PHOENIX
ENVIRONMENTAL SCIENCES

Baseline feral monitoring for the Mardie Salt Project

Prepared for BCI Minerals

February 2025

Final

Baseline feral monitoring for the Mardie Salt Project for the Mardie Salt Project

Prepared for BCI Minerals

Version history

Author/s	Reviewer/s	Version	Version number	Date submitted	Submitted to
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EXECUTIVE SUMMARY

Mardie Minerals Pty Ltd (Mardie Minerals), a wholly owned subsidiary of BCI Minerals Ltd (BCI), is developing the Mardie Project (the Project), a proposed solar salt operation that will make use of seawater and evaporation to produce a concentrated salt product and other associated products.

BCI is required to implement annual feral monitoring, to be compliant with conditions 14, 15 and 16 of EPBC 2018/8236 (as varied) and EPBC 2022/9169. To meet the requirements of condition 14 of the EPBC 2018/8236 (as varied) and EPBC 2022/9169 approvals, BCI requested Phoenix Environmental Sciences (Phoenix) to conduct the first round of introduced fauna surveys to establish baseline data on cats, red foxes, rabbits, pigs, and cane toads.

Ten (10) motion sensitive cameras were deployed inside the impact area of the Project Development Envelope and an additional 10 cameras were installed at control sites outside of the impact area to provide reference data on the natural fluctuations of introduced species. Cameras were programmed to record year-round, for a period of 12 months (November 2023 to November 2024), to ensure similar survey effort between sites and between impact and control areas. Cameras were left in-situ for one year and serviced by BCI staff periodically to ensure they were functioning normally and were properly maintained.

The monitoring sites were placed in five broad fauna habitat types. These were spinifex grassland, shrubland over spinifex grassland, open woodland (riparian), mudflat or saltflat, and mangal community.

Five feral fauna species were identified during the survey, including cat (*Felis catus*), red fox (*Vulpes vulpes*), European cattle (*Bos taurus*), dog/dingo (*Canis familiaris*) and rabbit (*Oryctolagus cuniculus*). All sites recorded at least one feral species over the year, with most sites recording two species. Over the survey period, red foxes were detected 75 times (0.31 times per month per site), cats were detected 133 times (0.62 times per month per site), rabbits were detected twice, and dogs/dingoes were detected 14 times (0.08 times per month per site). Cane toads and pigs were not detected.

Statistical tests found there was no statistically significant difference in the number of cat and red fox detections per 30-day period at impact and control sites. Cats and red foxes were detected on average more times per month per site at impact sites than at the control sites. However, the difference in detections of red fox between impact and control sites was above the significance threshold ($p \leq 0.05$).

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ACRONYMS AND ABBREVIATIONS

DE	Development envelope
BCI	BCI Minerals Pty Ltd
EPBC	Environment Protection and Biodiversity Conservation Act
IBRA	Interim Biogeographic Regionalisation for Australia
T&P	Threatened and Priority
WA	Western Australia

1 INTRODUCTION

Mardie Minerals Pty Ltd (Mardie Minerals) a wholly owned subsidiary of BCI Minerals Ltd (BCI), is developing the Mardie Project (the Project). The Project is located 80 km southwest of Karratha in the Pilbara region of Western Australia (WA; Figure 3-1). The Project is located in the Eremaean Botanical Province as defined by EPA (2016b).

The Project is a proposed solar salt operation that will make use of seawater and evaporation to produce a concentrated salt product and other associated products. This will involve the creation of a series of evaporation and crystallisation ponds to produce sodium chloride (NaCl) salt, as well as sulphate of potash.

In October 2023, Phoenix Environmental Sciences Pty Ltd (Phoenix) was commissioned by BCI to undertake an introduced fauna baseline survey for the Project.

1.1 COMPLIANCE REQUIREMENTS

The Project initially received federal environmental approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) in 2022 under EPBC number 2018/8236 (DAWE 2022a). Subsequent approval was granted in 2024 under EPBC 2022/9169 (DCCEEW 2024a) following a significant change to the original proposed action. In October 2024, the conditions for EPBC 2018/8236 were varied to mirror the conditions of EPBC 2022/9169.

This report has been commissioned by BCI to meet condition 14 of EPBC 2018/8236 (as varied) and EPBC 2022/9169 (Table 1-2). Conditions 15 and 16 are required to be met in the following years of feral fauna monitoring.

Table 1--1 Compliance requirements as per EPBC 2018/8236 (as varied) & EPBC 2022/9169 approvals

Condition number	Condition
14	'The approval holder must, before 1 March 2025, provide to the department a report which establishes a baseline number for the number of cats, foxes, rabbits, pigs, and cane toads within the development envelope.
15	The approval holder must ensure that the number of cats, foxes, rabbits, pigs, and cane toads within the development envelope does not increase as a result of the Action when compared to the baseline number for each species as specified in the report required by condition 14.
16	At least once each calendar year, and on a similar date or dates each year, the approval holder must undertake monitoring surveys in accordance with best practice to determine the number of cats, foxes, rabbits, pigs, and cane toads within the development envelope. The approval holder must provide a report to the department providing details of this survey data within 2 months of undertaking the surveys in every calendar year.

1.2 SCOPE OF WORK

To meet the compliance requirements outlined above, BCI engaged Phoenix to conduct the introduced fauna surveys to establish baseline data on cats, red foxes, rabbits, pigs, and cane toads. The proposed scope of work was as follows:

- installation of 20 remote cameras to assess the number of cats, red foxes, rabbits, pigs, and cane toads within the Project Development Envelope (DE), and at Mardie Station which will act as a reference site
- opportunistic searches for secondary evidence (such as tracks and scats) of introduced fauna
- review and assess the number of cats, red foxes, rabbits, pigs, and cane toads detected on the cameras after 12 months and provide a full technical report after 12 months of monitoring that summarises the baseline data and provides a framework for future years monitoring data.

1.3 IMPACT AREA

The impact area, located within the DE, is approximately 20,000 ha and contains a quarry, several ponds, and a dredging area (Figure 3-1).

2 CLIMATE AND WEATHER

The nearest Bureau of Meteorology weather station with comprehensive data collection and relatively recent historic rainfall data is Mardie (no. 005008, Latitude: 21.19°S Longitude 115.98°E), located less than 1 km east of the impact area.

Mardie records the highest mean maximum monthly temperature (37.9°C) in January and the lowest in July (27.8°C). The lowest mean monthly minimum temperature occurs in July (12.0°C) and the highest in February (25.4°C) (Figure 2-1). Mean annual rainfall is 274.6 mm with February and March recording the highest monthly means (62.3 and 48.2 mm respectively; Figure 2-1). Cyclonic activity is significant with several systems affecting the coast and hinterland annually.

Daily mean temperatures at Mardie over the survey period were mostly consistent with the long-term averages for the region; mean maximum temperatures from November 2023 to January 2024 were on average slightly cooler than the long-term average (Figure 2-1)

It was generally quite dry at Mardie over 2024, except for the last few months of the survey period. June was well above the median monthly rainfall for the site, recording more than double the median rainfall for the month (56.2mm), and August, September, and October all recorded far more rain than the median monthly rainfall (Figure 2-1).

