



**DEEP YELLOW LIMITED ACN 006 391 948**

**NARNOO MINING PTY LTD ACN 084 713 100**

**Mulga Rock Project**

**Sandhill Dunnart Conservation Plan**

**EPBC 2013 / 7083, Shire of Menzies, Western Australia**

**Prepared by: GHD Pty Ltd ACN 008 488 373**

**29 January 2024**



## VERSION HISTORY AND DECLARATION OF ACCURACY

Table 1 shows approvals or significant changes to this document.

**Table 1: Version History**

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### Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

**Signed:**

**Full name (please print):**

Cathy Paxton

**Organisation (please print):**

Deep Yellow Limited

**Date:** 29 January 2024



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## 1 EXECUTIVE SUMMARY

Deep Yellow Limited is developing the Mulga Rock Project located 240 km east-northeast of Kalgoorlie, Western Australia.

As the Project was considered to have a residual significant impact to the Sandhill Dunnart, listed as 'Endangered' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), the Project was referred to the then Department of Agriculture, Water and the Environment (which changed to the Department of Environment and Energy and is now the Department of Climate Change, Energy, the Environment and Water [DCCEEW]).

After referral, approval was granted with conditions by the Department of Environment and Energy, referenced as EPBC 2013/7083. Condition 2 of the approval necessitates the preparation of a Sandhill Dunnart Conservation Plan to reduce the threat to the Sandhill Dunnart posed by feral animals within the Defined Area.

After completion of the Sandhill Dunnart Conservation Plan, in consultation with the Western Australia Department of Biodiversity, Conservation and Attractions and the submission of the Plan on 10 November 2022 to the Department of Climate Change, Energy, the Environment and Water, the Plan was approved on the 31 January 2023.

The Sandhill Dunnart Conservation Plan outlines the conservation objectives, and actions required to implement, measure and monitor these objectives, to reduce the threat to the Sandhill Dunnart posed by feral animals within the Defined Area.

Monitoring quadrats are established in key locations to determine baseline populations of Sandhill Dunnart and feral animals. This, with ongoing monitoring is applied to understand population trends and whether potential decline in Sandhill Dunnart population numbers is related to the presence of feral animals. A systematic monitoring methodology, derived from recognised principles, practices and guidelines, is proposed to determine the presence of the Sandhill Dunnart and feral animals within the Defined Area, on ongoing population dynamics.

Where and when triggered, feral animal management measures will be implemented within the Defined Area and include targeted species baiting techniques. Various contingency responses and corrective actions are included within the Plan as management measures are implemented and triggers detected.

## 2 INTRODUCTION AND PURPOSE OF THE PLAN

### 2.1 Background

The owner of the Mulga Rock Project (**MRP** and the **Project**) and the registered holder of the tenements associated with this project is Narnoo Mining Pty Ltd ACN 084 713 100 (**Narnoo**). The proponent of the project is Vimy Resources Limited ACN 120 178 949 (**Vimy**). Narnoo is a 100% owned subsidiary of Vimy. Vimy is in turn a 100% owned subsidiary of Deep Yellow Limited ACN 006 391 948 (**Deep Yellow** and the **Company**). Deep Yellow is listed on the Australian Securities Exchange and is the ultimate holding company in the Deep Yellow group of companies, which includes both Vimy and Narnoo.

Deep Yellow is developing the MRP located 240 km east-northeast of Kalgoorlie in the dune fields on the western flank of the Great Victoria Desert (**GVD**), Western Australia (**WA**). MRP involves open pit mining of four polymetallic deposits with commercial grades of uranium hosted in carbonaceous material. The location of MRP, project boundary and development envelope are shown in Figure 1 and Figure 2. The area of the GVD to be mined is located within a region representative of Priority Ecological Community (**PEC**) ‘yellow sandplain vegetation of the Great Victoria Desert with diverse vertebrate fauna’ listed as Priority 3 by Department of Biodiversity, Conservation and Attractions (**DBCA**). The yellow sandplain PEC is characterised by diverse shrubs and very high vertebrate diversity.

On 28 November 2013 MRP was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) to the then Department of Agriculture, Water and the Environment (**DAWE**) (which changed to the Department of Environment and Energy and now the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**)). On 7 January 2014, DAWE determined MRP a “controlled action”, with the controlling provisions being “listed threatened species and communities” and “nuclear actions”, to be assessed under the bilateral agreement with the WA State Government. The MRP received approval under the *EPBC Act* on 2 March 2017 (EPBC 2013/7083) with part of Condition 2 of the approval stating the following:

*“To offset the residual significant impact to the Sandhill Dunnart (*Sminthopsis psammophila*), the person taking the action must prepare a Sandhill Dunnart Conservation Plan (the Plan) to reduce the threat to the Sandhill Dunnart posed by feral animals within the defined area.*

*The Plan must be prepared by a **suitably qualified expert** and in consultation with the WA Department of Park and Wildlife.”*

The Sandhill Dunnart Conservation Plan (**SDCP** or **Plan**) was prepared by suitably qualified experts with relevant tertiary qualifications and a minimum of ten years demonstrated experience developing management plans to satisfy the conditions of EPBC approval requirements. Glen Gaikhorst, GHD principal zoologist with over 25 years’ experience in fauna survey, has been involved in SHD research in the GVD since 2001. The aim of the research program was to locate and map the distribution of SHD in the GVD and study the species’ ecology and reproductive biology. Glen has identified all the mammal species in the south-western portion of the GVD.

Monitoring of the SHD within the GVD has been conducted over several decades. Historic surveys used a combination of Elliot and pitfall traps whereas more recent surveys have used camera traps. The Company has undertaken conventional trapping surveys dating back to 1985. Although the monitoring areas targeted were outside of the Defined Area these monitoring efforts have developed and refined a survey/sampling methodology which are employed within this Plan.

After completion of the **SDCP**, in consultation with the DBCA and DCCEEW, the DCCEEW approved the Plan (dated 10 November 2022) on the 31 January 2023.

As a requirement within the SDCP, an initial review is required one year following the DCCEEW's approval. This is the annual review of the SDCP which reflects the monitoring and management approach going forward, based on the two years of baseline data analysed by GHD (refer to Appendix 1).

## 2.2 Project Description

The MRP involves the development of an open pit uranium mining operation, the construction and operation of associated ore processing facility consisting of uranium extraction and uranium concentrate packing facilities, and the necessary supporting infrastructure.

The ore zones are up to 38 m thick at Mulga Rock East with an average thickness of 4.5 m, and up to 8 m in thickness at Mulga Rock West with an average of 2.3 m. Uranium mineralisation is hosted by flat-lying, carbonaceous clastic sediments, which are in turn overlain by weathered, oxidised sediments that range in thickness from 19 m to 62 m forming the waste overburden. Dewatering is required to allow mining some of the orebody. Where possible, dewater will be used on-site for dust suppression and any excess water will be disposed of by reinjection. Owing to the nature of the host rock and overburden, over 90% and possibly all the mining will be done by free digging.

The deposits will be mined using large-scale open pits to produce at an annualised peak capacity of 2,180 t/a (4.8 Mlbs) uranium oxide but averaging 1,590 t/a (3.5 Mlbs) uranium oxide. Due to the large lateral extent and horizontal geometry of the deposit in the Ambassador pit, it is proposed to use 'strip' mining techniques like those used in mineral sands and coal mining. Strip mining commences with the excavation of an initial box cut to expose the ore, with the initial overburden placed in a surface landform. After mining the first ore exposed by the initial box cut, the resulting pit void will be used for in-pit tailings deposition. In general, the rest of the Ambassador pit will be strip-mined one strip at a time, with previously mined areas progressively backfilled with overburden and rehabilitated. This mining method will result in 'real-time rehabilitation', including a smaller environmental footprint at any given time and significant savings in waste movement and rehabilitation costs.

There are also several smaller high-grade and secondary satellite pits within the MRP. A conventional truck and shovel mining method will be utilised for these pits where mining proceeds bench-by-bench in a vertical direction from the surface with disposal of overburden material ex-pit on overburden surface landforms. This method will also be applied within the larger deposits where pit geometries do not support strip mining.

Processing of the ore includes the following main stages:

- Beneficiation of the ore to remove sand (quartz) particles using conventional gravity/ screening techniques;
- Milling;
- Extraction of the uranium from the ore using acid leach (sulphuric acid,  $H_2SO_4$ ), in tanks;
- Capturing the released uranium using Resin-In-Pulp;
- Stripping of uranium from the loaded resin;
- Uranium conditioning (ultra and nano-filtration, precipitation, drying and packaging).

Tailings generated by the processing of the ore will be disposed by backfilling the mine's open pit voids.



Drawn: CAD Resources ~ Ref: a2947\_LC001\_Locality ~ Date: January 2024

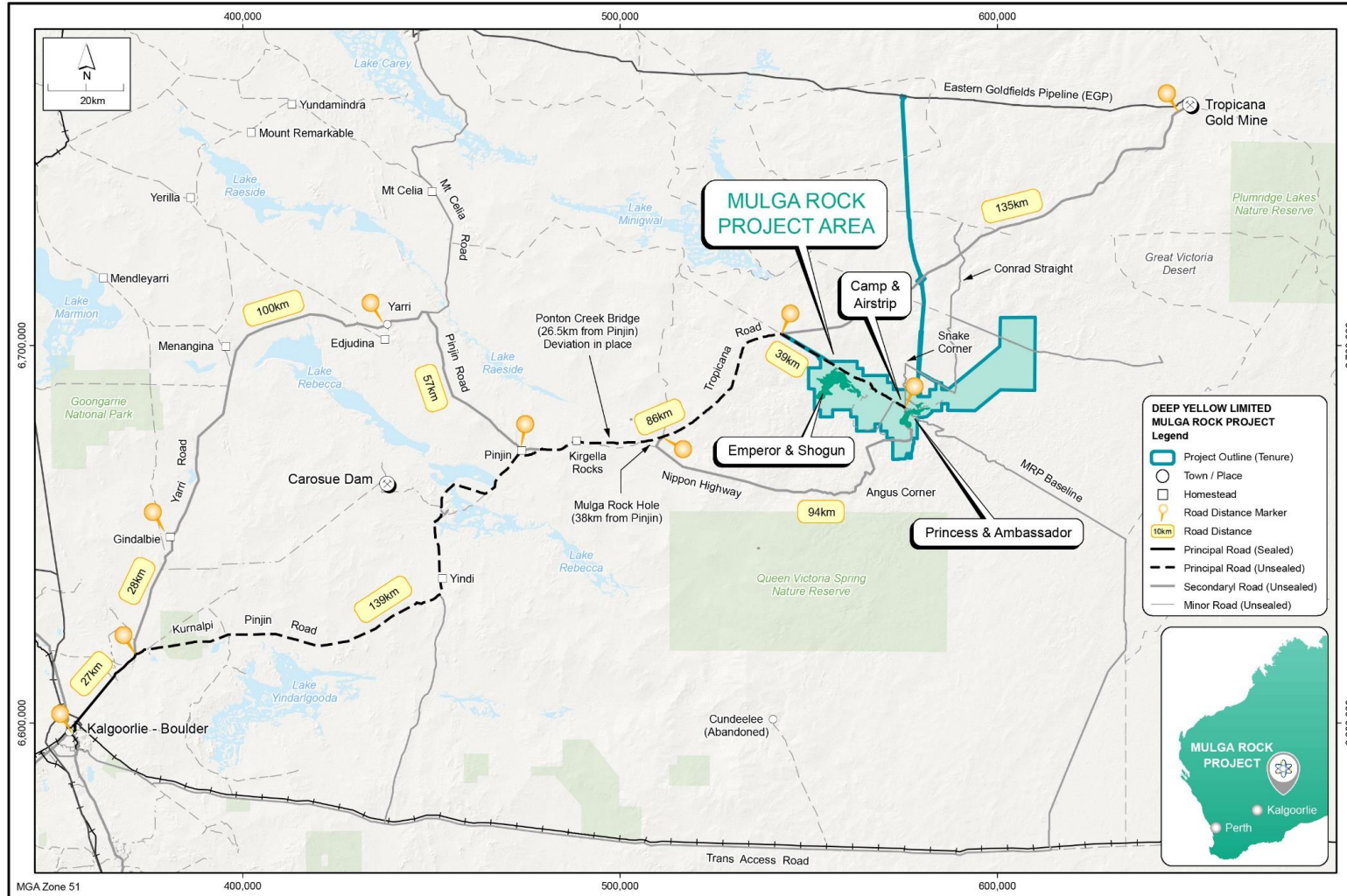


Figure 1: MRP Regional Location

Drawn: CAD Resources - Ref: a2947\_TN001\_01\_SDCP - Date: January 2024 - Imagery: ESRI, Maxar, Deep Yellow

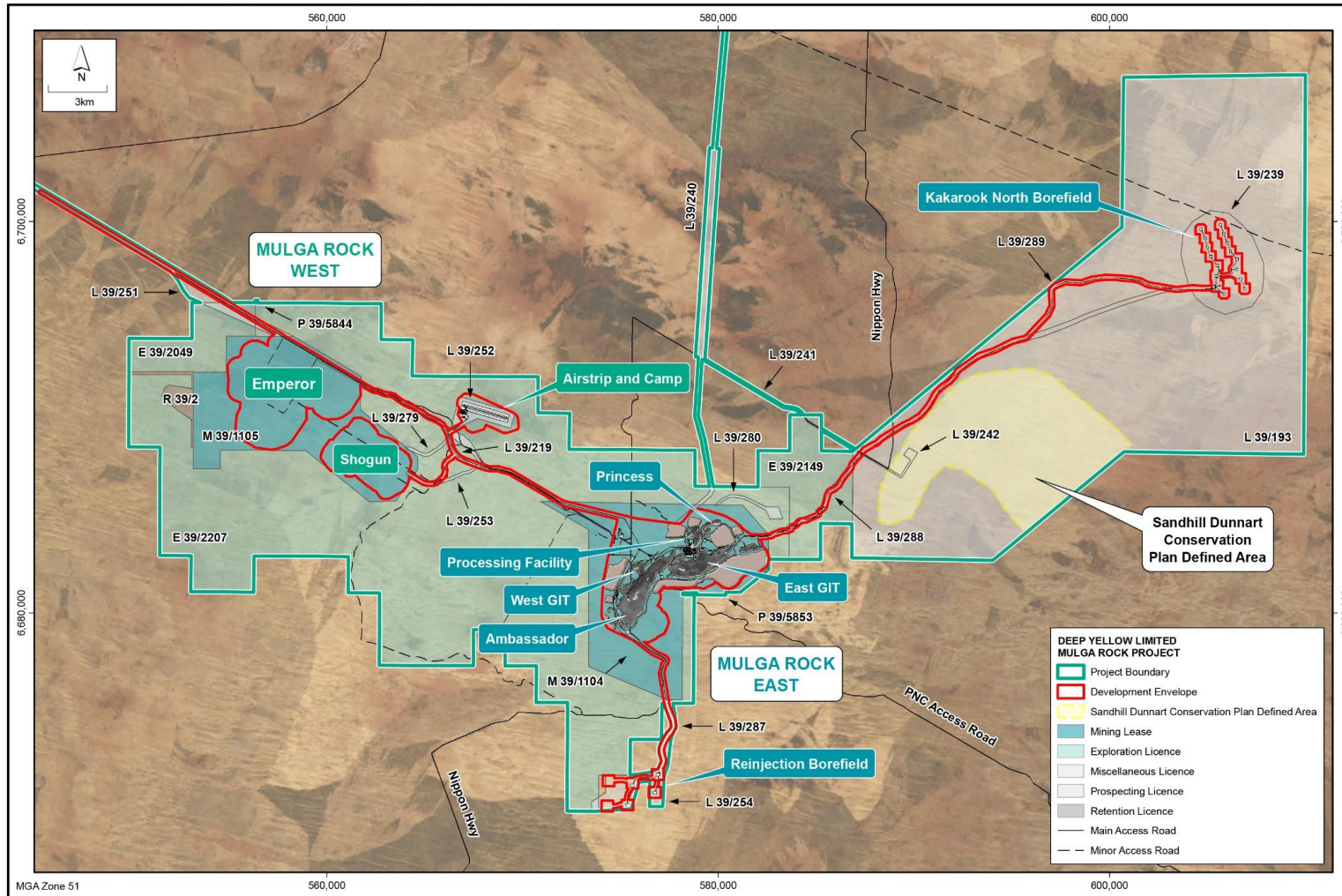


Figure 2: MRP Layout

The drummed uranium oxide concentrate will be transported by road from the mine site in containers to a suitable port (expected to be Port Adelaide) for export. Transport options have not been finalised and the necessary approvals will be sought from the appropriate decision-making authorities, following consultation with stakeholders. At the end of the mine's life, the areas disturbed by mining activities will be decommissioned and rehabilitated to the required regulatory standards and in accordance with the approved closure plan.

Required project infrastructure will include:

- Aerodrome for fly in fly out workforce
- Accommodation Village for up to 358 personnel
- Access roads and tracks
- Bulk earthworks (activities will include clearing all required areas, installations including culverts, box cuts, backfill, hardstands, dams, drains, catchments, services trenching, and water storage ponds)
- Communications system
- Transportable buildings including offices, change rooms, crib rooms and ablutions
- Steel framed buildings including workshops, warehouse and storage
- Fuel storage and distribution facility
- Chemical storage and make up facility
- Power station
- Site fencing and security
- Processing facility
- In-pit tailings storage facilities
- Borefield water supply including raw water for processing and potable supplies
- In-Pit dewatering infrastructure
- Reinjection borefield
- Potable and wastewater treatment plant
- Landfill and land farm.

Transport to site for consumables, bulk materials and general supply items will be via existing public road systems linked to dedicated site roads.



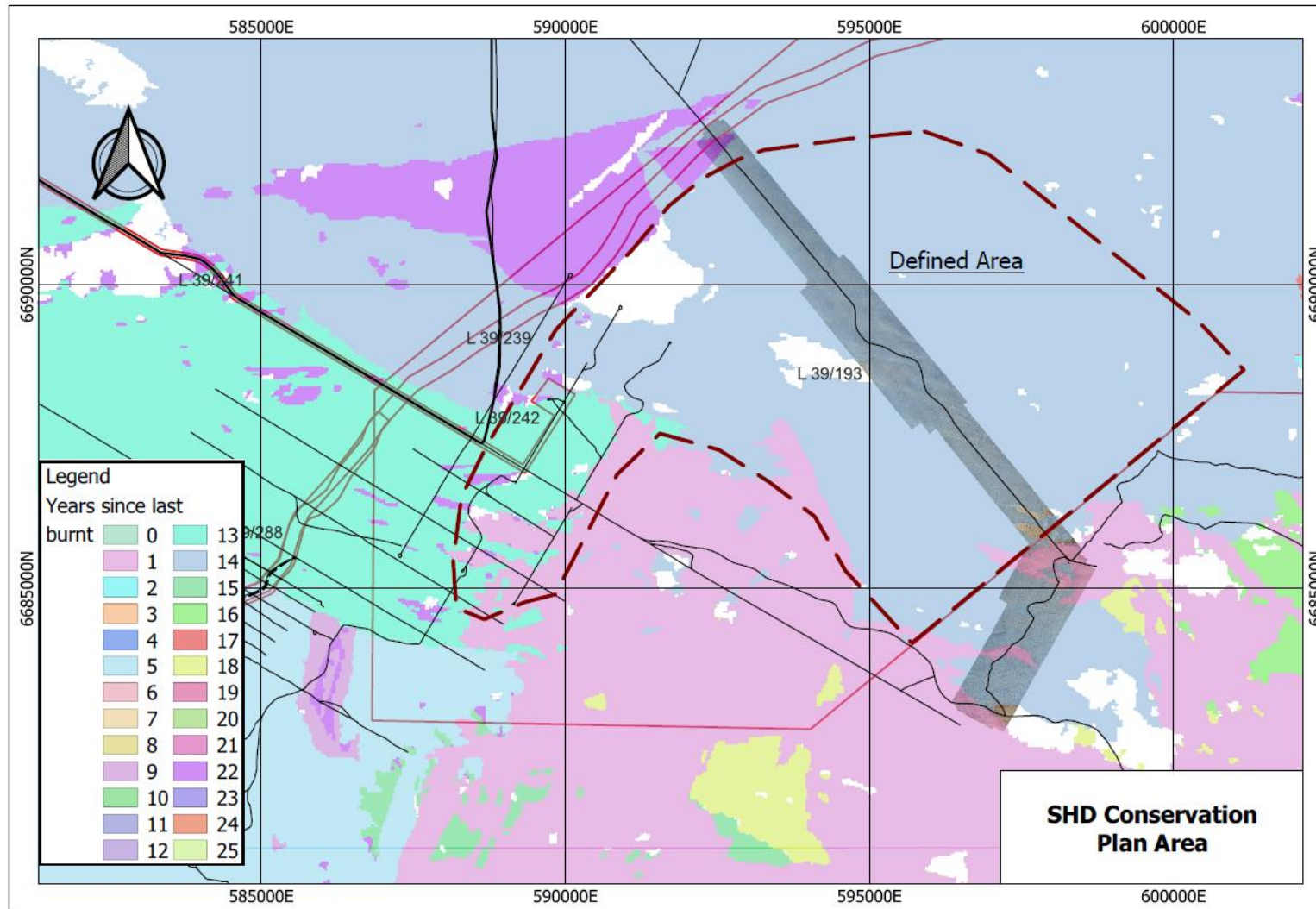
The design of project infrastructure has considered the known location of areas where conservation significant flora/fauna are likely to occur and, in particular, areas containing complex interlinked dunes.

Ground disturbing activities associated with MRP require the clearing of 3,515 ha of SHD suitable habitat (prime and sub-prime) which was determined to represent a significant residual impact to the species. EPBC 2013/7083 conditional approval necessitates the preparation of a SHD Conservation Plan (**the Plan**) to reduce the threat to the SHD posed by feral animals within the defined area.

### 2.3 Purpose of the Plan

EPBC 2013/7083 Condition 2 requires the preparation of a SDCP to reduce the threat to the SHD posed by feral animals within the Defined Area (Figure 2 and Figure 3).

The overall purpose of the Plan is to comply with EPBC 2013/7083 Condition 2. The Plan outlines the conservation objectives, and actions required to implement, measure and monitor the conservation objectives, to reduce the threat to the SHD posed by feral animals within the Defined Area.



**Figure 3:** Sandhill Dunnart Conservation Plan Defined Area Fire History

### 3 CONDITIONS OF APPROVAL

EPBC 2013/7083 Condition 2 states the requirement for the Plan to be prepared by a suitably qualified expert. Glen Gaikhorst, GHD principal zoologist who has prepared this Plan, has the relevant tertiary qualifications, over 25 years' experience in fauna survey, and has been involved in SHD research in the GVD since 2001.

Table 2 summarises the requirements of EPBC 2013/7083 Condition 2 and the sections within the Plan that satisfy the conditional requirements. Following the release of EPBC 2013/7083 conditional approval, further specific “Environmental Management Plan Guidance” was provided by DAWE (now DCCEEW) directly to the Company. Refer to Appendix 2 for the EMP Guidance; Table 2 links the specific EMP Guidance requirements to the EPBC 2013/7083 approval conditions.

**Table 2: EPBC Approval Condition Requirements**

Approval Condition	Section in Plan	Key Commitments / EMP Guidelines (Appendix 2)
a) define the area over which the Plan applies (the defined area). The defined area must: <ul style="list-style-type: none"> <li>(i) be located outside of the MRP development envelope, but within the project boundary.</li> <li>(ii) contain at least 6,000 ha of suitable habitat for Sandhill Dunnart.</li> <li>(iii) contain a local population of Sandhill Dunnart.</li> </ul>	Section 13; Figures 1 and 2	Guidance items 4, 6, 7 and 22.
b) detail objectives and measurable performance indicators for implementing the Plan and managing threats to the Sandhill Dunnart within the defined area relating to feral animals.	Section 9; Section 15; Section 16	Note the uplift in habitat condition/feral animal/predator control is to be achieved at Year 5 and maintained for the life of the impact (taken as life of approval). Therefore, the Plan must achieve the performance indicator/s by Year 5 following commencement and maintain. Please see guidance items 5, 6 and 8.
c) detail the methodology that will be implemented for determining the baseline condition of the defined area including estimated baseline local population of Sandhill Dunnart and feral animals.	Section 19	Explain how you will establish the baseline condition prior to project commencement and/or during initial years of the project, relationship to performance indicators and statistical power/reliability. Please see guidance items 5 and 14-16.
d) detail management actions that will be implemented to achieve the Plan's objectives.	Section 16; Section 17	See guidance items 10-12.
e) identify and manage risks associated with achieving the Plan's objectives.	Section 9	See guidance items 9, 10, 12 and 13.

Approval Condition	Section in Plan	Key Commitments / EMP Guidelines (Appendix 2)
f) detail contingency responses and corrective actions should performance indicators not be achieved. This includes triggers values for implementing contingency responses and corrective actions, and the timeframes in which corrective actions will be implemented.	Section 9; Section 17	Note contingency response is to confirm an event/circumstance or determine that it is due to the approved action and the cause of the event etc. Corrective actions are subsequently implemented, as appropriate. Please see guidance item 10.
g) detail a monitoring program, including a monitoring methodology, to review effectiveness of management actions and to support an adaptive management approach to implementation of the Plan.	Section 19	See guidance items 14-19.
h) provide the timing and frequency of management actions, monitoring and reporting programs and the person/s responsible for implementing the actions and programs.	Section 9; Section 15; Section 19; Section 20; Section 21	See guidance items 11, 14-17, 20 and 21.

## 4 OBJECTIVES AND CONTEXT OF THE CONSERVATION PLAN

### 4.1 Context of the Conservation Plan

A draft National Recovery Plan (**NRP**) for SHDs was developed in 2019 by the South Australian Department of Environment and Water (**DEW**), within which the overall objective is to:

- secure and enhance the conservation status of the SHD in the wild through on-ground management actions outlined in the draft Recovery Plan.

The specific objectives of the draft Recovery Plan are to:

- Develop and implement appropriate threat management strategies to protect and conserve all known sub-populations.
- Expand the knowledge of the distribution, status, and population trends of the SHDs.
- Increase understanding of the biology and ecology of SHDs.
- Identify habitats critical to survival and map potential habitat of SHDs.
- Promote awareness of the status of SHDs and required conservation actions to landholders and the wider public.
- Manage the recovery process.

