Great Victoria Desert
Sandhill Dunnart Baseline Survey

March 2018
Prepared for the Great Victoria Desert Biodiversity Trust

Executive Summary

The Great Victoria Desert Biodiversity Trust (GVDBT) is seeking to better understand the distribution and habitat preferences of the Sandhill Dunnart (*Sminthopsis psammophila*) within the Great Victoria Desert in Western Australia.

In 2015/16, Department of Parks and Wildlife (DPaW), now the Department of Biodiversity, Parks and Attractions (DBCA) was commissioned by GVDBT to produce survey and monitoring guidelines for the Sandhill Dunnart (SHD) and define a baseline survey design for the species. Subsequent to the completion of these documents, the GVDBT commissioned Greening Australia to conduct a baseline survey for this species, in accordance with the guidelines and survey design produced by DPaW.

The overarching objective of the Project was to gather information on Sandhill Dunnart distribution and habitat preferences through a field survey that builds upon the previous work conducted for the GVDBT. More specifically, the objectives of the Project were to:

- undertake surveys for the Sandhill Dunnart at 20 sites across the Survey Area, in accordance with the SHD baseline survey design and recommended survey methodology (DPaW 2016);
- collect environmental data to allow for investigation of the relationship between SHD and relevant environmental variables;
- collect opportunistic data regarding occurrence of other fauna species (including conservation significant fauna whilst undertaking SHD surveys;
- provide a baseline dataset of SHD occurrence suitable for use in future analysis, survey and monitoring.
- work collaboratively with the GVDBT and foster inter-organisation knowledge transfer (ie. contribute to broader programmes or datasets, where possible).

These objectives were addressed by way of a field survey conducted between September and December 2017, with 138 cameras deployed at 20 sites across the Survey Area. The Survey Area for this project included the following three IBRA sub-regions (GVD1 – Shield, GVD2 – Central, GVD3 – Maralinga, WA portion only), comprising over 212,163 km^2 of sparsely inhabited desert landscape. Nine sites were established in late September/early October with motion sensor cameras remaining in the field until early November and 11 sites were established in early-November, remaining in the field until mid-December.

Nine broad fauna habitat categories were identified at sites within the Survey Area:

- A: Mulga (*Acacia aneura* complex) woodland and associated species;
- B: Mixed Woodland (*Eucalypt* spp., *Callitris* sp. or *Casuarina pauper*);
- C: Spinifex grassland (low tree-steppe): hummock grassland with scattered eucalypts;
- D: Spinifex grassland (shrub-steppe): hummock grassland with scattered shrubs (*Acacia* sp., *Grevillea* sp.) or mallee (*Eucalyptus* sp.);
- E: Spinifex grassland (sparse low tree-steppe): hummock grassland with sparse eucalypts;

- F: Spinifex grassland (sparse shrub-steppe): hummock grassland with sparse *Acacia* shrubs;
- G: Spinifex grassland (tree- and shrub-steppe): hummock grassland with scattered eucalypts (*Eucalyptus gongylocarpa*) over shrubs (*Acacia* sp.) or mallee (*E. youngiana*);
- H: Mallee (mixed *Eucalyptus* spp.) over *Triodia* hummock grassland and scattered shrubs;
- I: Tall mixed shrublands (*Acacia* spp.) over *Triodia* hummock grasslands.

While the survey aimed to detect the Sandhill Dunnart, opportunistic observations and the use of motion sensor cameras over a large area enabled a substantial diversity of fauna species to be recorded. Overall, 137 fauna species were recorded, comprising 25 reptile, 88 bird, 18 native mammal and six introduced mammal species. The recorded assemblage included several species rarely encountered in the Great Victoria Desert and has resulted in the extension of range for a number of species. Several species were recorded in the region for the first time, and a number of threatened taxa were located, including the Sandhill Dunnart.

The Sandhill Dunnart was confirmed from one new area, with a second location considered likely to support the species. Confirmation of a new Sandhill Dunnart population extends the known range approximately 100 km to the east. A new population of Great Desert Skink (*Liopholis kintorei*) was detected adding to the few known occupied sites in Western Australia. The Brush-tailed Mulgara (*Dasycercus blythi*) was detected across the GVD and was particularly prevalent in the north. The Spinifexbird (*Eremiornis carteri*) was recorded in the GVD for the first time, while a number of temperate adapted birds and reptiles were recorded further into the arid interior than previously reported. Trace evidence of the Ghost Bat (*Macroderma gigas*), Western Quoll (*Dasyurus geoffroii*), Black-flanked Rock-wallaby (*Petrogale lateralis lateralis*) and Common Brushtail Possum (*Trichosurus vulpecula*) adds to the few known arid zones sites formerly occupied by these threatened taxa. The survey results also emphasize the major and recent changes to the mammalian fauna of the Great Victoria Desert and highlight the major threats to the Sandhill Dunnart (evidence of introduced mammals and fire observed to be widespread).

The Sandhill Dunnart survey increased the species known distribution and reinforced habitat parameters observed elsewhere in the GVD. The survey results reveal that significant and targeted effort is required to detect new populations of the Sandhill Dunnart as the species appears to have a highly restricted regional distribution. Recommendations for follow-up surveys are proposed.

This document has been prepared for the benefit of the Great Victoria Desert Biodiversity Trust. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

QUALITY STATEMENT

PROJECT MANAGER	PROJECT TECHNICAL LEAD
Liam Mulcahy	Jeff Turpin (Kingfisher Environmental)

PREPARED BY
Liam Mulcahy, Jeff Turpin

CHECKED BY
Blair Parsons

REVIEWED BY	APPROVED FOR ISSUE BY
Blair Parsons	Blair Parsons

GREENING AUSTRALIA (WA)

1 Underwood Ave, Shenton Park, WA 6008
TEL +61 (08) 9287 8300

Revision Schedule

Rev No	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
V1.0	14/03/18	Draft for comment	LM, JT, BP	LM	BP	BP

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

1 Introduction

1.1 BACKGROUND

The Sandhill Dunnart (*Sminthopsis psammophila*) is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Biodiversity Conservation Act 2016* (Western Australia). Within Western Australia, there is little understanding of the ecology, biology and habitat requirements of the species and the influence of threatening processes or interactions among these (Threatened Species Scientific Committee 2015). Previous surveys targeting Sandhill Dunnarts within the Great Victorian Desert (GVD) have been highly localized and typically associated with mining development, identifying only a small number of dunnarts within specific habitat types. This limited knowledge base necessitated a broader systematic approach to collect additional information about the ecology of the species in the GVD.

In 2015/16, Department of Parks and Wildlife (DPaW, now the Department of Biodiversity, Parks and Attractions (DBCA)) was commissioned by the Great Victoria Desert Biodiversity Trust (GVDBT) to produce two reports to guide future survey effort for Sandhill Dunnarts in the Great Victoria Desert:

1. survey and monitoring guidelines (Department of Parks and Wildlife 2016b):
    a) review and collate existing information on distribution, ecology, biology and habitat requirements;
    b) develop standardized survey and monitoring protocols to maximise the value of the information collected during future surveys in Western Australia; and
2. baseline survey design (Department of Parks and Wildlife 2016a):
    a) examine historical survey data and locations for Sandhill Dunnart observations to assess potential habitat associations; and
    b) design a quantitative baseline survey to indicate placement of new survey sites where the Sandhill Dunnart may occur.

Subsequent to the completion of these documents, the GVDBT commissioned Greening Australia to conduct a baseline survey for this species using motion sensor cameras, in accordance with the guidelines and survey design produced by DPaW.

1.2 SURVEY SCOPE AND OBJECTIVES

The overarching objective of the Project was to gather information on Sandhill Dunnart distribution and habitat preferences through a field survey that builds upon the previous work conducted for the GVDBT. More specifically, the objectives of the Project were to:

- undertake surveys for the Sandhill Dunnart (SHD) at 20 sites across the Survey Area, in accordance with the SHD baseline survey design and recommended survey methodology (DPaW 2016);
- collect environmental data to allow for investigation of the relationship between SHD and relevant environmental variables;

- collect opportunistic data regarding occurrence of other fauna species (including conservation significant fauna whilst undertaking SHD surveys;
- provide a baseline dataset of SHD occurrence suitable for use in future analysis, survey and monitoring.
- work collaboratively with the GVDBT and foster inter-organisation knowledge transfer (i.e. contribute to broader programmes or datasets, where possible).

These objectives were addressed by way of a three-phase field survey conducted between September and December 2017, with 138 cameras deployed at 20 sites across the Survey Area (**Figure 1**). The Survey Area for this project included the following three IBRA sub-regions (GVD1 – Shield, GVD2 – Central, GVD3 – Maralinga, WA portion only), comprising 212,163 km^2 of sparsely inhabited desert landscape.

The objectives and methods adopted for this Project were aligned with the following guidelines and documents, where relevant:

- DPaW (2016) Survey and Monitoring Guidelines for the Sandhill Dunnart (*Sminthopsis psammophila*) in Western Australia;
- DPaW (2016) Defining a Baseline Survey Design for the Sandhill Dunnart (*Sminthopsis psammophila*) in the Great Victoria Desert of Western Australia;
- EPA and DPaW Technical Guide (2010) *Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*;
- Bamford, *et al*. (2013). *Fauna Sampling Manual: Guide to sampling techniques for wildlife research in Western Australia*.

Appropriate permission was sort form the Ngaanyatjarra Council, Cosmo Newberry and Pila Nguru Aboriginal Corporation to transit through the Ngaanyatjarra, Yilka and Spinifex Native Title Determinations, respectively. Permission was granted in pursuance of the provision of Section 31 of the *Aboriginal Affairs Planning Authority Act 1972.*

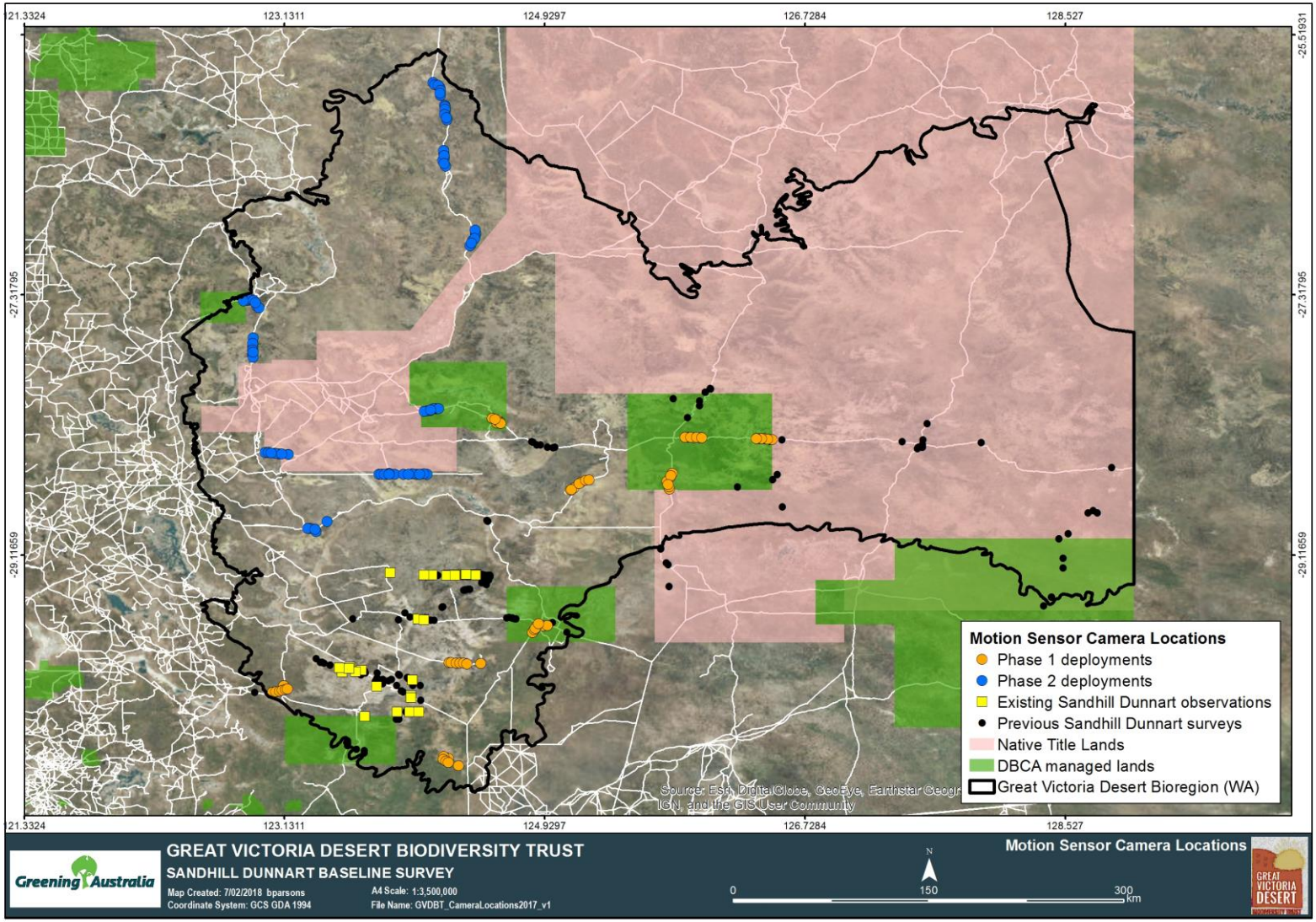

Figure 1: Great Victoria Desert Sandhill Dunnart Baseline Survey Area

2 Methods

2.1 SURVEY TEAM AND LICENSING

The field component of this survey was led by Greening Australia in partnership with Kingfisher Environmental with significant contributions made by dedicated volunteers (**Table 1**). The survey was conducted under DBCA Regulation 17 Licence 080022021.

Table 1: Survey team for the Sandhill Dunnart Baseline Survey

Person	Qualification	Position
Liam Mulcahy	BSc. (Botany/Geography)	Botanist/Project Manager
Jeff Turpin	BSc. (Zoology)	Zoologist/Technical Lead
Jo Riley	BSc. Hons (Zoology / Biochemistry)	Zoologist
Andrew Vear	BSc. Hons (Env. Sci. / Cons. Biol. / Env. Mgt.)	Botanist/Field Technician
Joe Meadham	BSc. Hons. (Zoology / Cons. Biol.)	Zoologist (volunteer)
Zac Simms	Environmental Scientist	Field Technician (volunteer)

2.2 SURVEY TIMING

The field component of this survey was conducted in three phases:

- Trip 1 – Camera Deployment: deployment of seven cameras at each of nine sites between 30 September and 6 October 2017;
- Trip 2 – Camera collection/re-deployment: collection of cameras from Trip 1 and deployment of seven cameras at each of 11 sites between 31 October and 9 November; and
- Trip 3 – Camera collection: collection of all cameras from Trip 2 between 12 and 20 December.

The survey period coincided with late Spring, which is considered an appropriate time of year for surveying Sandhill Dunnarts (DPaW 2016a; 2016b).

2.3 CLIMATE AND WEATHER

The Great Victoria Desert bioregion is both characterised by an arid climate with low variable rainfall (**Figure 2**), which can occur in both summer and winter (Australian Natural Resources Atlas 2002; Bastin 2008). Rainfall within the region can be highly localised and unpredictable, (influenced by temperate weather systems in the south and tropical systems from the north), with substantial fluctuations occurring from year to year (Bureau of Meteorology 2018),

Weather experienced during the surveys was average for the season with regards to temperature. Significant thunderstorm events, and therefore rainfall, were encountered during both the camera installation phases of the survey (**Figure 3**).

During the survey period, fire risk was a significant safety consideration to survey staff and a potential threat for cameras deployed in the field for an extended duration. During camera collection (December 2017) wildfire had destroyed six cameras within two of the 20 sampling sites near Lake Wells and Yeo Nature Reserve (Units 332 and 609). These fires are likely to have originated from lightning strikes

associated with thunderstorms. Uncontrolled wildfire (originating from lightening) was also observed in the proximity of the David Carnegie Rd, Anne Beadell Highway, Rason Lake Rd and the White Cliffs – Yamarna Rd during the final camera collection trip and subsequently burnt some survey sites following camera collection.

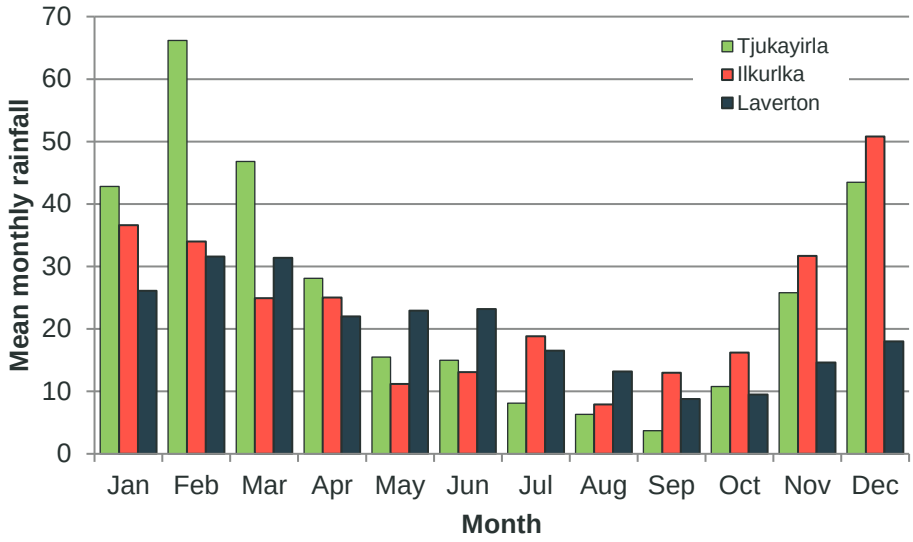

Figure 2: Mean monthly rainfall data for Tjukayirla, Ilkurlka and Laverton weather stations

Source: BOM (2018). Rainfall data from station 013040 (1994-present), 012240 (2005-present), 012045 (1899-present)

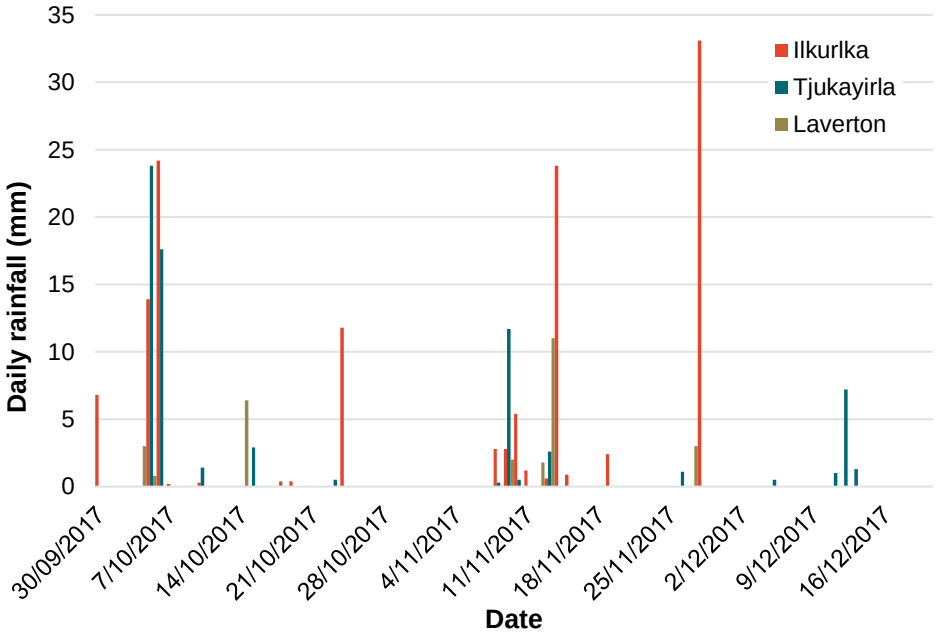

Figure 3: Daily rainfall during the survey period for Tjukayirla, Ilkurlka and Laverton weather stations

Source: BOM (2018). Rainfall data from station 013040, 012240, 012045.

2.4 SITE SELECTION

Candidate sites initially selected for survey were in accordance with the DPaW baseline survey design (Department of Parks and Wildlife 2016a), with placement broadly stratified based on vegetation type, fire history, previous survey effort, broad habitat type, considered proximity to mining infrastructure and accessibility by road. Additionally, site selection excluded areas within the vicinity of the Eastern Goldfields Pipeline and west of the Tropicana Gold Mine as these areas contained locations of known Sandhill Dunnart presence. Survey sites also excluded Native Title Areas (covering a large proportion of the GVD), although permission was obtained to traverse these areas to access survey sites. As Native Title excluded several of the survey sites initially proposed (e.g. Units 258, 559 and 769), replacement areas were also selected with consideration to the species distribution model in development by Jo Riley, which highlighted areas of potential habitat (e.g. Units 821 and 823).

During on-ground reconnaissance, the initial survey plan was altered where necessary as the field team encountered proposed sites that were recently burnt and/or inaccessible (e.g. Unit 937). As much as was practicable, the final set of 20 survey sites sought to resemble the initial set in terms of environmental and geographic variation (DPaW, 2016, **Figure 1** and **Table 2**).

Table 2: Survey sites sampled for the 2017 Sandhill Dunnart Baseline Survey

Site	Survey Phase	Easting	Northing	No of cameras	Date of deployment	Date of collection	Camera nights	Origin
1128	Phase 1	620301	6623257	7	30/09/2017	01/11/2017	32	Southern GVD replacement
1143	Phase 1	623981	6696489	7	01/10/2017	01/11/2017	31	Southern GVD replacement
1098	Phase 1	679919	6720750	7	01/10/2017	01/11/2017	31	Southern GVD replacement
805	Phase 1	712167	6832091	7	03/10/2017	03/11/2017	31	DPaW 2016
669	Phase 1	249802	6865909	7	03/10/2017	02/11/2017	30	Native Title Replacement
691	Phase 1	786947	6866086	7	03/10/2017	02/11/2017	30	DPaW 2016
808	Phase 1	774955	6838877	7	04/10/2017	03/11/2017	30	DPaW 2016
660	Phase 1	655741	6882228	7	04/10/2017	03/11/2017	30	Native Title Replacement
1184	Phase 1	512041	6679205	7	06/10/2017	30/10/2017	29	Southern GVD replacement
3	Phase 2	617384	7138898	7	05/11/2017	15/12/2017	40	DPaW 2016
15	Phase 2	624134	7122176	7	05/11/2017	15/12/2017	40	DPaW 2016
56	Phase 2	623108	7082518	7	05/11/2017	15/12/2017	40	DPaW 2016
170	Phase 2	644252	7025392	7	05/11/2017	15/12/2017	40	Native Title Replacement
609	Phase 2	615781	6890993	7	06/11/2017	17/12/2017	41	Native Title Replacement
821	Phase 2	587315	6841044	7	06/11/2017	17/12/2017	41	Native Title Replacement
845	Phase 2	607077	6841000	7	07/11/2017	17/12/2017	40	Inaccessible site replacement
973	Phase 2	530389	6799657	5	07/11/2017	17/12/2017	40	DPaW 2016
795	Phase 2	503779	6857549	7	08/11/2017	18/12/2007	40	DPaW 2016
332	Phase 2	485049	6973915	7	09/11/2017	14/12/207	35	Native Title Replacement
468	Phase 2	491315	6939101	7	09/11/2017	14/12/207	35	Native Title Replacement

Note: Camera origin refers to those camera sites initially selected in the DPaW Survey Plan (DPaW 2016), sites substituted to replace areas on native title land, sites selected to replace inaccessible areas and sites selected to replace areas removed from the southern parts of the GVD as dictated by the GVDBT scope presented to Greening Australia.

2.5 FIELD SURVEY

2.5.1 Motion Sensor Cameras

At each of the 20 sampling sites, seven motion sensor cameras were deployed (except Unit 973 where five cameras were deployed). Cameras (Reconyx Hyperfire HC900) were placed at least 2 km apart and spaced to ensure adequate coverage of target habitats. Where possible, motion sensor cameras were placed in the habitat types present according to the proportion of each habitat type represented in the survey unit. Camera installation specifications were identical at all sites and were consistent with DPaW guidelines (DPaW 2016b, **Plate 1**):

- placement of cameras on flat or gently sloping ground with a limited amount of vegetation in the field of view;
- cameras set approximately 30 cm above ground at an angle of 10 degrees, 1 m from the target area;
- capture set to three pictures per trigger with a one second delay;
- cameras baited with an attractant comprising universal bait and foam soaked in fish oil packed inside a small PVC pipe receptacle (12 cm long, 25 mm in diameter). Receptacles were secured into the ground using a 20mm tent peg (**Plate 2**).
- all cameras deployed for a period of no less than 28 days.

Plate 1: Example of motion sensor camera deployment for the GVD Sandhill Dunnart survey.

At each camera deployment, the following information was recorded:

- Site location (including GPS coordinates);
- Camera identification number;
- Card identification number;
- Date of deployment and collection;
- Bearing/direction of deployment;
- Height of deployment;
- Angle to target (inclination);
- Distance to target (m); and
- Bait/lure used.

Plate 2: Field staff preparing bait receptacles for camera trap deployment

2.5.2 Habitat Assessment

Standardised habitat assessments were conducted at each camera location and the following landscape parameters were documented as per DPaW guidelines:

- fire history (estimated time since last burn, percentage burnt, scorch height and fire intensity);
- landform and soil features (surface and colour);
- vegetation structure (Muir 1977), cover, condition and broad species composition;
- spinifex stage;
- estimate of leaf litter cover percentage and type; and
- the presence or absence of logs, rocks, woody debris or other habitat features (e.g. water, disturbances).

Four habitat photos were also taken at each of the camera locations to complement the data collected.

2.5.3 Opportunistic Sampling

Evidence of other conservation significant fauna or species of interest were documented at the survey sites or elsewhere within the Survey Area. These records included direct visual or aural observation, or indirect signs such as bones, carcasses, tracks, scats, burrows or structures. These opportunistic records supplement those obtained during the systematic sampling, and were generated as a result of observations made:

- during camera deployment and/or collection;
- while travelling between survey sites; and
- at any other time whilst working in or travelling within the Survey Area.

2.6 DATA MANAGEMENT

Recording of data in the field was conducted in accordance with survey and monitoring guidelines (DPaW, 2016) and focused on the collection of:

- local site information;
- recent fire and disturbance (i.e., anthropogenic/animal);
- vegetation community and habitat structure; and
- motion sensor camera deployment details.

Data was recorded using in-field data capture on electronic devices (eg. mobile phones, tablets) using the Fulcrum platform (release v2.25.0, 1 Jun 2017). All data were synced to a cloud-based server when internet or phone signal was available. Critical survey information (eg. camera location) was manually recorded as a failsafe. Each camera location was visited twice (ie. deployment and pickup), during which time data was completed, checked or additional data collected if deemed necessary.

2.6.1 Image management and recording

All images retrieved from motion sensor cameras were processed manually according to the following procedure:

- all images were copied from SD cards to a folder structure relating each set of photos to an individual camera deployment (ie. seven per site), and an individual site (ie. a total of 20 for the

survey), allowing for comparison with environmental variables and further analysis, where warranted.

- images were sorted and processed manually with the total number of active and blank images captured per deployment (ie. images featuring animals or not) recorded;
- species presence species was recorded for each motion sensor camera deployment. For species where identification was uncertain, individual images were marked for final assessment by Jeff Turpin.

3 Results and Discussion

3.1 FAUNA HABITATS

The Sandhill Dunnart Baseline Survey Design (DPaW, 2016) was based on broad vegetation units developed by Beard *et al*. (2013) and these were the units used to broadly define fauna habitats sampled during the survey (**Table 3**). A wide range of vegetation types were traversed throughout the Study Area, reflecting changes in soil, topography and climate. The region's vegetation is broadly typical of the arid zone; however, southern parts of the GVD are influenced by the temperate south-west, while northern areas are more typical of the arid interior.

Table 3: Broad Fauna Habitats occurring in the GVD (adapted from DPaW, 2016)

Vegetation form	Structural description	Floristic description
Bare areas	Salt lake, lagoon, claypan, rock	-
Halophyll and sarcophyll communities	Saltbush and bluebush	*Atriplex* sp., *Maireana* sp. communities on alkaline soils
	Saltbush and bluebush with scrub or open scrub	*Atriplex* sp., *Maireana* sp. with mulga (*Acacia aneura*), other wattle (*Acacia* sp.)
	Saltbush and/or bluebush with scattered low trees	*Atriplex* sp., *Maireana* sp. with mulga (*Acacia aneura*), other wattle (*A. papyrocarpa*), casuarina (*Allocasuarina pauper*)
	Samphire	*Tecticornia* sp. communities in saline areas
Low woodland (< 10m tall)	Low woodland or open low woodland	Other wattle (*Acacia* sp.), cypress pine (*Callitris* sp.), casuarina (*Allocasuarina* sp.), Eucalypt species (*Eucalyptus spp.*)
	Low woodland, open low woodland or sparse woodland	Mulga (*Acacia aneura* complex) and associated species
Medium woodland (10-30m tall)	Woodland	Goldfields associated Eucalypt species (e.g. gimlet, *E. salubris;* redwood, *E. transcontinentalis,* salmon gum, *E. salmonophloia*)
Spinifex grassland	Low tree-steppe	Hummock grassland (*Triodia* sp.) with scattered Eucalypts (*Eucalyptus spp.)*
	Shrub-steppe	Hummock grassland (*Triodia* sp.) with scattered shrubs (*Acacia* sp., *Grevillea* sp.) or mallee (*Eucalyptus* sp.)
	Sparse low tree-steppe	Hummock grassland (*Triodia* sp.) with sparse eucalypts (*Eucalyptus spp*.)
	Sparse shrub-steppe	Hummock grassland (*Triodia* sp.) with sparse shrubs (*Acacia* sp.)
	Tree- and shrub-steppe	Hummock grassland (*Triodia* sp.) with scattered eucalypts (*Eucalyptus gongylocarpa*) over wattle scrub (*Acacia* sp.) or mallee (*E. youngiana*)
Tall (sclerophyll) shrubland (> 1m tall)	Mallee	Eucalypt shrubland (*Eucalyptus spp.*)
	Scrub, open scrub or sparse scrub	Wattle (*Acacia* sp.), tea tree (*Melaleuca* sp.) and other species

Across the Great Victoria Desert, a subset of the vegetation present was sampled. Following the guidance from the Sandhill Dunnart Baseline Survey Design (DPaW 2016), bare areas (salt lake, lagoon, claypan, rock) and halophyll / sarcophyll communities (saltbush, bluebush and samphire

communities) were deemed unsuitable and excluded from the sampling regime. Medium woodland (Goldfields associated woodlands) was largely absent from the polygon areas so were also not sampled. Overall nine broad fauna habitat categories were sampled at sites within the Survey Area (**Figure 4**):

- A: Mulga (*Acacia aneura* complex) woodland and associated species;
- B: Mixed Woodland (*Eucalypt* spp., *Callitris* sp. or *Casuarina pauper*);
- C: Spinifex grassland (low tree-steppe): hummock grassland with scattered eucalypts;
- D: Spinifex grassland (shrub-steppe): hummock grassland with scattered shrubs (*Acacia* sp., *Grevillea* sp.) or mallee (*Eucalyptus* sp.);
- E: Spinifex grassland (sparse low tree-steppe): hummock grassland with sparse eucalypts;
- F: Spinifex grassland (sparse shrub-steppe): hummock grassland with sparse *Acacia* shrubs;
- G: Spinifex grassland (tree- and shrub-steppe): hummock grassland with scattered eucalypts (*Eucalyptus gongylocarpa*) over shrubs (*Acacia* sp.) or mallee (*E. youngiana*);
- H: Mallee (mixed *Eucalyptus* spp.) over *Triodia* hummock grassland and scattered shrubs;
- I: Tall mixed shrublands (*Acacia* spp.) over *Triodia* hummock grasslands.

