



# Targeted Camera Trap Fauna Survey Collie Green Steel Recycling Mill

Prepared for Green Steel WA Pty Ltd  
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1	J.Waters	D. Brearley	20/11/23	D. Brearley	V.Lim A.Ho M.Güldenpfennig	24/11/23



ACN 095 837 120  
PO Box 227  
YALLINGUP WA 6282  
Telephone 0427339842  
E-mail: [info@onshoreenvironmental.com.au](mailto:info@onshoreenvironmental.com.au)



ACN 660 873 058  
Level 28/140 St Georges Terrace  
PERTH WA 6000  
0411 832 899  
[www.greensteelwa.com.au](http://www.greensteelwa.com.au)

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# EXECUTIVE SUMMARY

Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was commissioned by Green Steel WA Pty Ltd (GSWA) to undertake a targeted fauna survey using camera traps at the proposed Collie Green Steel Recycling Mill situated east of the Collie townsite in south-west Western Australia.

The field survey was completed by a Principal Ecologist from Onshore Environmental utilising ten camera traps over a 28 night survey period between the 11<sup>th</sup> of October 2023 (camera deployment) and the 8<sup>th</sup> of November 2023 (camera retrieval).

A total of 16 fauna species across three fauna groups was recorded during the survey period.

None of the vertebrate fauna species recorded were listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

One species was listed as Conservation Dependant<sup>1</sup> under the Western Australian *Biodiversity Conservation Act 2016* (BC Act): Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*).

One species was listed as Priority 4 by the Department of Biodiversity, Conservation and Attractions (DBCA): Western Brush Wallaby (*Notamacropus irma*).

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<sup>1</sup> Conservation codes are listed and described in Appendices 1 and 2.

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# 1.0 INTRODUCTION

## 1.1 Preamble

Green Steel of WA Pty Ltd (GSWA) is proposing to develop the Collie Green Steel Recycling Mill situated approximately 7 km east of the Collie townsite in south-west Western Australia (Figure 1). The recycling mill will convert Western Australian scrap steel into rebar for both local, domestic, and international consumption. The site is situated adjacent to The Griffin Coal Mining Company's Ewington Coal Mine. The proposed green steel recycling mill will be constructed within privately owned farmland covering the northern half of the study area, with a spur line extending to the existing rail line constructed within state forest covering the southern half of the study area.

Onshore Environmental was commissioned to undertake a targeted fauna survey utilising motion sensor camera traps to monitor fauna activity.

## 1.2 Biogeographic Regions

The study area is located on the border of the Northern and Southern Jarrah Forest (JF1 and JF2) sub-regions of the Interim Biogeographic Regionalisation for Australia (IBRA7). Both subregions occur on the duricrusted plateau of the Yilgarn Craton with vegetation comprised of Jarrah-Marri forest on laterite gravels grading to Wandoo woodlands on clayey soils in the east. The climate of the sub-regions is Warm Mediterranean (Hearn *et al.* 2002).

The vegetation of the Southern Jarrah forest is described as "Jarrah-Marri forest in the west grading to Marri and Wandoo woodlands in the east. There are extensive areas of swamp vegetation in the south-east, dominated by Paperbarks and Swamp Yate. The understorey component of the forest and woodland reflects the more mesic nature of this area.

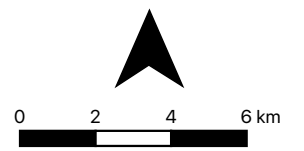
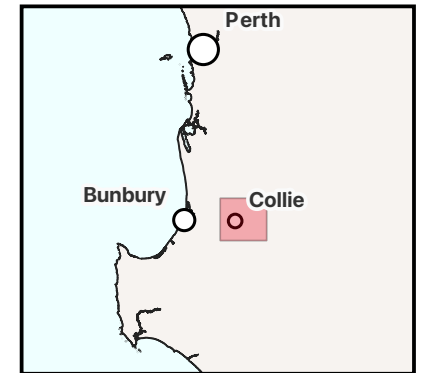
The Northern Jarrah forest also supports Jarrah-Marri forest in the west with vegetation in valleys including Bullish and Blackbutt. Wandoo and Marri woodlands occur to the east with breakaways of Powder-bark Wandoo. The subregion also contains low *Banksia* woodland on extensive sand sheets (Williams and Mitchel 2001).

