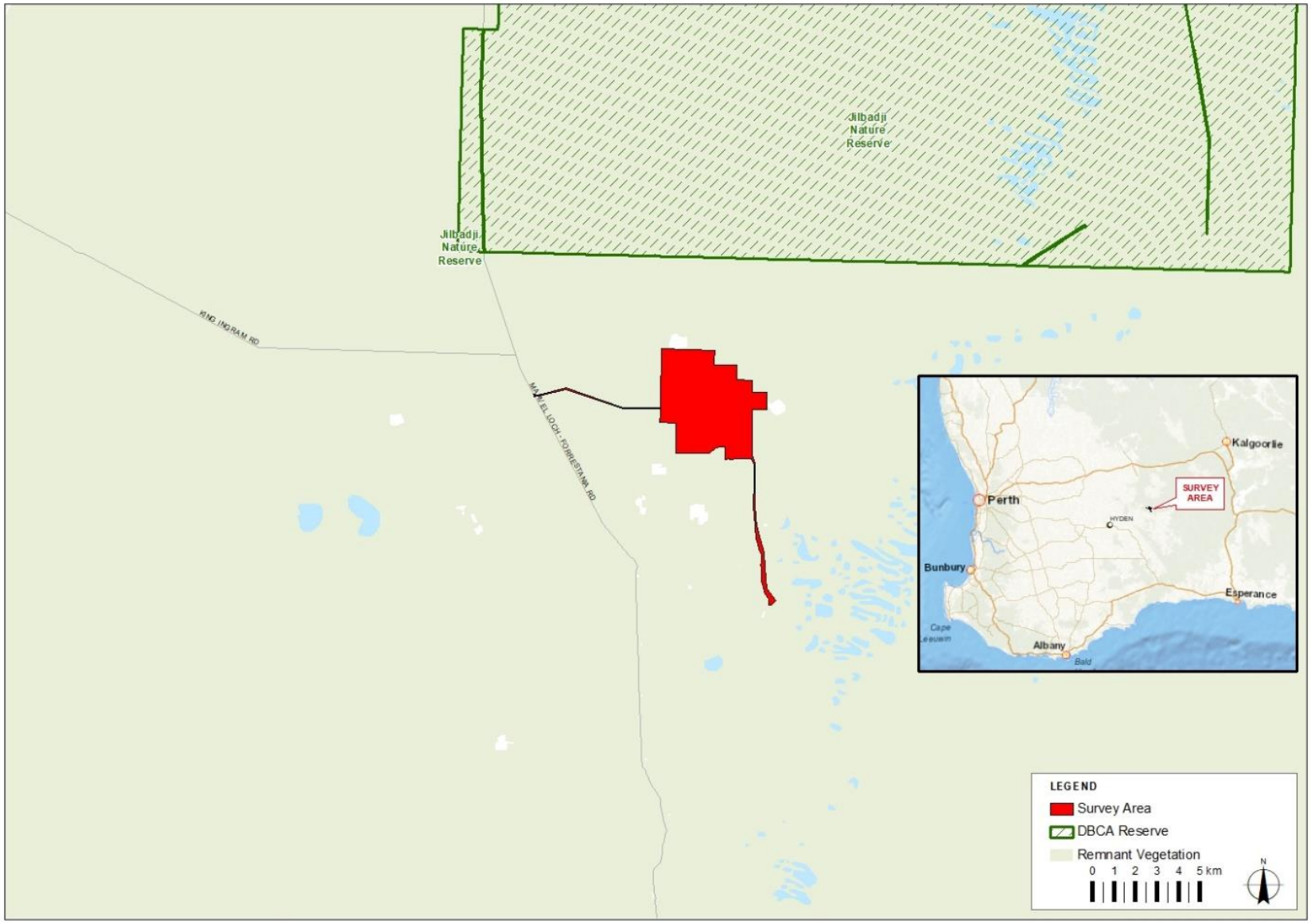

Figure 1: Project location

1.3 STATUTORY AND TECHNICAL FRAMEWORK

The requirements of the monitoring program were:

- to be conducted in accordance with current statutory and technical guidance:
  - Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
  - Department of Sustainability Environment Water Population and Communities (DSEWPaC) *Survey guidelines for Australia's threatened mammals* (2011)
  - Western Australian *Environmental Protection Act 1986* (EP Act)
  - Western Australian *Biodiversity Conservation Act 2016* (BC Act)
  - Environmental Protection Authority (EPA) *Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment* (2020)
  - Department of Environment Water Heritage and the Arts *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*. (DEWHA 2009b)
- follow DBCA Standard Operating Procedures:
  - cage traps for live capture of terrestrial vertebrates (DBCA 2023)
  - permanent marking of vertebrates using passive integrated transponder (DBCA 2023).

