



## Targeted Fauna Survey – Mount Mason Project

Prepared for Juno Minerals Limited

July 2021





## Limitations

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## Executive Summary

Western Ecological was commissioned by Juno Minerals Limited to undertake a desktop assessment and targeted survey for the Malleefowl and Night Parrot associated with their Mount Mason project. The Mount Mason section of the project is located about 90 km north west of Menzies and includes a haul road through the Mount Ida tenements to the Menzies-Sandstone Road. A second section of the project includes the Yunndaga Siding and proposed Menzies bypass route which has its northern end beginning approximately 2.5 km north west of Menzies and its southern end finishing about 7.5 km south east of Menzies. The Long-tailed Dunnart had also previously been recorded at Mount Mason and a secondary assessment was undertaken to detect them in the Mount Mason section.

In early June, after the field component of the targeted fauna survey was complete, Juno notified Western Ecological about discussions they had with the Western Australian Department of Mines, Industry Regulation and Safety, and that they mentioned the potential occurrence of the Arid Bronze Azure Butterfly in the project area. Consequently, this species was also considered as part of the assessment, with the potential for it to occur in the project area based on its current known distribution, habitat in the project area and database search results.

Searches of the Western Australian Department of Biodiversity, Conservation and Attractions threatened fauna database, NatureMap, and the Commonwealths Protected Matters Search Tool were undertaken to identify if the four species (Malleefowl, Night Parrot, Long-tailed Dunnart and ABAB) of conservation significance being targeted during this assessment had been recorded in and or near the survey area in the past.

During the survey a large series of systematic tracks were traversed in suitable habitat to look for Malleefowl and its signs. Two Malleefowl were sighted during the survey, one near the beginning of the haul road and inside the project area and the second near the bottom of the haul road, but just outside the project area. Malleefowl mounds were recorded at eight locations during the survey. Of these eight, only three were recorded inside the project area, the remaining five were outside the project area, but in relatively close proximity. Of these eight mounds, five were considered very old and disused as was evident due to a lack of material in the mound and their weathered state. Mound 6 was considered old and disused and was in the haul road at the southern end. Mound 7 is categorised as old and disused and is out of the project area, but was active during the 2012 survey. Mound 8 was also out of the project area, near the southern end of the haul road but was considered under construction. This was evident by the mound depression in the sand and there and there was scrapping of leaf litter near the mound, with scrape marks caused by the feet of the Malleefowl in the sand.

No Night Parrot calls were recorded on the three SM4s that were placed out at Mount Mason (two units) and in the haul road (one unit). There is no habitat for Night Parrots in the Mount Mason and haul road sections of the project area or the Yunndaga Siding and proposed Menzies bypass route.

Camera traps were placed out in order to detect the Long-tailed Dunnart, but none were captured on the five cameras placed out in the Mount Mason section of the project area. No camera traps were placed in the Yunndaga siding and proposed Menzies bypass section of the project area given the extent of disturbance, close proximity to Menzies and the absence of suitable rocky habitat.

There were no records of the Arid Bronze Azure Butterfly in the three database searches as this species is known from only two locations. The project area does fall into this very large area that has been very broadly mapped as the potential distribution of the Sugar Ant which is the Arid Bronze Azure Butterfly host. There are a two small patches of potentially suitable habitat in the Mount Mason and haul road section of the project area. However, as the Arid Bronze Azure Butterfly is currently only known from two populations, both of which are hundreds of kilometres from the project area, and there is only limited potential habitat in the project area, this species is unlikely to be present.



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# 1. Introduction

## 1.1 Background

Western Ecological (WE) was commissioned by Juno Minerals Limited (Juno) to undertake a desktop assessment and targeted survey for the Malleefowl associated with their Mount Mason project (“the project”). The Mount Mason section of the project is located about 90 km north west of Menzies (Figure 1). The project will include various mine infrastructure (mine pit, waster rock dump, ROM, mining operation centre and explosives magazine), camp expansion (including a sewer spray field) and a haul road and pipeline. The survey also assessed a haul road through the Mount Ida tenements to the Menzies-Sandstone Road (Figure 1). The haul road from Mount Mason to the Menzies-Sandstone Road is likely to be a 20 m wide corridor, however, the corridor examined during the assessment was 200 m wide (100 m either side of the centre line). The Yunndaga Siding and proposed Menzies bypass route which has its northern end beginning approximately 2.5 km north west of Menzies and its southern end finishing about 7.5 km south east of Menzies was also assessed (Figure 1).

In addition to the Malleefowl survey we undertook a preliminary survey for the Night Parrot (*Pezoporus occidentalis*). The Western Australian Department of Biodiversity, Conservation and Attractions (DBCA) recommends that Night Parrot surveys should be undertaken if there is suitable Night Parrot habitat present in an area proposed to be disturbed. The survey area falls close to the boundary that the DBCA considers a high to medium priority area for the species (DPaW 2017).

We understand that fauna surveys at Mount Mason and along the proposed haul road have previously been undertaken for the project in 2011 and 2012 by Keith Lindbeck & Associates (KLA 2012 & 2013). These surveys identified a number of species, including one species of conservation significance listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the Malleefowl (*Leipoa ocellata*) which is listed as Vulnerable under the EPBC Act and is the focus of this current survey work. At the time these two surveys were undertaken, the Night Parrot (listed as Endangered under the EPBC Act) was considered almost extinct and surveys for proposed developments did not consider this species.

The KLA (2012) survey also recorded one Long-tailed Dunnart (*Sminthopsis longicaudata*) in Spring 2011 and Autumn 2012. This species is listed as Priority 4 (P4) by the DBCA and as a result we decided to place out camera traps in an attempt to record the species again (noting that this was not the primary objective of the survey).

Jupiter Mines Pty Ltd (now Juno Minerals Limited) was granted a Native Vegetation Clearing Permit (NVCP) 5765/2 for the project on 24/9/2015 with an expiry date of 30/11/2018. Given this NVCP has expired, a new NVCP, from the Department of Mines, Industry Regulation and Safety (DMIRS) is required. This report provides supplementary and updated information in order to support the current NVCP application. In addition, Juno Minerals also have a Malleefowl Management Plan that has been approved by the Commonwealth Department of Agriculture, Water and the Environment (DAWE) (Juno Minerals Limited 2013).

In early June, after the field component of the targeted fauna survey was complete, Juno notified WE about discussions they had with DMIRS, and that DMIRS mentioned the potential occurrence of the Arid Bronze Azure Butterfly (ABAB) (*Ogyris subterrestris petrina*) in the project area. This species is listed as Critically Endangered under the EPBC Act. Consequently, this species was also considered as part of the assessment, with the potential for it to occur in the project area based on its current known distribution, habitat in the project area and database search results.

## 1.2 Scope and Objectives

The scope of work (SoW) to be undertaken for the targeted fauna survey was as follows:

- Primary objective was desktop assessment and targeted Malleefowl and Night Parrot survey
- Secondary objective was to undertake a cursory survey for the Long-tailed Dunnart
- Assess the potential for the ABAB to occur in the project area
- Document the above in a report that is supplementary to the previous fauna surveys.

### 1.3 Legislative context

Fauna in Western Australia is protected formally and informally by various legislative and non-legislative measures, which are as follows:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) – Australian Government
- *Biodiversity Conservation Act 2016* (BC Act) – WA State Government.

Non-legislative measures:

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

A short description of each is given below. Other definitions, including species conservation categories, are provided in Appendix 1.

#### **Environment Protection and Biodiversity Conservation Act (EPBC Act)**

The EPBC Act aims to protect matters of national environmental significance, which are detailed in Appendix 1. Under the EPBC Act, the Commonwealth Department of Agriculture, Water and the Environment (DAWE) lists protected species and Threatened Ecological Communities (TECs) by criteria set out in the Act. Species are conservation significant if they are listed as Threatened (i.e., Critically Endangered, Endangered and Vulnerable) or Migratory.

Bird species protected as Migratory under the EPBC Act include those listed under international migratory bird agreements relating to the protection of birds, which migrate between Australia and other countries, for which Australia has agreed. This includes the Japan-Australia Migratory Bird Agreement (JAMBA), the China-Australia Migratory Bird Agreement (CAMBA), the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Some marine fauna or terrestrial fauna that use marine habitats are listed as Marine under the EPBC Act. These species are only considered conservation significant when a proposed development occurs in a Commonwealth marine area (i.e., any Commonwealth Waters or Commonwealth Marine Protected Area). Outside of such areas, the EPBC Act does not consider these species to be matters of national environmental significance, so are not protected under the Act.

#### **Biodiversity Conservation Act (BC Act)**

The BC Act replaced both the *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929* and came into effect on 1 January 2019. The aim of the new Act is to conserve and protect biodiversity and to promote the ecologically sustainable use of biodiversity components in the State, and will bring more activities within the scope of biodiversity laws.

Taxa listed as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1a, 1b, and 1c), or is a rediscovered species to be regarded as threatened species under section 26(2) of the BC Act. Other categories include extinct or extinct in the wild and they are listed under section 23 (1) of the BC Act (Appendix 1).

If species meet 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, they are covered under section 13(1) of the BC Act and are called specially protected species. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act can't also be listed as Specially Protected species (see Appendix 1 for a more detailed description of each threat category).

Threatened Ecological Communities (TECs) are also covered under the BC Act and are placed into three categories of critically endangered, endangered or vulnerable under section 27(1a, 1b, and 1c) depending on their threat status.



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### **DBCA Priority Species and Communities**

DBCA lists species that are possibly threatened but that do not meet criteria for listing under the BC Act, or are otherwise data deficient, and adds them 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. Consideration 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 (see Appendix 1 for more detail of the priority codes).

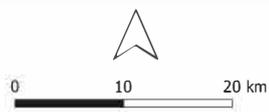
The DBCA also has a list of Priority Ecological Communities (PECs) that have scant information available to be considered a TEC, or which are rare but not currently threatened. Ecological communities that do not meet survey criteria or that are not sufficiently defined are added to the PEC list under priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as a TEC. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for near threatened, or that have been recently removed from the threatened list, are placed in priority 4. These ecological communities require regular monitoring. Conservation dependent ecological communities are placed in priority 5.

### **Informal Recognition of Threatened Fauna**

Certain populations or communities of fauna may be of local significance or interest because of their patterns of distribution and abundance. For example, fauna may be locally significant because they are range extensions to the previously known distribution or are newly discovered species (and have the potential to be of conservation significance). In addition, many species are in decline as a result of threatening processes (land clearing, grazing, and changed fire regimes) and relict populations of such species assume local importance for DBCA. It is not uncommon for DBCA to make comment on these species of interest.



Figure 1: Project Location



Scale 1:700,000

GDA94 - MGA Zone 51

Legend

Survey Areas





## 2. Methods

### 2.1 Survey Guidance

The fauna assessment was completed in accordance with the following EPA, DBCA and DAWE requirements for the environmental surveying and reporting of fauna surveys in WA, where relevant and practical, and as documented in:

- EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020)
- Interim Guideline for preliminary surveys of Night Parrot (*Pezoporus occidentalis*) in Western Australia (WA Department of Parks and Wildlife [DPaW] 2017).
- Survey Guidelines for Australia's Threatened Birds. EPBC Act survey guidelines 6.2 (2010) (DSEWPaC)
- National Recovery Plan for Malleefowl (*Leipoa ocellata*), Department for Environment and Heritage (Benshemesh 2007)
- Guideline for the survey of arid bronze azure butterfly (ABAB) in Western Australia (DBCA 2020).

### 2.2 Desktop Assessment

Searches of the DBCA threatened fauna database, NatureMap, and the EPBC Protected Matters Search Tool (EPBC PMST) were undertaken to identify if the four species (Malleefowl, Night Parrot, Long-tailed Dunnart and ABAB) of conservation significance being targeted during this assessment had been recorded in and or near the survey area in the past (DBCA 2021, DBCA 2021, DAWE 2021) (Appendix 2). The DBCA threatened fauna search was centred on coordinates 29° 15' 39" S and 120° 25' 31" E and a 100 km radial search was applied. NatureMap and PMST database searches were centred on coordinates (29° 07' 50" S and 120° 22' 05" E) but with a 40 km radial search area for NatureMap (maximum search area) and 100 km for the PMST.

### 2.3 Field Assessment

The field assessment was undertaken from the 13-19 May 2021 by two qualified Zoologist (Dr Ron Firth and Laura Stevens). The following survey methods were undertaken in the project area.

