



Great Victoria Desert Biodiversity Trust Projects within the context of Trust Deed and EPBC approval 2008/4270 for the Tropicana Gold Mine

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Introduction

The Great Victoria Desert Biodiversity Trust was established by the Tropicana Joint Venture (AngloGold Ashanti Australia Ltd 70% and manager, Independence Group NL 30%) as part of its offsets strategy for the Tropicana Gold Mine in Western Australia. Tropicana is located 330 kilometres east-northeast of Kalgoorlie on the western edge of the Great Victoria Desert.

The GVD Biodiversity Trust is a condition of the Federal EPBC Act approval for the Tropicana Gold Mine. Whilst the Tropicana JV will endeavour to continue to avoid and minimise significant impacts to biodiversity, offsets are a means to ensure that there is 'no net loss' or a 'net positive impact' as a result of mining and exploration activities.

As the offset is linked to the Commonwealth approval for the mine, the Trust must focus on benefits to threatened species and communities within the GVD region, such as Sandhill Dunnarts and Malleefowl.

Purpose of document

This document summarises the project activities which the Trust has supported since it commenced in 2014. The intent is to recognise the breadth of projects related to the GVD and the partnerships developed to facilitate research activities, land management, and species conservation, and to address the objectives of the Commonwealth conditions (Condition 6a of the EPBC approval 2008/4270) and the Trust Deed.

Activities are categorised as those benefiting workshops, environmental and conservation management projects, and those contributing to community benefits including capacity building.

Context

The purpose of the GVD Biodiversity Trust is to achieve the following objectives (aligned to objectives (i) (ii) and (iii) under Condition 6a of the EPBC approval 2008/4270 for the Tropicana Gold Mine):

Number	Objective
Trust 1	Develop a Bioregional Management Plan for the Great Victoria Desert bioregions 1 and 2 (being the Trust Area);
Trust 2	Facilitate and/or undertake priority research identified in the Bioregional Management Plan at the landscape level and into threatened species including species considered to be of national environmental significance (NES) under the EPBC Act.

Trust 3	Fund on-ground environmental and conservation management at the landscape level, with emphasis on net conservation benefits to threatened species including those considered of NES under the EPBC Act.
Trust 4	Facilitate indigenous involvement in land management and conservation activities in support of the above objectives;
Trust 5	Provide a direct offset to restore and rehabilitate degraded areas (of at least 100 hectares) outside of the Project's disturbance area, with areas to be rehabilitated agreed upon by the Management Panel in consultation with relevant stakeholders;
Trust 6	Provided it is consistent with the objectives in the items above, implement other objectives as set out in the Project Plan.

These objectives align to objectives (i) (ii) and (iii) under Condition 6a of the EPBC approval 2008/4270 for the Tropicana Gold Mine:

Number	Objective
EPBC 1	Develop a Bioregional Management Plan (the Plan) for the Great Victoria Desert bioregions 1 and 2 (the Trust Area).
EPBC 2	Facilitate priority research identified in the Plan at the landscape level and into threatened species and communities of national environmental significance under the EPBC Act. Research outcomes must include a review of the conservation status of species and communities of national environmental significance and the development of predictive models.
EPBC 3	Fund on-ground environmental and conservation management at the landscape level, with emphasis on net conservation benefits to threatened species and communities of national environmental significance under the EPBC Act. This must include actions identified in recovery plans for the marsupial mole, sandhill dunnart and malleefowl.

Workshops

Project: Sandhill dunnart workshop March 2019

Project Objective: Update the Trust on recent distributions, key threats, and future directions for the sandhill dunnart.

Description and outcomes: Presentations discussed the latest research for the sandhill dunnart including camera surveys, and research from a PhD relating to the species' biology and ecology. Experts were able to identify tangible projects that would benefit the conservation of sandhill dunnarts (eg: understand interactions of sandhill dunnarts to prescribed burning and introduced predator control). Some of these projects will commence implementation from 2020.

Target benefits: Sandhill dunnarts

Relevant Trust and EPBC Act Objectives: Trust 2; EPBC 2

Project status: Complete

Project: Fire workshop November 2018

Project Objective: Workshop and share knowledge about fire management in the GVD.

Description and Outcome: Discuss fire management in the GVD to achieve positive outcomes for biodiversity and cultural assets in the region. The meeting was attended by representatives from Yilka, Spinifex Rangers, DBCA (Regional Fire Officer, Fire Ecologist, Remote Sensing Technician), Rangelands NRM, and Ten Deserts.

Target benefits: Malleefowl, Sandhill dunnarts.

Relevant Trust and EPBC Act Objectives: Trust 4,6; EPBC 3

Project status: Complete

Project: Adaptive Management Implementation Plan for the GVD

Project Objective: Develop an Adaptive Management Implementation Plan (AMIP) for the Trust Area.