The environmental objectives of the SDCP, summarised in Section 5.2, aim to complement the specific objectives of the draft Recovery Plan, and assist in achieving the overall objective through the implementation of on-ground threat management actions. Whilst the Plan is written primarily in

compliance with the conditions of EPBC 2013/7083, it is intended that where practicable and appropriate the Plan will also deliver actions in keeping with the objectives of the draft Recovery Plan.

#### 4.2 Objectives of the Conservation Plan

EPBC 2013/7083 Condition 2 requires the preparation of a SHD Conservation Plan to reduce the threat to the SHD posed by feral animals within the Defined Area.

Implementation of the Plan aims to achieve the following conservation objectives for the SHD:

- To understand the threat to the SHD posed by feral animals within the Defined Area.
- To reduce the threat of feral animals within the Defined Area.
- To expand the knowledge of the distribution and status of the SHD in the Defined Area.
- To reduce the threat of third-party activities to the SHD within the Defined Area.

Collection of baseline SHD and feral animal population data within the Defined Area, and continued monitoring of population numbers, will assist in understanding population trends and whether potential decline in population numbers are related to the presence of feral animals. Implementation of threat management within the Defined Area specifically targeting known threatening species, will aim to reduce threats to the SHD. As baseline population data are consolidated and ongoing monitoring data are captured, the monitoring approach will be refined and improved, ultimately expanding the knowledge of distribution and status of the SHD in the Defined Area.

## 5 STATUS AND ECOLOGY OF SANDHILL DUNNART

### 5.1 Sandhill Dunnart Status

There are estimated to be approximately 5,000-10,000 mature SHD individuals within populations across Australia, but numbers are decreasing (TSSC 2015). The SHD is listed as 'Endangered' under the *EPBC Act* and 'Endangered' under the *Biodiversity Conservation Act 2016 (BC Act)*. Under the EPBC Act the SHD was deemed eligible for Endangered status due to its range declining significantly (TSSC 2015). There is an inferred decline in the area of occupancy, in the area, extent and quality of habitat, and in the number of mature individuals (TSSC 2015). Monitoring of the SHD within the GVD, conducted over several decades, has been successful in regularly identifying the species. Recent species distribution modelling suggests that the area of occupancy of the species is much larger than initially determined, with the discrepancy a reflection of a lack of survey intensity (Riley and Turpin 2019).

### 5.2 Previous Surveys

Several surveys have been conducted within the vicinity of the Defined Area. Historic surveys used a combination of Elliot and pitfall traps, whereas more recent surveys have used camera traps, a summary of the surveys is shown in Table 3. The first SHD was discovered in 1985 during baseline impact studies.

Overall survey effort in Western Australia suggesting the species is difficult to trap, is in low abundance and exhibit patchy distribution or seasonal fluctuations in response to wildfires or other influences (Vimy Resources 2015).



**Table 3 Summary of Survey Work within Vicinity of the Defined Area**

Year	Location	Trap efficiency			
		No. Elliot	No. Pitfall	No. Cam (Trap nights)	SHD capture
1975-1976	Neale Junction, Plumridge Lake and Queen Victoria Spring Nature Reserves (Burbidge et al. 1976, Mckenzie and Burbidge 1979)	No Record	No Record	-	0
1977	Queen Victoria Spring Nature Reserve (Morris and Rice 1981)	No Record	No Record	-	0
1985	Mulga Rock – Shogun, Emperor and Ambassador (Hart and Kitchener 1986)	1,520	1,520 (Est)	-	5
1987-1989	Northern Boundary of Queen Victoria Spring Nature Reserve	2,700	7,400	-	6
1990-1998	North of Queen Victoria Spring Nature Reserve	No record	No record	-	12
1999	Queen Victoria Spring Nature Reserve	390	0	-	0
1999	Mulga Rock – Shogun – Emperor	714	204	-	0
2000	25 km NNE of Queen Victoria Spring	No record	No record	-	1
2000-2008	Pinjin, West MR, East MR – Rason Rd, Plumridge Nature Reserve (Gaikhorst and Lambert 2001, 2002, 2003a, b, c, 2004, 2006, 2007, 2008, 2009)	9,957 (480 in Mulga Rock area)	5,427 (680 in Mulga Rock area)	-	17 (2 in Mulga Rock area)
2007	Tropicana Gold Mine Operations Area – Pinjin Infrastructure Targeted Survey #2	640	320	-	0
2008	Tropicana Gold Mine Operations Area – Pinjin Infrastructure Targeted Survey #1	1,100	939	-	0
2009	Tropicana Gold Mine Operations Area – Pinjin Infrastructure Targeted Survey #2	2,600	910	-	0
2009	Mulga Rock Project Area Targeted Survey #1	1,336	710	-	0
2010	Tropicana Group 2/3 Exploration Area – East of Mulga Rock SHD Habitat Assessment	Field survey	Field survey	-	-
2014	Sunrise Dam – Tropicana Gas Pipeline Corridor	1,680	693	-	4
2012-2014	Vimy Mulga Rock – Pilot/trial Camera Trapping	-	-	8 (720)	0
2014-2015	Vimy Mulga Rock – Targeted Camera Trapping	-	-	30 (12,080)	7 events
2015-2016	Vimy Mulga Rock – Regional	-	-	38 (8,208)	94 events
2015-2019	GVD, Tropicana project to Plumridge Rd (Riley/Turpin pers comm (from GHD 2020)	-	-	-	53
2017-2019	Vimy – Regional (Post PER)	-	-	15 (8,188)	23 events
Aug-Oct 2018	Greening Australia (GVDBT project)	-	1,305	16 (2,526)	6 (2 in pits, 4 events)

Year	Location	Trap efficiency			
		No. Elliot	No. Pitfall	No. Cam (Trap nights)	SHD capture
Oct 2020 to March 2021	GVDBT Management and Reference Areas baseline fauna assessments	-	5,376	64 (~9,600)	0
Nov 2021-Nov 2023	Mulga Rock Project – Defined Area	-	-	50 (36,800)	1,637 events

### 5.2.1 MRP Survey Work

Monitoring within the MRP boundary (Figure 1) has used both conventional and camera trapping methods. Camera trapping with the purpose of identifying taxa and determining the presence/absence of SHDs occurred from October 2012 to June 2016 (Vimy Resources 2015).

Camera trapping was conducted in association with the MRP at 15 sites over 840 trap nights from 10/10/2014 to 8/11/2014. No SHDs were detected. A bushfire burnt the area in November 2014, including all the camera trap locations.

A second phase of camera trapping was conducted, at the same 15 sites as previously used, between November 2014 and September 2015. Four SHDs were detected at two sites; one site had been burnt and the other was unburnt and described as a ‘post-fire refugia’.

In November 2015 a regional project commenced across 23 sites (46 cameras) located in areas identified as prime SHD habitat and where the species had been previously recorded. This project recorded 60 SHD events. An event refers to one or more distinguishable individuals recorded within a 24 hour period. Data were collected using Reconyx 550 Hyperfire white flash cameras from November 2015 to June 2016. Data from two of the fifteen sites in the MRP operational area were also collected during this period. The Camera Trap Protocol (2015) was submitted to the Department of Parks and Wildlife (DPAW) for comment and to the Office of the Environmental Protection Authority (OEPA) as part of the Mulga Rock Project Public Environmental Review documentation.

Although the monitoring areas targeted were outside of the Defined Area, these monitoring efforts have developed and refined a survey/sampling methodology which is employed in this SDCP, outlined further in Section 19.

### 5.3 Sandhill Dunnart Presence at MRP

The presence of SHD within the Development Area has been captured during camera trap monitoring programs; these programs have been ongoing since 2014 both within the Development Area and surrounding areas. The purpose of the program was to identify taxa and determine the presence/absence of SHD.

The program included the capture of digital images from infra-red cameras, which were subsequently analysed, and taxa identified by a suitably qualified ecologist with specialist experience in small mammal (e.g. Dasyuridae) identification in the GVD (GHD 2021a). As part of the monitoring program, three separate projects have been undertaken including a trial project, the Mulga Rock project and a regional project.

The trial project was undertaken from July to September 2014. During the trial two types of cameras were used, the Reconyx 550 Hyperfire white flash and the Bushnell motion infrared camera. The trial was limited to the proposed MRP operational area with eight sites established in the field. The trial project did not record any SHD.

At the conclusion of the trial, the Mulga Rock project was commenced with 15 new sites established in the MRP area from September 2014 to November 2015. Data from these sites were collected using Reconyx 550 Hyperfire white flash cameras. Five SHD events were recorded at camera MR11a in January 2015, three separate events at camera MR14a in March and April 2015 and one event at camera MR5a in August 2015. The three events from MR14a are likely to be the same individual moving within its home area and appears to be an adult. The MR11a individual appears to be slightly smaller and is a 2014 offspring not yet fully grown.

In November 2015 a regional project was commenced with 23 sites established in areas identified as prime SHD habitat and where SHD had been previously recorded. Data were collected using Reconyx 550 Hyperfire white flash cameras from November 2015 to August 2018. During this time, two sites were no longer able to be monitored due to fire and camera theft.

From the images analysed from the MRP and Regional program prior to July 2017, approximately 10,644 had a small mammal present with the remaining 212 images excluded from this assessment due to being too difficult to determine confidence or having no animal present. Eleven species were identified from the images, this included ten native mammals and one introduced mammal from all camera trapping projects.

Since the commencement in November 2021, the Defined Area camera trapping program has recorded several SHD individuals (Figure 4 – Figure 6). Camera trap locations within the Defined Area are detailed in Figure 7. SHD and feral animal data, implementation of the Plan and records of any impacts will be provided in the Annual Compliance Report to DCCEEW, and in accordance with MS1046 Condition 10.1 provided to Department of Water and Environmental Regulation (DWER) and to the DBCA.



**Figure 4:** SHD at Camera 17B on 11 January 2022



Figure 5: SHD at Camera 17B on 25 January 2022



Figure 6: SHD at Camera 17B on 10 April 2022

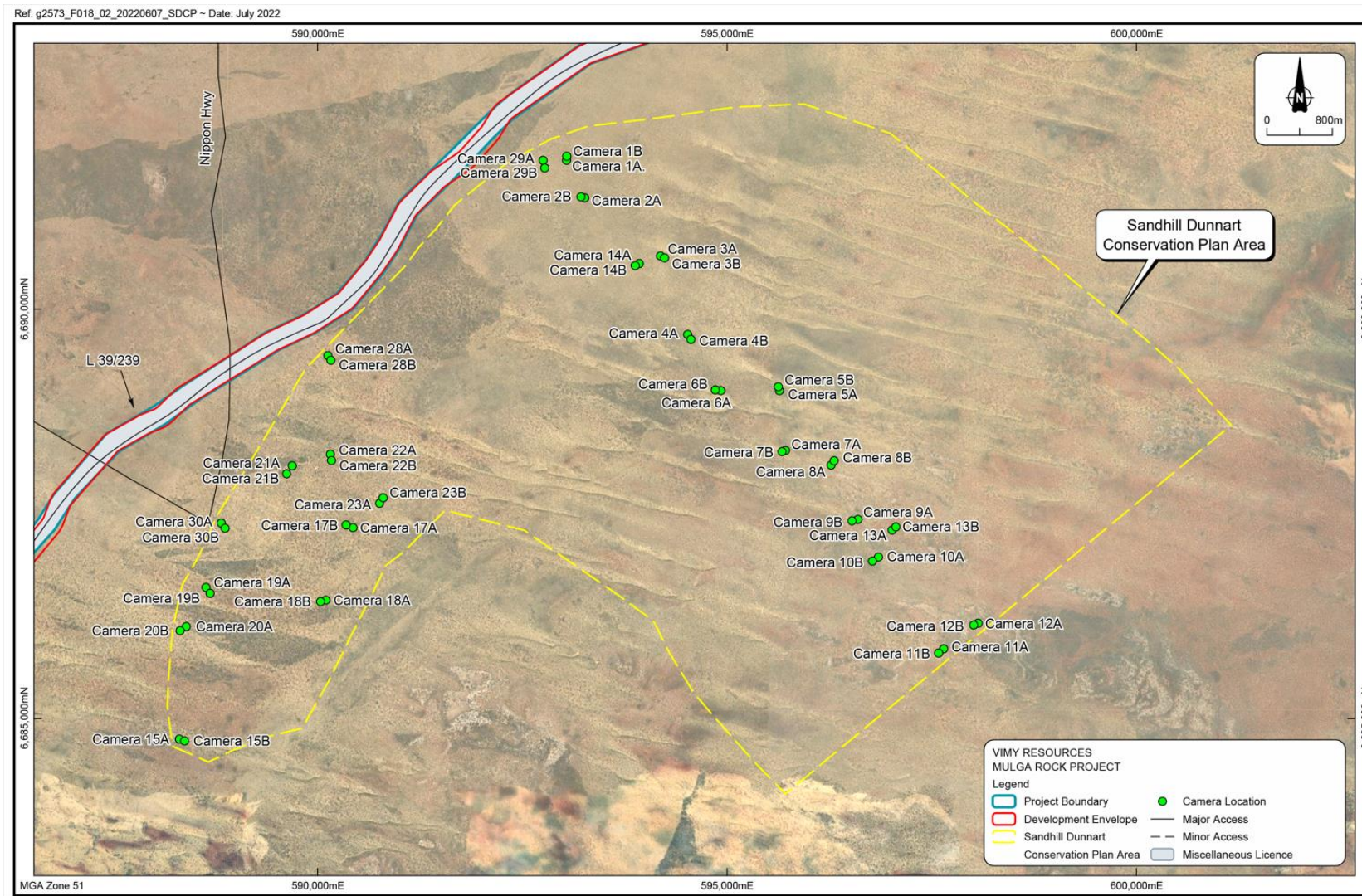


Figure 7: Camera Trapping Locations in the Defined Area

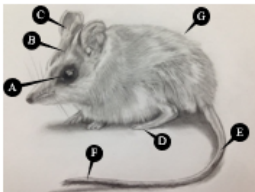
## 5.4 Sandhill Dunnart Ecology

### 5.4.1 Description

Like other Dunnarts, the SHD is a nocturnal and insectivorous species and is characterised by a long-pointed snout, large eyes, and large ears (DEW 2019). The SHD has a head to body length that ranges between 85-114 mm and a tail length in the range of 107-128 mm. The colouring of the SHD is predominantly grey to a buff/sand which changes to white on the underside and feet. The eyes are ringed black, and they possess a distinctive tail with stiff black hairs on the underside. In WA some specimens have a distinctive tail banding which is not seen in other populations (DEW 2019).

The distinct characteristics of the SHD which aid identification are shown in Table 4.

**Table 4: Sandhill Dunnart Physical Characteristics (Vimy Resources 2015)**

Species	Physical Characteristics and Identifying Features		
	Head / ears / feet	Tail	General body
<b>Sandhill Dunnart</b> <i>(Sminthopsis psammophila)</i> 	<b>A</b> Large eyes, black eye rings <b>B</b> Dark patch on forehead <b>C</b> Large ears with black anterior bristles <b>D</b> Long rear legs. All legs and underbelly white fur	<b>E</b> Tail thin and tapered, longer than H/B length (mean 11.8 cm)  Tail bi-colour – dorsal light grey/buff, with darker grey base  <b>F</b> Black grey ventral hair fin in final quarter	Weight: 36 g H/B length: 9.7 cm Body size: <b>G</b> Larger body than any other Dunnart recorded in the region Colour: Dorsal fur grey to brindle, underside white

### 5.4.2 Reproduction

Male and female SHD reach sexual maturity at approximately 11 months of age, they breed in spring and early summer with a 16 - 19 day gestation period (Lambert *et al.* 2011; McLean *et al.* 2019). Mating typically occurs in September with young born September/October and weaned from the pouch by December/January (Pearson & Churchill 2008). Availability of food resources can delay the breeding season (McLean 2015). SHD typically produce a single litter per year but have been known to produce a second litter during favourable conditions (Churchill 2001). SHD have a life span of approximately two years (Lambert *et al.* 2011; McLean 2015) which is linked to resource availability.

### 5.4.3 Distribution

Historically, SHD range extended from the south-west of the GVD in WA across to the Eyre Peninsula, South Australia and up to Lake Amadeus in the Northern Territory (Spencer 1896). The species has not been captured in the Northern Territory since 1894 and, at present, is now only known from three core populations across Australia. The three core populations of SHD consist of five known sub-populations (DEW 2019), located in the following areas:

- 1 South-western GVD, Western Australia
- 2 Yellabinna Regional Reserve, GVD, South Australia
- 3 Pinkawillinie Conservation Park, north-central Eyre Peninsula, South Australia
- 4 Middleback dunefields, north-eastern Eyre Peninsula, South Australia
- 5 Hincks Conservation Park, central Eyre Peninsula, South Australia

A sixth sub-population identified is to the east of Laverton, representing a 150 km range extension (Riley and Turpin 2019).

The SHD extent of occurrence is estimated at about 150,000 km<sup>2</sup>, while its overall occupancy area is conservatively estimated at between 500 to 2,000 km<sup>2</sup> (DEW 2019). Recent species distribution modelling suggests the WA GVD population occupancy area exceeds 15,000 km<sup>2</sup>, with the discrepancy largely a reflection of a lack of survey intensity (Riley and Turpin 2019).

Though the general region they live in is known, there is a lack of research into the distribution of the SHD in WA due to the inaccessibility and vastness of the GVD. Increased understanding of the habitat variables affecting the distribution of the species will help identify possible additional populations in WA and help refine population estimates.

#### 5.4.4 Habitat

##### Home Range

Studies have been conducted to understand the home range of SHD and results suggest variability in home range extent, largely as a function of resource availability. One study found an estimated home range of 7.8 ha, while a study of SHD on the Eyre Peninsula found variation between sites with the home range of SHD at one site between 16.1 to 41.5 ha and at the second between 3.2 and 6.2 ha (DPAW 2016).

There is little to no data for home range of SHD in WA. In general individuals may traverse 200–300 m per foraging period and have the ability to travel long distances in short periods with studies recording 1,960 m covered in 2 hours (Churchill 2001).

##### Habitat Type

The SHD habitat is most significantly associated with the presence of spinifex hummocks (*Triodia* spp.) in association with sand dunes. In WA, the SHD have been found exclusively in vegetation association 84 (Beard 1974) which is comprised of Marble gum (*Eucalyptus gongylocarpa*), Mallee and *Triodia* spp. (Gaikhorst and Lambert 2014). Although the habitat across the GVD has not been surveyed in detail there appears to be large tracts of potentially suitable habitat through the southern desert area.

Habitat availability has not been identified as a limiting factor to the SHD, at least in the southwest GVD (which largely coincides with the Yellow Sand Plain community). Despite the known resilience of the SHD to habitat fragmentation (Riley and Turpin 2019), large areas of suitable habitat are necessary to protect populations due to the high mobility of the species (McLean 2015, Churchill 2001). Recent research in WA and SA points to SHDs shelters being preferentially located in less open ground and more dense lower stratum habitats, with burrows and spinifex the two dominant types of shelters (Riley & Turpin, 2019).

SHD shelters classified by underlying landforms (Riley & Turpin 2019) show a dominant association with sandplains, dune slopes (with the north-facing slopes being dominant) followed by woodland, dune crest and Mulga dominated landforms (typically more clayey substratum).

Further research is required to identify and map habitat key to the stabilisation of SHD numbers across the southwest GVD.

*Triodia* of varying sizes have been found at all SHD sites and comprise 10-70% of groundcover. SHD appear to prefer large hummocks as nest sites. Post-fire age of spinifex potentially plays an important role in preferred habitat for the SHD due to its influence on the extent of ground cover and *Triodia* structure.

Too frequent fires result in hummocks that are too small, and too infrequent fires result in hummocks that provide inadequate cover from predators (DEW 2019). In WA, SHD captures have predominantly occurred in habitat that was 17-26 years post-fire with an optimum age structure recommended of 10-30 years (Gaikhorst and Lambert 2014).

Another study found important habitat characteristics were numbers of logs, average height of *Triodia* hummocks and complexity of vegetation (Moseby *et al.* 2016). Moseby *et al.* (2016) found that SHD tended to populate habitats which were  $\geq 10$  years post-fire and *Triodia* had at least 10% coverage and a minimum height of 330 mm. Moseby *et al.* (2016) recommended that fire be used as a management tool for the maintenance of SHD habitat where *Triodia* cover declines below 10% rather than using 'post fire age' as an independent indicator.

#### 5.4.5 Diet

As an insectivore, the SHD feeds on invertebrates such as ants, beetles, termites, spiders, centipedes, grasshoppers, and wasps (DEW 2019, Riley and Turpin 2019). Additionally, the SHD has been observed to be opportunistic as small reptile bones and vegetable material have been recorded in scat (DEW 2019). The SHD does not need to drink water as it is obtained from their diet (DPAW 2016). The variety of species suitable as feeding for the SHD suggests that diet is unlikely to play a significant role in their distribution (Churchill 2001).

The foraging behaviour of the SHD is influenced by temperature (DEW 2019) and also lunar phases (Read *et al.* 2015). The species is known to emerge from their nest within minutes of sunset and participate in more foraging in the early evening and less foraging on colder nights (DEW 2019). The SHD has been found to travel further on darker nights and may be impacted by the moon cycle and cloud cover (DPAW 2016).

## 6 FERAL ANIMAL SPECIES

Feral animals recorded in the MRP area during the camera trap monitoring program, visual observations from field staff or fauna consultants, and their status under the *Biosecurity and Agriculture Management Act 2007* (WA) (**BAM Act**), include:

- Cat (*Felis catus*) – Permitted – s11
- Dog (*Canis lupus subsp. familiaris*) – Permitted – s11; Feral - Declared Pest – s22(2)
- One-humped Camel (*Camelus dromedarius*) – Declared Pest – s22(2)
- Donkey (*Equus asinus*) - Declared Pest – s22(2)
- House Mouse (*Mus musculus domesticus*) – Permitted – s11
- Rabbit (*Oryctolagus cuniculus*) (Feral) – Declared Pest – s22(2)
- Common (Indian) Myna Bird (*Acridotheres tristis*) – Declared Pest – s22(2)
- Red Fox (*Vulpes vulpes*) – Declared Pest – s22(2).



## 7 POTENTIAL THREATS TO THE SANDHILL DUNNART'S SURVIVAL

Despite the limited research on SHDs, their home range and isolated populations make them susceptible to several threats. In addition, the SHD lies within the Critical Weight Range (35 – 500 g) which encompasses the Australian mammals that have seen the highest rate of decline and extinction (Johnson and Isaac 2009). Changes to fire regimes are thought to be the greatest threat to the species but they are also threatened by feral animals, introduced herbivores, and loss of habitat.

### 7.1 Fire

A change in fire regimes is considered to be a significant threat to SHDs (DEW 2019). In the past, traditional Aboriginal fire management produced diverse vegetation mosaics of varying ages. Such practices encouraged new vegetation, increased structural diversity, increasing food availability in unburnt areas (DEW 2019). The threat of changing fire regimes is of particular importance in the western part of the GVD, where one wildfire event has the potential to destroy large amounts of SHD habitat or an entire subpopulation of SHD (DEW 2019). Fires also cause habitat fragmentation which further threatens the survival of the SHD.

Studies in north-eastern GVD have shown the fire patterns to be changing. Aerial imagery from 1960–61 compared to imagery between 2000–2016 showed difference in mean size of fire of 11.2 ha and 3,699 ha respectively (DBCA 2018). The low level of fire management in that section GVD influences the pattern of large, hot bushfires that threaten biodiversity and potentially the continued survival of the SHD (DBCA 2018).

Given the lack of occupancy of the Yellow Sand Plain community by Aboriginal People since the 1920s (Warranup, 2015), this variable is deemed to be of less recent relevance to the SHD population in the southwest GVD.

### 7.2 Feral Animals (Predation)

Predation from feral cats and foxes is listed as a Key Threatening Processes under the EPBC Act, recognised for their major role in the decline in many native species (DEW 2019), with SHD ranked fifth highest of all Australian mammals threatened by cat predation (Woolley *et al.*, 2019), with predation efficacy known to increase in open habitats, such as those that persist in the YSP after extensive bushfires. There is little data on the impacts of cats and foxes on the SHD. Extinction risk is heightened as the species are ground dwelling, periods of low-rainfall areas result in sparse vegetation which limits cover from predation by cats and foxes.

In the GVD, the number of foxes is low, and particularly so in the Yellow Sand Plain community, but cats are present in moderate numbers (DPAW 2016). Data from other populations suggests the SHD can persist in areas with high predator numbers, but this could be the result of an ideal habitat abundant in foraging resources and habitat cover (DPAW 2016). Further research is needed in the GVD to understand the impact of predators to SHD.

### 7.3 Introduced Herbivores

Introduced herbivores such as cattle, goats, sheep, rabbits, and camels indirectly present a potential threat to the survival of SHD as a result of the following impacts:

- Damage to spinifex hummocks

- Removal of biomass altering fire regimes
- Reducing flora diversity
- Soil disturbance and compaction (DEW 2019).

In the GVD, feral camels pose the largest threat as introduced herbivores. Surveys undertaken in the eastern part of the GVD found high densities of camels and evidence of camel population growth (DPAW 2016b). Research shows that feral camel populations are highly influenced by water availability, with numbers growing significantly after periods of high rainfall (DPAW 2016b). Though feral camels generally avoid grazing on spinifex, they can broadly impact vegetation and habitat decreasing the abundance of invertebrates which is the SHDs main food source, consequently impacting species survival.

#### 7.4 Loss of Habitat

The SHDs range has been reduced due to clearance for agriculture and mining activities. Additionally, remaining areas of preferred habitat are highly fragmented. The fragmentation of habitat makes SHD populations vulnerable to extreme weather events and makes it difficult to recolonise suitable areas (DEW 2019).

In the GVD, loss of SHD preferred habitat is identified as a key threat and is associated with mining and exploration activities (DPAW 2016b). The direct act of exploration and clearing can flatten nests and habitat (DEW 2019). In addition, mining activities have the potential to spread weeds, and increase predator and introduced herbivore activity (DPAW 2016b).