The majority of the survey sites comprised Spinifex grassland (tree- and shrub-steppe), hummock grassland with scattered eucalypts (*Eucalyptus gongylocarpa*) over shrubs (*Acacia* spp.) or mallee (*E. youngiana*). As a result, most cameras were placed within this habitat (**Figure 4**). Other habitats were sampled at lower rates, reflecting their representation across the landscape. Mulga was sampled where the vegetation included spinifex in the understorey as the presence of *Triodia* (spp.) was considered an important habitat parameter.

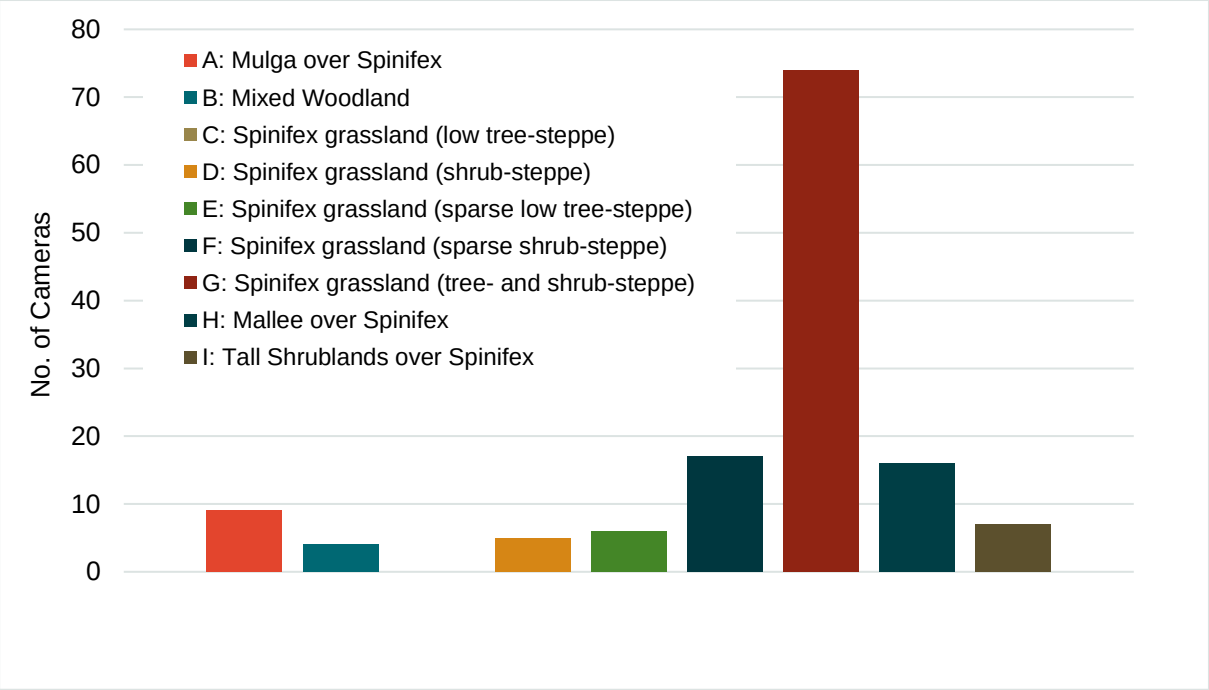

Figure 4: Cameras placed in each habitat type as recognised by DPaW (2016)

The vegetation types sampled occurred on a range of landforms including broad flat sandplains, sand dunes (crest, slopes and swales sampled), lateritic and calcrete rises and clay or loam flats. Sandplain and dune habitats dominated the landscape and thus were the dominant landform sampled. Drainage lines were mostly absent from the Survey Area and thus were not sampled.

Previous monitoring of the Sandhill Dunnart in the Great Victoria Desert has revealed a group of plant species typically occurring at sites occupied by Sandhill Dunnart (J. Riley and J. Turpin unpublished data). While the vegetation across the Survey Area varied, some species associated with the Sandhill Dunnart (elsewhere in the Great Victoria Desert) were recorded at several camera sites and included:

- Spinifex (*Triodia desertorum* and *Triodia basedowii*);
- Eucalypts (*Eucalyptus gongylocarpa, Eucalyptus youngiana, Eucalyptus leptopoda, Eucalyptus trivalva, Eucalyptus glomerosa* and *Eucalyptus concinna*);
- A variable shrub layer including *Grevillea juncifolia*, *Grevillea didymobotrya*, *Hakea francisiana*, *Callitris preissii*, *Calothamnus gilesi*, *Allocasuarina acutivalvis*, *Allocasuarina spinosissima*, *Bertya dimerostigma*, *Aluta maisonneuvei*, *Thryptomene biseriata* and *Leptospermum fastigiatum*.
- Other scattered shrubs such as *Lepidobolus deserti*, *Baeckia* sp. GVD, *Homalocalyx thryptomenoides*, *Lomandra leucocephala*, *Anthotroche pannosa*, *Acacia acanthoclada*, *Acaca desertorum*, *Acacia helmsiana*, *Acacia jamesiana*, *Acacia ligulata*, *Acacia aneura*, *Acacia ramulosa*, *Santalum acuminatum*, *Xanthorrhoea thorntonii*, *Persoonia coriacea*, *Daviesia grahamii*, *Leptosema chambersii* and *Gyrostemon ramulosus*.

3.2 FIRE HISTORY

Within the arid zone, resource variations influence the distribution patterns of plants and animals as environments are shaped by flood, fire and drought (Bradstock *et al*. 2012; Nano *et al*. 2012, Woinarski et al. 2014). Fire, and particularly fire frequency, has been highlighted as a significant threatening process to fauna communities across arid Australia (Woinarski and Recher 1997; Bradstock et al. 2012, Woinarski et al. 2014, TSSC 2016). While fire is a key contributor to a mosaic of habitats and successional stages of vegetation that can enhance biodiversity, it can also threaten many species (e.g. specialist fauna with narrow habitat requirements, including the Sandhill Dunnart, Woinarski and Recher 1997, TSSC 2016). In the Great Victoria Desert, the Sandhill Dunnart is known to favour long-unburnt vegetation (J. Turpin and J. Riley unpublished data).

Across the Survey Area, and throughout the 20 sites sampled, fire history varied, resulting in a mosaic of vegetation types observed across a range of successional stages. The fire history sampled ranged from very long unburnt (over 50 years post fire) to very recently burnt (less than two years post fire, eg. Unit 1143, U.S. Geological Survey 2018). Three survey sites were also burnt by wildfire during the survey period (Units , 609 and 332). Most survey sites showed some influence of recent fire and while cameras were situated within a range of habitats reflecting the range of fire histories present at a particular site, most cameras were placed within vegetation less than 20 years old – the dominant fire

history of the landscape (Figure 5). Efforts were also made to place some cameras is long unburnt vegetation as the Sandhill Dunnart favours such habitat elsewhere in the GVD.

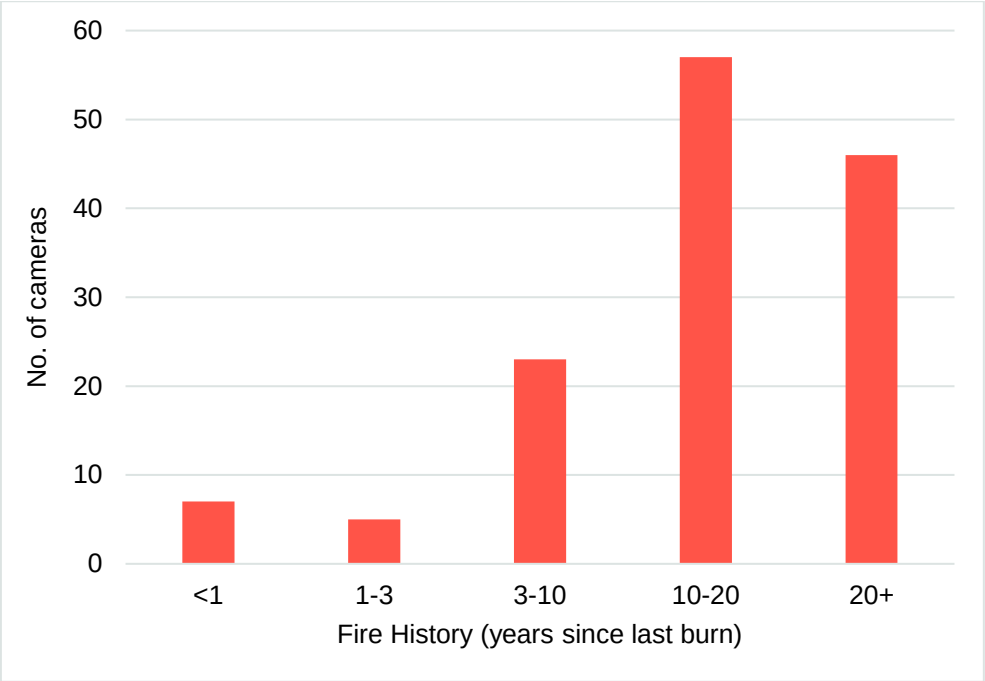

Figure 5: The range of fire histories sampled during the survey

The on-ground fire history varied to the mapping utilised to prepare the Sandhill Dunnart survey (DPaW, 2016). Some of this may be attributable to the age of the mapping and the limitations of the data collection, where mosaic or patchy burns are difficult to map. One of the initial survey sites proposed (Unit 843) was substituted in the field for an adjacent site (Unit 821) as almost the entire site was burnt during an extensive, high intensity wildfire over the summer of 2016 / 2017 (observed to be devoid of vegetation, U.S. Geological Survey 2018). Three of the survey sites were burnt by wildfire during the survey period (November and December 2017) and a fourth (Unit 795) was burning during camera collection in December (although cameras were collected before any sampling sites were affected).

3.3 HABITAT FIELD OBSERVATIONS

Habitat assessments were undertaken at each of the 138 sites where cameras were deployed. A brief summary of key environmental data is presented below (**Table 4, Figure 6 – 9**) with raw data included in **Appendix 4**.

Table 4: Habitat characteristics for sites with likely or known presence of Sandhill Dunnart

Camera details	Camera number	1143-9	1184-2
	Latitude	-29.85587255	-30.06279014
	Longitude	124.2835152	123.0489172
Fire history	Last burnt	20+ years	20+ years
	Percentage burnt	0	0
	Scorch height	0	0
	Fire Intensity	None	None
Landform and soils	Landform	Dune crest	Sandy rise
	Dry soil surface	Soft	Soft
	Soil colour	Yellow	Orange
	Soil shade	Pale	Pale
Ground cover	Bare ground	10	50
	Crust	2	0
	Stones	0	0
	Rocks	0	0
	Litter	10	25
	Coarse WD	4	5
	Logs < 50mm	2	3
	Logs > 50mm	1	2
Vegetation details	Spinifex stage	Stage 5	Stage 5
	Muir classification	Hummock grasses 30-70% cover	Shrubs > 2m 30-70% cover
	Vegetation notes	Looks great for SHD Cat scat collected	Adjacent to sand dune
Upper stratum	Growth form	Tree	Tree
	Height	6	5
	Cover	5	30
	Dominants	• Marble Gum • Callitris • Sand Dune Mallee	• Marble Gum • Callitris • scattered Mulga • E. youngiana
	Emergents	0	0
Middle stratum	Growth Form	Woody shrub	Woody shrub
	Height	2	2
	Cover	10	20
	Dominants	• *Allocasuarina spinosima* • *Banksia* spp. • *Persoonia* spp. • *Acacia* spp. inc *helmsiana* • *Grevillea stenobotrya*	• *Acacia ramulosa* • *Grevillia juncifolia* • *A. colletoides* • *Eremophila* spp.
	Emergents	0	0
Lower stratum	Growth Form	Hummock	Hummock
	Height	40	30
	Cover	35	15
	Dominants	• *Triodia desertorum* • *Triodia lepidobulus*	• *Triodia desertorum*
	Emergents	0	0

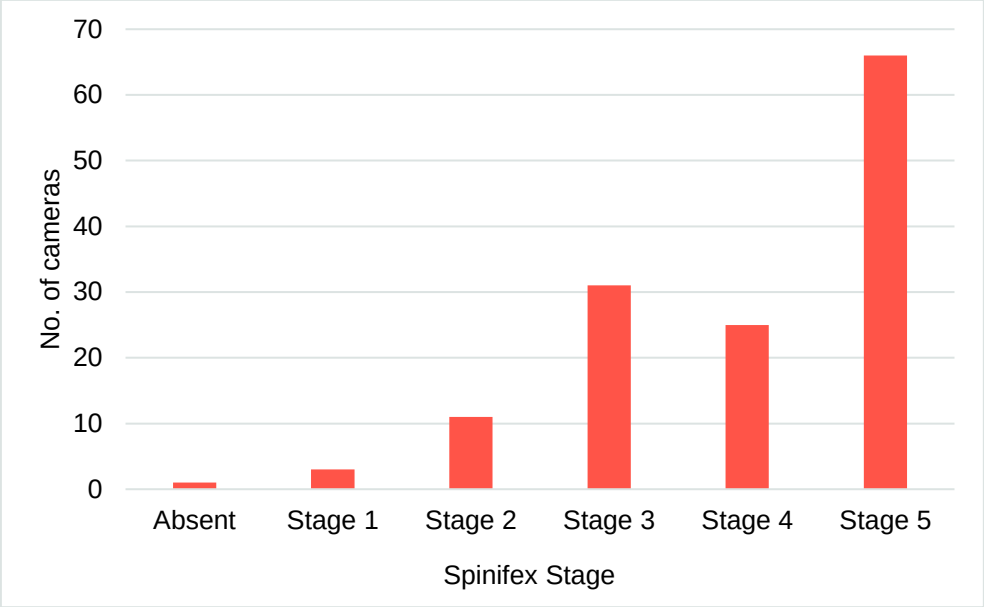

Figure 6: Observed Spinifex stage at each camera site

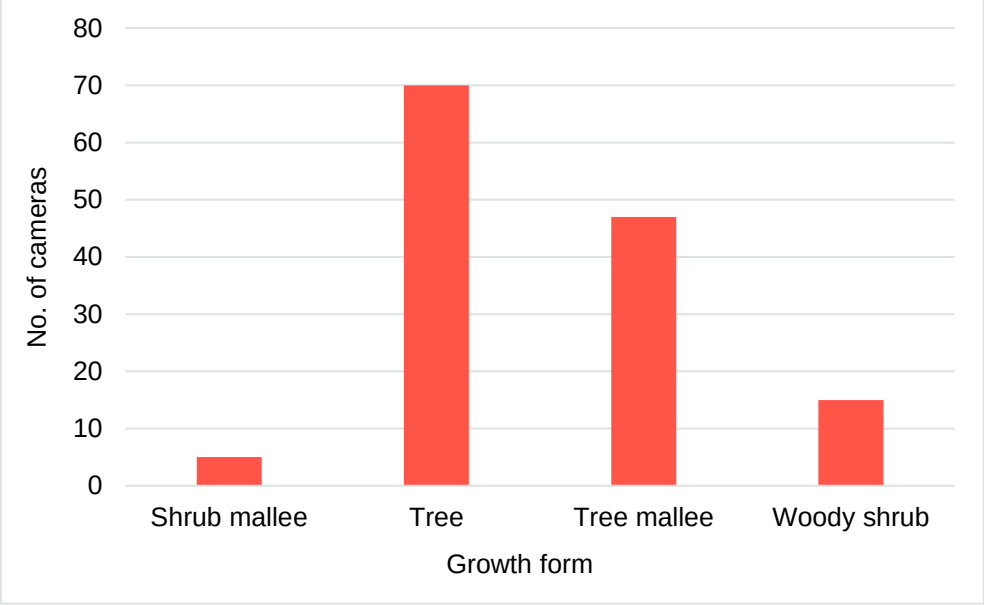

Figure 7: Observed vegetation growth form at each camera site

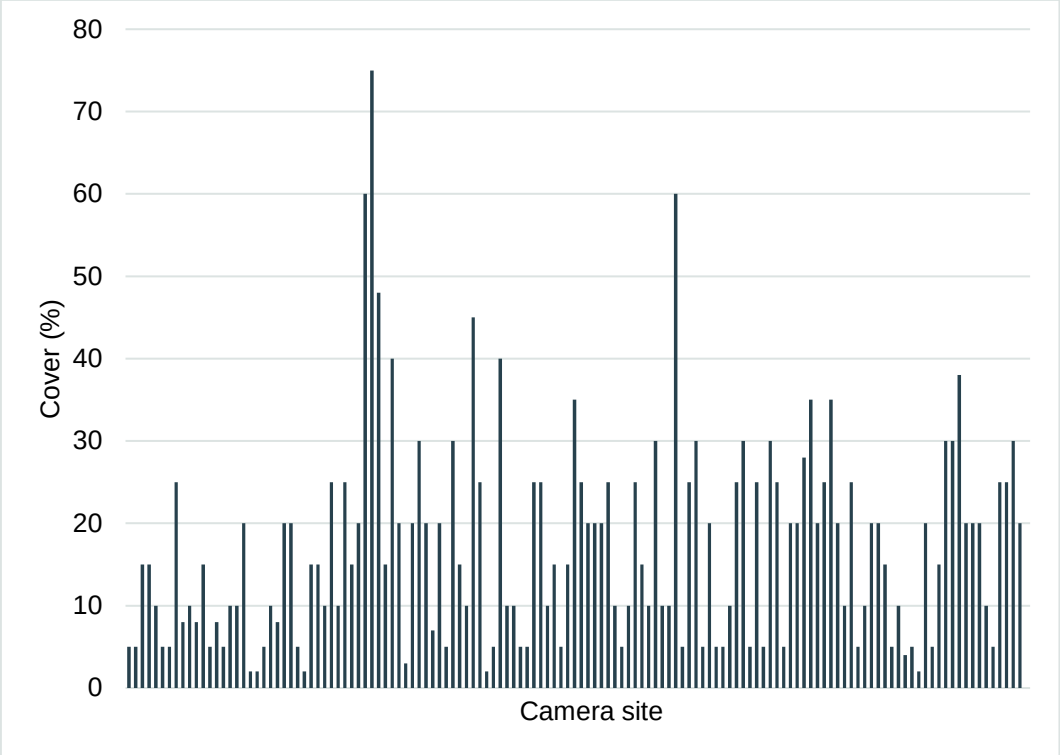

Figure 8: Upper stratum vegetation cover at each camera site

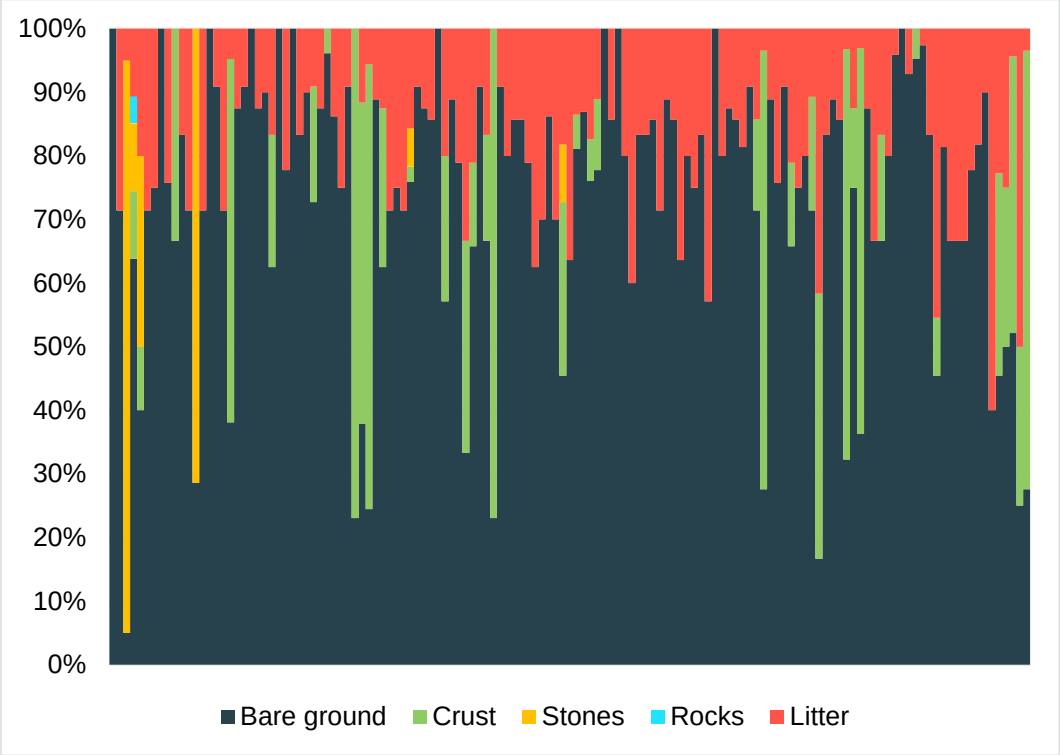

Figure 9: Ground cover composition at each camera site

3.4 FAUNA OBSERVATIONS

While the survey aimed to detect the Sandhill Dunnart, opportunistic observations and the use of motion sensor cameras enabled a large fauna assemblage to be recorded (**Table 5**).

Table 5: The fauna assemblage recorded during the survey

Species Recorded	Observations	Camera Records	Trace Evidence	Total
Reptiles	20	16	-	25
Birds	88	20	-	88
Native Mammals	8	9	-	12
Introduced Mammals	6	4	-	6
Regionally Extinct	-	-	6	6
Total	120	49	6	137

A total of 120 fauna species were observed during the survey (20 reptile, 88 bird, eight native mammal and six introduced mammal species, (**Appendix 2**). The assemblage observed included several species rarely encountered in the Great Victoria Desert or recorded in the region for the first time (eg. the Spinifexbird record is a range extension from northern Australia and represents a new species record for the GVD). Species of note included:

- Spinifexbird (*Megalurus carteri*): new record for the GVD, pair observed;
- Woma (*Aspidites ramsayi*): uncommon in the GVD, one individual observed;
- Malleefowl (*Leipoa ocellata*): uncommon in the GVD; fresh tracks, mound recorded;
- Major Mitchell's Cockatoo (*Lophochroa leadbeateri*): uncommon in GVD, pair observed;
- Striated Grasswren (Amytornis striatus): uncommon in GVD, several groups observed;
- Bluebonnet (*Northiella narethae*): DBCA Priority 4, pair observed;
- Mulgara (*Dasycercus blythi*): DBCA Priority 4, several burrows observed;
- Rufous Fieldwren (*Calamanthus campestri*): uncommon in the GVD, two observed;
- Scarlet-chested Parrot (*Neophema splendida*): uncommon in the GVD, two groups observed;

The southern Great Victoria Desert is a biogeographic interzone, containing elements of both the temperate south-west and arid interior. Several temperate-adapted species occur in the region in small populations at the arid extreme of their range (Turpin and Johnstone, 2017). A number were recorded during the survey and further into the arid interior than previously reported:

- Regent Parrot (*Polytelis anthopeplus*);
- Yellow-plumed Honeyeater (*Lichenostomus ornatus*);
- Brown-headed Honeyeater (*Melithreptus brevirostris*); and
- White-eared Honeyeater (*Lichenostomus leucotis*).

Evidence of six regionally extinct mammal species was also observed (abandoned shelters, burrow systems, bones and scats preserved inside caves (**Appendix 3**). Two species recorded were formerly widespread across the region (Boodie, *Bettongia lesueur*; Lesser Stick-nest Rat, *Leporillus apicalis*). However, the bones of the Ghost Bat (*Macroderma gigas*, left humerus) and Western Quoll (*Dasyurus*

geoffroii, left femur) and the scats of Brush-tail Possum (*Trichosurus vulpecula*, old scats recorded from caves) and Black-flanked Rock-wallaby (*Petrogale lateralis*, old scats recorded from caves) represent new and significant records for the GVD (**Section 3.4**). The locations of significant fauna are listed in **Appendix 3**.

3.5 CAMERA RESULTS

The motion sensor cameras successfully detected a wide range of fauna. Of the 138 cameras installed, 132 cameras successfully recorded fauna (six cameras were damaged by wildfire, Cameras 28, 68, 57, 30, 34, 29). A total of 146,216 camera images were recorded over 4,862 camera nights. Most cameras recorded between100 to 500 images over the duration they were installed (Median = 356 images, **Figure 10**).

Figure 10: The number of images taken per camera

While a wide range of fauna was detected, due to the small size of some animals (e.g. small rodents, frogs, skinks, geckos) and the limitations of the cameras, some taxa were not identified to species level and were excluded from the analysis. While superficially similar, a number of Dasyurids were identified (based on size, body shape and tail shape and length). Large and distinctive Dasyurids were readily recognizable. Smaller dunnarts and ningauis were not identified to species level as several species of similar size and morphology overlap in range and habitat in the Great Victoria Desert (*Sminthopsis dolichura, Sminthopsis ooldea, Sminthopsis hirtipes, Ningaui ridei, Ningaui yvonnae*).

In total 49 fauna species were recorded via the motion sensor cameras, comprising nine native mammal, four introduced mammal, 20 bird and 16 reptile species (Table 4, see Figures 7 and 8). The camera results reflected the relative abundance of fauna within the Great Victoria Desert. Common and widespread fauna were extensively recorded while rare and cryptic species were recorded at few locations. Six species (the Spinifex Hopping Mouse, Sandy Inland Mouse, Feral Cat, European Red

Fox, Sand Goanna and Western Grey Kangaroo) dominated the assemblage detected. The Spinifex Hopping Mouse was recorded from all survey units (20/20) and from the majority of cameras installed (101/138). Introduced mammals, comprising the Feral Cat (detected on 49 cameras), European Red Fox (28 cameras), Dingo (15 cameras) and Camel (13 cameras) were commonly recorded. All were detected widely across the Great Victoria Desert (as were their tracks and scats). The Sand Goanna (*Varanus gouldi*i) was the most abundant reptile recorded (from 66 cameras), while detections of the Centralian Blue-tongue (*Tiliqua multifasciata*, eight cameras) and Black-headed Monitor (*Varanus tristis*, seven cameras) were also numerous. Corvids (either the Little Crow or Torresian Crow) were the most frequent bird detected.

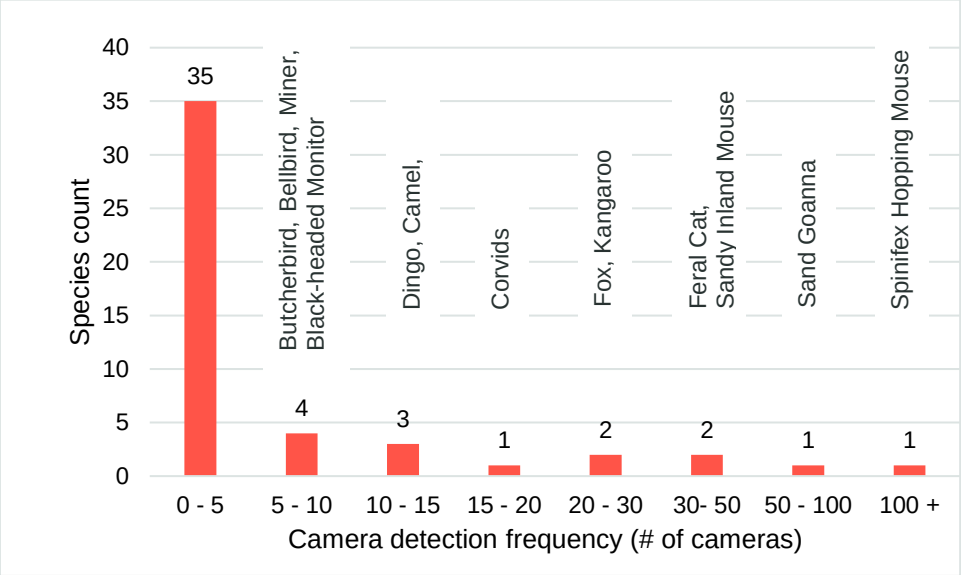

Figure 11: Camera detection frequency for fauna species

The motion sensor cameras also successfully detected a number of rare or cryptic taxa, including the Sandhill Dunnart, and several species were only detected at one location (**Figures 11, 12**). Several species of note were recorded via motion sensor cameras:

1. Sandhill Dunnart: recorded motion camera to the east of the species current known range;
2. Great Desert Skink (*Liopholis kintorei*): threatened species with few known populations in Western Australia. Confirmed from one camera along the David Carnegie Road;
3. Brush-tailed Mulgara (*Dasycercus blythi*): DBCA Priority 4, few records for the GVD, detected from twelve cameras during the survey;
4. Bobtail (*Tiliqua rugosa*): temperate adapted species recorded in the southern GVD at it's arid extreme, recorded from three cameras (Cameras 58, 59, 60); and
5. Western Bowerbird (*Ptilonorhynchus guttatus*): recorded in the GVD at the extreme of it's known range (recorded at Malleehen Rocks, Camera 74 and along David Carnegie Road, Camera 4).