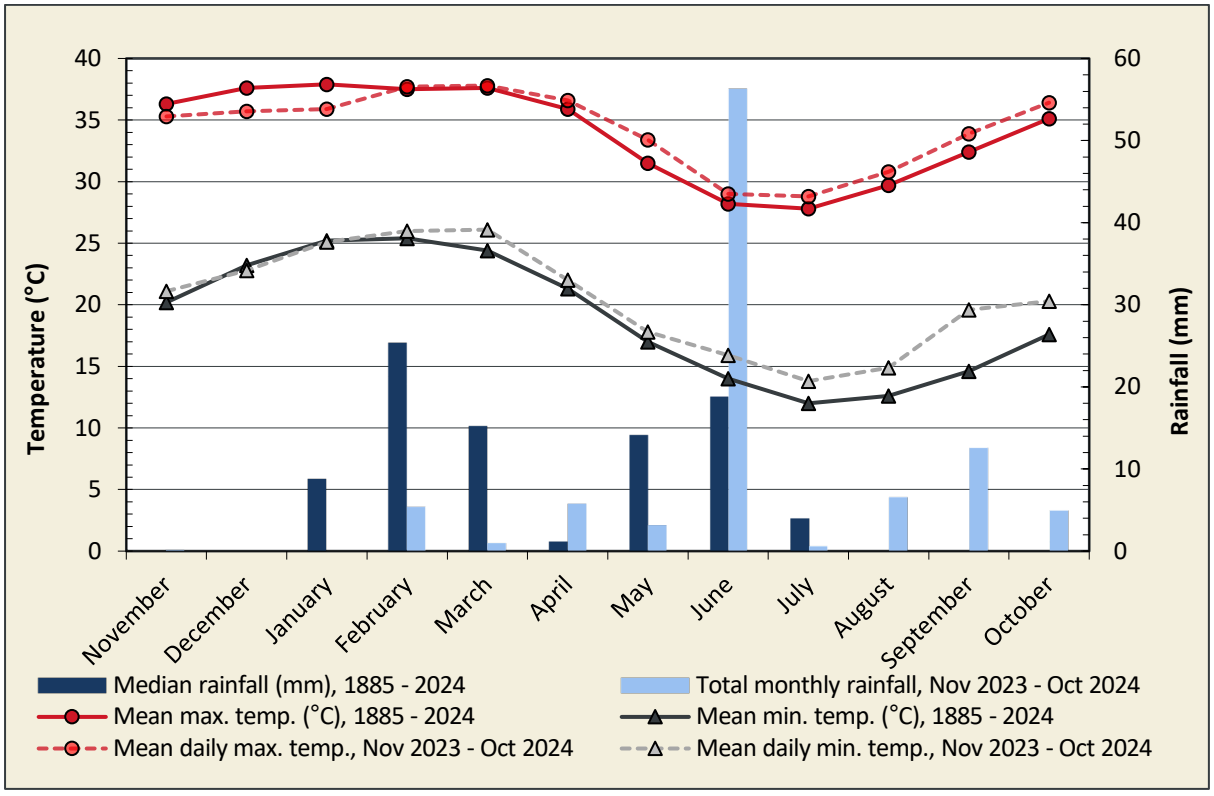


Figure 2-1 **Annual temperature data for Mardie (no. 005008) and mean monthly data for the 12 months of the survey**

3 METHODS

3.1 SURVEY TIMING

The initial field survey was carried out in spring (14-15 November) 2023, during which camera sites were established, with the cameras being deployed over the period November 2023 to November 2024.

3.2 FIELD METHODS

Field methods for the fauna survey included:

- habitat assessment (see 3.2.1)
- camera trapping (3.2.2).

A total of 20 survey sites were sampled (Figure 3-1).

3.2.1 Site selection and habitat assessment

Ten impact and 10 control sites were selected throughout the impact area and the immediate vicinity (around Mardie Station; Figure 3-1). At the broadest scale, site selection considered aspect, topography and land systems. At the finer scale, consideration was given to proximity to water bodies (drainage lines and creek), vegetation complexes and condition and soil type. Sites were primarily chosen to represent the best example of distinct habitats within the broader habitat associations of the impact area, with a focus on habitat diversity and site spread.

Where possible, in each habitat type, sites were located around potential attractants for introduced fauna, such as the village and open water sources.

Site selection was also determined based on accessibility as the cameras needed to be regularly serviced to collect data and replace the batteries. This constrained the placement of control sites as access to neighbouring properties required agreements between landowners.

The control sites were included to provide reference data on the natural fluctuations of introduced species. The control sites were located at least 200 m from the boundary of the DE. Habitat descriptions and characteristics were recorded at all sites (Figure 3-1; Table 3-1; Appendix 2).

3.2.2 Camera trapping

A single motion sensitive camera was deployed at each of the 20 monitoring sites. Non-edible lures were used as attractants at all cameras. Cameras were left in-situ for one year and checked by BCI staff periodically to ensure they were functioning normally. Cameras were deployed for approximately 376 sample nights for most sites (between November 2023 and November 2024).

While checking the cameras, BCI staff also refreshed the non-edible lures, replaced the batteries and SD cards, and stored the data to be sent to Phoenix. Cameras were set to trigger when motion was detected and record year-round for the 12 months to ensure similar survey effort between sites and between impact and control areas.

Any time a feral species triggered a camera trap, it was considered one detection. If that species remained in the vicinity of the camera and continued triggering the camera, these images were all considered a single detection. If the same species was detected again more than one hour after the last time the species was detected, it was considered a new detection.

In some instances, during camera maintenance, the cameras were found to not be functioning normally (e.g. damaged or moved by livestock or having insufficient battery and/or SD memory space). These issues are discussed in Section 5 (Survey Limitations). For the purposes of analysis, survey effort was standardised to the number of nights each camera was assumed to be functioning normally.

Table 3-1 Terrestrial fauna survey effort

Area	Site name	Nights deployed	Opportunistic sighting
Impact	1	120	
Control	2	376	
Control	3	376	
Control	4	376	
Control	5	376	
Control	6	277	1
Impact	7	376	
Impact	8	376	
Impact	9	336	
Impact	10	353	1
Control	11	375	
Impact	12	352	
Control	13	315	
Impact	14	376	
Control	15	347	
Control	16	374	
Control	17	374	
Impact	18	376	
Impact	19	376	
Impact	20	303	
Total		**6,910**	**2**

3.2.3 Opportunistic searches and secondary evidence

Opportunistic searches were undertaken at each site during camera deployment (Figure 3-1). Searches were primarily targeting secondary evidence of feral species including cats, foxes, rabbits, pigs, and cane toads. Secondary evidence such as scats, tracks, and burrows were recorded as opportunistic sightings where seen.

3.3 STATISTICAL ANALYSIS

A Poisson regression test was used to assess whether the number of red fox and cat detections per 30 days of survey was different at control and impact sites. Poisson regression is suitable for when count data follows a Poisson distribution, (e.g. when it is skewed to one side), and when the data is non-parametric. In this case, the data was skewed towards 0 as many sites did not record feral species, especially red fox. Key assumptions of the model are:

- **Non-negative integers:** Counts cannot be below 0
- **Independence**: The events are independent of each other (e.g., detections at each site are independent)
- **Constant rate of occurrence**: The rate of occurrence of the event is constant over time or space
- **Mean is equal to variance**: In a pure Poisson distribution, the mean and variance are equal. However, in real-world data, this is often not the case, and overdispersion (when variance substantially exceeds the mean) may occur. In this case, a test was run to check for overdispersion, which found a Poisson regression model was suitable.

To keep analyses consistent between species, a zero-count inflated Poisson regression was not used, despite the high number of 0s for red-fox.

The variables that were used in the analysis are as follows:

Dependent Variable (DV):	Number of detections per site per 30 days
Independent Variable (IV):	Presence of the camera at impact or control site

The number of days that a camera recorded for was controlled by analysing the number of detections per 30 days of deployment. As such, site 01 (which only had 120 days of survey effort across the 12-months) was able to be included in the analysis.