#### 2.3.1 Malleefowl Survey

The Malleefowl survey methods undertaken in the project area were consistent with relevant guidelines, conservation advice and current practices where relevant and practical and were as follows:

- Systematic transects were primarily walked on foot, but in some limited cases where possible driven by car at low speeds (approximately 10 km/h) as there are some tracks and old exploration drill lines
- These transects were traversed in habitat that was deemed suitable with this based mostly on the density of vegetation in the midstorey and groundstorey i.e., not being too dense in order for birds to construct mounds or too open i.e., not enough cover from the sun and or potential predators and the substrate (very rocky areas such as steep slopes and rocky ridges were excluded as mounds can not be constructed)
- Recording evidence of Malleefowl activity while walking the transects such as:
  - Malleefowl tracks
  - Malleefowl nesting mounds including status (inactive/ active) and activity according to the following criteria:
    - Nest in preparation – eggs not laid (evidence of litter trail)
    - Mound is in progress/ maintenance – eggs assumed to be laid
    - Evidence of chicks leaving nest – chicks fledging site / egg shell fragments
    - Decommissioned – spreading and returning of mound soil
- Malleefowl individual sightings and assessment of age (chick/ adult)
- Opportunistic observations of Malleefowl evidence (tracks, mounds, feathers and or individual sightings) in the project area while not assessing the systematic transects.

Some of the transects were walked outside of areas proposed to be disturbed in order to provide some broader context, while other areas, particularly along the Mount Mason haul road were not walked because of limited access and distance

from vehicle tracks (and because habitat was unsuitable because it had been burnt or was in drainage channels or floodplains where mounds are not built).

Systematic transects were not walked in the Yunddaga siding and proposed Menzies bypass route section of the project area because of an absence of suitable habitat (see results and discussion sections below).

### 2.3.2 Night Parrot Survey

The Night Parrot survey methods undertaken in the project area were consistent with relevant guidelines where relevant and practical and were as follows:

- Three Song Meter 4 (SM4) acoustic recording units (ARUs) were placed out for five nights at three locations at Mount Mason (two locations) and the Haul Road (one location) (see Plate 1)
- No SM4s were setup in the Yunddaga siding and proposed Menzies bypass section of the project area (see results and discussion sections below)
- Any recordings on the ARUs were analysed by Bob Bullen (Bat Call WA).



Plate 1. Example of SM4 setup in the project area to detect the calls of the Night Parrot.

### 2.3.3 Camera Traps

Five camera traps were placed out for four nights in rocky areas at Mount Mason where the Long-tailed Dunnart might occur based on their known ecology and previous captures in the area in 2011 and 2012 (KLA 2012). Camera traps had universal bait (peanut butter, sardines, oats and water) placed in bait stations in the cameras field of view (approximately 1.5 m away) (see Plate 2). No camera traps were placed out in the Yunndaga siding and proposed Menzies bypass section of the project area (see results and discussion sections below).



Plate 2. Example of Camera trap setup in the project area to detect the Long-tailed Dunnart (bait station on the left and camera on right side of the image).

### 2.3.4 Fauna Habitat Assessment

A number of habitat assessments were undertaken throughout the project area to define and delineate the main broad habitats present. The habitat assessment included an evaluation of the potential for habitats to support the three species of conservation significance being examined during the field survey (noting that the ABAB was not being considered at this stage). The ABAB and its likelihood to occur in the project area will be dealt with in the Discussion.

Each habitat description includes the following information where relevant:

- GPS co-ordinate will be recorded
- habitat condition will be assessed as 'completely degraded through to pristine, based on the scale given in Keighery (1994)
- landscape position
- dominant vegetation and structure e.g., number of vegetation strata
- hollow-bearing trees and dead stags (e.g., average size and abundance of hollows – should they be present)
- description of any rock and rocky outcrops
- logs (e.g., abundance and size)
- substrate (e.g., leaf litter)

- wetlands, creeks, rivers, dams and other water bodies
- description of any observed nests and roosts
- associated fauna species observed using the habitat
- disturbance e.g., cattle grazing, fire, and historic mining.

It is important to note that habitat types have previously been described for the Mount Mason and haul road section of the project area, though the names previously used to describe these may be somewhat different to those described here, they are very similar and broadly based on dominant flora species and to a lesser extent landscape position.



### 3. Results

#### 3.1 Fauna Survey limitations

Survey limitations are sometimes difficult to predict prior to undertaking an assessment, as is the extent to which they influence survey effort and results. Broad limitations that might have impacted the survey are outlined below in Table 1.

**Table 1. Broad limitations that might have impacted the survey.**

Limitations	Impact on the assessment
Qualifications and survey experience	The Zoologists that undertook the survey are qualified and experienced and have undertaken numerous targeted surveys for the species being examined in this report. Dr Ron Firth has over 20 years of experience designing, managing and undertaking biodiversity and ecological surveys throughout Western Australia, the Northern Territory, Queensland, New South Wales and Victoria. He has written over 100 consultant reports and has authored or co-authored 15 papers that have been published in peer reviewed scientific journals and has made other contributions to published Books. Laura Stevens has over 8 years of experience undertaking fauna surveys in WA and has written more than 25 consultant reports. Therefore, no perceived limitations associated with qualifications and experience.
Timing - Weather, season	The field assessment was undertaken from the 13-19 May 2021. The survey was primarily a targeted assessment of species (Malleefowl, Night Parrot) that are active all year, consequently, weather and season are not deemed a prime consideration (noting however that Malleefowl mound construction may not have commenced yet as this tends to occur this in June and August [Jones & Goth 2008], but see further below in results section which indicates otherwise).
Scope - Life forms sampled	The primary objective of the assessment was to undertake a targeted survey and broadly describe fauna habitats and this was achieved.
Sources of information	Sources of information included the DBCA threatened fauna database search with a search radius of 100 km centred on the survey area (DBCA 2021a), NatureMap (40 km search radius) and the EPBC Protected Matters Search Tool (EPBC PMST) with a 100 km search radius (DBCA 2021b, DAWE 2021). Other sources of local information included past surveys undertaken in the project area (KLA 2012 and 2013).
Completeness	The main objective of the survey was to undertake a targeted survey for Malleefowl and the Night Parrot and undertake an assessment of habitat for these species. This was for the most part achieved. However, some sections of the haul road were not assessed, in part because access and time was limited, habitats were considered unsuitable and the previous surveys failed to record them in those areas despite significant survey effort.
Disturbance	The project area is split into two sections - Mount Mason and the haul road and Yunndaga siding and proposed Menzies bypass route. Disturbance at Mount Mason and along the haul road is primarily a result of exploration activity (some vegetation clearing for exploration drill lines and drill pads, access tracks), pastoral activity i.e., cattle, tracks and fences and fire, particularly in long sections of the haul road. Disturbance in the Yunndaga siding and proposed Menzies bypass is far more extensive and is primarily a result of its close proximity to Menzies. The area has been disturbed and cleared of vegetation as a result of mining activity that dates back over 100 years and consists of mine pits, waste rock dumps, explorations tracks, access tracks (historic and current), rubbish and weeds. This disturbance has no doubt resulted in it being unsuitable for Malleefowl and this is partially reflected in an absence of recent database records.

#### 3.2 Database Search Results

Results of the three databases searches can be seen in Appendix 2. Malleefowl were present in all three databases, while the Night Parrot was only present in the PMST. The Long-tailed Dunnart was present in the DBCA threatened fauna database and NatureMap. The ABAB was not present in any of the three database searches.

It is important to note that the PMST is not entirely based on point records, but also on broader information, including bioclimatic distribution models, whereas the DBCA threatened fauna database and NatureMap are based on point records. Consequently, the results of the PMST are in some cases less accurate, particularly at a local scale. As a result, the PMST can include species that do not occur in the survey area because, for example, there is no habitat available or they are now

known to be locally extinct. In addition, fauna is not distributed evenly across the landscape, are more abundant in some places than others, and consequently more detectable (Currie 2007).

It is important to note that several other species of conservation significance were present in the database searches, however, these species are considered not to occur in the project area because there is no habitat e.g., no wetland habitat for waterbird species and others have already been considered and dealt with in previous reports (KLA 2012 and 2013).

### **3.2.1 Number of Database Records**

Please note that there were a relatively large number of Malleefowl records (74) and Long-tailed Dunnart records (43) present in the DBCA threatened fauna database. Given this we needed to somewhat reduce the number of records in order to consider those relevant. We did this by removing those Malleefowl records from between 1968 to 1998, given that these are older than 20 years (any birds recorded then are dead and any active mounds observed from then will no longer be used), which accounted for 19 records. The remaining 55 Malleefowl records are from between 2001 and 2020.

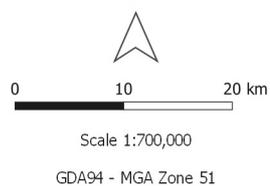
All of the Long-tailed Dunnart records that were present in the DBCA threatened fauna database were from 2011 (26), 2012 (15) and two from 2013, consequently none of them were removed (Figure 2). There are also a relatively large number of records to the east of the haul road and these are associated with rocky areas at Mount Ida (Figure 2).

Please note that not all the Malleefowl and Long-tailed Dunnart DBCA threatened fauna database records can be seen on the figure as some fall outside of the area being illustrated, while other records are very close and so the symbols are overlapping each other and therefore represent more than one record.

It is also important to note that there are two records in the DBCA threatened fauna database that when mapped are very close to Menzies (Figure 2). Both of these records are from 2007, both localities are given as Menzies. One has its site listed as 10 km North of pub on Davyhurst Road and the records accuracy is given as 50,000 m (50 km). I checked where Davyhurst Road is and it begins about 27 km south west of Menzies (it comes off the Evanston-Menzies Road), and ends in Davyhurst which was an old gold mining town that no longer exists. Therefore, this record can be dismissed as occurring in Menzies and near the project area. The second record has its site listed as Riverina Station and the records accuracy is given as 1,000 m (1 km). However, Riverina station is at least 45 km to the west of Menzies, again another record we can dismiss as being near the project area.



Figure 2: Threatened Fauna Records



Legend

- |   |  |
|---|--|
| Threatened Fauna  | <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Survey Area |
| <span style="color: blue;">▲</span> Long-tailed Dunnart |  |
| <span style="color: red;">▲</span> Malleefowl           |  |



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### 3.3 Field Survey Results

#### 3.3.1 Malleefowl Survey Results

During the survey a large series of systematic transects and tracks were traversed in the Mount Mason and haul road sections of the project area to look for Malleefowl and its signs (mounds and tracks) (Figure 3). These systematic transects were mostly undertaken in suitable habitat, but also in some areas considered unsuitable in order to ground truth habitats, and in areas outside of the project area, if the habitat was deemed suitable in order to provide some context (Figure 3). Further to this some areas inside the project area were not assessed because there are no plans to disturb vegetation i.e., only the area proposed for the sewer spray field and camp extension (and immediate surrounds) were walked as the other areas around the existing camp are not planned to be cleared of vegetation.

Two Malleefowl were sighted during the survey, number one near the beginning of the haul road and inside the project area and number two near the bottom of the haul road, but just outside the project area (Figure 3 and Table 2).

**Table 2. Malleefowl sightings and their coordinates.**

Malleefowl Sightings	Coordinates in UTM's (GDA94)
Malleefowl 1	244406, 6773149 (in project area)
Malleefowl 2	251427, 6752659 (out of project area)

Malleefowl mounds were recorded at eight locations during the survey (Figure 3 and Table 3). Of these eight, only three were recorded inside the project area, the remaining five were outside the project area, but in relatively close proximity. Of these eight mounds, five were considered very old and disused as was evident due to a lack of material in the mound and their weathered state (Plate 3). Mound 6 was considered old and disused and was in the haul road at the southern end. Mound 7 is categorised as old and disused and is out of the project area (Figure 3, Table 3, and Plate 4). This mound was active during the 2012 survey – see figure 18 and 19 on page 28 in KLA (2013). Mound 8 was also out of the project area, near the southern end of the haul road but was considered under construction (Plate 5). This was evident by the mound depression in the sand and there was scrapping of leaf litter near the mound, with scrape marks caused by the feet of the Malleefowl in the sand (Plate 6).

**Table 3. Malleefowl mounds recorded during the assessment, their status and location and whether they were in or out of the project area.**

Malleefowl Mound Status	Coordinates in UTM's (GDA94)	In or Out of Project Area
Mound 1 – Very old and disused	242581, 6776052	In
Mound 2 – Very old and disused	243413, 6776744	Out
Mound 3 – Very old and disused	243823, 6776516	Out
Mound 4 – Very old and disused	243939, 6776583	Out
Mound 5 – Very old and disused	243517, 6776267	In
Mound 6 – Old and disused	251697, 6752072	In
Mound 7 – Old and disused	244100, 6772869	Out
Mound 8 – Under construction	251299, 6752659	Out



Plate 3. Malleefowl mound 5 is an example of a very old and disused mound in the project area.



Plate 4. Malleefowl mound 7 is an example of an old and disused mound that is just outside of the project area. Note that this mound was active in 2012 (KLA 2013).



Plate 5. Malleefowl mound 8 is an example of a mound being built - it was recorded just outside of the haul road.