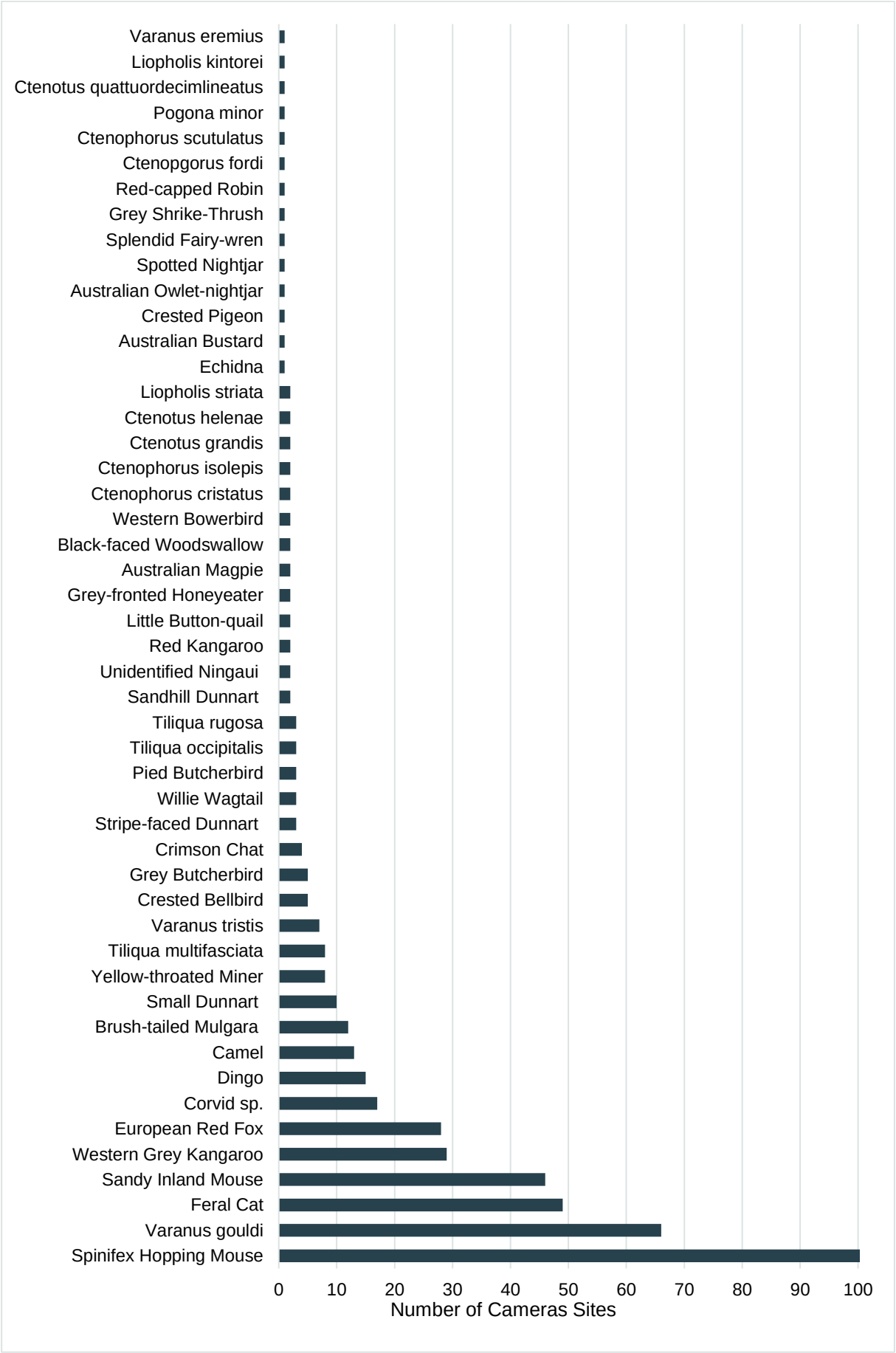

Figure 12: Frequency of detection for species recorded during the survey

3.6 SANDHILL DUNNART

The Sandhill Dunnart is a large dunnart with distinctively large ears, a dark forehead and a long, bi-coloured tail with a terminal crest of hairs. The tail length, while variable, is typically longer than the head-body length. Using motion sensor cameras, the species can be distinguished from other mammals by a combination of its size (it's the largest dunnart occurring in WA and the only species larger than an adult *Notomys*), a dark forehead (specific to *S. psammophila* and *S. macroura* in the southern GVD), large ears and head and a long, thin tail (however the crest difficult to distinguish on most camera images (**Plates 3** and **4**).

Plate 3: Sandhill Dunnart images from near Tropicana Gold Mine (2016 Reconyx image on right).

The Sandhill Dunnart was recorded from the survey with the species detected on a motion sensor camera placed within survey unit 1143 (from Camera 9: 623981E, 6696489N, (**Plate 5**). This record extends the range of the Sandhill Dunnart to the east and lies on the eastern fringe of a broad area of undulating yellow sandplains (**Figure 13**). The Sandhill Dunnart was recorded within a small remnant of long unburnt vegetation situated within a landscape dominated by two recent fire events (high intensity burns in 2006 and 2016, U.S. Geological Survey 2018). The Sandhill Dunnart was recorded from a saddle within a sand dune ridge which had provided some protection from previous fire events. Vegetation included scattered Marble Gum (*Eucalyptus gongylocarpa*) and *Callitris preissii* with a mature shrub layer (including *Allocasuarina spinosissima*, *Persoonia coriacea*, *Acacia helmsiana*, *Grevillea didymobotrya* and *Banksia elderiana*) over a mature hummock grassland (*Triodia desertorum* dominant stage 5 and with *Lepidobolus deserti*). Three images were captured (10/10/17) over the month survey period and may indicate a transient individual (**Plate 4**).

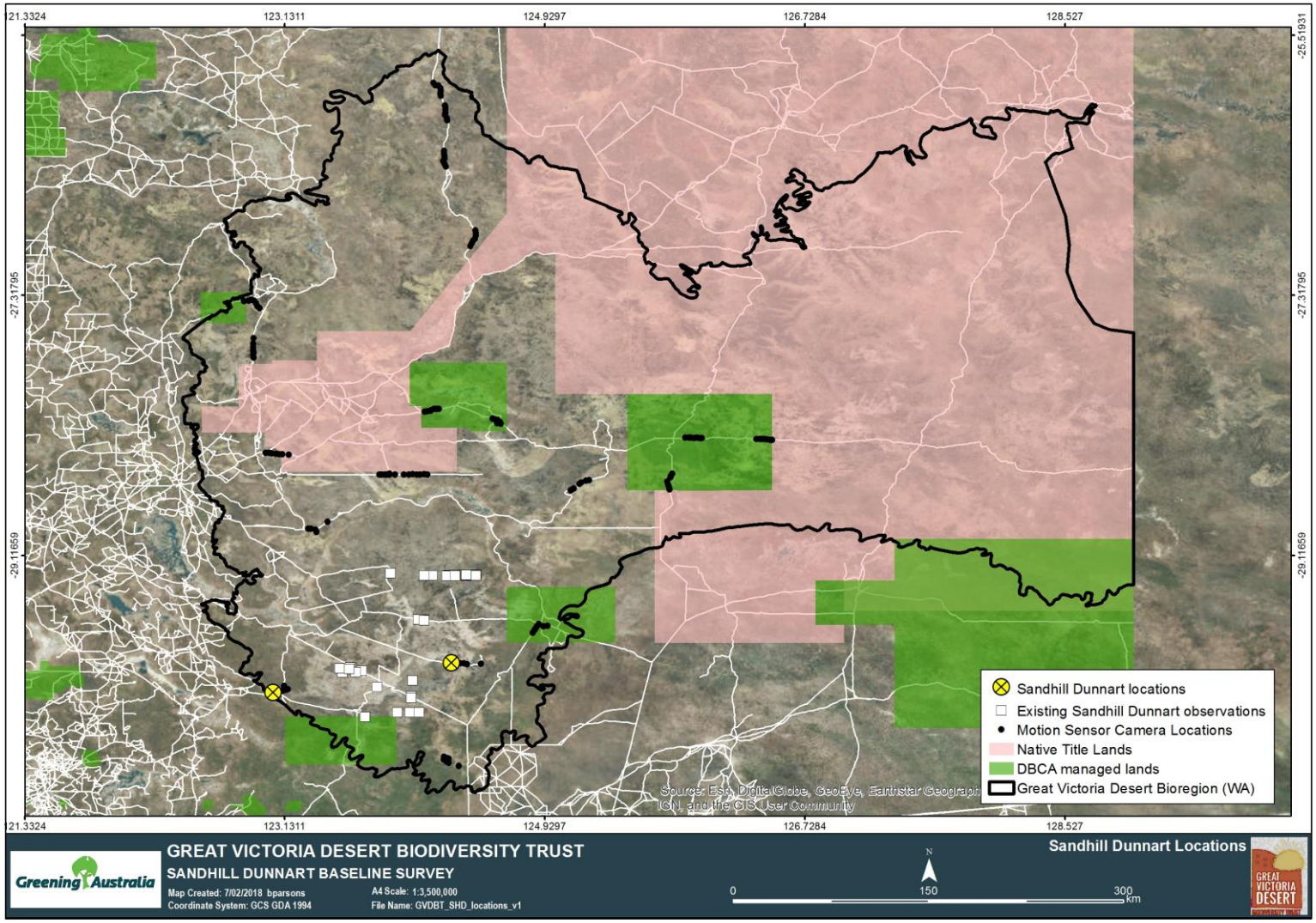

Figure 13: Known locations of Sandhill Dunnart within the GVD from this survey and recent/historical observations

A second camera recorded a dunnart, which, due to the presence of a head-stripe and large ears is considered likely to be a Sandhill Dunnart (**Plate 5**). However, due to its small size (smaller than a hopping mouse), and the lack clear images, species identification is not certain. The dunnart was recorded on the southern fringe of the GVD (Camera 58: 504715E, 6674257N) from a sandplain supporting long unburnt Marble Gum (*E. gongylocarpa*) and Mallee (*E. youngiana*), with *Callitris preissii* and *Grevillea juncifolia*, *Acacia ramulosa* and *Hakea francisiana* shrubs over *Triodia desertorum* (dominant stage 5).

Plate 4: Sandhill Dunnart image recorded during the 2017 survey

*The Sandhill Dunnart is identified by a combination of large size ears and distinctive head shape

Plate 5: Likely Sandhill Dunnart recorded from the south western GVD

While the Sandhill Dunnart was not positively identified from any other camera site, dunnarts were captured on motion camera imagery from additional areas. Due to the size or the position of some dunnarts photographed, species confirmation was not possible in some cases. Juvenile or sub-adult Sandhill Dunnarts can be difficult to identify on motion camera imagery as their size is similar to other sympatric Dasyurids (particularly within the range of the Stripe-faced Dunnart, which has a similarly dark stripe on the forehead and the Hairy-footed Dunnart, which has a similar body shape).

The superficially similar Striped-faced Dunnart (*S. macroura*) was recorded on camera from the northern GVD (Unit 468, **Plate 6**). Similar to the Sandhill Dunnart, the Stripe-faced Dunnart has a distinct dark stripe on its forehead and has the potential to overlap in range with the Sandhill Dunnart in the northern and central parts of the GVD. The Stripe-faced Dunnart can be distinguished as it has a short, often swollen, tapering tail, is smaller with a smaller head and ears relative to its body size and it's dark head stripe is often more pronounced, extending from the eyes to the nose.

Plate 6: Stripe-faced Dunnart recorded along Lake Wells Rd

A third dunnart was recorded along the White Cliffs Road (Area 795) east of Laverton (**Plate 7**). Species identification was difficult as the individual appeared to exhibit characters shared by both the Sandhill and Stripe-faced Dunnart. Images of the dunnart were compared to known Sandhill Dunnart Images recorded near the Tropicana Gold Mine (J. Turpin database, **Plates 8**). The dunnart exhibited a distinctive dark forehead stripe, however its head and ears appeared relatively small. The animal appeared smaller than an adult *Notomys* and had a thin tapering tail (differing to the Stripe-faced Dunnart with a swollen tail at Site 468). While species identification was indeterminate, the dunnart falls within an area where many Stripe-faced Dunnarts have been recorded.

Plate 7: Dunnart recorded along White Cliffs Road

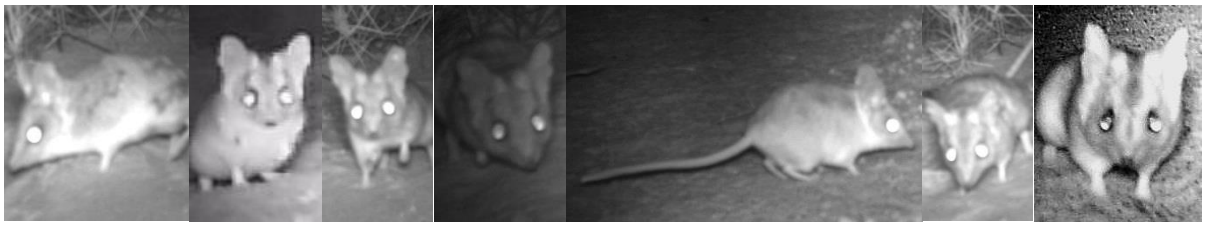

Plate 8: Examples of Sandhill Dunnart images captured from the Tropicana area (J. Turpin database)

The low detection rate of the Sandhill Dunnart is not unexpected and replicates that observed elsewhere in the GVD. While known populations can be readily detected by motion cameras, the Sandhill Dunnart has a very patchy distribution and occurs at low densities, so new populations can be difficult to detect (often requiring repeated survey visits). Due to its sparse occurrence combined with the large home ranges and movements during the breeding season, the Sandhill Dunnart's detectability can vary. At occupied sites near Tropicana Gold Mine, variations in detectability mean the species is not always confirmed from known sites (detectability varying from 28 – 100% across six survey periods) and significant effort is required to detect populations in new areas. While some of the sites surveyed are unlikely to support the species, a lack of camera images does not necessarily equate to the species absence, particularly within habitats supporting seemingly suitable vegetation. Therefore, while no further observations were made, the potential exists for the species to occur across a wider area of the GVD and at some of the survey sites sampled. As such, further survey effort is considered likely to detect the species across a wider area.

The survey results reveal that significant and targeted effort is required to detect new populations of the Sandhill Dunnart. The lack of Sandhill Dunnart records across the wider GVD suggests the species does have a restricted regional distribution and highlights the significance of the species record from survey unit 1143. While not only detecting a new population area this survey has enabled an eastward extension to the known range of this cryptic, endangered and poorly known species.

3.7 OTHER SPECIES OF SIGNIFICANCE

While the survey focused on the Sandhill Dunnart, additional species of conservation significance were recorded opportunistically, or on the motion cameras installed. Localities where these species were observed is depicted in Figure 10. Significant fauna included species listed under state or national legislation (e.g. Malleefowl, Great Desert Skink), priority fauna listed by DBCA (Brush-tailed Mulgara, Striated Grasswren), regionally significant fauna (with few or no known records from the Great Victoria Desert, Spinifexbird, Ghost Bat, Western Quoll) and uncommon species recorded in the Great Victoria Desert at the extreme of their known range. Mapped observation records for these species are provided below (**Figure 14**) and individual species are discussed in the following section.

3.7.1 Malleefowl

The Malleefowl (*Leipoa ocellata*, listed as Vulnerable under the EPBC and Wildlife Conservation Acts) has a highly fragmented range within the Great Victoria Desert where it is restricted to areas of dense vegetation, typically dense thickets of Mulga shrubland. The species was recorded during the 2017 survey from two locations (**Figure 14**):

- Fresh tracks recorded from mixed Acacia / Casuarina woodland within Plumridge Lakes Nature Reserve (688554E, 6723682N);
- Inactive mound recorded from dense Mulga shrubland along the Cable Haul Road (649112E, 6674809N (**Plate 9**).

Most records of Malleefowl in the GVD are of old abandoned mounds (such as the mound recorded along the Cable Haul Road), indicative of a larger historic distribution. Evidence of extant populations (such as tracks or recent breeding activity) are uncommon and provide important insights into the species current regional range.

Plate 9: Inactive Malleefowl mound recorded during the survey

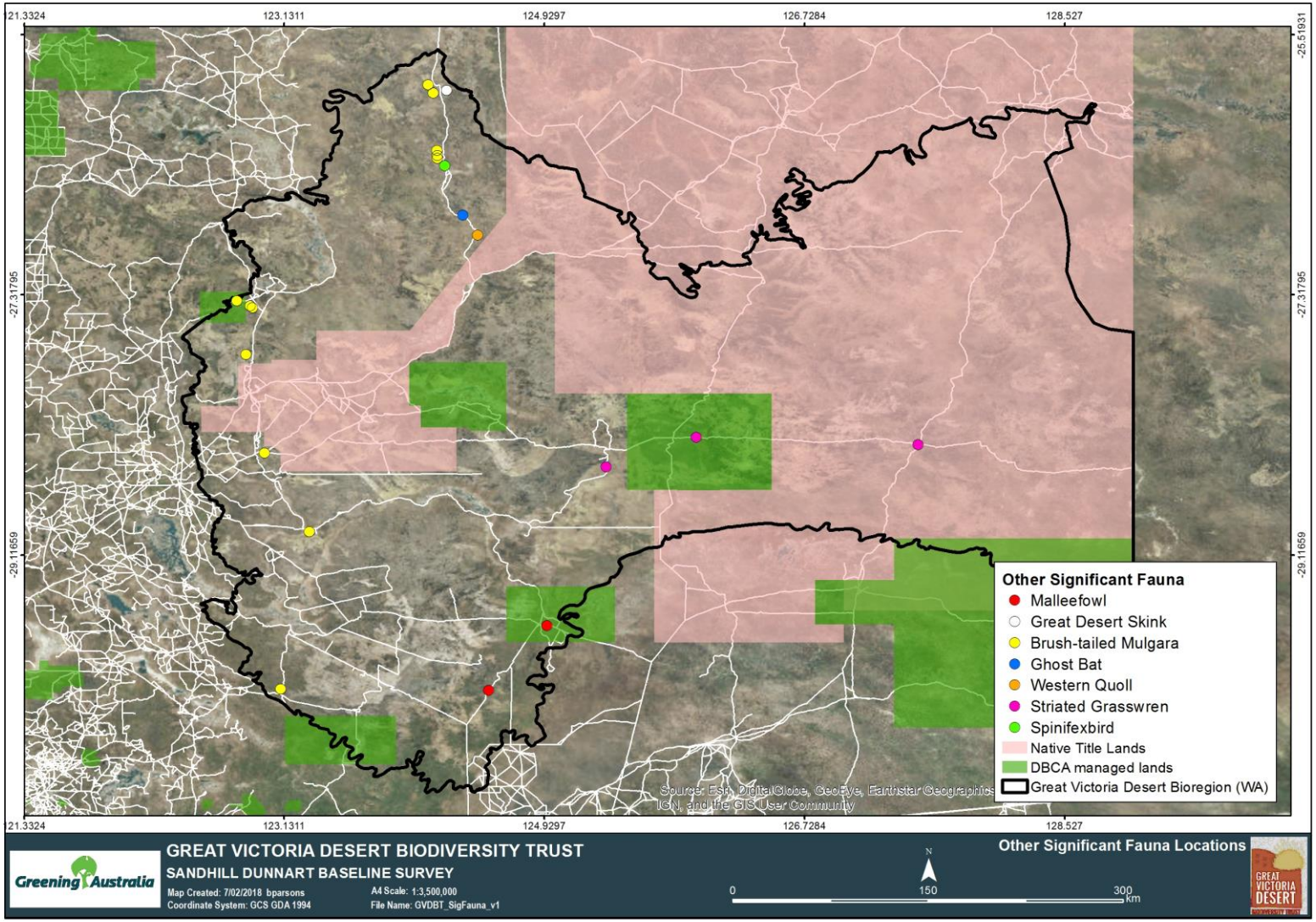

Figure 14: Localities of other fauna of significance observed during the survey

3.7.2 Great Desert Skink

The Great Desert Skink (*Liopholis kintorei*, listed as Vulnerable under the EPBC Act) has a poorly known and apparently declining distribution (TSSC, 2016). Historically the species has been recorded from widely scattered localities across central Australia (McAlpin 2001) including several records from the margins of the Great Victoria Desert (one record from the GVD Bioregion - 40 km east of Laverton in 1967; and also records from the Warburton area in the 1960's, Pearson *et al*., 2001). However, its range appears to have significantly contracted with recent surveys failing to detect the species in the Gibson Great Victoria Deserts (McAlpin, 2001; Pearson *et al*., 2001). In Western Australia, the species is currently known from few and scattered locations (within the Tanami and Gibson Deserts, Kiwirrkurra Indigenous Protected Area, Ngaanyatjarra Indigenous Protected Area and Karlamilyi National Park, TSSC, 2016). In these areas, the Great Desert Skink inhabits a range of vegetation types but typically occurs on spinifex sand plains and paleodrainages (TSSC, 2016).

The Great Desert Skink was recorded on motion camera during the survey, from along the David Carnegie Road (Site 3, Camera 6: at 51J, 621020E, 7134653N, see Figure 10, Plate 9), representing the first species record from the region since the 1960s. The location lies approximately 270 km west of the species previous records near Warburton (from 1963), and 350 km north of the 1967 record near Laverton. The species was recorded from an undulating red sandplain dominated by *Triodia* hummock grassland with scattered sand dunes and a mixed fire history (previously burnt in 2001, 2003 and 2012; U.S. Geological Survey 2018). The camera records represent a new and significant population area for Western Australia and the second species record for the GVD Bioregion (first since 1967).

Plate 10: The Great Desert Skink recorded during the survey

A number of additional cameras captured images of nocturnally active *Liopholis* skinks that could not be confidently assigned to species level, however are likely to be either *L. kintorei* or *L. striata*. Camera locations with the potential to have recorded additional Great Desert Skink locations included along the David Carnegie Road (two locations) and along Lake Wells Road (two locations). The records at these sites warrant further investigation.

3.7.3 Brush-tailed Mulgara

The Brush-tailed Mulgara (*Dasycercus blythi*, listed as Priority 4 by DBCA) has a widespread distribution across arid Australia however there are few regional records from the GVD (ALA, 2018). The Brush-tailed Mulgara was widely recorded during the survey from twelve motion camera sites spaced across the GVD (**Figure 14**, **Plate 11**). The species was extensively recorded in the northern parts of the region with many records along the David Carnegie (Site 3, Cameras 2 and 7; Site 15, Camera 16, Site 56, Cameras 18 and 19) and Lake Wells Roads (Site 468, Camera 62) and from De La Poer Nature Reserve and its surrounds (Site 332, Cameras 64, 65, 67). The Brush-tailed Mulgara was also recorded from the southern GVD where there are very few Mulgara records (near Malleehen Rocks, Site 973, Camera 72) and from the desert fringe (Site 1184, Camera 63 and Site 795 Camera 55). The species was recorded mostly on red sand plains supporting spinifex hummock grasslands, however one record of note came from the southern fringe of the GVD (Camera 63) from an undulating yellow sandplain supporting Mallee and Callitris with a shrubby understorey (including *Hakea francisiana*, *Grevillea juncifolia*, *Bertya dimerostigma*) over *Triodia desertorum* hummock grassland.

Plate 11: Brush-tailed Mulgara recorded during the survey

3.7.4 Striated Grasswren

The Striated Grasswren (*Amytornis striatus striatus*) is listed as Priority 4 by DBCA. It has a very scattered occurrence across central Australia where it favours long-unburnt spinifex grasslands with an over-storey of Mallee or shrubs. The Striated Grasswren was opportunistically recorded from three locations during the survey period. Three separate groups were recorded from spinifex grassland supporting scattered Eucalypts and shrubs along the Spackman Track, near Ilkurlka and from an area of dense Mallee and Spinifex within Neale Junction Nature Reserve (**Figure 14**). The region's few

records are concentrated along major access roads and so these records add to the occurrence of the Striated Grasswren throughout the GVD.

3.7.5 Spinifexbird

The Spinifexbird (*Eremiornis carteri*) occurs across northern Australia where it inhabits dense spinifex grasslands mixed with low shrubs (Johnstone and Storr 2004). In Western Australia, the Spinifexbird is widespread across the Pilbara and Great Sandy Deserts and extends into the Gibson Desert of Western Australia (Johnstone and Storr 2004). The Spinifexbird was recorded during the 2017 survey from an area of dense spinifex on a calcrete rise along the David Carnegie Road (51J, 623928E, 7076962N). This represents the first record of this species from the Great Victoria Desert and extends the species known range hundreds of kilometres to the south.

3.7.6 Ghost Bat

The Ghost Bat (*Macroderma gigas*) has a fragmented range across northern Australia where it roosts in deep, humid, temperature-stable caves (Armstrong and Anstee 2001). In Western Australia, the species is confined to specific physiologically benign roost sites in the Kimberly and Pilbara regions, however, formerly occurred over a much wider area (Armstrong and Anstee 2001; Figure12). Due to significant declines in the southern and arid parts of its range over the last 200 years, the Ghost Bat is listed as Vulnerable under the EPBC Act. (Butler 1961; Douglas 1967; Molnar *et al.* 1984; Churhcill and Helman 1990; Armstrong and Anstee 2001).

In Western Australia, the Ghost Bat formerly occupied several sites in the arid interior and south-west (Douglas 1967; Bridge 1975; Baynes *et al*. 1976). However, the species has not been recorded south of the Pilbara for over 50 years (Finlayson 1961; Butler 1962; Burbidge *et al.* 1988; Churchill and Helman 1990, Armstrong and Anstee 2001). From arid, inland Western Australia, records are few (a small number of sightings, fossil and guano records) and indicate the Ghost Bat was restricted to a select number of favourable areas (Churchill and Helman 1990). Historic sightings come from Mount Kenneth (60 km north-east of Paynes Find, Austin 1855), a Vanaurum mine east of Wiluna (Douglas 1967), Gahnda Rockhole (Butler 1961; Douglas 1967; Churchill and Helman 1990), the Rawlinson Range and the Kathleen Range on the Northern Territory border (Molnar et al. 1984; Churchill and Helman 1990).

The Ghost Bat was recorded from Empress Spring during the 2017 survey. An intact humerus bone was found on the cave floor within the rear (darkened zone) of the large cave system containing Empress Spring (**Figure 15**, **Plate 12**). The bone was collected and its identification later confirmed with the Western Australian Museum reference collection. Empress Spring lies approximately 200 km from the nearest known Ghost Bat records (historic records of bats from the early 1960s; Douglas 1967) and falls on the southern known limit of the species historic range. The humerus bone from Empress Spring represents the first species record from the Great Victoria Desert Bioregion (sixth record overall from the arid WA interior) and the first record of the species from arid, inland Western Australia since 1961 (**Figure 15**).

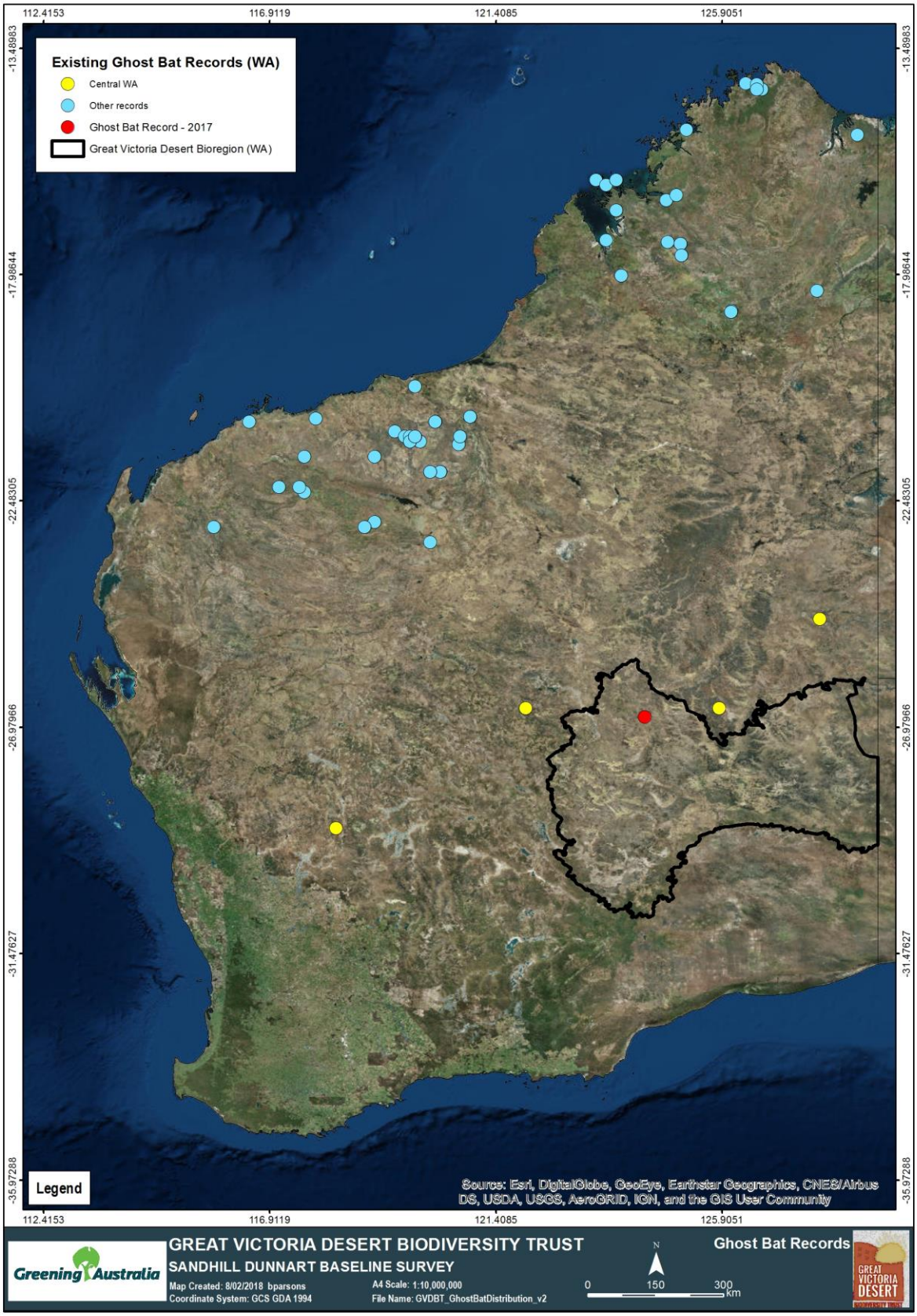

Figure 15: Existing Ghost Bat records in Western Australia including record captured during Baseline Sandhill Dunnart Survey 2017

Plate 12: Ghost Bat (humorous) bone found at Empress Springs

3.7.7 Western Quoll

The Western Quoll (*Dasyurus geoffroii*) was formerly widespread across much of southern and arid Australia inhabiting a range of vegetation types (DEC, 2012). It was relatively abundant at the time of European settlement, however, has since drastically declined. The Western Quoll was last reported in the arid zone of South Australia in the mid-1950s and from the Northern Territory in the 1960s (Finlayson 1961, Johnson and Roff 1982). In Western Australia the species is now restricted to the forests and woodlands of the south-west, however, formerly occurred across much of the state (DEC, 2012). Historic records from the arid interior are few but include the Canning Stock Route, Kiwirrkurra, Young Range (Burbidge *et al.* 1988), Kuduarra Well (Great Sandy Desert, 1931; Serena *et al.* 1991); and one record from the Great Victoria Desert (from 1962, DCBA, 2018). A Western Quoll femur bone was collected from a cave at Breaden Bluff during the December 2017 survey, representing only the second record of the species from the Great Victoria Desert (Figure 10, Plate 13).

Plate 13: **Western Quoll (femur) bone recorded from the Survey Area**

3.7.8 Black-flanked Rock-wallaby

The Black-flanked Rock-wallaby (*Petrogale lateralis lateralis*) was formerly patchily distributed across much of arid Western Australia (Pearson 2012). Historical and anecdotal records combined with subfossils and old scats indicate that while the Black-flanked Rock-wallaby had a fragmented distribution it was formerly widespread (Pearson 2012; Turpin *et al.* 2018). Since European settlement, ongoing population decline and the local extinction of many populations has severely reduced the rock-wallaby's range to a handful of isolated and small populations (Pearson 2012; Turpin *et al.* 2018). As a consequence, *P. l. lateralis* is listed as Endangered under state and federal legislation. The Black-flanked Rock-wallaby has not been previously reported to occur in the Great Victoria Desert, however, old scats attributable to this species were recorded during the survey (from a cave along the David Carnegie Road and from a separate survey in 2017 near Tropicana Gold Mine (J Turpin pers. obs.).