#### 7.5 Climate Change and Cumulative Impacts

Effects of climate change in the GVD, and subsequent potential impact to SHD, are difficult to measure due to lack of data, but available studies suggest several cumulative impacts, including:

- Alteration to the life cycle of plants and habitat structure: Fragmentation of SHD habitat, loss of preferred habitat and changes in habitat structure can impact the survival of SHD due to the high mobility of the species and the requirement for protection from habitat.
- Changes in rainfall: Native fauna in the Australian arid and semiarid zones are uniquely adapted to the current climatic conditions, often occurring in naturally low densities and increasing significantly in numbers following major rainfall events (McLean et al. 2019). Increased rainfall increases foliage subsequently providing more food for introduced herbivores such as camels. Camels indirectly threaten SHD through grazing on spinifex and reducing the abundance of invertebrates which are SHD primary food source (GVD Biodiversity Trust 2017).
- Fire risk: Rainfall has increased in the GVD in recent decades (ca. +2.5 mm/a per decade since 1970), which combined with higher CO<sub>2</sub> atmospheric concentrations leads to higher fuel loads, increasing the risk of fire. It appears that the frequency and intensity of fires is increasing due to the elevated fuel loads (DEW 2019). More frequent fires increase SHD predation as protection from foliage cover is reduced.
- Extreme weather events: Recolonisation of suitable habitat is impacted by extreme weather events (McLean 2019).

## 8 RISK ASSESSMENT

The risk assessment included in the 2022 Plan has been updated. The risk assessment identifies and manages the potential risks of failing to achieve the Conservation Plan performance indicators. The risk assessment adopts likelihood and consequence criteria in Table 5 and Table 6 respectively, and a risk matrix is presented in Table 7. Table 8 presents the risk assessment results, incorporating management objectives, triggers and corrective actions for each identified risk.

**Table 5: Likelihood Criteria**

Likelihood	Criteria
Highly likely	Is expected to occur during the conservation period.
Likely	Will probably occur during the conservation period.
Possible	Might occur during the conservation period.
Unlikely	Could occur during the conservation period but considered unlikely or doubtful.
Rare	May occur in exceptional circumstances.

**Table 6: Consequence Criteria**

Consequence	Criteria
Minor	Minor risk of failure to achieve the Plan's objectives. Results in short term delays to achieving Plan objectives, implementing low cost, well characterized corrective actions.
Moderate	Moderate risk of failure to achieve the Plan's objectives. Results in short term delays to achieving Plan objectives, implementing well characterized, high cost/effort corrective actions
High	High risk of failure to achieve the Plan's objectives, implementing uncertain, high cost/effort corrective actions.
Major	The Plan's objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies.
Critical	The Plan's objectives are unable to be achieved. With no evidenced mitigation strategies.

**Table 7: Risk Rating Matrix**

Likelihood	Consequence				
	Minor	Moderate	High	Major	Critical
Highly likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

**Table 8: Risk Assessment and Management**

Conservation objective/desired outcome	Event or circumstance	Relevant management actions/measures	Responsibility for implementation	Residual risk			Trigger for corrective action	Monitoring activity	Feasible/effective corrective actions
				Likelihood	Consequence	Risk Rating			
To understand the threat to the SHD posed by feral animals within the Defined Area <sup>1</sup>	Stochastic event (e.g., wildfire, severe weather) prevents monitoring activities from occurring or damages the Defined Area	Move monitoring quadrats to alternate locations within the Defined Area	Deep Yellow / sub-consultant	Unlikely	Moderate	Low	Extensive fire damage within the Defined Area	Review damage and suitability of existing assets to continue the monitoring program	Relocation of monitoring quadrats within the Defined Area
To reduce the threat of feral animals to the SHD within the Defined Area	Increase in feral animals within the Defined Area	Determination of the estimated baseline population of SHD and feral animals within the Defined Area	Deep Yellow / sub-consultant	Likely	High	High	Three consecutive departures (standard deviation) of species numbers over the Defined Area estimated baseline level (seasonally adjusted)	Monitoring of camera trapping data Review success of feral animal control measures	Increase the intensity of feral animal control measures
		Feral animal control measures taken (i.e. one or more of the following: baiting, installation of Felixer, and/or shooting species) within the Defined Area	Deep Yellow / sub-consultant						
	New feral animal species becomes prevalent in the Defined Area which poses a threat to the SHD	Determination of the estimated baseline population of SHD and feral animals within the Defined Area	Deep Yellow / sub-consultant	Unlikely	High	Medium	Three consecutive departures (standard deviation) of species numbers over the Defined Area estimated baseline level (seasonally adjusted).	Monitoring of camera trapping data	Implement Feral animal control measures for new species within the Defined Area

Conservation objective/desired outcome	Event or circumstance	Relevant management actions/measures	Responsibility for implementation	Residual risk			Trigger for corrective action	Monitoring activity	Feasible/effective corrective actions
				Likelihood	Consequence	Risk Rating			
	Insufficient funding of Defined Area feral animal management	Regular budget reviews	Deep Yellow / sub-consultant	Unlikely	High	Medium	Decline in feral animal management practices within the Defined Area when feral animal numbers are not within or below the estimated baseline	Monitoring of feral management actions	Seek support from GVD trust
To expand the knowledge of the distribution and status of the SHD within the Defined Area	Limited baseline data for feral animals within the Defined Area is recorded	Continue the monitoring program within the Defined Area	Deep Yellow / sub-consultant	Possible	High	Medium	Limited feral animals recorded within the Defined Area	Review SHD monitoring data	Review and adapt Monitoring Plan (GHD 2021b) Review the need for feral species control measures
To reduce the threat of third-party activities to the SHD within the Defined Area	Exploration or Miscellaneous lease approval by a third-party within the Defined Area and undertaking activities that impacts on the conservation of the SHD	Deep Yellow to object to third party lease applications over the Defined Area and/or propose Access Deeds.	Deep Yellow / sub-consultant	Possible	High	Medium	Third party Exploration or Miscellaneous lease application submitted to Department of Energy, Mines, Industry Regulation and Safety that intersects the Defined Area	Deep Yellow to monitor third party activities in relation to Defined Area	Consult with DCCEEW

Note: <sup>1</sup> Previous revision of plan identified 'No SHDs found within the Defined Area' as a potential risk. This has been removed as SHDs have been consistently recorded with the Defined Area over a two-year period.

## 9 CURRENT CONSERVATION ACTIONS

The draft Sandhill Dunnart Recovery Plan outlines several conservation actions underway (DEW 2019). A summary of the conservation actions is shown in Table 9.

**Table 9: Summary of Ongoing SHD Conservation Actions**

Conservation action	Summary of activities
Surveys and monitoring	Numerous surveys and monitoring works have been conducted in the GVD, this work has been used to develop standardised survey methods and monitoring guidelines for SHD in the field (GHD 2020).
Recovery team	Established in 2010 with members from a various conservation, research and industry groups. More recently, activities have been more State-based with focus on the Great Victoria Desert in WA; and the Yellabinna and Middleback dunefields areas.
National Recovery Plan and review	A draft recovery plan was prepared by the South Australian Department of the Environment in 2001 and was reviewed in 2007. A revised Sandhill Dunnart Recovery Plan was undertaken in 2019 and currently sits in Draft (DEW 2019).
Sandhill Dunnart Project	The Alinytjara Wilurara Natural Resource Management Board has been working with communities across the region to implement the draft Sandhill Dunnart Recovery Plan. This has included undertaking Sandhill Dunnart surveys in the Maralinga Tjarutja Lands and training in sand-plot tracking through the Oak Valley Land Management Engagement program.
Captive breeding research	In 2005, five Sandhill Dunnarts (3 males and 2 females) were collected from the Great Victoria Desert in Western Australia and transferred to Perth Zoo for captive breeding research. A total of six litters were produced over three seasons, with 41 animals bred. Research was published on their oestrus cycle, gestation period, and the growth and development of their young and a Husbandry Manual was also produced (Lambert et al. 2011).
The Great Victoria Desert Biodiversity Trust	The Great Victoria Desert Biodiversity Trust ( <b>GVDBT</b> ) was established in 2014 as an independent not-for-profit entity as part of the offset process for the Tropicana Gold Mine. The GVDBT aims to establish a bioregional plan (for 2 GVD sub-regions in WA), undertake priority research and management (including research on the Sandhill Dunnart), and facilitate the involvement of Traditional Owners.
Habitat protection – Fire Management	In WA, land managers have developed Guiding Principles or fire management in the region which includes areas of Sandhill Dunnart Habitat. The principles recognise that prescribed burns which create mosaics of post-fire vegetation growth stages, including long unburnt vegetation, will benefit biodiversity and buffer against large wildfires.
Habitat protection – formal	70,000 km <sup>2</sup> (about one fifth) of the Great Victoria Desert is in conservation parks and reserves.

## 10 RESIDUAL SIGNIFICANT IMPACT AND OFFSET OBLIGATIONS

Under MS 1046 Condition 8-1(2) the Company is not permitted to clear more than 3,474 ha of vegetation community E3 and 200 ha of vegetation community S6 within the MRP development envelope (refer to Figure 2). The extent of these communities within the MRP was mapped by Mattiske (2015) which found 10,407 ha of E3 and 964 ha of S6. Clearing associated with MRP accounts for up to 13.41% (1,395 ha) and 7.36% (70.98 ha) of these vegetation communities, respectively. The direct and indirect impacts of proposed disturbance for the MRP is shown in Table 10.

**Table 10: SHD Habitat within the Development Envelope as Mapped by Mattiske (2015)**

Vegetation Community	Description	Total Mapped Area (ha)	Area Mapped within Development Envelope (ha) (Direct + Indirect Impacts)	Proportion of Mapped Community within Development Envelope (%) (Direct + Indirect Impacts)	Area Mapped within Disturbance Footprint (ha) (Direct Impacts)	Proportion of Mapped Community within Disturbance Footprint (%) (Direct Impacts)	Proportion of Disturbance Footprint (%) (Direct Impacts)
E3	Low open woodland of <i>Eucalyptus gongylocarpa</i> over <i>Eucalyptus youngiana</i> , <i>Eucalyptus ceratocorys</i> , <i>Grevillea juncifolia</i> , <i>Hakea francisiana</i> and <i>Callitris preissii</i> over <i>Acacia helmsiana</i> , <i>Cryptandra distigma</i> and mixed low shrubs over <i>Triodia desertorum</i> , <i>Chrysitrix distigmata</i> and <i>Lepidobolus deserti</i> . This community occurs on yellow and yellow-orange sands on flats, slopes and between dunes. It resembles Pre-European Vegetation Association 84 and is therefore widespread throughout this region. Eleven Priority flora species recorded.	10407.01	3,315.72	31.86	1,395.93	13.41	36.86
S6	Low shrubland of <i>Thryptomene biseriata</i> , <i>Allocasuarina spinosissima</i> , <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> , <i>Jacksonia arida</i> , <i>Calothamnus gilesii</i> , <i>Acacia fragilis</i> , <i>Conospermum toddii</i> (P4), <i>Pityrodia lepidota</i> , <i>Lomandra leucocephala</i> , <i>Anthotroche pannosa</i> and mixed low shrubs over <i>Triodia desertorum</i> with <i>Lepidobolus deserti</i> with emergent <i>Eucalyptus gongylocarpa</i> , <i>Eucalyptus youngiana</i> , <i>Eucalyptus ceratocorys</i> and <i>Eucalyptus mannensis</i> subsp. <i>mannensis</i> . This community occurs on yellow sand dunes. Vegetation community S6 has affinities with the broadly defined “Yellow sand Plain Communities of the Great Victoria Desert” Priority 3 (ii) ecological community. Eight Priority species recorded.	964.92	199.49	20.67	70.98	7.36	1.87

The backfilled and revegetated in-pit tailings facilities (maximum of 172 ha, of which approximately 40% might represent prime SHD habitat) are likely to be the only long-term (100-year timeframe) residual impact affecting the viability of SHD occupancy, due to the prevalence of salt-tolerant chenopod-dominated vegetation communities, in artificial depressions in the landscape (akin to kopai lakes present throughout the region, Mattiske Consulting 2015).

## 11 APPLICATION OF THE EPBC OFFSET POLICY

Environmental offsets are conservation actions that provide environmental benefits intended to counterbalance the significant residual environmental impacts associated with a proposal (GoWA 2011). The Plan has been prepared in accordance with the WA Government's Environmental Offset Policy (GoWA 2011). Implementation of the Plan intends to counterbalance the impact of the project to SHD by reducing the threat to the SHD posed by feral animals within the Defined Area.

Mitigation of impacts to the SHD have been assessed through a hierarchy of avoid, minimise, reduce and rehabilitation of SHD habitat. This hierarchy is achieved primarily through changes in scope and design to avoid and minimise impacts; development and implementation of management plans to mitigate and manage environmental impacts during construction and operation and finally, implementation of this Plan.

## 12 DEFINED AREA

The Defined Area identified is located outside the MRP development envelope but within the project boundary (refer to Figure 2). The Defined Area is 6,000 ha and is located within the SHD known distribution.

### (a) Climate

The Defined Area is in the GVD, an area which experiences hot summers and cool-mild winters. Temperatures range from an average of 4-14°C in July to 17-37°C in January. Rainfall is not variable in the area, with approximately 20-40 mm/month in the summer months between November – March and 10-30 mm/month in winter months between April – October. The region exists in a water deficit condition throughout the year.

### (b) Geology and Soils

The Defined Area is located within the Northern Foreland metagranitic unit. The soil system is the Southern Great Victorian Desert Zone (124), characterised by sandplains and dunes (with some gravelly plains and calcrete plains) on sedimentary rocks of the Officer Basin and the southern extent of the Canning Basin with Red deep sands and Red sandy earths with some Red loamy earths (GoWA 2021).

### (c) Vegetation

Broad scale pre-European vegetation mapping of the area indicates that the Defined Area occurs within vegetation association 84; Tree and shrub steppe hummock grassland with scattered eucalypts over wattle scrub or mallee *Triodia* spp. *Acacia* spp., *Corymbia dichromophloia*, *Eucalyptus leucophloia*, *E. youngiana* (Beard 1974; GoWA 2021). No Threatened Ecological Communities (TECs) are known to occur in or near to the MRP and Defined Area. One Priority Ecological Community (Priority 3(iii)) is likely to occur in the area, described as the 'Yellow Sand Plain Communities of the Great Victoria Desert' containing very diverse mammalian and reptile fauna, with distinct plant communities (GoWA 2021).



(d) Tenure

The Defined Area is vested as Unallocated Crown Land (UCL) (type V3) upon which there is an overlying tenement. The Miscellaneous Licence (L39/193) has a total area of 31,641 ha and is held by Narnoo Mining Pty Ltd, valid until 7 October 2030 and can be extended by another 21 years.

(e) Connectivity

There are no nature reserves that connect to the Defined Area. The closest Conservation Reserves are the Queen Victoria Spring Nature Reserve and the Plumridge Nature Reserve (refer to Figure 1).

(f) Size and location

The Defined Area is 6,000 ha in size, located to the east of the MRP.

(g) Suitability as Sandhill Dunnart Habitat

The Defined Area is comprised of vegetation association 84 which includes *Triodia* spp., a key habitat type for Sandhill Dunnarts. Based on the known habitat types the area has been assessed as suitable.

### 13 LONG-TERM MANAGEMENT ARRANGEMENTS FOR THE DEFINED AREA

The Defined Area will be managed for the life of the EPBC Approval (until 2041), upon closure of the MRP and licence relinquishment sign-off by the relevant regulator.

A Conservation Land Management Plan will be developed, which will include:

- Version history
- Context, scope and rationale
- Defined area objectives, management targets and management actions to minimise direct and indirect impacts to SHD during the implementation of this Conservation Plan activities, via:
  - Maintenance of access tracks;
  - Measures to limit car strikes;
  - Fire preparedness, prevention and control; and
  - Staff communication (induction and toolbox meetings) on the location and purpose of the conservation.

### 14 CONSERVATION OUTCOMES AND PERFORMANCE INDICATORS

The conservation outcomes developed for the Defined Area and the accompanying performance indicators are summarised in Table 11.

**Table 11: Conservation Outcomes Implementation Schedule**

Conservation objective/outcome	Performance target	Management measure/s	Where	When	Related monitoring activity
To understand the threat to the SHD posed by feral animals within the Defined Area	Agreement of monitoring methodology with the regulator	Use developed methodology for monitoring quadrats established within the Defined Area	Within the Defined Area	Commenced November 2021, with a minimum of two years of baseline monitoring within Defined Area	Monitoring Plan (GHD 2021b), refer to Section 19
	Develop an estimated baseline of the SHD population within the Defined Area	Installation of 25 monitoring quadrats (2 cameras per site) within the Defined Area	Within the Defined Area		Monitoring data collected and analysed and incorporated into the Monitoring Plan (GHD 2021a)
	Develop an estimated baseline of feral animal population within the Defined Area				Sandhill Dunnart Defined Area - Species Image Analysis Baseline Assessment (GHD 2024)
To reduce the threat of feral animals to the SHD within the Defined Area	Reduction of feral animal numbers below estimated baseline within the Defined Area within 5 years following commencement of control measure implementation (i.e. May 2030)	Implement one or more of the following feral animal control measures based on prevalence of feral species within the Defined Area: <ul style="list-style-type: none"> <li>- baiting with 1080 (rabbits and foxes) or Eradicat (cats),</li> <li>- installation of Felixer (cats), and/or</li> <li>- shooting species (rabbits, camels, donkeys, goats, cattle or sheep) with investigation of aerial shooting with ranger programs in collaboration with the Great Victoria Desert Biodiversity Trust (GVDBT)</li> </ul>	Focus control measures to active areas for feral species within the Defined Area	One or more of the control measures will be commenced based on feral species prevalence and potential impact to SHD within 18 months of the baseline monitoring completion (i.e. May 2025)	Record feral animal control measure(s) implementation: <ul style="list-style-type: none"> <li>- baiting activities (quantities/locations)</li> <li>- Felixer installation, location and data</li> <li>- sightings and shoot success</li> </ul>
				Review annual monitoring data for feral species prevalence to determine future feral animal control focus and approach	Annual monitoring data report.



Conservation objective/outcome	Performance target	Management measure/s	Where	When	Related monitoring activity
To expand the knowledge of the distribution and status of the SHD within the Defined Area	Develop an estimated baseline of the SHD population within the Defined Area	Installation of 25 monitoring quadrats (2 cameras per site) within the Defined Area	Within the Defined Area	November 2021 – November 2023	Monitoring of efficacy of data collection techniques
	Finalise Monitoring Plan	Provide Defined Area SHD population data to relevant government bodies		By May 2024	
	Maintain the monitoring quadrats, collection, and analysis of images	Continue the monitoring program for SHD and feral species		For the life of the EPBC Approval	Annual monitoring data report
To reduce the threat of third-party activities to the SHD within the Defined Area	Reduce the potential for third parties to gain Exploration or Miscellaneous lease approval and undertaking activities within the Defined Area	Deep Yellow to object to third party lease applications over the Defined Area and/or propose access deeds.	Within the Defined Area	For the life of the EPBC Approval	Department of Energy, Mines, Industry Regulation and Safety Exploration or Miscellaneous lease applications within the MRP tenements.

## 15 MANAGEMENT MEASURES

Feral animal management measures, to be implemented within the Defined Area for each objective, are listed in Table 11 and summarised as follows:

- Installation of 25 monitoring quadrats within the Defined Area
- Assessment of remote camera data from the 25 monitoring quadrats
- Implementation of feral animal control measures (i.e. one or more of the following based on prevalence of feral species: baiting with 1080, installation of Felixer, and/or shooting species) within the Defined Area
- Develop and utilise monitoring methodology (Monitoring Plan)
- Dissemination of monitoring data and methodology to relevant stakeholders.

Feral animal species which pose a threat to the SHD, and their presence captured to date within the Defined Area are shown in Table 12. The table also provides links to National threat abatement plans.

Felixers units are remote sensing equipment that can be deployed in the field to primarily target feral cat populations. The units are developed by Thylation and use rangefinder sensors to distinguish target cats from non-target wildlife and humans, and spray targets with a measured dose of toxic 1080 gel (Thylation 2021). The solar-powered Felixer which can hold 20 sealed cartridges of toxic 1080 gel, resets automatically after firing. Felixers photograph all animals detected (including non-targets that are not fired upon) and can be programmed to play a variety of audio lures to attract feral cats. A choice of software settings controls the sensitivity and likelihood of firing on target cats.

The management measures and timeframes for implementation in Table 11 aim to protect and enhance SHD habitat and populations. Table 11 provides timeframes for implementation. Each management measure is described sufficiently to minimise ambiguity and is related to performance objectives.

Historic and current monitoring methodology (described in Sections 6.2, 6.3 and 19.1) have guided the feral animal management measures. Historic and current monitoring methodology are derived from recognised principles, practices and guidelines and justified technically and scientifically.



### 15.1 1080 Poison Program



Deployment of 1080 poison baiting remains the best method for pest animal control as it is the only poison to which Australian native wildlife have some tolerance. The baiting program will be used in a way that minimises the opportunity for native wildlife to encounter the bait or eat it. The 1080 program, if necessary, will be developed in consultation with an established ecologist / zoologist and can be broad scale (i.e. across the Defined Area) or could be targeted around known rabbit and fox frequented areas (e.g. rabbit warrens, fox dens). This will be determined by the ecologist/zoologist on assessment of the monitoring data.

The 1080 poison program will adhere to the guidelines set out in the Department of Health's *Code of Practice for the Safe Use and Management of Registered Pesticides containing 1080, PAPP and Strychnine* (DoH 2018).

**Table 12: Summary Threat Abatement, Control and Monitoring Activities of Feral Animal Species**

Feral Animal Species	Threat to SHD	Control Measures	Monitoring Activity	Threat Abatement Plan	Sighted in the Defined Area 2021-2022
Cat ( <i>Felis catus</i> )	Direct predation. See Section 8.2	Felixer 1080 Poison Program (Further information provided in Section 16.1).	Recording and review of Felixer 1080 baiting activity	<a href="#">Threat abatement plan for predation by feral cats</a>	
Dingo ( <i>Canis lupus subsp. dingo</i> )	Direct predation. See Section 8.2	Introduced pest control program – shooting	Recording	<a href="#">National Wild Dog Action Plan 2020 - 2030</a>	

Feral Animal Species	Threat to SHD	Control Measures	Monitoring Activity	Threat Abatement Plan	Sighted in the Defined Area 2021-2022
One-humped Camel ( <i>Camelus dromedarius</i> )	Habitat degradation. See Section 8.4	Introduced pest control program – shooting	Recording	<a href="#">National Feral Camel Action Plan: A national strategy for the management of feral camels in Australia</a>	
Donkey ( <i>Equus asinus</i> )	Habitat degradation. See Section 8.4	Introduced pest control program – shooting	Recording	Not available.	None sighted to date within the Defined Area
House Mouse ( <i>Mus musculus domesticus</i> )	Habitat degradation. See Section 8.4	Introduced pest control program - baiting	Recording	Not available.	

Feral Animal Species	Threat to SHD	Control Measures	Monitoring Activity	Threat Abatement Plan	Sighted in the Defined Area 2021-2022
Rabbit ( <i>Oryctolagus cuniculus</i> ) (Feral)	Habitat degradation. See Section 8.4	1080 Poison Program (Further information provided in Section 16.1).	Recording and review of 1080 baiting activity	<a href="#">Threat abatement plan for competition and land degradation by rabbits</a>	
Common (Indian) Myna Bird ( <i>Acridotheres tristis</i> )	Habitat degradation. See Section 8.4	Introduced pest control program – baiting	Recording	Not available.	None sighted to date within the Defined Area
Red Fox ( <i>Vulpes vulpes</i> )	Direct predation. See Section 8.2	1080 Poison Program (Further information provided in Section 16.1).	Recording and review of 1080 baiting activity	<a href="#">Threat Abatement Plan for predation by the European Red Fox</a>	
Cattle	Habitat degradation. See Section 8.4	Introduced pest control program – shooting	Recording	Not available.	None sighted to date within the Defined Area
Goats	Habitat degradation. See Section 8.4	Introduced pest control program – shooting	Recording	<a href="#">Threat Abatement Plan for competition and land degradation by unmanaged goats</a>	None sighted to date within the Defined Area
Sheep	Habitat degradation. See Section 8.4	Introduced pest control program – shooting	Recording	Not available.	None sighted to date within the Defined Area

## Method

The baiting program may comprise the installation of threat abatement devices, including the Felixer trap and/or general feral animal baiting. Felixers use rangefinder sensors to distinguish target cats and foxes from non-target wildlife and humans, and spray targets with a measured dose of toxic 1080 gel. This is important since occupancy modelling on feral cat populations from conventional baiting show only modest effects using a high intensity baiting protocol (approximately 10 baits/km<sup>2</sup>, Doherty et al. 2021).

## Scale

Control of fox and rabbit species will be most effective over a large area; therefore, a baiting program across the entire Defined Area. This will reduce the potential of re-infestation and subsequently the best result for native wildlife and SHD populations (GoA 2019). However, if the monitoring data finds single or localised feral species activity then a more targeted approach should be adopted. This is a more desired approach as it reduces the unnecessary use of poisons in the environment. Additionally in this instance baiting may not be the preferred option as use of firearm maybe more efficient. This will be determined by the ecologist / zoologist on assessment of the monitoring data.

## When

To reduce the impact of predator species on native wildlife, regular, targeted and on-going monitoring and control is required. The most successful season for the baiting program is expected to be during spring, as predator species will be less mobile and in high demand for food during their rearing season. Additionally, during mid-January to April, fox cubs are dispersing, which will increase their movements across the landscape. Further control will also be required if there is evidence of invading foxes throughout the year (GoA 2019). In this case the monitoring data is going to be the best method for assessing feral species activity within the Defined Area and need for control measures.

## Frequency

The DBCAs' Western Shield program baits four times per year. Frequency should therefore be established, using the Western Shield program as a guide (GoA 2019).

## Secondary baiting

In areas where foxes and rabbits are both present, it is recommended that 1080 baiting first be directed towards rabbit populations. Once poisoned, foxes that feed on rabbits that have been killed by 1080 will often be poisoned (GoA 2019).

## 16 CONTINGENCY RESPONSES AND CORRECTIVE ACTIONS

Contingency responses and corrective actions may arise as management measures listed in Table 8 are implemented and triggers detected. The current contingency responses and corrective actions for the Defined Area are:

- Relocation of monitoring quadrats within the Defined Area.
- Increase the intensity of feral animal control measures.
- Implement Feral animal control measures for new species within the Defined Area.
- Seek support from GVD trust.
- Review and adaptation of the Monitoring Plan.
- Consult with DCCEEW.