To be conducted by personnel complying with regulatory expectations in relation to holding the necessary DBCA Fauna License and years of experience.

1.3.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

At Commonwealth level, threatened taxa (flora and fauna) are protected under the EPBC Act, which lists species that are considered Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild (**Table 5**).

1.3.2 WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian EP Act was created to provide for an EPA that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement, and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information included in environmental assessments and provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

1.3.3 WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian BC Act provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia. It came into effect on 1 January 2019.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are highly protected and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable have been aligned with those in the EPBC Act and are detailed in **Table 6** in **Appendix 1**.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreements are also listed under the Act. These are known as specially protected species in the BC Act.

The most recent list of species of conservation interest were published in the Government Gazette on 06 October 2023 (Western Australian Government 2023a).

1.3.4 WESTERN AUSTRALIAN PRIORITY FAUNA

Conservation-listed fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, they have a greater level of significance than other native species. The categories covering Priority Fauna species are outlined in **Table 6** in **Appendix 1**.

1.3.5 DBCA WILDLIFE LICENCES

The field survey for the 2024 Chuditch monitoring was undertaken by Ecoscape Senior Ecologist Louisa Carlsson and Graduate Zoologist Dakota Scrimshaw under DBCA Wildlife Licensing Fauna License No. BA27000085-4 and Threatened Fauna Authority TFA 2020-0070-2.

1.3.6 COVALENT ENVIRONMENTAL APPROVAL CONDITIONS

Annual population monitoring of Chuditch is required by Covalent's EGLP approval conditions as outlined in Ministerial Statement (MS) 1199 and more detailed in the EGLP Terrestrial Fauna Environmental Management Plan (TFEMP) (Covalent 2022).

MS 1199 relating to Chuditch are as follows:

- Condition 3-1 (2): no direct or indirect adverse impacts to Malleefowl and Chuditch within the DE:
  - trigger criteria: a 25% decrease at impact sites in female abundance for two consecutive monitoring events
  - threshold criteria: 50% decrease at impact sites in female abundance for two-consecutive monitoring events.

2 METHODS

2.1 FIELD SURVEY

The field survey for the 2024 Chuditch monitoring program was undertaken by Ecoscape Senior Ecologist Louisa Carlsson and Graduate Zoologist Dakota Scrimshaw under DBCA Wildlife Licensing Fauna License No. BA27000085-4b and Threatened Species Authority TFA 2020-0070c_Turner_Authorisation. The survey was conducted during 9-16 July 2024.

2.2 SURVEY DESIGN

The design of the survey was developed in conjunction with DBCA expert Dr Keith Morris and included the following elements:

- monitoring to have a BACI design element to enable potential impacts to be measured:
  - two sites to be established: control site and impact site
  - control site to be more than 5 km from development envelope boundary and close to 2017 capture sites if possible
  - impact site to be within the development envelope and outside of the infrastructure footprint
- each site is to consist of three grids or transects of 10 traps each with traps to be spaced 200 m apart within a grid
- traps to be in operation for a minimum of 4 nights
- trap effort for each of the control and impact sites will be 10 traps x three grids x 4 nights = 120 trap nights.

This design has since been adapted to increase the success of capture, with the following changes:

- trapping grids extended to form transects to cover a greater area
- trapping effort increased to 6 nights, giving 120 trap nights per site
- the use of 20 trail cameras at the control site and 18 trail cameras at the impact site, at 500 m intervals between the cage traps, to help determine the presence/absence of Chuditch.

2.3 SITE SELECTION

The impact site was restricted to areas within the development envelope that were not planned to be cleared for the proposed mine and associated infrastructure and in areas where Chuditch were captured in 2017. Three areas were selected in 2019 by desktop investigation and have been replicated with minor amendments during the consecutive monitoring events.

