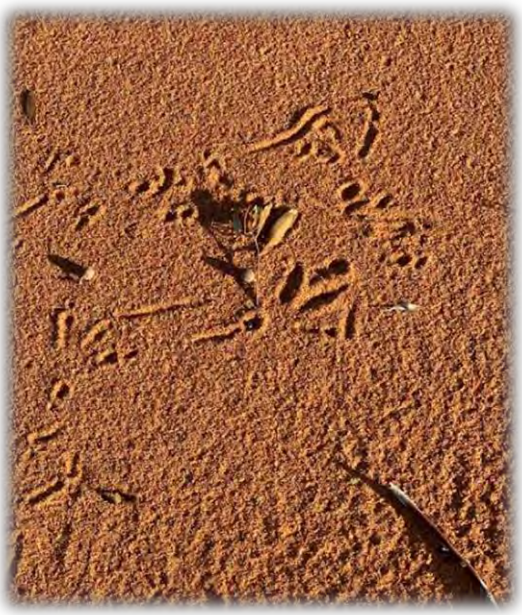
Great Victoria Desert Biodiversity Trust Annual Report


2021-2022

A report of the outputs, expenditure and governance of the Trust

August 2022

Message from the Chair

On behalf of the Management Panel of the Great Victoria Desert Biodiversity Trust, I am pleased to present the ninth Annual Report on our activities. This report is a public documentation of the Trust's activities for the 2021-22 financial year, ensuring our accountability to the organisations that fund the Trust, to the key stakeholders in the Great Victoria Desert (GVD), and to the broader WA public.

The Trust's activities this year have been focused on implementing the integrated landscape scale management initiative focusing on fire management with the aim of providing landscape scale improvements to the desert biodiversity and habitats, in particular, those of the Malleefowl and Sandhill Dunnart. A key part of this work involves working with the Traditional Owners to draw on their extensive management knowledge and to assist in building their on-going management capacity. Strengthening these relationships will be a key objective of the Trust this coming year.

This year, as part of working with Traditional Owners, the Trust commenced a partnership with the Indigenous Desert Alliance (IDA). This organisation co-ordinates projects across Australia's desert country and focuses on empowering networks of Indigenous rangers to share information and practices to work together to provide the highest standard of stewardship and care for the desert. The Trust and IDA are working together on a project to increase Indigenous fire management activities across the GVD for the regional benefits it can provide to biodiversity as well as areas of cultural significance.

Another key initiative commenced in 2021/2022 was the development of a partnership with Curtin University, where the Trust could fund projects that meet the objectives of the Trust and utilise the skills, knowledge and research interest of Curtin to improve the biodiversity of the desert. Key projects under this partnership are expected to commence in late 2022.

I would like to personally thank the members of the Management Panel for their continued commitment to the Trust's objectives and the Technical Advisory Panel (TAP) for their high level and invaluable technical advice, all of whom have provided their time without being remunerated. A special thanks Kathryn Sinclair our Operations' Manager and to Jaume Ruscalleda Alvarez, the Trust's Technical Biodiversity Officer. They have provided invaluable professional advice and support to the Management Panel and have expertly managed the various projects funded by the Trust.

Finally, I would like to formally acknowledge the strong and effective working relationship the Trust has with AngloGold Ashanti Australia, the DBCA, and with the WA Public Trustees who manage the funds for the Trust.

Dr Garry Middle

Executive Summary

In the 2021/22 financial year the Trust several significant projects were completed and several more projects were commenced. The projects completed or commenced under this initiative on 2021/22 include:

- Baseline Fauna survey and Malleefowl mound detection (GHD) - completed
- Installation of weather stations in the Landscape Conservation Initiative areas (LCI) - completed
- Vegetation and Soil Survey (Uni of Adelaide) – underway
- Purchase and installation of cameras for the detection of predators and Sandhill dunnarts in the LCI – completed
- Partnership with the Indigenous Desert Alliance on Indigenous fire management in the GVD - underway
- Fire Mapping of the GVD – ongoing

The Trust has also brought the significant body of mapping in-house, by the Technical Biodiversity Officer. This represents a significant cost saving for the Trust and also allows the development of different key insights including:

- More frequent mapping of fires in the landscape
- Mapping Mulga patches
- Increased understanding of rainfall and its interactions with burns

The annual contribution from the Tropicana Joint Venture (TJV) to the Trust in 2021-22 FY was $385,035.20 based on an annual fee of $100,000 plus $80 per hectare of cleared footprint for the TGM. The Trust also received $8,543.42 interest from the funds held on its behalf by the Public Trustee (Table 5). An additional $36,520 was received as a GST refund.

A total of $105,328.66 was spent directly on projects in the 2021-22 financial year. This represents a significant reduction in expenditure from the previous year however several key partnerships were developed in 2021/22 which will come to fruition in the 2022/2023 financial year.

The Management Panel and Chair continue to provide oversight and direction on Trust matters, working with the Trust's Operations Manager, including during two Management Panel meetings, and four out-of-session decisions. The Technical Advisory Panel met two times during the financial year and have played an important role in shaping the projects of the Trust and helping to ensure projects are consistently building knowledge on threatened species and shaping future projects.

Table of Contents

1. Introduction

The Trust represents a unique model for an environmental offset in Western Australia, and Australia in general. It was established in 2014 by the Tropicana Joint Venture (AngloGold Ashanti Australia (AGAA) Ltd (manager and 70% owner) and Independence Group NL (30% owner) as the central part of an offset package for the Tropicana Gold Mine (TGM) in Western Australia under the Commonwealth *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*. As of 31st May 2021 Regis Resources has taken ownership of the Independence Group NL portion of the Tropicana Gold Mine.

The Trust's main purpose is to deliver conservation benefits to nationally-listed threatened species, at a landscape-scale, and facilitate indigenous involvement in land management and conservation activities in the region. The projects supported in the 2021-2022 financial year have focused on planning towards a large-scale land management trial to understand the benefits or otherwise of patch burning to threatened species in the region. Through the partnership with IDA the Trust has also focussed on empowering Indigenous ranger groups to plan and conduct culturally appropriate fire activities which support and benefit biodiversity in the GVD. Appropriate fire management is one of the chief mechanisms that can protect threatened species in the GVD.

The Trust's purposes, region of focus ('Trust Area') and governance structure are outlined in more detail below for context.

1.1 Trust Purposes

The purpose of the Trust is to achieve the following objectives:

1. Develop a Bioregional Management Plan (also referred to as a 'Biodiversity Conservation Plan') for the Western Great Victoria Desert bioregions 1 and 2 (i.e. the 'Trust Area');
2. Facilitate and/or undertake priority research in the Bioregional Management Plan at the landscape level and into species considered to be of Matters of National Environmental Significance (MNES) under the *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*, including the Sandhill Dunnart and Malleefowl;
3. Fund on-ground environmental and conservation management at the landscape level, with emphasis on net conservation benefits to threatened species, including those considered MNES;
4. Facilitate indigenous involvement in land management and conservation activities in support of the above objectives.

These objectives reflect those specified in Condition 6 of the *EPBC Act* approval 2008/4270 for the Tropicana Gold Mine.

1.2 Trust Area

The Interim Biogeographic Regionalisation for Australia (IBRA) classifies Australia's landscapes into 89 large geographically distinct bioregions. These are based on common climate, geology, landform, native vegetation and species information (DoE, 2015). The 89 bioregions are further refined to form 419 subregions. These are more localised and homogenous geomorphological units in each bioregion.

The GVD is one of the 89 IBRA bioregions. It is comprised of 6 subregions which extend from approximately 200km east of Kalgoorlie in Western Australia to cover large areas of South Australia. The entire GVD IBRA region covers 42,375,084 ha.

The Trust's area of focus ('Trust Area') is comprised of the two most western subregions of the GVD, known as Shield and Central, which are entirely located within Western Australia (Figure 1). These two sub-regions cover an area of 17,332,721 ha.