Corrective actions may also arise from audits and management reviews. Corrective actions are to be reviewed and endorsed by Deep Yellow management before the action is implemented. Corrective actions will be followed-up to confirm satisfactory completion.

## 17 MANAGING UNCERTAINTY AND ADAPTIVE IMPLEMENTATION

### 17.1 Managing Uncertainty

The Plan has aimed to manage uncertainty by using reputable data and information sources as its basis. An assessment of the information sources is shown in Table 13.

**Table 13: Reputability of Information and Data Sources**

Information source	Information used	Limitations/uncertainty	Contribution to risk of Plan failure
Vimy monitoring program (2012 – 2016)	Historic baseline understanding of SHD presence/absence in the surrounding area. Understanding of monitoring techniques.	Based outside of the Defined Area	Low risk – monitoring program built / improved upon
Vimy camera trapping protocol (2015)	Understanding of camera trapping and monitoring techniques.	Based on work outside of Defined Area	Low risk – monitoring protocol was peer reviewed
Sandhill Dunnart Camera Trap Monitoring Motion Camera, Small Mammal Identification and analysis 2017	Historic baseline understanding of SHD presence/absence in the surrounding area.	Based outside of the Defined Area.	Low risk – monitoring program built / improved upon
Survey and monitoring guidelines for the Sandhill Dunnart in Western Australia 2016	Guidance on the SHD biology and ecology.	Based outside of the Defined Area.	Low risk – monitoring guidelines developed by Senior Zoologist who is working on current monitoring efforts
Survey and monitoring guidelines for the Sandhill Dunnart in Western Australia 2021	Updated research and guidance into surveying and monitoring the Sandhill Dunnart.	Based outside of the Defined Area.	Low risk – monitoring guidelines developed by Senior Zoologist who is working on current monitoring efforts
Great Victoria Desert Adaptive Management Implementation Plan Part A: Strategic Plan Part B: Work Plan	Threats to species across the Great Victoria Desert.	Threats are general and not specific to the SHD.	Low risk – provides general consideration of threats
Draft National Recovery Plan for the Sandhill Dunnart ( <i>Sminthopsis psammophila</i> ) 2019	Information on threats, species survival, conservation actions and recovery objectives.	Recovery Plan is in draft form and may be altered.	Low risk – considered plans objectives in this Conservation Plan

## 17.2 Adaptive Implementation

The adaptive implementation of the Plan will involve:

- Review of trapping methodology as additional insight in SHD ecology is gained.
- Monitoring of bushfire regime and ground cover and condition using multi-spectral high-resolution drone imagery.
- If and where deployed, review of Felixer monthly target strike data, to allow for the movement of Felixers if there is a low number of strikes and implementation of baiting programs if there is a high number of rabbits and/or foxes.
- Review of academic literature and policy statements to ensure current techniques are being used.

Audit to review collection of data for adaptive management triggers.

## 18 MONITORING

### 18.1 Monitoring Methodology within the Defined Area

A monitoring methodology to determine SHD baseline prevalence, has been developed and refined over several years.

GHD (2021) has developed a Monitoring Plan, provided in Appendix 3, which describes a systematic method to identify potential locations for remote camera installation to best determine the presence of the SHD and feral animals within the Defined Area.

Monitoring quadrats were established in 25 locations within the Defined Area. Each monitoring quadrat is to be approximately 50 m x 50 m, however some are slightly larger due to availability of habitat. The criteria for site selection (for quadrat locations) included the following parameters:

- High-resolution drone imagery was utilised but restricted to the main access tracks in the Defined Area, extending 300 m each side of the track. Sites were located within 300 m of established tracks to allow ease of access to sites and minimise disturbance within the Defined Area.
- Sites were located within long unburnt areas (>8 years since burn) to allow appropriately sized *Triodia* clumps for the species to persist. *Triodia* life stages are required to be at Stage 2 (youngest) to Stage 5 (oldest), ideally a dominance of Stage 3 and 4 clumps if preferred. From fire scar mapping three fire scar ages are present. The most dominant fire scar is 18 years since last burn (2005) with a small area of long unburnt (30+ years) and recently burnt within 7 years. The recent burn scar was excluded from location placement. Further refinement of the location selections was undertaken by utilising high resolution drone imagery (to 2 cm resolution) to allow selections of sites within known desirable *Triodia* presence.
- Sites were positioned close to or within dune systems or elevated sand plain systems. Additionally, dune swales merging into sandplain or minor clay pan verges were also desirable as they provide larger *Triodia* clumps. Where appropriate and ensuring monitoring locations are not close to each other, approximately half of the locations were placed within dune systems or elevated sand plain.
- Independence of sites is an important consideration for a trapping program. GHD (GHD 2020) recommends a minimum distance of approximately 2 km between sites to maintain independence for assessment of a populations size. In this instance independence cannot be assumed due to access and the number of sites established within the Defined Area, therefore the separation of proposed sites will be approximately 800 m apart.
- Sites were not placed within vegetation structure not conducive to the *Triodia* hummock grasslands present on the yellow sand plain (i.e. Mulga woodlands).
- Site were placed as close to possible to areas where SHD have previously been captured. SHD have been captured as part of Gaikhorst and Lambert (2014) project (site 3 and 5), approximately 800 m south-east and 8 km north of the Defined Area respectively. The Defined Area lies between two previous SHD capture areas.

The co-ordinates of the Defined Area monitoring quadrats are provided in Table 14.

**Table 14: SHD Monitoring Quadrat Co-Ordinates**

Area	Date established	Site	Camera ID	Easting (51)	Northing (51)
Defined Area	2021-11-23 1:28	Site 1	Camera 1A	593040	6691820
Defined Area	2021-11-23 1:28	Site 1	Camera 1B	593043	6691869
Defined Area	2021-11-23 2:52	Site 2	Camera 2A	593262	6691360
Defined Area	2021-11-23 3:31	Site 2	Camera 2B	593216	6691373
Defined Area	2021-11-23 5:05	Site 3	Camera 3A	594186	6690651
Defined Area	2021-11-23 6:25	Site 3	Camera 3B	594237	6690628
Defined Area	2021-11-23 7:01	Site 4	Camera 4A	594519	6689692
Defined Area	2021-11-23 7:01	Site 4	Camera 4B	594559	6689632
Defined Area	2021-11-24 0:26	Site 5	Camera 5A	595641	6689006
Defined Area	2021-11-24 1:53	Site 5	Camera 5B	595625	6689053
Defined Area	2021-11-24 0:26	Site 6	Camera 6A	594925	6689006
Defined Area	2021-11-24 0:26	Site 6	Camera 6B	594856	6689015
Defined Area	2021-11-24 3:07	Site 7	Camera 7A	595714	6688275
Defined Area	2021-11-24 3:07	Site 7	Camera 7B	595672	6688261
Defined Area	2021-11-24 4:57	Site 8	Camera 8A	596271	6688096
Defined Area	2021-11-24 4:57	Site 8	Camera 8B	596308	6688150
Defined Area	2021-11-24 6:19	Site 9	Camera 9A	596599	6687433
Defined Area	2021-11-24 6:19	Site 9	Camera 9B	596527	6687416
Defined Area	2021-11-24 22:19	Site 10	Camera 10A	596849	6686973
Defined Area	2021-11-25 0:40	Site 10	Camera 10B	596776	6686924
Defined Area	2021-11-25 1:29	Site 11	Camera 11A	597646	6685853
Defined Area	2021-11-25 3:37	Site 11	Camera 11b	597585	6685801
Defined Area	2021-11-25 1:29	Site 12	Camera 12A	598067	6686165
Defined Area	2021-11-25 1:29	Site 12	Camera 12B	598014	6686144
Defined Area	2021-11-24 6:19	Site 13	Camera 13A	597016	6687303
Defined Area	2021-11-24 6:19	Site 13	Camera 13B	597062	6687341
Defined Area	2021-11-23 4:33	Site 14	Camera 14A	593929	6690559
Defined Area	2021-11-23 5:05	Site 14	Camera 14B	593879	6690533
Defined Area	2021-11-26 1:12	Site 15	Camera 15A	588312	6684749
Defined Area	2021-11-26 1:12	Site 15	Camera 15B	588374	6684727
Defined Area	2021-11-26 21:51	Site 17	Camera 17A	590431	6687332
Defined Area	2021-11-27 1:04	Site 17	Camera 17B	590347	6687365
Defined Area	2021-11-25 3:37	Site 18	Camera 18A	590101	6686447
Defined Area	2021-11-25 6:21	Site 18	Camera 18B	590035	6686429
Defined Area	2021-11-25 6:53	Site 19	Camera 19A	588636	6686602
Defined Area	2021-11-25 7:28	Site 19	Camera 19B	588686	6686531
Defined Area	2021-11-26 23:20	Site 20	Camera 20A	588394	6686124
Defined Area	2021-11-26 23:20	Site 20	Camera 20B	588320	6686074
Defined Area	2021-11-26 2:45	Site 21	Camera 21A	589690	6688087
Defined Area	2021-11-26 2:45	Site 21	Camera 21B	589621	6687990
Defined Area	2021-11-26 2:45	Site 22	Camera 22A	590155	6688229
Defined Area	2021-11-26 2:45	Site 22	Camera 22B	590168	6688152
Defined Area	2021-11-26 5:51	Site 23	Camera 23A	590756	6687631
Defined Area	2021-11-26 6:19	Site 23	Camera 23B	590800	6687697
Defined Area	2021-11-26 18:45	Site 28	Camera 28A	590125	6689433
Defined Area	2021-11-26 18:45	Site 28	Camera 28B	590161	6689378
Defined Area	2021-11-27 5:13	Site 29	Camera 29A	592754	6691819
Defined Area	2021-11-27 5:45	Site 29	Camera 29B	592774	6691726
Defined Area	2021-11-25 23:35	Site 30	Camera 30A	588822	6687388
Defined Area	2021-11-25 23:35	Site 30	Camera 30B	588869	6687325

The remote camera set up adheres to the following methodology:

- Two camera types are currently used as part of the Mulga Rock Targeted Camera Trapping Program. These include the Bushnell Trophy Cam HD MAX with passive infra-red flash and the Reconyx Hyperfire with white LED flash for colour day/night photo capture at close range.
- Cameras were set up in locations that are flat or gently sloping with limited vegetation in the field of view to reduce false triggers. However, the location chosen for placement of cameras must provide a balance between being able to capture images unimpeded and the habitat preference of the species.
- Lure stations were set approximately 1.5–2.0 m from the camera. Any vegetation between the camera and the lure, and either side of the lure was removed. Where possible, any objects that obstructed the camera's field of view were removed. Lures were anchored via wire rope to prevent stealing by dingos.
- Lure station markers have a reference scale stuck/placed on them (2 x 1 cm grid pattern) to allow animal size comparisons and identification markings to aid in species identification.
- Where possible the background (area behind the lure) was uniform to help reduce temperature differentials between objects (i.e. where possible create the optimal homogenous background temperature).
- Cameras were fixed to a stake that could not move in the wind, and the unit faced south to avoid direct sunlight on the lens. Camera settings are as follows:
  - to produce five images/trigger
  - rapid fire (one image per second)
  - high sensitivity
  - 24-hour operation
- Two cameras (same model) were set up per site. At each site cameras set at approximately 30 – 50 m apart from each other to ensure a reasonable area is surveyed and to maintain conformity with quadrat areas utilized in previous successful surveys. This distance was also influenced by available habitat. A drift fence was setup at each camera to guide animals into view.
- The height of the camera was set at a height that is specific to the target species of the survey. For SHD's, horizontal cameras are located 20 to 30 cm above the ground.

## 18.2 Data Collection, Reporting and Handling

### 18.2.1 Baseline SHD and Feral Predator Populations

The data collection, reporting and handling for the baseline surveys adheres to the following methodology. Information from each quadrat was collected and transferred to Data Sheets. The Data Sheet also captures the location of the cameras per site (recorded as a GPS co-ordinate), habitats present, vegetation present and habitat score.

Camera images from each of the quadrats was analysed to determine SHD and feral animal baseline prevalence within the Defined Area.

The data is compiled in excel format and organised daily, per month, per species for the duration of each camera deployment. Data will be analysed using excel data analysis tools and other appropriate statistical analysis.

The baseline metrics to be collected are:

- Numbers of SHD observed (events)
- Numbers of feral predators observed (events)
- Numbers of other feral species observed (events)

An event was defined as any identification image series within a 24-hour period, unless multiple size classes/life stages were observed, providing strong evidence multiple individuals were present, then further events were recorded. From which, a baseline estimate for SHDs, feral predators and other feral species are generated.

### 18.2.2 Baseline Habitat Quality

The baseline habitat assessment was undertaken when the camera traps were installed. Habitat quality is assessed and scored against a benchmark, which determines the quality of vegetation within a particular ecosystem to support threatened species and their ecological habitat. The assessment includes the consideration of site condition, site context and species stocking rate. The habitat quality assessment can then be conducted, which categorises each vegetation type against a habitat quality score (DSEWPac 2012; Table 15 and Table 16).

**Table 15: Habitat Quality Assessment**

Site condition	Site context	Species stocking rate
a1. What is the structure and condition of the vegetation on the site?	b1. What is the connectivity with other suitable / known habitat or remnants?	c1. What is the presence of the species on the site? (i.e. confirmed / modelled).
a2. What is the diversity of relevant habitat species present (including both endemic and non-endemic)?	b2. What is the importance of the site in relation to the overall species population or the occurrence of the community?	c2. What is the density of species known to utilise the site?
a3. What relevant habitat features are on the site?	b3. What threats occur on or near site?	c3. What is the role of the site population in regard to the overall species population?
$A = (a1 + a2 + a3) / 3 \times 0.4$	$B = (b1 + b2 + b3) / 3 \times 0.4$	$C = (c1 + c2 + c3) / 3 \times 0.2$
Habitat Quality Score = A + B + C		

**Table 16: Habitat Quality Assessment Score**

Habitat Quality Score	Definition
<p>Poor: 0 - 3</p>	<ul style="list-style-type: none"> <li>• Site condition               <ul style="list-style-type: none"> <li>- Poor vegetation condition and structure</li> <li>- Low number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in vegetation association 84)</li> <li>- Lack of habitat features present (e.g. large hummocks as nest sites)</li> </ul> </li> <li>• Site context               <ul style="list-style-type: none"> <li>- Low connectivity to similar suitable habitat types in the landscape</li> <li>- Large number of threats at the site</li> <li>- Low importance of site in relation to overall species population</li> </ul> </li> <li>• Species stocking rate               <ul style="list-style-type: none"> <li>- Low density of species at the site</li> <li>- Low value of the site for SHD, including condition and / or context</li> </ul> </li> </ul>
<p>Moderate: 4 - 5</p>	<ul style="list-style-type: none"> <li>• Site condition               <ul style="list-style-type: none"> <li>- Low to medium vegetation condition and structure</li> <li>- Low to medium number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in vegetation association 84)</li> <li>- Moderate habitat features present (e.g. large hummocks as nest sites)</li> </ul> </li> <li>• Site context               <ul style="list-style-type: none"> <li>- Moderate connectivity to similar suitable habitat types in the landscape</li> <li>- Medium number of threats at the site</li> <li>- Moderate importance of site in relation to overall species population</li> </ul> </li> <li>• Species stocking rate               <ul style="list-style-type: none"> <li>- Medium density of species at the site</li> <li>- Medium value of the site for SHD, including condition and / or context</li> </ul> </li> </ul>
<p>Good: 6 - 8</p>	<ul style="list-style-type: none"> <li>• Site condition               <ul style="list-style-type: none"> <li>- High vegetation condition and structure</li> <li>- High number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in vegetation association 84)</li> <li>- Good number of habitat features present (e.g. large hummocks as nest sites)</li> </ul> </li> <li>• Site context               <ul style="list-style-type: none"> <li>- Good connectivity to similar suitable habitat types in the landscape</li> <li>- Low number of threats at the site</li> <li>- High importance of site in relation to overall species population</li> </ul> </li> <li>• Species stocking rate               <ul style="list-style-type: none"> <li>- High density of species at the site</li> <li>- High value of the site for SHD, including condition and / or context</li> </ul> </li> </ul>
<p>Excellent: 9 - 10</p>	<ul style="list-style-type: none"> <li>• Site condition               <ul style="list-style-type: none"> <li>- Excellent vegetation condition and structure</li> <li>- Excellent ecological requirements present (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in vegetation association 84)</li> <li>- High number of habitat features present (e.g. large hummocks as nest sites)</li> </ul> </li> <li>• Site context               <ul style="list-style-type: none"> <li>- Excellent connectivity to similar suitable habitat types in the landscape</li> <li>- Few threats present at the site</li> <li>- High importance of site in relation to overall species population</li> </ul> </li> <li>• Species stocking rate               <ul style="list-style-type: none"> <li>- High density of species at the site</li> <li>- High value of the site for SHD, including condition and / or context</li> </ul> </li> </ul>

### 18.2.3 Ongoing

Camera images from the quadrats will continue to be collected and analysed to determine SHD and feral animal prevalence and persistence trends within the Defined Area. The data will be compiled digitally for future analysis. Data will be analysed using appropriate statistical analysis software.

Compilation of feral animal control measure implementation will also occur. A Felixer device will take a photo every time its sensor is triggered, and images are classified as target or non-target. Data capture also includes a log of key attributes such as date, time, the lure played, sensor activation and temperature. The data gathered from the Felixer device(s) will be extracted and collected and stored digitally. If firearms are utilised or baiting undertaken a brief description of the undertaking and results, timing collected and stored in the same location. The data will be analysed against the baseline levels set in the initial monitoring period.

### 18.3 Achieving Conservation Objectives

Monitoring of the management actions towards achieving the conservation objectives is outlined in Table 17.

## 19 REPORTING

Data collected from the 25 monitoring quadrats will be collected and consolidated into a Sand Hill Dunnart and Feral Species Monitoring Report. The Monitoring Report will refer to camera images, SHD and feral species per site within the Defined Area, and monthly recorded data to determine key trends and / or conclusions.

The Monitoring Report will be submitted as part of the EPBC2013/7083 Condition 6 compliance reporting requirements as follows:

*“Within three (3) months of every twelve (12) month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the Plan. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.”*

## 20 ROLES AND RESPONSIBILITIES

The SDCP is to be prepared and revised by a suitably qualified expert, in this case Glen Gaikhorst GHD Principal Zoologist prepared the initial Plan and also revised the Plan. The Deep Yellow Head of Environment and Sustainability and Environmental Principal, and MRP’s Registered Manager are responsible for complying with this Conservation Plan. The roles and responsibilities of Deep Yellow personnel in relation to the implementation of the Plan are detailed in Table 18.



**Table 17: Monitoring Activities**

Monitoring activity	Management needs/ questions addressed	Parameter/s measured	Survey/monitoring guidelines	Where	When	Reliability
Establishing baseline monitoring quadrats	Baseline data on the estimated numbers of SHDs and feral animals in the Defined Area	Feral animal numbers SHD numbers	Vimy SHD Trapping Protocol (2015) SHD Camera Trap Monitoring (2017) Survey and monitoring guidelines for the SHD ( <i>Sminthopsis psammophila</i> ) in Western Australia (2020)	Within the Defined Area	November 2021 – November 2023	Baseline monitoring methodology previously developed (Section 6.2 and 6.3) and refined for current monitoring methodology (Section 19.1)
Analyse baseline monitoring data	Baseline data on the estimated numbers of SHDs and feral animals in the Defined Area	Feral animal numbers SHD numbers	Vimy SHD Trapping Protocol (2015) SHD Camera Trap Monitoring (2017) Survey and monitoring guidelines for the SHD ( <i>Sminthopsis psammophila</i> ) in Western Australia (2020)	Within the Defined Area	Completed by May 2024	Baseline monitoring methodology previously developed (Section 6.2 and 6.3) and refined for current monitoring methodology (Section 19.1)
Recording of 1080 baiting activity	Implementation of rabbit and fox control measures when implemented	Quantities of baits and locations placed	GHD Monitoring Plan (2021)	Within the Defined Area	Annual implementation of feral animal control measures will be incorporated into the Monitoring Report (Section 19)	Government provided guidance High reliability
Recording of Felixer installation, location and data	Implementation of cat control measures when implemented	Number of strikes (target) Number photos (target and non-target)	GHD Monitoring Plan (2021)	Within the Defined Area		Felixer has high target specificity and reliability (Moseby <i>et al</i> 2020)
Recording of firearm use and shoot success	Implementation of rabbits, camels, donkeys, goats, cattle, and/or sheep control measures when implemented	Sightings and shoot success	-	Within the Defined Area		High reliability
Analyse ongoing SHD and feral monitoring data	Continue the monitoring program for SHD and feral species	Feral animal numbers SHD numbers	Vimy SHD Trapping Protocol (2015) SHD Camera Trap Monitoring (2017) Survey and monitoring guidelines for the SHD ( <i>Sminthopsis psammophila</i> ) in Western Australia (2020)	Within the Defined Area	For the life of the EPBC Approval	Monitoring methodology previously developed (Section 6.2 and 6.3) and refined for current monitoring methodology (Section 19.1)

**Table 18: Conservation Plan Roles and Responsibilities**

Role	Conservation Plan Responsibilities
Qualified Fauna Expert	<ul style="list-style-type: none"> <li>• Reviewing and revising the Conservation Plan according to approved timeframes, as required.</li> <li>• Reviewing and adapting the monitoring plan as required.</li> <li>• Reviewing and advising on feral species control measures based on the feral animal’s prevalence and the effectiveness of the controls.</li> <li>• Preparing an annual monitoring report that includes analysis of SHD and feral animal data, and effectiveness of management actions.</li> <li>• Reviewing academic literature and policy to ensure current techniques are being used.</li> </ul>
Head of Environment and Sustainability	<ul style="list-style-type: none"> <li>• Reviewing and approving the Conservation Plan</li> <li>• Monitoring compliance with the Conservation Plan.</li> </ul>
Environmental Principal	<ul style="list-style-type: none"> <li>• Reviewing the Conservation Plan.</li> <li>• Ensuring the necessary resources are available to implement the Conservation Plan.</li> <li>• Managing implementation, monitoring and compliance of the Conservation Plan and any approval conditions.</li> <li>• Reviewing the annual monitoring report.</li> <li>• Point of contact between the experts and regulatory authorities on the Conservation Plan and reports.</li> </ul>
MRP’s Registered Manager	<ul style="list-style-type: none"> <li>• Ensuring all personnel are made aware of Conservation Plan objectives and requirements.</li> <li>• Managing the necessary on-site resources to ensure the Conservation Plan is properly implemented.</li> </ul>
Environmental Site Technician (or equivalent)	<ul style="list-style-type: none"> <li>• Implementing the monitoring and management controls required within the Conservation Plan.</li> <li>• Providing information to all personnel on the SHD Conservation Plan objectives.</li> </ul>

## 21 EMERGENCY CONTACTS AND PROCEDURES

The Head of Environment and Sustainability, and Principal Environment can be contacted via:

Telephone: 9286 6999

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

If an emergency occurs (i.e. uncontrolled bush fire threatening Company assets) the Deep Yellow Emergency Response Procedure (EHS-PR-005) would be initiated. The procedures consider the protection of people, assets and the environment.

## 22 REVIEW AND AUDIT

Reviewing the SDCP performance and implementation of management measures to achieve the conservation objectives will be the responsibility of the qualified fauna expert in consultation with Deep Yellow's Environmental personnel. Review of performance will occur annually, where monitoring data, activities, incidents and positive findings etc. will be collated and summarised.

Summary information will be reviewed and where areas of non-compliance or performance are identified, then appropriate remedial actions would be made. Contingency responses and corrective actions will be implemented as triggers are recognised. Corrective actions are to be reviewed and endorsed by Deep Yellow before the action is implemented. Where amendments are required, they will be incorporated into a new revision of the Plan.

A review process would involve:

- Assessing if key activities, actions, records and outputs required by the Plan are carried out as specified;
- Where failings are identified, develop corrective actions to remedy; and
- Include audit findings and results in any annual review.

If in the event management actions are shown to be ineffective then a review and revision of the Plan will be required, and if necessary, implementation of the following adaptive management procedure:

- Review and revise the risk register;
- Review and revise the management measures;
- Investigate the potential cause for the trigger; and
- Implement adaptive management measures.

The SDCP will have a defined schedule for review but will also have triggers for review for unforeseen events, as outlined in Table 19.

**Table 19: Review and Audit Schedule for the SHD Conservation Plan**

Review event	When
Initial review of SDCP	1 year following DCCEEW approval of SDCP (31 January 2024)
Second review of SHD Conservation Plan	3 years following DCCEEW approval of SDCP (31 January 2026)
Subsequent reviews	5 yearly intervals (2031, 2036, etc.)
Contingency trigger	After 3 contingency detection triggers
Risk event occurs	Immediate trigger for review
Unintended outcome from a management measure or corrective outcome	Triggered after 3 consecutive Standard Deviation departures from estimated baseline

### 22.1 Review of Management Measures

Any non-conformances identified during routine audits of the Plan will be documented as incidents and included in audit reporting.

Environmental performance, monitoring and auditing will be reported where required, to external stakeholders and in the Annual Compliance Report to DCCEEW.

## 23 ABBREVIATIONS AND UNITS OF MEASURE

Abbreviations and Acronyms	
ACN	Australian Company Number
BAM Act	<i>Biosecurity and Agricultural Management Act 2007 (WA)</i>
BC Act	<i>Biodiversity Conservation Act 2016 (WA)</i>
Cth	Commonwealth
DAWE	Department of Agriculture, Water and Environment (environmental functions now within the DCCEEW)
DBCA	Department of Biodiversity, Conservation and Attractions (WA)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth)
DEW	Department for Environment and Water (SA)
DoH	Department of Health (WA)
Deep Yellow	Deep Yellow Limited
DPAW	Department of Parks and Wildlife (WA) (now DBCA)
DSEWPac	Department of Sustainability, Environment, Water, Populations and Communities (Cth) (environmental functions now within the DCCEEW)
DWER	Department of Water and Environmental Regulation (WA)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
GoA	Government of Australia

## Abbreviations and Acronyms

GoWA	Government of Western Australia
GVD	Great Victoria Desert
GVDBT	Great Victoria Desert Biodiversity Trust
MRP and Project	Mulga Rock Project
MS1046	Ministerial Statement No. 1046
Narnoo	Narnoo Mining Pty Ltd (Narnoo).
NRP	National Recovery Plan
OEPA	Office of the Environmental Protection Authority
PEC	Priority Ecological Community
SDCP or Plan	Sandhill Dunnart Conservation Plan
SHD	Sandhill Dunnart
TSSC	Threatened Species Scientific Committee
UCL	Unallocated Crown Land
Vimy	Vimy Resources Limited
WA	Western Australia

## Units of Measure

These units of measure may be grouped broadly as prefixes and measurements. A prefix applies to the unit of measurement that immediately follows it—for example, milligram is abbreviated as mg. Superscripts 2 and 3 following a linear unit indicate area and volume respectively—for example, m<sup>2</sup> (square metres) and m<sup>3</sup> (cubic metres). Different units are combined by a solidus (/) to indicate 'per'. For example, grams per tonne is abbreviated g/t.