# Green Steel WA

**Figure 1  
Location of the Study Area**

## Legend

- DBCA Lands
- Green Steel Study Area
- Griffin Coal Tenements



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Projection: MGA Zone 50

Date: 18/10/2023

Status: Final

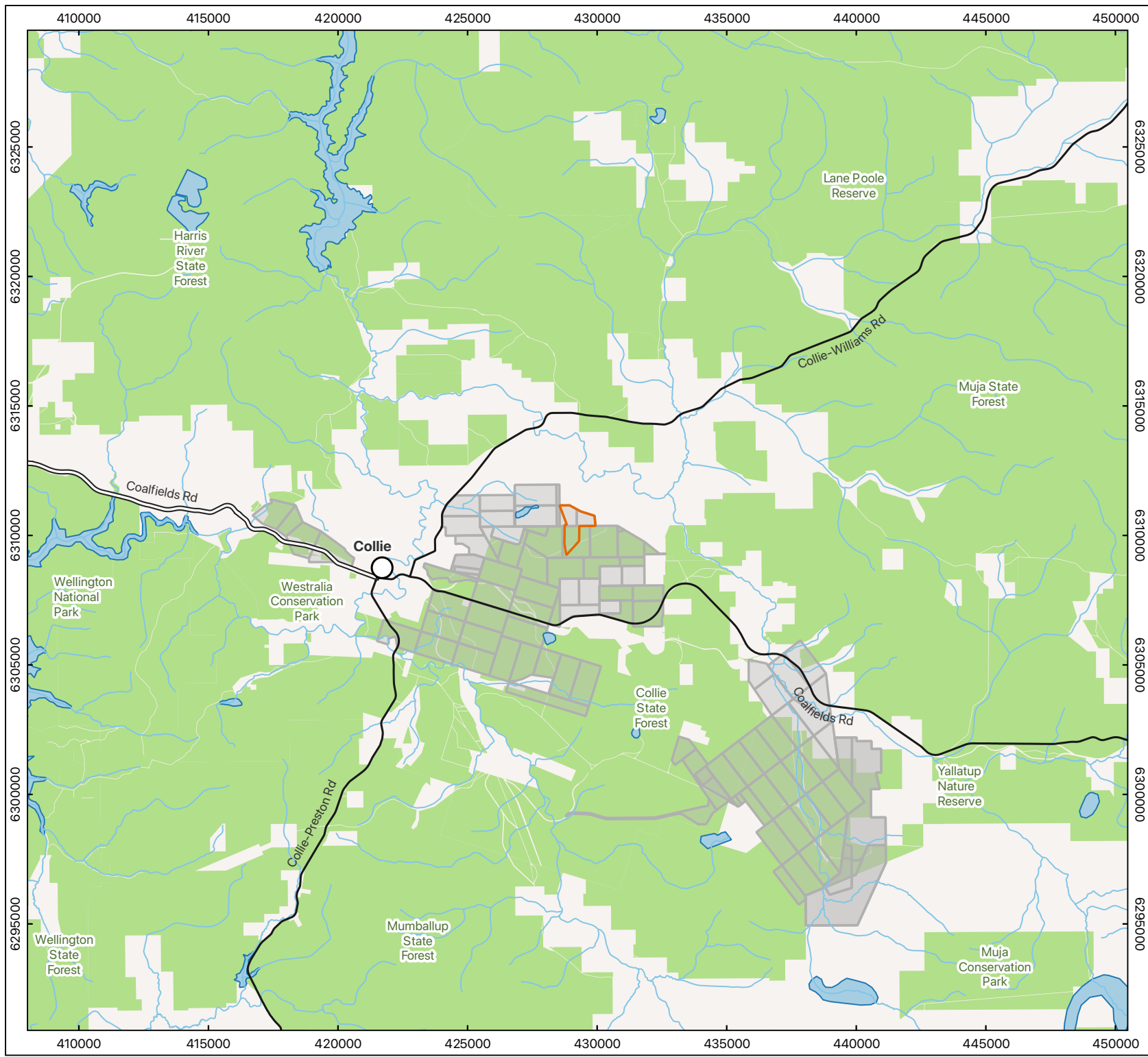
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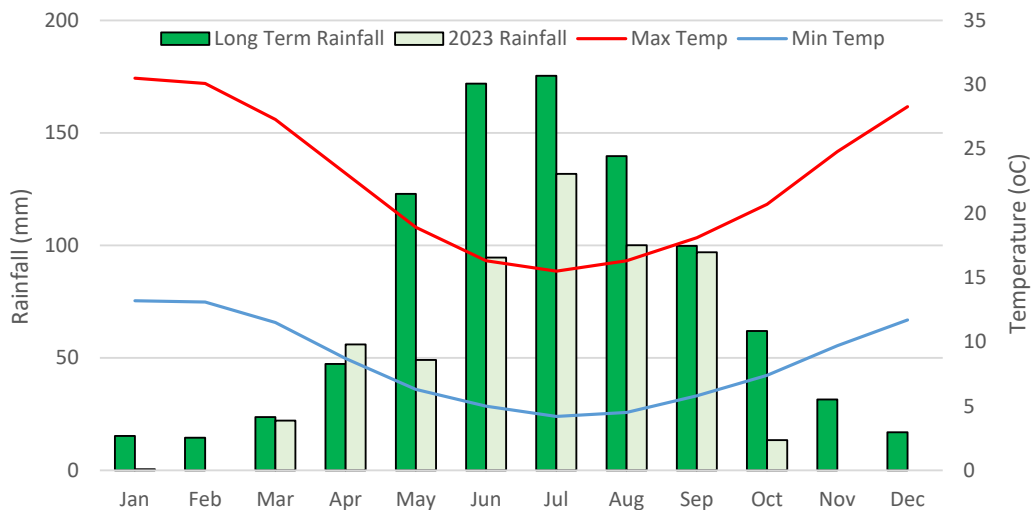
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## 1.3 Climate

The climate of south-west Western Australia is Mediterranean, with hot, dry summers and mild, wet winters. The Collie weather station is located nearby to the study area and has a long-term rainfall average of 920.9 mm (1899 to 2023), with the highest monthly rainfall received during June (172 mm) and July (175 mm). Average maximum summer temperatures range between 28.3°C and 30.5°C with average winter minimum temperatures ranging from 4.2°C to 5.0°C (Figure 2).

Rainfall during 2023 was below the long term average, with 564.5 mm received from January to October 2023 compared to the long term average of 872.4 mm for the same period (Figure 2).



**Figure 2** Monthly rainfall data from the Collie weather station from January to October 2023, with long term averages (Bureau of Meteorology [BOM] 2023).

## 1.4 Geology

The geology of the study area and the wider Collie region has been described by Wild and Walker (1982). The study area lies within the Collie Basin on the Darling Plateau. Permian sedimentary rocks occur in north north-west trending depressions on the Darling Plateau and are completely covered by Tertiary sediments. The largest, the Collie Basin, contains 1,300 m of strata, whilst the smaller Wilga Basin contains 360 m of sediments. Both depressions contain similar sedimentary sequences and are believed to have resulted from glacial scouring into the Archaean basement rocks.