Description and Outcome: The AMIP was developed over the course of three workshops held between October 2016 and March 2017, and using an adaptive management framework. Representatives from all eight stakeholder groups from the Adaptive Management Partnership (AMP) worked closely to develop the plan. Attendees included Pila Nguru Aboriginal Corporation, a Yilka representative, Rangelands NRM, Greening Australia, Department of Parks and Wildlife, Conservation Management, members of the Trust's Management Panel and the Trust's Operations Manager. The AMIP may be used as a guiding document to facilitate the coordination of activities and leveraging of resources between AMP organisations. The plan outlines what the group identified as the GVD's key natural and cultural assets. The AMP's priority actions for land management and research at

the species and landscape level were also identified. These are set out under a framework of seven high-level project themes related to conserving biodiversity and culture.

1. Buffel grass management;
2. Introduced predators and at-risk fauna;
3. Waru (Fire);
4. Camel / feral herbivore management;
5. Traditional ecological knowledge;
6. Access to country; and
7. Support the capacity of traditional owner groups.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 3,4,6; EPBC 2

Project status: Complete

Project: Burn Rule and Biodiversity Mapping in Spinifex Lands.

Project Objective: Determine burn rules for spinifex people's country.

Description and Outcome: A 'Back to Country' week for the Spinifex people was facilitated with support funding from the Trust. Around 80 members and staff from the Tjuntjunjarra Community made the trip to Ilkurlka in May 2017 for the event. The week's activities included flying Tjilpi and Minyma (Elders), Rangers and key family members via helicopter to significant ecological and cultural sites. Burn Rules were established to protect these sites from fire. The Rangers also collected ecological data to assist the Trust and SLM, such as vegetation type and the presence of Malleefowl (including previously unknown locations), weeds, introduced predators and feral herbivores. The school children from the Tjuntjuntjara Remote Community School interviewed the Elders and Rangers to document their experiences on video, and stories were also captured through paintings. Interviews with the Elders were used as a means to document traditional land management practices, such as patch burning, prior to European influence in Spinifex People's country. Together with the Burn Rules this information can be used to inform future fire management planning, through re-introduction of traditional patch-burn practices to protect vegetation and threatened fauna in the GVD from large unmanaged wildfires.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 3,4,6; EPBC 3,4

Project status: Complete

Environmental And Conservation Management Projects

Project: LiDAR to detect malleefowl mounds in the GVD

Project Objective: Use LiDAR remote sensing to scan predefined aerial pathways in the GVD to detect malleefowl mounds.

Description and Outcome: This approach helps to focus on-ground efforts where malleefowl mounds are more likely to occur. Approximately 1,675 km of 600 m wide corridors were scanned by aerial laser scanning and aerial photography across a wide area of the GVD. This totalled approximately 1,005 km² or 100,500 ha of aerial survey area. After all category mounds had been analysed and verified against orthophotos, 102 Class 1 (highly likely to be mounds) mound targets and 22 Class 2 (likely) mound targets were identified. Furthermore less likely targets included 1,826 Class 3 mound targets and a further 27,713 Class 4 mound targets. The Trust aims to ground truth all the Category 1 and 2 mound targets and may also ground truth Category 3 and 4 targets that are en-route to the Category 1 and 2 mound targets in the field.

Target benefits: Malleefowl

Relevant Trust and EPBC Act Objectives: Trust 2,3; EPBC 2,3

Project status: In progress

Project: Expand fire scar mapping to include the GVD using NAFI remote sensing

Project Objective: To capture long-term fire history mapping from 2000 – 2002 for the GVD and the broader Western Australian rangelands using NAFI criteria to allow a fully accessible system to identify 'long unburnt' areas.

Description and Outcome: Mapping involved producing fire history layers from 2000 – 2002 to show fire size, burn frequency and time since last burnt. Fire mapping for the years 2003–2016 was previously completed under separate contracts coordinated by Rangelands NRM and part-funded by the Trust. The mapping has been displayed on the NAFI website (www.firenorth.org.au), administered by Charles Darwin University, which also provides an online reporting tool that can convert the fire scar data into graphs and tables. This tool includes GVD areas, available for reporting in drop-down menus. Fire scar history identifies frequency of burns, as well as insight into vegetation types and fuel loads. This information may be used to improve the planning and implementation of fire management in the GVD to protect threatened species. However, recent fires in the GVD were not detected using the NAFI criteria and follow-up finer-scale mapping of fire history using Landsat imagery and spatial analysis is underway as a separate project.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 3,6; EPBC 2

Project status: Complete

Project: Fire scar mapping of the GVD using Landsat imagery

Project Objective: To provide a comprehensive fire scar history for the GVD from 1995 to 2018 (inclusive) using Landsat satellite imagery.

Description and Outcome: Remote sensing mapping is underway to map fire scar information including average burnt patch size and burn frequency from 1995 to 2018. This mapping will enable the Trust and to accurately determine areas of 'long unburnt' (since 1995) vegetation which is thought to be critical for the survival of species such as the Sandhill Dunnart and Malleefowl. Mapping will also allow estimation of the average interval of return between fires, and to allow for the determination of areas that are suitable for land management activities including feral and fire management to aid the conservation of threatened species. Habitat modelling for species such as Sandhill Dunnarts and Malleefowl, whose survival or persistence are considered to be dependent on long unburnt habitat, will thus be possible with a better degree of accuracy than previous NAFI maps alone.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 3,6; EPBC 2

Project status: In progress

Project: Sandhill dunnart pitfall trapping survey, including Malleefowl long-walks 2018

Project Objective: Undertake field surveys at two sites (using camera traps and pitfall traps) for Sandhill Dunnarts based on initial camera surveys conducted in 2017. Additional surveys for malleefowl mounds were conducted.