Plate 14: Black-flanked Rock-wallaby scats taken from along the David Carnegie Road, December 2017

3.7.9 Common Brushtail Possum

The Common Brushtail Possum (*Trichosurus vulpecula*) was formerly widespread across most of Australia. However, the species has suffered a dramatic decline across arid Australia where it now persists in a few small and isolated populations (in central Australia, Kerle and How 2008). The Common Brush-tail Possum formerly occurred throughout the GVD, however, records are few and most likely reflect historic populations (e.g. Muggan Rockhole 1899; Baker Lake 1965; Neale Junction 1985; skull collected from Mount Sefton 2009; DBCA, 2018, ALA 2018). Scats attributable to this species were recorded during the survey (from a cave along the David Carnegie Road) and also from a separate survey in 2017 near Tropicana Gold Mine (J Turpin pers. obs.). Some scats were observed to be relatively fresh and likely to indicate the species presence until recent times.

Plate 15: Common Brushtail Possum scats recorded along the David Carnegie Road, December 2017

4 Conclusion

The Sandhill Dunnart survey was conducted over a three-month period (October – December 2017) in accordance with the baseline survey and monitoring methodology developed by DPaW (DPaW 2016). The survey aimed to gather information on Sandhill Dunnart distribution and habitat preferences via a survey of 20 pre-selected sites across the Great Victoria Desert. While survey sites were widely separated across the region, sampling locations were excluded from native title determinations (covering a sizeable proportion of the GVD) and influenced by accessibility and recent fire history. As a result, some pre-selected survey locations were substituted in the field. As the survey aimed to sample new areas away from the species known distribution, a range of vegetation types were sampled in areas spaced widely across the GVD. A total of 138 camera sites were established to survey for the Sandhill Dunnart across nine broad vegetation types.

While the survey aimed to detect the Sandhill Dunnart, opportunistic observations and the use of motion sensor cameras enabled a large fauna assemblage to be recorded. A total of 25 reptile, 88 bird, 12 native mammal and six introduced mammal species were recorded. This included the Sandhill Dunnart.

The wide area and range of vegetation types sampled resulted in a number of interesting and significant fauna observations. The recorded assemblage included several species rarely encountered in the Great Victoria Desert and has resulted in the extension of range for a number of species (e.g. the Spinifexbird). Several species were recorded in the Great Victoria Desert for the first time (adding new species to the region's assemblage), some were observed in new areas, and importantly, a number of threatened taxa were located. Furthermore, the evidence of some regionally extinct mammals adds to the assemblage now known to formerly occur within the Great Victoria Desert.

The Sandhill Dunnart was confirmed from one new area, extending the species known range to the east. A second location is likely to support the species. A new population of Great Desert Skink was detected adding to the few known occupied sites in Western Australia. The Brush-tailed Mulgara was observed to be widespread across the GVD, and particularly prevalent in the north. The Spinifexbird was recorded in the GVD for the first time, while a number of temperate adapted birds and reptiles were recorded further into the arid interior than previously reported. Trace evidence of the Ghost Bat, Western Quoll, Black-flanked Wallaby and Common Brushtail Possum adds to the few known arid zones sites formerly occupied by these threatened taxa.

The Sandhill Dunnart survey increased the species distribution and reinforced habitat parameters observed elsewhere in the GVD. The species was recorded from long unburnt vegetation, from within habitat closely resembling sites where the species had been previously recorded The species was associated sand dunes supporting long unburnt vegetation including Marble Gum (*Eucalyptus gongylocarpa*), *Callitris preissii*, a mature shrub layer (including *Allocasuarina spinosissima, Persoonia coriacea, Acacia helmsiana, Grevillea didymobotrya* and *Banksia elderiana*) over a mature hummock grassland (*Triodia desertorum* dominant stage 5 and with *Lepidobolus deserti*). While much of the

surrounding landscape had been burnt at least twice within the last 20 years, the Sandhill Dunnart was recorded from the relatively small area escaping the effects of wildfire during that time.

The low detection rate of the Sandhill Dunnart is not unexpected and replicates that observed elsewhere in the GVD. While known populations can be readily detected by motion cameras, the Sandhill Dunnart has a very patchy distribution and occurs at low densities, so new populations can be difficult to detect (often requiring repeated survey visits). The Sandhill Dunnart's detectability is much lower than most desert mammals as the species also exhibits large home ranges and movements during the breeding season.

The survey results also emphasize the major and recent changes to the mammalian fauna of the Great Victoria Desert and highlight the major threats to the Sandhill Dunnart. Evidence of the region's former inhabitants were located (e.g. Ghost Bat, Western Quoll) however introduced mammals dominated the assemblage recorded. The Feral Cat and European Red Fox were actively recorded on camera at most survey sites, as was evidence of the Camel (tracks, recorded on camera at 9/20 sites). The effects of Cattle were also recorded along the David Carnegie Road. The Cattle and Camel degrade native vegetation and both the Feral Cat and European Red Fox predate on a wide range of native fauna, which in the Great Victoria Desert includes the Sandhill Dunnart (Turpin *et al.* 2017). The widespread influence of fire was also apparent throughout the region, with the vast majority of the landscape burnt multiple times within the last 20 years (U.S. Geological Survey 2018). The combined influences of introduced mammals and the far-reaching effects of wildfire are highly likely to influence the Sandhill Dunnarts regional distribution.

The Sandhill Dunnart was positively detected at one camera location despite 138 cameras placed at sites throughout the GVD. While some of the sites surveyed are unlikely to support the species, due to the species low detectability, the potential exists for the species to occur across a wider area of the GVD and at some of the survey sites sampled (particularly sites with similar vegetation to areas occupied by the species in the south). As such, further survey effort is considered likely to detect the species across a wider area.

The survey results reveal that significant and targeted effort is required to detect new populations of the Sandhill Dunnart. The lack of Sandhill Dunnart records across the wider GVD suggests the species does have a restricted regional distribution and highlights the significance of the records from this survey. While not only detecting a new population area this survey has enabled an eastward extension to the known range of this cryptic, endangered and poorly known species. Additional scientific papers are proposed to be prepared detailing some of the significant fauna records obtained during this survey.

5 Acknowledgements

Greening Australia would like to acknowledge the assistance of the following people:

- Greening Australia volunteers for their dedication and commitment during the surveys and long hours spent analysing the thousands of images captured by motion sensor camera – Jo Riley, Joseph Meadham, Zac Simms, Jessica Andrews and Jasmine Lynn;
- Rusty at Yamarna – Thanks for the hospitality and a safe haven to assess the fire situation around Yeo Station during the camera retrieval effort; Phil Merry at Ilkurlka Road house for his wonderful hospitality and the Spinifex People for granting access across the Anne Beadell and maintaining a wonderful asset in the middle of the desert;
- Rose Lane, Dylan Tucker, Sarah Brown and Jane Dunne at AngloGold Ashanti for refuelling and assistance during Phase 1;
- Ngaanyatjarra Council and Cosmo Newberry for granting transit access across their Native Title Areas; and
- Alex Baynes from the Western Australian Museum for providing access to the WAM reference collection.

6 References

Atlas of Living Australia (2018). Atlas of Living Australia website at http://www.ala.org.au.

Armstrong, K. N. and Anstee, D. (2000) The ghost bat in the Pilbara: 100 years on. Australian Mammalogy 22: 93-101.

Austin R, 1855. Journal of Assistant Surveyor R. Austin commanding an expedition sent by the Government to explore the interior of Western Australia. Government Printer: Perth.

Australian Natural Resources Atlas (2002). Rangelands - Overview Great Victoria Desert. Available at: http://www.anra.gov.au/topics/rangelands/overview/wa/ibra-gvd.html [Accessed January 20, 2012].

Bamford, M. et al. (2013). *Fauna Sampling Manual: Guide to sampling techniques for wildlife research in Western Australia*, Conservation Council of Western Australia: Perth, Western Australia.

Bastin G and the ACRIS Management Committee (2008). *Rangelands 2008 - Taking the Pulse*, published on behalf of the ACRIS Management Committee by the National Land & Water Resources Audit: Canberra.

Beard JS, Beeston GR, Harvey JM, Hopkins AJM, Shepherd DP (2013). The vegetation of Western. Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. Conservation Science. Western Australia 9, 1 pp.1–152,

Bradstock, R. A., Williams, R. J., and Gill, A. M. (2012). 'Flammable Australia: Fire Regimes, Biodiversity and Ecosystems in a Changing World.' (CSIRO Publishing: Melbourne).

Bureau of Meteorology (2018). Climate Data Online. Available at: http://www.bom.gov.au/climate/data/ [Accessed January 5, 2018].

Butler, W. H., 1961. Occurrence of the Ghost Bat, Macroderma gigas, in the Great Victoria Desert, W.A. W. Aust. Nat. 8(2): 42-43.

Burbidge, A.A., Johnson, K.A., Fuller, P.F., and Southgate, R.I. (1988). Aboriginal knowledge of animals of the central deserts of Australia. Australian Wildlife Research 15, 9-39.

Churchill S.K. and Helman P.M. 1990. Distribution of the ghost bat, Macroderma gigas, (Chiroptera: Megadermatidae) in central and south Australia. Australian Mammalogy 13, 149–156

Department of Biodiversity, Conservation and Attractions, Western Australia (DBCA) (2017). NatureMap Database. http://naturemap.dec.wa.gov.au/default.aspx.

Department of Environment and Conservation (2012). Chuditch (*Dasyurus geoffroii*) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia.

Department of Parks and Wildlife (2016a). *Defining a Baseline Survey Design for the Sandhill Dunnart (Sminthopsis psammophila) in the Great Victoria Desert of Western Australia*, Prepared for the

Great Victoria Desert Biodiversity Trust.

Department of Parks and Wildlife (2016b). *Survey and monitoring guidelines for the Sandhill Dunnart (Sminthopsis psammophila) in Western Australia*, Prepared for the Great Victoria Desert Biodiversity Trust.

Douglas A.M. 1967. The natural history of the ghost bat Macroderma gigas (Microchiroptera, Megadermatidae) in Western Australia. Western Australian Naturalist 10, 125–137.

Environmental Protection Authority and Department of Parks and Wildlife (2010). *Technical Guide - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, Perth, Western Australia.

Finlayson HH (1961) On central Australian mammals. Part IV. The distribution and status of central Australian species. Records ofthe South Australian Museum 14, 141–191.

Johnson, K. and Roff, A. (1982). The Western Quoll, Dasyurus geoffroii (Dasyuridae, Marsupalia) in the Northern Territory: historical records from venerable sources. In: M. Archer (Ed). Carnivorous Marsupials: pp. 221-226. Royal Zoological Society of New South Wales, Mosman.

Kerle, J.A. and How R.A. (2008). Common Brushtail Possum. In Van Dyck, S. and R. Strahan (Eds.) The Mammals of Australia. Reed New Holland. Sydney

McAlpin, S. (2001). A recovery plan for the Great Desert Skink (Egernia kintorei). Arid Lands Environment Centre. Alice Springs, Australia.

Molnar R.E., Hall L.S. and Mahoney J.A. 1984. New fossil localities for Macroderma Miller,1906 (Chiroptera: Megadermatidae) in New South Wales and its past and present distribution in Australia. Australian Mammalogy 7, 63–73.

Muir, B.G. (1977). Biological Survey of the Western Australian Wheatbelt Part 2 Vegetation and Habitat of Bendering Reserve. *Records of the Western Australian Museum Supplement*, 3.

Nano, C. E. M., Clarke, P. J., and Pavey, C. R. (2012). Fire regimes in arid hummock grasslands and Acacia shrublands. In: 'Flammable Australia: Fire Regimes, Biodiversity and Ecosystems in a Changing World'. (Eds R. A. Bradstock, A. M. Gill and R. J. Williams.) pp. 195–214. CSIRO Publishing: Melbourne.

Pearson, D. J. (2012). Recovery plan for five species of rock-wallabies: black-flanked rock-wallaby (Petrogale lateralis), Rothschild's rock-wallaby (Petrogale rothschildi), short-eared rock-wallaby (Petrogale brachyotis), monjon (Petrogale burbidgei) and nabarlek (Petrogale concinna). Department of Environment and Conservation, Perth.

Pearson, D., Davies, P., Carnegie, N. and Ward, J. (2001). The great desert skink (*Egernia kintorei*) in Western Australia: distribution, reproduction and ethno-zoological observations. Herpetofauna 31(1), pp.64-68.

Serena, M., T.R. Soderquist & K.D. Morris (1991). Western Australian Wildlife Management Program No 7: The Chuditch. Como, Western Australia: Department of Conservation and Land Management.

Threatened Species Scientific Committee (2015). *Conservation Advice Sminthopsis psammophila sandhill dunnart*, Department of the Environment: Canberra.

Threatened Species Scientific Committee (2016). Conservation Advice, *Liopholis kintorei* great desert skink. Canberra: Department of the Environment and Energy.

Turpin, J.M. and Johnstone, R.E. (2017). An isolated population of the southern scrub-robin (*Drymodes brunneopygia*) in the Great Victoria Desert. Pacific Conservation Biology 23 (1), 95 – 106.

Turpin, J.M., Riley, J.L and Lloyd, R. (2017). Yellow Sandplain Mammals of the Great Victoria Desert. 12th International Mammalogical Congress 2017, Perth.

Turpin, J.M., Dunlop J.A, White, N.E. and Bamford, M.J. (2018). New populations of the black-flanked rock-wallaby (*Petrogale lateralis*) from the Little Sandy Desert and Murchison, Western Australia. *Australian Mammalogy*, in press. Doi:10.1071/AM14043

Woinarski, J. C. Z., and Recher, H. F. (1997). Impact and response: a review of the effects of fire on the Australian avifauna. Pacific Conservation Biology 3, 183–205.

Woinarski, J., Traill, B., and Booth, C. (2014). The modern outback. Nature, people and the future of remote Australia. Pew Charitable Trusts, Sydney. Available at: http://www.pewtrusts.org/en/research-and-analysis/reports/2014/10/the-modern-outback

7 Appendices

APPENDIX 1: CAMERA SITE DETAILS

Location and habitat of motion sensor cameras installed during the survey

Camera	Zone	Easting	Northing	Polygon	Area	Survey	Habitat
Camera 1	51J	620301	6623257	1218	Southern GVD	Phase 1	G
Camera 2	51J	621179	6622994	1218	Southern GVD	Phase 1	G
Camera 3	51J	618366	6624617	1218	Southern GVD	Phase 1	G
Camera 4	51J	618004	6622419	1218	Southern GVD	Phase 1	G
Camera 5	51J	619581	6621019	1218	Southern GVD	Phase 1	B
Camera 6	51J	627836	6617242	1218	Southern GVD	Phase 1	G
Camera 7	51J	621189	6619700	1218	Southern GVD	Phase 1	H
Camera 8	51J	622733	6696289	1143	Southern GVD	Phase 1	G
Camera 9	51J	623981	6696489	1143	Southern GVD	Phase 1	G
Camera 10	51J	627212	6696116	1143	Southern GVD	Phase 1	G
Camera 11	51J	629762	6696059	1143	Southern GVD	Phase 1	G
Camera 12	51J	632141	6695826	1143	Southern GVD	Phase 1	G
Camera 13	51J	634505	6695125	1143	Southern GVD	Phase 1	G
Camera 14	51J	643666	6695406	1143	Southern GVD	Phase 1	G
Camera 15	51J	678591	6718740	1098	Plumridge Lakes NR	Phase 1	G
Camera 16	51J	679919	6720750	1098	Plumridge Lakes NR	Phase 1	G
Camera 17	51J	685948	6723497	1098	Plumridge Lakes NR	Phase 1	D
Camera 18	51J	681609	6723437	1098	Plumridge Lakes NR	Phase 1	D
Camera 19	51J	680542	6721812	1098	Plumridge Lakes NR	Phase 1	G
Camera 20	51J	688556	6723651	1098	Plumridge Lakes NR	Phase 1	B
Camera 21	51J	682775	6725396	1098	Plumridge Lakes NR	Phase 1	B
Camera 22	51J	708089	6828593	805	Spackman Track	Phase 1	G
Camera 23	51J	705953	6827435	805	Spackman Track	Phase 1	D
Camera 24	51J	713392	6833351	805	Spackman Track	Phase 1	G
Camera 25	51J	706768	6827756	805	Spackman Track	Phase 1	G
Camera 26	51J	712167	6832091	805	Spackman Track	Phase 1	G
Camera 27	51J	716362	6834589	805	Spackman Track	Phase 1	G
Camera 28	51J	718517	6835071	805	Spackman Track	Phase 1	D
Camera 29	52J	253785	6865188	669	Neale Junction	Phase 1	A
Camera 30	52J	249802	6865909	669	Neale Junction	Phase 1	G
Camera 31	52J	246509	6865826	669	Neale Junction	Phase 1	G
Camera 32	52J	255098	6865237	669	Neale Junction	Phase 1	A
Camera 33	52J	251903	6865557	669	Neale Junction	Phase 1	G
Camera 34	52J	247699	6865908	669	Neale Junction	Phase 1	G
Camera 35	52J	244426	6865904	669	Neale Junction	Phase 1	G
Camera 37	51J	790432	6865698	691	Neale Junction	Phase 1	H
Camera 38	51J	786947	6866086	691	Neale Junction	Phase 1	G
Camera 39	52J	207397	6865476	691	Neale Junction	Phase 1	G
Camera 40	51J	784614	6866143	691	Neale Junction	Phase 1	H

Camera 41	51J	794137	6865654	691	Neale Junction	Phase 1	A
Camera 42	51J	788333	6866206	691	Neale Junction	Phase 1	G
Camera 43	51J	792286	6865779	691	Neale Junction	Phase 1	H
Camera 44	51J	773774	6835848	808	Neale Junction	Phase 1	H
Camera 45	51J	774955	6838877	808	Neale Junction	Phase 1	G
Camera 46	51J	772826	6826592	808	Neale Junction	Phase 1	H
Camera 47	51J	772527	6828565	808	Neale Junction	Phase 1	D
Camera 48	51J	771604	6832918	808	Neale Junction	Phase 1	G
Camera 49	51J	774075	6837018	808	Neale Junction	Phase 1	G
Camera 36	51J	772197	6830433	808	Neale Junction	Phase 1	G
Camera 50	51J	657059	6879410	660	Yeo Lake	Phase 1	A
Camera 51	51J	658793	6880534	660	Yeo Lake	Phase 1	G
Camera 52	51J	653975	6883115	660	Yeo Lake	Phase 1	A
Camera 53	51J	657299	6882074	660	Yeo Lake	Phase 1	G
Camera 54	51J	657996	6880649	660	Yeo Lake	Phase 1	G
Camera 55	51J	659523	6879057	660	Yeo Lake	Phase 1	A
Camera 56	51J	655741	6882228	660	Yeo Lake	Phase 1	G
Camera 57	51J	512041	6679205	1184	Mulga Rockhole	Phase 1	H
Camera 58	51J	504715	6674257	1184	Mulga Rockhole	Phase 1	I
Camera 59	51J	506915	6674574	1184	Mulga Rockhole	Phase 1	I
Camera 60	51J	509465	6675093	1184	Mulga Rockhole	Phase 1	H
Camera 61	51J	511181	6675703	1184	Mulga Rockhole	Phase 1	G
Camera 62	51J	513228	6676532	1184	Mulga Rockhole	Phase 1	G
Camera 63	51J	514718	6676852	1184	Mulga Rockhole	Phase 1	H
Camera 1	51J	616210	7140534	3	David Carnegie	Phase 2	I
Camera 2	51J	617384	7138898	3	David Carnegie	Phase 2	F
Camera 3	51J	620787	7136747	3	David Carnegie	Phase 2	A
Camera 4	51J	619447	7138348	3	David Carnegie	Phase 2	I
Camera 5	51J	621209	7130714	3	David Carnegie	Phase 2	F
Camera 6	51J	621021	7134653	3	David Carnegie	Phase 2	F
Camera 7	51J	620873	7132436	3	David Carnegie	Phase 2	E
Camera 8	51J	624081	7117428	15	David Carnegie	Phase 2	F
Camera 9	51J	624094	7123246	15	David Carnegie	Phase 2	F
Camera 10	51J	625470	7111976	15	David Carnegie	Phase 2	F
Camera 11	51J	624134	7122176	56	David Carnegie	Phase 2	F
Camera 12	51J	624116	7120056	56	David Carnegie	Phase 2	F
Camera 13	51J	623811	7115970	56	David Carnegie	Phase 2	F
Camera 14	51J	625070	7113752	56	David Carnegie	Phase 2	F
Camera 15	51J	623047	7086505	15	David Carnegie	Phase 2	F
Camera 16	51J	623108	7082518	15	David Carnegie	Phase 2	E
Camera 17	51J	622411	7080573	15	David Carnegie	Phase 2	F
Camera 18	51J	622826	7088553	56	David Carnegie	Phase 2	E
Camera 19	51J	623142	7084520	56	David Carnegie	Phase 2	H
Camera 20	51J	624245	7076299	15	David Carnegie	Phase 2	F
Camera 21	51J	623326	7078602	56	David Carnegie	Phase 2	E

Camera 22	51J	644149	7023629	170	David Carnegie	Phase 2	F
Camera 23	51J	644252	7025392	170	David Carnegie	Phase 2	E
Camera 24	51J	642280	7019578	170	David Carnegie	Phase 2	F
Camera 25	51J	643915	7027343	170	David Carnegie	Phase 2	I
Camera 58	51J	640395	7015489	170	David Carnegie	Phase 2	F
Camera 26	51J	643551	7021168	170	David Carnegie	Phase 2	I
Camera 27	51J	641250	7017432	170	David Carnegie	Phase 2	I
Camera 29	51J	609837	6889351	609	Yeo Lake	Phase 2	H
Camera 30	51J	615781	6890993	609	Yeo Lake	Phase 2	G
Camera 31	51J	614131	6891018	609	Yeo Lake	Phase 2	G
Camera 32	51J	611875	6889740	609	Yeo Lake	Phase 2	G
Camera 33	51J	617678	6890912	609	Yeo Lake	Phase 2	B
Camera 34	51J	607813	6888864	609	Yeo Lake	Phase 2	E
Camera 35	51J	612327	6889973	609	Yeo Lake	Phase 2	G
Camera 36	51J	576742	6840963	821	Mount Douglas	Phase 2	G
Camera 37	51J	587315	6841044	821	Mount Douglas	Phase 2	G
Camera 38	51J	578295	6840888	821	Mount Douglas	Phase 2	G
Camera 39	51J	583720	6841587	821	Mount Douglas	Phase 2	G
Camera 40	51J	581815	6840909	821	Mount Douglas	Phase 2	G
Camera 41	51J	580464	6840914	821	Mount Douglas	Phase 2	G
Camera 42	51J	583684	6840932	821	Mount Douglas	Phase 2	G
Camera 43	51J	609380	6840849	842	Mount Douglas	Phase 2	G
Camera 44	51J	607077	6841000	842	Mount Douglas	Phase 2	G
Camera 45	51J	602137	6840924	842	Mount Douglas	Phase 2	G
Camera 46	51J	599154	6841093	842	Mount Douglas	Phase 2	G
Camera 47	51J	593264	6840854	842	Mount Douglas	Phase 2	G
Camera 48	51J	604296	6840808	842	Mount Douglas	Phase 2	G
Camera 49	51J	596661	6840839	842	Mount Douglas	Phase 2	G
Camera 71	51J	530389	6799657	973	Malleehen Rocks	Phase 2	G
Camera 72	51J	533965	6797409	973	Malleehen Rocks	Phase 2	G
Camera 73	51J	528497	6799590	973	Malleehen Rocks	Phase 2	A
Camera 74	51J	541620	6804892	973	Malleehen Rocks	Phase 2	G
Camera 75	51J	533471	6799065	973	Malleehen Rocks	Phase 2	H
Camera 50	51J	499797	6858035	795	White Cliffs	Phase 2	G
Camera 51	51J	515363	6856265	795	White Cliffs	Phase 2	G
Camera 52	51J	508861	6856768	795	White Cliffs	Phase 2	H
Camera 53	51J	502010	6857744	795	White Cliffs	Phase 2	H
Camera 54	51J	506704	6857092	795	White Cliffs	Phase 2	G
Camera 55	51J	503779	6857549	795	White Cliffs	Phase 2	G
Camera 56	51J	511030	6856671	795	White Cliffs	Phase 2	H
Camera 28	51J	488020	6974209	332	DE La Poer NR	Phase 2	H
Camera 57	51J	490064	6975207	332	DE La Poer NR	Phase 2	G
Camera 64	51J	485049	6973915	332	DE La Poer NR	Phase 2	G
Camera 65	51J	494103	6970276	332	DE La Poer NR	Phase 2	G
Camera 67	51J	495572	6968711	332	DE La Poer NR	Phase 2	G

Camera 68	51J	491825	6974220	332	DE La Poer NR	Phase 2	G
Camera 60	51J	493055	6972444	332	DE La Poer NR	Phase 2	G
Camera 59	51J	491462	6945663	468	Lake Wells Rd	Phase 2	G
Camera 61	51J	491315	6939101	468	Lake Wells Rd	Phase 2	A
Camera 62	51J	491345	6932821	468	Lake Wells Rd	Phase 2	F
Camera 63	51J	491479	6930648	468	Lake Wells Rd	Phase 2	G
Camera 66	51J	491437	6941519	468	Lake Wells Rd	Phase 2	G
Camera 69	51J	491319	6936556	468	Lake Wells Rd	Phase 2	G
Camera 70	51J	491503	6934824	468	Lake Wells Rd	Phase 2	G

APPENDIX 2: SPECIES RECORDED DURING THE SURVEY

Species detected by camera within each Survey Unit (polygon)

Class	Common Name	Scientific Name	Polygon																			Grand Total
			3	15	56	170	332	468	609	660	669	691	795	805	808	821	842	973	1098	1143	1184	1218	
Amphibian	Frog sp.	*Frog sp.*		x												x							2
Bird	Australian Bustard	*Ardeotis australis*		x																			1
Bird	Australian Magpie	*Cracticus tibicen*			x					x				x	x								4
Bird	Australian Owlet Nightjar	*Aegotheles cristatus*								x													1
Bird	Bird sp.	-				x				x													2
Bird	Black-faced Woodswallow	*Artamus cinereus*	x			x																	2
Bird	Crested Bellbird	*Oreoica gutturalis*	x							x	x			x								x	5
Bird	Crested Pigeon	*Ocyphaps lophotes*			x																		1
Bird	Crimson Chat	*Epthianura tricolor*	x	x																			2
Bird	Grey Butcherbird	*Cracticus torquatus*															x	x	x				3
Bird	Grey Shrike Thrush	*Colluricincla harmonica*												x									1
Bird	Grey-fronted Honeyeater	*Lichenostomus plumulus*			x							x											2
Bird	Little Button Quail	*Turnix velox*																			x		1
Bird	Little Crow	*Corvus bennetti*			x					x			x								x	x	5
Bird	Pied Butcherbird	*Cracticus nigrogularis*								x		x						x					3
Bird	Raven	*Corvus coronoides*	x	x	x																		3
Bird	Splendid Fairy-wren	*Malurus splendens*								x													1
Bird	Spotted Nightjar	*Eurostopodus argus*								x													1
Bird	Stubble Quail	*Coturnix pectoralis*												x									1
Bird	Western Bowerbird	*Chlamydera guttata*	x															x					2
Bird	Willie Wagtail	*Rhipidura leucophrys*										x							x				2
Bird	Yellow-throated Miner	*Manorina flavigula*					x				x	x		x						x	x		6
Mammal	Brush-tailed Mulgara	*Dasycercus blythi*	x		x		x	x					x					x			x		7
Mammal	Camel	*Camelus dromedarius*	x	x	x			x	x			x	x		x				x				9
Mammal	Dingo	*Canis dingo*	x	x	x			x		x		x		x	x	x			x	x			11
Mammal	Dog (?)	*Canis familiaris*				x																	1
Mammal	Echidna	*Tachyglossus aculeatus*							x														1
Mammal	Euro	*Macropus robustus*																			x		1
Mammal	Feral Cat	*Felis catus*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	19
Mammal	Mus or Pseudomys sp.	*Mus* or *Pseudomys* sp.	x		x			x	x	x					x	x	x	x					9
Mammal	Ningaui sp.	*Ningaui* sp.																			x	x	2
Mammal	Pseudomys sp.	*Pseudomys* sp.	x		x	x	x	x		x	x	x	x		x		x	x	x		x	x	15
Mammal	Red Fox	*Vulpes vulpes*		x	x	x			x	x	x	x	x	x	x	x	x	x	x	x			15
Mammal	Red Kangaroo	*Macropus rufus*	x																				1
Mammal	Sandhill Dunnart	*Sminthopsis psammophila*																		x	x		2
Mammal	Sandy Inland Mouse	*Pseudomys hermannsburgensis*		x	x		x			x			x	x	x		x						8
Mammal	Small dunnart	-		x					x	x			x					x			x		6
Mammal	Small rodent	-	x	x		x							x				x			x		x	7
Mammal	Spinifex Hopping Mouse	*Notomys alexis*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	20
Mammal	Stripe-faced Dunnart	*Sminthopsis macroura*							x														1
Mammal	Western Grey Kangaroo	*Macropus fuliginosus*						x	x		x		x	x		x	x	x	x	x	x	x	12
Reptile	Black-headed Monitor	*Varanus tristis*			x					x		x						x		x	x	x	7
Reptile	Bobtail Lizard	*Tiliqua rugosa*																			x		1

Class	Common Name	Scientific Name	Polygon																			Grand Total
			3	15	56	170	332	468	609	660	669	691	795	805	808	821	842	973	1098	1143	1184	1218	
Reptile	Central Military Dragon	*Ctenophorus isolepis*	x		x																		2
Reptile	Centralian Blue-tongue	*Tiliqua multifasciata*		x			x			x	x		x		x							x	7
Reptile	Clay-soil Ctenotus	*Ctenotus helenae*	x					x															2
Reptile	Crested Dragon	*Ctenophorus cristatus*																	x			x	2
Reptile	Ctenotus sp.	*Ctenotus* sp.	x					x										x					3
Reptile	Dwarf Bearded Dragon	*Pogona minor*																			x		1
Reptile	Fourteen-lined Ctenotus	*Ctenotus quattuordecimlineatus*					x																1
Reptile	Gecko sp.	*Nephrurus* sp.																			x		1
Reptile	Grand Ctenotus	*Ctenotus grandis*			x		x																2
Reptile	Great Desert Skink	*Liopholis kintorei*	x	x			x																3
Reptile	Liopholis sp.	*Liopholis* sp.	x	x		x			x														4
Reptile	Lozenge-marked Dragon	*Ctenophorus scutulatus*						x															1
Reptile	Mallee Military Dragon	*Ctenophorus fordi*																			x		1
Reptile	Nocturnal Desert Skink	*Liopholis striata*						x															1
Reptile	Pygmy Desert Monitor	*Varanus eremius*								x													1
Reptile	Sand Monitor	*Varanus gouldii*	X	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	19
Reptile	Small gecko	-																x					1
Reptile	Snake Sp.	-									x												1
Reptile	Western Blue-tongue	*Tiliqua occipitalis*								x											x		2
Unknown	Unknown	-				x	x											x		x			4
	Grand Total		20	16	18	11	12	13	11	21	10	12	13	12	11	8	10	16	11	10	18	12	554