The Collie Basin is approximately 26 km long by 13 km wide and stretches south-east from Allanson (to the west of Collie). There are three sub-basins: Cardiff, Shotts and Muja. These sub-basins are comprised of the lower Permian unit, the Stockton Formation and the overlying Collie Coal Measures. The Stockton Formation rests on a glacially striated granite pavement, and consists of a basal tillite, which is overlain by sandstone, siltstone and mudstone. The Collie Coal Measures are composed of a conglomerate, sandstone, siltstone, shale and intercalated seams of sub-bituminous coal.



## 1.5 Flora and Vegetation

### 1.5.1 Beard (1981) Vegetation Associations

The study area occurs in the Menzies Sub-district of the Darling Botanical District, in the South-West Botanical Province (Beard 1981). The Menzies Sub-district (southern jarrah forest) covers a total area of 26,572 km<sup>2</sup>, of which 18,715 km<sup>2</sup> (70 percent) originally supported jarrah and jarrah-marri forest (Beard 1981).

The study area is dissected by the West Darling (northern extent) and Bridgetown (southern extent) Vegetation Systems as recognised by Beard (1981) (Figure 3). Within these systems, there is one vegetation association that intersects the study area:

- Vegetation Association 3 - Medium Forest; Jarrah-Marri.

When determining representation and reservation of remaining vegetation, Vegetation Association 3 was determined to be well represented at all levels (state-wide, bioregional [IBRA and IBRA sub-region], and local government authority), with more than 56% of the pre-European extent remaining. Vegetation Association 3 was also determined to be well reserved, with more than 15% of the current extent protected for conservation within the Southern Jarrah Forest sub-region.

### 1.5.2 Mattiske and Havel (1998) Vegetation Complexes

The pre-1750 distribution of vegetation complexes of the south-west forest region of Western Australia has been mapped at 1:50,000 scale by Mattiske and Havel (1998) as part of the biodiversity assessment for the comprehensive regional assessment for the south-west forest region. This database has been used to assess flora and vegetation values as part of the 1999 Regional Forest Agreement (RFA). Interrogation of this database confirmed there were three vegetation complexes (as described and mapped by Mattiske and Havel 1998) intersecting the study area (Table 1, Figure 4).

**Table 1** Vegetation complexes, as mapped by Mattiske and Havel (1998), represented within the study area.



Vegetation Complex	Vegetation Description
<b>Collie Plain</b>	
Cardiff	Uplands: Open Woodland of <i>Allocasuarina fraseriana</i> - <i>Banksia</i> species - <i>Xylomelum occidentale</i> - <i>Nuytsia floribunda</i> on sandy soils on valley slopes in the subhumid zone.
Collie	Uplands: Open Forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> - <i>Corymbia calophylla</i> - <i>Allocasuarina fraseriana</i> on gravelly sandy upland soils in the subhumid zone.
<b>Darling Plateau</b>	
Yarragil 2	Open forest of <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> - <i>Corymbia calophylla</i> on slopes, woodland of <i>Eucalyptus patens</i> - <i>Eucalyptus rudis</i> with <i>Hakea prostrata</i> and <i>Melaleuca viminea</i> on valley floors in subhumid and semiarid zones.

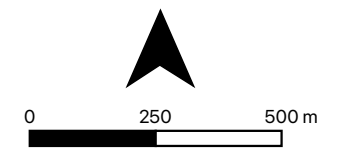
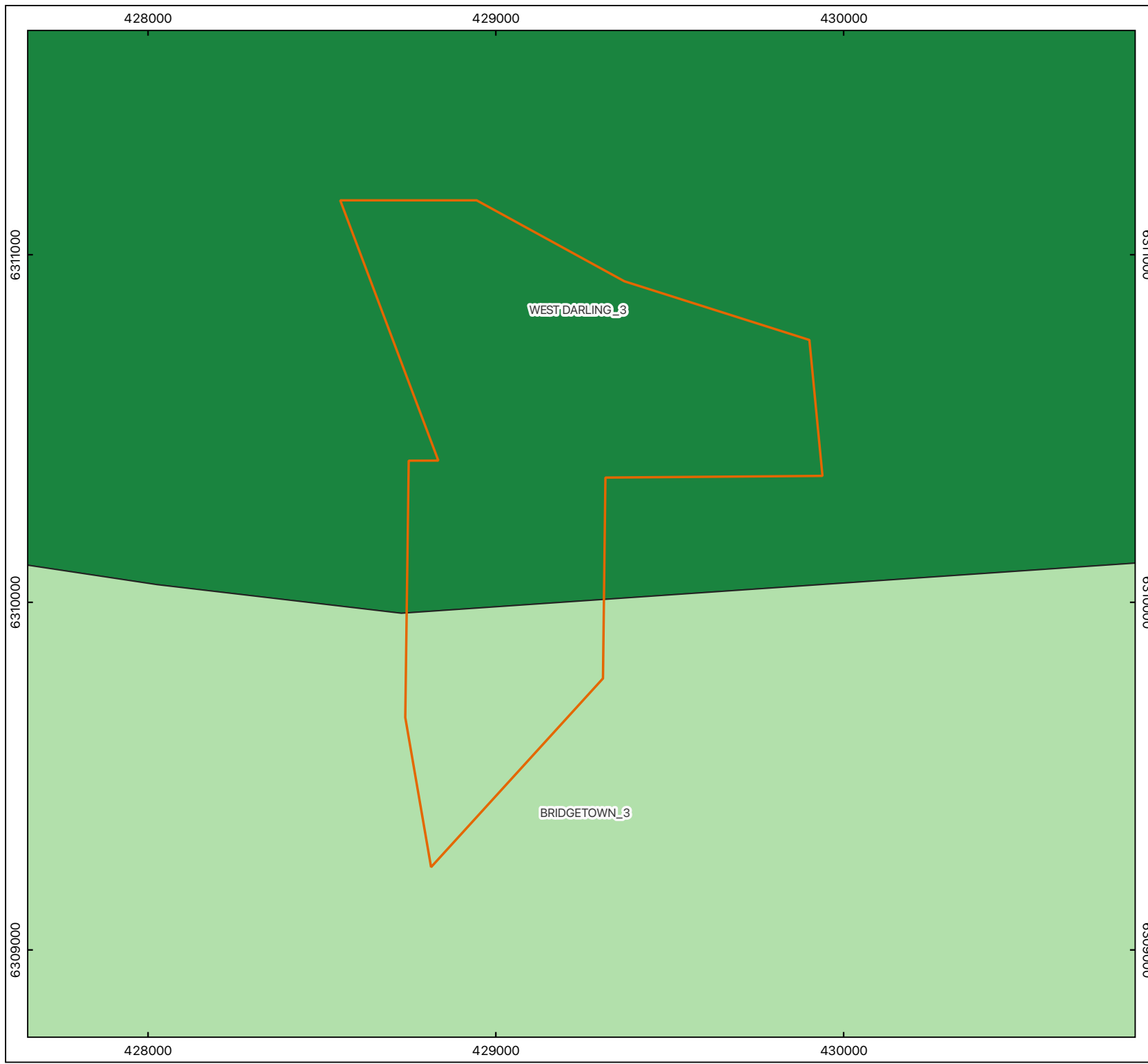
## GREEN STEEL WA