Plate 6. The scarring of material associated with the building of mound 8 (scrape marks from Malleefowl feet can be seen in the image).

Malleefowl tracks were also recorded during the survey at the southern end of the haul road at five locations, of which four were in the project area (tracks 1, 2 3 and 4) and one set of tracks (tracks 5) were outside of the haul road (Figure 3 and Table 4). Tracks were most likely recorded in this section of the haul road as the substrate was sandy and as a result tracks were more obvious to the observer.

**Table 4. Malleefowl tracks and their coordinates.**

Malleefowl Tracks	Coordinates in UTM's (GDA94)	Tracks in or out of the Project Area
Tracks 1	251698, 6751564	In
Tracks 2	251655, 6751820	In
Tracks 3	251649, 6752108	In
Tracks 4	251751, 6751449	In
Tracks 5	251803, 6751408	Out

No systematic transects were walked in the Yunndaga siding and proposed Menzies bypass section of the project area given the extent of disturbance, close proximity to Menzies and the absence of suitable habitat (see fauna habitat section below).

### 3.3.2 Night Parrot Survey Results

No Night Parrot calls were recorded on the three SM4s that were placed out at Mount Mason (two units) and in the haul road (one unit). There is no habitat for Night Parrots in the Mount Mason and haul road sections of the project area (see habitat section discussion sections below). The location of the SM4s can be seen on figure 3 and their coordinates below in table 5.

**Table 5. SM4 unit number and its location in the project area.**

SM4 Number	Coordinates in UTM's (GDA94)
1	243287, 6776135
2	245668, 6773140
3	249936, 6753824

No SM4 units were placed in the Yunndaga siding and proposed Menzies bypass section of the project area given the extent of disturbance, close proximity to Menzies and the absence of suitable habitat (see fauna habitat section below).

### 3.3.3 Camera Trap Survey Results

Camera traps were placed out in order to detect the Long-tailed Dunnart, but none were captured on the five cameras placed out in the Mount Mason section of the project area. The location of the camera traps can be seen on figure 3 and their coordinates below in table 6.

**Table 6. Camera trap number Malleefowl sightings and their coordinates.**

Camera Trap Number	Coordinates in UTM's (GDA94)
1	243389, 6775976
2	243223, 6776083
3	243213, 6775871
4	243504, 6775329
5	245204, 6773508

No camera traps were placed in the Yunndaga siding and proposed Menzies bypass section of the project area given the extent of disturbance, close proximity to Menzies and the absence of suitable rocky habitat (see fauna habitat section below).

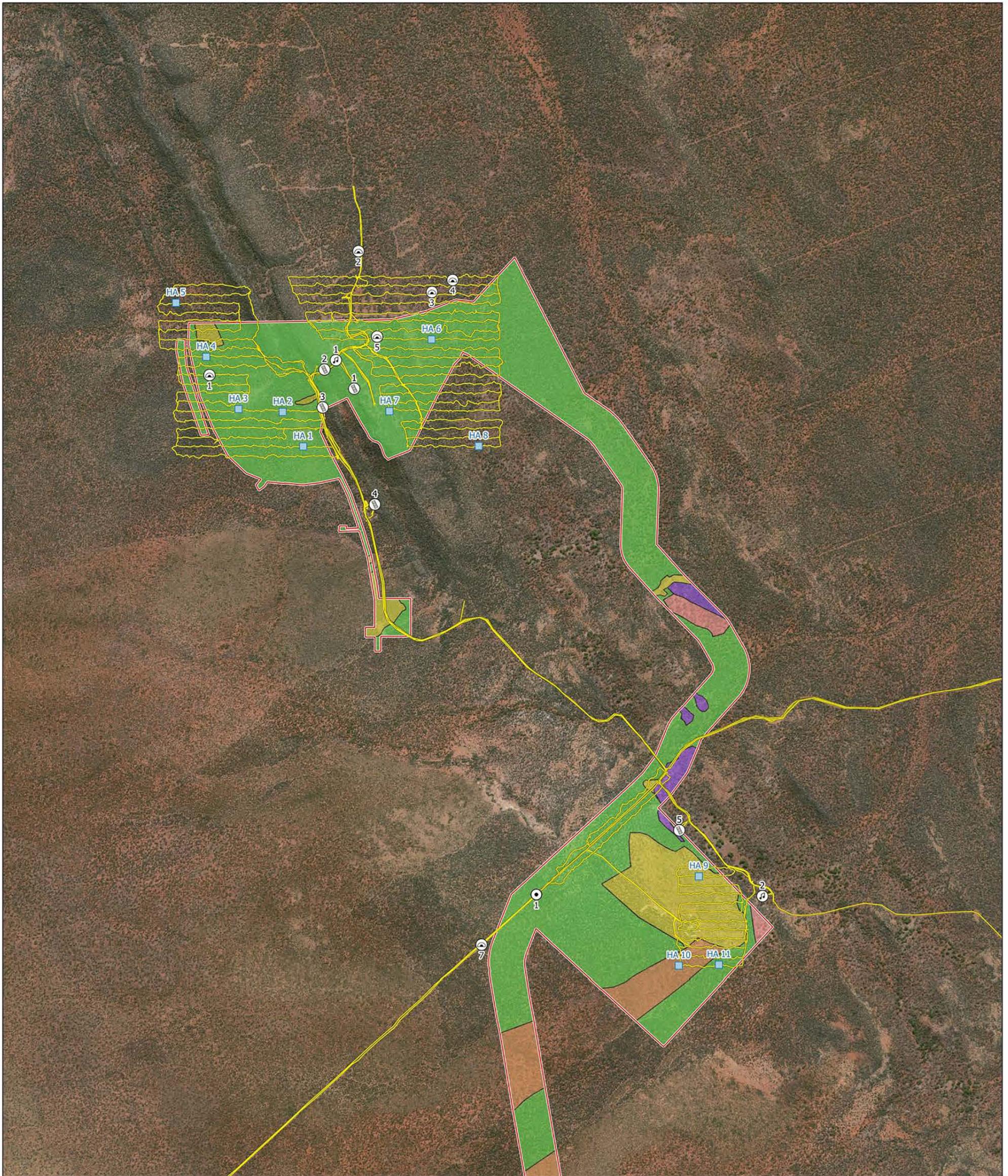
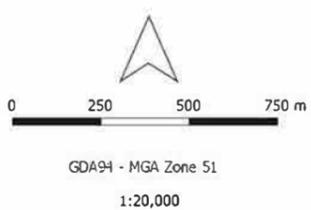


Figure 3: Fauna Habitat and Assessment Sites - Mount Mason and Haul Road



Legend

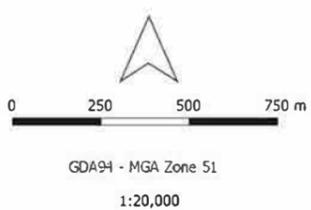
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| <ul style="list-style-type: none"> <li> Malleefowl Mounds</li> <li> Camera</li> <li> SM4</li> <li> Malleefowl Tracks</li> <li> Malleefowl</li> </ul> | <ul style="list-style-type: none"> <li> Habitat Assessment</li> <li> Tracks</li> <li> Survey Area</li> </ul> | <p><b>Habitat</b></p> <ul style="list-style-type: none"> <li> Acacia Shrubland</li> <li> Acacia Shrubland (Burnt)</li> <li> Eucalyptus salubris Open Woodland</li> <li> Eucalyptus lesouefii Open woodland</li> <li> Mulga Shrubland</li> </ul> |
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Figure 3: Fauna Habitat and Assessment Sites - Mount Mason and Haul Road



Legend

- Malleefowl Mounds
- Camera
- SM4
- Malleefowl Tracks
- Malleefowl

- Habitat Assessment
- Tracks
- Survey Area

Habitat

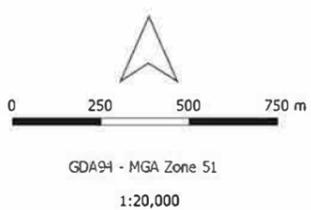
- Acacia Shrubland
- Acacia Shrubland (Burnt)
- Eucalyptus salubris Open Woodland
- Eucalyptus lesouefii Open woodland
- Mulga Shrubland



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Figure 3: Fauna Habitat and Assessment Sites - Mount Mason and Haul Road



Legend

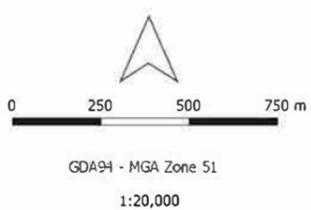
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| <ul style="list-style-type: none"> <li> Malleefowl Mounds</li> <li> Camera</li> <li> SM4</li> <li> Malleefowl Tracks</li> <li> Malleefowl</li> </ul> | <ul style="list-style-type: none"> <li> Habitat Assessment</li> <li> Tracks</li> <li> Survey Area</li> </ul> | <p><b>Habitat</b></p> <ul style="list-style-type: none"> <li> Acacia Shrubland</li> <li> Acacia Shrubland (Burnt)</li> <li> Eucalyptus salubris Open Woodland</li> <li> Eucalyptus lesouefii Open woodland</li> <li> Mulga Shrubland</li> </ul> |
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Figure 3: Fauna Habitat and Assessment Sites - Mount Mason and Haul Road



Legend

-  Malleefowl Mounds
-  Camera Trap
-  SM4
-  Malleefowl Tracks
-  Malleefowl
-  Habitat Assessment
-  Tracks
-  Survey Area

Habitat

-  Acacia Shrubland
-  Acacia Shrubland (Burnt)
-  Eucalyptus salubris Open Woodland
-  Eucalyptus lesouefii Open woodland
-  Mulga Shrubland



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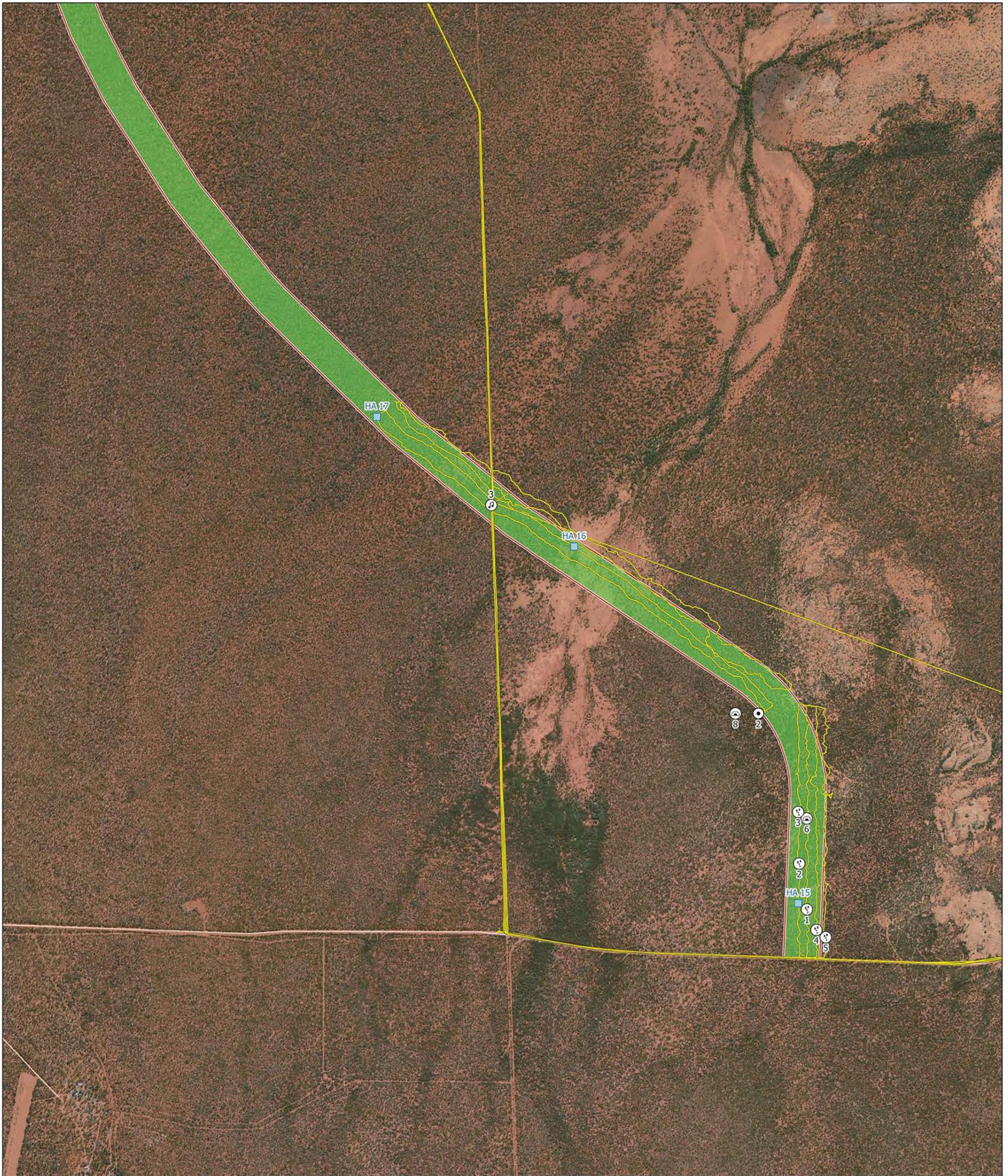