The control site was also preselected by desktop investigation using the 2017 trapped Chuditch locations and placing a 5 km buffer around the development envelope. The location of the control site was relocated after the 2019 survey to be closer to the original 2017 transect, approximately 5 km north of the Jasmine mine pit. This control site has since been used for subsequent monitoring events.

2.4 DATA ANALYSIS

The intention is to analyse capture data to provide a population density estimate using a standard mark and recapture method as that performed by Rayner *et al*. (2011). Data collected in the field is entered into the MARK software (White 2014) that completes an iteration process to provide an estimate of population density based on information entered by the user.

3 RESULTS

3.1 MONITORING SITES

The field team revisited two monitoring sites to capture and record data on the target species Chuditch (*Dasyurus geoffroii*). Traps and cameras were set at the impact site (**Map 1**), within the development envelope, and at the control site (**Map 2**), approximately 5 km to the northwest of the impact site.

Monitoring sites were comprised of three lines of wire cage traps totalling 20 traps spaced at 500 m intervals at the impact site and one line of 20 traps spaced at 500 m intervals at the control site. In 2020, the trap layout was modified from a grid pattern, extending the traps out into longer lines to cover more area; this layout has been used since. Traps were set for a total of 6 nights giving a total of 120 trap nights/site. Wire cage traps were baited with raw chicken wings and camera traps were baited with Tuna oil. Traps were checked each morning within 3 hours of sunrise. Traps were covered with hessian bags to provide shelter. Trap locations are listed in **Table 7** and **Table 8** in **Appendix 2**.

As an additional effort to record Chuditch, trail cameras were placed at roughly 500 m intervals, with a camera located between each trap. Thirty-eight cameras were deployed in total, 18 at the impact site and 20 at the control site.

Habitat quality within the development envelope was considered to be in very good condition with the impact sites trapping area being located across all habitat types. Habitat quality at the control sites varied from very good to moderate; the 'moderate' sites were regenerating from fire disturbance approximately 5 years previous. Weather conditions were cold mornings and cool, cloudy days with early morning fog including one day of heavy rain and one morning of light rain.

3.2 CHUDITCH RECORDS

No Chuditch were recorded at the impact site for the entire monitoring event.

No Chuditch were recorded at the control site for the entire monitoring event.

3.2.1 OTHER SPECIES

The non-target species list is shown in **Table 2** and **Table 3**. The records of Mitchell's Hopping-mouse, Dunnart species and unidentified rodent species suggests a low abundance of predators such as Fox and Feral Cat. However, Cats (**Image 1**) were recorded on two trail cameras and one Cat was captured in a wire trap, all of which occurred at the impact site. Individuals that could not be confidently identified due to unclear photographs were labelled as unidentified and grouped into a broader taxonomic group.

Table 2: Non-targeted fauna species captured in traps

Species	Common name	Site ID	Trap ID	Date
Felis catus	Feral Cat	Impact	T7	15.07.2023

Table 3: Non-targeted fauna species recorded on trail cameras

Species	Common name
Cinclosoma clarum	Copper-backed Quail-thrush
Drymodes brunneopygia	Southern Scrub Robin
Felis catus	Feral Cat
Hylacola cauta	Shy Heathwren
Macroeca fascinans	Jacky Winter
Notomys mitchellii	Mitchell's Hopping-mouse
Platycercus icterotis	Western rosella
Sminthopsis gilberti	Gilbert's Dunnart

Image 1: Trail camera image of a cat.

3.3 DATA ANALYSIS

No capture-mark-recapture analysis was able to be performed as no Chuditch were recorded during the 2024 EGLP monitoring.

4 DISCUSSION AND RECOMMENDATIONS

4.1 CHUDITCH POPULATION

The results of the 2024 EGLP Chuditch monitoring has provided data that can be used to compare future monitoring events for the Covalent Lithium EGLP site. It was not possible to estimate a population abundance as no (female) Chuditch were recorded in the 12 months from July 2023 to July 2024.