**Figure 3**  
**Beard (1981) vegetation**  
**associations represented within**  
**the study area.**

### Legend

Vegetation Associations

-  BRIDGETOWN\_3
-  WEST DARLING\_3



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Datum: GDA 94

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Date: 19/10/2023

Status: Final

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## GREEN STEEL WA

**Figure 4**  
**Mattiske and Havel (1998)**  
**vegetation complexes represented**  
**within the study area.**

### Legend


 Study Area

#### Vegetation Complexes

 Cardiff

 Collie

 Dwellingup

 Yarragil 2



0 250 500 m

1:15,000

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Projection: MGA Zone 50

Date: 19/10/2023

Status: Final

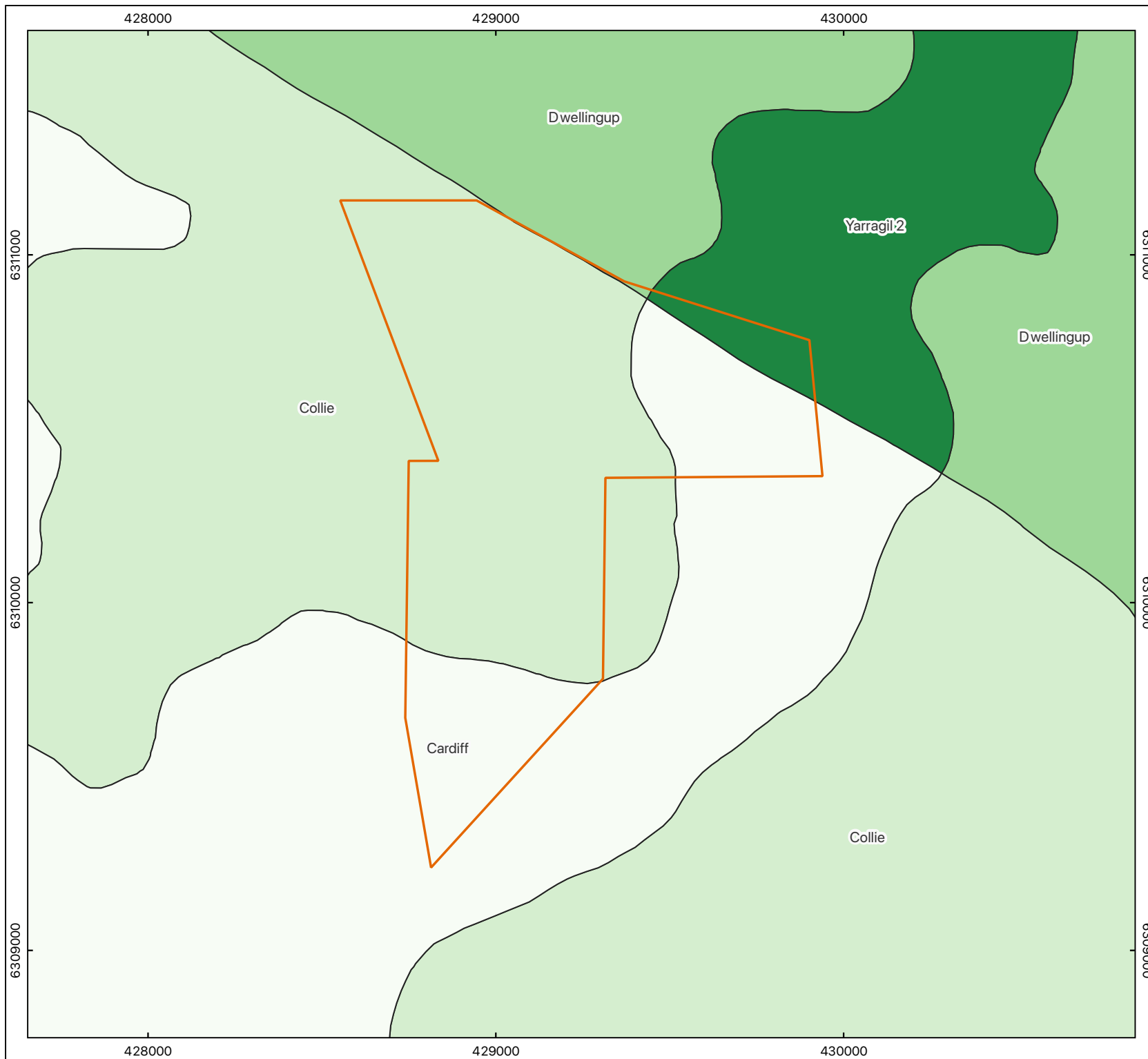
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## 2.0 METHODOLOGY

### 2.1 Legislation and Guidance Statements

The targeted fauna survey utilising camera traps followed recommendations provided within the EPA technical guidance for terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020), as well as survey guidelines for Australia’s threatened mammals (DSEWPC 2011).