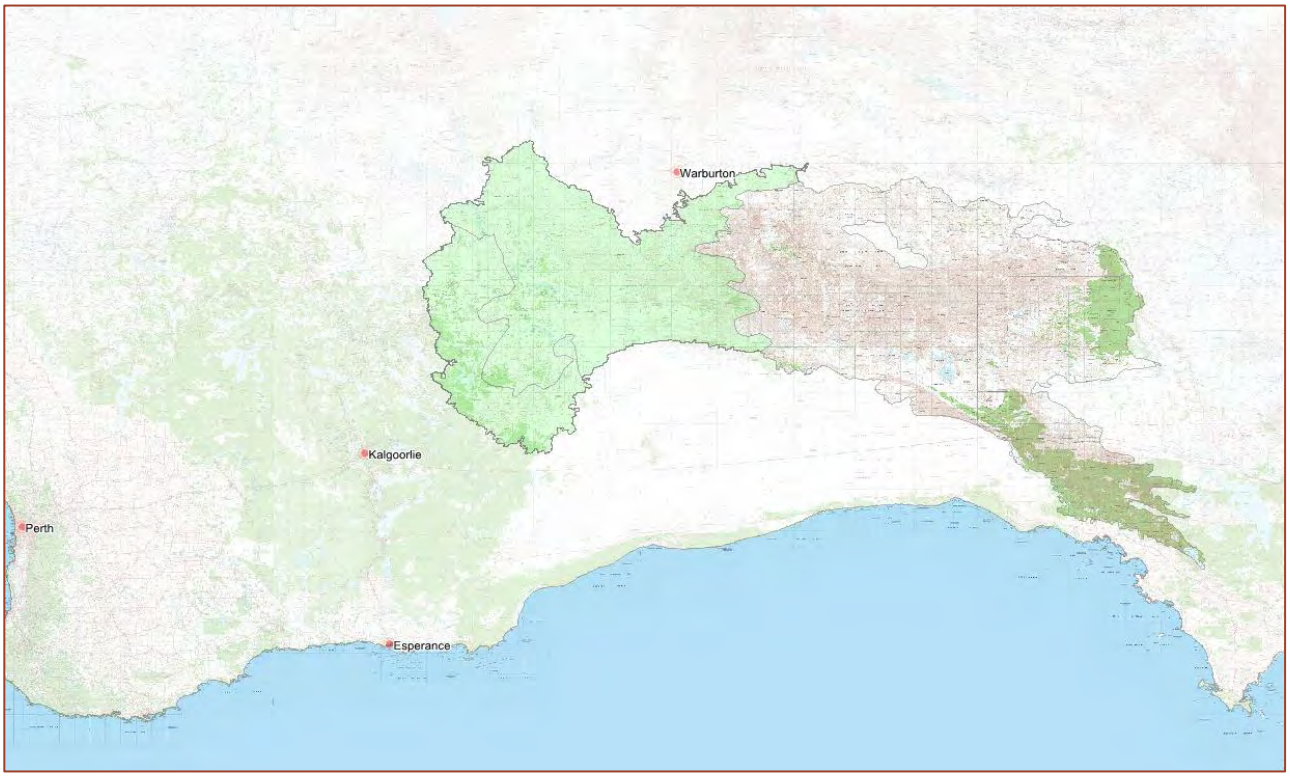


Figure 1. The location and extent of the GVD (outlined) and the Trust Area (bright green)

Whilst the Trust's activities are predominantly focussed on research and on-ground activities within the Shield and Central subregions of the GVD, they can occur outside this region if they meet the Trust's overall objectives. That is, they must be relevant and beneficial to species and biodiversity within the Trust Area, especially species and communities that are MNES as listed by the *EPBC Act*.

2. Governance

The governance structure of the Trust is a key component of ensuring stakeholder support and the delivery of activities that align with the Project Plan approved by the former DoE as part of the TGM *EPBC Act* approval (2008/4270). The governance structure of the Trust is outlined in Figure 2.

The activities and expenditure of the Trust are the overall responsibility of the Trust's Management Panel, which consists of representatives from the Department of Biodiversity, Conservation and Attractions (DBCA) and AngloGold Ashanti Australia (AGAA), as well as an independent Chair.

The day-to-day management and operation of the Trust is the responsibility of the Operations Manager. The Operations Manager reports to the Trust's Management Panel via the Chair. The Operations Manager is supported through the provision of technical advice from the Trust's Technical Advisory Panel (TAP). The TAP consists of six members with experience and technical expertise of the GVD and its landscape. The Trust's Operations Manager works as Chair of the TAP.

The Public Trustee of Western Australia maintains the financial accountability of the Trust, ensuring that all the spending of the Trust account aligns with the Trust Deed. The Public Trustee maintains a role on the Management Panel, having a standing invitation to attend meetings.

The Trust's funds, held by the Public Trustee, are allocated to various organisations and individuals according to anticipated benefit, value for money, and alignment with the Trust's objectives and priorities. The recipients may include Traditional Owner groups, researchers, not-for-profit environmental groups and expert consultants.

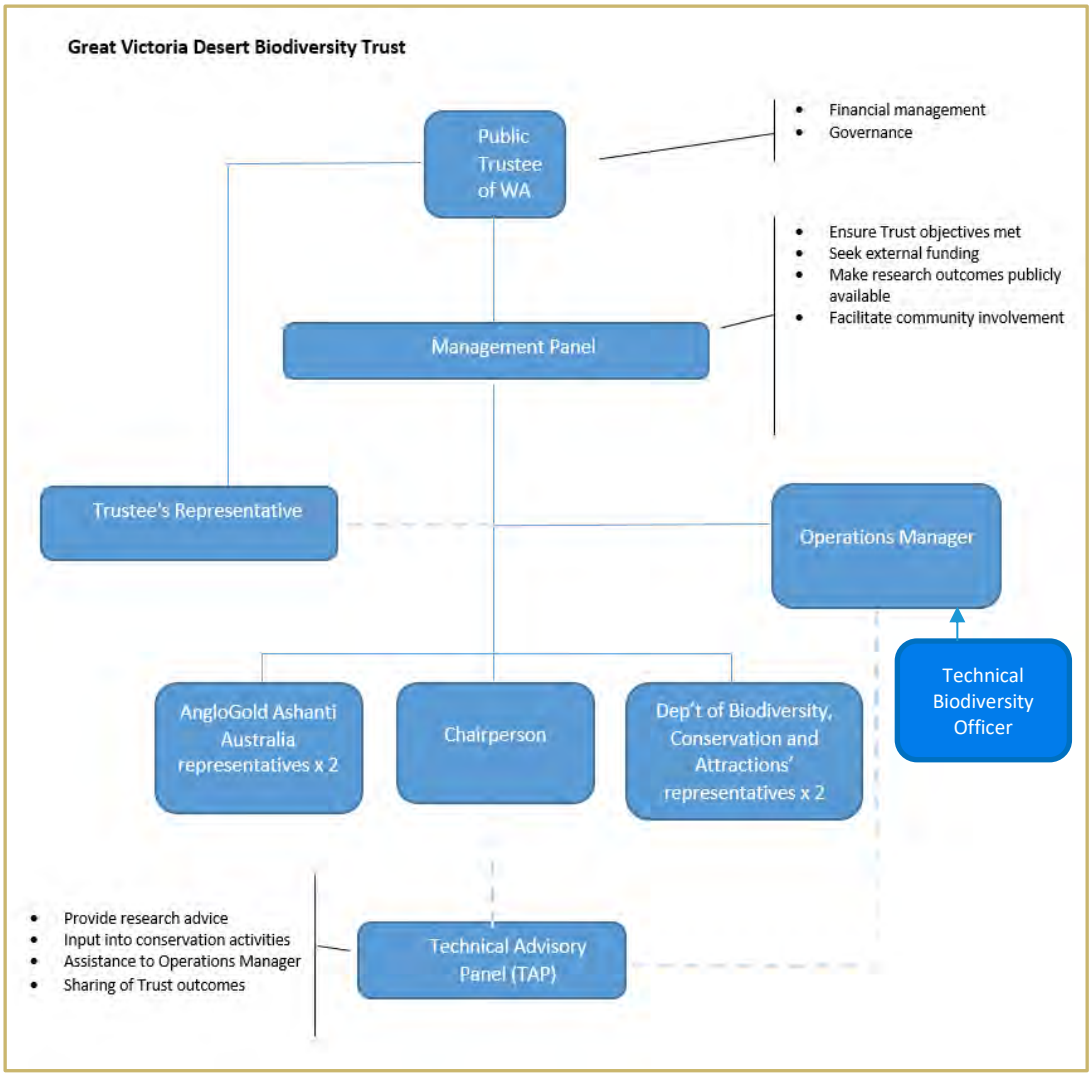


Figure 2. The Structure of the Great Victoria Desert Biodiversity Trust

The Trust, and all of its activities and expenditure, is governed by an overarching Trust Deed. This document details the relationship between:

- The Trust's Management Panel;
- AngloGold Ashanti Australia, as the founder; and
- The Public Trustee of Western Australia, as the financial manager.

The Trust Deed also outlines the roles and responsibilities of the Management Panel, Chair, Trustee, Operations Manager and the TAP, and the purposes and scope of the Trust. Additional background information is located at www.gvdbiodiversitytrust.org.au/about-us and in the Trust Deed (http://www.gvdbiodiversitytrust.org.au/wp-content/uploads/2014/11/GVDBT-Trust-Deed.pdf).

2.1 The Management Panel

The Management Panel met two times during the 2021-22 financial year (Table 1) to ensure progress was maintained on key priorities. Membership of the Management Panel remained constant throughout the 2021-22 year.

Table 1: Management Panel Meetings and Attendance 2021-2022

Attendee	Meeting 1 7/10/2021	Meeting 2 2/12/2021
Garry Middle (Chair)	√	√
Norm Galli (AGAA)	√	√
Nerilee Rockman (AGAA)	√	√
Mark Cowan (DBCA)	√	**Apologies**
Nigel Wessels (DBCA)	√	√
Kathryn Sinclair (OM)	√	√
Jaume Ruscalleda Alvarez (Biodiversity Technical Officer)	√	√
Sue Wormald (Public Trustee)	**Apologies**	**Apologies**

To expedite the timely turnover of project decisions, the Management Panel also had four out-of-session meetings (Table 2) which were conducted via email and utilised consensus-based agreement regarding project decisions and variations to projects.

Table 2. Out of session meeting proposals (email consensus)

Business Case	Operations Manager to participate and present at the Malleefowl and Threatened Species Forum in Geraldton
Date	17 August 2021
Cost	$800 + GST
Email response	All MP members supported
Outcome	Trip conducted and presentation delivered

Business Case	Attendance of the OM at Upurli Upurli Nguratja meeting in Kalgoorlie
Date	25 October 2021
Cost	$650 + GST
Email response	All MP members except Mark Cowan (no response provided)
Outcome	Operations Manager was unable to attend in person and delivered the presentation electronically

Business Case	Support for the installation of existing camera traps and engaging with Spinifex rangers for both the installation of cameras and discussing ongoing fire management.
Date	24 March 2022
Cost	$57,000 + GST
Email response	All MP members
Outcome	This trip took place 1 May to 6 May. 96 cameras were installed. Two ecologists, Jeff Turpin and Ray Lloyd accompanied the OM and the TBO on the trip. Unfortunately, at the last minute, the Spinifex rangers were not able to attend.