<b>Prefixes</b>	
G	Giga (1,000,000,000)
M	Mega or Million (1,000,000)
k	Kilo (1,000)
c	Centi (0.01)
m	Milli (0.001)
μ	Micro (0.000001)
<b>Units</b>	
a	annum
°C	Degrees Celsius
ha	hectare
lb	pound
m	metre
t	tonne

## 24 REFERENCES

- Beard, J. S. 1974. *Great Victoria Desert: the vegetation of the Great Victoria Desert area 1:1,000,000 vegetation series, Explanatory Notes to sheet 3*. Nedlands, W.A: University of Western Australia Press. ISBN 0-85564-045-6.
- Burbidge, A. A., McKenzie, N. L., Chapman, A. and Lambert, P. M. (1976) *The wildlife of some existing and proposed reserves in the Great Victoria and Gibson Deserts*, Western Australia. Wildlife Research Bulletin Western Australia 5. Department of Fisheries and Wildlife Western Australia, Wanneroo.
- Churchill, S. 2001. *Survey and ecological study of the Sandhill Dunnart, *Sminthopsis psammophila* at Eyre Peninsula and the Great Victoria Desert*. Department for Environment and Heritage, Adelaide
- Department for Environment and Water (DEW). 2019. *National Recovery Plan for the Sandhill Dunnart (*Sminthopsis psammophila*)*. Department for Environment and Water, South Australia.
- Department of Health (DoH). 2018. *Code of Practice for the Safe Use and Management of Registered Pesticides containing 1080, PAPP and Strychnine: Fore vertebrate pest management in Western Australia*. Department of Health, Department of Primary Industries and Regional Development and Department of Biodiversity, Conservation and Attractions, Western Australia, Perth.
- Department of Parks and Wildlife (DPAW). 2016. *Survey and monitoring guidelines for the Sandhill Dunnart (*Sminthopsis psammophila*) in Western Australia*. Government of Western Australia, Perth.
- Department of Parks and Wildlife (DPAW). 2016b. *Research and adaptive Management Plan*. Government of Western Australia, Perth.
- Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC). 2012. *Offsets Assessment Guide*. Available at: <https://www.awe.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy>.
- Doherty, T. S., Hall, M.L., Parkhurst, B., Westcott, V. 2021. *Experimentally testing the response of feral cats and their prey to poison baiting*. Wildlife Research, CSIRO Publishing, pp.
- Gaikhorst, G. and Lambert, C. 2001. *Fauna trapping survey -Great Victoria Desert –September-October 2000, March-April 2001*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2002. *Fauna trapping survey -Great Victoria Desert –October 2001*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2003a. *Fauna trapping survey -Great Victoria Desert –October 2003*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2003b. *Fauna trapping survey -Great Victoria Desert –October 2003, Site 5, Site 6*. Report to CALM.

- Gaikhorst, G. and Lambert, C. 2003c. *Fauna trapping survey -Great Victoria Desert –March 2003*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2004. *Fauna trapping survey -Great Victoria Desert –October 2003*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2006. *Fauna trapping survey -Great Victoria Desert –March and October 2003*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2007. *Fauna trapping survey -Great Victoria Desert –April 2006*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2008. *Fauna trapping survey -Great Victoria Desert –April 2007*. Report to CALM.
- Gaikhorst, G. and Lambert, C. 2009. *Fauna trapping survey -Great Victoria Desert –March, May and October 2008*. Report to CALM.
- Gaikhorst, G. and C. Lambert. 2014. *Sandhill dunnart - a species review and where this elusive little beast lives in Western Australia*. Perth, Western Australia
- GHD. 2020. *Survey and Monitoring Guidelines for the Sandhill Dunnart in Western Australia*. Prepared for Great Victoria Desert Biodiversity Trust. Editor Glen Gaikhorst.
- GHD. 2021a. *Sandhill Dunnart Camera Trap Monitoring - Small mammal identification and analysis*. Unpublished report for Vimy Resources, Perth, Western Australia.
- GHD. 2021b. *Sandhill Dunnart Study Plan*. Unpublished report for Vimy Resources, Perth, Western Australia.
- GHD.2024. *Sandhill Dunnart Defined Area – Species Image Analysis Baseline Assessment*. Unpublished report for Deep Yellow Limited, Perth, Western Australia.
- Government of Australia (GoA). 2019. National Landcare Program, *Fox Control: Nature Conservation Information Sheet*.
- Government of Western Australia (GoWA). 2011. Western Australian Environmental Offsets Policy, September 2011.
- GoWA. 2021. *Data WA*. Perth, Western Australia. Available from <https://catalogue.data.wa.gov.au/> Accessed November 2021.
- Great Victoria Desert Biodiversity Trust. (GVD Biodiversity Trust) 2017. *Adaptive Management Implementation Plan Part A: Strategic Plan*.
- Hart, R. P. and Kitchener, D. J. (1986) *First record of Sminthopsis psammophila (Marsupialia: Dasyuridae) from Western Australia*. Records of the Western Australian Museum 13: 139-144.
- Johnson, C.N. and Isaac, J.L. 2009. *Body mass and extinction in Australian marsupials: The ‘Critical Weight Range’ revisited*. Austral Ecology. 34: 35-40.

- Lambert, C., Gaikhorst, G. and Matson, P. 2011. *Captive breeding of the sandhill dunnart, Sminthopsis psammophila (Marsupialia, Dasyuridae): Reproduction, Husbandry and Growth and Development*. Australian Mammalogy 33(1): 21-27.
- Mattiske Consulting. 2015. *Flora and Vegetation Survey of the Mulga Rock Project Area*. Unpublished report prepared for Energy and Minerals Australia Limited.
- McKenzie, N. L. and Burbidge, A. A. 1979. *The wildlife of some existing and proposed reserves in the Gibson, Little Sandy and Great Victoria Deserts, Western Australia*. Wildlife Research Bulletin Western Australia 8. Department of Fisheries and Wildlife Western Australia, Wanneroo.
- McLean, A. 2015. *Conservation biology of an endangered semi-arid marsupial, the Sandhill Dunnart (Sminthopsis psammophila)*. Ph.D. thesis, School of Biological Sciences, The University of Adelaide.
- McLean, A., Cooper, S., Lancaster, M., Gaikhorst, G., Lambert, C., Moseby, K., Read, J., Ward, M., Carthew, S. 2019. *Small marsupial, big dispersal? Broad- and fine-scale genetic structure of an endangered marsupial from the Australian arid zone*. Australian Journal of Zoology. Check volume and page numbers – in reference docs.
- Morris, K. D. and Rice, G. E. (1981) *Some vertebrates recorded on a visit to Queen Victoria Spring in December 1977*. Western Australian Naturalist 15: 11-13.
- Moseby, K., Read, J., McLean, A., Ward, M. and Rogers, D.J. 2016. *How high is your hummock? The importance of Triodia height as a habitat predictor for an endangered marsupial in a fire-prone environment*. Austral Ecology 41(4): 382–395.
- Moseby K. E., McGregor H., Read J. L. 2020. *Effectiveness of the Felixer grooming trap for the control of feral cats: a field trial in arid South Australia*. Wildlife Research 47, 599-609.
- Pearson, D.J. and Churchill, S. 2008. *Sandhill Dunnart, Sminthopsis psammophila*. In: Van Dyck, S. and Strahan, R. (eds.). The Mammals of Australia. Pp 156-158. 3rd ed. Reed New Holland, Sydney.
- Read, J. L., Ward, M.J., and Moseby, K. 2015. *Factors that influence trap success of sandhill dunnarts (Sminthopsis psammophila) and other small mammals in Triodia dunefields of South Australia*. Australian Mammalogy. 37: 212–218.
- Riley, J. and Turpin, J. 2019. *Research and Monitoring of the sandhill dunnart in the Western Australian Great Victorian Desert*. Presented at the 2019 GVD Biodiversity Trust SHD Workshop
- Spencer, W.B. (ed.) 1896. *Report on the work of the Horn Scientific Expedition to Central Australia*. Part 1. P 84. Melbourne: Melville, Mullen and Slade.
- Thylation. 2021. *Felixer FAQs*. Available online from <https://thylation.com/felixer-faqs/> . Accessed November 2021.
- Threatened Species Scientific Committee (TSSC). 2016. *Conservation Advice – Sandhill Dunnart*. Canberra, ACT.





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Vimy Resources. 2015. *Camera Trapping Protocol – Sandhill Dunnart (Sminthopsis psammophila) – Mulga Rock Project Area*. Unpublished report.

Warranup. 2015. Report of an ethnographic survey of the Mulga Rock Uranium Project Area, Great Victoria Desert, Western Australia (prepared by C. Mathieu).



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**APPENDIX 1 – SHD DEFINED AREA – SPECIES IMAGE ANALYSIS BASELINE ASSESSMENT**

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Your ref: PO-1281  
Our ref: 12591259

29 January 2024

Guy Clarke  
Deep Yellow Limited  
PO Box 1770  
Subiaco WA 6904

## Sandhill Dunnart Defined Area - Species Image Analysis Baseline Assessment

Dear Guy

# 1. Introduction

## 1.1 Background

Vimy Resources Limited (ABN 56 120 178 949) (Vimy) is the proponent of the Mulga Rock Project (MRP or the Project). Effective from 4 August 2022, Vimy became a 100% owned subsidiary of Deep Yellow Limited (ABN 97 006 391 948) (Deep Yellow or the Company) following a Scheme of Arrangement (Merger). Deep Yellow is listed on the Australian Securities Exchange (ASX) and is the ultimate holding company in the Deep Yellow group of companies. Narnoo Mining Pty Ltd (ABN 81 084 713 100) (Narnoo) is the owner of the MRP, and the registered holder of the tenements associated with the MRP. Narnoo, as a 100% owned subsidiary of Vimy, is now part of the Deep Yellow group of companies.

Vimy referred the MRP on the 28 November 2013 under the *Environmental Protection Biodiversity Conservation Act 1999* (Cth) (EPBC Act) to the Department of Agriculture, Water and the Environment (DAWE) (EPBC 2013/7083). On 7 January 2014, DAWE determined MRP a "controlled action", with the controlling provisions being "listed threatened species and communities" and "nuclear actions", to be assessed under the bilateral agreement with the Western Australian State Government. The MRP was federally approved on the 2 March 2017 with a condition attached to offset the residual impact to the Sandhill Dunnart (SHD) (*Sminthopsis psammophila*), which is listed as endangered under both the *Biodiversity Conservation Act 2016* (WA) (BC Act) and the EPBC Act.

GHD has been assisting the Company at the MRP since 2014 with the identification and analysis of remote camera images for small mammal species. The focus species for undertaking this work is the SHD. The initial programs (2014) were focused on establishing best technique and camera types to use to capture SHDs. In 2015 this program was extended to 15 sites around the MRP operational area with the program extending more regionally in late 2015. This data and analysis were presented in *Sandhill Dunnart Camera Trap Monitoring - Small mammal identification and analysis* (GHD 2021a).

Condition 2 of the EPBC 2013/7083 approval requires the preparation of a *Sandhill Dunnart Conservation Plan* (SDCP) to reduce the impact to the SHD posed by feral animals within a Defined Area. The SDCP is based around a 6000ha portion of land (Defined Area) within the SHD's known distribution. To implement the SDCP an understanding of the presence of the species and feral animals is required including an

understanding of baseline data. The SDCP was submitted and subsequently approved in November 2022 (GHD 2022b).

Within the SDCP is a study plan (which was first developed by GHD (2021b) to locate remote camera locations within the Defined Area to obtain preliminary data of SHD presence and feral species use. GHD compiled a summary memo of SHD and feral species presence within the Defined Area (GHD 2022a) and covered from camera establishment (November 2021) to August 2022. An additional progress summary memo was also produced in December 2023 covering camera data from the memo for the period November 2021 to August 2022 (GHD 2022a) and August 2022 to May 2023 (GHD 2023).

This letter compiles two-years' (note period covered) worth of camera images to establish baseline data to be used within the SDCP for future triggers and monitoring of SHD and feral species within the Defined Area.

## 1.2 Purpose of this letter

The purpose of this letter is to:

- Summarise the camera analysis from the previous two years of camera imagery for the Defined Area
- Analyse SHD presence/seasonal patterns and use per site within the Defined Area
- Analyse feral species presence within the Defined Area.

## 1.3 Scope and limitations

This letter has been prepared by GHD for Deep Yellow (and may only be used and relied on by Deep Yellow for the purpose agreed between GHD and Deep Yellow as set out in section 1.2 of this letter. GHD otherwise disclaims responsibility to any person other than Deep Yellow arising in connection with this letter. GHD also excludes implied warranties and conditions, to the extent legally permissible. The services undertaken by GHD in connection with preparing this letter were limited to those specifically detailed in the letter and are subject to the scope limitations set out in the letter.

GHD has prepared this letter based on information provided by Deep Yellow, which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the letter report which were caused by or omissions in that information.

Site conditions may change after the date of the field survey. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this letter if the site conditions change.

## 2. Methodology

Vimy undertook extensive testing and subsequently were given approval from Department of Parks and Wildlife to undertake camera trapping as their primary means of assessing for presence of SHDs. The approved approach is specified in *Camera Trapping Protocol – Sandhill Dunnart (Sminthopsis psammophila) – Mulga Rock Project Area* (Vimy 2015). In combination with GHD, Deep Yellow has continued to use camera traps as outlined in Vimy (2015) to determine presence of the species. This method is more cost effective, easily repeatable across the landscape and quicker than conventional trapping methods. For this project the study has shown that the camera traps record and demonstrate presence of SHD and ferals across the Defined Area.

### 2.1 Infra-red cameras

Reconyx Hyperfire 550 cameras, utilising white LED flash for colour day/night photo capture at close range were used across the 25 designated sites as presented in the *Sandhill Dunnart Study Plan* (GHD 2021b). All cameras were set up in the same format. Images are recorded in five shot succession at one second

intervals enabling capture of individuals at different angles to aid in identification. The study plan (GHD 2021b) includes more detail regarding camera set-up.

Fresh batteries and SD cards were replaced on a regular basis and downloaded into a central database and labelled accordingly. All images are stored and sorted by Deep Yellow before sending the dataset to GHD for assessment.

## 2.2 Trapping layout

Camera layout formations were kept consistent across all sites, employing a doublet design along an “X” fence line with horizontal cameras placed on posts facing south at its central point. As such, each site consisted of two deployed camera devices for greater coverage, represented as cameras A and B at each site. The trap layout is described in greater detail in the *Sandhill Dunnart Study Plan* (GHD 2021b).

## 2.3 Data collection period

The 25 camera survey sites were setup in November 2021 and have remained *in-situ*. This assessment considers images from commencement of collection until the end of November 2023, to provide two years of data.

## 2.4 Identification

SHDs were identified in accordance with the Deep Yellow's Camera Trapping Protocol, *Sandhill Dunnart (Sminthopsis psammophila) of the Mulga Rock Project Area* (Vimy 2015) and via the consultant's specialist experience. Glen Gaikhorst, the lead researcher has worked on SHDs since 2001 both in and ex situ.

A confidence key was developed to demonstrate the consultant's confidence in the species identification provided. This is presented below in Table 1.

Table 1 Confidence key for image analysis

Confidence key	Description
High	High level of confidence of species identification (clear morphological characteristics)
Moderate	Moderate level of confidence of species identification (lacking some degree of detail)
Low	Low level of confidence (blurred image or lacking significant detail)

## 2.5 Event definition

An event was defined as any identification image series within a 24-hour period, unless multiple size classes/life stages were observed, providing strong evidence multiple individuals were present, then further events were recorded. Size variation from life stages is presented in Figure 1.

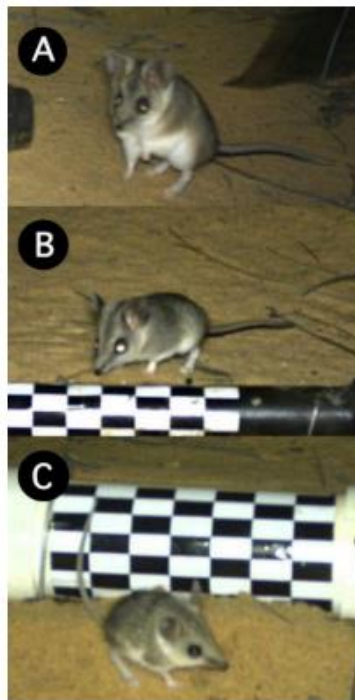


Figure 1 Size class variation of *Sminthopsis psammophila* present across the survey area. A); adult individual, B); sub-adult individual, C); juvenile individual

## 2.6 Baseline Parameters

SHDs like most arid zone *Sminthopsis* species are notoriously difficult to assess population size due to them having highly seasonal fluctuating populations, naturally low population sizes, large home ranges, low recapture rates (for mark recapture studies) and available habitat to assess (Riley 2020, Churchill 2001a, 2001b, Ward et al. 2008). Hence no robust method for estimating a SHD population size has been demonstrated (Riley 2020, Woinarski and Burbidge 2016).

An analysis of the existing two-year baseline dataset of sandhill dunnart imagery was undertaken to derive a proposed threshold to identify periods of low sandhill dunnart activity/presence during ongoing monitoring.

The baseline dataset was processed to extract the total number of sandhill dunnart 'events' per day at each camera device. For this analysis, an event for a camera was classified as at least one positive sandhill dunnart ID during a day. For example, if one or multiple positive IDs of SHDs were made at a camera device during a day, this was classified as a single event. The maximum theoretical number of events that could occur in the dataset during a day is therefore 50 (i.e. one event per camera location).

The event data was arranged into a daily timeseries, and a 90-day (~3 month) backwards-looking moving average was calculated. The first recorded event in the baseline data was on 25 November 2021, and the first result for the 90-day moving average is 90 days after this (22 February 2022).

The 5th percentile of the 90-day moving average has been adopted as a trigger indicating low sandhill dunnart activity. The 5th percentile is a low value within the data range, for which 95% of the data exceeded this value (i.e. the 90-day average was above the 5th percentile 95% of the time, and less than the 5th percentile for only 5% of the time).

Given the low number of feral species recorded over the two-year monitoring period, statistical analysis was not undertaken.

### 3. Results

#### 3.1 Sandhill Dunnart

The image analysis for the Defined Area has been undertaken from the period of November 2021 to November 2023. The SHD was identified on 48 camera devices across 24 sites providing 1637 discreet events. Only one of the 25 sites did not record SHD ((Site 4, A and B cameras) for the two-year period (see Table 2).

Table 2 Displays total captured events of the SHD (*Sminthopsis psammophila*) per site over two years

Sites	Number of Captured Event(s)			Total Events
	Period Nov 21 - Aug 22	Period Sept 22 - May 23	Period June 23 - Nov 23	
Site 1 A	5	0	0	5
Site 1 B	13	2	2	17
Site 2 A	5	3	12	20
Site 2 B	4	5	12	21
Site 3 A	4	11	17	32
Site 3 B	12	7	21	40
Site 4 A	0	0	0	0
Site 4 B	0	0	0	0
Site 5 A	13	49	54	116
Site 5 B	8	30	42	80
Site 6 A	1	1	1	3
Site 6 B	2	0	2	4
Site 7 A	7	33	17	57
Site 7 B	4	24	12	40
Site 8 A	9	12	19	40
Site 8 B	12	21	21	54
Site 9 A	0	8	27	35
Site 9 B	4	8	13	25
Site 10 A	4	1	8	13
Site 10 B	0	2	10	12
Site 11 A	8	1	1	10
Site 11 B	9	6	3	18
Site 12 A	27	7	0	34
Site 12 B	20	23	8	51
Site 13 A	6	38	29	73
Site 13 B	9	58	90	157
Site 14 A	3	3	1	7
Site 14 B	2	2	2	6
Site 15 A	9	3	3	15
Site 15 B	5	7	8	20
Site 17 A	0	5	6	11
Site 17 B	21	1	5	27

Sites	Number of Captured Event(s)			Total Events
	Period Nov 21 - Aug 22	Period Sept 22 - May 23	Period June 23 - Nov 23	
Site 18 A	0	10	9	19
Site 18 B	1	7	13	21
Site 19 A	4	15	11	30
Site 19 B	22	0	11	33
Site 20 A	3	7	23	33
Site 20 B	21	21	21	63
Site 21 A	17	9	12	38
Site 21 B	2	8	2	12
Site 22 A	14	7	10	31
Site 22 B	3	1	1	5
Site 23 A	0	10	7	17
Site 23 B	0	8	11	19
Site 28 A	6	20	4	30
Site 28 B	8	10	6	24
Site 29 A	14	4	3	21
Site 29 B	9	7	3	19
Site 30 A	13	32	57	102
Site 30 B	12	20	45	77

This presence data infers there is a good representative population of SHD persisting within the Defined Area. SHD events were recorded in every month and consisted of one to 228 events, representing a high degree of fluctuation within the data as presented in Figure 2.

There are no obvious reasons for the absence of SHD records from Site 4, with this locality having a similar habitat score to other areas where the species has been consistently recorded. Other species have been recorded on Site 4, A and B cameras demonstrating that camera fault is not a factor.

Peak activity periods of the SHD were from approximately March/April through to June and again from August/September. These peaks correlate to life events for sandhill Dunnarts consisting of dispersal of young and increased activity from males as they traverse the landscape during the mating period. Other high activity events may also indicate resident specimens in the area constantly triggering cameras. A distinct low period in activity can be seen from October to December. This period is likely to be representative of the female juveniles depositing period where young are too big to be carried in the pouch and transitioned into a nest reducing the female undertaking long distances of activity. It is also the period when the male portion of the population is at its smallest, before the dramatic influx of disbursing juveniles.



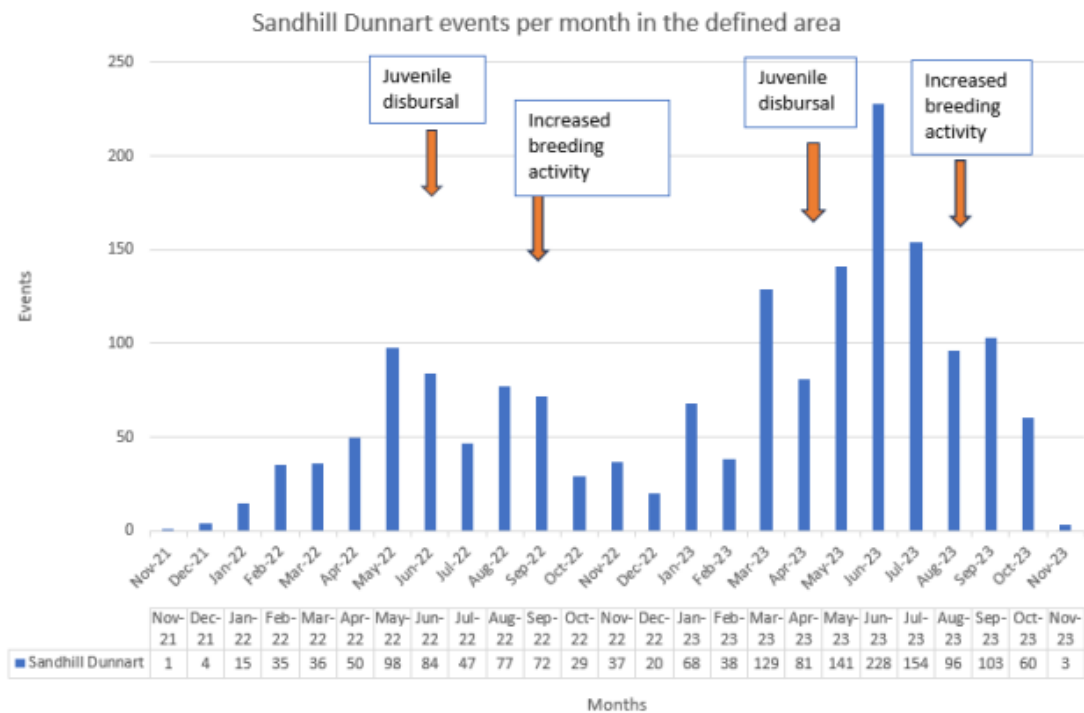


Figure 2 Raw data events per months demonstrating key activity periods for the species

### 3.2 Feral species

Predatory feral species, consisting of cats and red foxes. Foxes were recorded on six camera devices over four sites over a two-year period represented 14 discreet events. This data represents limited fox activity at an average of one event every two months. It is unlikely based on these numbers that any animal is sedentary and likely represent individuals moving through the landscape. Twelve of the 14 discreet events were recorded at Sites 11 and 12. These two sites are located adjacent to a clay pan and gypsum rise just outside of the Defined Area. These areas are typical habitat rabbits prefer to dig (as the soil has greater structure) and is also the two locations where rabbits were recorded on camera. Therefore, it is reasonable to assume the foxes are utilising the clay pan/gypsum area to hunt rabbits and additionally traversing through the surrounding habitat. The fox event data per site is represented in Table 3.

Cats were recorded on 18 camera devices across 14 sites providing 24 discreet events over a two-year period (see Table 4). This data represents an average of one event every month over the two-year period. No specific sites had greater activity than others over the two-year period.

Other feral species, consisting of camels and rabbits were recorded on five camera devices across five sites providing 10 discrete events (see Table 5 and Table 6). Camel events were singular inferring irregular visitors to the Defined Area while the rabbits were restricted to Sites 11 and 12, which is positioned near to a clay pan/gypsum area which is likely utilised for warrens.