### 2.2 Field Survey Methodology

#### 2.2.1 Timing and Personnel

The field survey was completed by a Principal Ecologist (Ms Jessica Waters) from Onshore Environmental, working over two one day field trips on the 11<sup>th</sup> of October 2023 (camera deployment) and the 8<sup>th</sup> of November 2023 (camera retrieval). This is within the recommended survey timing in the southern climatic region for reptiles, birds and mammals (EPA 2020).

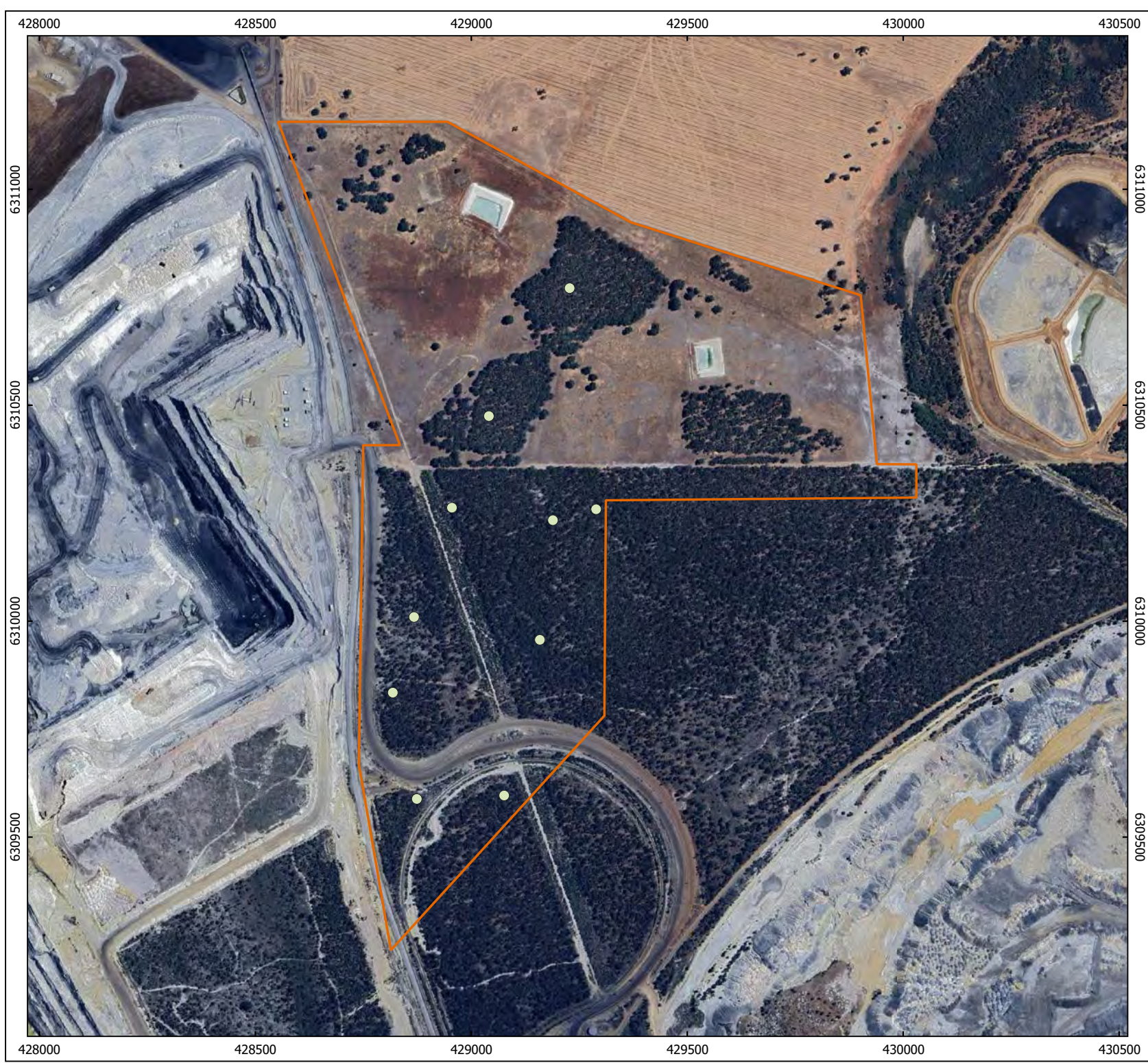
#### 2.2.2 Motion Sensor Camera Survey

The study area was ground truthed to assess and document preferred habitat and indirect evidence (e.g., scats, dens, prints) of fauna species. A total of ten motion sensor cameras with infrared illumination to 30 metres (Browning Spec Ops Elite HP5 model) were placed within areas that represented the most likely habitats of target conservation significant species (denser areas of forest, riparian vegetation, creek lines). Cameras were generally positioned with southerly aspect to avoid direct sun exposure onto the camera lens, facing the ground, and, where appropriate, directed towards fallen logs or rock piles (potential den or exploratory sites for species such as Chuditch). Camera locations were baited with universal bait (a mixture of sardines, fish oil, rolled oats and peanut paste) to attract animals. All ten cameras were deployed for a total duration of 28 nights (Table 2, Figure 5).