	The total cost of the trip was $16,774.33.

Business Case	Commit funding for the WA Herbarium for the identification of TERN vegetation specimens.
Date	31 May 2022
Cost	A maximum expenditure of $13,550 + GST for the identification of Landscape Conservation Initiative specimens by the WA Herbarium A maximum expenditure of $13,550 + GST for the incorporation certain specimens into the WA Herbarium.
Email response	All MP members
Outcome	Pending

2.2 The Operations Manager

The Operations Manager maintained communication and meeting with the Chair of the Trust, the Technical Advisory Panel, and Management Panel, throughout the year to ensure the Trust maintained steady progress on key activities and maintained a strategic vision of the objectives of the Trust. Kathryn Sinclair remained in this role throughout 2021-22, working three days a week.

2.2.1 The Technical Biodiversity Officer

In September 2020 the Trust recruited for a Technical Biodiversity Officer (TBO). This was a new position in the Trust and required the successful applicant to manage the Trust's data, spatial layers, GIS information and the management of other technical projects as directed by the Operations Manager. Jaume Ruscalleda Alvarez is employed in the role. From 1 July to September 2021 this role was one day a week and increased in September 2021 to two days per week.

2.3 The Public Trustee

The Public Trustee's representative provided assistance with financial documents to the Trust and project invoice payments. The Trustee has provided quarterly and annual financial statements.

As in previous years, the Public Trustee's representative worked closely with Ernst and Young, the nominated financial auditors, to ensure that all of the Trust's spending, accounting and financial reporting had been conducted appropriately. The Trustee continues to give strong oversight and guidance (as required) to the Trust to ensure it meets both financial and legal obligations.

2.4 The Technical Advisory Panel

The Technical Advisory Panel (TAP) was established in April 2015 to provide expert advice and support to the Trust, such as providing feedback on the scope of research proposals, on-ground environmental or conservation activities, and research reports. The membership of the TAP has increased, with Mark Cowan joining the TAP as a representative from the Management Panel and Dr Stephen van Leeuwen remaining on the TAP despite leaving the Management Panel.

The TAP formally met two times during the 2021-22 financial year (Table 3) to discuss issues including:

- Updating the scope requirements for the Landscape Conservation Initiative- Baseline Fauna survey;
- Review and assess Expression of Interests related to the updated Baseline Fauna survey;
- Discuss the types of cameras to purchase for predator monitoring and Sandhill Dunnart detection. TAP also provided guidance on the camera configurations and baiting requirements.

In addition TAP members were consulted, out-of-session, on eDNA on the 24 March 2022.

Throughout the year members on the TAP were individually approached to guide development of Trust project work scopes related to their areas of expertise.

Table 3: Technical Advisory Panel Meetings and Attendance 2021-2022

Attendee	Meeting 1: 23/09/2021	Meeting 2: 25/11/2021
Belinda Bastow	√	√
Ryan Ellis	√	Conflict of interest – not included in meeting
Katherine Moseby	√	√
Blair Parsons	Apology	√
Stephen van Leeuwen	Apology	√
Kathryn Sinclair	√	√
Jaume Ruscalleda Alvarez	√	√
Mark Cowan (MP member)	√	√

3. Trust Activities

Projects and Activities

In the 2021-22 Financial Year (FY) the Trust commenced and completed several projects, summarised briefly below. Full reports have been made available to the public on the Trust website (http://gvdbiodiversitytrust.org.au/).

3.1 GVD Landscape Conservation Initiative (LCI)

The LCI, which commenced in 2020, is an integrated landscape management project in the south-west of the GVD (Figure 3) focusing on prescribed, small-scale, cool, culturally sensitive burns and introduced predator control. In addition, the Trust will monitor the effectiveness of management by investigating the response of biodiversity communities (small mammals, including Sandhill Dunnarts, reptiles, Malleefowl activity), and introduced predators including other feral species observed, before and after land management activities (fire/baiting) over an initial 10-year period. Monitoring will be compared between paired landscapes (one managed and one unmanaged/reference) in the GVD.

3.1.1 LCI – Baseline Fauna Survey

Context: A key part of the LCI project is understanding the fauna assemblages in the Management area (MA) and Reference area (RA) and seeing how they change in response to small-scale, cool, culturally sensitive burns. GHD was commissioned to undertake a Spring (2020) and Autumn (2021) fauna survey using pitfall traps and camera traps. Pitfall traps were established in equal numbers in the MA and RA, in areas of different fire ages. Camera trapping occurred concurrently with pitfall trapping however the cameras were also left in the field for the period between field trips, approximately six months.

Purpose: To understand the species and the community assemblages present in the MA and RA.

Key findings: The final report was provided to the Trust in August 2021. A list of the species detected in each area is provided in Table 4.

Management implications: This is an ongoing project, aimed to be conducted biannually or annually to detect changes in species composition. A further baseline survey is aimed to be conducted in Spring 2022, this is expected to be followed by fauna monitoring in Autumn 2022.

Status: Contract completed and report finalised.

Reference: Landscape Conservation Initiative - Baseline Fauna Survey Outcomes. GHD (2021). Available on the Trust's website.

Table 4. Species detected in pitfall trapping

Species detected (X=presence, recorded via evidence)		
Mammal Species Numbers	**Management area**	**Reference area**
Macropus fuliginosus	X	X
Osphranter robustus	Not detected	X
Cercartetus concinnus	1	2
Mus musculus	2	7
Ningaui ridei	113	38
Notomys alexis	2	23
Sminthopsis dolichura	34	14
Sminthopsis hirtipes	13	7
Sminthopsis ooldea	3	Not detected
Dasycercus blythi	Not detected	X
Pseudomys hermannsburgensis	15	4
Vulpes vulpes	X	X
Felis catus	X	X
Camelus dromedarius	X	X
Canus dingo	X	X
Total mammals detected	**183**	**91**
	Management area	**Reference area**
Reptile Species Numbers		
Diplodactylus laevis	13	2
Diplodactylus wiru	15	9
Gehyra purpurascens	9	11
Gehyra variegata	2	1
Heteronotia binoei	4	Not detected
Lucasium bungabinna	17	2
Lucasium damaeum	80	100
Nephrurus laevissimus	21	135
Nephrurus levis levis	25	7
Rhynchoedura ornata	40	35
Strophurus assimilis	2	Not detected
Strophurus elderi	5	5
Delma australis	3	2
Delma butleri	7	Not detected
Delma nasuta	2	Not detected
Delma petersoni	8	Not detected
Lialis burtonis	3	Not detected
Pygopus nigriceps	15	7
Ctenophorus clayi	3	35
Ctenophorus cristatus	31	18
Ctenophorus isolepis gularis	57	63
Ctenophorus nuchalis	1	37
Diporiphora reginae	1	3
Moloch horridus	59	18
Pogona minor minor	21	7
Ctenotus atlas	52	17
Ctenotus brooksi 41 60	Not detected	101
Ctenotus calurus	23	7
Ctenotus dux	1	Not detected
Ctenotus helenae	8	1

Ctenotus pantherinus ocellifer	25	1
Ctenotus quattuordecimlineatus	48	16
Ctenotus schomburgkii	172	35
Cyclodomorphus melanops elongatus	4	1
Eremiascincus aff. richardsonii	3	22
Lerista bipes	164	140
Lerista desertorum	11	2
Lerista taeniata	1	1
Lerista timida	1	Not detected
Liopholis inornata	27	14
Liopholis striata	2	3
Menetia greyii	17	1
Morethia butleri	12	7
Morethia obscura	1	Not detected
Proablepharus reginae	8	Not detected
Tiliqua occipitalis	4	Not detected
Varanus eremius	10	9
Varanus gouldii	9	4
Varanus tristis	5	4
Anilios bicolor	4	2
Anilios bituberculatus	7	15
Anilios margaretae	Not detected	1
Brachyurophis fasciolatus fasciatus	1	7
Brachyurophis semifasciatus	12	Not detected
Demansia aff. Psammophis	6	Not detected
Furina ornate	1	Not detected
Pseudechis australis	2	Not detected
Pseudonaja mengdeni	3	Not detected
Pseudonaja modesta	7	Not detected
Simoselaps bertholdi	26	4
Suta monarchus	2	1
Aspidites ramsayi	3	Not detected
Total number of species	**122**	**71**

3.1.2 LCI - Weather stations installation in the GVD

Context: The LCI was launched in 2020 in order to monitor changes in biodiversity in the context of fire management activities. Environmental factors, such as rainfall and temperature, that are also fundamental to understand changes in biodiversity. This is particularly important as rainfall is one of the main drivers of fire in desert environments. There are currently no weather stations in close proximity to LCI project areas.

Purpose: The main goal of this project was to deploy two automatic, satellite-connected weather stations in the LCI's management and reference areas. These would provide highly accurate information on weather – providing daily data on rainfall, minimum and maximum temperatures and humidity.

Management implications: This will help understand changes in biodiversity survey data as well as complement fire management planning activities.

Key findings: The two weather stations were deployed in August 2021 by a team consisting of the OM, the TBO and 2 officers from DBCA (Goldfields region) (see Figure 3). The team found suitable locations towards the centre of the MA and RA. The DBCA

were invaluable in terms of their knowledge of the area, their assistance in setting up the weather stations, particularly the camel deterrent fences and provision of vehicles and associated equipment for the trip.