The hypotheses that were tested were as follows:

Null hypothesis (H0) =	The number of detections per site per 30 days of deployment is the same in control and impact areas
Alternative hypothesis (H1) =	The number of detections per site per 30 days of deployment is different in control and impact areas

Presentation of results

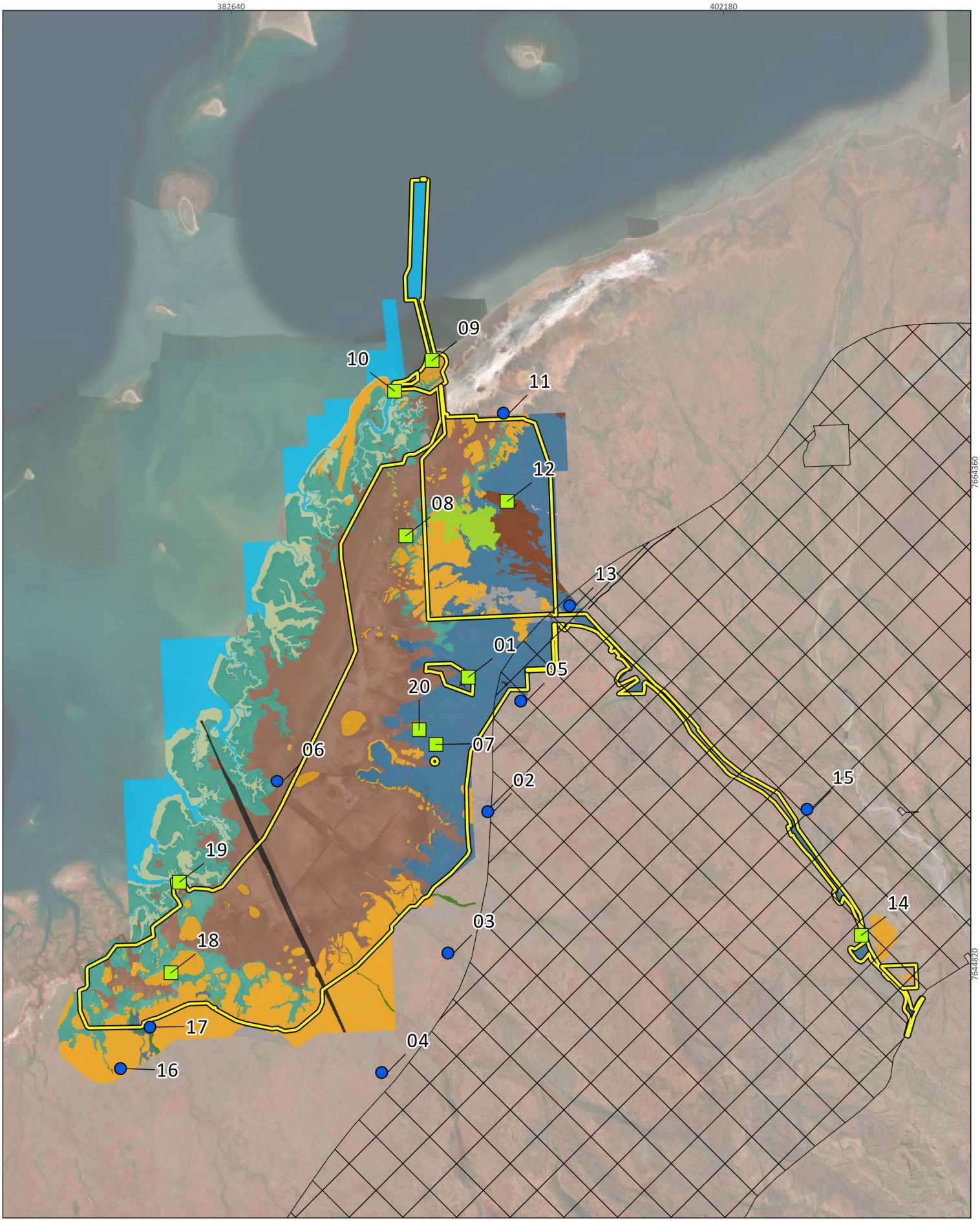
Statistical results of the Poisson regression are presented in full. The p-values generated for the site type were interpreted to determine whether a statistically significant difference between control and impact sites has been found. As per standard scientific practice, the alpha (α) value was set at ($p \leq 0.05$) for a result to be significant.

3.4 SURVEY PERSONNEL

The Phoenix personnel involved in the surveys are listed in Table 3-2.

Table 3-2 Phoenix personnel

Name	Qualifications	Roles
Dr. Floyd Holmes	PhD (Biol Sci), BSc (Physics & Cons Biol) (Hons)	Project manager, reporting
Patrick Williams	MSc. (Env sci), BSc. (Cons Biol. & Wildlife Biol)	Field work, reporting, data management
Ethan Broom	BSc (Zool & Genetics), (Hons)	Data management, reporting
Deon Loo	BSc (Cons Biol & Zool)	Data management



BCI Minerals
Basline feral fauna monitoring

Project No	1616
Date	24/02/2025
Drawn by	BK
Map author	EB

0 2.5 5
Kilometers

1:195,400 (at A4) GDA 1994 MGA Zone 51

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Impact Area
Mardie Station

Habitat

- Samphire shrubland
- beach and dune
- cleared
- fresh water pool
- low shrubland
- mangal community
- mudflat or saltflat
- open woodland (riparian)
- open woodland over spinifex grassland
- shrubland
- shrublands over spinifex grasslands
- spinifex grassland
- tidal channel and ocean
- tidal samphire mudflat
- tussock grassland
- woodland over shrubland
- woodland over tussock grassland

Sites

- Control
- Impact

Figure 3-1

Camera trap site locations

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4 RESULTS

4.1 HABITATS

The monitoring sites were placed in five broad fauna habitat types according to vegetation mapping from Phoenix (2019), Phoenix (2020a) and Phoenix (2021). Habitat types included (Table 4-1):

1. spinifex grassland,
2. shrubland over spinifex grassland,
3. open woodland (riparian),
4. mudflat or saltflat, and
5. mangal community.

Most sites were associated with spinifex grassland (3 impact, 6 control sites), or shrubland over spinifex grassland (3 impact, 5 control sites). However, some of these sites were in very close proximity to other habitat types, and in certain cases surrounded entirely by them, and in these cases, both habitats were recorded (Table 4-1).

Table 4-1 Extent and description of fauna habitat present at monitoring sites

Habitat type	Site/s		Description	Nights deployed	Feral fauna detections	Detections per day	Representative photograph
	Impact	Control					
Spinifex grassland	08, 09, 18	10, 14, 15, 16, 17, 06	Spinifex grassland consists primarily of large spinifex hummocks, often with occasional mixed *Acacia* and Mesquite (*Prosopsis* spp.) shrubs. Some areas of spinifex grassland are heavily impacted by European cattle and Mesquite. However, there are also large areas of high quality, mature spinifex hummock grassland.	2666	76	0.04	
Shrubland over spinifex grassland	07, 12, 20	02, 03, 04, 05, 13	Scattered mixed Acacia over spinifex grassland, often on red-brown clay loam plain. *Acacia* shrubs are often mixed with Mesquite (*Prosopsis* spp.) Occasional presence of perennial grasses. More structurally complex than spinifex grasslands.	2022	45	0.02	
Open woodland (riparian)	01		One isolated patch of open woodland of date palms (*Phoenix dactylifera*) and *Sebansia formosa* over Mesquite, mixed tall shrubs, sedges and Typha nearby a waterhole.	120	12	0.10	

Habitat type	Site/s		Description	Nights deployed	Feral fauna detections	Detections per day	Representative photograph
	Impact	Control					
Mudflat or saltflat	08, 18	06, 11	Mudflat or saltflat areas that are predominantly devoid of vegetation with some areas of sparse samphire shrubland.	1312	93	0.07	
Mangal community	19		Mangrove shrubland over low samphire shrubs. Occurs adjacent to water along the coastline and adjacent to tidal creeks. The site is heavily modified by a water intake station.	353	18	0.05	

4.2 FERAL ASSEMBLAGE

A total of five feral species were detected within or adjacent to the impact area (Table 4-2; Appendix 2). All sites recorded at least one feral species over the year, with most sites recording two species. Most species were detected at both the impact and control sites, except for rabbit. Rabbit was only detected within the impact area, though there were only two detections throughout the year. European cattle and dog/dingoes were included in this assemblage, though neither are required to be monitored by BCI as part of the conditions listed in EPBC 2018/8236 (as varied) and EPBC2022/9169 (Table 1--2).