Species detected at each camera site

Class	Common Name	Scientific Name	0003					0015							0056							0660							0669						
			2	4	5	6	7	10	15	16	17	20	8	9	11	12	13	14	18	19	21	50	51	52	53	54	55	56	29	30	31	32	33	34	35
Amphibian	Frog sp.	Frog sp.															x																		
Bird	Australian Bustard	*Ardeotis australis*											x																						
Bird	Australian Magpie	*Cracticus tibicen*								x													x												
Bird	Australian Owlet Nightjar	*Aegotheles cristatus*																						x											
Bird	Black-faced Woodswallow	*Artamus cinereus*			x																														
Bird	Crested Bellbird	*Oreoica gutturalis*			x																				x									x	
Bird	Crested Pigeon	*Ocyphaps lophotes*								x																									
Bird	Crimson Chat	*Epthianura tricolor*				x	x								x																				
Bird	Grey Butcherbird	*Cracticus torquatus*																																	
Bird	Grey Shrike Thrush	*Colluricincla harmonica*																																	
Bird	Grey-fronted Honeyeater	*Lichenostomus plumulus*																		x															
Bird	Little Button Quail	*Turnix velox*																																	
Bird	Little Crow	*Corvus bennetti*																	x					x											
Bird	Pied Butcherbird	*Cracticus nigrogularis*																					x												
Bird	Raven	*Corvus coronoides*	x				x		x				x	x		x	x																		
Bird	Splendid Fairy-wren	*Malurus splendens*																						x											
Bird	Spotted Nightjar	*Eurostopodus argus*																				x													
Bird	Stubble Quail	*Coturnix pectoralis*																																	
Bird	Western Bowerbird	*Chlamydera guttata*		x																															
Bird	Willie Wagtail	*Rhipidura leucophrys*																																	
Bird	Yellow-throated Miner	*Manorina flavigula*																														x	x		x
Bird	Bird sp.	-																						x											
Mammal	Brush-tailed Mulgara	*Dasycercus blythi*	x				x			x									x	x															
Mammal	Camel	*Camelus dromedarius*		x				x					x		x				x	x															
Mammal	Dingo	*Canis dingo*		x				x					x								x			x											
Mammal	Dog (?)	*Canis familiaris*																																	
Mammal	Euro	*Macropus robustus*																																	
Mammal	Feral Cat	*Felis catus*			x		x				x		x	x	x		x						x		x				x			x	x	x	x
Mammal	Mus or Pseudomys sp.	*Mus or Pseudomys sp.*				x				x		x										x	x	x		x		x							
Mammal	Ningaui sp.	*Ningaui sp.*																																	
Mammal	Pseudomys sp.	*Pseudomys sp.*		x								x											x				x	x				x	x		
Mammal	Red Fox	*Vulpes vulpes*							x						x	x			x						x			x	x			x			
Mammal	Red Kangaroo	*Macropus rufus*				x																													
Mammal	Sandhill Dunnart	*Sminthopsis psammophila*																																	
Mammal	Sandy Inland Mouse	*Pseudomys hermannsburgensis*									x						x	x				x	x		x										
Mammal	Small dunnart	-															x							x											
Mammal	Small rodent	-			x													x																	
Mammal	Spinifex Hopping Mouse	*Notomys alexis*	x		x	x	x		x	x	x	x		x	x	x	x	x				x	x		x	x	x	x		x	x	x	x	x	x
Mammal	Stripe-faced Dunnart	*Sminthopsis macroura*																																	
Mammal	Western Grey Kangaroo	*Macropus fuliginosus*																												x					
Reptile	Black-headed Monitor	*Varanus tristis*								x																		x							
Reptile	Bobtail Lizard	*Tiliqua rugosa*																																	
Reptile	Central Military Dragon	*Ctenophorus isolepis*					x			x																									
Reptile	Centralian Blue-tongue	*Tiliqua multifasciata*														x								x										x	
Reptile	Clay-soil Ctenotus	*Ctenotus helenae*					x																												
Reptile	Crested Dragon	*Ctenophorus cristatus*																																	
Reptile	Ctenotus sp.	*Ctenotus sp.*		x																															
Reptile	Dwarf Bearded Dragon	*Pogona minor*																																	
Reptile	Echidna	*Tachyglossus aculeatus*																																	
Reptile	Fourteen-lined Ctenotus	*Ctenotus quattuordecimlineatus*																																	
Reptile	Gecko sp.	*Nephrurus sp.*																																	
Reptile	Grand Ctenotus	*Ctenotus grandis*								x																									
Reptile	Great Desert Skink	*Liopholis kintorei*				x											x																		
Reptile	Liopholis sp.	*Liopholis sp.*	x														x																		
Reptile	Lozenge-marked Dragon	*Ctenophorus scutulatus*																																	
Reptile	Mallee Military Dragon	*Ctenophorus fordi*																																	
Reptile	Nocturnal Desert Skink	*Liopholis striata*																																	
Reptile	Pygmy Desert Monitor	*Varanus eremius*																				x													
Reptile	Sand Monitor	*Varanus gouldii*	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x					x	x	x		x
Reptile	Western Blue-tongue	*Tiliqua occipitalis*																									x								
Reptile	Small gecko	-																																	
Reptile	Snake Sp.	-																																x	
Unknown	Unknown	-																																	
	Grand Total		5	6	6	6	8	2	4	9	4	4	6	5	6	4	9	5	4	4	1	6	8	8	6	3	3	5	2	2	3	6	4	5	4

Class	Common Name	Scientific Name	0691							0805					0808							1098						1143					
			37	38	39	40	41	42	43	22	23	25	26	27	36	44	45	46	47	48	49	15	16	17	18	19	20	10	12	13	14	8	9
Amphibian	Frog sp.	Frog sp.																															
Bird	Australian Bustard	*Ardeotis australis*																															
Bird	Australian Magpie	*Cracticus tibicen*											x							x													
Bird	Australian Owlet Nightjar	*Aegotheles cristatus*																															
Bird	Black-faced Woodswallow	*Artamus cinereus*																															
Bird	Crested Bellbird	*Oreoica gutturalis*											x																				
Bird	Crested Pigeon	*Ocyphaps lophotes*																															
Bird	Crimson Chat	*Epthianura tricolor*																															
Bird	Grey Butcherbird	*Cracticus torquatus*																					x										
Bird	Grey Shrike Thrush	*Colluricincla harmonica*											x																				
Bird	Grey-fronted Honeyeater	*Lichenostomus plumulus*		x																													
Bird	Little Button Quail	*Turnix velox*																															
Bird	Little Crow	*Corvus bennetti*																															
Bird	Pied Butcherbird	*Cracticus nigrogularis*						x																									
Bird	Raven	*Corvus coronoides*																															
Bird	Splendid Fairy-wren	*Malurus splendens*																															
Bird	Spotted Nightjar	*Eurostopodus argus*																															
Bird	Stubble Quail	*Coturnix pectoralis*												x																			
Bird	Western Bowerbird	*Chlamydera guttata*																															
Bird	Willie Wagtail	*Rhipidura leucophrys*			x																		x										
Bird	Yellow-throated Miner	*Manorina flavigula*						x		x																						x	
Bird	Bird sp.	-																															
Mammal	Brush-tailed Mulgara	*Dasycercus blythi*																															
Mammal	Camel	*Camelus dromedarius*	x																	x				x									
Mammal	Dingo	*Canis dingo*	x								x					x					x			x	x				x				
Mammal	Dog (?)	*Canis familiaris*																															
Mammal	Euro	*Macropus robustus*																															
Mammal	Feral Cat	*Felis catus*	x		x	x	x	x	x	x		x	x				x							x	x		x			x	x		
Mammal	Mus or Pseudomys sp.	*Mus or Pseudomys sp.*															x																
Mammal	Ningaui sp.	*Ningaui sp.*																															
Mammal	Pseudomys sp.	*Pseudomys sp.*		x		x			x									x	x	x			x		x								
Mammal	Red Fox	*Vulpes vulpes*	x							x	x		x		x	x								x	x					x			
Mammal	Red Kangaroo	*Macropus rufus*																															
Mammal	Sandhill Dunnart	*Sminthopsis psammophila*																															x
Mammal	Sandy Inland Mouse	*Pseudomys hermannsburgensis*											x	x				x															
Mammal	Small dunnart	-																															
Mammal	Small rodent	-																															x
Mammal	Spinifex Hopping Mouse	*Notomys alexis*	x	x			x	x				x	x	x	x		x					x	x	x		x			x	x	x	x	x	x
Mammal	Stripe-faced Dunnart	*Sminthopsis macroura*																															
Mammal	Western Grey Kangaroo	*Macropus fuliginosus*								x	x		x											x		x	x				x	x	x
Reptile	Black-headed Monitor	*Varanus tristis*						x																									x
Reptile	Bobtail Lizard	*Tiliqua rugosa*																															
Reptile	Central Military Dragon	*Ctenophorus isolepis*																															
Reptile	Centralian Blue-tongue	*Tiliqua multifasciata*																x	x														
Reptile	Clay-soil Ctenotus	*Ctenotus helenae*																															
Reptile	Crested Dragon	*Ctenophorus cristatus*																							x								
Reptile	Ctenotus sp.	*Ctenotus sp.*																															
Reptile	Dwarf Bearded Dragon	*Pogona minor*																															
Reptile	Echidna	*Tachyglossus aculeatus*																															
Reptile	Fourteen-lined Ctenotus	*Ctenotus quattuordecimlineatus*																															
Reptile	Gecko sp.	*Nephrurus sp.*																															
Reptile	Grand Ctenotus	*Ctenotus grandis*																															
Reptile	Great Desert Skink	*Liopholis kintorei*																															
Reptile	Liopholis sp.	*Liopholis sp.*																															
Reptile	Lozenge-marked Dragon	*Ctenophorus scutulatus*																															
Reptile	Mallee Military Dragon	*Ctenophorus fordi*																															
Reptile	Nocturnal Desert Skink	*Liopholis striata*																															
Reptile	Pygmy Desert Monitor	*Varanus eremius*																															
Reptile	Sand Monitor	*Varanus gouldii*		x			x	x					x	x			x	x	x	x			x										
Reptile	Western Blue-tongue	*Tiliqua occipitalis*																															
Reptile	Small gecko	-																															
Reptile	Snake Sp.	-																															
Unknown	Unknown	-																															x
	Grand Total		5	4	2	2	3	6	2	4	3	2	9	4	2	2	4	4	3	4	2	1	5	5	6	1	2	1	2	3	3	3	6

Class	Common Name	Scientific Name	1218						0170						0332				0468					0604			
			1	2	4	5	6	7	23	22	26	24	27	58	64	60	65	67	59	66	61	62	63	33	31	35	32
Amphibian	Frog sp.	Frog sp.																									
Bird	Australian Bustard	*Ardeotis australis*																									
Bird	Australian Magpie	*Cracticus tibicen*																									
Bird	Australian Owlet Nightjar	*Aegotheles cristatus*																									
Bird	Black-faced Woodswallow	*Artamus cinereus*							x																		
Bird	Crested Bellbird	*Oreoica gutturalis*						x																			
Bird	Crested Pigeon	*Ocyphaps lophotes*																									
Bird	Crimson Chat	*Epthianura tricolor*																									
Bird	Grey Butcherbird	*Cracticus torquatus*																									
Bird	Grey Shrike Thrush	*Colluricincla harmonica*																									
Bird	Grey-fronted Honeyeater	*Lichenostomus plumulus*																									
Bird	Little Button Quail	*Turnix velox*																									
Bird	Little Crow	*Corvus bennetti*	x				x																				
Bird	Pied Butcherbird	*Cracticus nigrogularis*																									
Bird	Raven	*Corvus coronoides*																									
Bird	Splendid Fairy-wren	*Malurus splendens*																									
Bird	Spotted Nightjar	*Eurostopodus argus*																									
Bird	Stubble Quail	*Coturnix pectoralis*																									
Bird	Western Bowerbird	*Chlamydera guttata*																									
Bird	Willie Wagtail	*Rhipidura leucophrys*																									
Bird	Yellow-throated Miner	*Manorina flavigula*													x												
Bird	Bird sp.	-							x																		
Mammal	Brush-tailed Mulgara	*Dasycercus blythi*													x		x	x				x					
Mammal	Camel	*Camelus dromedarius*																					x			x	
Mammal	Dingo	*Canis dingo*																		x							
Mammal	Dog (?)	*Canis familiaris*								x			x														
Mammal	Euro	*Macropus robustus*																									
Mammal	Feral Cat	*Felis catus*		x	x			x	x		x				x					x						x	
Mammal	Mus or Pseudomys sp.	*Mus or Pseudomys sp.*																			x					x	
Mammal	Ningaui sp.	*Ningaui sp.*					x																				
Mammal	Pseudomys sp.	*Pseudomys sp.*	x	x					x	x				x			x		x				x				
Mammal	Red Fox	*Vulpes vulpes*							x				x												x		
Mammal	Red Kangaroo	*Macropus rufus*																									
Mammal	Sandhill Dunnart	*Sminthopsis psammophila*																									
Mammal	Sandy Inland Mouse	*Pseudomys hermannsburgensis*															x	x									
Mammal	Small dunnart	-																								x	
Mammal	Small rodent	-					x	x		x																	
Mammal	Spinifex Hopping Mouse	*Notomys alexis*			x	x	x		x	x	x	x	x	x	x	x	x	x	x				x	x	x	x	x
Mammal	Stripe-faced Dunnart	*Sminthopsis macroura*																								x	
Mammal	Western Grey Kangaroo	*Macropus fuliginosus*			x			x													x					x	
Reptile	Black-headed Monitor	*Varanus tristis*		x																							
Reptile	Bobtail Lizard	*Tiliqua rugosa*																									
Reptile	Central Military Dragon	*Ctenophorus isolepis*																									
Reptile	Centralian Blue-tongue	*Tiliqua multifasciata*					x										x										
Reptile	Clay-soil Ctenotus	*Ctenotus helenae*																	x								
Reptile	Crested Dragon	*Ctenophorus cristatus*			x																						
Reptile	Ctenotus sp.	*Ctenotus sp.*																			x						
Reptile	Dwarf Bearded Dragon	*Pogona minor*																									
Reptile	Echidna	*Tachyglossus aculeatus*																							x		
Reptile	Fourteen-lined Ctenotus	*Ctenotus quattuordecimlineatus*																x									
Reptile	Gecko sp.	*Nephrurus sp.*																									
Reptile	Grand Ctenotus	*Ctenotus grandis*															x										
Reptile	Great Desert Skink	*Liopholis kintorei*															x										
Reptile	Liopholis sp.	*Liopholis sp.*										x														x	
Reptile	Lozenge-marked Dragon	*Ctenophorus scutulatus*																			x						
Reptile	Mallee Military Dragon	*Ctenophorus fordi*																									
Reptile	Nocturnal Desert Skink	*Liopholis striata*																	x		x						
Reptile	Pygmy Desert Monitor	*Varanus eremius*																									
Reptile	Sand Monitor	*Varanus gouldii*					x	x	x	x				x	x	x	x	x	x		x	x				x	
Reptile	Western Blue-tongue	*Tiliqua occipitalis*																									
Reptile	Small gecko	-																									
Reptile	Snake Sp.	-																									
Unknown	Unknown	-												x	x												
	Grand Total		2	3	4	1	6	5	7	5	2	2	3	4	6	2	8	5	5	2	6	2	3	1	3	9	1

Class	Common Name	Scientific Name	0795							0843						0842							0973				1184							Grand Total
			51	56	52	54	55	53	50	36	38	41	39	42	37	43	44	48	45	46	49	47	71	75	72	74	57	58	59	60	61	62	63	
Amphibian	Frog sp.	Frog sp.												x																				2
Bird	Australian Bustard	*Ardeotis australis*																																1
Bird	Australian Magpie	*Cracticus tibicen*																																4
Bird	Australian Owlet Nightjar	*Aegotheles cristatus*																																1
Bird	Black-faced Woodswallow	*Artamus cinereus*																																2
Bird	Crested Bellbird	*Oreoica gutturalis*																																5
Bird	Crested Pigeon	*Ocyphaps lophotes*																																1
Bird	Crimson Chat	*Epthianura tricolor*																																3
Bird	Grey Butcherbird	*Cracticus torquatus*																		x				x										3
Bird	Grey Shrike Thrush	*Colluricincla harmonica*																																1
Bird	Grey-fronted Honeyeater	*Lichenostomus plumulus*																																2
Bird	Little Button Quail	*Turnix velox*																															x	1
Bird	Little Crow	*Corvus bennetti*			x																									x	x	x	x	9
Bird	Pied Butcherbird	*Cracticus nigrogularis*																								x								3
Bird	Raven	*Corvus coronoides*																																7
Bird	Splendid Fairy-wren	*Malurus splendens*																																1
Bird	Spotted Nightjar	*Eurostopodus argus*																																1
Bird	Stubble Quail	*Coturnix pectoralis*																																1
Bird	Western Bowerbird	*Chlamydera guttata*																								x								2
Bird	Willie Wagtail	*Rhipidura leucophrys*																																2
Bird	Yellow-throated Miner	*Manorina flavigula*																										x						8
Bird	Bird sp.	-																																2
Mammal	Brush-tailed Mulgara	*Dasycercus blythi*					x																		x								x	13
Mammal	Camel	*Camelus dromedarius*	x			x																												13
Mammal	Dingo	*Canis dingo*												x																				14
Mammal	Dog (?)	*Canis familiaris*																																2
Mammal	Euro	*Macropus robustus*																											x			x		2
Mammal	Feral Cat	*Felis catus*			x	x		x	x	x	x	x		x		x			x	x	x	x		x	x	x								54
Mammal	Mus or Pseudomys sp.	*Mus or Pseudomys sp.*										x		x	x	x							x	x										21
Mammal	Ningaui sp.	*Ningaui sp.*																															x	2
Mammal	Pseudomys sp.	*Pseudomys sp.*					x													x				x	x		x	x	x		x	x		38
Mammal	Red Fox	*Vulpes vulpes*	x								x	x	x	x								x				x								28
Mammal	Red Kangaroo	*Macropus rufus*																																1
Mammal	Sandhill Dunnart	*Sminthopsis psammophila*																										x						2
Mammal	Sandy Inland Mouse	*Pseudomys hermannsburgensis*				x		x										x				x												15
Mammal	Small dunnart	-					x																	x			x		x					7
Mammal	Small rodent	-		x			x												x															10
Mammal	Spinifex Hopping Mouse	*Notomys alexis*	x	x		x	x	x			x	x	x	x	x		x	x	x	x		x	x	x	x		x	x	x		x	x	x	121
Mammal	Stripe-faced Dunnart	*Sminthopsis macroura*																																1
Mammal	Western Grey Kangaroo	*Macropus fuliginosus*	x			x				x		x	x	x					x		x						x	x	x					26
Reptile	Black-headed Monitor	*Varanus tristis*																							x			x						7
Reptile	Bobtail Lizard	*Tiliqua rugosa*																										x	x	x				3
Reptile	Central Military Dragon	*Ctenophorus isolepis*																																2
Reptile	Centralian Blue-tongue	*Tiliqua multifasciata*					x																											8
Reptile	Clay-soil Ctenotus	*Ctenotus helenae*																																2
Reptile	Crested Dragon	*Ctenophorus cristatus*																																2
Reptile	Ctenotus sp.	*Ctenotus sp.*																					x											3
Reptile	Dwarf Bearded Dragon	*Pogona minor*																										x						1
Reptile	Echidna	*Tachyglossus aculeatus*																																1
Reptile	Fourteen-lined Ctenotus	*Ctenotus quattuordecimlineatus*																																1
Reptile	Gecko sp.	*Nephrurus sp.*																									x							1
Reptile	Grand Ctenotus	*Ctenotus grandis*																																2
Reptile	Great Desert Skink	*Liopholis kintorei*																																3
Reptile	Liopholis sp.	*Liopholis sp.*																																4
Reptile	Lozenge-marked Dragon	*Ctenophorus scutulatus*																																1
Reptile	Mallee Military Dragon	*Ctenophorus fordi*																									x							1
Reptile	Nocturnal Desert Skink	*Liopholis striata*																																3
Reptile	Pygmy Desert Monitor	*Varanus eremius*																																1
Reptile	Sand Monitor	*Varanus gouldii*	x				x	x	x		x	x	x		x				x	x		x			x			x	x	x	x		x	67
Reptile	Western Blue-tongue	*Tiliqua occipitalis*																												x			x	3
Reptile	Small gecko	-																							x									1
Reptile	Snake Sp.	-																																1
Unknown	Unknown	-																							x									4
	Grand Total		5	2	2	5	7	4	2	2	4	6	4	7	3	2	1	2	5	5	2	5	3	6	8	5	6	9	6	4	4	4	7	

APPENDIX 3: OPPORTUNISTIC FAUNA DATA

Scientific Name	Common Name	Zone	Eastings	Northings	Date	Observation	Comments
Macroderma gigas	Ghost Bat	51J	635867	7038771	4/11/2017	Left humerus found in cave	Range extension, second record for GVD
Dasyurus geoffroii	Western Quoll	51J	645846	7023298	14/12/2017	Right femur found in cave	New record for GVD
Trichosurus vulpecula	Brushtail Possum	51J	645846	7023298	14/12/2017	old scats	Significant record for the GVD
Petrogale lateralis	Black-flanked rock-wallaby	51J	645846	7023298	14/12/2017	old scats	Significant record for the GVD
Aspidites ramsayi	Woma	51J	654647.599	6996370.796	5/11/2017	1 individual seen	Uncommon in GVD
Platycercus narethae	Bluebonnet	51J	768237.204	6708524.993	1/11/2017	2 bird heard / seen	DCBA Priority 4
Leipoa ocellata	Malleefowl	51J	688554.105	6723682.698	1/10/2017	Fresh tracks	EPBC Vulnerable
Leipoa ocellata	Malleefowl	51J	649112.404	6674809.191	30/09/2017	Inactive mound	EPBC Vulnerable
Dasycercus blythi	Brush-tailed Mulgara	51J	491387.4	6932794.191	14/12/2017	Burrow	DBCA Priority 4
Eremiornis carteri	Spinifex bird	51J	623928.896	7076962.694	15/12/2017	2 birds seen / heard	First record for the GVD
Calamanthus campestris	Rufous Fieldwren	51J	491489.702	6932878.793	9/11/2017	1 bird heard / seen	Uncommon in GVD
Calamanthus campestris	Rufous Fieldwren	51J	781137.901	6726626.994	1/11/2017	1 bird heard / seen	Uncommon in GVD
Megalurus mathewsi	Rufous Songlark	51J	491248.005	6939160.999	9/11/2017	1 bird heard / seen	Uncommon in GVD
Megalurus mathewsi	Rufous Songlark	51J	622357.003	7080536.001	5/11/2017	1 bird heard / seen	Uncommon in GVD
Megalurus cruralis	Brown Songlark	51J	621121.897	7130631.092	4/11/2017	1 bird heard / seen	Uncommon in GVD
Megalurus cruralis	Brown Songlark	51J	623664.104	7123845.094	4/11/2017	1 bird heard / seen	Uncommon in GVD
Cacatua leadbeateri	Major Mitchell's Cockatoo	52J	225109.102	6866053.994	3/11/2017	2 bird heard / seen	Uncommon in GVD
Amytornis striatus	Striated Grasswren	52J	354407.599	6862957.992	2/11/2017	group seen /heard	Uncommon in GVD
Amytornis striatus	Striated Grasswren	51J	792318.602	6865788.496	3/10/2017	group seen /heard	Uncommon in GVD
Amytornis striatus	Striated Grasswren	51J	730623.903	6844782.4	3/10/2017	group seen /heard	Uncommon in GVD
Polytelis anthopeplus	Regent Parrot	51J	622675.999	6597830.996	31/10/2017	2 bird heard / seen	Uncommon in GVD

Scientific Name	Common Name	Zone	Eastings	Northings	Date	Observation	Comments
Melithreptus brevirostris	Brown-headed Honeyeater	51J	622675.999	6597830.996	31/10/2017	1 bird heard / seen	Range limit
Melithreptus brevirostris	Brown-headed Honeyeater	51J	511095.396	6675636.894	6/10/2017	5 birds seen	Uncommon in GVD
Ptilotula ornata	Yellow-plumed Honeyeater	51J	622675.999	6597830.996	31/10/2017	1 bird heard / seen	Range limit
Lichenostomus leucotis	White-eared Honeyeater	51J	621199.304	6619730.296	31/10/2017	1 bird heard / seen	Uncommon in GVD, range limit
Lichenostomus leucotis	White-eared Honeyeater	51J	621110.004	6623031.992	30/09/2017	1 bird heard / seen	Uncommon in GVD, range limit
Lichenostomus leucotis	White-eared Honeyeater	51J	619623.605	6621039.497	1/11/2017	1 bird heard / seen	Uncommon in GVD
Cinclosoma marginatum	Western Quail-thrush	51J	677862.704	6801390.601	2/10/2017	1 bird heard / seen	Near range limit
Rhipidura albiscapa	Grey Fantail	51J	679805.996	6799090.995	2/10/2017	1 bird heard / seen	Uncommon in GVD
Malurus lamberti	Variegated Fairy-wren	51J	679805.996	6799090.995	2/10/2017	4 bird heard / seen	Uncommon in southern GVD, range limit
Neophema splendida	Scarlet-chested Parrot	51J	649269.796	6691771.691	1/10/2017	2 bird heard / seen	Uncommon in GVD
Neophema splendida	Scarlet-chested Parrot	51J	643064.502	6988766.802	4/11/2017	2 bird heard / seen	Uncommon in GVD
Ardeotis australis	Australian Bustard	51J	489940.998	6975114.092	9/11/2017	1 bird seen	
Ardeotis australis	Australian Bustard	51J	561200.796	6841070.798	6/11/2017	Tracks	
Ardeotis australis	Australian Bustard	51J	569574.3	6841026.998	6/11/2017	1 bird seen	
Ardeotis australis	Australian Bustard	51J	624324.901	7066969.395	5/11/2017	1 bird seen	
Ardeotis australis	Australian Bustard	51J	626085.402	7109872.893	5/11/2017	1 bird seen	
Ardeotis australis	Australian Bustard	51J	621073.501	7134673.701	4/11/2017	1 bird seen	
Ardeotis australis	Australian Bustard	51J	636857.404	7010377.391	4/11/2017	Tracks	
Ardeotis australis	Australian Bustard	51J	712151.3	6832120.695	3/11/2017	Tracks	
Ardeotis australis	Australian Bustard	52J	263245.699	6865215.991	3/11/2017	2 birds seen	
Ardeotis australis	Australian Bustard	51J	767026.297	6807901.402	2/11/2017	1 bird seen	
Bettongia lesueur	Boodie	51J	587300.604	6700483.392	4/08/2017	Warren/mound	

Scientific Name	Common Name	Zone	Eastings	Northings	Date	Observation	Comments
Bettongia lesueur	Boodie	51J	738959.3	6705344.894	1/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447336.704	6768355.8	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447280.798	6768274.591	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	446509.604	6768524.9	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	446841.004	6768331.995	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	446784.301	6768274.292	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447036.401	6771570.594	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447255.702	6770855.799	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447345.396	6770698.999	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447379.297	6770064.296	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447431.996	6769862.296	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	448844.196	6770887.699	15/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	447531.696	6769468.097	13/11/2017	Warren/mound	
Bettongia lesueur	Boodie	51J	626030.901	7073229.8	15/12/2017	Warren/mound	