Figure 3: Fauna Habitat and Assessment Sites - Mount Mason and Haul Road



Legend

- Malleefowl Mounds
- Camera Trap
- SM4
- Malleefowl Tracks
- Malleefowl

- Habitat Assessment
- Tracks
- Survey Area

- Habitat
- Acacia Shrubland
  - Acacia Shrubland (Burnt)
  - Eucalyptus salubris Open Woodland
  - Eucalyptus lesouefii Open woodland
  - Mulga Shrubland



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### 3.4 Fauna Habitat

#### 3.4.1 Fauna Habitat Mount Mason and Haul Road

At Mount Mason and along the haul road we identified, described and mapped five broad fauna habitat types and undertook 17 habitat assessments (Figure 3 and Appendix 3). The five broad habitat types are named as follows:

- Mulga Shrubland – Mulga dominates this habitat and occurs in a variety of landscape positions i.e., rocky hills and slopes, in drainage channels and floodplains, and on flats with a sandy substrate
- Acacia Shrubland (burnt) – this habitat is a result of an extensive fire that occurred in 2006/2007 (KLA 2012), and it comprises a number of Acacia species including Mulga and tends to occur on the flats for the most part, but also on slopes
- Acacia Shrubland – very similar to above but it has not been burnt and also occurred on slopes with a rocky/stony substrate
- *Eucalyptus lesouefii* Open woodland – occurred on stony slopes with gravelly soil with an open midstorey with mixed shrubs
- *Eucalyptus salubris* Open Woodland – found on stony slopes with gravelly soil with an open midstorey with mixed shrubs.

These five habitat types are widespread and common in areas adjacent to the project area and, more broadly, across the region. The extent of each habitat type in the survey area is presented below in Table 7 (note that there has been some very minor rounding of the numbers).

**Table 7. Fauna habitat type and extent in the project area (Mount Mason and haul road).**

Broad Habitat Type	Habitat Extent in the Project Area (ha)	Habitat Extent in the Project Area (%)
Mulga Shrubland	613.96	77.69
Acacia Shrubland (burnt)	127.76	16.17
Acacia Shrubland	36.72	4.65
<i>Eucalyptus lesouefii</i> Open woodland	6.89	0.87
<i>Eucalyptus salubris</i> Open Woodland	4.92	0.62
<b>Total</b>	<b>790.25</b>	<b>100</b>

Of the five broad habitat types, Mulga Shrubland is by far the most extensive, followed by Acacia Shrubland (burnt), then Acacia Shrubland, followed by *Eucalyptus lesouefii* Open woodland and the least extensive habitat type described was *Eucalyptus salubris* Open Woodland. For examples of most of these habitat types see photos in Appendix 3.

Habitat condition was scored as mostly excellent at the habitat assessments sites (Appendix 3). Disturbance at Mount Mason and along the haul road is primarily a result of exploration activity (some vegetation clearing for exploration drill lines and drill pads, access tracks), pastoral activity i.e., cattle, tracks and fences and fire, particularly in long sections of the haul road (Figure 3).

None of the habitats are suitable for Night Parrots as there are no areas with large spinifex (*Triodia*) hummocks.

It is important to note that habitat types have previously been described for the Mount Mason and haul road section of the project area (KLA 2012, 2013), though the names previously used to describe these may be somewhat different to those described here, they are very similar and for the most part based on dominant flora species and to a lesser extent landscape position.

#### 3.4.2 Fauna Habitat Yunndaga Siding and Menzies Bypass

In the Yunndaga Siding and Menzies Bypass we have identified, described and mapped three broad fauna habitat types (and mapped areas that were for the most part cleared of native vegetation) and undertook seven habitat assessments (Figure 4 and Appendix 3). The three broad habitat types are named as follows:

- Mulga Shrubland – occurs in a variety of landscape positions i.e., small rocky hills and rises, in drainage channels and floodplains, and on flats (noting that much of this section of the project area displays little relief in elevation)
- Scattered Low Shrubland – this habitat consists of chenopods, other low shrubs and Buffel Grass
- Eucalypt Open woodland – we have called it scattered *Eucalyptus lesouefii* (not entirely sure it is this species) with little midstorey (mixed shrubs) and understorey in relatively flat areas.

These three habitat types are widespread and common in areas adjacent to the survey area and, more broadly, across the region. The extent of each habitat type in the survey area is presented below in Table 8 (note that there has been some very minor rounding of the numbers).

**Table 8. Fauna habitat type and extent in the project area (Yundaga siding and Menzies bypass).**

Broad Habitat Type	Habitat Extent in the Project Area (ha)	Habitat Extent in the Project Area (%)
Mulga Shrubland	181.36	69.35
Low Scattered Shrubland	43.64	16.53
Eucalypt Open Woodland	7.36	2.81
Cleared	29.66	11.31
<b>Total</b>	<b>262.23</b>	<b>100</b>

Of the three broad habitat types, Mulga Shrubland is by far the most extensive, followed by Low Scattered Shrubland, then the least extensive is Eucalypt Open woodland. Cleared areas are the third most extensive area, however, here they are not considered habitat. For examples of most of these habitat types see photos in Appendix 3.

The habitat has been extensively disturbed as a result of historic mining activity and is now deemed unsuitable for Malleefowl, as it has limited canopy cover in many areas and lacks a diverse shrub layer throughout much of the project area. During our habitat assessments, short walks and while driving tracks we did not see any Malleefowl, their mounds or tracks. None of the habitats are suitable for Night Parrots as there are no areas with large spinifex (*Triodia*) hummocks. There are also no rocky ridges with boulders that is preferred habitat for the Long-tailed Dunnart.

Habitat condition was deemed as very good to good at the habitat assessments sites (Appendix 3). Much of the habitat is open with limited canopy cover and there is little to no cover of shrubs in the midstorey. Disturbance in the Yundaga siding and proposed Menzies bypass is far more extensive than the Mount Mason and haul road section of the project area. Disturbance is primarily a result of its close proximity to Menzies. The area has been disturbed and cleared of vegetation in many areas as a result of mining activity that dates back over 100 years and consists of mine pits, waste rock dumps, explorations tracks, drill pads, access tracks (historic and current), rubbish and weeds such as Buffel Grass.



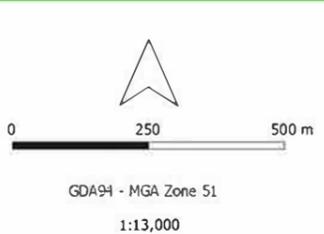
Figure 4: Fauna Habitat and Assessment Sites - Yunndaga Siding and Bypass Route

	<b>Legend</b>		
	<ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Habitat Assessment</li> <li><span style="color: yellow;">—</span> Tracks</li> <li><span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px;"></span> Survey Area</li> </ul>	<b>Habitat</b> <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> Cleared</li> <li><span style="background-color: #c0504d; display: inline-block; width: 10px; height: 10px;"></span> Low Scattered Shrubland</li> <li><span style="background-color: #70ad47; display: inline-block; width: 10px; height: 10px;"></span> Mulga Shrubland</li> <li><span style="background-color: #9932cc; display: inline-block; width: 10px; height: 10px;"></span> Eucalypt Open Woodland</li> </ul>	

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Figure 4: Fauna Habitat and Assessment Sites - Yunndaga Siding and Bypass Route



Legend

- Habitat Assessment
- Tracks
- Survey Area

Habitat

- Cleared
- Low Scattered Shrubland
- Mulga Shrubland
- Eucalypt Open Woodland



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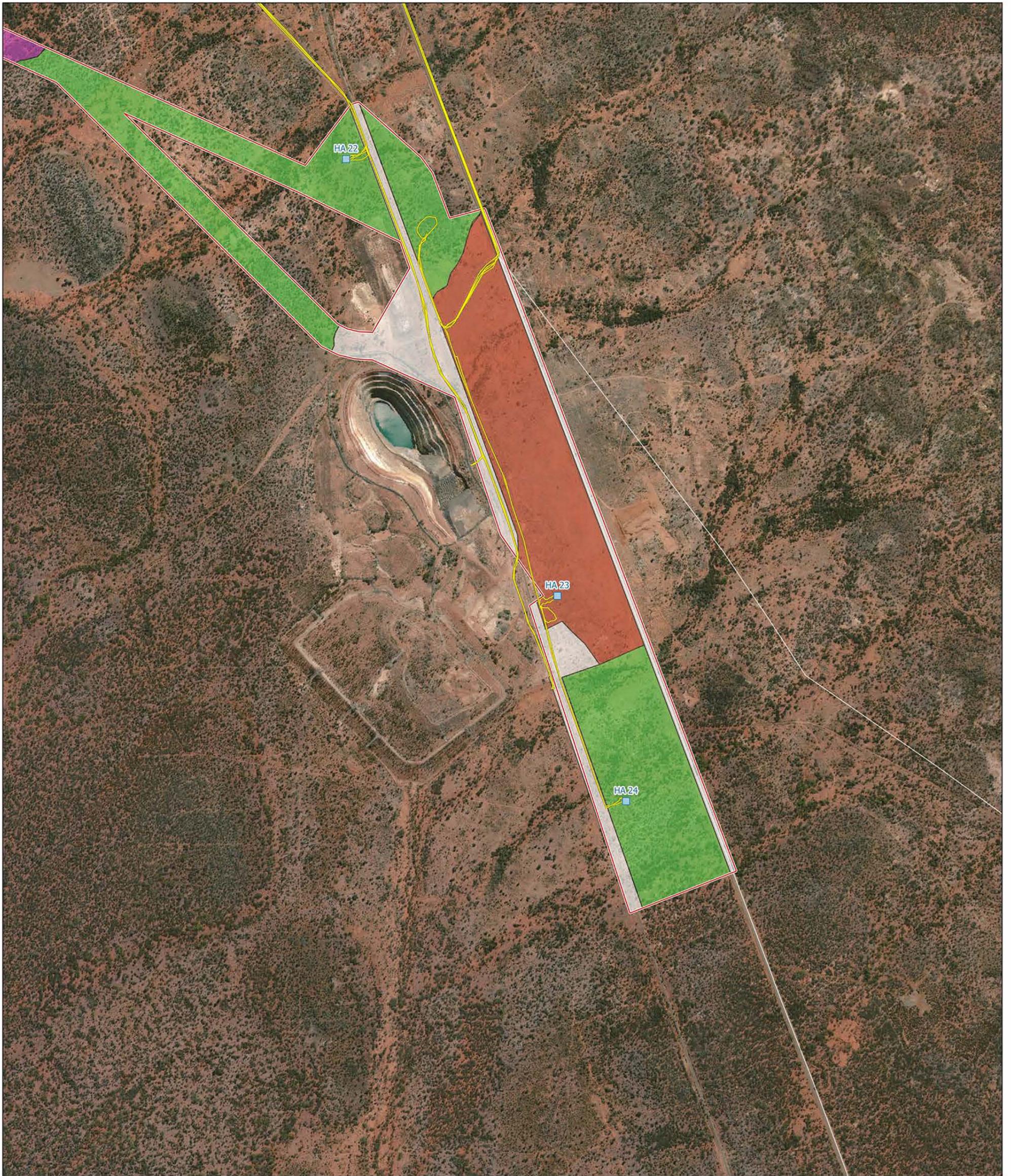
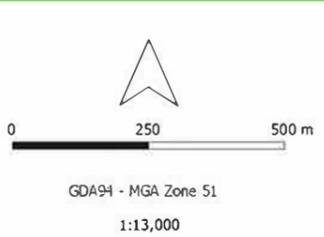


Figure 4: Fauna Habitat and Assessment Sites - Yundaga Siding and Bypass Route



Legend

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| <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> Habitat Assessment</li> <li><span style="color: yellow;">—</span> Tracks</li> <li><span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span> Survey Area</li> </ul> | <p><b>Habitat</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Cleared</li> <li><span style="background-color: orange; display: inline-block; width: 15px; height: 10px;"></span> Low Scattered Shrubland</li> <li><span style="background-color: green; display: inline-block; width: 15px; height: 10px;"></span> Mulga Shrubland</li> <li><span style="background-color: purple; display: inline-block; width: 15px; height: 10px;"></span> Eucalypt Open Woodland</li> </ul> |
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## 4. Discussion

### 4.1 *Malleefowl*

Based on this current survey and previous surveys we know that Malleefowl have built mounds and likely nested in them in the Mount Mason and haul road sections of the project area, however, all of the mounds recorded during this assessment in the project area are either very old and disused or considered old and disused (see Plates 3 and 4). One Mound being built was recorded just outside of the haul road at the southern end (see Plates 5 and 6). Further to this two Malleefowl were sighted, one in the project area at the northern end of the Mount Mason section, and the other just outside of the haul road at the southern end (in relatively close proximity to the mound under construction). Malleefowl tracks were also recorded at the southern end of the haul road at five locations during the survey, of which four were in the project area and one set of tracks were outside of the haul road. Tracks were most likely recorded in this section of the haul road as the substrate was sandy and as a result tracks were more obvious to the observer.