The weather stations have been functioning well however they were occasionally not transmitting data for short periods of time. Discussions between the TBO and manufacturer indicated that this may have been a result of the orientation of the solar panel relative to the satellite transmitting device. In May 2022 the TBO re-oriented the solar panel of the reference area weather station. This was found to overcome the issue, so the same will be done in the management area during the next visit to the LCI area.

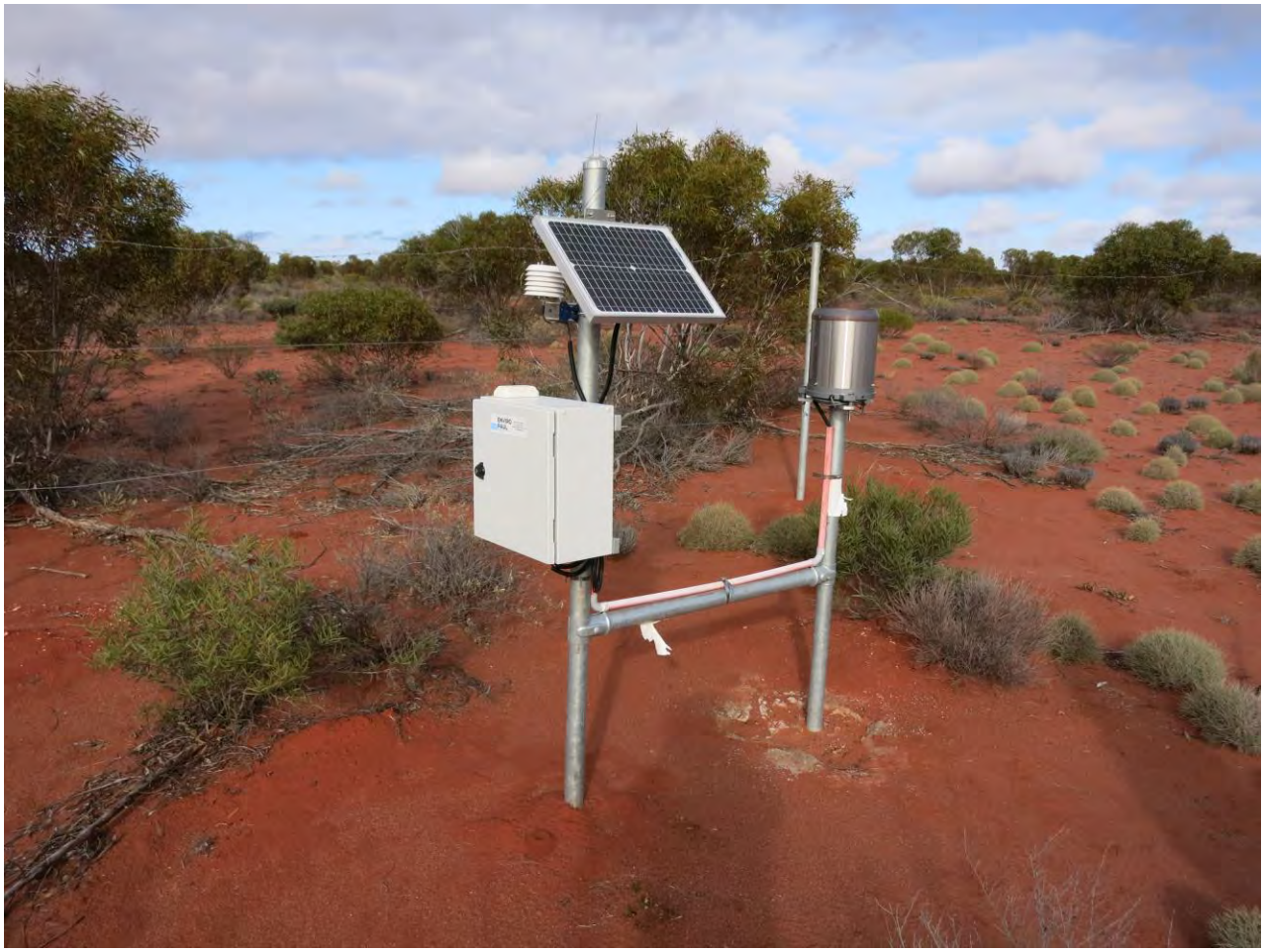


Figure 3 Installed weather station

Status: Installation is complete. The weather stations will continue to transmit data and the remaining solar panel will be re-orientated at the Trust's next trip to the LCI area. Data is shareable for anyone who requests access. Figure 4 - below shows monthly accumulated rainfall in the management and reference areas (using the complete dataset downloaded from the weather station loggers).

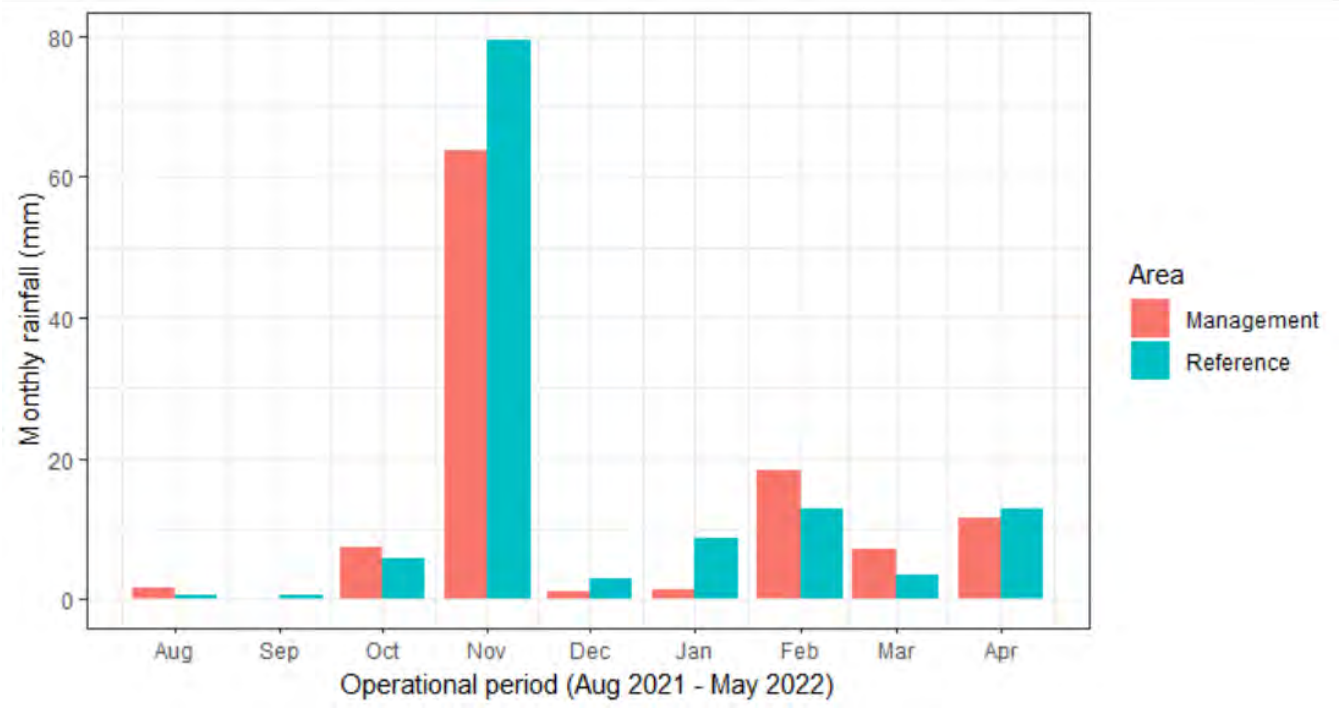


Figure 4 LCI - monthly accumulated rainfall

3.1.3 LCI – Fire management assessment

Context: As part of the Weather station installation (see 3.1.2) the Trust requested Neil Burrows, fire consultant, to assess the fuel loads in the MA and develop a prescription for 2021/2022.

Purpose: Develop a fire prescription for the MA of the LCI project based on an assessment of vegetation combined with fire age mapping.

Key findings: A detailed prescription including maps and wind directions has been provided.

Management implications: The aim is that the DBCA regional fire management team will conduct aerial and roadside burns based on this prescription.

Status: Prescription report completed. The map below (Figure 5) shows the proposed burning for the management area.