APPENDIX 4: SITE ENVIRONMENTAL DATA

Site Fire History and Landform Data

Camera_no	latitude	longitude	last_burn	percentage_burnt	scorch_height	fire_intensity	landform	dry_soil_surface	soil_colour	soil_shade
0003-1	-25.84892655	124.1596705	3-10 years	100	1	Moderate	Sandplain	Hard	Red	Pale
0003-2	-25.86363047	124.1715172	20+ years	0	0	None	sandplain on stony plateau	Firm	Red	Pale
0003-3	-25.88273407	124.2057011	3-10 years	65	2	High	Stony plain	Hard	Orange	Pale
0003-4	-25.86840587	124.1921725	20+ years	0	0	None	Stony plain	Firm	Red	Pale
0003-5	-25.90163648	124.2082641	10-20 years	90	2	High	Stony plain	Hard	Red	Pale
0003-6	-25.921649	124.2069847	10-20 years	35	0	Patchy	Dune footslope	Soft	Red	Pale
0003-7	-25.93717252	124.2103851	20+ years	0	0	None	Dune crest	Loose	Orange	Pale
0015-1	-26.00436592	124.2399367	3-10 years	75	4	Moderate	Dune slope	Loose	Red	Pale
0015-2	-26.3361088	124.2329974	20+ years	0	0	None	Dune slope	Soft	Red	Pale
0015-3	-26.05687511	124.2405966	3-10 years	100	3	Moderate	Sandplain	Cracking	Red	Pale
0015-4	-26.3721011	124.2339868	20+ years	0	0	None	Dune slope	Soft	Red	Pale
0015-5	-26.38972408	124.2272341	10-20 years	50	3	Patchy	Sandplain	Firm	Red	Pale
0015-6	-26.10594973	124.2548994	3-10 years	100	2	Moderate	Sand plain(pebble laterite)	Loose	Red	Dark
0015-7	-26.42812905	124.2460263	20+ years	0	0	None	Dune footslope	Firm	Red	Pale
0056-1	-26.31768767	124.2305948	3-10 years	100	1.5	Moderate	Gravel sand plain	Soft	Red	Dark
0056-2	-26.01401395	124.2404788	10-20 years	85	0	Patchy	Dune footslope	Soft	Red	Pale
0056-3	-26.03314607	124.2404828	10-20 years	50	0	Patchy	Sandplain	Soft	Red	Pale
0056-4	-26.35403407	124.234184	10-20 years	100	2	Moderate	Sandplain	Cracking	Red	Dark
0056-5	-26.07004119	124.2378315	3-10 years	100	2	High	Dune footslope	Firm	Red	Pale
0056-6	-26.0899862	124.2506715	3-10 years	100	2	High	Dune crest	Soft	Red	Pale
0056-7	-26.40739918	124.2365106	10-20 years	100	1.5	None	Dune slope	Loose	Red	Dark
0170-1	-26.86816467	124.4487108	3-10 years	100	1.5	Low	Dune crest	Loose	Red	Pale
0170-2	-26.88574496	124.4523793	3-10 years	50	2	Patchy	Dune crest	Soft	Red	Pale
0170-3	-26.90166841	124.4515237	3-10 years	50	2	Patchy	Floodplain	Hard	Orange	Pale
0170-4	-26.92396359	124.4458101	3-10 years	70	5	Moderate	Dune crest	Loose	Red	Pale
0170-5	-26.93851849	124.4332596	20+ years	0	0	None	Dune footslope	Soft	Red	Pale
0170-6	-26.95797974	124.4232387	3-10 years	100	1.5	Moderate	Dune slope	Loose	Red	Pale
0170-7	-26.9755189	124.4147847	No evidence	0	0	None	Sandplain	Firm	Red	Pale
0332-1	-27.3579004	122.8488328	10-20 years	80	2	Patchy	Sandplain	Firm	Red	Pale
0332-3	-27.37123699	122.9298851	10-20 years	100	2.5	None	Sandplain	Firm	Red	Dark
0332-4	-27.35518228	122.9173411	3-10 years	75	5	Moderate	Sandy rise	Soft	Red	Pale
0332-5	-27.34626948	122.8995124	10-20 years	100	1.5	None	Sandplain	Firm	Orange	Dark
0332-6	-27.35529976	122.8788615	3-10 years	100	1	Moderate	Sandplain	Firm	Orange	Dark
0332-6	-27.39083526	122.9403849	20+ years	0	0	None	Sandplain	Firm	Red	Pale
0332-7	-27.40494775	122.9552826	10-20 years	80	3	Moderate	Sandplain	Firm	Red	Pale
0468-1	-27.6130286	122.9134907	3-10 years	75	3	Patchy	Sandplain	Firm	Red	Pale
0468-2	-27.65036467	122.9130756	10-20 years	0	0	None	Sandplain	Firm	Red	Dark
0468-3	-27.671996	122.9127646	20+ years	0	0	None	Sandplain	Firm	Red	Pale
0468-3	-27.69520463	122.9118002	3-10 years	100	1.5	Low	Hillcrest	Firm	Red	Dark
0468-6	-27.7289557	122.9122062	10-20 years	100	4	Moderate	Sandplain	Firm	Red	Pale
0468-6	-27.71089316	122.9137628	3-10 years	100	1	Low	Floodplain	Hard	Red	Dark
0468-7	-27.74856915	122.9135549	10-20 years	80	2	Moderate	Sandy rise	Firm	Red	Pale
0604-1	-28.10201167	124.1979465	3-10 years	100	2.5	Low	Floodplain	Firm	Orange	Dark
0604-2	-28.10148384	124.1786143	20+ years	0	0	None	Dune slope	Soft	Red	Pale
0604-3	-28.10134757	124.1618323	3-10 years	100	2	Low	Dune footslope	Loose	Red	Pale
0604-4	-28.11099924	124.143584	10-20 years	50	2	Patchy	Dune slope	Firm	Red	Pale
0604-6	-28.11682375	124.1182922	3-10 years	100	0.5	Low	Sandplain	Hard	Red	Pale
0604-6	-28.1213789	124.097727	10-20 years	100	5	Moderate	Sandplain	Firm	Red	Pale
0604-7	-28.1131789	124.1390045	3-10 years	30	1.5	Moderate	Dune footslope	Soft	Red	Pale
0660-1	-28.20176428	124.6002807	3-10 years	100	3.5	Moderate	Sandplain	Loose	Red	Pale
0660-2	-28.19043159	124.6096634	10-20 years	80	3	Patchy	Sandy rise	Soft	Orange	Pale
0660-3	-28.19145546	124.6180167	10-20 years	100	2	Low	Dune crest	Soft	Red	Dark
0660-4	-28.20465751	124.6254066	10-20 years	100	2	Moderate	Sandplain	Firm	Red	Pale
0660-5	-28.17761388	124.6023881	1-3 years	50	1	Patchy	Dune crest	Soft	Red	Dark
0660-6	-28.17651263	124.5864995	20+ years	0	0	None	Sandy rise	Soft	Orange	Pale
0660-7	-28.16861934	124.5683275	20+ years	0	0	None	Mulga hard pan	Surface crust	Red	Dark
0669-1	-28.31622013	126.5023327	10-20 years	80	0	Patchy	Swale	Hard	Orange	Pale
0669-2	-28.31639011	126.4889213	1-3 years	100	2	Moderate	Swale	Loose	Red	Pale

Camera_no	latitude	longitude	last_burn	percentage_burnt	scorch_height	fire_intensity	landform	dry_soil_surface	soil_colour	soil_shade
0669-3	-28.31271271	126.4698236	20+ years	0	0	None	Dune footslope	Firm	Orange	Pale
0669-4	-28.30913746	126.4484859	3-10 years	100	1.5	Moderate	Dune footslope	Surface crust	Red	Pale
0669-5	-28.30877215	126.4270541	20+ years	50	0	Patchy	Dune crest	Soft	Orange	Pale
0669-6	-28.30925661	126.4149146	10-20 years	100	8	Moderate	Dune footslope	Surface crust	Red	Pale
0669-7	-28.30816998	126.3936767	20+ years	0	0	None	Dune footslope	Soft	Orange	Pale
0691-1	-28.30423786	126.0162977	10-20 years	100	6	Moderate	Dune footslope	Loose	Red	Pale
0691-2	-28.30237455	125.9991982	10-20 years	50	2	Patchy	Swale	Soft	Red	Pale
0691-3	-28.30165869	125.980357	20+ years	0	0	None	sandplain overlying calcrete	Soft	Red	Pale
0691-4	-28.30266747	125.961454	10-20 years	100	3	Moderate	Dune crest	Loose	Red	Pale
0691-5	-28.2986677	125.9400153	20+ years	0	0	None	Dune crest	Loose	Red	Pale
0691-6	-28.30006259	125.9258436	10-20 years	100	8	High	Dune slope	Loose	Red	Pale
0691-7	-28.30046249	125.9021857	3-10 years	100	5	Moderate	Sandplain	Surface crust	Red	Pale
0795-1	-28.4198966	123.1569152	20+ years	0	0	None	Dune crest	Loose	Orange	Pale
0795-2	-28.41639613	123.1125663	20+ years	0	0	None	Sandy rise	Firm	Red	Pale
0795-3	-28.4154438	123.0905168	10-20 years	0	0	None	Sandplain	Firm	Orange	Dark
0795-4	-28.4125758	123.068451	20+ years	0	0	None	Sandy rise	Firm	Red	Pale
0795-5	-28.40845119	123.038586	10-20 years	80	2	Patchy	Sandplain	Firm	Red	Pale
0795-6	-28.40665542	123.0205256	10-20 years	100	1.5	Moderate	Sandplain	Firm	Orange	Pale
0795-7	-28.4040375	122.9979373	10-20 years	80	2	Patchy	Sandplain	Firm	Red	Pale
0805-1	-28.66389074	125.1074642	10-20 years	100	5	Moderate	Dune crest	Soft	Red	Pale
0805-2	-28.6608104	125.1157711	20+ years	50	2	Moderate	Sandy rise	Firm	Red	Pale
0805-3	-28.6531029	125.1291549	10-20 years	100	6	High	Dune crest	Soft	Red	Pale
0805-4	-28.62087625	125.1701539	10-20 years	80	2	Low	Sandplain	Firm	Red	Pale
0805-5	-28.60931919	125.1824145	10-20 years	100	6	Moderate	Dune crest	Soft	Red	Pale
0805-6	-28.59765689	125.2125445	20+ years	0	0	None	Sandy rise	Firm	Red	Pale
0805-7	-28.5929786	125.2344719	10-20 years	100	2	Moderate	Sandplain	Soft	Red	Pale
0808-1	-28.54784283	125.8101958	20+ years	100	7	High	Sandplain	Loose	Red	Pale
0808-2	-28.64141974	125.787916	10-20 years	100	3	Moderate	Sandy rise	Loose	Red	Pale
0808-3	-28.62467257	125.7841469	3-10 years	100	2	Moderate	Sand flat	Loose	Red	Pale
0808-4	-28.60239825	125.7773896	3-10 years	50	0	Patchy	Dune slope	Loose	Red	Pale
0808-5	-28.57540894	125.7987839	10-20 years	100	3	Moderate	Hillcrest	Firm	Red	Pale
0808-6	-28.56485182	125.8016478	1-3 years	100	4	High	Sandplain	Soft	Red	Pale
0808-7	-28.65906463	125.7913709	10-20 years	100	4	High	Sandplain	Soft	Red	Pale
0821-1	-28.55583829	123.7845378	20+ years	0	0	None	Sandy hill crest - sand flat	Loose	Red	Pale
0821-2	-28.55660595	123.7969181	20+ years	0	0	None	Dune footslope	Loose	Red	Pale
0821-3	-28.55615885	123.8225943	20+ years	0	0	None	Dune crest	Loose	Orange	Pale
0821-4	-28.55610466	123.8364268	20+ years	0	0	None	Dune slope	Soft	Orange	Pale
0821-5	-28.5498478	123.8558592	10-20 years	30	0	Low	Dune slope	Soft	Orange	Pale
0821-6	-28.55577484	123.8556326	1-3 years	50	0.5	Patchy	Dune crest	Loose	Red	Pale
0821-7	-28.55451264	123.892607	10-20 years	25	2	Patchy	Dune footslope	Soft	Orange	Pale
0842-1	-28.55459513	124.1182079	20+ years	0	0	None	Sandplain	Surface crust	Red	Pale
0842-2	-28.55344978	124.094654	20+ years	0	0	None	Dune slope	Loose	Red	Pale
0842-3	-28.55537373	124.0662395	10-20 years	80	3	Patchy	Sandplain	Firm	Orange	Pale
0842-4	-28.55454027	124.0441235	20+ years	0	0	None	Dune slope	Loose	Red	Pale
0842-5	-28.55318093	124.0136658	20+ years	50	2	Patchy	Dune slope	Soft	Orange	Pale
0842-6	-28.55503736	124.0314428	20+ years	0	0	None	Hillcrest	Loose	Red	Pale
0842-7	-28.55582725	123.9534704	20+ years	0	0	None	Sandplain	Firm	Orange	Pale
0973-1	-28.93129709	123.2923633	10-20 years	100	5	High	Sandplain	Firm	Red	Dark
0973-2	-28.93067067	123.3118045	10-20 years	100	3	Moderate	Sandplain	Hard	Red	Pale
0973-3	-28.93593849	123.3434563	10-20 years	100	1.5	Low	Sand flat	Firm	Red	Dark
0973-4	-28.9508556	123.3485562	10-20 years	80	2	Moderate	Sandy rise	Firm	Orange	Pale
0973-5	-28.88309373	123.4267931	20+ years	0	0	None	Sandplain	Loose	Yellow	Pale
1098-1	-29.64854287	124.8450739	20+ years	100	2	Moderate	Dune footslope	Surface crust	Orange	Pale
1098-2	-29.63017115	124.8584671	20+ years	0	0	None	Sandplain	Firm	Orange	Dark
1098-3	-29.6202529	124.8645767	10-20 years	100	1	Low	Dune crest	Surface crust	Orange	Pale
1098-4	-29.6057023	124.8754299	20+ years	0	0	None	Dune crest	Loose	Red	Pale
1098-5	-29.58784972	124.8872007	10-20 years	100	0	None	Sandplain	Loose	Orange	Pale
1098-6	-29.60271727	124.9470813	20+ years	0	0	None	Sandplain	Firm	Orange	Pale
1098-7	-29.6044914	124.9202245	20+ years	0	0	None	Sandplain	Firm	Red	Pale
1143-1	-29.8578468	124.2706743	10-20 years	100	0	None	Sandplain	Loose	Yellow	Pale
1143-3	-29.858986	124.3169802	3-10 years	100	2	Moderate	Dune footslope	Soft	Yellow	Pale
1143-4	-29.85919492	124.3434733	10-20 years	90	2	High	Dune slope	Soft	Yellow	Pale

Camera_no	latitude	longitude	last_burn	percentage_burnt	scorch_height	fire_intensity	landform	dry_soil_surface	soil_colour	soil_shade
1143-5	-29.8610198	124.3681203	< 1 year	100	6	High	Sandplain	Loose	Orange	Pale
1143-6	-29.86713696	124.3926512	1-3 years	100	6	Extreme	Dune crest	Soft	Yellow	Pale
1143-7	-29.863543	124.4874683	20+ years	100	3	Moderate	Dune footslope	Soft	Yellow	Pale
1143-9	-29.85587255	124.2835152	20+ years	0	0	None	Dune crest	Soft	Yellow	Pale
1218-1	-30.5169932	124.2538248	20+ years	0	0	None	Dune crest	Loose	Yellow	Pale
1218-3	-30.5050892	124.2334966	10-20 years	100	1.5	Moderate	Sand flat	Surface crust	Orange	Dark
1218-4	-30.5247709	124.2299729	10-20 years	40	2	Moderate	Sandplain	Firm	Orange	Pale
1218-5	-30.5372192	124.2466044	20+ years	0	0	None	Floodplain	Surface crust	Red	Dark
1218-6	-30.57048014	124.3330854	10-20 years	90	3	Moderate	Sandy rise	Firm	Yellow	Pale
1218-7	-30.548641	124.2635757	10-20 years	100	30	Low	Floodplain	Surface crust	Orange	Pale
1184-1	-30.01816355	123.124871	10-20 years	50	0	Patchy	Sandplain	Soft	Orange	Pale
1184-2	-30.06279014	123.0489172	20+ years	0	0	None	Sandy rise	Soft	Orange	Pale
1184-3	-30.05991535	123.0717937	20+ years	0	0	None	Sandy rise	Soft	Orange	Pale
1184-4	-30.05524475	123.0982668	20+ years	0	0	None	Sandy rise	Soft	Orange	Pale
1184-5	-30.0497361	123.1160545	10-20 years	75	2	Patchy	Swale	Soft	Yellow	Pale
1184-6	-30.04216825	123.1372074	3-10 years	75	2	Patchy	Sandplain	Soft	Orange	Pale
1184-7	-30.03924438	123.152662	10-20 years	90	2	Moderate	Sandy rise	Soft	Orange	Pale

Site Structure, Cover and Spinifex Stage Data

Camera_no	latitude	longitude	muir_classification	Cover								Spinifex stage
				Bare ground	Crust	Stones	Rocks	Litter	Coarse WD	Logs < 50mm	Logs > 50mm	
0003-1	-25.84892655	124.1596705	Shrubs 1-2m,10-30% cover	15	0	0	0	0	3	0	0	Stage 5
0003-2	-25.86363047	124.1715172	Hummock grasses,10-30% cover	20	0	0	0	8	2	0	0	Stage 5
0003-3	-25.88273407	124.2057011	Shrubs > 2m,10-30% cover	5	0	90	0	5	0	0	0	Stage 5
0003-4	-25.86840587	124.1921725	Shrubs > 2m,10-30% cover	30	5	5	2	5	3	0	0	Stage 5
0003-5	-25.90163648	124.2082641	Hummock grasses,10-30% cover	20	5	15	0	10	2	1	0	Stage 5
0003-6	-25.921649	124.2069847	Hummock grasses,30-70% cover	25	0	0	0	10	2	1	0	Stage 4
0003-7	-25.93717252	124.2103851	Hummock grasses,30-70% cover	15	0	0	0	5	0	0	0	Stage 3
0015-1	-26.00436592	124.2399367	Hummock grasses,30-70% cover	25	0	0	0	0	5	0	0	Stage 3
0015-2	-26.3361088	124.2329974	Shrubs < 1m,10-30% cover	25	0	0	0	8	2	0	0	Stage 5
0015-3	-26.05687511	124.2405966	Tussock grasses,10-30% cover	10	5	0	0	0	0	0	0	Stage 2
0015-4	-26.3721011	124.2339868	Hummock grasses,10-30% cover	40	0	0	0	8	2	0	0	Stage 5
0015-5	-26.38972408	124.2272341	Hummock grasses,10-30% cover	25	0	0	0	10	5	1	0	Stage 5
0015-6	-26.10594973	124.2548994	Mallee >3m,10-30% cover	40	0	100	0	0	6	0	0	Stage 3
0015-7	-26.42812905	124.2460263	Hummock grasses,10-30% cover	25	0	0	0	10	2	2	0	Stage 5
0056-1	-26.31768767	124.2305948	Shrubs 1-2m,10-30% cover	10	0	0	0	0	0	0	0	Stage 4
0056-2	-26.01401395	124.2404788	Hummock grasses,10-30% cover	50	0	0	0	5	5	0	0	Stage 3
0056-3	-26.03314607	124.2404828	Hummock grasses,10-30% cover	25	0	0	0	10	2	1	1	Stage 4
0056-4	-26.35403407	124.234184	Mallee >3m,10-30% cover	40	60	0	0	5	5	3	2	Stage 4
0056-5	-26.07004119	124.2378315	Hummock grasses,10-30% cover	35	0	0	0	5	2	0	0	Stage 3
0056-6	-26.0899862	124.2506715	Hummock grasses,<10% cover	50	0	0	0	5	2	0	0	Stage 3
0056-7	-26.40739918	124.2365106	Hummock grasses,10-30% cover	10	0	0	0	0	3	3	0	Stage 4
0170-1	-26.86816467	124.4487108	Shrubs > 2m,10-30% cover	35	0	0	0	5	5	5	0	Stage 5
0170-2	-26.88574496	124.4523793	Shrubs < 1m,10-30% cover	45	0	0	0	5	0	0	0	Stage 3
0170-3	-26.90166841	124.4515237	Hummock grasses,10-30% cover	30	10	0	0	8	2	2	0	Stage 5
0170-4	-26.92396359	124.4458101	Shrubs > 2m,10-30% cover	40	0	0	0	0	3	3	0	Stage 4
0170-5	-26.93851849	124.4332596	Shrubs < 1m,10-30% cover	35	0	0	0	10	2	1	0	Stage 5
0170-6	-26.95797974	124.4232387	Shrubs > 2m,10-30% cover	30	0	0	0	0	5	3	2	Stage 3
0170-7	-26.9755189	124.4147847	Hummock grasses,10-30% cover	40	0	0	0	8	2	1	0	Stage 5
0332-1	-27.3579004	122.8488328	Hummock grasses,10-30% cover	45	0	0	0	5	2	2	1	Stage 4
0332-3	-27.37123699	122.9298851	Mallee >3m,10-30% cover	40	10	0	0	5	3	0	0	Stage 5
0332-4	-27.35518228	122.9173411	Hummock grasses,10-30% cover	35	0	0	0	5	3	1	1	Stage 3
0332-5	-27.34626948	122.8995124	Low mallee < 3m,10-30% cover	50	2	0	0	0	2	2	0	Stage 5
0332-6	-27.35529976	122.8788615	Mallee >3m,<10% cover	10	0	0	0	0	2	2	0	Stage 3
0332-6	-27.39083526	122.9403849	Hummock grasses,10-30% cover	40	0	0	0	8	2	1	1	Stage 4
0332-7	-27.40494775	122.9552826	Hummock grasses,10-30% cover	30	0	0	0	10	2	1	0	Stage 4
0468-1	-27.6130286	122.9134907	Hummock grasses,30-70% cover	50	0	0	0	5	2	0	0	Stage 2
0468-2	-27.65036467	122.9130756	Trees 5-10m,10-30% cover	30	100	0	0	0	0	3	0	Stage 5
0468-3	-27.671996	122.9127646	Shrubs > 2m,10-30% cover	35	0	0	0	18	10	4	2	Stage 5
0468-3	-27.69520463	122.9118002	Trees 5-10m,10-30% cover	40	100	0	0	5	3	3	0	Stage 5
0468-6	-27.7289557	122.9122062	Hummock grasses,10-30% cover	20	0	0	0	8	2	1	0	Stage 3
0468-6	-27.71089316	122.9137628	Shrubs > 2m,<10% cover	15	100	0	0	0	0	0	0	Stage 4
0468-7	-27.74856915	122.9135549	Trees < 5m,<10% cover	40	0	0	0	5	2	0	0	Stage 4

Camera_no	latitude	longitude	muir_classification	Cover								Spinifex stage
				Bare ground	Crust	Stones	Rocks	Litter	Coarse WD	Logs < 50mm	Logs > 50mm	
0604-1	-28.10201167	124.1979465	Trees 5-10m,<10% cover	25	10	0	0	5	3	0	0	Stage 5
0604-2	-28.10148384	124.1786143	Hummock grasses,10-30% cover	25	0	0	0	10	2	2	1	Stage 5
0604-3	-28.10134757	124.1618323	Trees 5-10m,<10% cover	15	0	0	0	5	1	1	0	Stage 5
0604-4	-28.11099924	124.143584	Shrubs < 1m,10-30% cover	25	0	0	0	10	2	1	0	Stage 5
0604-6	-28.11682375	124.1182922	Mallee >3m,10-30% cover	35	0	0	0	5	5	5	0	Stage 5
0604-6	-28.1213789	124.097727	Hummock grasses,10-30% cover	28	2	5	0	8	2	2	1	Stage 5
0604-7	-28.1131789	124.1390045	Trees 5-10m,<10% cover	30	0	0	0	3	2	0	0	Stage 5
0660-1	-28.20176428	124.6002807	Mallee >3m,10-30% cover	35	0	0	0	5	5	3	0	Stage 4
0660-2	-28.19043159	124.6096634	Hummock grasses,10-30% cover	30	0	0	0	5	3	2	1	Stage 3
0660-3	-28.19145546	124.6180167	Shrubs 1-2m,10-30% cover	45	0	0	0	0	5	3	2	Stage 4
0660-4	-28.20465751	124.6254066	Hummock grasses,10-30% cover	20	8	0	0	7	2	2	1	Stage 3
0660-5	-28.17761388	124.6023881	Shrubs 1-2m,10-30% cover	40	0	0	0	5	15	0	5	Stage 1
0660-6	-28.17651263	124.5864995	Trees 5-10m,<10% cover	30	0	0	0	8	2	2	1	Stage 3
0660-7	-28.16861934	124.5683275	Trees < 5m,10-30% cover	20	20	0	0	20	5	2	0	Stage 5
0669-1	-28.31622013	126.5023327	Trees < 5m,<10% cover	25	5	0	0	8	3	3	2	Stage 5
0669-2	-28.31639011	126.4889213	Hummock grasses,<10% cover	20	0	0	0	2	0	0	0	Stage 2
0669-3	-28.31271271	126.4698236	Hummock grasses,10-30% cover	20	5	0	0	5	1	1	1	Stage 5
0669-4	-28.30913746	126.4484859	Hummock grasses,10-30% cover	30	100	0	0	0	5	0	0	Stage 3
0669-5	-28.30877215	126.4270541	Shrubs 1-2m,10-30% cover	50	0	0	0	5	5	0	0	Stage 5
0669-6	-28.30925661	126.4149146	Hummock grasses,10-30% cover	20	0	0	0	5	0	0	0	Stage 4
0669-7	-28.30816998	126.3936767	Shrubs < 1m,10-30% cover	30	0	0	0	5	2	1	1	Stage 5
0691-1	-28.30423786	126.0162977	Hummock grasses,10-30% cover	30	0	0	0	5	3	0	0	Stage 4
0691-2	-28.30237455	125.9991982	Hummock grasses,10-30% cover	30	0	0	0	8	2	1	1	Stage 4
0691-3	-28.30165869	125.980357	Low mallee < 3m,10-30% cover	30	0	0	0	18	5	4	3	Stage 3
0691-4	-28.30266747	125.961454	Trees < 5m,<10% cover	70	0	0	0	30	10	0	0	Stage 4
0691-5	-28.2986677	125.9400153	Low mallee < 3m,10-30% cover	50	0	0	0	8	2	2	1	Stage 5
0691-6	-28.30006259	125.9258436	Hummock grasses,30-70% cover	35	0	0	0	15	5	0	0	Stage 4
0691-7	-28.30046249	125.9021857	Hummock grasses,10-30% cover	20	12	4	0	8	2	2	1	Stage 3
0795-1	-28.4198966	123.1569152	Trees 5-10m,10-30% cover	70	0	0	0	40	5	3	2	Stage 5
0795-2	-28.41639613	123.1125663	Mallee >3m,10-30% cover	30	2	0	0	5	3	1	1	Stage 5
0795-3	-28.4154438	123.0905168	Low mallee < 3m,30-70% cover	20	0	0	0	3	0	0	0	Stage 3
0795-4	-28.4125758	123.068451	Hummock grasses,10-30% cover	35	3	0	0	8	2	2	1	Stage 5
0795-5	-28.40845119	123.038586	Hummock grasses,10-30% cover	35	5	0	0	5	2	1	0	Stage 5
0795-6	-28.40665542	123.0205256	Low mallee < 3m,10-30% cover	20	0	0	0	0	2	2	0	Stage 5
0795-7	-28.4040375	122.9979373	Hummock grasses,10-30% cover	30	0	0	0	5	2	1	0	Stage 5
0805-1	-28.66389074	125.1074642	Hummock grasses,10-30% cover	40	0	0	0	0	0	0	0	Stage 3
0805-2	-28.6608104	125.1157711	Hummock grasses,10-30% cover	20	0	0	0	5	3	2	1	Stage 3
0805-3	-28.6531029	125.1291549	Hummock grasses,10-30% cover	30	0	0	0	20	5	0	0	Stage 3
0805-4	-28.62087625	125.1701539	Hummock grasses,30-70% cover	50	0	0	0	10	4	2	1	Stage 3
0805-5	-28.60931919	125.1824145	Hummock grasses,10-30% cover	25	0	0	0	5	0	0	0	Stage 3
0805-6	-28.59765689	125.2125445	Hummock grasses,10-30% cover	30	0	0	0	5	3	2	1	Stage 4
0805-7	-28.5929786	125.2344719	Hummock grasses,30-70% cover	20	0	0	0	8	3	1	0	Stage 3
0808-1	-28.54784283	125.8101958	Trees 5-10m,<10% cover	40	0	0	0	5	3	2	5	Stage 5
0808-2	-28.64141974	125.787916	Shrubs > 2m,10-30% cover	30	0	0	0	5	3	2	2	Stage 5

Camera_no	latitude	longitude	muir_classification	Cover								Spinifex stage
				Bare ground	Crust	Stones	Rocks	Litter	Coarse WD	Logs < 50mm	Logs > 50mm	
0808-3	-28.62467257	125.7841469	Hummock grasses,10-30% cover	70	0	0	0	40	10	5	5	Stage 3
0808-4	-28.60239825	125.7773896	Trees 5-10m,<10% cover	40	0	0	0	10	5	4	3	Stage 3
0808-5	-28.57540894	125.7987839	Low mallee < 3m,10-30% cover	30	0	0	0	10	5	0	0	Stage 4
0808-6	-28.56485182	125.8016478	Hummock grasses,<10% cover	50	0	0	0	10	2	2	1	Stage 2
0808-7	-28.65906463	125.7913709	Hummock grasses,10-30% cover	20	0	0	0	15	8	3	3	Stage 2
0821-1	-28.55583829	123.7845378	Trees 5-10m,<10% cover	30	0	0	0	0	2	0	0	Stage 5
0821-2	-28.55660595	123.7969181	Mallee >3m,10-30% cover	40	0	0	0	10	5	0	0	Stage 5
0821-3	-28.55615885	123.8225943	Shrubs 1-2m,10-30% cover	35	0	0	0	5	2	1	1	Stage 5
0821-4	-28.55610466	123.8364268	Shrubs < 1m,10-30% cover	30	0	0	0	5	3	1	1	Stage 5
0821-5	-28.5498478	123.8558592	Mallee >3m,10-30% cover	35	0	0	0	8	2	2	1	Stage 5
0821-6	-28.55577484	123.8556326	Low mallee < 3m,10-30% cover	50	0	0	0	5	0	0	0	Stage 5
0821-7	-28.55451264	123.892607	Trees < 5m,<10% cover	25	5	0	0	5	2	2	1	Stage 5
0842-1	-28.55459513	124.1182079	Trees 5-10m,10-30% cover	40	100	0	0	5	5	5	0	Stage 5
0842-2	-28.55344978	124.094654	Mallee >3m,10-30% cover	40	0	0	0	5	5	3	2	Stage 5
0842-3	-28.55537373	124.0662395	Shrubs 1-2m,10-30% cover	25	0	0	0	8	2	2	2	Stage 3
0842-4	-28.55454027	124.0441235	Trees 5-10m,<10% cover	50	0	0	0	5	10	7	3	Stage 5
0842-5	-28.55318093	124.0136658	Shrubs 1-2m,10-30% cover	25	5	0	0	8	2	2	2	Stage 5
0842-6	-28.55503736	124.0314428	Trees 5-10m,<10% cover	30	0	0	0	10	7	4	3	Stage 5
0842-7	-28.55582725	123.9534704	Shrubs 1-2m,10-30% cover	40	0	0	0	10	2	4	3	Stage 5
0973-1	-28.93129709	123.2923633	Trees < 5m,10-30% cover	20	5	0	0	3	2	1	1	Stage 5
0973-2	-28.93067067	123.3118045	Hummock grasses,10-30% cover	2	5	0	0	5	5	2	1	Stage 3
0973-3	-28.93593849	123.3434563	Low mallee < 3m,10-30% cover	25	0	0	0	5	2	2	0	Stage 4
0973-4	-28.9508556	123.3485562	Hummock grasses,10-30% cover	40	0	0	0	5	5	3	2	Stage 3
0973-5	-28.88309373	123.4267931	Mallee >3m,10-30% cover	30	0	0	0	5	3	0	0	Stage 5
1098-1	-29.64854287	124.8450739	Trees < 5m,<10% cover	50	100	0	0	5	5	0	0	Stage 5
1098-2	-29.63017115	124.8584671	Mallee >3m,10-30% cover	30	5	0	0	5	2	2	1	Stage 3
1098-3	-29.6202529	124.8645767	Shrubs 1-2m,<10% cover	60	100	0	0	5	3	0	0	Stage 4
1098-4	-29.6057023	124.8754299	Hummock grasses,30-70% cover	35	0	0	0	5	3	3	3	Stage 5
1098-5	-29.58784972	124.8872007	Hummock grasses,10-30% cover	10	0	0	0	5	0	0	0	Stage 4
1098-6	-29.60271727	124.9470813	Trees 5-10m,<10% cover	40	10	0	0	10	2	2	2	Stage 5
1098-7	-29.6044914	124.9202245	Hummock grasses,30-70% cover	20	0	0	0	5	3	2	0	Stage 4
1143-1	-29.8578468	124.2706743	Hummock grasses,30-70% cover	70	0	0	0	3	1	0	0	Stage 5
1143-3	-29.858986	124.3169802	Hummock grasses,10-30% cover	70	0	0	0	0	2	0	0	Stage 2
1143-4	-29.85919492	124.3434733	Hummock grasses,30-70% cover	65	0	0	0	5	2	1	0	Stage 3
1143-5	-29.8610198	124.3681203	Mallee >3m,10-30% cover	60	3	0	0	0	3	0	0	Stage 1
1143-6	-29.86713696	124.3926512	Shrubs < 1m,<10% cover	75	0	0	0	2	2	2	0	Stage 1
1143-7	-29.863543	124.4874683	Trees < 5m,<10% cover	50	0	0	0	10	1	1	1	Stage 4
1143-9	-29.85587255	124.2835152	Hummock grasses,30-70% cover	10	2	0	0	10	4	2	1	Stage 5
1218-1	-30.5169932	124.2538248	Trees 5-10m,<10% cover	10	0	0	0	15	5	5	2	Stage 5
1218-3	-30.5050892	124.2334966	Trees 5-10m,<10% cover	10	7	0	0	5	3	2	1	Stage 5
1218-4	-30.5247709	124.2299729	Hummock grasses,30-70% cover	20	10	0	0	10	5	2	1	Stage 2
1218-5	-30.5372192	124.2466044	Trees 5-10m,30-70% cover	60	50	0	0	5	2	0	0	Absent
1218-6	-30.57048014	124.3330854	Hummock grasses,30-70% cover	10	10	0	0	20	4	2	1	Stage 2
1218-7	-30.548641	124.2635757	Trees 5-10m,<10% cover	40	100	0	0	5	3	0	0	Stage 5