**Table 2 Locations for camera traps situated throughout the study area.**

Camera No.	Easting	Northing	Deployment Date	Retrieval Date
1	429290	6310260	11/10/2023	8/11/2023
2	429190	6310235	11/10/2023	8/11/2023
3	428868	6310011	11/10/2023	8/11/2023
4	428819	6309836	11/10/2023	8/11/2023
5	428956	6310264	11/10/2023	8/11/2023
6	429160	6309958	11/10/2023	8/11/2023
7	429229	6310772	11/10/2023	8/11/2023
8	428875	6309589	11/10/2023	8/11/2023
9	429042	6310476	11/10/2023	8/11/2023
10	429077	6309597	11/10/2023	8/11/2023





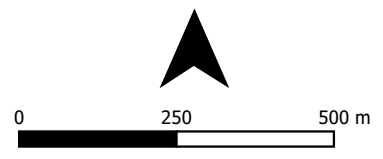


## GREEN STEEL WA

**Figure 5**  
**Location of camera traps**  
**within the study area**

### Legend

-  Study Area
-  Camera Locations



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## 3.0 RESULTS

The ten motion sensor cameras over 28 nights recorded a total of 96 fauna observations from 16 fauna species across three species groups (Table 3, Appendix 3).

The total fauna included three introduced species (feral animals); Cow (*Bos taurus*), Rabbit (*Oryctolagus cuniculus*) and Red Fox (*Vulpes vulpes*).

**Table 3 Summary of fauna recorded during camera trap survey.** \* Introduced, P4 Priority 4, CD Conservation Dependent

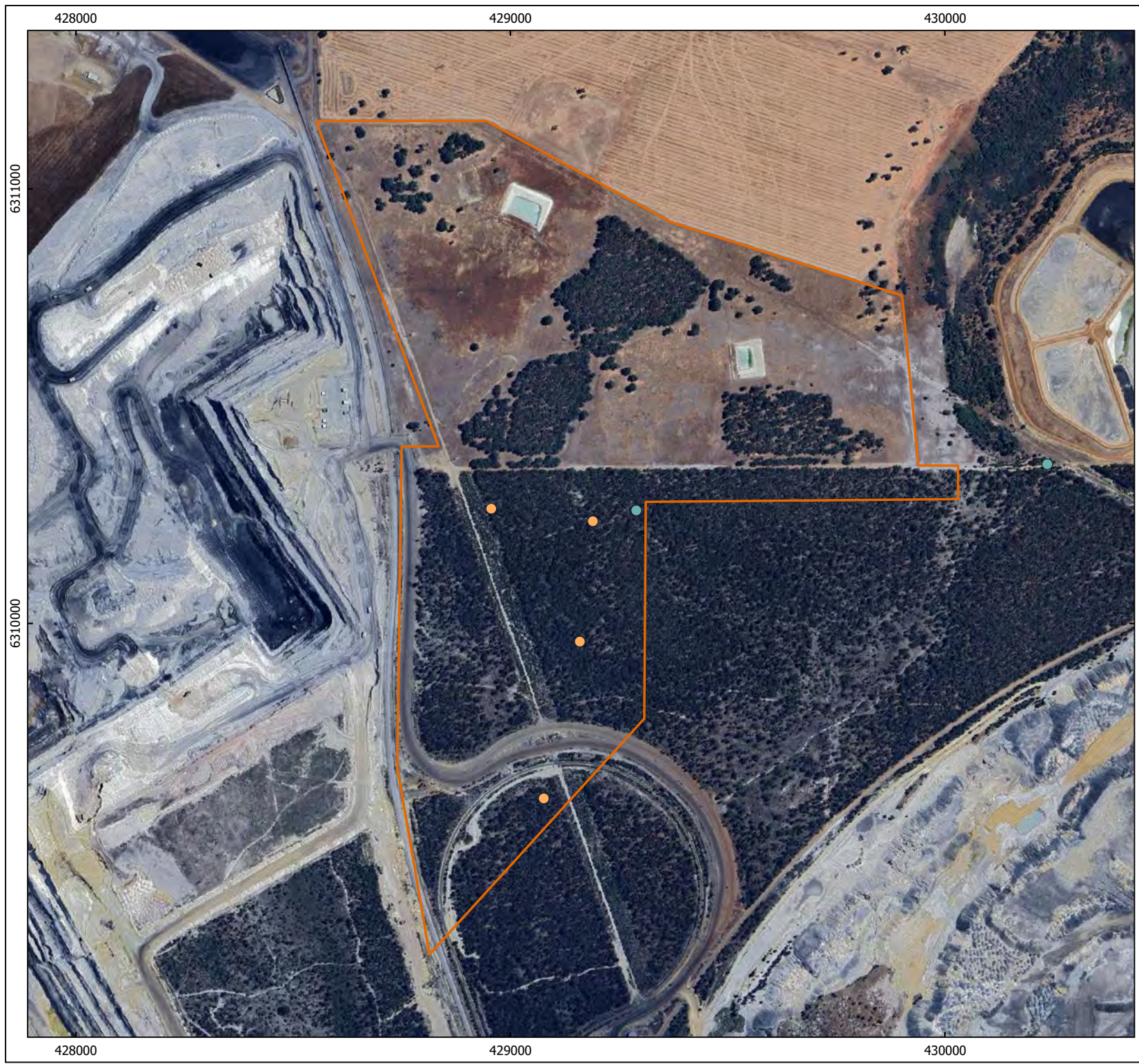
Species Group	Taxon Name	Common Name	Status
Birds	<i>Corvus coronoides</i>	Australian Raven	
Birds	<i>Gymnorhina tibicen</i>	Australian Magpie	
Birds	<i>Phaps chalcoptera</i>	Common Bronzewing	
Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
Mammals	Bat sp. indet	Bat	
Mammals	<i>Bos taurus</i>	Cow	*
Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
Mammals	<i>Macropus irma</i>	Western Brush Wallaby	P4
Mammals	<i>Oryctolagus cuniculus</i>	Rabbit	*
Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	CD
Mammals	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	
Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
Mammals	<i>Vulpes vulpes</i>	Red Fox	*
Reptiles	<i>Egernia napoleonis</i>	South-western Crevice Skink	
Reptiles	<i>Tiliqua rugosa</i>	Bobtail	
Reptiles	<i>Varanus rosenbergi</i>	Heath Monitor	