We have not attempted to assign broad categories of age to old mounds as the rate of mound weathering is not known for this area and would change, with this being dependent to some extent on the material from which the mound is constructed (stones or sand), its location in the landscape (surrounding vegetation) and weather (i.e., rainfall quantities and how much occurs during a particular rainfall event, wind and extreme storm events).

Studies have shown that a wide range of food shrubs, rather than an abundance of any one species is probably important for Malleefowl during for example droughts (Harlen & Priddel 1996). This is supported by other studies showing that Malleefowl are more abundant in areas where shrubs are more diverse (Woinarski 1989).

Malleefowl prefer habitat with a dense canopy and an open ground layer in which they can construct their mounds (Benshemesh 2007). Benshemesh (1992) also found that dense canopy cover was the most important feature associated with high breeding densities at sites in Victoria. Fire history is also important with Malleefowl birds preferring old growth (i.e., long unburnt) mallee. Fire has a major influence on the structure and floristic composition of habitats that Malleefowl occupy.

Given the Malleefowls preference for habitat with a diverse shrub layer and areas that are long unburnt, the Acacia Shrubland (burnt) is unlikely to be preferred habitat, particularly for foraging and mound construction as there is little to no canopy. No mounds have been recorded in this habitat in the project area during this survey or previous surveys. However, these birds have a relatively large home range that can be up to 4 km<sup>2</sup> in low rainfall areas (Booth 1987). Given this relatively large home range, Malleefowl could traverse all areas in the Mount Mason and haul road section of the project area. Mound construction is unlikely to occur in some sections of Mulga Shrubland where there are drainage channels or floodplains as their mounds could potentially be washed away or at least inundated with water (further to this none were recorded in such areas during this survey or past surveys).

There are no Malleefowl records in close proximity to the Yunddaga siding and Menzies bypass section of the project area. The habitat has been extensively disturbed as a result of historic mining activity and is deemed unsuitable for Malleefowl, as it has limited canopy cover in many areas and lacks a diverse shrub layer throughout much of the project area. During our habitat assessments, short walks and while driving tracks we did not see any Malleefowl, their mounds or tracks.

### 4.2 *Night Parrot*

The Night Parrot is an enigmatic species thought possibly to be extinct until the recent recoveries of two dead specimens from Queensland (and new locations more recently). The type specimen and many early sightings, however, came from WA (Johnstone et al. 2013). Night Parrots are cryptic, nocturnal and endemic to Australia's arid interior. Until the late 19th century, they were widespread and relatively easily found at least at some locations. For instance, 14 of the 25 museum specimens in existence came from the Gawler Ranges in South Australia between 1871 and 1881 (Murphy et al. 2017). The last Night Parrot collected intentionally was in Western Australia in 1912 (Wilson 1937). Then followed 78 years of unconfirmed reports spanning all mainland states and the Northern Territory, until in 1990 a desiccated bird was found by

a roadside in western Queensland (Boles et al. 1994, Murphy et al. 2017). In 2006, another dead bird was discovered by a Ranger 200 km to the south-east of the 1990 specimen (McDougall et al. 2009, Murphy et al. 2017). In 2013, the first photographs of a living night parrot were captured close to the site of the 2006 specimen (Dooley 2013, Murphy et al. 2017). Their cryptic nature, remote distribution and apparently rapid decline means that there is scant ecological information about night parrots.

A more recent sighting of the Night Parrot in WA comes from the Pilbara (12 April 2005) at a well near the Fortescue Marshes (Davis & Metcalf 2008). There was also a sighting near Matuwa (Lorna Glen), which is about 160 km north-east of Wiluna, in 2009 (Hamilton et al. 2017).

This species was present only in the PMST database (there were no records in the DBCA threatened fauna database or NatureMap), and there are limitations with this PMST as outlined above in section 3.2. None of their calls were recorded on the SM4s. There is very limited ecological information available for this species such as its preferred habitat (only very broad information). However, with increasing conservation focus being given to this species, more information is likely to become available, e.g., the discovery of Night Parrot nests in large Spinifex hummocks in Queensland (Murphy *et al.* 2017) which is a common and widespread habitat type throughout much of south-east Queensland and WA. There is no suitable habitat in the form of large spinifex hummocks in either section of the project area, as a result this species is highly unlikely to occur in the project area.

### 4.3 Long-tailed Dunnart

Records of the Long-tailed Dunnart come from widely scattered localities in the arid zone where it inhabits rugged, rocky areas. Little is known of the life history of long-tailed dunnarts, but available evidence suggests that this widely scattered species is restricted to rugged, rocky areas (Burbidge et al. 2008). Habitat includes plateaus composed of boulders and stones, with fine red sand sparsely vegetated with Mulga and miniritchie (*Acacia sp.*) shrubs over spinifex and areas of open woodland of Mulga (Van Dyck & Strahan 2008). The striated foot-pad and long strongly muscular tail of the Long-tailed Dunnart suggest it is an active and capable climber.

This species was recorded at the base of rocky scree in the Mount Mason section of the project area in 2011 (one individual) and 2012 (one individual) (KLA 2012). This species was not recorded in the project area during this survey on the five camera traps that were placed out in Mulga shrubland on rocky ridges and rocky hill slopes. Given the limited number of captures during the previous survey and no captures on camera traps during this survey, the Long-tailed Dunnart is likely to occur in very low densities in this area. There are also relatively large number of records to the south associated with rocky areas at Mount Ida (Figure 2).

There is no suitable habitat in the form of rugged rocky ridges along the haul road or in the Yunndaga siding and Menzies bypass section. Given this the species is highly unlikely to occur in these sections of the project area.

### 4.4 Arid Bronze Azure Butterfly

The Arid Bronze Azure Butterfly (ABAB) is known from only two existing subpopulations in WA. One occurs at Barbalin Nature Reserve (BNR), and at a second site ~100 km from Barbalin (DBCA 2020). There was a population at Lake Douglas, 12 km south west of Kalgoorlie, however, this population is reported to have become extinct in about 1993 as no ABAB have been recorded there since then (CA 2015, DBCA 2020).

The ABAB has an obligate association with a Sugar Ant (host) *Camponotus terebrans* and the ABAB larvae live entirely within the ant's nest during their development. The larvae are cryptic and extremely difficult to detect and only two have ever been seen (CA 2015, DBCA 2020). The most critical factor for habitat occupancy by the butterfly is the presence of large colonies of the host ant; only large colonies can support the ABAB because, being a parasitic species, it requires large numbers of hosts (CA 2015, DBCA 2020).

At the ABABs two known sites, the vegetation is mature mixed Gimlet *Eucalyptus salubris* / Salmon Gum *E. salmonophloia* woodlands on red-brown loam soils, with an open understorey (DBCA 2020). In addition to Gimlet and Salmon Gum, other smooth-barked Eucalypts at these sites which have basal ant colonies include Wandoo *E. wandoo*, smooth-barked York

Gum *E. loxophleba lissophloia* and Ribbon-barked Mallee *E. sheathiana*. The habitat at the extinct Lake Douglas site differs from the other sites but is also dominated by mature smooth-barked Eucalypt woodland, particularly Victoria Desert mallee *E. concinna* (DBCA 2020).

Given the ABABs obligate association with the Sugar Ant, the potential distribution of the ant may also reflect the distribution of the ABAB. The potential distribution of the Sugar Ant has been mapped and is illustrated in the DBCA Guideline for the survey of (ABAB) (DBCA 2020). This potential distribution encompasses a very large area of WA where rainfall is less than 325 mm and south of 26° S and where vegetation has been mapped as woodland and where the vegetation description includes Eucalypt ((DBCA 2020).

There were of course no records of ABAB in the three database searches (Appendix 2) as this species is known from only two locations. The project area does fall into this very large area that has been very broadly mapped as the potential distribution of the Sugar Ant which is the ABABs host. There are a two small patches of *Eucalyptus salubris* in the Mount Mason and haul road section of the project area which account for 4.92 ha or 0.62% of the total habitat. As the ABAB is currently only known from two populations, both of which are hundreds of kilometres from the project area, and there is only limited potential habitat in the project area, this species is unlikely to be present.



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# ***APPENDICES***



## ***Appendix 1: Conservation Categories***

# CONSERVATION CODES

## For Western Australian Fauna and Flora

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).



### Categories of Threatened Fauna Species under the EPBC Act.

Conservation Code	Description
<b>Ex</b>	Extinct Taxa which at a particular time if, at the time, there is no reasonable doubt that the last member of the species has died.
<b>ExW</b>	Extinct in the Wild Taxa which are known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or 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.
<b>Cr</b>	Critically Endangered Taxa which at a particular 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.
<b>En</b>	Endangered Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
<b>Vu</b>	Vulnerable Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

Source: Environment Protection and Biodiversity Conservation Act 1999.