Camera_no	latitude	longitude	muir_classification	Cover								Spinifex stage
				Bare ground	Crust	Stones	Rocks	Litter	Coarse WD	Logs < 50mm	Logs > 50mm	
1184-1	-30.01816355	123.124871	Low mallee < 3m,<10% cover	35	0	0	0	8	2	2	0	Stage 2
1184-2	-30.06279014	123.0489172	Shrubs > 2m,30-70% cover	50	0	0	0	25	5	3	2	Stage 5
1184-3	-30.05991535	123.0717937	Shrubs > 2m,30-70% cover	40	0	0	0	20	2	2	2	Stage 5
1184-4	-30.05524475	123.0982668	Mallee >3m,10-30% cover	30	0	0	0	15	3	2	1	Stage 5
1184-5	-30.0497361	123.1160545	Hummock grasses,10-30% cover	35	0	0	0	10	2	2	1	Stage 5
1184-6	-30.04216825	123.1372074	Hummock grasses,<10% cover	45	0	0	0	10	5	2	1	Stage 2
1184-7	-30.03924438	123.152662	Mallee >3m,10-30% cover	45	0	0	0	5	2	2	2	Stage 2

Site Vegetation Stratum Data

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0003-1	-25.84892655	124.1596705	Tree mallee	3.5	5	E.kingsmillii, Acacia pruimocarpa, Acacia aneura	O	Woody shrub	2	15	Grevilia stenobotria,Senna artimesioides helmsii, Acacia tetrogonophyla, Acacia ligulata, Exocarpus sparteus	O	Hummock	35	80	Triodia sp, Amphipogan caricinus	Carpobrotis sp., ptilotis polystachys
0003-2	-25.86363047	124.1715172	Woody shrub	3	5	Acacia pruinocarpa	0	Woody shrub	2	15	Hakea lorea, Acacia tetragonophylla, Acacia jennerae, Eremophila forestii		Hummock	35	35	Triodia basedowii, Triodia sp.	Upside down plant
0003-3	-25.88273407	124.2057011	Woody shrub	4	15	A.aneura	A. Ligulata	Woody shrub	2.5	10	Erimophylla sp. Erimophylla freelingia, Cydrax latifolium		Chenopod shrub	35	75	Maireana georgei, triodia sp.	Ptilotus exaltus, sclerolaena eriacantha
0003-4	-25.86840587	124.1921725	Woody shrub	5	15	Acacia aneura, Acacia pruinocarpa	0	Woody shrub	1	20	Eremophila latrobei, Acacia tetragonophylla, scavola spinescens, young acacia aneura		Hummock	35	15	Triodia basedowi, Triodia melvillii	Sarcostema
0003-5	-25.90163648	124.2082641	Shrub mallee	4	10	Eucalyptus sp mallee	0	Heath shrub	2	15	Acacia aneura, Hakea loria, Eremophila latrobei, young acacia pruinocarpa	0	Hummock	30	40	Triodia basedowi	0
0003-6	-25.921649	124.2069847	Tree mallee	3	5	Corymbia chippendalei, Hakea loria	0	Woody shrub	2	15	Grevillia stenobotrya, Acacia murrayana, G. Juncifolia.		Hummock	35	35	Triodia basedowi, Triodia sp rigidisima long seed heads and curly wirlys	
0003-7	-25.93717252	124.2103851	Tree	6	5	Coorymbia chippendaylii	0	Woody shrub	2.5	35	Grevilia stenobotria, Aluta maisonovei, Acacia murriana	Na		35	70	Triodia sp. tall	Na
0015-1	-26.00436592	124.2399367	Woody shrub	4	25	Acacia anuera	O	Woody shrub	1.5	30	Aluta maisonneuvei	Na	Hummock	30	65	Triodia tall.	Amphipogan caricinus, Dicrastylis excuccosa cinerea, Rulingia loxophylla, ptilotis helipteroides
0015-2	-26.3361088	124.2329974	Tree	3	8	Gyrocarpus ramulosus, Hakea lorea	Mallee sp	Woody shrub	1	35	Aluta, Acacia ramulosa	Grevillia eriostachya, Acacia diclyosticka liam knows name	Hummock	30	20	Triodia basedowi, Triodia sp long heads	Rulingia
0015-3	-26.05687511	124.2405966	Woody shrub	1	10	Melaleuca uncinate, Acacia Aneuara	Na	Heath shrub	1	0	Acacia murriana, Erimophylla forrestii, Acacia sp	Na	Tussock	50	70	Triodia x2 species, Amphipogan caricinus, Dicrastylus exsuccosa, Kennedia propens, Rulingia loxophylla	
0015-4	-26.3721011	124.2339868	Tree mallee	6	8	Eucalyptus sp mallee, eucalyptus coolibah	0	Woody shrub	1	20	Acacia dichliosticha, Aluta, Eremophila forestii	0	Hummock	35	40	Triodia basedowi	Dicrastylis
0015-5	-26.38972408	124.2272341	Tree	4	15	Eucalyptus coolibah, Acacia aneurs	0	Woody shrub	2	15	Melaleuca sp, Eremophila longifolia, Senna artemisiodes	0	Hummock	35	35	Triodia basedowi	Ptilotus sp.
0015-6	-26.10594973	124.2548994	Tree mallee	3	5	E.kingsmillii	Acacia pruinocarpa, Acacia aneuara	Woody shrub	1	15	A.aneara, Hakea lorea	Na	Hummock	40	80	Dicrastylis exsucoosa cineria, Triodia basdoweii, Rulingia loxophylla	
0015-7	-26.42812905	124.2460263	Woody shrub	3	8	Hakea lorea, Acacia ligulata	0	Woody shrub	2	20	Melaleuca uncinata., Senna artemisiodes, Aluta.	Eremophila sp glabra., Acacia tetragonophylla	Hummock	35	35	Triodia basedowi	Aluta

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0056-1	-26.31768767	124.2305948	Woody shrub	2.5	5	Hakea Lorea, Grevillea eriostachya, Acacia dictyophleba	Na	Woody shrub	1	10	Erimophylla forrestii	Na	Hummock	35	70	Triodia basdowii, Triodia sp(tall), Amphipogan caricinus, Rulingia loxophylla	Na
0056-2	-26.01401395	124.2404788	Woody shrub	3	10	Grevillia stenobotrya	0	Woody shrub	2	15	Gyrocarpus ramulosa, Acacia ligulata, Eremophila forestii	Hakea loria	Hummock	35	30	Triodia sp long heads, seringia elliptica	0
0056-3	-26.03314607	124.2404828	Woody shrub	4	10	Acacia aneura, Hakea loria	0	Woody shrub	2	20	Melaleuca sp, Acacia ligulata, young a aneura, Hakea loria.	0	Hummock	40	40	Triodia basedowi, Triodia sp long heads	
0056-4	-26.35403407	124.234184	Tree mallee	5	20	Eucalyptus kingsmillii, Eucalyptus leptopoda	Acacia aneura	Woody shrub	2	30	Acacia kempiana, A ligulata	Na	Hummock	35	70	Triodia basdowii, Triodia tall sp. Erimophylla battii	Na
0056-5	-26.07004119	124.2378315	Tree	2	2	Gyrocarpus americanus	0	Woody shrub	1.5	15	Grevillia erichostachya, Grevillia juncifolia, Grevillia stenobotrya, Acacia murrayana	0	Hummock	40	30	Triodia sp long heads	Aluta, senna sp.
0056-6	-26.0899862	124.2506715	Tree	3	2	Gyrocarpus americanum	Corymbia chipendalei	Woody shrub	1	20	Grevillia stenobotrya, Grevillia eriostachya, Newcastlia lambs tail, Ptilotus sp,	0	Hummock	40	15	Triodia sp long heads, Anrhrotrachne panosa, tussock grasses - aristida sp, eragrostis sp.	Ptilotus sp.
0056-7	-26.40739918	124.2365106	Tree	5	5	E.kingsmillii, E. coolabah?	Na	Woody shrub	2.5	35	A. Ligulata, Aluta masonneuvii, Grevillia stenobotria, Dodoma rigida, Erimophylla sp., Melaleuca uncinata	Na	Hummock	35	80	Triodia desertorum	Na
0170-1	-26.86816467	124.4487108	Woody shrub	5	10	A.aneura, A.ligulata	A.ligulata	Woody shrub	1.5	40	Aluta maisonneuverii, Grevilia stenobotria, Grevilia eriostachya, Erimophylla gibsoniie	Hibiscus sp.	Hummock	1.5	60	Triodia desertorum, Solanum lasiophyllum	Ptilotis sessilifolius
0170-2	-26.88574496	124.4523793	Tree mallee	4	8	Eucalyptus youngiana, Gyrocarpus ramulosus	0	Woody shrub	1	15	Grevillia stenobotrya, Acacia ligulata, Aluta		Woody shrub	40	20	Newcastlia, C putae, ptilotus dune thing	0
0170-3	-26.90166841	124.4515237	Tree	5	20	Acacia aneura	0	Woody shrub	1	15	Eremophila gilesii, young A. aneura, Eremophila la trobeii	0	Hummock	35	35	Triodia basedowi	
0170-4	-26.92396359	124.4458101	Tree	5	20	A.aneura, A.aneura var. conifera	E.youngiana, A pruinocarpa	Woody shrub	1.5	30	A. Kempeana, Dicrastylis excuccosa cinerea, native poplar	Na	Hummock	35	60	Triodia sp, Amphipogan caricinus, Egrostis setifolia	O
0170-5	-26.93851849	124.4332596	Tree mallee	6	5	Eucalyptus youngiana	0	Woody shrub	1	38	Aluta, Grevillia juncifolia,	Gyrocarpus ramulosa, Micromyrtus, Acacia helmsiana	Hummock	30	15	Triodia basedowi	0
0170-6	-26.95797974	124.4232387	Tree mallee	4	2	E.youngiana	Na	Woody shrub	2	40	Gyrostemon ramulosus, Grevilia stenobotrya, Acacia dictophlyba, Aluta masonneuvii	Dicrastylis exsuccosa	Hummock	35	60	Triodia sp	Na
0170-7	-26.9755189	124.4147847	Tree	5	15	Acacia aneura, Eucalyptus youngiana	0	Woody shrub	1.5	18	Acacia grasbyi, Eremophila forestii, young A anaurea	0	Hummock	35	33	Triodia basedowi	Dicrastylis yellow
0332-1	-27.3579004	122.8488328	Tree	5	15	M Gum, Eucalyptus youngiana	0	Woody shrub	1.5	20	Acacia ligulata, Hakea fran, Eremophila forestii	Acacia helmsiana	Hummock	35	30	Triodia basedowi	Leptosema chambersi, Eremophila platythamnos
0332-3	-27.37123699	122.9298851	Tree mallee	3	10	E.leptophylla	Na	Woody shrub	1.5	40	A.ligulata, Acacia sticky leaves, Melaleuca sp.	Na	Hummock	30	60	Triodia basdoweii	
0332-4	-27.35518228	122.9173411	Tree	5	25	M Gum	Eucalyptus youngiana	Woody shrub	1	30	Acacia helmsiana, Acacia ligulata, Hakea fran, Acacia desertorum, Eremophila forestii	Exocarpus	Hummock	30	38	Triodia basedowi	Eremophila platythamnos, Micromyrtus, leptosema chambersi

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0332-5	-27.34626948	122.8995124	Tree mallee	3	10	E.youngiana	Na	Woody shrub	2	30	A.desertorum, H.francisiana, G. Juncifolia, A, ligulata, Acacia sp(DCR)	Erimophylla forrestii	Tussock	30	50	Triodia basedoweii	Na
0332-6	-27.35529976	122.8788615	Tree mallee	3	5	E.youngiana	Na	Woody shrub	1.5	20	H. fransisiana, A.ligulata, G.junkifolia,	Beackia GvD, micromyrtus eremaus, Anthrotroche pannosa	Hummock	30	90	Triodia basdoweii	Na
0332-6	-27.39083526	122.9403849	Tree mallee	4	20	Eucalyptus youngiana	Hakea loria	Woody shrub	1.5	25	Hakea fran, Hakea loria, Acacia helmsiana, Acacia ligulata,	0	Hummock	35	40	Triodia basedowi	Leptosema chambersi
0332-7	-27.40494775	122.9552826	Tree	5	15	M Gum	0	Woody shrub	1.5	25	Acacia ligulata, Hakea fran, Acacia helmsiana	0	Hummock	30	40	Triodia basedowi	Eremophila forestii
0468-1	-27.6130286	122.9134907	Tree	6	20	Marble Gum	Acacia aneura, Brachychiton gregoryi	Woody shrub	1	25	Acacia ligulata, Eremophila longifolia, Hakea fran, A praini	0	Hummock	25	25	Triodia basedowi	Purple hibiscus
0468-2	-27.65036467	122.9130756	Woody shrub	5	60	A.aneura, A. kempiana,	E. leptophylla	Woody shrub	23	60	A.ramulosa, A. linophylla	E.longifolia, E. gilesii, ?????	Hummock	30	60	Triodia desertorum	Fern
0468-3	-27.671996	122.9127646	Tree	3	35	Acacia aneura	0	Woody shrub	1.5	35	Acacia aneura, Eremophila la trobei, Eremophila forestii, Senna artemisiodes,	0	Hummock	20	30	Triodia basedowi	
0468-3	-27.69520463	122.9118002	Tree mallee	10	40	E.trivalva	A.aneura , cydrax?	Woody shrub	1.2	40	A.aneura, E.forrestii	Ptilotis obvata	Hummock	30	60	Triodia sp	Na
0468-6	-27.7289557	122.9122062	Woody shrub	2	18	Grevillia juncifolia	0	Woody shrub	1	25	Grevillia juncifolia, Grevillia stenobotrya,	Acacia ligulata, Eremophila forestii	Hummock	30	60	Triodia basedowi, Baeckia sp	Homalocalyx, Rulingia, Leptosema chambersi
0468-6	-27.71089316	122.9137628	Woody shrub	2	30	G. stenobotryia, Senna artimesiodes fillaformis	E. forresttii	Woody shrub	0.5	20	Rulingia loxophleba	Na		30	70	Triodia desertorum, Leptosema chambersii	Kenedia prorepens,
0468-7	-27.74856915	122.9135549	Tree	6	15	M Gum	0	Woody shrub	1.5	20	Grevilia stenobotria, Senna artemisiodes, Eremophila forrestii, Hibiscus sp purple	Ptilotus obovatus, Micromyrtus flaviflora, Acacia ligulata	Hummock	30	60	Triodia basedowi	
0604-1	-28.10201167	124.1979465	Tree mallee	6	40	E.erimocola, E. youngiana	A. Aneura, A. Kempiana	Woody shrub	1.8	40	A.ramulosa, Senna artimesioides filaforma, Ptilotis obvatis	Na	Hummock	30	60	Triodia Basdoweii	Na
0604-2	-28.10148384	124.1786143	Tree	6	20	Marble Gum, Eucalyptus glomerosa	0	Woody shrub	1.5	25	Hakea fran, Aluta, Acacia ligulata, Dodenea viscosa, Acacia ramulosa, Acacia aneura		Hummock	35	35	Triodia basedowi	Eremophila forestii
0604-3	-28.10134757	124.1618323	Tree	8	3	E.gongliocarpa,	E.youngiana	Woody shrub	1.8	80	Senna artimisioises filiforma, A. ligulata,	Aluta masonneuveii	Hummock	30	70	Triodia basdoweii	Na
0604-4	-28.11099924	124.143584	Tree	5	20	M Gum, Eucalyptus youngiana	0	Woody shrub	1.5	40	Aluta, Acacia ligulata, Grevillia stenobotrya, Acacia sp long leaved helmsiana,	0	Hummock	35	25	Triodia basedowi	Anrhrotrachne panosa
0604-6	-28.11682375	124.1182922	Tree mallee	5	15	E.youngiana	E.gonglyocarpa, A. Aneura	Woody shrub	2	30	A. Aneura. A.kempiana, A.ligulata	Na	Hummock	30	60	Triodia basdoweii	Na
0604-6	-28.1213789	124.097727	Tree mallee	5	15	Eucalyptus youngiana, M Gum	0	Woody shrub	1	20	Acacia aneura, Acacia coolgardiensis, Hakea fran, Senna artemisiodes, Acacia jamesiana	0	Hummock	35	55	Triodia basedowi	Solanum sp
0604-7	-28.1131789	124.1390045	Tree	6	20	Marble Gum	E. Youngiana	Woody shrub	1	60	Aluta massioneuvi	Anthrotrochne penosa	Hummock	0.2	5	T basedowi	0
0660-1	-28.20176428	124.6002807	Tree mallee	3.5	7	E.youngiana	E.youngiana, A.aneura	Woody shrub	1.5	40	A.aneura, A. kempsiana	O	Hummock	30	70	Triodia basdowii	Solanum sp.

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0660-2	-28.19043159	124.6096634	Tree	6	20	M Gum, E socialis	0	Woody shrub	1	20	Eremophila sp., Acacia helmsiana, Acacia ligulata, halgonia erecta	0	Hummock	35	35	Triodia basedowi	0
0660-3	-28.19145546	124.6180167	Tree	8	5	E.gonglycarpa	E.glomerosa	Woody shrub	1.5	60	A.ligulata, Thryptomene biserata, Anthrotroche pannosa, E. platythamnos	Hibiscus sp.	Hummock	0.3	20	Triodia basdowii	O
0660-4	-28.20465751	124.6254066	Tree	5	30	Acacia aneura, mallee sp.	0	Woody shrub	2	15	Acacia aneura, Eremophila latrobei, native hibiscus,	0	Hummock	35	55	Triodia basedowii	0
0660-5	-28.17761388	124.6023881	Tree mallee	8	15	E. youngiana	A. Aneura	Woody shrub	1	45	Thryptomene biserata	Dicrastylis exsuccosa	Hummock	30	30	Triodia basedowii	O
0660-6	-28.17651263	124.5864995	Tree	5	10	M Gum	0	Woody shrub	1	16	Dodenia viscosa, Eremophila longifolia, Rulingia sp. Purple hibiscus	0	Hummock	40	55	Triodia basedowii	0
0660-7	-28.16861934	124.5683275	Tree	4	45	A.aneura	O	Woody shrub	1.5	10	Erimophylla latrobeii, A. Ramulosa	Homalacalyx thryptomonoides	Hummock	30	40	Triodia basdoweii	O
0669-1	-28.31622013	126.5023327	Tree	5	25	Acacia aneura	0	Woody shrub	2	20	Regenerating acacia aneura	0	Hummock	35	30	Triodia badedowi, Triodia sp. ??melvilli?	Eremophila spp.
0669-2	-28.31639011	126.4889213	Tree mallee	1.5	2	E.goglyocarpa	Acacia aneura	Woody shrub	1.5	10	Grevilia juncifolia, Hakea fransisciana, Rulingia loxiflora	Erimophylla sp.	Hummock	40	80	Triodia desertorum	O
0669-3	-28.31271271	126.4698236	Tree mallee	5	5	E youngiana, M Gum	0	Woody shrub	1	35	Aluta maisonouveri, Thryptomene biseriata, Eremophila forestii, Grevillia stenobotrya	0	Hummock	35	35	Triodia basedowi, Triodia desertorum.	0
0669-4	-28.30913746	126.4484859	Woody shrub	1	40	Thryptomene biseriata	O	Woody shrub	1	0	O	O	Hummock	30	40	Triodia desertorum	Stylidium sp.
0669-5	-28.30877215	126.4270541	Tree	6	10	M Gum, E youngiana	0	Woody shrub	1	45	Acacia helmsiana, Thryptomene biseriata,	0	Hummock	35	15	Triodia basedowii,	0
0669-6	-28.30925661	126.4149146	Tree	8	10	E.gonglyocarpa	Na	Woody shrub	1.5	20	A. Ligulata	Hibiscus sp.	Hummock	30	60	Triodia sp.	O
0669-7	-28.30816998	126.3936767	Tree mallee	5	5	M gum, E youngiana	0	Woody shrub	1	40	Aluta, Grevillia juncifolia, Eremophila forestii, Micromyrtus sp., Acacia helmsiana	0	Hummock	35	30	Triodia desertorum, Triodia basedowi	0
0691-1	-28.30423786	126.0162977	Tree	10	5	E.gonglycarpa	E.youngiana	Shrub mallee	3	20	A.aneura, A.longifolia, A. Ligulata,G.stenobotrya	Hibiscus sp.	Hummock	40	60	Triodia desertorum	O
0691-2	-28.30237455	125.9991982	Tree	4	25	Mulga, E youngiana	0	Woody shrub	1	10	Acacia yellow, Dubosia hopwoodi, Dodenia viscosa	0	Hummock	30	30	Triodia basedowi, Aristida grass, Solanum	0
0691-3	-28.30165869	125.980357	Shrub mallee	4	25	Eucalyptus sp mallee, Eucalyptus leptopoda	0	Woody shrub	1	20	Acacia spp.	0	Hummock	40	20	Triodia scariosa	0
0691-4	-28.30266747	125.961454	Tree mallee	3	10	E.gonglyocarpa	Mallee??	Woody shrub	2	40	A.ligulata, Thryptomene bieriata, Anthrotroche pannosa	O	Hummock	30	20	Trodia dessertorum	O
0691-5	-28.2986677	125.9400153	Tree	4	15	M Gum, E glomerosa	0	Woody shrub	1	20	Thryptomene biseriata, Dodenia viscosa, acacia ligilata	0	Hummock	30	20	Triodia basedowi, Triodia deserorum, Anthrotrachne panosa	0
0691-6	-28.30006259	125.9258436	Tree	10	5	E.gonglyocarpa	E.glomerosa	Woody shrub	1.5	15	A.ligulata, Anthrotroche pannosa, Aluta maisonneuvie	Hibiscus sp.	Hummock	40	50	Triodia deserorum	
0691-7	-28.30046249	125.9021857	Tree	4	15	A.aneura, mallee.	O	Woody shrub	1	10	A.ligulata, Erimophylla sp.	O	Hummock	30	35	Triodia sp	O
0795-1	-28.4198966	123.1569152	Tree	8	35	E.gongylocarpa	0	Woody shrub	2.5	2	G.stenobotryia, A. Ligulata, Senna artemesioides petiolaris	Anthrotroche pannosa	Hummock	30	30	Triodia basedoweii	Lomandra leucophyta
0795-2	-28.41639613	123.1125663	Tree mallee	5	25	Eucalyptus trivalvus, M Gum	0	Woody shrub	1.5	20	Acacia colletoides, Senna artemisiodes, Acacia ligulata, Acacia desertorum	Grevillia juncifolia , Hakea fran	Hummock	25	40	Triodia basedowi	Leptosema chambersi
0795-3	-28.4154438	123.0905168	Tree mallee	3	20	E. trivelvis	Na	Woody shrub	2	5	A.ligulata	Na	Hummock	30	70	Triodia basdoweii	Na

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0795-4	-28.4125758	123.068451	Tree	6	20	M Gum, Eucalyptus youngiana	Eucalyptus trivalva	Woody shrub	1.5	15	Hakea fran, Senna artemisiodes, Acacia ligulata, Grevillia juncifolia, Acacia jamesiana	Exocarpus sp.	Hummock	25	40	Triodia basedowi	Leptosema chambersi
0795-5	-28.40845119	123.038586	Tree mallee	4	20	Eucalyptus youngiana, Eucalyptus trivalva	0	Woody shrub	1.5	20	Grevillia juncifolia, Acacia desertorum, Hakea fran.	0	Hummock	30	40	Triodia basedowi, Baeckia sp.	Leptosema chambersi,
0795-6	-28.40665542	123.0205256	Tree mallee	3	25	E. trivalva	Na	Woody shrub	1.5	5	A.desertorum, A. ligulata	Na	Hummock	30	80	Triodia basedoweii	Na
0795-7	-28.4040375	122.9979373	Tree	6	10	Marble gum	E. Youngiana	Woody shrub	1.5	15	G. Juncifolia, Hakea francisiana, A ligulata	Exocarpus sp	Hummock	30	45	T. Bas	A. Penosa, beckya sp., Chinese lantern, Micromyrtus
0805-1	-28.66389074	125.1074642	Tree	5	5	E.gonglyocarpa, E youngiana , malleee	O	Woody shrub	1.5	5	Grevillea juncifolia, Erimophila longifolia, acacia ligulata	O	Hummock	0.3	60	T.desertorum, T . Rigidisma	O
0805-2	-28.6608104	125.1157711	Tree	6	10	M gum, E trvivalva	0	Woody shrub	2	10	Acacia ligulata, Grevilia sp. Eremophila platythamnos. Acacia sp.	0	Hummock	40	50	Triodia badedowi. Triodia rigidisima.	0
0805-3	-28.6531029	125.1291549	Tree	6	25	E.gonglyocarpa	O	Woody shrub	2.5	40	G.stenobotria, Erimophyla longifolia, Anthrotroche panosa, hibiscus sp.	O	Hummock	0.3	60	T.rigidisma	O
0805-4	-28.62087625	125.1701539	Tree	6	15	M gum, E youngiana, Mallee species.	0	Woody shrub	1	15	Acacia ligulata, Hakea fransciciana, E platythamnos, eremophila forestii	0	Hummock	35	38	Triofis basedowi, Triodia sp.	0
0805-5	-28.60931919	125.1824145	Tree mallee	6	10	E.gonglyocarpa	O	Woody shrub	2	40	G.srenobotria, Anthrotroche pannosa, Erimophylla sp.	O	Hummock	30	70	Triodia sp.	
0805-6	-28.59765689	125.2125445	Tree	8	30	M Gum, E youngiana, E glomerosa	Brachychiton gregoryi	Woody shrub	2	20	H fransiciana, A ligulata, purple hibiscus, Eremophila sp.	0	Hummock	35	38	Triodia basedowi, Triodia sp a bit like rigidissima.	0
0805-7	-28.5929786	125.2344719	Tree	5	10	M gum, E youngiana	0	Woody shrub	2	10	H fran, Grevillia juncifolia, Acacia helmsiana, Acacia ligulata.	0	Hummock	35	45	Triodia basedowi, Triodia sp. Upside down plant	0
0808-1	-28.54784283	125.8101958	Tree	12	10	E.gonglycarpa	Mallee?, E.gonglycarpa, E. youngiana	Woody shrub	2	15	A.ligulata	Hibiscus sp.	Hummock	30		Triodia basdowii	O
0808-2	-28.64141974	125.787916	Woody shrub	2	60	A.ligulata, G.stenobotryia	O	Woody shrub	1	10	Anthrotroche pannosa	O	Hummock	30	70	Triodia desertorum O	
0808-3	-28.62467257	125.7841469	Tree	12	5	E.gonglyocarpa	E.gonglyocarpa	Woody shrub	2.5	25	Hakka Francisiana, G. stenobotria, A.ligulata, Erimophilla sp.	Hibiscus sp.	Hummock	30	30	Triodia desertorum	O
0808-4	-28.60239825	125.7773896	Tree	6	25	M Gum	0	Woody shrub	1	20	Acacia ligulata, mauve hibiscus, Anrhrotrachne panosa, Grevillia stenobotrya, Eremophila platythamnos.	0	Hummock	30	30	Triodia similar to rigidisima....common tall seed one.	0
0808-5	-28.57540894	125.7987839	Tree mallee	3	30	Mallee eucalypt X 2	Mallee	Hummock	30	70	Triodia	O		30	70	Triodia	
0808-6	-28.56485182	125.8016478	Tree	1	5	M Gum	0	Woody shrub	1	5	Grevillia juncifolia, Acacia spp., purple hibiscus	0	Hummock	20	20	Triodia basedowi, Aristida sp.	0
0808-7	-28.65906463	125.7913709	Tree mallee	4	20	Mallee sp.	0	Woody shrub	1	15	Acacia ligulata, Acacia sp., Hibiscus mauve flower trifoliate leaf, Senna short fat leaf.	0	Hummock	25	45	Triodia basedowi	0
0821-1	-28.55583829	123.7845378	Tree	10	5	E.gonglyocarpa,	E. glomerosa, E youngiana, E. gonglyocarpa	Woody shrub	2	40	A.ligulata, G.stenobotryia, Hakea francisiana, Aluta masonneuvei,	E.gonglyocarpa, A ramulosa, Callitris preissii	Hummock	30	70	Triodia basedowii	O
0821-2	-28.55660595	123.7969181	Tree mallee	5	5	E.youngiana, E. glomerosa	Callitris preissii	Woody shrub	2	70	Aluta maisonneuvii, G. Stenobotryia, Bertya dimerostigma	C pressii	Hummock	30	40	Triodia basedowii	O