There is no clear correlation between temporal observations of ferals species and SHD prevalence or SHD juvenile dispersal.

Table 3 Displays captured events of foxes (*Vulpes vulpes*) activity per site over two years.

Site	Number of Captured Event(s) – red fox
Site 8 A	1
Site 11 A	3
Site 11B	4

Site	Number of Captured Event(s) – red fox
Site 12 A	3
Site 12 B	2
Site 13 A	1

*Table 4 Displays captured events of feral cat (Felis catus) activity per site over two years.*

Site	Number of Captured Event(s) – feral cat
Site 7A	1
Site 7 B	1
Site 8 A	2
Site 9 A	1
Site 9 B	1
Site 10 B	1
Site 15 B	1
Site 17 B	1
Site 18 B	2
Site 19 A	1
Site 20 A	1
Site 20 B	2
Site 21 B	1
Site 22 B	2
Site 23 A	1
Site 28 B	3
Site 30 A	1
Site 30 B	1

*Table 5 Displays captured events of camel (Camelus dromedarius) activity per site over a two-year period.*

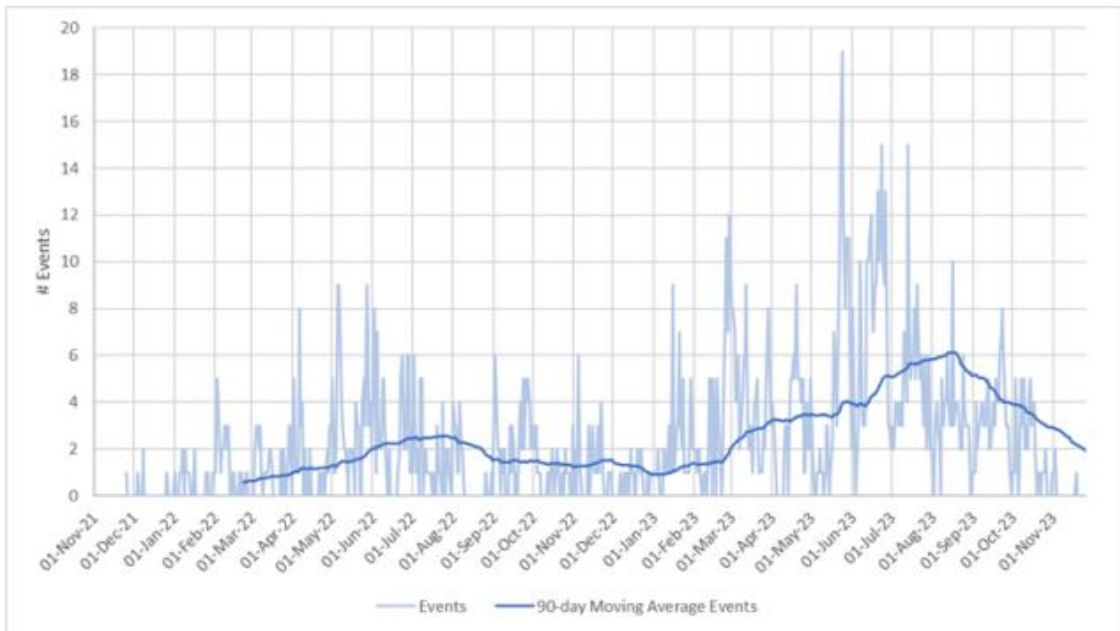
Site	Number of Captured Event(s) – Camels
Site 15 A	1
Site 29 A	1

*Table 6 Displays captured events of rabbit (Oryctolagus cuniculus) activity per site over a two-year period.*

Site	Number of Captured Event(s) – Rabbits
Site 11 A	3
Site 12 A	1
Site 12 B	4

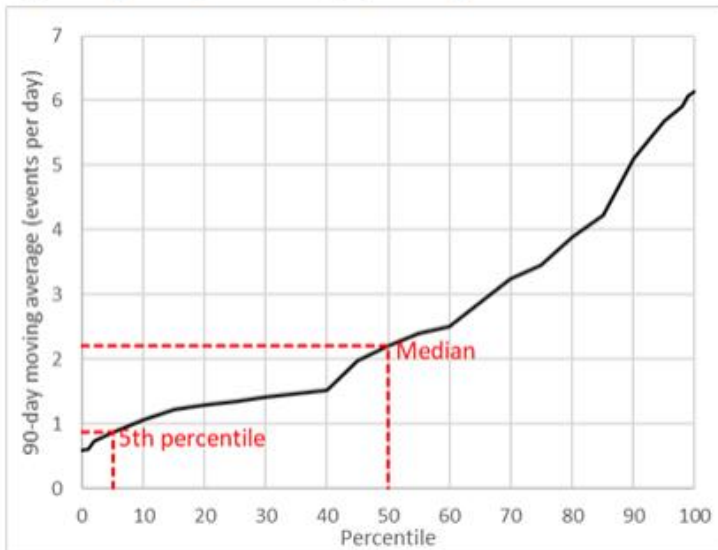
### 3.3 Baseline parameters and triggers

The daily events and 90-day moving average timeseries data are presented in Figure 3 below. The two-year dataset results in a total of 642 90-day moving average data points.



**Figure 3** Daily events and 90-day moving average timeseries data

The 90-day moving average data ranges from a minimum of 0.6 events per day (across all 50 sites) to a maximum of 6.1 events per day, with a median of 2.2 events per day. The statistical distribution of the 90-day moving average data is displayed in Figure 4 below.



**Figure 4** The statistical distribution of the 90-day moving average data

The 5th percentile of the baseline data is a 90-day average of 0.9 events per day. Future monitoring data will need to be processed in the same manner as presented in Figure 3 and Figure 4 to compare future data to the two-year baseline. Any future data indicating prolonged durations of 90-day moving averages of less than 0.9 events will indicate a low level of sandhill dunnart presence within the monitoring areas that is statistically rare when compared to the baseline data and should therefore be further investigated to determine possible causes for the low activity.

As the event data is highly seasonal, with events generally peaking though out winter and reducing during summer, expansion of this approach could be applied in future to develop separate thresholds for summer and winter if required when more camera imagery is available.

Raw data for feral species would require examination and determine if number present exceed those presented in Section 3.2 i.e. fox one event every two month or cats one event per month.

### 3.4 Feral management consideration

With the current data in mind and feral species persisting at low levels a targeted approach could be adopted for the fox and rabbit. Should management action be required, Sites 11 and 12 area (including the claypan/gypsum area) should be prioritised for fox and rabbit targeted baiting.

If a Felixer is acquired, then one unit could be utilised and moved throughout the Defined Area rather than targeting specific sites. Alternatively the baiting for cats should focus initially on camera locations where they have been r

## 4. References

Churchill, S. (Ed.). 2001a. Recovery plan for the sandhill dunnart (*Sminthopsis psammophila*). Department for Environment and Heritage, Adelaide, South Australia.

Churchill, S. (Ed.). 2001b. Survey and ecological study of the sandhill dunnart, *Sminthopsis psammophila*, at Eyre Peninsula and the Great Victoria Desert. Department for Environment and Heritage, Adelaide, South Australia.

GHD (2021a). Sandhill Dunnart Camera Trap Monitoring - Small mammal identification and analysis. Unpublished report for Vimy Resources, Perth, Western Australia.

GHD (2021b). Sandhill Dunnart Study Plan. Unpublished report for Vimy Resources, Perth, Western Australia.

GHD (2022b). Sandhill Dunnart Conservation Management Area - Sandhill Dunnart and Feral Species Image Analysis. Unpublished report for Deep Yellow.

GHD (2022a). Sandhill Dunnart Conservation Management Area - Sandhill Dunnart and Feral Species Image Analysis. Unpublished memo for Deep Yellow

Riley, J. L. (2020). Spatial ecology and conservation management of the endangered sandhill dunnart, *Sminthopsis psammophila*. A dissertation submitted to the University of Bristol in accordance with the requirements for award of the degree of PhD in the Faculty of Life Sciences.

Vimy Resources (2015) Camera Trapping Protocol – Sandhill Dunnart (*Sminthopsis psammophila*) – Mulga Rock Project Area. Unpublished report

Ward, M. J., J. Read, and K.E. Moseby, K. (Eds). 2008. Monitoring Sandhill dunnarts, *Sminthopsis psammophila*, in the Great Victorian Desert. A Report to the Wildlife Conservation Fund. Department for Environment and Heritage. Adelaide, Australia.

Woinarski, J.C.Z. and A.A. Burbidge. 2016. *Sminthopsis psammophila*. The IUCN Red List of Threatened Species 2016: e.T20293A21947794. www.iucnredlist.org. Accessed 30th December 2016.

Regards



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## APPENDIX 2 – EMP GUIDANCE

**Table 1:** Approval conditions

Approval condition	DoEE guidance
<p>2. To offset the residual significant impact to the Sandhill Dunnart (<i>Sminthopsis psammophila</i>), the person taking the action must prepare a Sandhill Dunnart Conservation Plan (the Plan) to reduce the threat to the Sandhill Dunnart posed by feral animals within the defined area. The Plan must be prepared by a <b>suitably qualified expert</b> and in consultation with the WA Department of Park and Wildlife. The plan must:</p>	
<p>a) define the area over which the Plan applies (the defined area). The defined area must:</p> <ul style="list-style-type: none"> <li>i. be located outside of the <b>MRUP development envelope</b>, but within the <b>project boundary</b></li> <li>ii. contain at least 6,000 ha of suitable habitat for Sandhill Dunnart</li> <li>iii. contain a local population of Sandhill Dunnart</li> </ul>	<p>Please see guidance items 4, 6, 7 and 22.</p>
<p>b) detail objectives and measurable performance indicators for implementing the Plan and managing threats to the Sandhill Dunnart within the defined area relating to feral animals</p>	<p>Please note the uplift in habitat condition/feral animal/predator control is to be achieved at Year 5 and maintained for the life of the impact (taken as life of approval). Therefore, the plan must achieve the performance indicator/s by Yr5 following commencement and maintain. Please see guidance items 5, 6 and 8.</p>
<p>c) detail the methodology that will be implemented for determining the baseline condition of the defined area including estimated baseline local population of Sandhill Dunnart and feral animals</p>	<p>Please explain how you will establish the baseline condition prior to project commencement and/or during initial years of the project, relationship to performance indicators and statistical power/reliability. Please see guidance items 5 and 14-16.</p>
<p>d) detail management actions that will be implemented to achieve the objectives of the Plan</p>	<p>Please see guidance items 10-12.</p>
<p>e) identify and manage risks associated with achieving the Plan's objectives</p>	<p>Please see guidance items 9, 10, 12 and 13.</p>
<p>f) detail contingency responses and corrective actions that will be implemented should performance indicators not be achieved. This includes trigger values for implementing contingency responses and corrective actions, and the timeframes in which corrective actions will be implemented</p>	<p>Please note contingency response is to confirm an event/circumstance or determine that it is due to the approved action and the cause of the event etc. Corrective actions are subsequently implemented, as appropriate. Please see guidance item 10.</p>
<p>g) detail a monitoring program, including a monitoring methodology, to review effectiveness of management actions and to support an adaptive management approach to implementation of the Plan</p>	<p>Please see guidance items 14-19</p>
<p>h) provide the timing and frequency of management actions, monitoring and reporting programs and the person/s responsible for implementing the actions and programs</p>	<p>Please see guidance items 11, 14-17, 20 and 21</p>

**Table 2: EMP Guidelines**

Guidance
1. The plan includes a <b>Declaration of Accuracy</b> signed by the approval holder.
2. The plan includes an <b>executive summary</b> which states the relevant EPBC Act approval conditions, outlines the purpose of the plan and the primary strategies to manage key risks to achieve the plan’s objectives.
3. The plan includes a table containing: <ul style="list-style-type: none"> <li>a) <b>EPBC Act approval conditions</b> that specify the content of the plan;</li> <li>b) plan section and page numbers that address those requirements; and</li> <li>c) key commitments addressing those requirements.</li> </ul>
4. The plan <b>describes the project</b> sufficiently to give context to the plan, and includes: <ul style="list-style-type: none"> <li>a) the location and nature of approved action activities and residual significant impacts to Sandhill Dunnart;</li> <li>b) the location of Sandhill Dunnart to be managed and conserved through the plan; and</li> <li>c) environmental information and significance of these locations, including relationship to the approved action.</li> </ul>
5. The plan states the <b>environmental objectives</b> for Sandhill Dunnart to be achieved by implementing the plan. The plan quantifies environmental objectives through measurable extent and condition performance indicators for the local Sandhill Dunnart population and feral animal population.
6. The plan describes the proposed <b>conservation area</b> , including nature, location, tenure, connectivity and potential for inclusion in the nature conservation reserve system.
7. The <b>plan</b> includes a digital version of the conservation area <b>attributes and shapefiles</b> .
8. User inputs to the <b>EPBC Offset Guide</b> are the basis to the plan, such that performance indicators are: <ul style="list-style-type: none"> <li>a) based on start quality, future quality with offset and time until ecological benefit;</li> <li>b) effective for the duration of the impact;</li> <li>c) relevant to management interventions and environmental condition; and</li> <li>d) used to monitor, evaluate, review and improve the effectiveness of the plan.</li> </ul>
9. The plan <b>assesses the risk</b> of failure to achieve the plan’s performance indicators. To this end the plan: <ul style="list-style-type: none"> <li>a) states the plan’s performance indicators;</li> <li>b) identifies events or circumstances that prejudice attainment and/or maintenance of performance indicators. The events or circumstances must address scientific/ecological uncertainty, stochastic events and legal/land use planning factors that may represent risks;</li> <li>c) includes a qualitative assessment of the likelihood and consequence of those events or circumstances, and the residual risk of failure to achieve those criteria due to identified events or circumstances, assuming management measures will be implemented;</li> <li>d) characterises <b>risk</b> as low, medium, high or severe, and derived from <b>likelihood</b> (highly likely, likely, possible, unlikely, rare) and <b>consequence</b> (minor, moderate, high, major and critical); and</li> <li>e) explains how consequence, likelihood and risk level for each risk have been determined.</li> </ul>
10. The plan <b>manages the risk</b> of failure by: <ul style="list-style-type: none"> <li>a) detailing management measures that will be implemented to achieve the performance indicators;</li> <li>b) enhancing monitoring and management measures for high risk events or circumstances, thereby providing a ‘margin of safety’ to detect, avoid or mitigate the likelihood and/or impacts of the event or circumstance;</li> <li>c) specifying management triggers (measurable events or circumstances) that detect actual or potential issues in a timely manner to avoid, minimise or mitigate adverse consequences;</li> </ul>

### Guidance

- d) ensuring the monitoring program includes activities to detect management triggers, and explaining how monitoring activities may inform the selection and implementation of corrective actions;
- e) detailing effective contingency responses and corrective actions that may be implemented if a management trigger is realised; and
- f) monitoring the effectiveness of corrective actions and implementing alternate actions in the event corrective actions are not effective.

**11.** The plan includes **feral animal management measures** that will protect and enhance Sandhill Dunnart habitat and population. Each management measure:

- a) has timeframes for implementation;
- b) is described sufficiently to avoid ambiguity and to inform plan implementation;
- c) is related to performance objectives; and
- d) is derived from recognised principles, practice or guidelines, and is justified - technically, scientifically and/or legally – as an effective and appropriate measure to attain and maintain the plan’s performance objectives.

**12.** The plan **identifies and manages uncertainty**. To this end the plan specifies:

- a) key data/information used to formulate the plan;
- b) the limitations and uncertainty associated with the use of that data/information;
- c) the risks the limitation and uncertainty represents for plan failure; and
- d) how these risk, are mitigated during plan implementation. For example, where a margin of safety is applied to management measures until uncertainty is reduced to an acceptable level or performance objectives are attained.

**13.** The plan includes an **adaptive implementation program** to ensure uncertainty is reduced over time, and that performance indicators are achieved. The plan therefore includes arrangements for:

- a) ensuring new data/information is collected and incorporated into the plan, as a result of implementing the plan and from new information derived from external sources (e.g. academic literature, EPBC policy statements);
- b) effectively coordinating, scheduling and/or triggering monitoring, risk management, auditing and reporting activities;
- c) periodically reviewing risks, including in response to the risk level, changing circumstances or the results from implementing contingency responses;
- d) frequent review of the effectiveness of management measures with significant levels of uncertainty, relatively long implementation timeframes, and upon which the plan is highly dependent;
- e) addressing the consequences of significant environmental incidents (pre-determined and unanticipated); and
- f) **reviewing the plan** under the following circumstances:
  - performance reports indicate performance indicators may not be achieved;
  - according to approved timeframes; and
  - the impacts of significant environmental incidents.

**14.** The plan outlines the **purpose of monitoring** and its functional relationship to operational decisions.

**15.** The plan states **monitoring objectives** to meet operational decision-making. To this end:

- a) for each objective, the monitoring plan specifies the **variables to be measured**, the state and/or rate of change, the precision and confidence, the spatial resolution and time scales required to inform operational decision-making; and
- b) the monitoring objectives provide for ‘early-control’ (that management actions are effective) and ‘early warning’ (corrective actions are required) functions, so as inform timely decisions on corrective actions to ensure performance and completion criteria are achieved.

## Guidance

**16.** The plan describes the **monitoring methods** that will be implemented, and:

- a) includes quantitative (e.g. on-ground survey results) and qualitative baseline data (e.g. photo-point monitoring sites) that establish the start quality/condition of the environment;
- b) describes the sampling strategy (including monitoring area, site selection and sampling intensity over space and time) and statistical analyses to be employed;
- c) justifies the sampling strategy/monitoring methods, including through the likely statistical power delivered by the strategy/method;
- d) justifies the monitoring methods to be used, including:
  - an assessment of effectiveness and constraints to use;
  - capacity to detect change in environmental condition due to management interventions;
  - capacity to demonstrate attainment of performance indicators;
- e) commits to engage appropriately qualified experts to design and conduct monitoring and survey activities, and analyse monitoring results; and
- f) the location, nature and number of monitoring sites, including control sites to evaluate management performance.

**17.** The plan includes a **data handling program** for data storage and protection, data extraction, quality control, analysis, interpretation, reporting and presentation. Data ownership, and distribution, availability and licensing to the Department for compliance and recovery planning purposes, must be specified. Timelines for the data handling, analyses and delivery should be specified.

**18.** The plan outlines a **periodic technical review and evaluation** of the plan and the likely composition of the review committee(s).

**19.** The plan includes a schedule and triggers for **self-auditing** the implementation and effectiveness of the plan and outlines auditable systems for recording plan implementation and achievement of performance indicators.

**20.** The plan includes commitments to **report** on plan implementation. This is achieved by:

- a) identifying relevant reporting obligations under the EPBC approval;
- b) specifying how plan implementation will be reported in accordance with those obligations, including reporting on risk management, management measures, monitoring and adaptive implementation activities during the reporting period.

**21.** The plan specifies **accountabilities** for implementing the plan, including for management measures, risk management, monitoring, reporting, review, auditing and contingency responses.

**22. Maps, plans, figures, images and sections** used in the strategy/plan:

- a) show the conservation area in a regional context;
- b) must be clearly legible, including fine print, when printed on A4;
- c) show areas with differing environmental condition or quality;
- d) show the location of static monitoring plots and the general location of random monitoring/survey activities;
- e) are scaled to enable the reader to clearly identify, based on local landmarks (e.g. roads, waterbodies) the location of management activities being shown on the map;
- f) include appropriate standard metric scales to represent the information (for example 1:10 000). Datum – plans and cross sections refer to AHD;
- g) have metric measurements, graphic bar scales, local grid lines and standards and north point or orientation of sections (include a key) are used throughout; and
- h) include title blocks in the lower right hand corner with the following information: EPBC number and project name, title and number of the plan, author, scale, date, source and date of data.



#### Guidance

23. The plan **references scientific, legal or other claims or statements** that support the effectiveness of the plan, e.g. references to scientific literature, published guidelines, legislation, conservation advice, recovery plans, threat abatement plans.
24. The plan uses the terms '**will**' and '**must**' when committing to actions, instead of 'where possible', 'as required', 'to the greatest extent possible', 'should' or 'may'.
25. The **footer or header** of each page of the plan states the name of the project, EPBC #, date of the plan and sequential page numbering.
26. The plan includes a **glossary of terms** comprised of acronyms, terms open to different interpretations, not in common use, technical or defined in the approval conditions.
27. The plan includes risk assessment/management, implementation and monitoring schedules.



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## APPENDIX 3 – SANDHILL DUNNART MONITORING PLAN

# Technical Memorandum

03 November 2021 (revised 12 December 2023)

<b>To</b>	Guy Clarke	<b>Tel</b>	08 9389 2725
<b>Copy to</b>		<b>Email</b>	guy.clarke@deepyellow.com.au
<b>From</b>	Glen Gaikhorst	<b>Ref. No.</b>	12563122
<b>Subject</b>	Remote Camera installation - Site Plan and Establishment		

## 1. Background

Vimy Resources Limited (ABN 56 120 178 949) (Vimy) is the proponent of the Mulga Rock Project (MRP or the Project). Effective from 4 August 2022, Vimy became a 100% owned subsidiary of Deep Yellow Limited (ABN 97 006 391 948) (Deep Yellow or the Company) following a Scheme of Arrangement (Merger). Deep Yellow is listed on the Australian Securities Exchange (ASX) and is the ultimate holding company in the Deep Yellow group of companies. Narnoo Mining Pty Ltd (ABN 81 084 713 100) (Narnoo) is the owner of the MRP, and the registered holder of the tenements associated with the MRP. Narnoo, as a 100% owned subsidiary of Vimy, is now part of the Deep Yellow group of companies.

Vimy referred the MRP on the 28 November 2013 under the *Environment Protection Biodiversity Conservation Act 1999* (Cth) (EPBC Act) to the Department of Agriculture, Water and the Environment (DAWE) (EPBC 2013/7083). On 7 January 2014, DAWE determined MRP a “controlled action”, with the controlling provisions being “listed threatened species and communities” and “nuclear actions”, to be assessed under the bilateral agreement with the Western Australian State Government. The MRP was federally approved on the 2 March 2017 with a condition attached to offset the residual impact to the Sandhill Dunnart (*Sminthopsis psammophila*), which is listed as endangered under both the *Biodiversity Conservation Act 2016* (WA) (BC Act) and the EPBC Act.

Condition 2 of the EPBC 2013/7083 approval requires the preparation of a Sandhill Dunnart Conservation Plan (SDCP) to reduce the impact to the Sandhill Dunnart posed by feral animals within a defined conservation area. The SDCP is based around a 6000 ha portion of land within the Sandhill Dunnarts known distribution. In order to implement the SDCP an understanding of the presence of the species and feral animals is required including an understanding of baseline data for the Sandhill Dunnart and feral species (predatory and other).

### 1.1 Purpose and scope

The purpose of the remote camera installation - site plan is to develop a systematic method to identify potential locations to site remote cameras to confirm the presence of the Sandhill Dunnart and feral animals within the conservation area. The following scope of works was implemented to achieve the purpose:

- Desktop assessment
- Develop a map of 30 potential camera establishment locations based on relevant criteria to establish 25 remote camera sites (five sites as spare in case habitats of on the ground are unsuitable)
- Document the criteria utilised (this document) to select the camera site locations.

## 1.2 Memorandum limitations and assumptions

This memorandum has been prepared by GHD for Vimy and may only be used and relied on by Vimy for the purpose agreed between GHD and Vimy as set out in section 1.2 of this memorandum. GHD otherwise disclaims responsibility to any person other than Vimy arising in connection with this memorandum. GHD also excludes implied warranties and conditions, to the extent legally permissible. The services undertaken by GHD in connection with preparing this memorandum were limited to those specifically detailed in the memorandum and are subject to the scope limitations set out in the memorandum.

GHD has prepared this memorandum on the basis of information provided by Vimy and others who provided information to GHD (including Government authorities and private individuals), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the letter report which were caused by or omissions in that information.

Site conditions may change after the date of the field survey. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this memorandum if the site conditions change.

## 2. Method for determining potential camera locations

### 2.1 Desktop Searches

A desktop assessment was used to gather contextual information on the conservation area to identify fauna habitat types and the likelihood of the Sandhill Dunnart to occur within those habitat types to refine the 25 camera establishment locations.

The following environmental data (via searches and government and client spatial data) was considered for the Defined Area:

- Search of DBCA Threatened and Priority Fauna database (DBCA) for current records of Sandhill Dunnart
- NatureMap database for Sandhill Dunnart previously recorded with a focus on datasets from; Threatened Fauna, Fauna Survey Returns Database (New), Western Australian Museum database for mammals
- Broadscale vegetation types and vegetation condition
- Geology and Soils, Land Use Systems and Hydrology information to provide background information on the variability of the environment and likely vegetation and habitat types present.
- Access tracks
- Fire scar ages
- Where data exists size of *Triodia* spp. Based on fine scale mapping
- Further refinement of the location selections was undertaken by utilising high resolution drone imagery (to 2 cm resolution) to allow selections of sites within known desirable *Triodia* presence.

### 2.2 Defined Area

The Defined Area proposed by Vimy is approximately 6000 ha and lies within the project boundary but outside of the proposed operational area. It is positioned on the yellow sand plain, which has affinities with the broadly defined “Yellow sand Plain Communities of the Great Victoria Desert” Priority 3 (ii) ecological community, and has a mix of dunes, elevated sand plains, swales, clay pans and plain. The area has a primary access road running northwest to southeast with several smaller tracks positioned in the southwest. Figure 1, Appendix A shows the location of the proposed Defined Area.

## 2.3 Map development

For best success of recording Sandhill Dunnart within the Defined Area 30 locations were identified with the intention of establishing 25 monitoring sites. By identifying 30 locations allows for 5 areas to be excluded while in the field subject to recent environmental factors i.e. fire, other disturbance and/or habitats present. Each location identified will be an approximate 50 m x 50 m area.