Table 4-2 Feral fauna assemblage recorded during the 2023/2024 monitoring season

Site name	Area	Cat	Dog/Dingo	European Cattle	Rabbit	Red Fox
02	Control	•	•			
03	Control	•	•			
04	Control	•	•	•		
05	Control	•	•			
06	Control					•
11	Control	•	•			
13	Control	•		•		
15	Control	•	•	•		
16	Control		•			
17	Control	•				•
Control sites total		**8**	**7**	**3**	**-**	**2**
01	Impact	•	•	•		
07	Impact	•				
08	Impact	•				•
09	Impact	•				•
10	Impact	•				•
12	Impact	•				
14	Impact	•				
18	Impact	•			•	•
19	Impact					•
20	Impact	•				
Impact sites total		**9**	**1**	**1**	**1**	**5**
Total number of sites detected		**17**	**8**	**4**	**1**	**7**

4.3 ANNUAL FERAL FAUNA DETECTIONS

Over the camera monitoring period, foxes were detected 75 times (0.31 times per month per site), cats were detected 133 times (0.62 times per month per site), rabbits were detected twice, dogs/dingoes were detected 14 times (0.08 times per month per site) and cane toads and pigs were not detected. Cats and red foxes were detected on average more times per month per site at impact sites than at the control sites. Dogs/dingoes were detected on average more times per month per site at control sites than the impact sites.

Sites 18 and 19 had the highest number of fox detections (33 and 18 respectively). Sites 08 and 11 had the highest number of cat detections (23 and 20 respectively). Site 16 had the highest number of dog/dingo detections (3) and rabbits were only detected at site 18 (Table 4-3).

Table 4-3 Feral fauna detection summary

Site name	Nights deployed	30-day periods	Cat		Red Fox		Cane Toad		Rabbit		Pig		Dog		Grand total
			Total 2023/2024	Average per 30 days	Total 2023/2024	Average per 30 days	Total 2023/2024	Average per 30 days	Total 2023/2024	Average per 30 days	Total 2023/2024	Average per 30 days	Total 2023/2024	Average per 30 days	
Control sites															
02	376	12.5	7	0.56	0	0	0	0	0	0	0	0	1	0.08	8
03	376	12.5	3	0.24	0	0	0	0	0	0	0	0	1	0.08	4
04	376	12.5	2	0.16	0	0	0	0	0	0	0	0	1	0.08	3
05	376	12.5	4	0.32	0	0	0	0	0	0	0	0	1	0.08	5
06	277	9.2	0	0.00	3	0.3	0	0	0	0	0	0	0	0	3
11	375	12.5	20	1.60	0	0	0	0	0	0	0	0	2	0.16	22
13	315	10.5	15	1.43	0	0	0	0	0	0	0	0	0	0	15
15	347	11.6	1	0.09	0	0	0	0	0	0	0	0	1	0.09	2
16	374	12.5	0	0.00	0	0	0	0	0	0	0	0	3	0.24	3
17	374	12.5	9	0.72	4	0	0	0	0	0	0	0	0	0	13
Control total	**3566**	**118.9**	**61**	**0.51 (±0.18)**	**7**	**0.06 (±0.04)**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0.08 (±0.02)**	**78**
Impact sites															
01	120	4.0	7	1.75	0	0.0	0	0	0	0	0	0	4	1	11
07	376	12.5	1	0.08	0	0.0	0	0	0	0	0	0	0	0	1
08	376	12.5	23	1.84	5	0.4	0	0	0	0	0	0	0	0	28
09	336	11.2	15	1.34	5	0.4	0	0	0	0	0	0	0	0	20
10	353	11.8	13	1.10	7	0.6	0	0	0	0	0	0	0	0	20
12	352	11.7	4	0.34	0	0.0	0	0	0	0	0	0	0	0	4
14	376	12.5	2	0.16	0	0.0	0	0	0	0	0	0	0	0	2
18	376	12.5	5	0.40	33	2.6	0	0	2	0.16	0	0	0	0	40
19	376	12.5	0	0.00	18	1.4	0	0	0	0	0	0	0	0	18
20	303	10.1	2	0.20	0	0.0	0	0	0	0	0	0	0	0	2
Impact total	**3344**	**111.3**	**72**	**0.65 (±0.23)**	**68**	**0.61 (±0.27)**	**0**	**0**	**2**	**0.02 (±0.02)**	**0**	**0**	**4**	**0.04 (±0.1)**	**146**
Grand total	**6910**	**230**	**133**	**0.62 (±0.1)**	**75**	**0.31 (±0.15)**	**0**	**0**	**2**	**0.01 (±0.01)**	**0**	**0**	**14**	**0.09 (±0.05)**	**224**

4.4 MONTHLY FERAL FAUNA DETECTIONS

The average number of all cats, red foxes, rabbits, and dogs/dingoes detected per month per site at impact sites was higher than control sites (Figure 4-1). Feral fauna detection rates were highest in July for impact sites and in August for control sites. The number of feral species detected per month followed similar trends at impact and control sites. July recorded the largest difference in feral activity between impact and control sites, largely based on a spike in detections at impact sites.

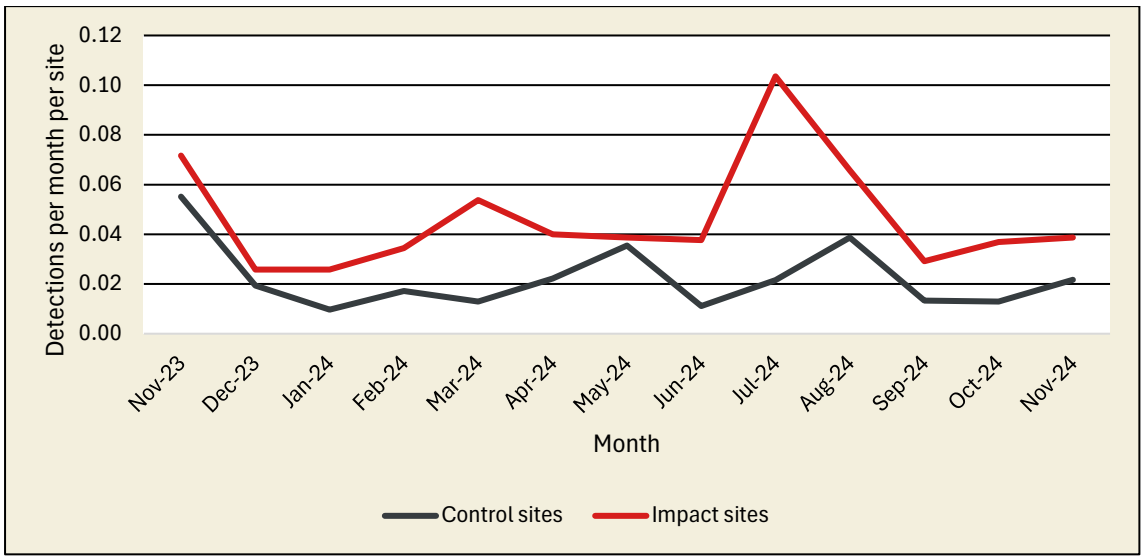

Figure 4-1 Mean feral detections per month at impact and control sites

The average number of cats detected per month per site at impact sites was higher than at control sites (Figure 4-2). Generally, the detection rates of cats followed a similar trend between impact and control sites, except for July. In July, the mean detection rate for cats was much higher than control sites. After this spike in feral activity in July, impact sites had marginally lower levels of feral activity than control sites in the following months.