Chuditch captures at the impact and control sites at Mt Holland have been low since monitoring began in 2019 (**Table 9** in **Appendix 3**). One female has been caught from the impact site in 2019, since then only males were caught or individuals of undetermined sex as they were captured on trail camera. Given the proximity to disturbance it is likely that female Chuditch prefer the surrounding areas for denning with Mt Holland used as dispersal habitat by young males. The spike in Chuditch captures (by trap) in 2023 may be associated with different bait and cages used by the feral animal control team.

The monitoring fell within the optimum period for monitoring Chuditch, aligning with the known mate-seeking and denning period (Rayner et al. 2011). Furthermore, although the increase in collection area by extending the distance between cage traps from 200 m to 500 m has not resulted in an increase in captures, 120 trap nights was considered to be an adequate number of trapping nights. The weather conditions were similar to those in previous years (Ecoscape 2021, 2022, 2023) and were unlikely to have influenced capture rates. There were no other known variables that may have affected the camera capture events. The lack of Chuditch recorded during 2024 is unlikely to be significant, and possibly stems from natural fluctuations in population density (Wayne et al. 2008).

The use of trail cameras to supplement cage trapping is useful as it provides presence/absence data for the Chuditch, and also inform the more general fauna assemblage, including predators, within and outside the DE.

4.2 RECOMMENDATIONS ADOPTED FROM 2023 CHUDITCH MONITORING

With the conclusion of the 2023 monitoring, the following recommendations were adopted for the 2024 Chuditch monitoring:

- continued monitoring, undertaken in July 2024
- increased the spacing of cage traps to 500 m to avoid oversampling
- continued use of trail cameras
- investigation of the use of alternate baits and/or attractants. Bait for cage traps was changed to raw chicken wings.

4.3 ASSESSMENT AGAINST TRIGGER/TRESHOLD CRITERIA

An assessment against the trigger and threshold criteria as outlines in the EGLP TFEMP (Covalent 2022) is outlined below (**Table 4**).

Table 4: Assessment against trigger/threshold criteria

Criteria	Response
Trigger Criteria	The trigger and threshold criteria were formulated to address Condition 3-1(2) of MS 1199 which states *No direct or indirect adverse impacts to Malleefowl and Chuditch within the Development Envelope*. The estimated local population within the DE (impact site) based on female Chuditch abundance is not measurable as no female Chuditch were captured during the current and previous year. Therefore, neither the trigger nor the threshold criteria have been breached.
A 25% decrease at impact sites in female abundance for two consecutive years	
Threshold Criteria	
A 50% decrease at impact sites in female abundance for two consecutive monitoring events	

4.4 RECOMMENDATIONS FOR 2025 MONITORING

Ecoscape recommends no changes to the 2025 Chuditch monitoring methodology.

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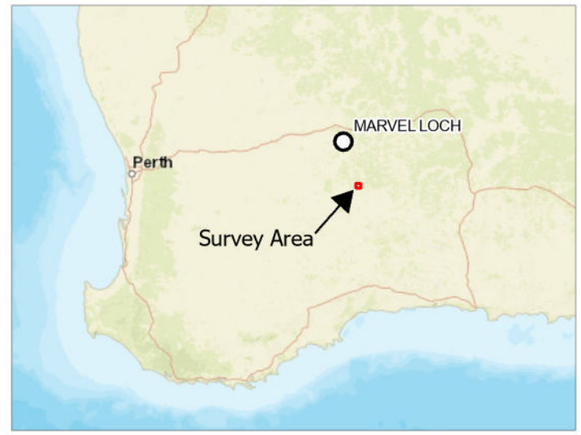
MAPS

LEGEND

- Impact Trap Sites
- Trail Camera Locations
- previous Chuditch sightings/ captures

DATA SOURCES:
SOURCE DATA: TRAP AND CAMERA DATA SITES (ECOSCAPE, 2024)
IMAGERY: ESRI WORLD IMAGERY (2024)
SERVICE LAYERS: WORLD IMAGERY: MAXAR
WORLD STREET MAP: ESRI, HERE, GARMIN, NGA, USGS



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IMPACT SITE
COVALENT FAUNA MONITORING 2024