Two conservation significant fauna species were recorded on 17 separate occasions from five of ten cameras within the study area (Figure 6, Appendix 4):

- Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) listed as Conservation Dependent under the BC Act was recorded on 14 occasions from four cameras; and
- Western Brush Wallaby (*Notamacropus irma*) listed as Priority 4 fauna by the DBCA was recorded on three occasions from three cameras.

None of the vertebrate fauna species recorded were listed under the Commonwealth EPBC Act.



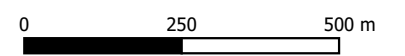


## GREEN STEEL WA

**Figure 6**  
**Conservation significant**  
**fauna recorded from the**  
**study area**

### Legend

- Study Area
- Significant Fauna**
- Brush-tailed Phascogale  
(Conservation Dependent)
- Western Brush Wallaby  
(Priority 4)



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Datum: GDA 94  
 Projection: MGA Zone 50

Date: 20/11/2023  
 Status: Final  
 Figure: 6  
 Sheet Size: A4  
 File Name Reference: GS\_Fig4\_sig.pdf  
 Drawn by: JW  
 Requested by: DB



## 4.0 SUMMARY

The targeted fauna survey utilising ten motion sensor camera traps was completed by Principal Ecologist Ms Jessica Waters from Onshore Environmental, utilising ten camera traps established throughout the study area over a 28 night duration between the 11<sup>th</sup> of October 2023 (camera deployment) and the 8<sup>th</sup> of November 2023 (camera retrieval). A total of 96 fauna observations from 16 fauna species across three species groups was recorded during the survey period.

None of the vertebrate fauna species recorded were listed under the Commonwealth EPBC Act.

One species recorded on 14 occasions from four cameras within the study area was listed as Conservation Dependant under the Western Australian BC Act: Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*).

One species recorded on three occasions from three cameras within the study area was listed as Priority 4 by the DBCA: Western Brush Wallaby (*Notamacropus irma*).

Three introduced fauna species (feral animals) were observed from camera traps during the survey: Cow (*Bos taurus*), Rabbit (*Oryctolagus cuniculus*) and Red Fox (*Vulpes vulpes*).

## 5.0 STUDY TEAM

The targeted fauna survey utilising camera traps was planned, co-ordinated and executed by the following personnel:

**Onshore Environmental Consultants P/L**

ABN 41 095 837 120

PO Box 227

YALLINGUP WA 6282

Phone: 0427 339 842

Email: [info@onshoreenvironmental.com.au](mailto:info@onshoreenvironmental.com.au)

*Project Staff*

Dr Darren Brearley

PhD Project Manager

Ms Jessica Waters

BSc Principal Ecologist and GIS/Mapping

## 6.0 REFERENCES

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# APPENDIX 1

Conservation categories for fauna species listed under  
the EPBC Act

Category	Description
<b>Extinct (EX)</b>	Taxa not definitely located in the wild during the past 50 years.
<b>Extinct in the Wild (EW)</b>	Taxa known to survive only in captivity.
<b>Critically Endangered (CE)</b>	Taxa facing an extremely high risk of extinction in the wild in the immediate future.
<b>Endangered (EN)</b>	Taxa facing a very high risk of extinction in the wild in the near future.
<b>Vulnerable (VU)</b>	Taxa facing a high risk of extinction in the wild in the medium-term future.
<b>Migratory (MG)</b>	Consists of species listed under the following International Conventions: Japan-Australia Migratory Bird Agreement (JAMBA) China-Australia Migratory Bird Agreement (CAMBA) Convention on the Conservation of Migratory Species of Wild animals (Bonn Convention)

# APPENDIX 2

## Conservation Codes for Western Australian Flora and Fauna





Department of **Biodiversity,  
Conservation and Attractions**

## CONSERVATION CODES

### For Western Australian Flora and Fauna

Threatened, Extinct and Specially Protected fauna or flora<sup>1</sup> are species<sup>2</sup> 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:

#### **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 that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

**Threatened flora** is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

#### **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 under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

#### **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. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

#### **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 under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

### **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).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

#### **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 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

### **Specially protected species**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

#### **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 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

#### **CD Species of special conservation interest (conservation dependent fauna)**

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

#### **OS Other specially protected species**

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.