## ***Appendix 2: Database Searches***

SCI_NAME	COM_NAME	CLASS	WA_LISTING	WA_status	EPBcstatus	Date	DAY	MONTH	YEAR	SOURCE_ID	SOURCE	CERTAINTY	OBS_METHOD	OBS_TYPE	COUNT	LOCALITY	SITE	ACCURACY_M	LONG_GDA	LAT_GDA	NAME_ID	FAMILY	GENUS	SPECIES	SUBSPECIES	KINGDOM
Branchinella simplex	a fairy shrimp (inland WA)	INVERTEBRATE	P1			16/10/2007	16	10	2007	90801	AP_SUBREG_INVERTS				0	Lake Moriarty	Lake Moriarty		121.1748000000	-29.8363000000	33935	Thamnocephalidae	Branchinella	simplex		Animalia
Actitis hypoleucos	Common Sandpiper	BIRD	Specially Protected - n MI	MI		16/10/2007	16	10	2007	1227412 157	BIRDATA				0	Niagara Dam	Niagara Dam	100	121.4258000000	-29.4072000000	41323	Scolopacidae	Actitis	hypoleucos		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			11/01/2013	11	1	2013	1356932 237	BIRDATA				0	Ullaring Rock	Ullaring Rock	100	120.5503000000	-29.9278000000	25624	Falconidae	Falco	peregrinus		Animalia
Tringa glareola	Wood sandpiper	BIRD	Specially Protected - n MI	MI		20/01/2015	20	1	2015	1548040 154	BIRDATA				0	Leonora WWTP	Leonora WWTP	0	121.3225000000	-28.8878000000	24806	Scolopacidae	Tringa	glareola		Animalia
Tringa glareola	Wood sandpiper	BIRD	Specially Protected - n MI	MI		15/03/2015	15	3	2015	1548041 154	BIRDATA				0	Leonora WWTP	Leonora WWTP	0	121.3225000000	-28.8878000000	24806	Scolopacidae	Tringa	glareola		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			22/07/1978	22	7	1978	44463 237	BIRDATLAS1				0	LEONORA	LEONORA	18000	121.0847000000	-28.7487000000	25624	Falconidae	Falco	peregrinus		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			12/07/1979	12	7	1979	66913 237	BIRDATLAS1				0	ULARRING	ULARRING	108000	119.5014000000	-29.4987000000	25624	Falconidae	Falco	peregrinus		Animalia
Tringa nebularia	Common greenshank, greens	BIRD	Specially Protected - n MI	MI		29/04/1979	29	4	1979	66915 158	BIRDATLAS1				0	ULARRING	ULARRING	108000	120.5014000000	-29.4987000000	24808	Scolopacidae	Tringa	nebularia		Animalia
Thinornis rubricollis	Hooded plover, hooded dotte	BIRD	Priority	P4		2/10/1980	2	10	1980	90616 138	BIRDATLAS1				0	108000			119.5014000000	-29.4987000000	48135	Charadriidae	Thinornis	rubricollis		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			2/10/1980	2	10	1980	90616 237	BIRDATLAS1				0	ULARRING	ULARRING	108000	119.5014000000	-29.4987000000	25624	Falconidae	Falco	peregrinus		Animalia
Leipoa ocellata	Malleefowl	BIRD	Threatened - Vulnerab	VU	VU	27/06/2001	27	6	2001	165605 7	BIRDATLAS2				0	Perrinvale Outstatic	Perrinvale Outstatic	100	120.1717000000	-28.9787000000	24557	Megapodiidae	Leipoa	ocellata		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			31/03/2002	31	3	2002	266442 237	BIRDATLAS2				0	Ullaring Rock	Ullaring Rock	100	120.5511000000	-29.9257000000	25624	Falconidae	Falco	peregrinus		Animalia
Falco peregrinus	Peregrine falcon	BIRD	Specially Protected - o OS			20/08/1999	20	8	1999	28936 237	BIRDATLAS2				0	Near Whitewell, Mt	Near Whitewell, Mt	100	119.5670000000	-29.4348000000	25624	Falconidae	Falco	peregrinus		Animalia
Actitis hypoleucos	Common Sandpiper	BIRD	Specially Protected - n MI	MI		26/09/2004	26	9	2004	432019 157	BIRDATLAS2				0	Niagara Dam	Niagara Dam	100	121.4264000000	-29.4037000000	41323	Scolopacidae	Actitis	hypoleucos		Animalia
Jalmenus aridus	Inland hairstreak, desert blue	INVERTEBRATE	Priority	P1		31/10/1997	31	10	1997	15284	BUGBASE				0	MENZIES	Lake Douglas, near I	0	121.0014000000	-29.9987000000	33979	Lycanidae	Jalmenus	aridus		Animalia
Leipoa ocellata	Malleefowl	BIRD	Threatened - Vulnerab	VU	VU	7/09/2011	7	9	2011	CDFN_734	BUSHBLITZ				0			30	120.5927000000	-29.8794000000	24557	Megapodiidae	Leipoa	ocellata		Animalia
Leipoa ocellata	Malleefowl	BIRD	Threatened - Vulnerab	VU	VU	7/09/2011	7	9	2011	23978	COWANSURVEYS	Very Certain	Survey	Sighting	1	ULARRING	Credo Station	30	120.5927000000	-29.8794000000	24557	Megapodiidae	Leipoa	ocellata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		19/05/2011	19	5	2011	257363	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9647000000	-28.6744000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		22/05/2011	22	5	2011	257366	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9642000000	-28.6752000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		18/05/2011	18	5	2011	257369	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9644000000	-28.6751000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		23/05/2011	23	5	2011	257370	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9644000000	-28.6751000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		24/05/2011	24	5	2011	257371	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9644000000	-28.6751000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		20/05/2011	20	5	2011	257374	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9646000000	-28.6746000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		22/05/2011	22	5	2011	257375	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6732000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		25/05/2011	25	5	2011	257381	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9693000000	-28.6736000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		18/05/2011	18	5	2011	257382	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6734000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		24/05/2011	24	5	2011	257383	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6734000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		22/05/2011	22	5	2011	257396	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9441000000	-28.7337000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		23/05/2011	23	5	2011	257409	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9377000000	-28.7271000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		1/09/2011	1	9	2011	284843	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Goldfields, Mt Masc	100	120.3614000000	-29.1211000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		30/10/2011	30	10	2011	284968	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Goldfields, Mt Ida	100	120.4228000000	-29.2124000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		16/11/2011	16	11	2011	364406	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6732000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		17/11/2011	17	11	2011	364463	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9693000000	-28.6738000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		17/11/2011	17	11	2011	364464	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9693000000	-28.6736000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		17/11/2011	17	11	2011	364465	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9448000000	-28.7328000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		18/11/2011	18	11	2011	364527	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9693000000	-28.6736000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		18/11/2011	18	11	2011	364528	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6733000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		19/11/2011	19	11	2011	364583	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9642000000	-28.6753000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		19/11/2011	19	11	2011	364584	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9692000000	-28.6732000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		20/11/2011	20	11	2011	364625	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9644000000	-28.6749000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		21/11/2011	21	11	2011	364716	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9646000000	-28.6746000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		21/11/2011	21	11	2011	364717	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9642000000	-28.6753000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		21/11/2011	21	11	2011	364718	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Mount Forrest, Min	100	119.9642000000	-28.6753000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Leipoa ocellata	Malleefowl	BIRD	Threatened - Vulnerab	VU	VU	21/10/2011	21	10	2011	385481	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	LAKE GILES - MCM 1	100	119.9919000000	-29.8297000000	24557	Megapodiidae	Leipoa	ocellata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL	Priority	P4		2/03/2012	2	3	2012	441214	FAUNASURVEY	Certain	Survey	Unknown	1	ULARRING	Goldfields, Mt Masc	100	120.3614000000	-29.1211000000	24115	Dasyuridae	Sminthopsis	longicaudata		Animalia
Sminthopsis longicaudata	Long-tailed dunnart	MAMMAL																								

Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	6/01/1994	6	1	1994	89815	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	1.3 km Sth of Elvire 0	119.600000000000	-29.51666667000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	23/06/1980	23	6	1980	89838	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	10 km South of Can 10000	119.600000000000	-29.55000000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	30/03/1975	30	3	1975	89850	TFAUNA	Moderately cer	Opportunistic sij	Sighting	2	MENZIES	10 miles South of Iv 1000	121.066700000000	-29.81660000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	19/07/1974	19	7	1974	89866	TFAUNA	Moderately cer	Opportunistic sij	Secondary sij 0	0	MENZIES	11 miles South of Iv 1000	121.083300000000	-29.83330000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	13/08/1967	13	8	1967	89867	TFAUNA	Moderately cer	Historical (writte	Secondary sij 1	1	MENZIES	11 miles South of Iv 1000	121.102858000000	-29.85865000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	24/05/1969	24	5	1969	89896	TFAUNA	Moderately cer	Historical (writte	Secondary sij 0	0	MENZIES	13 miles South of Iv 1000	121.083300000000	-29.86660000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	19/07/1974	19	7	1974	89901	TFAUNA	Moderately cer	Opportunistic sij	Secondary sij 0	0	MENZIES	12 miles South of Iv 1000	121.083300000000	-29.85000000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	7/01/1994	7	1	1994	89929	TFAUNA	Moderately cer	Opportunistic sij	Sighting	2	MENZIES	17 km west of Men: 0	120.866666700000	-29.71666667000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	27/09/1990	27	9	1990	90056	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	29 km east of Menz 0	120.733333300000	-29.73333330000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	9/03/1981	9	3	1981	90065	TFAUNA	Moderately cer	Opportunistic sij	Secondary sij 0	0	ULARRING	3 km South "main g 1000	119.583300000000	-29.53330000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	13/05/1964	13	5	1964	90191	TFAUNA	Moderately cer	Historical (writte	Sighting	1	ULARRING	5 miles West North 1000	120.500000000000	-30.10000000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/09/1979	1	9	1979	90245	TFAUNA	Moderately cer	Opportunistic sij	Secondary sij 0	0	MENZIES	70 mile peg 10000	121.083300000000	-29.86660000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	20/11/1993	20	11	1993	90410	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	Between Mt Elvire S 0	119.533333300000	-29.58333330000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/03/1981	1	3	1981	90728	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	Elvire Rock at Mt Elh 10000	119.597222200000	-29.50500000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/09/1980	1	9	1980	91018	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	Lake Barlee on Mt E 0	119.664722200000	-29.51638889000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	16/04/2002	16	4	2002	91125	TFAUNA	Moderately cer	Opportunistic sij	Sighting	2	MENZIES	Menzies Sandstone 0	121.000000000000	-29.50000000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/01/1995	1	1	1995	91262	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	MENZIES	Near intersection of 0	121.100000000000	-29.86666667000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	6/07/1994	6	7	1994	91379	TFAUNA	Moderately cer	Opportunistic sij	Sighting	2	ULARRING	Nr Hospital Rocks 0	120.100000000000	-29.83333330000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/01/2001	1	1	2001	91552	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	Perrinvale Outstatio 500	120.170270000000	-28.98000000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	10/06/1995	10	6	1995	91814	TFAUNA	Moderately cer	Opportunistic sij	Sighting	1	ULARRING	Walling Rock Statio 0	120.383333300000	-29.26666667000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	6/09/2017	6	9	2017	92523	TFAUNA	Certain	Opportunistic sij	Day sighting 1	1	Crede	ex-Credo Ucl - Dept 1000	120.488200000000	-29.94830000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	5/04/2018	5	4	2018	94510	TFAUNA	Very Certain (pl	Survey	Day sighting 1	1	Ularring	UCL, b/w Walling Rr 50	119.815347200000	-29.57646355000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	1/01/2013	1	1	2013	96058	TFAUNA	Certain	Opportunistic sij	Day sighting 0	0	Mount Ida Range	Mount Ida Range, a 1000	120.402500000000	-29.22860000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	20/03/2007	20	3	2007	96658	TFAUNA	Certain	Opportunistic sighting	1	1	Menzies	Riverina Station, me 1000	121.028500000000	-29.69360000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	20/08/2007	20	8	2007	96677	TFAUNA	Certain	Opportunistic sighting	0	0	Menzies	Walling Rock Statio 1000	120.399900000000	-29.34960000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	12/07/2012	12	7	2012	96755	TFAUNA	Certain	Opportunistic sij	Day sighting 1	1	Goongarrie	Goongarrie Station 1000	121.044900000000	-29.96800000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	18/04/2012	18	4	2012	96769	TFAUNA	Certain	Opportunistic sighting	0	0	Menzies	Northern end of Cre 1000	120.585000000000	-29.86833330000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	25/09/2008	25	9	2008	96810	TFAUNA	Certain	Opportunistic sighting	0	0	Menzies	approx. 2.6km nortl 1000	120.416715100000	-29.20726171000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	20/10/2008	20	10	2008	96813	TFAUNA	Certain	Opportunistic sij	Day sighting 1	1	Menzies	approx. 2km west o 1000	121.086568200000	-29.84788566000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	15/05/2008	15	5	2008	96818	TFAUNA	Certain	Opportunistic sighting	1	1	Menzies	track of the Daryhu 1000	120.518333300000	-29.91833330000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	8/06/2008	8	6	2008	96821	TFAUNA	Certain	Opportunistic sighting	2	2	Goongarrie	Goongarrie station 1000	121.041600000000	-29.97800000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	29/01/2008	29	1	2008	96867	TFAUNA	Certain	Opportunistic sighting	3	3	Menzies	Mount Ida Rd - 100 1000	120.386318600000	-29.14293058000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	5/11/2009	5	11	2009	96887	TFAUNA	Certain	Opportunistic sighting	2	2	Menzies	Mt Elvire proposed 1000	119.709722200000	-29.58555560000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	19/10/2010	19	10	2010	96978	TFAUNA	Certain	Opportunistic sighting	1	1	Menzies	1km NE of Goongar 10000	121.062775200000	-29.95166274000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	12/08/2011	12	8	2011	97004	TFAUNA	Certain	Opportunistic sighting	1	1	Ularring	Evanston-Menzies R 10000	120.307695200000	-29.85299561000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	13/12/2011	13	12	2011	97319	TFAUNA	Certain	Opportunistic sij	Sighting	2	2	Northern Goldfields HWY	1000	121.258700000000	-29.44750000000	24557	Megapodiidae	Leipoa	ocellata	Animalia
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	13/07/2013	13	7	2013	97324	TFAUNA	Certain	Opportunistic sij	Dusk sighting 1	1	Menzies	14km west of Menz 1000	120.882400000000	-29.71630000000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	3/03/2019	3	3	2019	98456	TFAUNA	Very Certain (pl	Opportunistic sij	Day sighting 1	1	Davyhurst Road, Menzies	500	120.669998500000	-29.97749635000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	21/09/2019	21	9	2019	103002	TFAUNA	Certain	Opportunistic sij	Sighting	1	1	Goongarrie Station	150m from the stat 50	120.826800000000	-30.04870000000	24557	Megapodiidae	Leipoa	ocellata	Animalia
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	23/01/2020	23	1	2020	133006	TFAUNA	Very Certain (pl	Opportunistic sij	Dead	1	Crede	Davyhurst-Mulline f 50	120.541191400000	-29.93688872000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Leipoa ocellata	malleefowl	BIRD	Threatened - Vulnerab	VU	29/04/2020	29	4	2020	140171	TFAUNA	Certain	Opportunistic sij	Day sighting 1	1	Lake Guilies PEC	Macarthur Minerals 50	120.033055600000	-30.01722220000	24557	Megapodiidae	Leipoa	ocellata	Animalia	
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	AVIF:37771	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	ULARRING	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia		
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	AVIF:37782	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	ULARRING	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia		
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	AVIF:37783	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	ULARRING	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia		
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	urn:lsid:taxonomy.c	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	1	WAM_BIRDS	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia	
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	urn:lsid:taxonomy.c	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	1	WAM_BIRDS	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia	
Calonectris leucomelas	Streaked shearwater	BIRD	Specially Protected - n MI	MI	20/03/2012	20	3	2012	urn:lsid:taxonomy.c	WAM_BIRDS	WAM Vouchere Collection	Specimen	1	1	WAM_BIRDS	Camp Lake Ida mine 50000	120.470000000000	-29.11670000000	24686	Procellariidae	Calonectris	leucomelas	Animalia	