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

SCALE: 1:28,000 @ A3

0 0.2 0.4 0.6 0.8 1 km

PROJECT NO: 4934-24

REV	AUTHOR	APPROVED	DATE
0	DS	LC	19/08/2024

MAP 01

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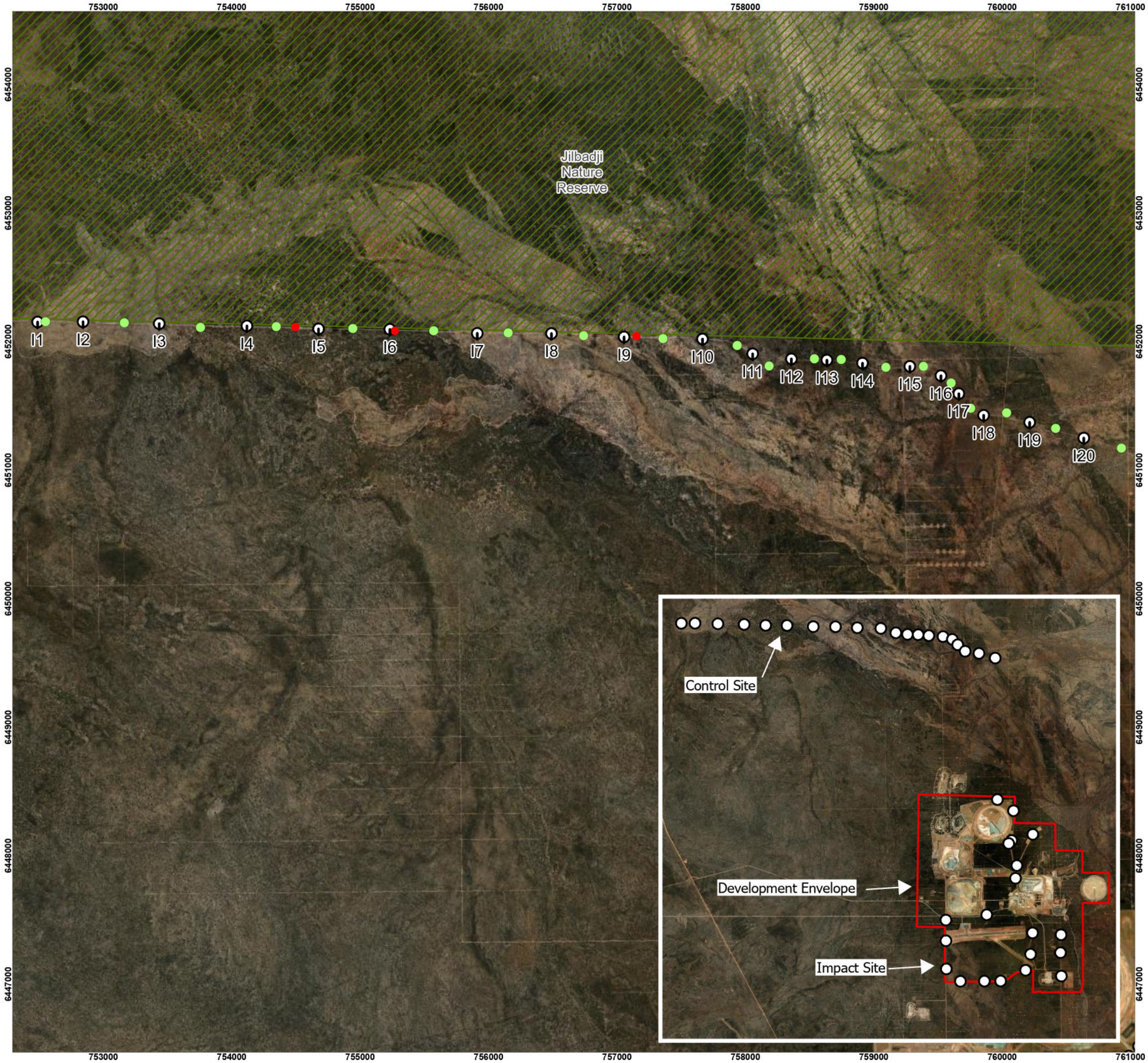
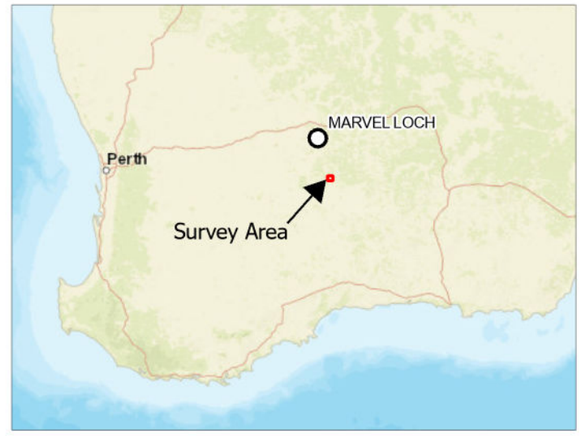