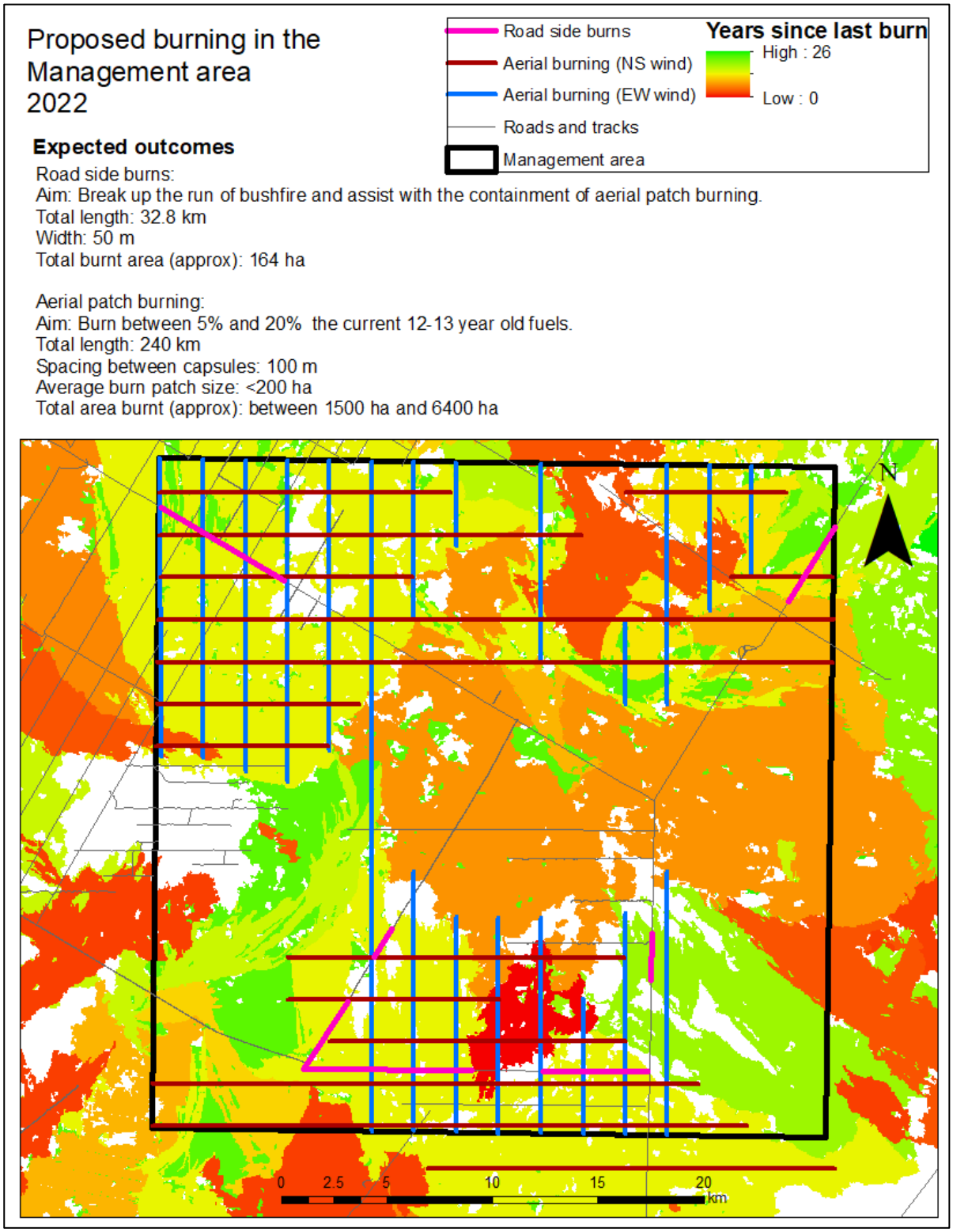


Figure 5 Prescription for fire management

3.1.4 LCI – Vegetation and Soil survey (University of Adelaide - TERN)

Context:

As part of understanding the biodiversity of the MA and RA, a full understanding of the vegetation and soils of the areas are required. TERN designed a vegetation and soil survey based around the MA and RA. The survey design incorporated fire age information and aligned with existing fauna survey plot locations as much as possible. The design used the standard TERN Ecosystem monitoring methodology.

Purpose:

The purpose of the project is two-fold:

1) To provide a comprehensive baseline analysis for the LCI for vegetation and soil in the MA and RA

2) To provide training in vegetation and soil sampling techniques to representatives of the Trust to enable those representatives to undertake customised vegetation and soil surveys.

Outcomes: The TERN field team undertook the survey and sampling program in May 2022.

Status: Ongoing – report pending and awaiting sample analysis by the WA Herbarium.

3.1.5 Vegetation cover and fire attributes baseline for the GVD (DBCA – remote sensing)

Context:

This project consisted of five project activities, four of which were delivered during the 2020-2021 financial year and reported in the 2020-2021 annual report. These activities consisted of locating suitable reference areas for the LCI project, mapping fire in the whole of the GVD for the year 2020 as well as summer fires (December 2020 to March 2021) in the LCI management area. Additionally, a last project component consisting of developing a novel vegetation mapping tool was commenced in the previous financial year and completed at the end of 2021The main goal of this last project component was to calibrate satellite imagery to on ground cover vegetation (obtained through very high resolution aerial imagery) to allow high resolution vegetation monitoring measures.

Findings:

The initial goal of this project component pursuing the mapping of three different land cover types (bare ground, grasses and trees/shrubs) through calibrated Landsat imagery data was not achieved. The model was not able to differentiate between the two vegetation classes (grasses and tree/shrubs). However, this method is very effective at differentiating vegetation from non-vegetation (bare ground). This allowed to generate very accurate vegetation cover (%) maps at very high resolution (30 m) using Landsat data.

Management Implications:

High resolution vegetation cover maps allow to better characterize fire risk in spinifex-dominated landscapes such as the GVD. These maps can also be used to locate optimal habitat for spinifex-dependant species such as the endangered Sandhill dunnart. With this method, Landsat historical imagery and fire scar data can be used to generate burn potential maps which can better inform fire management actions for biodiversity conservation purposes.

Status:

The completion of this last project component marks the successful finalization of the project assigned to DBCA. In addition, a scientific publication has been prepared focussing on the burn potential mapping application described above and is currently under review in a scientific journal. As an example of the outcomes of this project, the map below (Figure 6) shows the vegetation cover (in %) at 30 m resolution in the management area in late 2020.

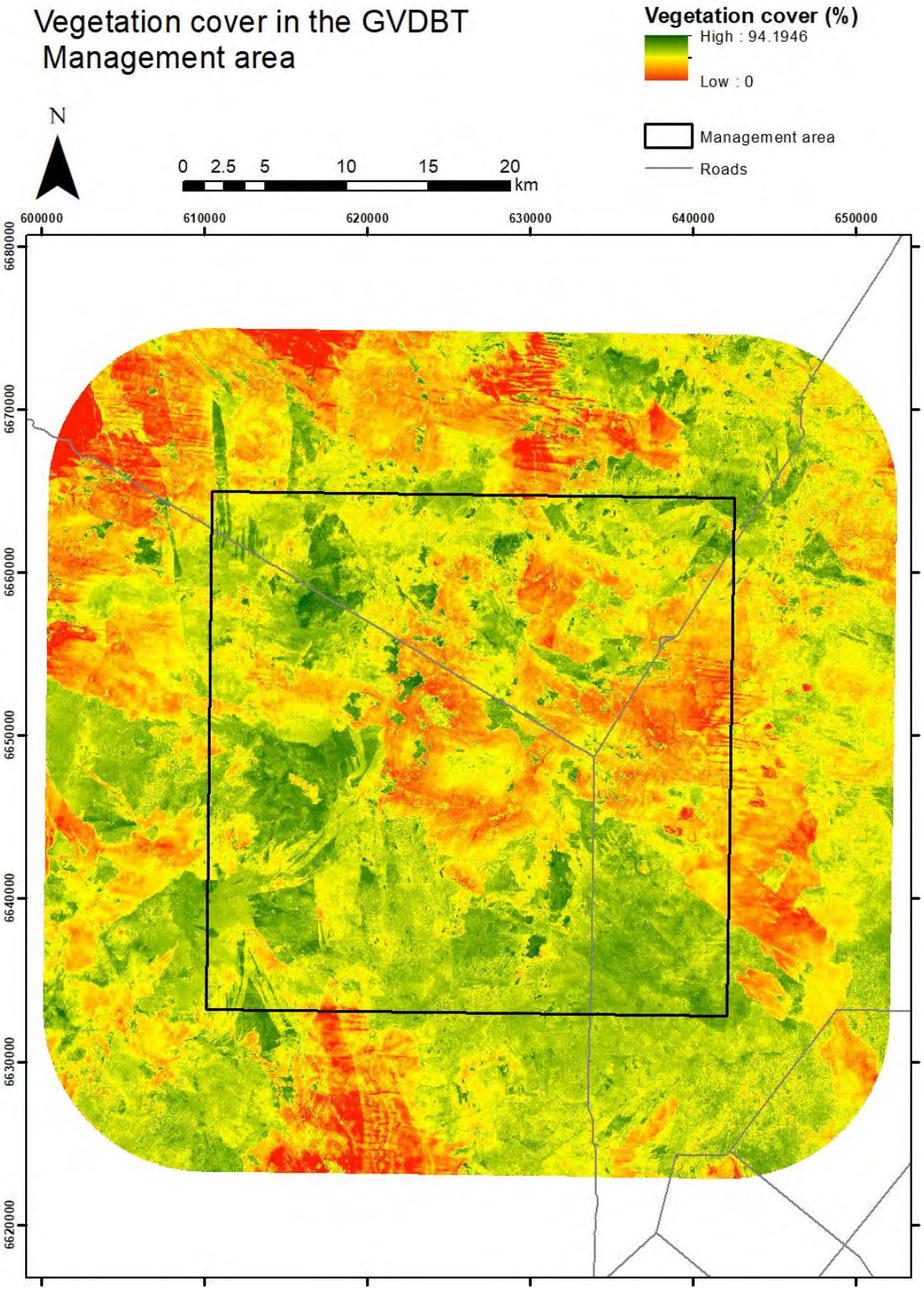


Figure 6 Vegetation cover in the Management area

3.1.6 Indigenous Fire Management – the Indigenous Desert Alliance

Context:

Fire is one of the largest threats facing biodiversity in the GVD. Very limited fire management occurs across the GVD due to limited funding and resources allocated to fire management in remote areas. Traditional owners have stewardship over the land and are the custodians for the past, present and future management of the land. Recognising this connection to country, the Trust developed a partnership with the Indigenous Desert Alliance (IDA) to help support and empower all the Indigenous groups in the GVD to undertake culturally appropriate fire management.