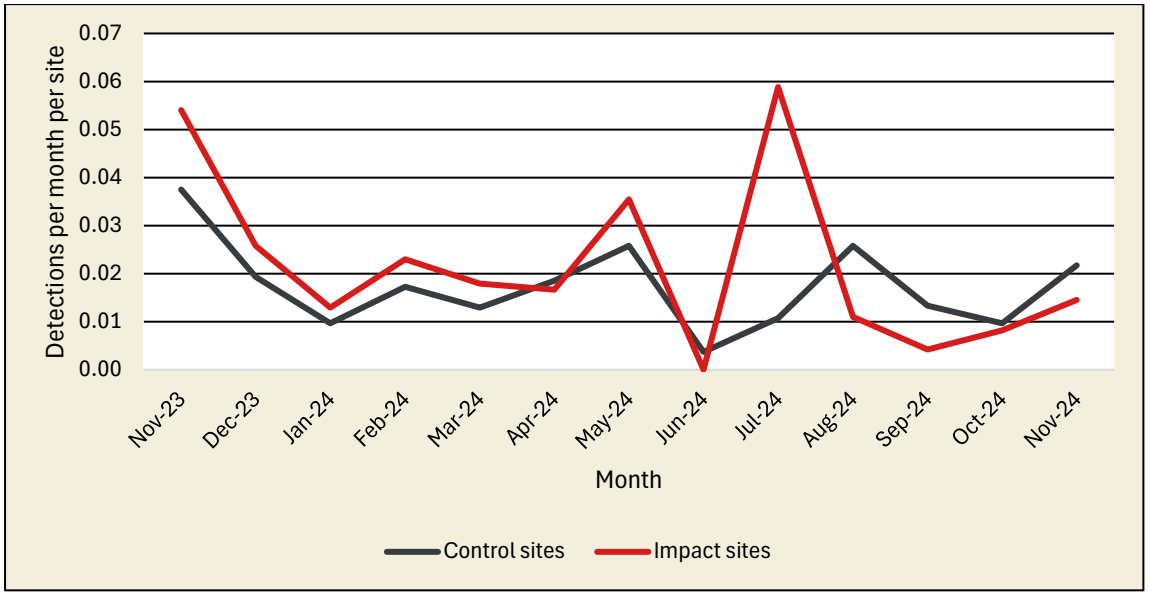

Figure 4-2 Mean cat detections per month at impact and control sites

The number of detections of red foxes per month per site was higher at impact sites than control sites across most of the year (Figure 4-3). The trends of red fox detection per month per site were relatively similar between impact and control sites. The largest spike in red fox activity at impact and control sites occurred during August. The lowest rates of detections across control and impact sites occurred in December 2023, and May 2024.

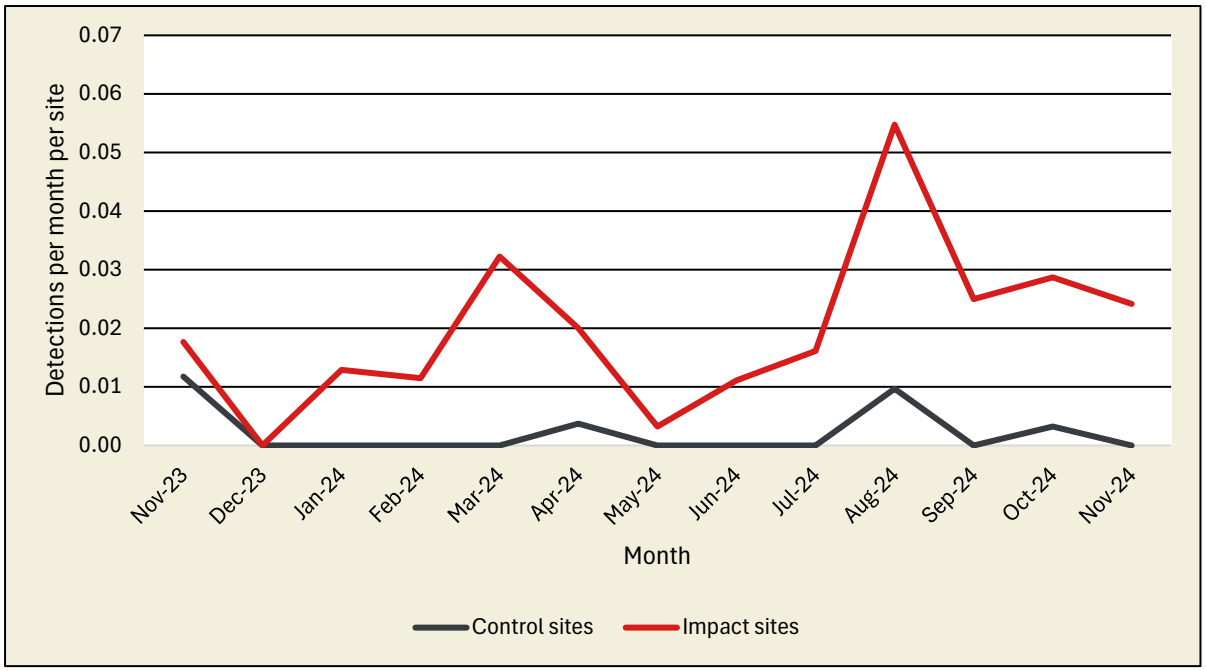

Figure 4-3 Mean red fox detections per month at impact and control sites

4.4.1 Statistical analysis

The results of the Poisson regression tests comparing the number of red fox and cat detections per 30 days found no significant difference in the number of red foxes and cats detected at impact and control sites (Table 4-4). However, the P-value for red fox was 0.13, which is moderately close to significant.

Table 4-4 Results of Poisson regression tests for cat and red fox detections 30 days

		Estimate	Std. Error	Z Value	P-value
Red Fox	Intercept	-3.507	1.826	-1.921	0.0548
	Site type	2.853	1.878	1.519	0.1287
Cat		**Estimate**	**Std. Error**	**Z Value**	**P-value**
	Intercept	-0.6694	0.4419	-1.515	0.130
	Site type	0.3423	0.5779	0.592	0.554

5 SURVEY LIMITATIONS

The limitations of the terrestrial fauna survey have been considered in accordance with the relevant EPA guidelines (EPA 2020).

5.1 AVAILABILITY OF DESKTOP INFORMATION

The availability of local and regional contextual information was sufficient to address the scope of the survey.

5.2 ACCESS

All cameras were deployed in areas easily accessible by road, and as a result survey effort in the mangroves was limited as it was not easily accessed.

5.3 SITE SELECTION

Based on the ecology of cats and red foxes in the West Pilbara, the control sites around Mardie station are likely not far enough from the DE to be independent of changes in the impact area. The home ranges of cats at Yarraloora Station (just south of Mardie in the western Pilbara) have been estimated at 5 km^2 – 34 km^2 for males and 2 km^2 – 17 km^2 for females (Williamson SD *et al.* 2021). A similar study comparing the home ranges of red foxes at a station south-west of Port Hedland found a mean home range size of 27.3 km^2, with no difference between sexes (Stuart *et al.* 2023). The movement pattern of these red foxes were also heavily impacted by tracks and artificial water sources (Stuart *et al.* 2023).

Given that the closest control site was 225 m from the DE, and most sites were <500 m from the DE, it is highly likely that all control sites are too close to the impact area to act as appropriate reference sites.

5.4 SURVEY TIMING

Phoenix was commissioned for the survey with the aim of collecting baseline information on feral fauna prior to construction. However, the survey was completed several years after construction of the Project had begun. Given the survey was conducted after construction had commenced, the survey may not represent true baseline information on the presence of feral fauna. Red foxes are known to disperse along cleared roads (Hradsky *et al.* 2017), and it is possible that construction of the Project had already altered the presence and abundance of feral fauna species prior to the deployment of any monitoring equipment by Phoenix. However, based on the compliance requirements as per EPBC 2018/8236 (as varied) & EPBC 2022/9169 approvals, baseline surveys prior to construction of the site is not a requirement.