## **P** **Priority species**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

### **1 Priority 1: Poorly-known species**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

### **2 Priority 2: Poorly-known species**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

### **3 Priority 3: Poorly-known species**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

### **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.

<sup>1</sup> The definition of flora includes algae, fungi and lichens

<sup>2</sup>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 3

Vertebrate fauna recorded from the study area

Waypoint	Zone	Easting	Northing	Species Group	Taxon Name	Common Name	WA Con Stat
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 22	50H	429190	6310235	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 30	50H	429077	6309597	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 30	50H	429077	6309597	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 30	50H	429077	6309597	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 30	50H	429077	6309597	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 26	50H	429160	6309958	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 26	50H	429160	6309958	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 26	50H	429160	6309958	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 26	50H	429160	6309958	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 26	50H	429160	6309958	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 21	50H	429290	6310260	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 21	50H	429290	6310260	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 25	50H	428956	6310264	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 23	50H	428868	6310011	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 23	50H	428868	6310011	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 23	50H	428868	6310011	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 27	50H	429229	6310772	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 27	50H	429229	6310772	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 28	50H	428875	6309589	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 29	50H	429042	6310476	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	
ONS 24	50H	428819	6309836	Mammals	<i>Antechinus flavipes leucogaster</i>	Mardoo	

Waypoint	Zone	Easting	Northing	Species Group	Taxon Name	Common Name	WA Con Stat
ONS 26	50H	429160	6309958	Mammals	<i>Bat sp. indet</i>	Bat	
ONS 27	50H	429229	6310772	Mammals	<i>Bos taurus</i>	Cow	
ONS 29	50H	429042	6310476	Mammals	<i>Bos taurus</i>	Cow	
ONS 30	50H	429077	6309597	Birds	<i>Corvus coronoides</i>	Australian Raven	
ONS 26	50H	429160	6309958	Birds	<i>Corvus coronoides</i>	Australian Raven	
ONS 25	50H	428956	6310264	Birds	<i>Corvus coronoides</i>	Australian Raven	
ONS 23	50H	428868	6310011	Birds	<i>Corvus coronoides</i>	Australian Raven	
ONS 29	50H	429042	6310476	Birds	<i>Corvus coronoides</i>	Australian Raven	
ONS 26	50H	429160	6309958	Reptiles	<i>Egernia napoleonis</i>	South-western Crevice Skink	
ONS 29	50H	429042	6310476	Birds	<i>Gymnorhina tibicen</i>	Australian Magpie	
ONS 22	50H	429190	6310235	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 22	50H	429190	6310235	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 30	50H	429077	6309597	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 30	50H	429077	6309597	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 26	50H	429160	6309958	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 26	50H	429160	6309958	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 26	50H	429160	6309958	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 26	50H	429160	6309958	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 25	50H	428956	6310264	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 23	50H	428868	6310011	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 23	50H	428868	6310011	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 27	50H	429229	6310772	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 28	50H	428875	6309589	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 29	50H	429042	6310476	Mammals	<i>Macropus fuliginosus</i>	Western Grey Kangaroo	
ONS 26	50H	429160	6309958	Mammals	<i>Macropus irma</i>	Western Brush Wallaby	Priority 4
ONS 21	50H	429290	6310260	Mammals	<i>Macropus irma</i>	Western Brush Wallaby	Priority 4
ONS 25	50H	428956	6310264	Mammals	<i>Macropus irma</i>	Western Brush Wallaby	Priority 4
ONS 25	50H	428956	6310264	Mammals	<i>Oryctolagus cuniculus</i>	Rabbit	
ONS 27	50H	429229	6310772	Birds	<i>Phaps chalcoptera</i>	Common Bronzewing	
ONS 22	50H	429190	6310235	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent

Waypoint	Zone	Easting	Northing	Species Group	Taxon Name	Common Name	WA Con Stat
ONS 30	50H	429077	6309597	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 30	50H	429077	6309597	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 30	50H	429077	6309597	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 30	50H	429077	6309597	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 26	50H	429160	6309958	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 26	50H	429160	6309958	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 26	50H	429160	6309958	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 26	50H	429160	6309958	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 26	50H	429160	6309958	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 25	50H	428956	6310264	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 25	50H	428956	6310264	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 25	50H	428956	6310264	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 25	50H	428956	6310264	Mammals	<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	Conservation Dependent
ONS 21	50H	429290	6310260	Mammals	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	
ONS 23	50H	428868	6310011	Mammals	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	
ONS 28	50H	428875	6309589	Mammals	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	
ONS 28	50H	428875	6309589	Reptiles	<i>Tiliqua rugosa</i>	Bobtail	
ONS 28	50H	428875	6309589	Reptiles	<i>Tiliqua rugosa</i>	Bobtail	
ONS 22	50H	429190	6310235	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 22	50H	429190	6310235	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 26	50H	429160	6309958	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 21	50H	429290	6310260	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 21	50H	429290	6310260	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 27	50H	429229	6310772	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 28	50H	428875	6309589	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 29	50H	429042	6310476	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 24	50H	428819	6309836	Mammals	<i>Trichosurus vulpecula</i>	Common Brushtail Possum	
ONS 26	50H	429160	6309958	Reptiles	<i>Varanus rosenbergi</i>	Heath Monitor	
ONS 29	50H	429042	6310476	Reptiles	<i>Varanus rosenbergi</i>	Heath Monitor	
ONS 22	50H	429190	6310235	Mammals	<i>Vulpes vulpes</i>	Red Fox	

Waypoint	Zone	Easting	Northing	Species Group	Taxon Name	Common Name	WA Con Stat
ONS 30	50H	429077	6309597	Mammals	<i>Vulpes vulpes</i>	Red Fox	
ONS 30	50H	429077	6309597	Mammals	<i>Vulpes vulpes</i>	Red Fox	
ONS 23	50H	428868	6310011	Mammals	<i>Vulpes vulpes</i>	Red Fox	
ONS 27	50H	429229	6310772	Mammals	<i>Vulpes vulpes</i>	Red Fox	
ONS 28	50H	428875	6309589	Mammals	<i>Vulpes vulpes</i>	Red Fox	
ONS 24	50H	428819	6309836	Mammals	<i>Vulpes vulpes</i>	Red Fox	



# APPENDIX 4

Photographic representation of conservation significant fauna  
species recorded from the study area



Brush-tailed Phascogale (Conservation Dependent)



Western Brush Wallaby (Priority 4)