Findings:

IDA have been working with groups, particularly Yilka land management and Spinifex rangers, to support on-ground action and develop plans and programs to implement across the next few years. Some small-scale burn activity is expected to take place in the winter of 2022.

Management implications:

The better supported traditional owners are, the more fire management that can occur. Increasing the scale and regularity of fire management in the GVD is expected to lead to an increase in biodiversity and a decrease the scale and severity of wild fire activity.

Status:

Ongoing- the project is mid-way through the initial contract.

3.1.7 Fire Mapping in the Great Victoria Desert

Context:

In the past, the Trust had delegated fire mapping to external contractors (DBCA). This year this task was performed in-house by the Technical Biodiversity Officer using freely available Landsat satellite imagery. Fire scars were mapped over the full extent of the GVD over five periods of time between December 2020 and March 2022. This allows to better characterise fire occurrence and also classify fires as hot (wild) fires or as cool (prescribed) burns. The area mapped is actually larger than the WA extent of the GVD and corresponds to the Landsat scenes that cover this area (which explains why some of the mapped fires are found outside of the GVD boundaries).

Findings:

Between December of 2020 and December of 2021, fires burnt a total of 125,100 ha in the mapped area. This is approximately a quarter of the area that burnt in 2020 and is well below the average annual burnt area for the 1995 to 2020 period, ~ 900,000 ha, and well below the median ~ 500,000 ha. This might be related to the low rainfall levels recorded in the GVD in the past few years. Of all the area burnt in 2021, 98.6% can be classified as hot fire burn

(between October and April). Between December of 2021 and April of 2022, a total of 24,295 burnt in the mapped area, confirming the low fire trend observed in 2021 (see Figure 7).

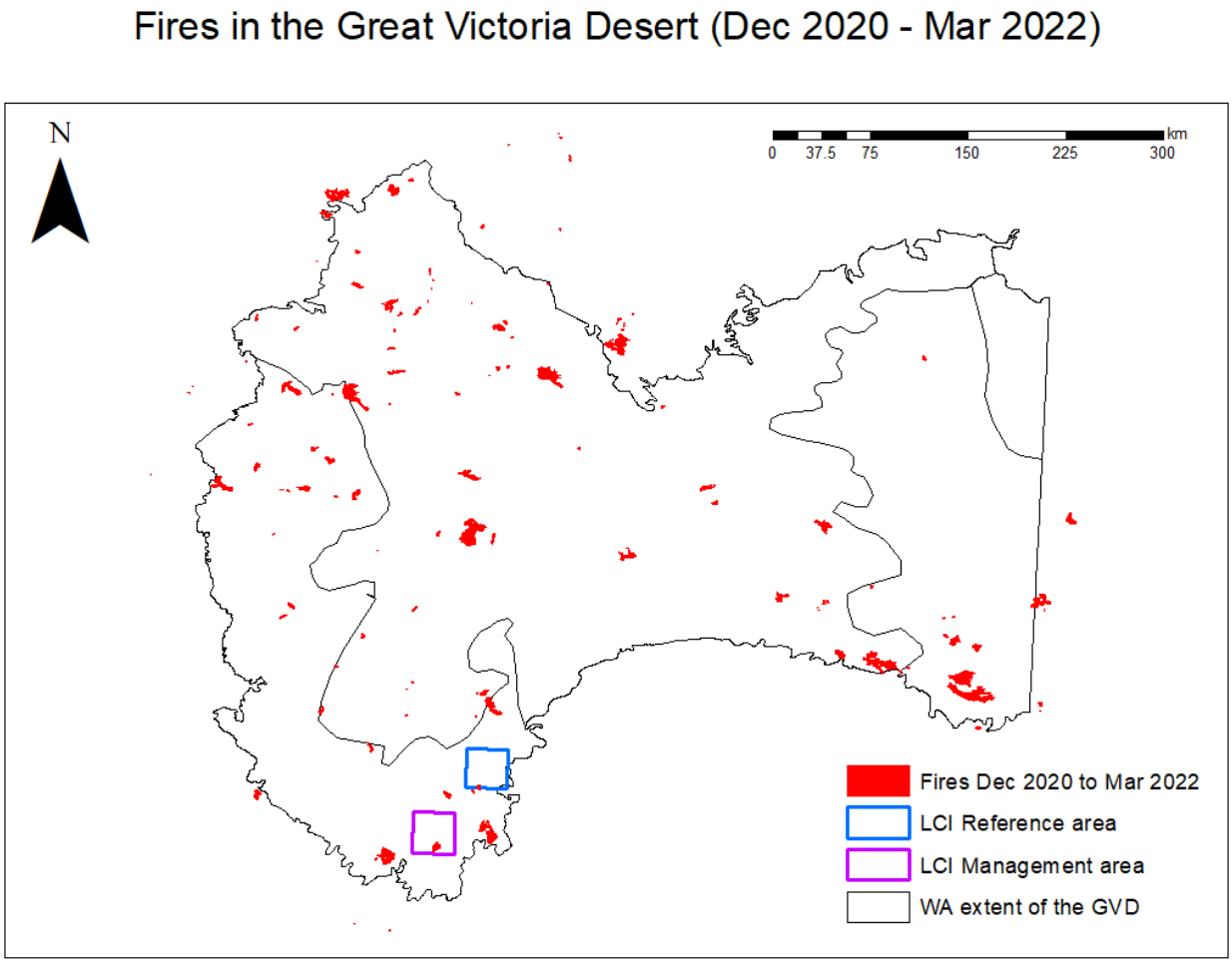


Figure 7 Fire mapping in the GVD for selected period

Management implications:

All fires recorded during this period will be used to generate a new *time since fire* map. This is a key input for fire management activities across the GVD, including the Landscape Conservation Initiative. This information will be shared with stakeholders in the GVD interested in managing fires (including Traditional Owner groups managing land including the Spinifex, Pilki and Yilka areas), as well as made available on the Trust's website where it is publicly available.

Status:

Fire mapping is an ongoing commitment of the Trust. It is conducted once a year around the months of March-April, to help plan activities within the Landscape Conservation Initiative, and to help our stakeholders in the GVD in their fire operation planning, which usually starts around the months of May-June.

3.1.8 Mapping mulga groves in the Landscape Conservation Initiative areas

Context:

Mulga groves are key elements in the GVD's landscape. They provide habitat and refuge to numerous fauna species, and they also help prevent the spread of fires. However, they are also fire sensitive, and can be burnt in extreme fire conditions. Their loss is unvaluable for this landscape, and its extent and location are important information to help in its protection. Additionally, the endangered mallee fowl tends to build their nests in or around mulga groves, which can help plan targeted ecological monitoring of this ground dwelling bird. For this reason, the Trust has started mapping mulga grove extent in the Landscape Conservation Initiative areas, using a supervised classification method based on Sentinel-2 satellite images (see Figure 8).

Findings:

A total of 3,442 ha of mulga grove have been detected in the Management area. These findings should be confirmed by targeted ground-truthing, which can be done in the context of the upcoming fieldwork and/or using high resolution aerial imagery which was obtained during the LiDAR flights performed in 2019.

Management implications

Mulga groves are key habitat for the mallee fowl. Its monitoring and protection should be based on accurate knowledge of their extent and location

Status:

This is an ongoing process which will be extended to the reference area.