5.5 CAMERA OPERATION AND ANALYSIS

Cameras were deployed with the intention of recording year-round to ensure similar survey effort between sites and between impact and control areas. Phoenix deployed the cameras at the start of the survey program and provided feedback to BCI to adjust camera trap positioning after reviewing the first few months of data. BCI was responsible for monitoring the cameras on-site, collecting the data quarterly, and sending the data through to Phoenix to review. However, due to large period of time between site visits, several cameras were disturbed by livestock, died, or ran out of card space during deployment and were not recording data for parts of the year. The camera at site 9 was also

removed over September 2024 while clearing was conducted and redeployed in October 2024. As such, no data was collected from this device during that period.

Thirteen cameras were reviewed by BCI staff before sending to Phoenix and false triggers or any photos of BCI staff visiting the site were deleted. This resulted in the deletion of several thousand photos before the data was provided to Phoenix to review. As Phoenix could not view these photos for evidence of feral fauna, Phoenix were only able to complete their analysis on the photos they were provided with.

Figure 5-1 demonstrates the gaps in survey effort generated from these disturbances. As such, the gaps in survey effort were estimated based on the date that photographs were taken. No other disturbances were recorded throughout the year that may have impacted the data.

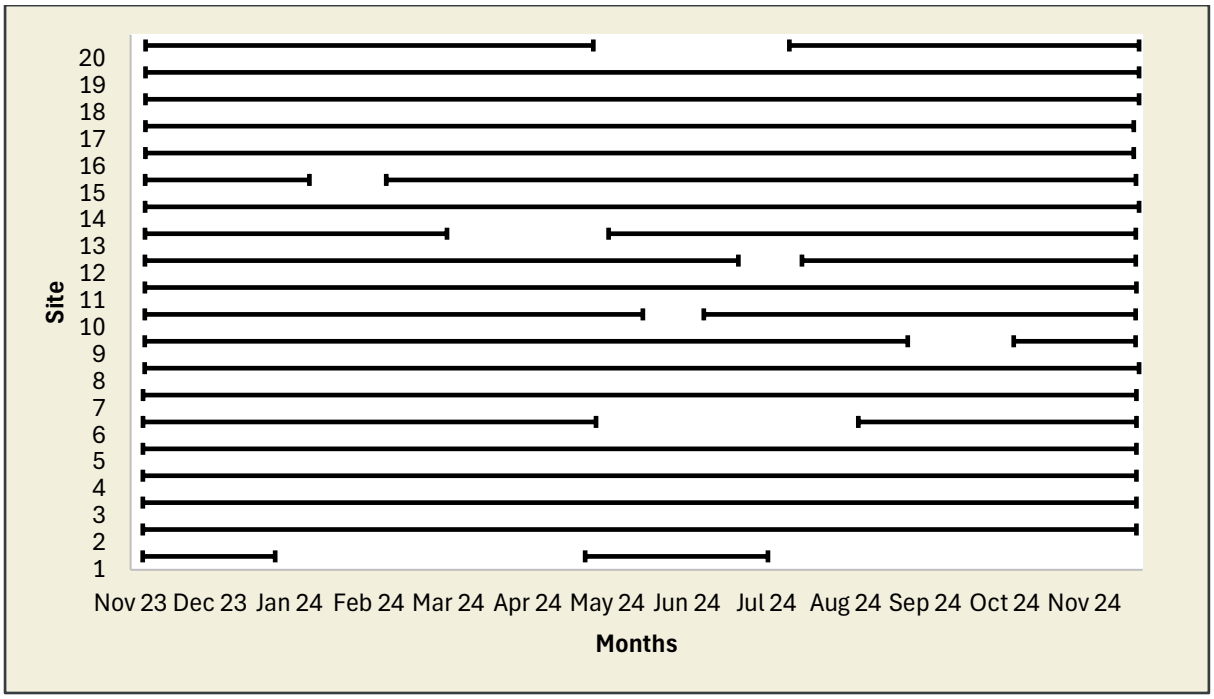

Figure 5-1 Time period camera traps are operating at each site

6 DISCUSSION

6.1 HABITATS

The monitoring sites were placed in five broad fauna habitat types. This included spinifex grassland, shrubland over spinifex grassland, open woodland (riparian), mudflat or saltflat, and mangal community.

Open woodland (riparian) had the fewest number of sites (1) and had the highest average detections per day. The riparian vegetation present in this habitat type occurred near a seasonal waterhole, which likely acts as an attractant for birds, herpetofauna and mammals. The water and higher density of fauna in the area would then attract feral fauna. As such, the high number of detections within this habitat type is not unexpected. Notably, the camera at this site also had the lowest number of days in operation (120), which reduced the amount of data available for analysis of any trends.

Mudflat and saltflat-associated sites had the highest total number of detections over the year and the second highest number of detections per day. This habitat type supports a range of migratory shorebirds, which may provide food for feral mammals during the migratory shorebird season (November – April). These habitats are also relatively bare, with little shelter, which may allow for

easier hunting for feral mammals. Notably, almost half of all feral detections in this habitat type were recorded at site 18. Most of these records were of red foxes, though it was also the only site where rabbits were recorded. It appears likely that this camera was deployed near a red fox den, which would explain the high number of detections at this site compared to other sites in the same habitat type.

The mangal community had the third highest number of feral detections per day. The site representing this habitat type has been modified by a water intake station, which may have impacted the number of feral animals present in the area.

Shrubland over spinifex grassland had the lowest number of detections per day, followed by spinifex grassland. These were the most widespread habitat types in the impact area and immediate vicinity of the DE and were represented by the most sites. Compared to riparian woodland and mangal communities, these habitats are less productive and may act as less of an attractant compared to other habitat types in the impact area.

6.2 FERAL FAUNA ACTIVITY

The survey confirmed that five feral species currently occur within or adjacent to the Project site. All feral fauna recorded in this survey were detected in the *Level 2 targeted terrestrial fauna survey for the Mardie Project* (Phoenix 2020b), except for rabbit. Rabbit was detected on two occasions over the monitoring survey period and was only detected in low numbers (one detection in March 2024 and one in April 2024, both at site 18).

The number of cats and red foxes detected over the survey period was far higher than any other feral species. The total number of cats detected (133) was also substantially higher than the number of red foxes detected (75), and the number of sites that cats were detected at (17) was higher than the number of red foxes detected (7). Together, this suggests that cats are more abundant at impact and control sites than red foxes.

The detection rate was typically higher at impact sites than control sites over the course of the year, though the difference was not statistically significant for cats or red foxes. However, the P-value for red foxes was moderately close to statistically significant (0.13), and red foxes were not detected at control sites for most months of the year, but were detected in all months except May at impact sites. By comparison, cats were detected in all months for control and impact areas and dogs/dingoes had only 14 detections for the year.

The control and impact sites appeared to generally follow the same trends in detections and would increase and decrease in feral activity at similar times. This suggests that factors independent of the Project are influencing trends in detections in both the impact and control areas. Peaks in activity were noted early in the reporting period (November) and again in July/August. The spike in activity in July/August may be due to increased prey supply as a result of substantial rains in June 2024, when 56.2 mm of rain was recorded over the month compared to the historical median of 18.8mm (historical data from 1885-2024). August, September, and October all recorded higher rainfall than the historic median. This rainfall during the dry season likely led to increased activity of herpetofauna, and potentially increased abundance of insects and other prey sources for feral fauna. As such, the number and activity of feral fauna in the area may have temporarily increased during this period.

6.3 CONCLUSION

Feral fauna monitoring carried out from November 2023 to November 2024 detected five feral fauna species - red fox, cat, dog/dingo, rabbit and European cattle. Of these, only rabbit had not been previously detected in the impact area. Analysis of detection rates found no significant difference in the number of red foxes or cats at the impact sites and control sites. Fluctuations in detections during the monitoring period appeared to be consistent between control and impact sites and likely represent the influence of factors other than the Project.