Description and Outcome: 172 fauna species were recorded during the survey via pitfall trapping, camera trapping and opportunistic observations. This comprised 63 reptiles species, 69 bird species, 27 native mammals and 13 introduced species. Sandhill Dunnarts were captured at two pitfall trapping sites and on camera at four sites. Four Malleefowl were observed and five mounds were recorded.

Target benefits: Malleefowl, Sandhill dunnarts

Relevant Trust and EPBC Act Objectives: Trust 2,3; EPBC 2,3

Project status: Complete

Project: Sandhill dunnart camera trapping survey 2017

Project Objective: Broad-scale survey of habitats across the GVD to determine the likely occurrence and habitat of sandhill dunnarts.

Description and Outcome: During the survey 138 cameras were set at 20 sites and more than 140,000 images were captured during survey. Sandhill dunnarts were detected in two locations (one as confirmed and one as highly likely). The survey recorded 137 fauna species, comprising 25 reptile, 88 bird, 18 native mammal and six introduced mammal species.

Target benefits: Sandhill dunnarts

Relevant Trust and EPBC Act Objectives: Trust 2,3; EPBC 2,3

Project status: Complete

Project: Malleefowl surveys in the GVD

Project Objective: Undertake surveys in the GVD to identify Malleefowl distribution and habitat.

Description and Outcome: Increased knowledge on the distribution of Malleefowl in the south-west of the GVD where surveys to date were limited. Malleefowl habitat suitability was assessed with experts and key stakeholders in the GVD using mapping layers including Beard's vegetation associations, fire scars, Landsat imagery, roads and tracks. A habitat suitability map book containing areas of high, moderate and low suitability for Malleefowl was created. Seventy-six survey sites were randomly selected from this subset, across three categories of suitability. The survey sites included 24 accessible sites where Malleefowl had previously been recorded.

Target benefits: Malleefowl

Relevant Trust and EPBC Act Objectives: Trust 2,3; EPBC 2,3

Project status: Complete

Project: Monitoring protocols for malleefowl in the GVD

Project Objective: Develop protocols for monitoring Malleefowl within the context of the GVD.

Description and Outcome: Protocols specifically designed for the GVD were developed because of the extremely low density of Malleefowl believed to be present throughout the GVD. The protocols may be utilised by the Trust for ongoing monitoring of malleefowl populations once surveys have identified their location and distribution.

Target benefits: Malleefowl

Relevant Trust and EPBC Act Objectives: Trust 2,3; EPBC 2,3

Project status: Complete

Project: GVD Bioregional Plan (Biodiversity Conservation Plan)

Project Objective: Develop a bioregional plan for the GVD subregions (Shield and Central) as a requirement of EPBC Approval 2008/4270.

Description and Outcome: Through the Adaptive Management Partnership, the Trust commissioned Rangelands NRM to complete a Bioregional Plan, now called the Biodiversity Conservation Plan.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 1; EPBC 1

Project status: Complete

Project: Identification of traditional and contemporary burn patterns and practices

Project Objective: Reconstruct traditional Aboriginal burning patterns in the GVD.

Description and Outcome: Old aerial photographs showed that the people who carried out the burning prior to 1961 had a sound knowledge of fire behaviour; they were able to keep the fires small because they understood relationships between fire behaviour, vegetation (fuel) and weather, especially wind. A lower fuel cover / continuity meant less flammable vegetation. This also led to patches of heavier overstorey canopy – mallees, marble gum, mulga groves. The consequence of patch-burning was that it mitigated, or buffered, the harmful effects of hot season bushfires. The results suggest that action is needed to increase the capacity of land managers to better manage fire in the GVD and to re-instate traditional Anangu fire management across larger areas of high cultural and conservation value.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 4,6; EPBC 2

Project status: Complete

Community support

Project: Seed Funding for Spinifex Rangers – Minyma Uninypa – the Seed Women

Project Objective: Build capacity for the Spinifex Women Rangers to establish a local business to help rehabilitate key areas of land in the Great Victoria Desert.

Description and Outcome: The Trust funded the Spinifex Women Rangers to establish a seed biology and ecology laboratory, as part of more widely funded project. The project has the potential to collect rare or endangered plant seed, store and germinate these to support land rehabilitation projects in the GVD.

Target benefits: Capacity building of Spinifex women; rehabilitation benefits

Relevant Trust and EPBC Act Objectives: Trust 4,5

Project status: Complete

Project: Supporting indigenous rangers to attend NRM and indigenous forums

Project Objective: Support involvement by indigenous Spinifex Rangers at the Southern Desert Ranger Forum 2019 (in WA).

Description and Outcome: Attendance by Rangers enabled direct learnings and networking with other Ranger groups beyond the GVD.

Target benefits: Landscape and cultural assets

Relevant Trust and EPBC Act Objectives: Trust 4,5

Project status: Complete