# NatureMap Species Report

Created By Guest user on 03/05/2021

**Kingdom** Animalia  
**Current Names Only** Yes  
**Core Datasets Only** Yes  
**Method** 'By Circle'  
**Centre** 120° 22' 05" E, 29° 07' 50" S  
**Buffer** 40km  
**Group By** Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	103	655
Priority 4	1	5
Protected under international agreement	1	3
Rare or likely to become extinct	1	4
<b>TOTAL</b>	<b>106</b>	<b>667</b>

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
<b>Rare or likely to become extinct</b>				
1.	24557 <i>Leipoa ocellata</i> (Malleefowl)		T	
<b>Protected under international agreement</b>				
2.	24686 <i>Calonectris leucomelas</i> (Streaked Shearwater)		IA	
<b>Priority 4</b>				
3.	24115 <i>Sminthopsis longicaudata</i> (Long-tailed Dunnart)		P4	
<b>Non-conservation taxon</b>				
4.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
5.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
6.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
7.	24264 <i>Acanthiza robustirostris</i> (Slaty-backed Thornbill)			
8.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
9.	<i>Aname tepperi</i>			
10.	25448 <i>Antaresia stimsoni</i> (Stimson's Python)			
11.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
12.	25528 <i>Aphelocephala leucopsis</i> (Southern Whiteface)			
13.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
14.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
15.	<i>Barnardius zonarius</i>			
16.	24251 <i>Bos taurus</i> (European Cattle)	Y		
17.	<i>Cethegus fugax</i>			
18.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
19.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
20.	25580 <i>Cinlosoma castaneothorax</i> (Chestnut-breasted Quail-thrush)			
21.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
22.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
23.	24416 <i>Corvus bennetti</i> (Little Crow)			
24.	25592 <i>Corvus coronoides</i> (Australian Raven)			
25.	25593 <i>Corvus orru</i> (Torresian Crow)			
26.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
27.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
28.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
29.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
30.	24889 <i>Ctenophorus scutulatus</i> (Lozenge-marked Dragon)			
31.	25052 <i>Ctenotus leonhardii</i>			
32.	25054 <i>Ctenotus mimetes</i>			
33.	25074 <i>Ctenotus schomburgkii</i>			
34.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
35.	25468 <i>Demansia psammophis</i> (Yellow-faced Whipsnake)			
36.	24940 <i>Diplodactylus pulcher</i>			
37.	24470 <i>Dromaius novaehollandiae</i> (Emu)			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
38.	25092 <i>Egernia depressa</i> (Southern Pygmy Spiny-tailed Skink)			
39.	<i>Eolophus roseicapillus</i>			
40.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
41.	25109 <i>Eremiascincus richardsonii</i> (Broad-banded Sand Swimmer)			
42.	<i>Eucyrtops eremaea</i>			
43.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
44.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
45.	24959 <i>Gehyra variegata</i>			
46.	<i>Geogarypus taylori</i>			
47.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
48.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
49.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
50.	<i>Hoggicosa castanea</i>			
51.	<i>Lampona ampeinna</i>			
52.	<i>Lampona quinqueplagiata</i>			
53.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
54.	25489 <i>Macropus robustus</i> (Euro, Biggada)			
55.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
56.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
57.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
58.	47997 <i>Melanodryas cucullata</i> (Hooded Robin)			
59.	25663 <i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			
60.	25184 <i>Menetia greyii</i>			
61.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
62.	<i>Missulena occatoria</i>			
63.	25190 <i>Morethia butleri</i>			
64.	24223 <i>Mus musculus</i> (House Mouse)	Y		
65.	25427 <i>Neobatrachus sutor</i> (Shoemaker Frog)			
66.	25497 <i>Nephruvus levis</i>			
67.	24967 <i>Nephruvus levis subsp. levis</i>			
68.	24971 <i>Nephruvus vertebralis</i>			
69.	24094 <i>Ningui ridei</i> (Wongai Ningui)			
70.	24224 <i>Notomys alexis</i> (Spinifex Hopping-mouse)			
71.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
72.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
73.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
74.	24619 <i>Pachycephala inornata</i> (Gilbert's Whistler)			
75.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
76.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
77.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
78.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
79.	<i>Pilbarascutigera incola</i>			
80.	25510 <i>Pogona minor</i> (Dwarf Bearded Dragon)			
81.	24683 <i>Pomatostomus superciliosus</i> (White-browed Babbler)			
82.	24106 <i>Pseudantechinus woolleyae</i> (Woolley's Pseudantechinus)			
83.	25262 <i>Pseudechis butleri</i> (Spotted Mulga Snake)			
84.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
85.	25263 <i>Pseudonaja modesta</i> (Ringed Brown Snake)			
86.	25434 <i>Pseudophryne occidentalis</i> (Western Toadlet)			
87.	42344 <i>Pumella albifrons</i> (White-fronted Honeyeater)			
88.	24278 <i>Pyrrholaemus brunneus</i> (Redthroat)			
89.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
90.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
91.	<i>Scolopendra laeta</i>			
92.	<i>Selenotholus foelschei</i>			
93.	30948 <i>Smicromis brevirostris</i> (Weebill)			
94.	24109 <i>Sminthopsis dolichura</i> (Little long-tailed Dunnart)			
95.	24114 <i>Sminthopsis hirtipes</i> (Hairy-footed Dunnart)			
96.	25597 <i>Strepera versicolor</i> (Grey Currawong)			
97.	24923 <i>Strophurus assimilis</i> (Goldfields Spiny-tailed Gecko)			
98.	24946 <i>Strophurus strophurus</i>			
99.	<i>Synsphyronus mimulus</i>			
100.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
101.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
102.	25211 <i>Varanus caudolineatus</i>			
103.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
104.	25524 <i>Varanus panoptes</i> (Yellow-spotted Monitor)			
105.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
106.	<i>Zebraplatys fractivittata</i>			

Name ID Species Name

Naturalised

Conservation Code

<sup>1</sup>Endemic To Query Area

**Conservation Codes**

- T - Rare or likely to become extinct
- X - Presumed extinct
- IA - Protected under international agreement
- S - Other specially protected fauna
- 1 - Priority 1
- 2 - Priority 2
- 3 - Priority 3
- 4 - Priority 4
- 5 - Priority 5

<sup>1</sup> For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 12/07/21 12:23:36

[Summary](#)

[Details](#)

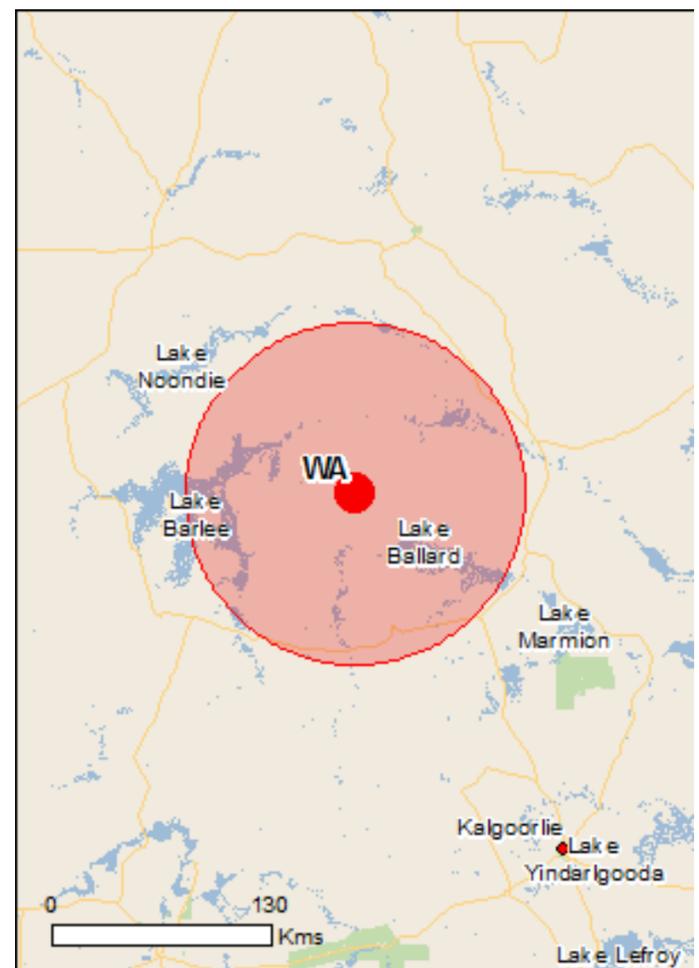
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 100.0Km](#)



# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	8
<a href="#">Listed Migratory Species:</a>	7

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Land:</a>	1
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	11
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None

## Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

<a href="#">State and Territory Reserves:</a>	3
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	15
<a href="#">Nationally Important Wetlands:</a>	2
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

### Listed Threatened Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
------	--------	------------------

#### Birds

<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
---	------------	--

<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
---	------------	---

<a href="#">Pezoporus occidentalis</a> Night Parrot [59350]	Endangered	Species or species habitat may occur within area
--	------------	--

<a href="#">Polytelis alexandrae</a> Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat likely to occur within area
---	------------	--

#### Mammals

<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
---	------------	--

#### Plants

<a href="#">Myriophyllum lapidicola</a> Chiddarcooping Myriophyllum [55940]	Endangered	Species or species habitat known to occur within area
--	------------	---

<a href="#">Ricinocarpos brevis</a> [82879]	Endangered	Species or species habitat known to occur within area
--	------------	---

<a href="#">Tetratheca paynterae</a> Paynter's Tetratheca [66451]	Endangered	Species or species habitat may occur within area
--	------------	--

### Listed Migratory Species [\[ Resource Information \]](#)

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
------	------------	------------------

#### Migratory Marine Birds

<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
---	--	--

#### Migratory Terrestrial Species

<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
---	--	--

Name	Threatened	Type of Presence
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat likely to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

## Other Matters Protected by the EPBC Act

### Commonwealth Land [\[ Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -

### Listed Marine Species [\[ Resource Information \]](#)

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat likely to occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Chrysococcyx osculans</a> Black-eared Cuckoo [705]		Species or species habitat known to occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Thinornis rubricollis</a> Hooded Plover [59510]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

## Extra Information

### State and Territory Reserves [\[ Resource Information \]](#)

Name	State
Bulga Downs & Cashmere Downs Pastoral leases portions	WA
Credo	WA
Mount Manning Range	WA

### Invasive Species [\[ Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
------	--------	------------------

### Birds

Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area

### Mammals

Camelus dromedarius Dromedary, Camel [7]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

### Plants

Carrichtera annua Ward's Weed [9511]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Cylindropuntia spp. Prickly Pears [85131]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area

### Nationally Important Wetlands [ Resource Information ]

Name	State
<a href="#">Lake Ballard</a>	WA
<a href="#">Lake Barlee</a>	WA

# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-29.13056 120.36806

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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## ***Appendix 3: Habitat Assessments***

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA1				
Project Number:										
Date: 14/5/21			Easting: 243104			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6775653				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam	cracking clay		clay		
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds					Mammals					Reptiles

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA2				
Project Number:										
Date: 14/5/21			Easting: 242990			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6775846				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam	cracking clay		clay		
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA3				
Project Number:										
Date: 14/5/21			Easting: 242743			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6775862				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura, Allocasuarina sp.</i>		2.5	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason					Site Number: HA4						
Project Number:											
Date: 14/5/21			Easting: 242563			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6776154				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam		cracking clay		clay		
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		3	0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover	Herbs		0.05	0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION					LAST FIRE						
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 Yr	3 >5 Yr
(general)				DISTURBANCE				(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none		
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds	Mammals				Reptiles						

FAUNA HABITAT ASSESSMENT SHEET														
Mid-west														
Location: Mount Mason					Site Number: HA5									
Project Number:														
Date: 15/5/21			Easting: 242394			Aspect		N	NE	SW	NW			
Quadrat Size: 50 x 50 m			Northing: 6776456					E	SE	W	N/A			
Soil Texture					sand		sandy-loam		loam		cracking clay		clay	
					VEGETATION									
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover								
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick					
	Riverine Woodland	Overstorey	Acacia aneura		4	0 <5%	1 <20%	2 20-60%	3 60-100%					
	Other Grassland	Midstorey	Acacia aneura		1	0 <5%	1 <20%	2 20-60%	3 60-100%					
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%					
CONDITION					LAST FIRE									
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 Yr	3 >5 Yr			
(general)				DISTURBANCE			(cattle)							
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none					
GROUND COVER														
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%					
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *					
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%					
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%					
MICROHABITATS														
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common					
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common					
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common					
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common					
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m					
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common				
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common					
SPECIES														
Malleefowl	YES	NO	DETAILS		Could forage in area given nearby records, old mounds and recent sighting.									
Night Parrot	YES	NO												
Long-tailed Dunnart	YES	NO			Could occur as the area is a small ridge with some small boulders for shelter.									
Birds			Mammals				Reptiles							