LEGEND

- Control Trap Sites
- Trail Camera Locations
- previous Chuditch sightings/ captures
- DBCA Legislated Lands and Waters (DBCA-011)

DATA SOURCES:
SOURCE DATA: TRAP AND CAMERA DATA SITES (ECOSCAPE, 2024)
IMAGERY: ESRI WORLD IMAGERY (2024)
SERVICE LAYERS: WORLD IMAGERY: EARTHSTAR GEOGRAPHICS
WORLD IMAGERY: MAXAR
WORLD STREET MAP: ESRI, HERE, GARMIN, NGA, USGS



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CONTROL SITE
COVALENT FAUNA MONITORING 2024

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

SCALE: 1:30,000 @ A3

0 0.5 1 1.5 km

PROJECT NO: 4934-24

REV	AUTHOR	APPROVED	DATE
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MAP 02

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APPENDIX 1 LEGISLATIVE CONTEXT, DEFINITIONS AND CRITERIA

COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act is a legal framework to protect and manage matters of national environmental significance (MNES) including important flora, fauna, ecological communities and heritage areas listed under the Act.

Threatened taxa (flora and fauna) are protected under the EPBC Act, which lists species and ecological communities that have been assessed as meeting the criteria to be listed as Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild, as detailed in **Table 5**.

Threatened Ecological Communities protected under the EPBC Act are categorised as Critically Endangered, Endangered or Vulnerable, also detailed in this table.

Migratory species subject to international agreements are also protected under the EPBC Act. The definition of a migratory species under the Act follows that prescribed by the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (DCCEEW 2023). The list of migratory species established under section 209 of the EPBC Act comprises:

- migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II);
- migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA); and
- native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Table 5: EPBC Act categories for flora, fauna and ecological communities

Category	Threatened species	Threatened Ecological Communities
Extinct	A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.	n/a
Extinct in the wild	A native species is eligible to be included in the extinct in the wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.	n/a
Critically Endangered (CR)	A native species is eligible to be included in the *critically endangered* category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *critically endangered* category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria
Endangered (EN)	A native species is eligible to be included in the *endangered* category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *endangered* category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

Category	Threatened species	Threatened Ecological Communities
Vulnerable (VU)	A native species is eligible to be included in the *vulnerable* category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *vulnerable* category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.
Conservation Dependent	A native species is eligible to be included in the conservation dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long-term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.	n/a

WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian EP Act was created to provide for an Environmental Protection Authority (the EPA) that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian BC Act provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are protected under this legislation and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable are detailed in **Table 6**; these categories align with those of the EPBC Act. Some State-listed threatened species and ecological communities are provided with additional protection as they are also listed under the Commonwealth EPBC Act (see **Table 5** for conservation status category descriptions).

The most recent Western Australian flora and fauna listings were published in the Government Gazette on 6 October 2023 (Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a) and ecological communities listings on 26 May 2023 (Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b).

PRIORITY-LISTED FLORA AND FAUNA

Flora are listed as PF where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to TF categories. Whilst PF are not specifically listed in the BC Act, some may qualify as being of special conservation interest and thereby have a greater level of protection than unlisted species.

There are three categories covering Western Australian-listed TF and four categories covering PF species which are outlined in **Table 6**. PF for Western Australia are regularly reviewed by the DBCA whenever new information becomes available, with species status altered or removed from the list when data indicates that they no longer meet these requirements.

Conservation-listed fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, these have a greater level of significance than other native species. The categories covering Priority Fauna species are outlined in **Table 6**.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, have a restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreement are also listed under the Act. These are known as 'specially protected species' in the BC Act.