Site selection criteria for proposed camera establishment locations included consideration of:

- Sites to be within 300 m of established tracks to allow ease of access to sites within the Defined Area for routine maintenance and collection of data.
- Sites to be within areas that are long unburnt (> 8 years since burn) to allow the appropriately sized *Triodia* clumps for Sandhill Dunnart to persist. *Triodia* life stages are required to be at Stage 2 (youngest) to stage 5 (oldest), ideally a dominance of stage 3 and 4 clumps is preferred. From fire scar mapping three fire scar ages are present. The most dominant fire scar is 18 years old (2005), with a small area of long unburnt (30 + years) and recently burnt within 7 years. The recent burn scar has been excluded from proposed camera establishment locations. Further refinement of the location selections was undertaken by utilising high resolution drone imagery (to 2 cm blocks) to allow selections of sites within known desirable *Triodia* presences. The area of high resolution was restricted to the main access track in the Defined Area but extending 300 m each side of the track.
- Sites positioned close to or within dune systems or elevated sand plain systems. Additionally, dune swales merging into sandplain or minor clay plain verges are also desirable as they provide larger *Triodia* clumps. Where appropriate and to not clump locations too close to each other approximately half of the proposed camera establishment locations have been placed within dune systems or elevated sand plain.
- Independence of sites is an important consideration. (GHD 2020) recommends a minimum distance of approximately 2 km between sites, for this study due to access and number of study sites to be established separation of proposed camera establishment locations is much less and lie approximately 800 m apart.
- Sites should not be placed within vegetation structure not conducive to the *Triodia* hummock grasslands present on the yellow sand plain i.e. Mulga woodlands.
- Site should be placed as close to possible areas where Sandhill Dunnart have previously been captured. Sandhill Dunnart have been captured as part of Gaikhorst and Lambert (2014) project (site 3 and 5) approximately 800 m southeast and 8 km north of the Defined Area respectively. The Defined Area lies between two previous Sandhill Dunnart capture areas.

Figure 2, Appendix A presents some of the criteria utilised and proposed camera establishment locations.

## 2.4 Field installation and refinement

The desktop selection of camera establishment location guided the in-field placement of sites. Experienced and trained Zoologists and Ecologists installed the cameras, with consideration to the site selection criteria.

If established sites are determined not suitable in future image collection or are impacted by environmental factors (e.g. fire) then an alternative site will be considered.

## 3. Remote camera setup protocol

Vimy Resources has previously documented their remote camera trapping protocol in Vimy Resources Limited (2014), Camera Trapping Protocol - Sandhill Dunnart (*Sminthopsis psammophila*) – Mulga Rock Uranium Project (2014).

The below method is an extraction of this:

- Two camera types are currently used as part of the Mulga Rock Targeted Camera Trapping Program.
- These include the Bushnell Trophy Cam HD MAX with passive infra-red flash and the Reconyx Hyperfire with white LED flash for colour day/night photo capture at close range.
- Cameras should be set up in a location that is flat or gently sloping with limited vegetation in the field of view to reduce false triggers. However, the location chosen for placement of cameras has to be a balance between being able to capture images unimpeded and the habitat preference of the species.

- Lure stations will be located approximately 1.5–2.0m from the horizontal camera. Any vegetation between the camera and the lure, and either side of the lure should be cleared or trimmed. Where possible, any objects that may obstruct the camera's field of view will be removed. Lures are required to be anchored via wire rope to prevent stealing by Dingos.
- Lure station markers have a reference scale stuck on the exterior (2 x 1 cm grid pattern) to allow animal size comparisons and to ensure that any pictures can be easily verified to a specific site.
- Where possible the background (area behind the lure) should be uniform to help reduce temperature differentials between objects i.e. where possible create the optimal homogenous background temperature.
- Cameras must be fixed to a stake that will not move in the wind, and the unit should face south to avoid direct sunlight on the lens. Cameras are set up (a) to produce five images/trigger, (b) rapid fire, (c) high sensitivity and (d) 24 hour operation.
- Two cameras are setup (same model) at the same site, cameras should be set at approximately 30 - 50 m apart from each other to ensure a reasonable area is surveyed and to maintain conformity with quadrat areas utilized in previous successful surveys. A drift fence will be setup at cameras to guide animals into view.
- The height of the camera should be set at a height that is specific to the target species of the survey and for SHD's horizontal cameras are located 20 to 30 cm above the ground.
- Completion of the site information on the Data Sheet should be done in the field on the setup day. The camera's exact location should be recorded as a GPS coordinate on the data record sheet.
- In all situations, details will be entered onto the Data Sheet for each camera site and incorporate both cameras' data.

The Data Sheet for each site is provided in Appendix B.

## 4. Interrogation of data

The aim of utilising remote cameras within the Defined Area is to:

- Identify the presence/absence of Sandhill Dunnart in the Defined Area
- Identify the presence/absence of feral species in the Defined Area, with specific focus on feral cat, fox and rabbit. Other species will also be recorded (e.g. camel).
- If Sandhill Dunnart are present, establish baseline levels, for long term monitoring if controls of impacts are undertaken
- If feral species are detected, establish baseline levels for long term monitoring if controls are undertaken
- Gather ecological data on the Sandhill Dunnart (and other species) to aid in greater understanding of the species.

## 5. References

Gaikhorst, G., and Lambert, C. (2014). Sandhill Dunnart – A Species Review and where this elusive little beast lives in Western Australia. Presentation at the GEMG Conference, Kalgoorlie WA. May 2014.

GHD (2020). Survey and Monitoring Guidelines for the Sandhill Dunnart in western Australia. Prepared for Great Victoria Desert Biodiversity Trust. Editor Glen Gaikhorst, January 2020.

Vimy Resources Limited (2014). Camera Trapping Protocol - Sandhill Dunnart (*Sminthopsis psammophila*) – Mulga Rock Uranium Project (2014).

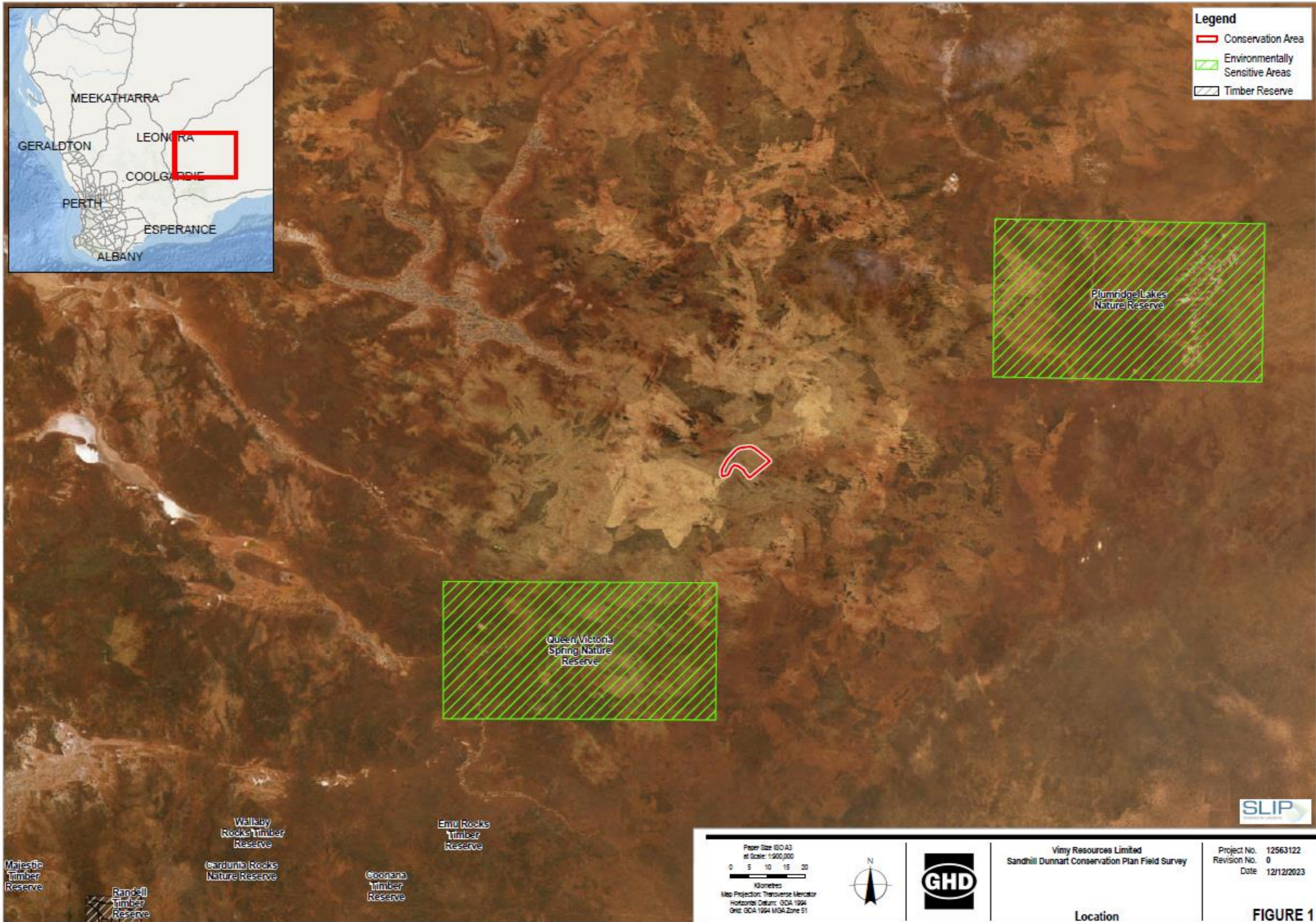
Regards



**Glen Gaikhorst**  
Principal Zoologist

# Appendix A

Figures



**Legend**

- Conservation Area
- Environmentally Sensitive Areas
- Timber Reserve

Plumridge Lakes  
Nature Reserve

Queen Victoria  
Spring Nature  
Reserve

Majestic  
Timber  
Reserve

Randell  
Timber  
Reserve

Cardinya Rocks  
Nature Reserve

Walkaby  
Rocks Timber  
Reserve

Coonana  
Timber  
Reserve

Emu Rocks  
Timber  
Reserve



Paper Size ISO A3  
at Scale: 1:900,000

0 5 10 15 20  
Kilometres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 51



Vimy Resources Limited  
Sandhill Dunnart Conservation Plan Field Survey

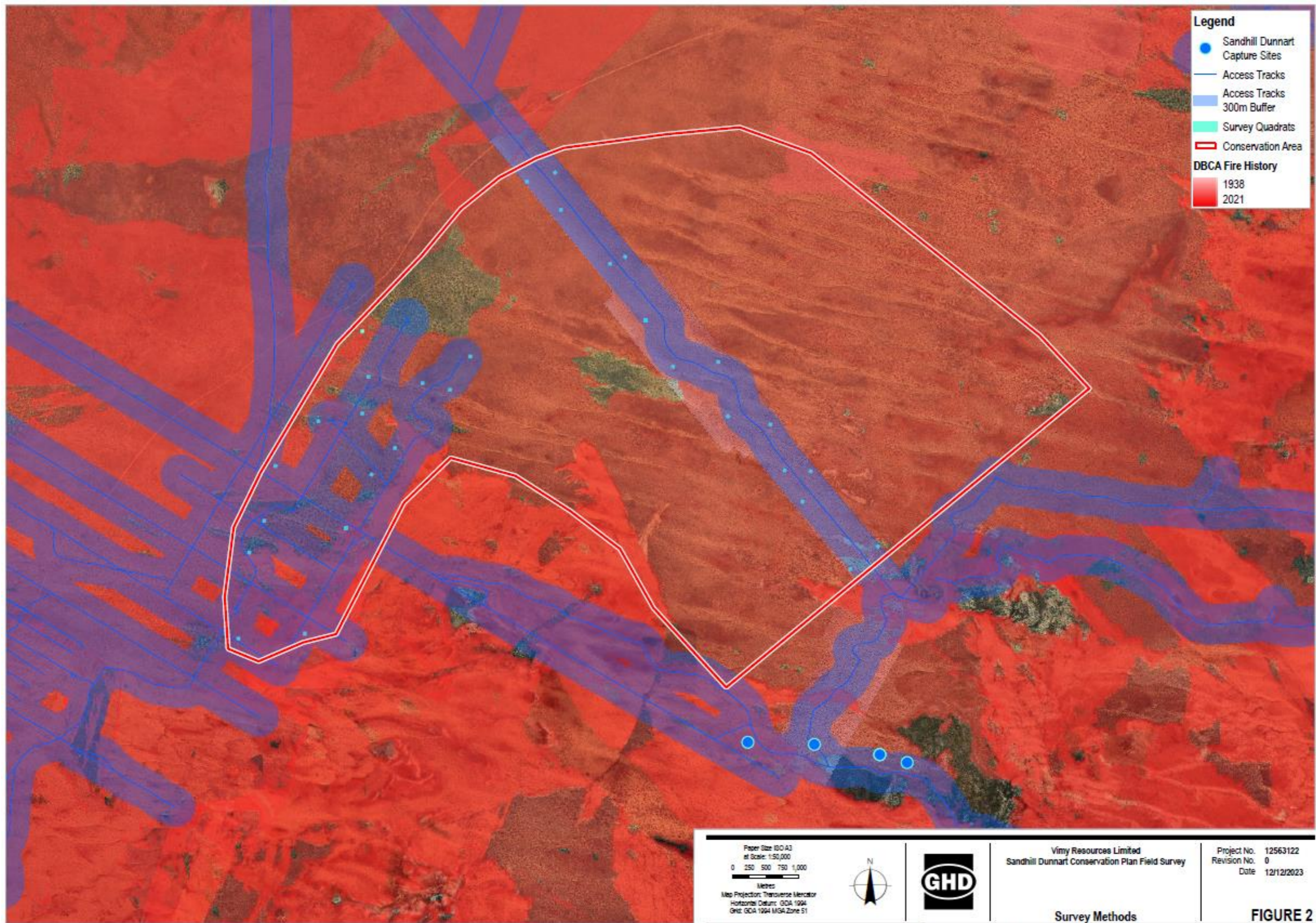
Project No. 12563122  
Revision No. 0  
Date 12/12/2023

Location

**FIGURE 1**

© 2011-2023 GHD. All rights reserved. GHD, Environmentally sensitive areas, GDA registered marks and emblems, SLIP, Landscape (2021/111) World Geopositioning, Earth Science, FAO, IOWA, USGS, World Imagery, Earthstar Geographics





**Legend**

- Sandhill Dunnart Capture Sites
- Access Tracks
- Access Tracks 300m Buffer
- Survey Quadrats
- Conservation Area

**DBCA Fire History**

- 1938
- 2021

Paper Size: ISO A3  
 at Scale: 1:50,000  
 0 250 500 750 1,000  
 Metres  
 Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 51



Vimy Resources Limited  
 Sandhill Dunnart Conservation Plan Field Survey

Project No. 12563122  
 Revision No. 0  
 Date 12/12/2023

Survey Methods

**FIGURE 2**


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# **Appendix B**

**Camera monitoring sites Data Sheets**


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

Location and Site Code: CA 1A and 1B		Date Set: 23/11/2021	Date Retrieved: Every 3 months No of Observation Days: ~90		
OBSERVER/S GHD (GG, BM, SF, JM)					
LOCATION DESCRIPTION: VIMY CONSERVATION AREA Landscape Photo point: Orientation: facing south      Photo File No:					
MGA COORD (GDA 94 - Zone 51)		Easting: 593042 Northing: 6691817 RL: <20m Accuracy: 5m			
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:        m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 8 km SE approx. 3 years ago	Stage 4 20%
HABITAT DESCRIPTION		Triodia Hummock Grassland on elevated Yellow sandplain.			
VEGETATION TYPE from attached legend		Open eucalyptus over mixed shrubland.			
Habitat Quality Assessment Score		8.1/10 = Good habitat			
Camera Type: Reconyx 550		Camera Code: 1A		Easting: 593040, Northing: 6691820	
ASPECT TO TARGET ZONE		CAMERA HEIGHT:        30 cm		DISTANCE TO TARGET ZONE:    1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: due south°		LURE RECIPE: PB oats fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE:    Li-Th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 23/11/2021	
CARD TYPE:    SD 32		CAPACITY: 32G		REPLACEMENT DATE: 23/11/2021    No. of IMAGES:	
Camera Type: Reconyx 550		Camera Code: 1B		Easting: 593043, Northing: 6691869	
ASPECT TO TARGET ZONE		CAMERA HEIGHT:        30 cm		DISTANCE TO TARGET ZONE:    1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: due south°		LURE RECIPE: PB, oats, fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE:    eneloop		NO: 12 x AA		BATTERY REPLACEMENT DATE: 23/11/2021	
CARD TYPE:    SD		CAPACITY: 32G		REPLACEMENT DATE: 23/11/2021    No of IMAGES:	
GENERAL COMMENTS: Good quality clumps, setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 2A and 2B		<b>Date Set:</b> 23/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA Landscape Photo point: Orientation: facing south Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting:</b> 593261				
	<b>Northing:</b> 6691356				
	<b>RL:</b> <20m				
	<b>Accuracy:</b> 5m				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input checked="" type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: m Dune Separation: m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 7.5 km SE approx. 3 years ago	Stage 3 to 4 20%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland on elevated Yellow sandplain.				
<b>VEGETATION TYPE</b> from attached legend	Open eucalyptus over mixed shrubland.				
<b>Habitat Quality</b> <b>Assessment Score</b>	8.1/10 = Good habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 2A</b>		<b>Easting: 593262, Northing: 6691360</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> 140°		<b>LURE RECIPE:</b> PB, RO, fish oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 15°		<b>LURE TYPE/PLACEMENT :</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 23/11/2021		<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 2B</b>		<b>Easting: 593216, Northing: 6691373</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> 140°		<b>LURE RECIPE:</b> PB, RO, fish oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 15°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 23/11/2021		<b>No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> Good quality Triodia clumps. Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

Location and Site Code: CA 14A and 14B		Date Set: 23/11/2021	Date Retrieved: Every 3 months No of Observation Days: ~90		
OBSERVER/S GG, BM, SF, JM					
LOCATION DESCRIPTION: VIMY CONSERVATION AREA Landscape Photo point: Orientation: south facing      Photo File No:					
MGA COORD (GDA 94 - Zone 51)		Easting: 593939			
		Northing: 6690557			
		RL: <20m			
		Accuracy: 5m			
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 8m Dune Separation: 200m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 7 km S approx. 3 years ago	Stage 3 20%
HABITAT DESCRIPTION		Triodia Hummock Grassland within Dune system.			
VEGETATION TYPE from attached legend		Vegetation open marble gum Woodland over mixed shrubs over triodia hummocks			
Habitat Quality Assessment Score		8.1/10 = Good habitat			
Camera Type: Reconyx 550		Camera Code: 14a		Easting: 593929, Northing: 6690559	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south facing		LURE RECIPE: PB, RO, fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: eneloop lith      NO: 12 x AA		BATTERY REPLACEMENT DATE: 23/11/2021			
CARD TYPE: SD      CAPACITY: 32G		REPLACEMENT DATE: 23/11/2021      No. of IMAGES:			
Camera Type: Reconyx 550		Camera Code: 14b		Easting: 593879, Northing: 6690533	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south facing		LURE RECIPE: PB, RO, fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: eneloop lith      NO: 12 x AA		BATTERY REPLACEMENT DATE: 23/11/2021			
CARD TYPE: SD      CAPACITY: 32G		REPLACEMENT DATE: 23/11/2021      No of IMAGES:			
GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 3A and 3B		<b>Date Set:</b> 23/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION: VIMY CONSERVATION AREA</b> Landscape Photopoint: Orientation: facing south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 594186</b>				
	<b>Northing: 6690649</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
					
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 8 m Dune Separation: 0m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 7 km S approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland within Dune system.				
<b>VEGETATION TYPE</b> from attached legend	Vegetation open marble gum Woodland over mixed shrubs over triodia hummocks				
<b>Habitat Quality Assessment Score</b>	8.3/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 3A</b>		<b>Easting: 594186, Northing: 6690651</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT: tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li-Th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE:</b>	
				<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 3B</b>		<b>Easting: 594237, Northing: 6690628</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: South facing</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10</b>		<b>LURE TYPE/PLACEMENT : Tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE:</b>	
				<b>No of IMAGES:</b>	
<b>GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long</b>					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 4A and 4B		<b>Date Set:</b> 23/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA Landscape Photo point: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 594517</b>				
	<b>Northing: 6689693</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
					
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 5m Dune Separation: 400m?	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 5.5 km S approx. 3 years ago	Stage 3 30%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland within Dune system.				
<b>VEGETATION TYPE</b> from attached legend	Vegetation open marble gum Woodland over mixed shrubs over triodia hummocks				
<b>Habitat Quality Assessment Score</b>	8.2/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 4A</b>		<b>Easting: 594519, Northing: 6689692</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south facing</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li-Th</b>		<b>NO: 12 x AA</b>	<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>		
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>	<b>REPLACEMENT DATE:</b>		<b>No. of IMAGES:</b>
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 4B</b>		<b>Easting: 594559, Northing: 6689632</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south facing</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li th</b>		<b>NO: 12 x AA</b>	<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>		
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>	<b>REPLACEMENT DATE:</b>		<b>No of IMAGES:</b>
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					

## CAMERA MONITORING DATA SHEET


Fill out a data sheet for each station and record data by circling relevant information

Location and Site Code: CA 6A and 6B		Date Set: 24/11/21	Date Retrieved: Every 3 months No of Observation Days: ~90		
OBSERVER/S GG, BM, SF, JM					
LOCATION DESCRIPTION: VIMY CONSERVATION AREA Landscape Photo point: Orientation: south Photo File No:					
MGA COORD (GDA 94 - Zone 51)	Easting: 594921				
	Northing: 6689006				
	RL: <20m				
	Accuracy: 5m				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input checked="" type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 10 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 5 km S approx. 3 years ago	Stage 3 40%
HABITAT DESCRIPTION	Triodia Hummock Grassland within Dune system.				
VEGETATION TYPE from attached legend	Open marble gum Woodland over mixed shrubs and mallee over triodia Grassland on sand dune.				
Habitat Quality Assessment Score	8.3/10 Good Habitat				
Camera Type: Reconyx 550		Camera Code: 6A		Easting: 594925, Northing: 6689006	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: °		LURE RECIPE: PB oats fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: Li-Th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: 24/11/21 No. of IMAGES:	
Camera Type: Reconyx 550		Camera Code: 6B		Easting: 594856, Northing: 6689015	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: °		LURE RECIPE: PB oats fish oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: Li th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: No of IMAGES:	
GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long					




## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 5A and 5B		<b>Date Set:</b> 24/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION: VIMY CONSERVATION AREA</b> Landscape Photopoint: Orientation: south Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Eastings: 595662</b>				
	<b>Northing: 6689008</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
<b>Landform Type</b>	<b>Soils</b>	<b>Drainage</b>	<b>Vegetation Community</b>	<b>Fire History</b>	<b>Spinifex Stage and % Cover</b>
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 10 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 5.5 km S approx. 3 years ago	Stage 2 30%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland within Dune system.				
<b>VEGETATION TYPE</b> from attached legend	Open mallee Woodland over mixed shrubs over triodia grassland on sand dune.				
<b>Habitat Quality</b> <b>Assessment Score</b>	7.9/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 5A</b>		<b>Eastings: 595641, Northing: 6689006</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li-Th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 24/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32GB</b>		<b>REPLACEMENT DATE:</b>	
				<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 5B</b>		<b>Eastings: 595625, Northing: 6689053</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT :</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 24/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE:</b>	
				<b>No of IMAGES:</b>	
<b>GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long</b>					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

Location and Site Code: CA 7A and 7B		Date Set: 24/11/21	Date Retrieved: Every 3 months No of Observation Days: ~90		
OBSERVER/S GG, BM, SF, JM					
LOCATION DESCRIPTION: VIMY CONSERVATION AREA Landscape Photopoint: Orientation: south Photo File No:					
MGA COORD (GDA 94 - Zone 51)		Easting: 595718			
		Northing: 6688270			
		RL: <20m			
		Accuracy: 5m			
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input checked="" type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 10 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 4 km S approx. 3 years ago	Stage 3 30%
HABITAT DESCRIPTION		Triodia Hummock Grassland within Dune system.			
VEGETATION TYPE from attached legend		Open mallee Woodland over mixed shrubs and Xanthorrea over triodia hummocks Grassland on sand dune.			
Habitat Quality Assessment Score		9/10 Excellent Habitat			
Camera Type: Reconyx 550		Camera Code: 7A		Easting: 595714, Northing: 6688275	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south		LURE RECIPE: PB oats and tuna oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
BATTERY TYPE: Li-Th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: 24/11/21 No. of IMAGES:	
Camera Type: Reconyx 550		Camera Code: 7B		Easting: 595672, Northing: 6688261	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south		LURE RECIPE: PB oats and tuna oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
BATTERY TYPE: Li-th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: 24/11/21 No of IMAGES:	
GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code: CA 8A and 8B</b>		<b>Date Set: 24/11/21*</b>	<b>Date Retrieved: Every 3 months</b>		
		<b>No of Observation Days: ~90</b>			
<b>OBSERVER/S GG, BM, SF, JM</b>					
<b>LOCATION DESCRIPTION: VIMY CONSERVATION AREA</b>					
Landscape Photopoint: Orientation: south Photo File No:					
<b>MGA COORD (GDA 94 - Zone 51)</b>					
		<b>Easting: 596292</b>			
		<b>Northing: 6688088</b>			
		<b>RL: &lt;20m</b>			
		<b>Accuracy: 5m</b>			
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input checked="" type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 8 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 4 km S approx. 3 years ago	Stage 3-4 20%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland within Dune system.				
<b>VEGETATION TYPE from attached legend</b>	Open mallee Woodland over mixed shrubs and xanthorrea over triodia hummocks Grassland on sand dune.				
<b>Habitat Quality Assessment Score</b>	9/10 Excellent Habitat.				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 8A</b>		<b>Easting: 596271, Northing: 6688096</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li-Th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 24/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 24/11/21</b>	
				<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code:</b>		<b>Easting: 596308, Northing: 6688150</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 24/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 24/11/21</b>	
				<b>No. of IMAGES:</b>	
<b>GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long</b>					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