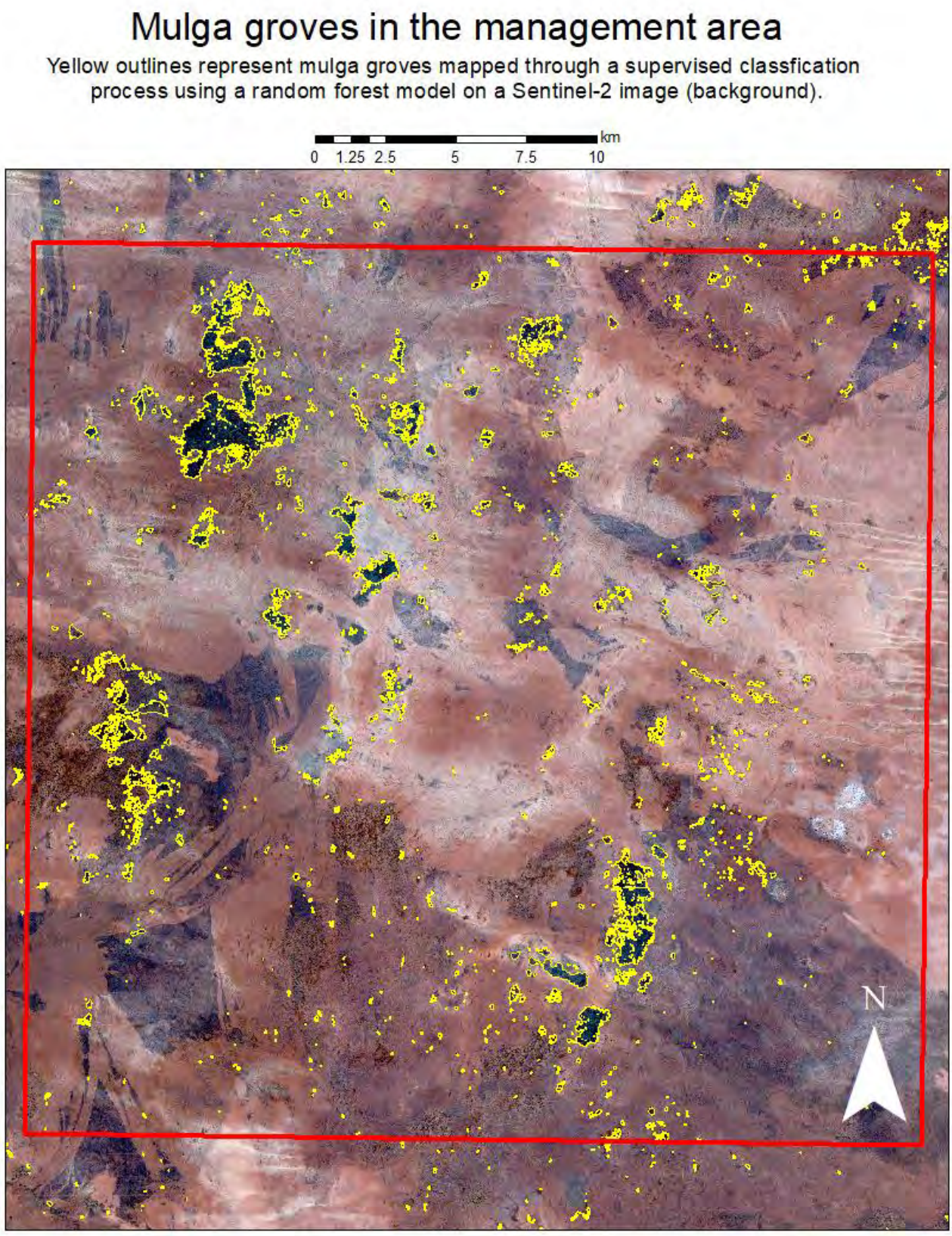


Figure 8 Mulga groves in the LCI Management area

3.1.9 Camera trap deployment in the Landscape Conservation Initiative areas

Context:

Introduced predators, including feral cats, foxes and wild dogs / dingos occur throughout the GVD, although their densities and their specific impacts on threatened species (such as Sandhill Dunnart and Malleefowl) are unknown. Additionally, the presence of Sandill Dunnarts in the LCI areas is still unknown, as so far they haven't been detected in the pitfall traps. For these reasons, the Trust deployed two configurations of camera traps for each one of the purposes (detecting feral predators and detecting Sandhill dunnarts)(see Figure 9).

Findings:

In early May 2022 a total of 96 camera traps were installed in the Landscape Conservation Initiative areas (management and reference areas). Two main types of cameras were deployed in different locations, according to two different criteria. Red infrared camera traps (Reconyx Professional Hyper Fire HP2) were installed at 4 km intervals on the main tracks and roads, in specific locations where they will provide a wide field of view on the track/road as well as being as out of direct sight as possible. These cameras should provide detection capacity of feral predators, who tend to use them to move across the landscape. White flash infrared cameras (Reconyx Professional Hyper Fire HP22W White Flash) were installed at 2 km of each other in long unburnt spinifex-dominated areas (with more than 20 years since they last burnt). These should provide us with the chance to detect sandhill dunnarts who prefer this type of habitat. There are plans to place baits in front of these white flash cameras in coming months to increase chances of detection. All cameras were set up to provide 3 pictures spaced by 1 second whenever activated by the motion sensor (set at medium-high sensitivity). In the management area, 24 long unburnt cameras and 23 track/road cameras were installed, whereas 25 long unburnt cameras and 24 track/road cameras were installed in the reference area. The picture below shows a white flash camera installed in long unburnt habitat (Figure 10).

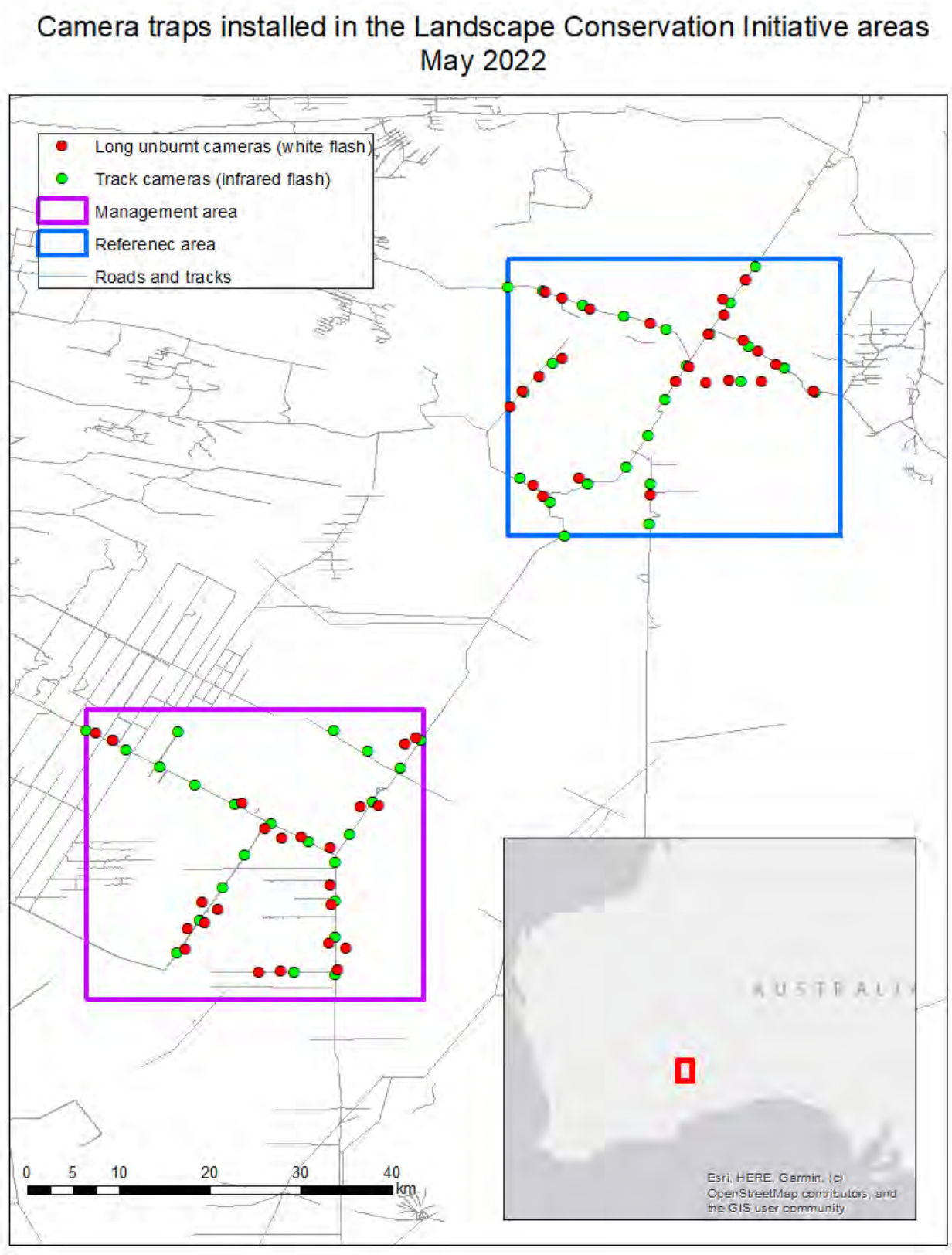


Figure 9 Camera configurations in the LCI areas

Figure 10 Camera trap in long unburnt habitat

Management implications:

Determining feral predator occupancy over the management and reference areas will allow to determine if the Trust should be investing resources in feral predator control. If that is the case, the occupancy measures obtained through these cameras will serve as baseline to determine the efficiency of any control measures that are potentially available. Sandhill dunnart detection will allow the Trust to target fauna surveys and implement protection measures in areas were sandhill dunnarts are found. This can also serve to assess if the presence of this species in the LCI areas is significant or marginal.

Status:

This is an ongoing project with the potential baiting of the cameras in the long unburnt configuration.

4. Trust Promotion

4.1 Paper on vegetation cover assessment and burn potential in the GVD

The Technical Biodiversity Officer, together with Ricky van Dongen and Carl Gosper (of DBCA) have written a paper on a novel method to map vegetation cover and assess burn potential, developed in the context of the contract with DBCA. In this paper, fire history maps and Landsat satellite imagery were used to map the degree of vegetation recovery following fire. This approach, based on accurate vegetation cover assessments, provides a model which is responsive to climate variability and can assist fire managers in burn planning and assessing fire risk. The paper has been submitted to the International Journal of Wildland Fire and is currently under review.

4.2 Presentation and attendance at the Malleefowl and Threatened Species Forum

The Operations Manager attended and presented at the Malleefowl and Threatened Species Forum in Geraldton, September 8 – 10 2021. The topic presented was “Surveying for Malleefowl in the Great Victoria Desert” and outlined the methods the Trust has used for detecting Malleefowl in the region.

4.3 Presentation to the Upurli Upurli Nguratja claimants

The Trust’s Operation Manager presented to the Upurli Upurli Nguratja, via video link, on the Great Victoria Desert Biodiversity Trust and the intended activities in the LCI area which falls within the Upurli Upurli Nguratja claim. The presentation was well received and several questions were asked. The Trust maintained communication with the claimants, through their Central Desert lawyer.

5. Finances, Administration and Allocation of Funds

5.1 Finances

The annual contribution from the Tropicana Joint Venture (TJV) to the Trust in 2021-22 FY was $385,035.20 based on an annual fee of $100,000 plus $80 per hectare of cleared footprint for the TGM. The Trust also received $8,543.42 interest from the funds held on its behalf by the Public Trustee (Table 5). An additional $36,520 was received as a GST refund.