Table 6: Conservation codes for Western Australian flora and fauna (DBCA 2020)

Conservation Codes for Western Australian Flora and Fauna
Threatened, Extinct and Specially Protected fauna or flora[1] are species[2] which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.
The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the *Biodiversity Conservation Act 2016*.
Categories of Threatened, Extinct and Specially Protected fauna and flora are:

Conservation Codes for Western Australian Flora and Fauna	
T	**Threatened species** Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act). **Threatened fauna** is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species. **Threatened flora** is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species. The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline (Number 1) and Ministerial Guideline (Number 2) that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria4, and is based on the national distribution of the species
CR	**Critically endangered species** Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as critically endangered undersection 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
EN	**Endangered species** Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
VU	**Vulnerable species** Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as vulnerable undersection 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.
Extinct species **Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.**	
EX	**Extinct species** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
EW	**Extinct in the wild species** Species that "*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25of the BC Act).
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
MI	**Migratory species** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.
CD	**Species of special conservation interest (conservation dependent)** Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act)
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18of the BC Act).

Conservation Codes for Western Australian Flora and Fauna	
P	**Priority species** Priority is not a listing category under the BC Act. All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land). Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened. Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
1	**Priority 1: Poorly-known species – known from few locations, none on conservation lands** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.
2	**Priority 2: Poorly-known species – known from few locations, some on conservation lands** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.
3	**Priority 3: Poorly-known species – known from several locations** Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.
4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

[1] The definition of flora includes algae, fungi and lichens.
[2] Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

APPENDIX 2 TRAPPING SITE DETAILS

Table 7: Locations of impact trap sites (GDA 94, Zone 50)

Site Type	Trap Number	Easting	Northing
Impact Sites	T1	760692.5206	6447581.731
	T2	761110.9044	6447290.906
	T3	761062.5497	6446518.55
	T4	760986.1256	6446441.497
	T5	761611.8846	6446678.444
	T6	761198.8606	6445870.403
	T7	761163.2436	6445539.283
	T8	760416.0497	6444592.978
	T9	759356.4134	6444455.276
	T10	759357.2609	6443918.48
	T11	759369.0411	6443188.535
	T12	759733.3473	6442868.615
	T13	760355.9038	6442872.321
	T14	760777.1096	6442875.833
	T15	761425.3342	6443153.699
	T16	761553.7461	6443570.656
	T17	761605.2657	6444122.761
	T18	762331.5326	6443610.644
	T19	762344.9382	6444075.063
	T20	762353.0542	6443002.941

Table 8: Locations of control trap sites (GDA 94, Zone 50)

Site Type	Trap Number	Easting	Northing
Control Sites	I1	752489.0571	6452153.164
	I2	752842.7972	6452155.158
	I3	753436.0142	6452140.423
	I4	754119.049	6452122.749
	I5	754676.8074	6452099.728
	I6	755231.8431	6452096.273
	I7	755912.9313	6452064.768
	I8	756490.4309	6452063.566
	I9	757056.0544	6452037.331
	I10	757666.9168	6452020.795
	I11	758057.5065	6451905.823
	I12	758359.1586	6451865.999
	I13	758635.6007	6451857.1
	I14	758913.0766	6451833.076
	I15	759281.5469	6451807.839
	I16	759523.7585	6451735.312
	I17	759662.9389	6451596.049
	I18	759856.0861	6451427.109
	I19	760214.6321	6451372.793
	I20	760636.4661	6451250.484

APPENDIX 3 CHUDITCH CAPTURE HISTORY

Table 9: Chuditch captures at Mt Holland

Year	Sex	Microchip Number	Trap Type	Site	Event
2024	-	(no captures)	All	All	Chuditch Monitoring 2024
2023	M	941000022848312	Trap	Control Site	Chuditch Monitoring 2023
	?	-	Camera	Control Site	Chuditch Monitoring 2023
	M	-	Trap & Camera	Impact Site	Feral Predator Control 2023 & Chuditch Monitoring 2023
	M	-	Trap	Impact Site	Feral Predator Control 2023
	M	-	Trap	Outside DE	Feral Predator Control 2023
2022	?		Camera	Control Site	Chuditch Monitoring 2022
2021	M		Trap	Impact Site	Fauna Pre-clearance Survey 2021
2020	F	941000022848316	Trap	Control Site	Chuditch Monitoring 2020
2019	F	941000019576584	Trap	Impact Site	Chuditch Monitoring 2019