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Appendix 1 Survey site locations

Site name	Latitude	Longitude
01	-21.1852	115.9504
02	-21.2340	115.9577
03	-21.2840	115.9400
04	-21.3257	115.9127
05	-21.1947	115.9722
06	-21.2196	115.8777
07	-21.2088	115.9369
08	-21.1335	115.9290
09	-21.0712	115.9420
10	-21.0816	115.9271
11	-21.0913	115.9705
12	-21.1229	115.9682
13	-21.1613	115.9925
14	-21.2842	116.0963
15	-21.2382	116.0798
16	-21.3201	115.8129
17	-21.3057	115.8249
18	-21.2865	115.8317
19	-21.2542	115.8365
20	-21.2032	115.9307

Appendix 2 Feral fauna example images

Species	Site	Photograph
Cat (*Felis catus)*	02	
Red Fox (*Vulpes vulpes*)	06	
Dog/Dingo (*Canis familiaris*)	05	

Species	Site	Photograph
European Cattle (*Bos taurus*)	13	
Rabbit (*Oryctolagus cuniculus*)	18	

Appendix 3 Survey site descriptions

Site details			
Site	**01**	**Position (WGS84)**	115.9504, -21.1852
Slope	gentle	**Topography**	seasonally wet area
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	none

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	14 Nov 2023	14 Nov 2023
1	Camera trap	14 Nov 2023	03 Jan 2024
1	Camera trap	29 Apr 2024	07 Jul 2024

Site description - visit 1 (14 Nov 2023)			
Large palm trees and Eucalyptus spp. over mixed Acacia and Hakea over buffel grass and some soft spinifex nearby a seasonal waterhole on a clay loam red-brown plain.			
Habitat	waterhole		
Disturbance	evidence of feral animals, grazing-low		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	61	**Litter distribution**	transported
Tree cover (%)	10	**Litter depth (cm)**	1.0
Shrub cover (%)	30	**Litter cover (%)**	1
Grass cover (%)	20	**Herb cover (%)**	1

Site details			
Site	**02**	**Position (WGS84)**	115.9577, -21.2340
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	quartz, ferrous - ironstone

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	14 Nov 2023	14 Nov 2023
1	Camera trap	14 Nov 2023	23 Nov 2024

Site description - visit 1 (14 Nov 2023)			
Scattered mixed Acacia shrubland over Mitchell grass and hard spinifex nearby an access track on a red-brown clay loam plain with ironstone and quartz cobbles.			
Habitat	shrubland		
Disturbance	evidence of feral animals, current operations, grazing-low, vehicle tracks		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	65	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	30	**Litter cover (%)**	5
Grass cover (%)	30	**Herb cover (%)**	5

Site details			
Site	**03**	**Position (WGS84)**	115.9400, -21.2840
Slope	gentle	**Topography**	drainage line
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	ferrous - ironstone, quartz

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	14 Nov 2023	23 Nov 2024
1	Site description	14 Nov 2023	14 Nov 2023

Site description - visit 1 (14 Nov 2023)			
Scattered *Corymbia* trees fringing a minor drainage line over mixed Acacias. Understory of spinifex grassland with some buffel grass throughout the drainage. Substrate of red-brown clay loam plain with ironstone and quartz cobbles			
Habitat	spinifex grassland		
Disturbance	evidence of feral animals, grazing-low, livestock tracks, vehicle tracks, weed infestation		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	92	**Litter distribution**	under vegetation
Tree cover (%)	10	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	60	**Herb cover (%)**	2

Site details			
Site	**04**	**Position (WGS84)**	115.9126, -21.3259
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	ferrous - ironstone, quartz

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	14 Nov 2023	23 Nov 2024
1	Site description	14 Nov 2023	14 Nov 2023

Site description - visit 1 (14 Nov 2023)			
Scattered Mulga shrubland over mixed perennial grasses on a red-brown clay loam plain adjacent to an access track.			
Habitat	shrubland		
Disturbance	evidence of feral animals, grazing-low, vehicle tracks, litter		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	62	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	40	**Litter cover (%)**	1
Grass cover (%)	20	**Herb cover (%)**	2

Site details			
Site	**05**	**Position (WGS84)**	115.9722, -21.1948
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	ferrous - ironstone, quartz

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	14 Nov 2023	23 Nov 2024
1	Site description	14 Nov 2023	14 Nov 2023

Site description - visit 1 (14 Nov 2023)			
Scattered Mulga shrubland over spinifex and tussock grasses on a red-brown clay loam plain. Adjacent to homestead and access tracks.			
Habitat	spinifex grassland		
Disturbance	evidence of feral animals, grazing-low, vehicle tracks, litter		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	66	**Litter distribution**	under vegetation
Tree cover (%)	5	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	40	**Herb cover (%)**	1

Site details			
Site	**06**	**Position (WGS84)**	115.8776, -21.2197
Slope	Negligible	**Topography**	intertidal zone
Soil colour	red-brown	**Soil texture**	loamy sand
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	14 Nov 2023	03 May 2024
1	Site description	14 Nov 2023	14 Nov 2023
1	Opportunistic sighting	14 Nov 2023	14 Nov 2023
1	Camera trap	10 Aug 2024	23 Nov 2024

Site description - visit 1 (14 Nov 2023)			
Spinifex and hummock grasses on a small island in the middle of intertidal mudflats.			
Habitat	playa		
Disturbance	evidence of feral animals, current operations		
Vegetation condition	Poor	**Fire age**	>10
Total veg. cover (%)	24	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	2	**Litter cover (%)**	1
Grass cover (%)	20	**Herb cover (%)**	2

Site details			
Site	**07**	**Position (WGS84)**	115.9369, -21.2088
Slope	Negligible	**Topography**	plain
Soil colour	red-brown, black	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	ferrous - ironstone, quartz

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	14 Nov 2023	14 Nov 2023
1	Camera trap	14 Nov 2023	23 Nov 2024

Site description - visit 1 (14 Nov 2023)			
Scattered mixed Acacia shrubland over hard spinifex grassland of stages 3-4 on a red-brown clay loam plain. Thin layer of black manganese gravel and ironstone and quartz cobbles. Adjacent to bins in laydown area.			
Habitat	shrubland		
Disturbance	evidence of feral animals, grazing-low, vehicle tracks, large-scale clearing		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	61	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	40	**Herb cover (%)**	1

Site details			
Site	**08**	**Position (WGS84)**	115.9290, -21.1335
Slope	gentle	**Topography**	sand dune
Soil colour	red-brown	**Soil texture**	loamy sand
Rock cover (%)		**Rock type**	ferrous - ironstone

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	24 Nov 2024
1	Site description	15 Nov 2023	15 Nov 2023

Site description - visit 1 (15 Nov 2023)			
Soft spinifex grassland fringing mixed chenopod shrubland next to mudflats. Some infrastructure located behind the sand dune.			
Habitat	beach		
Disturbance	current operations, evidence of feral animals, vehicle tracks		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	35	**Litter distribution**	sparse
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	1
Grass cover (%)	20	**Herb cover (%)**	5

Site details			
Site	**09**	**Position (WGS84)**	115.9420, -21.0712
Slope	Negligible	**Topography**	sand dune
Soil colour	light brown	**Soil texture**	loamy sand
Rock cover (%)		**Rock type**	none

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	29 Aug 2024
1	Site description	15 Nov 2023	15 Nov 2023
	Camera trap	08 Oct 2024	23 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Mixed Acacia and mesquite over soft spinifex and hummock grassland located behind the main jetty operations building. Large amount of recent infrastructure and earthworks.			
Habitat	spinifex grassland		
Disturbance	evidence of feral animals, current operations, large-scale clearing, vehicle tracks, revegetation, weed infestation		
Vegetation condition	Good	**Fire age**	>10
Total veg. cover (%)	91	**Litter distribution**	scattered
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	1
Grass cover (%)	80	**Herb cover (%)**	1