Location and Site Code: CA 9A and 9B		Date Set: 24/11/21	Date Retrieved: Every 3 months No of Observation Days: ~90		
OBSERVER/S GG, BM, SF, JM					
LOCATION DESCRIPTION: VIMY CONSERVATION AREA Landscape Photopoint: Orientation: south Photo File No:					
MGA COORD (GDA 94 - Zone 51)	Easting: 5965595				
	Northing: 6687446				
	RL: <20m				
	Accuracy: 5m				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input checked="" type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 8 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 3.5 km S approx. 3 years ago	Stage 3 10 to 20%
HABITAT DESCRIPTION		Triodia Hummock Grassland within Dune system.			
VEGETATION TYPE from attached legend		Open mallee Woodland over mixed shrubs over triodia hummock Grassland on sand dune.			
Habitat Quality Assessment Score		9/10 Excellent Habitat.			
Camera Type: Reconyx 550		Camera Code: 9A		Easting: 596599, Northing: 6687433	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south		LURE RECIPE: PB oats and tuna oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: Li-Th		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: 24/11/21 No. of IMAGES:	
Camera Type: Reconyx 550		Camera Code: 9B		Easting: 596527, Northing: 6687416	
ASPECT TO TARGET ZONE		CAMERA HEIGHT: 30 cm		DISTANCE TO TARGET ZONE: 1 m	
FACING DOWN: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CAMERA ORIENTATION: south		LURE RECIPE: PB oats and tuna oil	
LANDSCAPE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		ANGLE TO GROUND: 10°		LURE TYPE/PLACEMENT : tube	
CAMERA SETTINGS: <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			Lens Cleaned: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
BATTERY TYPE: Li		NO: 12 x AA		BATTERY REPLACEMENT DATE: 24/11/21	
CARD TYPE: SD		CAPACITY: 32G		REPLACEMENT DATE: 24/11/21 No. of IMAGES:	
GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 13A and 13B		<b>Date Set:</b> 24/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA Landscape Photopoint: Orientation: south Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 597010</b>				
	<b>Northing: 6687311</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:       m Dune Separation:   m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 3.5 km S approx. 3 years ago	Stage 3 10 to 20%
<b>HABITAT DESCRIPTION</b>	Open mallee Woodland over mixed shrubland and triodia hummock grassland				
<b>VEGETATION TYPE</b> from attached legend	Triodia Hummock Grassland on Yellow sandplain. Between sand dune and gypsum rise.				
<b>Habitat Quality Assessment Score</b>	8.5/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 13A</b>		<b>Easting: 597016, Northing: 6687303</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: Li-Th</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23 11 2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 23 11 2021</b> <b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 13B</b>		<b>Easting: 597062, Northing: 6687341</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats fish oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 23/11/2021</b> <b>No of IMAGES:</b>	
<b>GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long</b>					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 10A and 10B		<b>Date Set:</b> 25/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 596850</b>  <b>Northing: 6686979</b>  <b>RL: &lt;20m</b>  <b>Accuracy: 5m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 2.8 km S approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Open mallee Woodland over mixed shrubland and triodia hummock grassland				
<b>VEGETATION TYPE</b> from attached legend	Triodia Hummock Grassland on Yellow sandplain				
<b>Habitat Quality Assessment Score</b>	8.6/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 10A</b>		<b>Easting: 596849, Northing: 6686973</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 10B</b>		<b>Easting: 596776, Northing: 6686924</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 12A and 12B		<b>Date Set:</b> 25/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)		<b>Easting: 598073</b>	<b>Northing: 6686162</b>		
		<b>RL: &lt;20m</b>			
		<b>Accuracy: 5m</b>			
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input checked="" type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input checked="" type="checkbox"/> Other  Gypsum	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 2.7 km SW approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>		Triodia hummock Grassland on Gypsum rise.			
<b>VEGETATION TYPE</b> from attached legend		Open Mallee Woodland over mixed shrubs over triodia hummock Grassland on Gypsum rise.			
<b>Habitat Quality Assessment Score</b>		8.3 Good Habitat			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 12A</b>		<b>Easting: 598067, Northing: 6686165</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 20 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 25/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 25/11/21		<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 12B</b>		<b>Easting: 598014, Northing: 6686144</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 20 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 25/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 25/11/21		<b>No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					

## CAMERA MONITORING DATA SHEET


Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 11A and 11B		<b>Date Set:</b> 25 11 2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 597645</b> <b>Northing: 6685856</b> <b>RL: &lt;20m</b> <b>Accuracy: 5m</b>				
<b>Landform Type</b>	<b>Soils</b>	<b>Drainage</b>	<b>Vegetation Community</b>	<b>Fire History</b>	<b>Spinifex Stage and % Cover</b>
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 2.2 km SW approx. 3 years ago	Stage 3-4 10 to 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock Grassland on Gypsum Rock claypan rise				
<b>VEGETATION TYPE</b> from attached legend	Open Mallee Woodland over mixed shrubs over triodia hummock Grassland				
<b>Habitat Quality Assessment Score</b>	8.0 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 11A</b>		<b>Easting: 597646, Northing: 6685853</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23 11 2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 11B</b>		<b>Easting: 597585, Northing: 6685801</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23 11 2021			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No of IMAGES:			
<b>GENERAL COMMENTS:</b> 11B on dune flank, Setup in the cross fence design. Each fence length approx. 10 m long					




## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 18A and 18B		<b>Date Set:</b> 25/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA Landscape Photopoint: Orientation: south west Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 590101</b>				
	<b>Northing: 6686444</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 10m Dune Separation: 200m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input checked="" type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year <b>Mosaic of burn scar</b> Distance to nearest burn area Reference: 2.6 km SW approx. 3 years ago	Stage 2-3 10 to 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock Grassland on sand dune flank				
<b>VEGETATION TYPE</b> from attached legend	Open Mallee Woodland over mixed shrubs over triodia hummock Grassland				
<b>Habitat Quality Assessment Score</b>	7.7/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 18A</b>		<b>Easting: 590101, Northing: 6686447</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 18B</b>		<b>Easting: 590035, Northing: 6686429</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: No of IMAGES:</b>	
<b>GENERAL COMMENTS: Setup in the cross fence design. Each fence length approx. 10 m long</b>					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 19A and 19B		<b>Date Set:</b> 25/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 588635</b> <b>Northing: 6686605</b> <b>RL: &lt;20m</b> <b>Accuracy: 5m</b>				
<b>Landform Type</b> <input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input checked="" type="checkbox"/> Swale Dune Height: 8 m Dune Separation: 400 m	<b>Soils</b> <input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<b>Drainage</b> <input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<b>Vegetation Community</b> <input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<b>Fire History</b> <input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year Distance to nearest burn area Reference: 2.7 km S approx. 3 years ago	<b>Spinifex Stage and % Cover</b> Stage 3-4 10 to 20%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland on sandy Swale.				
<b>VEGETATION TYPE from attached legend</b>	Open Marble gum and mallee Woodland over mixed shrubs over triodia hummock grassland on sandy swale.				
<b>Habitat Quality Assessment Score</b>	9/10 Excellent Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 19A</b>		<b>Easting: 588636, Northing: 6686602</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 20 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 25/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 25/11/21 No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 19B</b>		<b>Easting: 588686, Northing: 6686531</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 20 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT :tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 25/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 25/12/21 No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> dunes either side of Site approx 6 m tall. Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 30A and 30B		<b>Date Set:</b> 26/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days:~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 588822</b>  <b>Northing: 6687381</b>  <b>RL: &lt;20m</b>  <b>Accuracy: 5m</b>				
<b>Landform Type</b>	<b>Soils</b>	<b>Drainage</b>	<b>Vegetation Community</b>	<b>Fire History</b>	<b>Spinifex Stage and % Cover</b>
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 3.3 km S approx. 3 years ago	Stage 2-3 10 to 20%
<b>HABITAT DESCRIPTION</b>	Triodia Hummock Grassland on sandplain				
<b>VEGETATION TYPE</b> from attached legend	Open mallee Woodland over mixed shrubs over triodia hummock grassland				
<b>Habitat Quality Assessment Score</b>	8/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 30A</b>		<b>Easting: 588822, Northing: 6687388</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 30B</b>		<b>Easting: 588869, Northing: 6687325</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 15A and 15B		<b>Date Set:</b> 26/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 588313</b>  <b>Northing: 6684743</b>  <b>RL: &lt;20m</b>  <b>Accuracy: 5m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 0.7 km S approx. 3 years ago	Stage 2-3 10 to 20%
<b>HABITAT DESCRIPTION</b>	Triodia tussock grassland on low sandy rise.				
<b>VEGETATION TYPE</b> from attached legend	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland.				
<b>Habitat Quality Assessment Score</b>	8/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 15A</b>		<b>Easting: 588312, Northing: 6684749</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 26/11/21 <b>No. of IMAGES:</b>			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 15B</b>		<b>Easting: 588374, Northing: 6684727</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 26/11/21 <b>No. of IMAGES:</b>			
<b>GENERAL COMMENTS:</b> site 15a and 15B on low sandy rise. Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 21A and 21B		<b>Date Set:</b> 26/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 589689</b>				
	<b>Northing: 6688084</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5 m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 4.0 km S approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock grassland on elevated sandsheet.				
<b>VEGETATION TYPE</b> from attached legend	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland on sandsheet.				
<b>Habitat Quality Assessment Score</b>	8.6/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 21A</b>		<b>Easting: 589690, Northing: 6688087</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 26/11/21 <b>No. of IMAGES:</b>			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 21B</b>		<b>Easting: 589621, Northing: 6687990</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> eneloop <b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 26/11/21			
<b>CARD TYPE:</b> SD <b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 26/11/21 <b>No. of IMAGES:</b>			
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 22A and 22B		<b>Date Set:</b> 26/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 590156</b> <b>Northing: 6688226</b> <b>RL: &lt;20m</b> <b>Accuracy: 5 m</b>				
<b>Landform Type</b>	<b>Soils</b>	<b>Drainage</b>	<b>Vegetation Community</b>	<b>Fire History</b>	<b>Spinifex Stage and % Cover</b>
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input checked="" type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 4.4 km S approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock grassland on flank of sand dune				
<b>VEGETATION TYPE</b> from attached legend	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland				
<b>Habitat Quality Assessment Score</b>	8.6/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 22A</b>		<b>Easting: 590155, Northing: 6688229</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: eneloop</b> <b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE 23/11/2021</b>			
<b>CARD TYPE: SD</b> <b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 23/11/2021</b> <b>No. of IMAGES:</b>			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 22B</b>		<b>Easting: 590168, Northing: 6688152</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: NIMH</b> <b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 23/11/2021</b>			
<b>CARD TYPE: SD</b> <b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 23/11/2021</b> <b>No of IMAGES:</b>			
<b>GENERAL COMMENT</b> 22B on sand sheet. Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 23A And 23B		<b>Date Set:</b> 26/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION: VIMY CONSERVATION AREA</b> Landscape Photopoint: Orientation: south east Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 590755</b>				
	<b>Northing: 6687630</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5 m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:       m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input checked="" type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 4.0 km SW approx. 3 years ago	Stage 2-3 15%
<b>HABITAT DESCRIPTION</b>	Open Triodia hummock grassland on orange sandsheet.				
<b>VEGETATION TYPE from attached legend</b>	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland on sandsheet.				
<b>Habitat Quality Assessment Score</b>	8/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 23A</b>		<b>Easting: 590756, Northing: 6687631</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 20 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT :</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: NIMH</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 26/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 26/11/21 No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 23B</b>		<b>Easting: 590800, Northing: 6687697</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 20 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT :tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE: eneloop</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 26/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: 26/11/21 No. of IMAGES:</b>	
<b>GENERAL COMMENTS: site within mosaic of two Fire scars. Setup in the cross fence design. Each fence length approx. 10 m long</b>					

## CAMERA MONITORING DATA SHEET


Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 20A and 20B		<b>Date Set:</b> 27/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south		Photo File No:			
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 588388</b>				
	<b>Northing: 6686121</b>				
	<b>RL: &lt;20m</b>				
	<b>Accuracy: 5m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input checked="" type="checkbox"/> Network Dune <input type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height: 10 m Dune Separation: 200 m	<input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input checked="" type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 2 km S approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>		Triodia hummock Grassland on elevated sandsheet in Dune network. Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland on elevated sandsheet.			
<b>VEGETATION TYPE</b> from attached legend					
<b>Habitat Quality Assessment Score</b>		8.9/10 Good Habitat			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 20A</b>		<b>Easting: 588394, Northing: 6686124</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> NIMH		<b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 27/11/21	
<b>CARD TYPE:</b> SD		<b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 27/11/21 <b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 20B</b>		<b>Easting: 588320, Northing: 6686074</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> enloop		<b>NO:</b> NIMH 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 27/11/21	
<b>CARD TYPE:</b> SD		<b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 27/11/21 <b>No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> Site on edge of two fire scars. 20A and 20B situated within 10-20 year Fire scar. Setup in the cross fence design. Each fence length approx. 10 m long					




## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 17A and 17B		<b>Date Set:</b> 27 11 2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 590426</b> <b>Northing: 6687327</b> <b>RL: &lt;20m</b> <b>Accuracy: 5 m</b>				
<b>Landform Type</b> <input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:      m Dune Separation: m	<b>Soils</b> <input type="checkbox"/> Red Sands <input checked="" type="checkbox"/> Orange Sands <input type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<b>Drainage</b> <input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<b>Vegetation Community</b> <input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<b>Fire History</b> <input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year Distance to nearest burn area Reference: 3.6 km SW approx. 3 years ago	<b>Spinifex Stage and % Cover</b> Stage 2-3 10%
<b>HABITAT DESCRIPTION</b>	Triodia hummock Grassland on elevated sandsheet near dune				
<b>VEGETATION TYPE</b> from attached legend	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland on elevated sandsheet.				
<b>Habitat Quality Assessment Score</b>	8/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 17A</b>		<b>Easting: 590431, Northing: 6687332</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other		<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<b>BATTERY TYPE: Nimh</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 27/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 17B</b>		<b>Easting: 590347, Northing: 6687365</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT: 30 cm</b>		<b>DISTANCE TO TARGET ZONE: 1 m</b>	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION: south</b>		<b>LURE RECIPE: PB oats and tuna oil</b>	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND: 10°</b>		<b>LURE TYPE/PLACEMENT : tube</b>	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other		<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<b>BATTERY TYPE: nimh</b>		<b>NO: 12 x AA</b>		<b>BATTERY REPLACEMENT DATE: 27/11/21</b>	
<b>CARD TYPE: SD</b>		<b>CAPACITY: 32G</b>		<b>REPLACEMENT DATE: No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> mulgara burrow network near 17B. Setup in the cross fence design. Each fence length approx. 10 m long					


## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 28A and 28B		<b>Date Set:</b> 27/11/2021	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 590126</b> <b>Northing: 6689430</b> <b>RL: &lt;20m</b> <b>Accuracy: 5 m</b>				
<b>Landform Type</b> <input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<b>Soils</b> <input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<b>Drainage</b> <input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<b>Vegetation Community</b> <input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<b>Fire History</b> <input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year Distance to nearest burn area Reference: 5.5 km SW approx. 3 years ago	<b>Spinifex Stage and % Cover</b> Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock Grassland on elevated sandsheet				
<b>VEGETATION TYPE</b> from attached legend	Open marble gum and mallee Woodland over mixed shrubs over triodia hummock Grassland on elevated sandsheet				
<b>Habitat Quality Assessment Score</b>	8.9/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 28A</b>		<b>Easting: 590125, Northing: 6689433</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> NIMH      NO: 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/21			
<b>CARD TYPE:</b> SD      CAPACITY: 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 28B</b>		<b>Easting: 590161, Northing: 6689378</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 30 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail <input checked="" type="checkbox"/> Fence Gap <input type="checkbox"/> Other			<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>BATTERY TYPE:</b> NIMH      NO: 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 23/11/21			
<b>CARD TYPE:</b> SD      CAPACITY: 32G		<b>REPLACEMENT DATE:</b> No. of IMAGES:			
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					

## CAMERA MONITORING DATA SHEET

Fill out a data sheet for each station and record data by circling relevant information

<b>Location and Site Code:</b> CA 29A and 29B		<b>Date Set:</b> 27/11/21	<b>Date Retrieved: Every 3 months</b> <b>No of Observation Days: ~90</b>		
<b>OBSERVER/S</b> GG, BM, SF, JM					
<b>LOCATION DESCRIPTION:</b> VIMY CONSERVATION AREA					
Landscape Photopoint: Orientation: south east      Photo File No:					
<b>MGA COORD</b> (GDA 94 - Zone 51)	<b>Easting: 592757</b>  <b>Northing: 6691816</b>  <b>RL: &lt;20m</b>  <b>Accuracy: 5 m</b>				
Landform Type	Soils	Drainage	Vegetation Community	Fire History	Spinifex Stage and % Cover
<input type="checkbox"/> Longitudinal Dune <input type="checkbox"/> Complex (Tuning Fork) <input type="checkbox"/> Network Dune <input checked="" type="checkbox"/> Sandsheet <input type="checkbox"/> Crest <input type="checkbox"/> Flank <input type="checkbox"/> Swale Dune Height:            m Dune Separation:      m	<input type="checkbox"/> Red Sands <input type="checkbox"/> Orange Sands <input checked="" type="checkbox"/> Yellow Sands <input type="checkbox"/> Kopi <input type="checkbox"/> Red Earth <input type="checkbox"/> Other	<input type="checkbox"/> Claypan <input type="checkbox"/> Lunette <input type="checkbox"/> Kopi <input type="checkbox"/> Mounds <input type="checkbox"/> Swale <input type="checkbox"/> Other	<input type="checkbox"/> Open Woodland <input type="checkbox"/> Woodland <input type="checkbox"/> Low Woodland <input type="checkbox"/> Thicket <input type="checkbox"/> Shrubland <input checked="" type="checkbox"/> Hummock Grasslands <input type="checkbox"/> Mechanically Disturbed	<input type="checkbox"/> > 30 years unburnt <input type="checkbox"/> Burnt in last 20 to 30 years <input checked="" type="checkbox"/> Burnt in last 10 to 20 years <input type="checkbox"/> Burnt in last 1-10 years <input type="checkbox"/> Burnt in last year  Distance to nearest burn area Reference: 8 km SE approx. 3 years ago	Stage 3 20%
<b>HABITAT DESCRIPTION</b>	Triodia hummock grassland on sandsheet.				
<b>VEGETATION TYPE</b> from attached legend	open mallee and marble gum woodland over mixer shrubs over triodia hummock grassland.				
<b>Habitat Quality Assessment Score</b>	8.1/10 Good Habitat				
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 29A</b>		<b>Easting: 592754, Northing: 6691819</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 20 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE:</b> NiMh		<b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 27/11/21	
<b>CARD TYPE:</b> SD		<b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 27/11/21	
				<b>No. of IMAGES:</b>	
<b>Camera Type: Reconyx 550</b>		<b>Camera Code: 29b</b>		<b>Easting: 592774, Northing: 6691726</b>	
<b>ASPECT TO TARGET ZONE</b>		<b>CAMERA HEIGHT:</b> 20 cm		<b>DISTANCE TO TARGET ZONE:</b> 1 m	
<b>FACING DOWN:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CAMERA ORIENTATION:</b> south		<b>LURE RECIPE:</b> PB oats and tuna oil	
<b>LANDSCAPE:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>ANGLE TO GROUND:</b> 10°		<b>LURE TYPE/PLACEMENT :</b> tube	
<b>CAMERA SETTINGS:</b> <input type="checkbox"/> Animal Trail		<input checked="" type="checkbox"/> Fence Gap		<input type="checkbox"/> Other	
				<b>Lens Cleaned:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>BATTERY TYPE:</b> NiMh		<b>NO:</b> 12 x AA		<b>BATTERY REPLACEMENT DATE:</b> 27/11/21	
<b>CARD TYPE:</b> SD		<b>CAPACITY:</b> 32G		<b>REPLACEMENT DATE:</b> 27/11/21	
				<b>No of IMAGES:</b>	
<b>GENERAL COMMENTS:</b> Setup in the cross fence design. Each fence length approx. 10 m long					

## Habitat Quality Score Assessment

Methods - Taken from Sandhill Dunnart Conservation Plan - Mulga Rock Project

For "site context" and "Species stocking rate" the defined area is close to areas where SHD have previously been captured as part of Gaikhorst and Lambert (2014) project (site 3 and 5), approximately 800 m south east and 8 km north of the Defined Area respectively. The Defined Area lies between two previous SHD capture areas (SHD Conservation Plan 2022). The habitat with the defined area is all with Veg com. 84 the desired environment for SHD.

Habitat Quality Assessment		
Site condition	Site context	Species stocking rate
a1. What is the structure and condition of the vegetation on the site?	b1. What is the connectivity with other suitable / known habitat or remnants?	c1. What is the presence of the species on the site? (i.e. confirmed / modelled).
a2. What is the diversity of relevant habitat species present (including both endemic and non-endemic)?	b2. What is the importance of the site in relation to the overall species population or the occurrence of the community?	c2. What is the density of species known to utilise the site?
a3. What relevant habitat features are on the site?	b3. What threats occur on or near site?	c3. What is the role of the site population in regard to the overall species population?
$A = (a1 + a2 + a3) / 3 \times 0.4$	$B = (b1 + b2 + b3) / 3 \times 0.4$	$C = (c1 + c2 + c3) / 3 \times 0.2$
Habitat Quality Score = A + B + C		
Habitat Quality Assessment Score		
Habitat Quality Score	Score Definitions	
<b>Poor: 0 - 3</b>	<b>• Site condition</b>	
	Poor vegetation condition and structure	
	Low number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in veg. association 84)	
	Lack of habitat features present (e.g. large hummocks as nest sites)	
	<b>• Site context</b>	
	Low connectivity to similar suitable habitat types in the landscape	
	Large number of threats at the site	
	Low importance of site in relation to overall species population	
	<b>• Species stocking rate</b>	
<b>Moderate: 4 - 5</b>	Low density of species at the site	
	Low value of the site for SHD, including condition and / or context	
	<b>• Site condition</b>	
	Low to medium vegetation condition and structure	

	<p>Low to medium number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in veg. association 84)</p> <p>Moderate habitat features present (e.g. large hummocks as nest sites)</p> <p><b>• Site context</b></p> <p>Moderate connectivity to similar suitable habitat types in the landscape</p> <p>Medium number of threats at the site</p> <p>Moderate importance of site in relation to overall species population</p> <p><b>• Species stocking rate</b></p> <p>Medium density of species at the site</p> <p>Medium value of the site for SHD, including condition and / or context</p>
<b>Good: 6 - 8</b>	<p><b>• Site condition</b></p> <p>High vegetation condition and structure</p> <p>High number of ecological requirements (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in vegetation association 84)</p> <p>Good number of habitat features present (e.g. large hummocks as nest sites)</p> <p><b>• Site context</b></p> <p>Good connectivity to similar suitable habitat types in the landscape</p> <p>Low number of threats at the site</p> <p>High importance of site in relation to overall species population</p> <p><b>• Species stocking rate</b></p> <p>High density of species at the site</p> <p>High value of the site for SHD, including condition and / or context</p>
<b>Excellent: 9 - 10</b>	<p><b>• Site condition</b></p> <p>Excellent vegetation condition and structure</p> <p>Excellent ecological requirements present (lacks presence of <i>Triodia</i> spp. in association with sand dunes, exclusively in veg. association 84)</p> <p>High number of habitat features present (e.g. large hummock clumps as nest sites)</p> <p><b>• Site context</b></p> <p>Excellent connectivity to similar suitable habitat types in the landscape</p> <p>Few threats present at the site</p> <p>High importance of site in relation to overall species population</p> <p><b>• Species stocking rate</b></p> <p>High density of species at the site</p> <p>High value of the site for SHD, including condition and / or context</p>

## Habitat Quality Score

Site	Condition				Site Context				Species stocking rate				Overall Habitat Score
	A1	A2	A3	score (A)	B1	B2	B3	score (B)	C1	C2	C3	score (C)	
Remote Camera Sites within the Defined Area													
1A and 1B	8	8	7	3.07	9	8	8	3.33	9	8	8	1.67	<b>8.1</b>
2A and 2B	8	8	7	3.07	9	8	8	3.33	9	8	8	1.67	<b>8.1</b>
14A and 14B	8	8	7	3.07	9	8	8	3.33	9	8	8	1.67	<b>8.1</b>
3A and 3B	8	8	8	3.20	9	8	8	3.33	9	9	8	1.73	<b>8.3</b>
4A and 4B	8	8	7	3.07	9	8	8	3.33	9	9	9	1.80	<b>8.2</b>
6A and 6B	9	7	8	3.20	9	9	9	3.60	7	8	8	1.53	<b>8.3</b>
5A and 5B	9	7	6	2.93	9	9	9	3.60	7	7	7	1.40	<b>7.9</b>
7A and 7B	9	9	9	3.60	9	9	9	3.60	9	9	9	1.80	<b>9.0</b>
8A and 8B	9	9	9	3.60	9	9	9	3.60	9	9	9	1.80	<b>9.0</b>
9A and 9B	9	9	9	3.60	9	9	9	3.60	9	9	9	1.80	<b>9.0</b>
13A and 13B	8	8	8	3.20	9	9	9	3.60	8	8	9	1.67	<b>8.5</b>
10A and 10B	8	8	9	3.33	9	9	9	3.60	8	8	9	1.67	<b>8.6</b>
12A and 12B	8	7	8	3.07	9	9	9	3.60	8	8	9	1.67	<b>8.3</b>
11A and 11B	8	7	8	3.07	7	9	9	3.33	8	8	8	1.60	<b>8.0</b>
18A and 18B	6	8	8	2.93	8	8	8	3.20	8	7	8	1.53	<b>7.7</b>
19A and 19B	9	9	9	3.60	9	9	9	3.60	9	9	9	1.80	<b>9.0</b>
30A and 30B	7	8	7	2.93	8	9	9	3.47	8	8	8	1.60	<b>8.0</b>
15A and 15B	7	8	7	2.93	8	9	9	3.47	8	8	8	1.60	<b>8.0</b>
21A and 21B	8	8	9	3.33	8	9	9	3.47	9	9	9	1.80	<b>8.6</b>
22A and 22B	8	8	9	3.33	8	9	9	3.47	9	9	9	1.80	<b>8.6</b>
23A and 23B	7	8	8	3.07	8	9	9	3.47	8	7	7	1.47	<b>8.0</b>
20A and 20B	8	9	9	3.47	9	9	9	3.60	9	9	9	1.80	<b>8.9</b>
17A and 17B	7	7	8	2.93	9	9	9	3.60	7	7	8	1.47	<b>8.0</b>
28A and 28B	8	9	9	3.47	9	9	9	3.60	9	9	9	1.80	<b>8.9</b>
29A and 29B	8	8	7	3.07	9	8	8	3.33	9	8	8	1.67	<b>8.1</b>