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA6				
Project Number:										
Date: 15/5/21			Easting: 243821			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6776251				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100%*	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA7				
Project Number:										
Date: 16/5/21			Easting: 243586			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6775850				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam	cracking clay		clay		
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	Acacia aneura		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	Acacia sp., Eremophila sp.		2	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)			DISTURBANCE				(cattle)			
	0 heavv	1 medium	2 mild	3 none		0 heavv	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO		Could occur as the area is a near ridge with boulders for shelter.						
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA8				
Project Number:										
Date: 16/5/21			Easting: 244084			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6775655				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other:		Average Height in metres	Cover					
	Acacia Shrubland	Stratum			Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	<i>Eucalyptus lesouefii</i>		0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	<i>Acacia aneura, Eremophila sp.</i>		0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover			0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE				(cattle)		
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent		Present			Woody Debris	0 none	1 rare	2 moderate	3 common
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA9				
Project Number:										
Date: 16/5/21			Easting: 245313			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6773251				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam	cracking clay		clay		
VEGETATION										
Vegetation Description	Hummock Grassland	Other:		Average Height in metres	Cover					
	Acacia Shrubland	Stratum			Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	Mixed Acacia sp (including Mulga)		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	Eremophila sp.		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS		Could forage in area given nearby records, old mounds and recent sighting.					
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET												
Mid-west												
Location: Mount Mason						Site Number: HA10						
Project Number:												
Date: 16/5/21			Easting: 245201			Aspect	N	NE	SW	NW		
Quadrat Size: 50 x 50 m			Northing: 6772752				E	SE	W	N/A		
												
Soil Texture	sand		sandy-loam		loam	cracking clay		clay				
VEGETATION												
Vegetation Description	Hummock Grassland	Other:		Average Height in metres	Cover							
	Acacia Shrubland	Stratum			Scattered Plants	Sparse	Moderate	Thick				
	Riverine Woodland	Overstorey			0 <5%	1 <20%	2 20-60%	3 60-100%				
	Other Grassland	Midstorey	Mixed <i>Acacia</i> sp (including Mulga)		0 <5%	1 <20%	2 <b>20-60%</b>	3 60-100%				
	Euc Woodland	Ground Cover			0 <5%	1 <20%	2 20-60%	3 60-100%				
CONDITION						LAST FIRE						
Scale:	5 Pristine	4 Excellent	3 <b>Very Good</b>	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 4-5 Yr	3 >5 Yr	
(general)				DISTURBANCE				(cattle)				
	0 heavy	1 <b>medium*</b>	2 mild	3 none	0 heavy	1 medium	2 mild	3 none				
GROUND COVER												
Bare Ground	0 <5%	1 <20%	2 <b>20-60%</b>	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%			
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *			
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%			
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%			
MICROHABITATS												
Burrowing Suitability	0 Rock	1 Stony	2 <b>Sandy Loam</b>	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common			
Pebbles Stones	0 none	1 <b>0-30%</b>	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common			
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common			
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common			
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m			
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present				Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES												
Malleefowl	YES	NO	DETAILS		Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO										
Long-tailed Dunnart	YES	NO										
Birds			Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Mount Mason						Site Number: HA11				
Project Number:										
Date: 16/5/21			Easting: 245425			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6772757				E	SE	W	S
										
Soil Texture	sand		sandy-loam		loam	cracking clay		clay		
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	Acacia aneura		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey				0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds	Mammals				Reptiles					

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA12					
Project Number:											
Date: 17/5/21			Easting: 247246			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6760556				E	SE	W	S	
											
Soil Texture	sand		sandy-loam		loam		cracking clay		clay		
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	<i>Eremophila sp.</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover	Grass			0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)				
	0 heavy	1 medium*	2 mild	3 none	0 heavy	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present		Woody Debris	0 none	1 rare	2 moderate	3 common			
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds	Mammals				Reptiles						

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA13					
Project Number:											
Date: 17/5/21			Easting: 247254			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6759372				E	SE	W	S	
											
Soil Texture	sand		sandy-loam		loam		cracking clay		clay		
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	<i>Eremophila sp.</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 4-5 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)				
	0 heavy	1 medium*	2 mild	3 none	0 heavy	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100%*		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds	Mammals				Reptiles						

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA14					
Project Number:											
Date: 17/5/21			Easting: 246556			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6763803				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam	cracking clay		clay			
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 >5 Yr	
(general)				DISTURBANCE			(cattle)				
	0 heavy	1 medium*	2 mild	3 none	0 heavy	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present		Woody Debris	0 none	1 rare	2 moderate	3 common			
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds	Mammals				Reptiles						

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA15					
Project Number:											
Date: 17/5/21			Easting: 251649			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6751598				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam	cracking clay		clay			
VEGETATION											
Vegetation Description	Hummock Grassland	Other:		Average Height in metres	Cover						
	Acacia Shrubland	Stratum			Scattered Plants	Sparse	Moderate	Thick			
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		0 <5%	1 <20%	2 20-60%	3 60-100%			
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		0	1	2	3			
	Euc Woodland	Ground Cover			<5%	<20%	2 20-60%	3 60-100%			
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr	
(general)				DISTURBANCE				(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none		
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES			NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage and construct mounds given sightings, mounds and tracks in area.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds					Mammals					Reptiles	

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA16					
Project Number:											
Date: 17/5/21			Easting: 250399			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6753592				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam		cracking clay		clay		
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey				0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover	Sedges			0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)				
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none		
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO			DETAILS						
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds					Mammals					Reptiles	

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Mount Mason Haul Road						Site Number: HA17					
Project Number:											
Date: 18/5/21			Easting: 249297			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6754317				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam	cracking clay		clay			
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	<i>Eremophila sp.</i>			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 4-5 Yr	4 >5 Yr
(general)						(cattle)					
	0 heavy	1 medium*	2 mild	3 none	0 heavy	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100%*		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present		Woody Debris	0 none	1 rare	2 moderate	3 common			
SPECIES											
Malleefowl	YES	NO	DETAILS	Could forage in area given nearby records, old mounds and recent sighting.							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds	Mammals				Reptiles						

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Yunnadga Siding & Bypass Route						Site Number: HA18				
Project Number:										
Date: 19/5/21			Easting: 306721			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6715157				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey				0	1	2	3	
	Euc Woodland	Ground Cover				<5%	<20%	20-60%	60-100%	
CONDITION										
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	LAST FIRE			
							0 <1 year	1 1-3 Yr	2 Yr	4-5 >5 Yr
DISTURBANCE										
	(general)						(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO		DETAILS						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds					Mammals					Reptiles

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Yunnadga Siding & Bypass Route						Site Number: HA19				
Project Number:										
Date: 19/5/21			Easting: 307154			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6713863				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		4	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		1	0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO		DETAILS						
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds					Mammals					Reptiles

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Yunnadga Siding & Bypass Route						Site Number: HA20					
Project Number:											
Date: 19/5/21			Easting: 307400			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6712572				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam	cracking clay		clay			
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey				0	1	2	3		
	Euc Woodland	Ground Cover				<5%	<20%	20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr	
(general)				DISTURBANCE			(cattle)				
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none		
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100%*		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO			DETAILS						
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds					Mammals					Reptiles	

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Yunnadga Siding & Bypass Route						Site Number: HA21					
Project Number:											
Date: 19/5/21			Easting: 308881			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6710584				E	SE	W	S	
											
Soil Texture	sand		sandy-loam		loam	cracking clay		clay			
VEGETATION											
Vegetation Description	Hummock Grassland	Other:		Average Height in metres	Cover						
	Acacia Shrubland	Stratum			Scattered Plants	Sparse	Moderate	Thick			
	Riverine Woodland	Overstorey	<i>Acacia aneura</i>		0 <5%	1 <20%	2 20-60%	3 60-100%			
	Other Grassland	Midstorey	<i>Eremophila sp.</i>		0 <5%	1 <20%	2 20-60%	3 60-100%			
	Euc Woodland	Ground Cover			0 <5%	1 <20%	2 20-60%	3 60-100%			
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr	
(general)				DISTURBANCE			(cattle)				
	0 heavv	1 medium	2 mild	3 none	0 heavv	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO			DETAILS						
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds					Mammals					Reptiles	

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Yunnadga Siding & Bypass Route						Site Number: HA22					
Project Number:											
Date: 19/5/21			Easting: 311359			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6708560				E	SE	W	N/A	
											
Soil Texture	sand	sandy-loam	loam	cracking clay	clay						
VEGETATION											
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	Acacia sp., Eremophila sp.			0	1	2	3		
	Euc Woodland	Ground Cover	Buffel Grass			<5%	<20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	4-5 Yr	3 >5 Yr
(general)				DISTURBANCE				(cattle)			
	0 heavv	1 medium*	2 mild	3 none	0 heavv	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present		Woody Debris	0 none	1 rare	2 moderate	3 common			
SPECIES											
Malleefowl	YES	NO	DETAILS								
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds				Mammals				Reptiles			

FAUNA HABITAT ASSESSMENT SHEET											
Mid-west											
Location: Yunnadga Siding & Bypass Route						Site Number: HA23					
Project Number:											
Date: 19/5/21			Easting: 312100			Aspect	N	NE	SW	NW	
Quadrat Size: 50 x 50 m			Northing: 6706973				E	SE	W	N/A	
											
Soil Texture	sand		sandy-loam		loam		cracking clay		clay		
VEGETATION											
Vegetation Description	Hummock Grassland	Other:Low Scattered Shrubland			Average Height in metres	Cover					
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick		
	Riverine Woodland	Overstorey				0 <5%	1 <20%	2 20-60%	3 60-100%		
	Other Grassland	Midstorey	Acacia sp.			0 <5%	1 <20%	2 20-60%	3 60-100%		
	Euc Woodland	Ground Cover	Chenopods, Buffel Grass			0 <5%	1 <20%	2 20-60%	3 60-100%		
CONDITION						LAST FIRE					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr	
(general)				DISTURBANCE			(cattle)				
	0 heavv	1 medium*	2 mild	3 none	0 heavv	1 medium	2 mild	3 none			
GROUND COVER											
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%		
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100% *		
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%		
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%		
MICROHABITATS											
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common		
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common		
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common		
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common		
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m		
Suitability for Bats	YES		NO		Termite Mounds	0 none	1 rare	2 moderate	3 common		
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common		
SPECIES											
Malleefowl	YES	NO		DETAILS							
Night Parrot	YES	NO									
Long-tailed Dunnart	YES	NO									
Birds				Mammals				Reptiles			

FAUNA HABITAT ASSESSMENT SHEET										
Mid-west										
Location: Yunnadga Siding & Bypass Route						Site Number: HA24				
Project Number:										
Date: 19/5/21			Easting: 312355			Aspect	N	NE	SW	NW
Quadrat Size: 50 x 50 m			Northing: 6706227				E	SE	W	N/A
										
Soil Texture	sand		sandy-loam		loam		cracking clay		clay	
VEGETATION										
Vegetation Description	Hummock Grassland	Other: Mulga Shrubland			Average Height in metres	Cover				
	Acacia Shrubland	Stratum				Scattered Plants	Sparse	Moderate	Thick	
	Riverine Woodland	Overstorey	Acacia aneura			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Other Grassland	Midstorey	Acacia sp., Eremophila sp.			0 <5%	1 <20%	2 20-60%	3 60-100%	
	Euc Woodland	Ground Cover				0 <5%	1 <20%	2 20-60%	3 60-100%	
CONDITION						LAST FIRE				
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1-3 Yr	2 Yr	3 >5 Yr
(general)				DISTURBANCE			(cattle)			
	0 heavy	1 medium*	2 mild	3 none		0 heavy	1 medium	2 mild	3 none	
GROUND COVER										
Bare Ground	0 <5%	1 <20%	2 20-60%	3 60-100%	Hummock Grass	0 <5%	1 <20%	2 20-60%	3 60-100%	
Rock	0 <5%	1 <20%	2 20-60%	3 60-100%	Other Grass	0 <5%	1 <20%	2 20-60%	3 60-100%*	
Leaf Litter	0 <5%	1 <20%	2 20-60%	3 60-100%	Herbs	0 <5%	1 <20%	2 20-60%	3 60-100%	
Logs >10cm	0 <5%	1 <20%	2 20-60%	3 60-100%	Other	0 <5%	1 <20%	2 20-60%	3 60-100%	
MICROHABITATS										
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Presence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YES		NO			Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present			Woody Debris	0 none	1 rare	2 moderate	3 common	
SPECIES										
Malleefowl	YES	NO			DETAILS					
Night Parrot	YES	NO								
Long-tailed Dunnart	YES	NO								
Birds					Mammals					Reptiles