Site details			
Site	**10**	**Position (WGS84)**	115.9271, -21.0816
Slope	Negligible	**Topography**	sand dune
Soil colour	light brown	**Soil texture**	sand, sandy clay
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	21 May 2024
1	Site description	15 Nov 2023	15 Nov 2023
1	Opportunistic sighting	15 Nov 2023	15 Nov 2023
1	Camera trap	13 Jun 2024	23 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Mixed acacia and mesquite over soft spinifex grassland next to mangroves and rocky creek line on a light brown sandy soil with shells and a layer of cobbles on the surface.			
Habitat	mangrove		
Disturbance	current operations, large-scale clearing, vehicle tracks		
Vegetation condition	Very Good	**Fire age**	>10
Total veg. cover (%)	100	**Litter distribution**	under vegetation
Tree cover (%)	30	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	2
Grass cover (%)	40	**Herb cover (%)**	20

Site details			
Site	**11**	**Position (WGS84)**	115.9705, -21.0913
Slope	Negligible	**Topography**	sand dune
Soil colour	red-orange	**Soil texture**	sand, loamy sand
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	23 Nov 2024
1	Site description	15 Nov 2023	15 Nov 2023

Site description - visit 1 (15 Nov 2023)			
Scattered mixed acacia over spinifex grassland on a sandy rise on a flood plain with many chenopod shrubs throughout the flood plain.			
Habitat	spinifex grassland		
Disturbance	current operations, vehicle tracks		
Vegetation condition	Excellent	**Fire age**	>10
Total veg. cover (%)	75	**Litter distribution**	sparse
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	5	**Litter cover (%)**	1
Grass cover (%)	30	**Herb cover (%)**	40

Site details			
Site	**12**	**Position (WGS84)**	115.9678, -21.1230
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	ferrous - ironstone, quartz

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	26 Jun 2024
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	20 Jul 2024	23 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Mesquite shrubland with some mixed Acacia throughout. A small drainage line nearby with tall Corymbia overstory. Located adjacent to a Telstra tower in an area that is soon to be cleared for crystallisation ponds.			
Habitat	shrubland		
Disturbance	current operations, vehicle tracks, weed infestation, grazing-low		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	72	**Litter distribution**	sparse
Tree cover (%)	10	**Litter depth (cm)**	1.0
Shrub cover (%)	40	**Litter cover (%)**	1
Grass cover (%)	20	**Herb cover (%)**	2

Site details			
Site	**13**	**Position (WGS84)**	115.9925, -21.1613
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Nov 2023	08 Mar 2024
1	Camera trap	08 May 2024	23 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Scattered Corymbia plants over Mesquite and other mixed shrubs over buffel grass on a red-brown clay loam plain. A nearby water tank is being used by European cattle.			
Habitat	shrubland		
Disturbance	current operations, evidence of feral animals, grazing-medium, livestock tracks, weed infestation, vehicle tracks		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	96	**Litter distribution**	under vegetation
Tree cover (%)	5	**Litter depth (cm)**	1.0
Shrub cover (%)	60	**Litter cover (%)**	1
Grass cover (%)	30	**Herb cover (%)**	1

Site details			
Site	**14**	**Position (WGS84)**	116.0963, -21.2842
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Nov 2023	24 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Scattered mixed Acacia plants over scattered hard spinifex of stages 2-4 on a red-brown clay loam plain. Some ironstone and quartz cobbles on the surface. Located near a large borrow pit.			
Habitat	shrubland		
Disturbance	current operations, evidence of feral animals, exploration (drill pads and access tracks), large-scale clearing, vehicle tracks		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	81	**Litter distribution**	scattered
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	60	**Herb cover (%)**	1

Site details			
Site	**15**	**Position (WGS84)**	116.0801, -21.2381
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Nov 2023	16 Jan 2024
1	Camera trap	14 Feb 2024	23 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Scattered mixed Acacia over spinifex grassland of stages 2-4, on red-brown clay loam plain adjacent to water tanks used by European cattle.			
Habitat	shrubland		
Disturbance	current operations, evidence of feral animals, grazing-high, livestock tracks, vehicle tracks		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	90	**Litter distribution**	scattered
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	60	**Herb cover (%)**	10

Site details			
Site	**16**	**Position (WGS84)**	115.8129, -21.3201
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Nov 2023	22 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Mixed scattered Acacia plants over spinifex grassland, stages 3-5, with a thin layer of ironstone and quartz cobbles over a red-brown clay loam plain. Adjacent to a minor creek line.			
Habitat	spinifex grassland		
Disturbance	vehicle tracks, grazing-low, livestock tracks		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	71	**Litter distribution**	sparse
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	1
Grass cover (%)	60	**Herb cover (%)**	1

Site details			
Site	**17**	**Position (WGS84)**	115.8248, -21.3057
Slope	Negligible	**Topography**	drainage line
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	22 Nov 2024
1	Site description	15 Nov 2023	15 Nov 2023

Site description - visit 1 (15 Nov 2023)			
Scattered mixed Acacia and Mesquite over spinifex grassland, stages 3-5, on red-brown clay loam plain. Adjacent to a minor drainage line with a thin layer of ironstone and quartz cobbles on the surface.			
Habitat	spinifex grassland		
Disturbance	grazing-low, vehicle tracks, weed infestation		
Vegetation condition	Very Good	**Fire age**	>5
Total veg. cover (%)	82	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	1
Grass cover (%)	70	**Herb cover (%)**	2

Site details			
Site	**18**	**Position (WGS84)**	115.8317, -21.2865
Slope	gentle	**Topography**	sandy rise
Soil colour	red-brown	**Soil texture**	sandy loam
Rock cover (%)		**Rock type**	limestone

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Nov 2023	24 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Occasional Mesquite plants over spinifex grasses along the edge of a sandy rise. Chenopod shrubland is present on low points in the flood plain.			
Habitat	chenopod shrubland		
Disturbance	current operations, evidence of feral animals, vehicle tracks, large-scale clearing		
Vegetation condition	Good	**Fire age**	>5
Total veg. cover (%)	72	**Litter distribution**	sparse
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	30	**Litter cover (%)**	1
Grass cover (%)	40	**Herb cover (%)**	2

Site details			
Site	**19**	**Position (WGS84)**	115.8365, -21.2542
Slope	Negligible	**Topography**	creek
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	24 Nov 2024
1	Site description	15 Nov 2023	15 Nov 2023

Site description - visit 1 (15 Nov 2023)			
Water intake station. Vegetation largely altered but consists of mangroves over mudflats edged by open water.			
Habitat	mangrove		
Disturbance	current operations, erosion channels, large-scale clearing, vehicle tracks		
Vegetation condition	Poor	**Fire age**	>10
Total veg. cover (%)	21	**Litter distribution**	under vegetation
Tree cover (%)	10	**Litter depth (cm)**	1.0
Shrub cover (%)	10	**Litter cover (%)**	1
Grass cover (%)	0	**Herb cover (%)**	1

Site details			
Site	**20**	**Position (WGS84)**	115.9307, -21.2033
Slope	Negligible	**Topography**	plain
Soil colour	red-brown	**Soil texture**	clay loam
Rock cover (%)		**Rock type**	

Sample and effort summary			
Visit	**Sample method**	**Date start**	**Date stop**
1	Camera trap	15 Nov 2023	02 May 2024
1	Site description	15 Nov 2023	15 Nov 2023
1	Camera trap	15 Jul 2024	24 Nov 2024

Site description - visit 1 (15 Nov 2023)			
Occasional Mesquite over spinifex grassland on red-brown clay loam plain adjacent to the main camp with lots of open cleared areas. Camera deployed in recently burnt area			
Habitat	spinifex grassland		
Disturbance	evidence of feral animals, current operations, litter, weed infestation, livestock tracks, large-scale clearing		
Vegetation condition	Degraded	**Fire age**	1
Total veg. cover (%)	81	**Litter distribution**	under vegetation
Tree cover (%)	0	**Litter depth (cm)**	1.0
Shrub cover (%)	20	**Litter cover (%)**	1
Grass cover (%)	60	**Herb cover (%)**	1