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0821-3	-28.55615885	123.8225943	Tree	6	10	M Gum, Callitris	Eucalyptus youngiana	Woody shrub	1	25	Aluta, Davisia grahami, Acacia helmsiana, Grevillia stenobotrya, leptospermun fastigiatum	0	Hummock	30	20	Triodia desertorum	Anthrotrochne panosa, Caesia rigida, Lomandra leucocephala, Pityrodia
0821-4	-28.55610466	123.8364268	Tree	6	25	MGum, Callitris, Eucalyptus glomerosa	0	Woody shrub	1.5	30	Grevillia stenobotrya, Aluta, Microcorys, Acacia helmsiana	0	Hummock	25	15	Triodia desertorum	Lomandra leucocephala, C. Putae, Anrhrotrachne panosa
0821-5	-28.5498478	123.8558592	Tree mallee	4	30	Eucalyptus concinna, Eucalyptus glomerosa, M Gum, Callitris	0	Woody shrub	1	25	Hakea fran, Grevillia stenobotrya, Grevillia didymobotrya, Aluta	Acacia helmsiana, Microcorys, Leptospermun fastigiatum	Hummock	30	20	Triodia desertorum, Lomandra leucocephala	Anrhrotrachne panosa, C putae, Caustis desertii
0821-6	-28.55577484	123.8556326	Tree mallee	3	5	E.gongliocarpa, C. Preissii	C.preissii	Woody shrub	1	20	Aluta maisoneuvii, G. stenobotria, G. dydymobotryia	A.ligulata, Anathotroche pannosa	Hummock	40	50	Triodia basdoweii, Lomandra leucocephalus	Keraudrenia integrifolia
0821-7	-28.55451264	123.892607	Tree	5	25	M Gum, Callitris	Eucalyptus glomerosa	Woody shrub	1	25	Aluta, Davisia grahami, Acacia ligulata, Grevillia stenobotrya	Grevillia didymobotrya, Microcorys	Hummock	25	25	Triodia desertorum	Caesia rigida, Anrhrotrachne panosa
0842-1	-28.55459513	124.1182079	Tree	15	5	E.gonglyocapa	E. glomerosa, C. Preissii,	Woody shrub	2.5	70	G. Stenobotria, H. francissiana, G. didymobotryia	A. desertorum, Aluta maisoneuvei	Hummock	30	60	Triodia desertorum	Leptosema chambersii
0842-2	-28.55344978	124.094654	Tree mallee	3.5	30	E.gongylocarpa, C. preissii	E. glomerosa	Woody shrub	2.5	70	A.ligulata, H. francissiana, A.desertorum	Aluta maisonuiveii, H. francissiana, Anthrotoche pannosa	Hummock	30	60	Triodia desertorum	Solanum lasiophyllum
0842-3	-28.55537373	124.0662395	Tree	6	25	M Gum, Eucalyptus youngiana, Callitris	Eucalyptus glomerosa	Woody shrub	1.5	35	Hakea fran, Acacia desertorum, Acacia praini, Grevillia juncifolia	Acacia helmsiana	Hummock	30	20	Triodia basedowi, Leptosema chambersi, Acacia acanthoclada	0
0842-4	-28.55454027	124.0441235	Tree	7	5	E.gonglyocarpa, C. Preissii	E.youngiana, E.glomerosa, Gyrostemon ramulosa, H. francissiana	Woody shrub	1.5	1.5	Aluta maisoneuvei, G. dodymobotrya, G. Stenobotria, A ligulata,	Anthrotroche pannosa	Hummock	30	40	Triodia desertorum	Na
0842-5	-28.55318093	124.0136658	Tree	4	20	M Gum, Eucalyptus glomerosa, Callitris	0	Woody shrub	1.5	30	Hakea fran, Grevillia juncifolia, Aluta, Acacia helmsiana, Acacia ligulata	0	Hummock	30	25	Triodia basedowi	Lomandra leucocephala, Anrhrotrachne panosa
0842-6	-28.55503736	124.0314428	Tree	8	20	E.gongylocarpa, C. Verucosa	E.gongylocarpa, E. glomerosa	Woody shrub	1.5	60	, Aluta maisoneuveii, A.ligulata. Acacia sp..	C.verrucossa	Hummock	30	70	Triodia desertorum	Na
0842-7	-28.55582725	123.9534704	Tree	5	28	M Gum, Callitris, Eucalyptus glomerosa	0	Woody shrub	1.5	30	Acacia praini, Grevillia juncifolia, Acacia helmsian, young Callitris, Hakea fran	Acacia ligulata, Dodenia viscosa	Hummock	20	20	Triodia basedowi	Anrhrotrachne panosa, Halgonia erecta
0973-1	-28.93129709	123.2923633	Tree mallee	5	35	E. conncina, A. aneura,	A.kempiana	Woody shrub	1.5	5	Senna artimesiodes artimesiodes	Na	Hummock	35	80	Triodia desertorum	O
0973-2	-28.93067067	123.3118045	Tree mallee	4	20	Eucalyptus trivalva	Acacia aneura, M Gum	Woody shrub	1	15	Senna artemisiodes, Acacia colletoides, Eremophila longifolia	Young A aneura	Hummock	25	40	Triodia basedowi	Solanum sp
0973-3	-28.93593849	123.3434563	Tree mallee	4	25	E.conncina	Na	Woody shrub	2.5	35	G.dydimobotrya, A desertorum, Scaeviola spinesence	Ptilotus obovatus	Hummock	30	75	Triodia desertorum	Ptilotus exaltus

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
0973-4	-28.9508556	123.3485562	Tree mallee	4	35	Eucalyptus sp mallee	M Gum, Eucalyptus youngiana	Woody shrub	1	20	Acacia helmsiana, young M Gum	0	Hummock	25	38	Triodia basedowi	0
0973-5	-28.88309373	123.4267931	Tree mallee	3.5	20	E. youngiana, E. leptopoda	H.francisiana	Woody shrub	1.5	60	Grevilia juncifolia, Aluta masoneuvii, A jamesiana, Allocasuarina acutivelvis	Bea CIA spy GVD, Acacia acanthocladis	Hummock	30	60	Triodia basdoweii,	Leptosemia chambersii, Kerodrenia sp.
1098-1	-29.64854287	124.8450739	Tree mallee	5	10	E.gongylocarpa, E. youngiana	O	Woody shrub	1	60	Thryptomene sp.	0	Hummock	0.5	0.5	Triodia desertorum	0
1098-2	-29.63017115	124.8584671	Tree mallee	6	25	Red mallee see pics	0	Woody shrub	2	10	Acacia spp., senna srtemisdioides, Dodenia lonulata, pituri dubosia hopwood	0	Hummock	50	40	Triodia nadedowi	0
1098-3	-29.6202529	124.8645767	Tree	5	5	E. gogylocarpa	O	Woody shrub	2	40	Thryptomene sp., Acacia ligulata, cassia filifolia	O	Tussock	0.5	40	Triodia basedowiei	O
1098-4	-29.6057023	124.8754299	Tree	6	10	M Gum, Euc trivalva	0	Woody shrub	2	15	Thryptomene biseriata, Bertya, Acacia helmsiana, Dodenia viscosa, Acacia ligulata, Young callitris	0	Hummock	40	20	Triodia desertorum	0
1098-5	-29.58784972	124.8872007	Tree	8	20	E. youngiana, acacia aneurysm, E trivalvis	E youngiana	Woody shrub	2	5	A. ligulata, A. Tetragonophylla	O	Hummock	0.5	90	Triodia sp.	
1098-6	-29.60271727	124.9470813	Tree	8	20	Acacia aneura, Casuarina pauper	0	Woody shrub	2	20	Acacia kempeana, Eremophila latrobei, Senna artemisioides, acacia colletoides, santalum spicatum	0	Hummock	30	10	Triodia badedowi, Aristida	0
1098-7	-29.6044914	124.9202245	Tree	5	15	M gum, mulga, E youngiana,	0	Woody shrub	2	15	A kempeana, E latrobei, Senna artrmisiofes, acacia sp.	0	Hummock	50	30	Triodia basedowi	0
1143-1	-29.8578468	124.2706743	Tree mallee	10	5	E.gonglyocarpa, E youngiana,E leptopda.	0	Woody shrub	1.5	30	Grevillua stenobotryia, , Caustsis desertii, Acacia ligulata, Bertya dimerostigma	0	Hummock	0.5	30	Triodia desertorum	Kenedia sp., Lomandra longifolia
1143-3	-29.858986	124.3169802	Tree mallee	3	10	E. youngiana, E sp.	O	Woody shrub	1.5	15	Calothamnus gilesii, Acacia ligulata, Grevilia stenobotryia. Banksia sp.	Thryptomene biseriata	Hummock	0.5	25	Triodia rigidisma	
1143-4	-29.85919492	124.3434733	Tree	4	4	Marble Gum, E leptopoda, E youngian	0	Woody shrub	2	16	G junc, H fran, Bertya, A helmsiana, A ligulata	0	Hummock	30	5	Triodia des.	0
1143-5	-29.8610198	124.3681203	Tree mallee	2	5	E. Youngiana, Condonocarpus cotinifolius	E.Youngiana, Condonocarpus cotinifolius	Woody shrub	0.6	20	Calothamnus gilesi, banksia sp		Hummock	30	40	Egrostis sp., Triodia desertorum	O
1143-6	-29.86713696	124.3926512	Tree	4	2	Marble Gum. E youngiana.	0	Woody shrub	0	8	Grev stenobotryia, Persoonia, white flower on veg list....pityrodia? Thryptomene, Leptospermum.	0	Hummock	0	10	Lomandra leucocephala, anthrotrachne panosa, Caustis deserti, pimelia, Calothamnus giles. Rulingia, see Jo pic. Very scattered tiny triodia des 5cm high.	0
1143-7	-29.863543	124.4874683	Tree	8	20	E.gonglyocarpa, mallee crincly, Calitris sp. , qundong.	0	Woody shrub	2	10	Grevilia junc., hakea fran, Bertya sp. Grevillea stenobotria, acacia helmsiana	0	Hummock	0.5	15	Triodia desertorum	0
1143-9	-29.85587255	124.2835152	Tree	6	5	Marble Gum, Calitris, sand dune mallee	0	Woody shrub	2	10	Allocas spinosima, Banksia, Persoonia, Acacia spp inc helmsiana, Grev syenobotryia.	0	Hummock	40	35	Triodia deserorum, lepidobulus	0
1218-1	-30.5169932	124.2538248	Tree	6	10	E.gongliocarpa,mallee, callitris preissii	Allocasuarina sp.	Shrub mallee	2.5	25	Hakea fransisiana, Grevillea junkifolia, Acacia ligulata	Aluta maisonneuvei	Hummock	35	60	Triodia basedowii, Lomandra leucophala	Na
1218-3	-30.5050892	124.2334966	Tree	6	5	E.gongliocarpa	E.Youngiana, mallee	Shrub mallee	2	35	A . ligulata, G. Juncifolia, Calothamnus gielsii	Thryptomene biseriata	Hummock	30	80	Triodia basedowii	

Cam_no	latitude	longitude	Upper stratum					Mid stratum					Lower stratum				
			Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents	Growth Form	Height	Cover	Dominants	Emergents
1218-4	-30.5247709	124.2299729	Tree mallee	6	25	M gum, e young, e collect	0	Woody shrub	1	30	Melaleuca bobly stems, acacia spp. Including jamesiana, leptospermum fsstigiatum,	0	Hummock	40	15	T desertorum, acacia acanthoclada, T rigidisima	0
1218-5	-30.5372192	124.2466044	Tree	8	25	Casuarina paupa	0	Woody shrub	2	50	Dodanea lobulata , erimophyla sp.	0	Hummock	30	5	Triodia scarisosa	0
1218-6	-30.57048014	124.3330854	Tree mallee	5	30	E young, e collect 2, callitris	0	Woody shrub	3	35	G junc., H fran., Acacia spp.,	0	Hummock	40	50	Triodia deserorum	0
1218-7	-30.548641	124.2635757	Tree mallee	10	20	Mallee eucalypt 2	O	Woody shrub			Erimophilla scoparium, erim. sp. , dodanea lobulosa. Pityrodium sp., Senna artemisioides.	O	Hummock	50	30	Triodis scariosa	0
1184-1	-30.01816355	123.124871	Shrub mallee	4	15	E socialis, E mallee sp	0	Woody shrub	1	35	Melaleuca hamata, Melaleuca uncinata, Melaleuca sp., young Calitris,	0	Hummock	20	15	Triodia desertorum	0
1184-2	-30.06279014	123.0489172	Tree	5	30	M Gum, Callitris, scattered Mulga, E youngiana	0	Woody shrub	2	20	Acacia ramulosa, Grevillia juncifolia, A colletoides, Eremophila, H fran	0	Hummock	30	15	Triodia desertorum	0
1184-3	-30.05991535	123.0717937	Shrub mallee	5	30	Mallee sp, M gum, Callitris	0	Woody shrub	2	30	Allocasuarina helmsii, Davisia purperrscens, Acacia sp., beautiful red Grevillia see pics	0	Hummock	30	10	Triodia desertorum	0
1184-4	-30.05524475	123.0982668	Tree mallee	5	38	Mallee species including E socialis, Callitris	0	Woody shrub	1	20	Acacia colletoides, Alyxia buxifolia, Acacia sp., beautiful red Grevillia see pics, Acacia ramulosa.	0	Hummock	30	20	Triodia desertorum	Homalocalyx thryptomenoides.
1184-5	-30.0497361	123.1160545	Tree	5	20	Callitris, E youngiana, Mallee sp.	0	Woody shrub	1	35	Leptospermum, Grev didybotryia, G juncifolia, Acacia jamesiana, Phebalium sp., Bertyia dimeristigma, Homalocalyx thryptomenoides, allocasurina acutivalvis.	0	Hummock	35	10	Triodia desertorum	0
1184-6	-30.04216825	123.1372074	Tree	5	20	M Gum, E leptopoda, big ball mallee see pics	0	Woody shrub	1	15	Acacia desertorum, Melaleuca sp. Green wispy plant at shd sites.	0	Hummock	25	15	Triodia desertorum	0
1184-7	-30.03924438	123.152662	Shrub mallee	3	20	E leptopoda, Mallee sp, Callitris.	0	Woody shrub	1	30	Acacia desertorum, Bertya dimeristigma, Enekbatus eremius, Baekia sp. GVD, Hakea franscisiana, Grevillia juncifolia.	0	Hummock	20	25	Triodia desertorum	0

Site Camera Set Details

Camera no	latitude	longitude	Camera details										
			date_set	date_retrieved	Make_model	Code	SD Card	Bearing	Height	Dist	Angle	Facing	Bait_lure	Notes
0003-1	-25.84892655	124.1596705	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	1	1b	80	30	1	10	Open space	Standard bait tube	
0003-2	-25.86363047	124.1715172	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	2	2b	280	20	1	4	Open space	Standard bait tube	
0003-3	-25.88273407	124.2057011	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	3	3b	174	30	1	10	Open space	Standard bait tube	
0003-4	-25.86840587	124.1921725	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	4	4b	170	20	1	4	Open space	Standard bait tube	
0003-5	-25.90163648	124.2082641	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	6	6b	10	20	1	4	Open space	Standard bait tube	
0003-6	-25.921649	124.2069847	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	7	7b	300	20	1	4	Open space	Standard bait tube	
0003-7	-25.93717252	124.2103851	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	5	5b	355	30	1	10	Open space	Standard bait tube	
0015-1	-26.00436592	124.2399367	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	9	9a	45	30	1	10	Open space	Standard bait tube	
0015-2	-26.3361088	124.2329974	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	15	15b	180	20	1	4	Open space	Standard bait tube	
0015-3	-26.05687511	124.2405966	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	8	8b	220	30	1	10	Open space	Standard bait tube	
0015-4	-26.3721011	124.2339868	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	16	16b	330	20	1	4	Open space	Standard bait tube	
0015-5	-26.38972408	124.2272341	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	17	17b	180	20	1	4	Open space	Standard bait tube	
0015-6	-26.10594973	124.2548994	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	10	10b	270	30	1	10	Open space	Standard bait tube	
0015-7	-26.42812905	124.2460263	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	20	20b	7	20	1	4	Open space	Standard bait tube	
0056-1	-26.31768767	124.2305948	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	18	18b	224	30	1	10	Open space	Standard bait tube	
0056-2	-26.01401395	124.2404788	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	11	11b	300	20	1	4	Open space	Standard bait tube	
0056-3	-26.03314607	124.2404828	2017-11-04	2017-12-15	Reconyx HyperFire PC 900	12	12b	60	20	1	4	Open space	Standard bait tube	
0056-4	-26.35403407	124.234184	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	19	19a	85	30	1	10	Open space	Standard bait tube	
0056-5	-26.07004119	124.2378315	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	13	13b	100	20	1	4	Open space	Standard bait tube	
0056-6	-26.0899862	124.2506715	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	14	14b	10	20	1	4	Open space	Standard bait tube	
0056-7	-26.40739918	124.2365106	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	21	21b	80	30	1	10	Open space	Standard bait tube	
0170-1	-26.86816467	124.4487108	2017-11-05	2017-12-15	Reconyx HyperFire PC 900	25	25b	275	30	1	10	Open space	Standard bait tube	
0170-2	-26.88574496	124.4523793	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	23	23b	270	20	1	4	Open space	Standard bait tube	
0170-3	-26.90166841	124.4515237	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	22	22b	25	20	1	4	Open space	Standard bait tube	
0170-4	-26.92396359	124.4458101	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	26	26b	105	30	1	10	Open space	Standard bait tube	
0170-5	-26.93851849	124.4332596	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	24	24b	5	20	1	4	Open space	Standard bait tube	
0170-6	-26.95797974	124.4232387	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	27	27b	300	30	1	10	Open space	Standard bait tube	Upon collection no bait tube present
0170-7	-26.9755189	124.4147847	2017-11-05	2017-12-14	Reconyx HyperFire PC 900	58	58b	300	20	1	4	Open space	Standard bait tube	
0332-1	-27.3579004	122.8488328	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	64	64a	335	20	1	4	Open space	Standard bait tube	
0332-3	-27.37123699	122.9298851	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	60	60b	72	30	1	10	Open space	Standard bait tube	
0332-4	-27.35518228	122.9173411	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	68	68a	150	20	1	4	Open space	Standard bait tube	Burned
0332-5	-27.34626948	122.8995124	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	57	57b	34	30	1	10	Open space	Standard bait tube	Medium sensitivity, upon collection camera burnt completely see photos
0332-6	-27.35529976	122.8788615	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	28	28b	10	30	1	10	Open space	Standard bait tube	Medium sensitivity, upon collection completely burnt see photos
0332-6	-27.39083526	122.9403849	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	65	65a	100	20	1	4	Open space	Standard bait tube	Ok
0332-7	-27.40494775	122.9552826	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	67	67a	45	20	1	4	Open space	Standard bait tube	
0468-1	-27.6130286	122.9134907	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	59	59a	290	20	1	4	Open space	Standard bait tube	
0468-2	-27.65036467	122.9130756	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	66	66a	350	30	1	10	Open space	Standard bait tube	
0468-3	-27.671996	122.9127646	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	61	61a	180	20	1	4	Open space	Standard bait tube	
0468-3	-27.69520463	122.9118002	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	69	69a	220	30	1	10	Open space	Standard bait tube	
0468-6	-27.7289557	122.9122062	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	62	62a	300	20	1	4	Open space	Standard bait tube	
0468-6	-27.71089316	122.9137628	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	70	70a	330	30	1	10	Open space	Standard bait tube	
0468-7	-27.74856915	122.9135549	2017-11-09	2017-12-14	Reconyx HyperFire PC 900	63	63a	148	30	1	10	Open space	Standard bait tube	Upon collection no bait tube present

Camera no	latitude	longitude	Camera details										
			date_set	date_retrieved	Make_model	Code	SD Card	Bearing	Height	Dist	Angle	Facing	Bait_lure	Notes
0604-1	-28.10201167	124.1979465	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	33	33a	6	30	1	10	Open space	Standard bait tube	
0604-2	-28.10148384	124.1786143	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	30	30b	35	20	1	4	Open space	Standard bait tube	
0604-3	-28.10134757	124.1618323	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	31	31b	336	30	1	10	Open space	Standard bait tube	bait tube moved 5m NW
0604-4	-28.11099924	124.143584	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	35	35b	110	20	1	4	Open space	Standard bait tube	Camera ok!!!! In unburnt island
0604-6	-28.11682375	124.1182922	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	29	29a	340	30	1	10	Open space	Standard bait tube	Camera destroyed by fire, possibly 16/12/2017? See photos.
0604-6	-28.1213789	124.097727	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	34	34b	45	20	1	4	Open space	Standard bait tube	Burnt . camera killed.
0604-7	-28.1131789	124.1390045	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	32	32b	175	30	1	10	Open space	Standard bait tube	Semi burnt. Camera burnt but SD card ok. Camera located 10m from unburnt island so fire likely less intense here.
0660-1	-28.20176428	124.6002807	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	50	50a	264	25	1	10	Open space	Standard bait tube	High
0660-2	-28.19043159	124.6096634	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	54	54a	40	20	1	5	Open space	Standard bait tube	
0660-3	-28.19145546	124.6180167	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	51	51a	175	25	1	0	Open space	Standard bait tube	
0660-4	-28.20465751	124.6254066	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	55	55a	270	15	1	8	Open space	Standard bait tube	Medium high
0660-5	-28.17761388	124.6023881	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	53	53a	105	25	1	10	Open space	Standard bait tube	High sesitivity
0660-6	-28.17651263	124.5864995	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	56	56a	355	15	1	10	Open space	Standard bait tube	Medium high
0660-7	-28.16861934	124.5683275	2017-10-04	2017-11-03	Reconyx HyperFire PC 900	52	52a	85	25	1	10	Open space	Standard bait tube	
0669-1	-28.31622013	126.5023327	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	32	32a	295	20	1	5	Open space	Standard bait tube	
0669-2	-28.31639011	126.4889213	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	29	29a	135	30	1	20	Open space	Standard bait tube	Medium option setting
0669-3	-28.31271271	126.4698236	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	33	33a	90	20	1	4	Open space	Standard bait tube	
0669-4	-28.30913746	126.4484859	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	30	30a	310	30	1	10	Open space	Standard bait tube	Medium/high motion setting
0669-5	-28.30877215	126.4270541	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	34	34a	98	20	1	5	Open space	Standard bait tube	
0669-6	-28.30925661	126.4149146	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	31	31a	310	30	1	10	Open space	Standard bait tube	
0669-7	-28.30816998	126.3936767	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	35	35a	275	20	1	5	Open space	Standard bait tube	
0691-1	-28.30423786	126.0162977	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	39	39a	255	30	1	10	Open space	Standard bait tube	Medium high motion settin
0691-2	-28.30237455	125.9991982	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	41	41a	280	25	1	5	Open space	Standard bait tube	Sensitivity=high
0691-3	-28.30165869	125.980357	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	43	43a	98	30	1	5	Open space	Standard bait tube	High
0691-4	-28.30266747	125.961454	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	37	37a	250	30	1	10	Open space	Standard bait tube	
0691-5	-28.2986677	125.9400153	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	42	42a	270	30	1	3	Open space	Standard bait tube	High
0691-6	-28.30006259	125.9258436	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	38	38a	330	30	1	10	Open space	Standard bait tube	
0691-7	-28.30046249	125.9021857	2017-10-03	2017-11-02	Reconyx HyperFire PC 900	40	40a	345	30	1	10	Open space	Standard bait tube	
0795-1	-28.4198966	123.1569152	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	51	51b	177	30	1	10	Open space	Standard bait tube	
0795-2	-28.41639613	123.1125663	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	56	56b	210	20	1	4	Open space	Standard bait tube	
0795-3	-28.4154438	123.0905168	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	52	52b	5	30	1	10	Open space	Standard bait tube	
0795-4	-28.4125758	123.068451	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	54	54b	90	20	1	4	Open space	Standard bait tube	
0795-5	-28.40845119	123.038586	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	55	55b	180	20	1	4	Open space	Standard bait tube	Sandhill dunnart!!!!
0795-6	-28.40665542	123.0205256	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	53	53b	20	30	1	10	Open space	Standard bait tube	
0795-7	-28.4040375	122.9979373	2017-11-08	2017-12-18	Reconyx HyperFire PC 900	50	50b	354	30	1	10	Open space	Standard bait tube	
0805-1	-28.66389074	125.1074642	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	23	23a	43	40	1	10	Open space	Standard bait tube	
0805-2	-28.6608104	125.1157711	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	25	25a	330	25	1	5	Open space	Standard bait tube	Put on medium sensitivity due to heaps of moving grass.
0805-3	-28.6531029	125.1291549	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	22	22a	240	30	1	10	Open space	Standard bait tube	
0805-4	-28.62087625	125.1701539	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	26	26a	45	30	1	4	Open space	Standard bait tube	Sensitivity= med high
0805-5	-28.60931919	125.1824145	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	24	24a	5	30	1	10	Open space	Standard bait tube	
0805-6	-28.59765689	125.2125445	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	27	27a	290	25	1	5	Open space	Standard bait tube	
0805-7	-28.5929786	125.2344719	2017-10-03	2017-11-03	Reconyx HyperFire PC 900	28	28a	90	25	1	5	Open space	Standard bait tube	Sensitivity= medium
0808-1	-28.54784283	125.8101958	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	45	45a	2	23	1	10	Open space	Standard bait tube	

Camera no	latitude	longitude	Camera details										
			date_set	date_retrieved	Make_model	Code	SD Card	Bearing	Height	Dist	Angle	Facing	Bait_lure	Notes
0808-2	-28.64141974	125.787916	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	47	47a	20	25	1	10	Open space	Standard bait tube	
0808-3	-28.62467257	125.7841469	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	36	36a	73	25	1	10	Open space	Standard bait tube	
0808-4	-28.60239825	125.7773896	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	48	48a	170	10	1	3	Open space	Standard bait tube	Medium
0808-5	-28.57540894	125.7987839	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	44	44a	40	25	1	10	Open space	Standard bait tube	Medium/high
0808-6	-28.56485182	125.8016478	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	49	49a	320	15	1	10	Open space	Standard bait tube	Medium
0808-7	-28.65906463	125.7913709	2017-10-04	2017-11-02	Reconyx HyperFire PC 900	46	46a	190	25	1	8	Open space	Standard bait tube	Medium
0821-1	-28.55583829	123.7845378	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	36	36b	180	30	1	10	Open space	Standard bait tube	Medium sensitivity
0821-2	-28.55660595	123.7969181	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	38	38a	330	30	1	10	Open space	Standard bait tube	
0821-3	-28.55615885	123.8225943	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	41	41b	90	20	1	4	Open space	Standard bait tube	
0821-4	-28.55610466	123.8364268	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	40	40b	110	20	1	4	Open space	Standard bait tube	
0821-5	-28.5498478	123.8558592	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	39	39B	40	20	1	4	Open space	Standard bait tube	
0821-6	-28.55577484	123.8556326	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	42	42b	10	30	1	10	Open space	Standard bait tube	Bait moved 5m NW
0821-7	-28.55451264	123.892607	2017-11-06	2017-12-17	Reconyx HyperFire PC 900	37	37a	90	20	1	4	Open space	Standard bait tube	
0842-1	-28.55459513	124.1182079	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	43	43b	104	30	1	10	Open space	Standard bait tube	
0842-2	-28.55344978	124.094654	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	44	44b	340	30	30	10	Open space	Standard bait tube	
0842-3	-28.55537373	124.0662395	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	48	48b	120	20	1	4	Open space	Standard bait tube	
0842-4	-28.55454027	124.0441235	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	45	45b	156	30	1	10	Open space	Standard bait tube	
0842-5	-28.55318093	124.0136658	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	46	46b	90	20	1	4	Open space	Standard bait tube	
0842-6	-28.55503736	124.0314428	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	49	49b	188	30	1	10	Open space	Standard bait tube	
0842-7	-28.55582725	123.9534704	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	47	47b	200	20	1	4	Open space	Standard bait tube	
0973-1	-28.93129709	123.2923633	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	73	73b	316	30	1	10	Open space	Standard bait tube	No bait tube- scattered bait
0973-2	-28.93067067	123.3118045	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	71	71a	200	20	1	4	Open space	Standard bait tube	
0973-3	-28.93593849	123.3434563	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	75	75b	224	30	1	10	Open space	Standard bait tube	No bait tube
0973-4	-28.9508556	123.3485562	2017-11-07	2017-12-17	Reconyx HyperFire PC 900	72	72a	210	20	1	4	Open space	Standard bait tube	
0973-5	-28.88309373	123.4267931	2017-11-08	2017-12-17	Reconyx HyperFire PC 900	74	74b	320	30	1	10	Open space	Standard bait tube	
1098-1	-29.64854287	124.8450739	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	15	15a	327	50	1	10	Open space	Standard bait tube	
1098-2	-29.63017115	124.8584671	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	16	16a	241	30	1	4	Open space	Standard bait tube	
1098-3	-29.6202529	124.8645767	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	19	19a	270	50	1	10	Open space	Standard bait tube	
1098-4	-29.6057023	124.8754299	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	18	18a	163	30	1	0	Open space	Standard bait tube	Camera straight as ground sloping
1098-5	-29.58784972	124.8872007	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	21	21A	60	50	1	10	Open space	Standard bait tube	Set to medium sensitivity due to spinifex movement
1098-6	-29.60271727	124.9470813	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	20	20a	60	30	1	4	Open space	Standard bait tube	
1098-7	-29.6044914	124.9202245	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	17	17a	2	30	1	5	Open space	Standard bait tube	
1143-1	-29.8578468	124.2706743	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	8	8a	330	35	1	10	Open space	Standard bait tube	
1143-3	-29.858986	124.3169802	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	10	10a	25	30	1	10	Open space	Standard bait tube	
1143-4	-29.85919492	124.3434733	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	11	11a	60	30	1	3	Open space	Standard bait tube	
1143-5	-29.8610198	124.3681203	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	12	12a	122	30	1	10	Open space	Standard bait tube	Bait has been moved
1143-6	-29.86713696	124.3926512	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	13	13a	33	30	1	4	Open space	Standard bait tube	
1143-7	-29.863543	124.4874683	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	14	14a	300	35	1	10	Open space	Standard bait tube	
1143-9	-29.85587255	124.2835152	2017-10-01	2017-11-01	Reconyx HyperFire PC 900	9	9a	155	25	1	4	Open space	Standard bait tube	
1218-1	-30.5169932	124.2538248	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	1	1a	240	30	1	10	Open space	Standard bait tube	
1218-3	-30.5050892	124.2334966	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	3	3a	15	30	1	10	Open space	Standard bait tube	
1218-4	-30.5247709	124.2299729	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	4	4a	142	20	1	5	Open space	Standard bait tube	
1218-5	-30.5372192	124.2466044	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	5	5a	345	30	1	10	Open space	Standard bait tube	
1218-6	-30.57048014	124.3330854	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	6	6a	344	30	1	4	Open space	Standard bait tube	

Camera no	latitude	longitude	Camera details										
			date_set	date_retrieved	Make_model	Code	SD Card	Bearing	Height	Dist	Angle	Facing	Bait_lure	Notes
1218-7	-30.548641	124.2635757	2017-09-30	2017-11-01	Reconyx HyperFire PC 900	7	7a	300	30	1	10	Open space	Standard bait tube	
1184-1	-30.01816355	123.124871	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	57	57a	40	15	1	5	Open space	Standard bait tube	High
1184-2	-30.06279014	123.0489172	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	58	58a	270	15	1	5	Open space	Standard bait tube	High
1184-3	-30.05991535	123.0717937	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	59	59a	260	15	1	5	Open space	Standard bait tube	High
1184-4	-30.05524475	123.0982668	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	60	60a	200	15	1	4	Open space	Standard bait tube	High
1184-5	-30.0497361	123.1160545	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	61	61a	185	15	1	5	Open space	Standard bait tube	High
1184-6	-30.04216825	123.1372074	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	62	62a	300	20	1	5	Open space	Standard bait tube	High
1184-7	-30.03924438	123.152662	2017-10-06	2017-11-06	Reconyx HyperFire PC 900	63	63a	5	15	1	5	Open space	Standard bait tube	High