A total of $105,328.66 was spent directly on projects in the 2021-22 financial year. This figure does not include the time spent by the Operations Manager or Technical Biodiversity Officer managing these projects, or costs associated with asset management fees, or administration-related expenses (detailed in Table 5). The project expenditure for the 2021-22 financial year is significantly lower than 2020-21 (see Table 6 for income / expenditure comparison). This can be attributed to several factors including:

1) Co-vid 19 delaying some projects

2) The pausing of the Fauna monitoring component of the LCI project due to the inability to find a consultant able to undertake the project within an appropriate cost to value budget

3) A significant amount of mapping work being undertaken in-house. This represents a significant saving for the Trust.

AGAA maintains an oversight of the Trust's day-to-day expenditure as part of its administrative support function, and all Trust expenditure is presented to the Management Panel in quarterly and annual statements provided by the Public Trustee.

The Public Trustee has continued to provide strong support and guidance in 2021-22 to the Trust to ensure it meets its financial and legal obligations. Financial statements are provided to the Trust by the Public Trustee on a quarterly and annual basis (Appendix 1), which are subsequently tabled at Management Panel meetings.

Ernst and Young audited the Trust in November 2021 and in December 2021 confirmed that the Trust's spending, accounting and financial reporting have been conducted appropriately.

Table 5: Summary of income and expenditure for the Trust during the 2021-2022 financial year

Item	Income	Expenditure
Income		
Annual contribution (AGAA)	$385,035.20	
Interest	$8,543.42	
Expenditure: management and administration		
Salary (Operations Manager and Technical Biodiversity Officer - project management and administration*)		$96,326.55
Public Trustee asset management and transaction fees		$13,339.86
Conference attendance and presentation delivery		$891.13
Expenditure: Projects		
Landscape Conservation Initiative – Baseline fauna survey – *refer to section 3.1.1*		$6,633.91
Weather station purchase and installation – *refer to section 3.1.2*		$13,286.98
Neil Burrows – Fire planning – *refer to section 3.1.3*		$1,319.69
Fire and vegetation mapping (DBCA) - *refer to section 3.1.5*		$7,480
Indigenous Desert Alliance- Indigenous Fire Management – *refer to section 3.1.6*		$16,500
Fire mapping software and website map – *refer to section 3.1.7*		$759
Camera trap purchase and installation – *refer to section 3.1.9*		$57,149.08
Journal publication – *refer to section 4.1*		$2,200
Refund of GST on expenditure	$36,520	
TOTAL	$430,098.62	$215,886.20

Key: * = approximately 80% of time spent on project and contract management and 20% on Trust operations and administration.

Table 6: Comparison of expenditure and income 2020-21 and 2021-22

Item	2020-21	2021-22
Income		
Annual contribution (AGAA)	$379,803	$385,035.20
Interest	$11,582.27	$8,543.42
Refund of GST on expenditure	$15,216	$36,520
Total income	**406,601.27**	**430,098.62**
Expenditure: management and administration		
Salary (Operations Manager and Technical Biodiversity Officer - project management and administration*)	$81,848.51	$96,326.55
Public Trustee asset management and transaction fees	$13,349.93	$13,339.86
Financial audit fees (Ernst and Young)	$6,406.40	Not provided yet
Memberships	$110	-
Conference attendance and presentation delivery	$971.64	$891.13
Total expenditure: management and administration	**102,576.48**	**110,557.19**
Expenditure: Projects		
Landscape Conservation Initiative – Baseline fauna survey	$320,986.79	$6,633.91
Landscape Conservation Initiative - Fire management burns /planning	$16,517	$1,319.69
Landscape Conservation Initiative – vegetation and soil survey (TERN)	$8,222.20	-
Landscape Conservation Initiative – weather station purchase and installation	-	$13,286.98
Indigenous Desert Alliance- Indigenous Fire Management		$16,500
Fire and vegetation mapping (DBCA)	$29,920	$7,480
Fire mapping in-house and website map	-	$759
Malleefowl Mound – Ground truthing LiDAR results (National Malleefowl Recovery Team)	$19,558	-
Camera trap purchase and installation		$57,149.08
Database upgrades, website maintenance and upgrades – *refer to section 3.3*	$1,100.45	
Journal publication		$2,200
Total expenditure: Projects	**$395,203.99**	**$105,328.66**
Funds at close of financial year	**$1,714,496.48**	**$1,928,708.90**

5.2 Administration

AGAA continues to provide essential administrative support to the Operations Manager and Trust, including:

- Human resource services, such as payroll management, employment contract;

- General office administration and equipment, such as IT, mobile phone, office/meeting space;
- Flights, accommodation and access to vehicles at TGM, as appropriate; and
- Legal services for contracts.

This substantial in-kind support represents a considerable reduction in the administration expenses that would otherwise be incurred by the Trust and ensures that the Trust maintains its administration cost below the 20% maximum outlined in the Trust Deed.

5.3 Funding

The TGM continues to be the Trust's sole financial contributor.

6. Future Direction

6.1 Planned projects for 2022-2023 FY

6.1.1 LCI – Fauna monitoring

The Trust has been working to establish a fauna monitoring project with Curtin University as part the LCI. Through this will undertake another baseline fauna monitoring project in 2022/2023 as part of the LCI project. This will utilise existing pitfall trap locations and is expected to take place in Spring 2022 and Autumn 2023.

6.1.2 LCI – Fire management

Fire management by the Management Panel to take place in July 2021 however due to weather conditions and DBCA fire management protocols this fire management was not able to take place. Fire management activities were scheduled for August 2022 however the unavailability of the Spinifex rangers to participate in this activity resulted in the postponement. The aim is that fire management activities occur across the MA in July or August 2023.

6.1.3 Ongoing partnership with the Indigenous Desert Alliance

Based on the current project, it is likely that the project with IDA will continue to develop and continue into the 2022-23 financial year.

6.2 Stakeholder Engagement

6.2.1 Discussion with Spinifex rangers and the Upurli Upurli Nguratja claimants

The Trust has met with Spinifex rangers and their co-ordinator as well as had discussions with the lawyer for the Upurli Upurli Nguratja claimants. This has resulted in some direct discussions with some of the Upurli Upurli Nguratja claimants. It is hoped that in the 2022-23 financial year the Trust will be able to facilitate an on-country with both these groups.

6.2.2 Ten Deserts – Buffel Free GVD

The Trust has continued to participate in meetings with the Buffel Free GVD working group. The Trust continues to work with this project to develop future Buffel grass management projects including Ranger education packages. The involvement in this project has reduced substantially in 2021-22 but it is hoped further engagement will recommence in the 2022-23 financial year.

Appendix 1: Statement of Transactions 2021-22 FY

Statement of Transactions

MR . GREAT VICTORIA DESERT BIODIVERSITY TRUST FUND

Client Reference: 33111845 Contact: TM39
Public Trustee Activity TRST / 1

Statement of Transactions Number 12
Statement Period from 30/06/21 to 30/06/22

Date	Transaction Details	Payments	Receipts
	Opening Balance as per Statement of Account Dated 30/06/2021		**1,714,496.48**
	OTHER PAYMENTS AND RECEIPTS		
16-JUL-21	ENVIRO PAUL - ENVIRO PAUL	11,702.82	
20-AUG-21	FIELD TRIP: FUEL ASSESS - NEIL BURROWS	1,319.69	
24-SEP-21	MONITOR LANDSCAPE M/S 5 - DEPT OF BIODIVERSITY, CONSERVATION AND ATTRACTIONS	7,480.00	
30-SEP-21	CR INTEREST 30/09/2021		4,414.00
11-OCT-21	DELIVERY PHASE - GHD PTY LTD	6,633.91	
23-DEC-21	JOURNAL PUBLICATION COST - DEPT OF BIODIVERSITY, CONSERVATION AND ATTRACTIONS	2,200.00	
01-FEB-22	CAMERA PURCHASES - PROFESSIONAL TRAPPING SUPPLIES	40,613.50	
18-MAR-22	GST REFUND		36,520.00
21-MAR-22	AGA ANNUAL CONTRIBUTION		385,035.20
31-MAR-22	CR INTEREST 31/03/2022		4,129.42
18-MAY-22	CAMERA ESTABLISHMENT - KINGFISHER ENVIROMENTAL	12,408.76	
18-MAY-22	INDIGENOUS FIRE 1ST INSTA - INDIGENOUS DESERT ALLIANCE	16,500.00	
07-JUN-22	TRUST EXPENSES - ANGLOGOLD ASHANTI	103,687.66	
30-JUN-22	ASSET MANAGEMENT FEE	11,197.86	
30-JUN-22	TRANSACTIONAL FEE	2,142.00	
	Closing Balance		**1,928,708.90**

Opening Balance	Total Payments	Total Receipts	Closing Balance
1,714,496.48	215,886.20	430,098.62	1,928,708.90

Statement of Assets & Liabilities

MR . GREAT VICTORIA DESERT BIODIVERSITY TRUST FUND

Client Reference: 33111845 Contact: TM39
Public Trustee Activity TRST / 1

Statement of Assets & Liabilities Number 12
Statement Period from 30/06/21 to 30/06/22

Description	Recorded Value	Valuation Date
ASSETS		
PT CASH ACCOUNT	1,928,708.90	30-JUN-22
Totals	**1,928,708.90**	

Total Assets	Total Liabilities	Net Recorded Value
1,928,708.90	0.00	1,928,708.90