

CHAPTER 15- Environmental offsets

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15.1 Introduction

ABM offsets proposal will focus on the environmental and social offsets that can be achieved in conjunction with the mining of the Twin Bonanza Project.

Key environmental concerns raised by the EPA and SEWPaC through the assessment of the Notice of Intent (NOI) included:

1. the potential for the action to impact sites with Indigenous and non-indigenous cultural or archaeological significance
2. the clearing and loss of potential habitat, and individuals of a number of species listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the Territory Parks and Wildlife Conservation Act (TPWC Act)
3. an increased risk of environmental damage or degradation to the site. In the absence of suitable mitigation or management measures, ongoing degradation could result in significant impacts to the environment, in particular flora and fauna and remnant vegetation
4. potential ongoing impacts to groundwater resources through the establishment and abstraction of water from at least two bores and a bore field
5. uncertainty around the scope of the project in relation to the scale, size and complexity of all components
6. the potential for ongoing land degradation and impacts associated with the management and disposal of wastewater and other contaminants
7. based on the information provided and in the absence of further assessment or analysis, the introduction and operation of a new development with associated infrastructure is likely to significantly alter the current social and economic aspects of the region.

Environmental offsets provide a mechanism for development to proceed while ensuring that the environmental values that the policies are designed to protect, are conserved in the longer term. Offset policies are usually applied to development where all efforts to retain the existing environmental values have been demonstrated by the proponent.

This offset strategy considers the estimated unavoidable impacts of the proposed project and includes the proposed approach to manage direct offsets. The intention of this strategy is to provide government and community with sufficient confidence that the proposed offset methodology will deliver suitable offsets to adequately compensate for unavoidable impacts associated with the project.

ABM will endeavour to offset, where reasonably practicable, these impacts in the form of the following initiatives:

1. Bilby research with the involvement of recognised researchers in consultation with the Central Land Council which aims to:
 - a. increase the knowledge of the bilby populations in the Tanami Desert and add to the peer reviewed conservation literature on bilbies
 - b. simultaneously study the effect of mining on the bilbies and establish the relationship between mining and desensitisation of the populations.
2. Feral animal control aimed at preventing the expansion of predator numbers (including cat) and to reduce feral animal predation of native fauna, including bilby and brush tailed mulgara.
3. Prevent the potential spread of declared weeds and the further spread of buffel grass (*Cenchrus ciliaris*) across the site.
4. Provide funding and support to regional biodiversity monitoring in the Tanami Desert that is a collaboration between mining companies, the Central Land Council (CLC), Warlpiri and Wulainj traditional rangers. The program intersects both the Northern and Southern Tanami Indigenous Protected Areas (IPA).
5. Social and economic contributions to the Indigenous and non-indigenous communities.
6. Reduce fuel consumption and greenhouse gas emissions by using solar power generation.

The remainder of the concerns raised by the EPA and SEWPaC are addressed in earlier chapters of this EIS. In particular the social and economic impacts have been discussed in the Chapter 13: Social economic risks/ historic and cultural heritage addressing several avenues of offsets (also refer to section 15.6 Residual impacts).

The offsets outlined in this chapter have been developed in consultation with the following government representatives, consultants and researchers in the respective fields:

1. Dr Chris Pavey – (CSIRO) Author of the National recovery plan for the greater bilby. Provided feedback on the Biodiversity Management Plan and this Chapter.
2. Dr Simon Ward - (Director of Species Conservation, Department of Land Resources Management)

3. Felicity McLean - (Department of Sustainability, Environment, Water, Population and Communities)
4. Dr Rachel Partridge - (Desert Wildlife Services)
5. Hugh McGregor - (Australian Wildlife Conservancy)
6. Central Land Council (CLC)
7. EcOZ – Environmental Consultants
8. Animal Plant Mineral - Environmental Consultants
9. Woolard Consulting Pty Ltd – Environmental Consultants

15.2 Legislative requirements

The environmental impact assessment involves regulation under both Northern Territory and Commonwealth legislation. Relevant legislation to the project is listed in Chapter 2: Regulatory environment.

15.2.1 Northern Territory Government environmental offset policy

At the present time, only draft guidelines (NTEPA 2013) are available for environmental offsets within the Northern Territory. These guidelines “seek lasting environmental, economic and social benefits by fostering coordination of offset/condition of approval requirements and voluntary application of the “licence to operate” concept. Specifically within the Northern Territory, environmental offsets can form part of the approval requirements imposed under the:

- Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)
- Mining Management Act 2001 (NT) s 37(5)(d)
- Aboriginal Land Rights (Northern Territory) Act 1976 (Cth) (ALR Act)
- Native Title Act 1993 (Cth)

15.2.2 Commonwealth environment offset policy

The commonwealth’s EPBC Act, provides protection for matters of national environmental significance (NES).

The EPBC Act environmental offsets policy (SEWPAC 2012) requires the offsetting of residual significant impacts on Matters of National Significance (MNES). In relation to the proposed development by ABM, the following MNES is applicable:

- Listed threatened species and ecological communities
 - greater bilby (vulnerable)— confirmed on the lease
 - brush-tailed mulgara (Not a MNES issue only vulnerable under TPWC Act included for completeness)—confirmed on the lease
 - crest-tailed mulgara (vulnerable)— not present on the lease
 - great desert skink (vulnerable)— not present on the lease

The environmental offsets assessment guide provides a decision-making framework for the department to consider the appropriateness and adequacy of proposed offsets for listed threatened species and ecological communities. Basically, suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter.

The commonwealth government is focused on offsetting EFBC Act listed species such as the greater bilby. Subsequently ABM will propose a range of offset and mitigation measures for review by the commonwealth.

15.3 Offsets planning

15.3.1 Consultation with relevant stakeholders

In order to ensure the options proposed by ABM for environmental offsets are acceptable to key stakeholders ABM has undertaken consultation in line with the following state and commonwealth guidelines.

- The Northern Territory draft guideline titled “Guidelines on Environmental Offsets and Associated Approval Conditions – Draft” advises that proponents are urged to develop coordinated offsets/conditions packages in collaboration with all stakeholders.
- The Commonwealth Government’s EFPC Act environmental offsets policy states that an appropriate offsets package should be developed by proponents in consultation with the department.

The project is located on Aboriginal freehold land and therefore a number of environmental commitments that are detailed in Section 15.4 have been negotiated as part of the mining agreement between ABM and the CLC as the representative of the Traditional Owners. The details of this agreement are confidential.

15.3.2 Proposed offset selection criteria

15.3.2.1 Northern Territory Government offset criteria

As the Northern Territory guidelines are in a draft stage, no specific criteria are available. The draft guidelines highlight that proponents are often faced with multiple offset/approval condition requirements in relation to the following;

- EPBC Act
- Mining Management Act s 37(5)(d)
- ALR Act
- Native Title Act

Offsets requirements and conditions are amenable to achieving synergistic outcomes overall for the community as a whole. ABM view offsets as a whole and develops offsets packages in collaboration with all stakeholders.

15.3.2.2 Commonwealth Government offset criteria

The Commonwealth Government have specific criteria in relation to offsets. In order to guide offsets, eight offset principles are stated in the policy that must meet the below listed criteria:

- Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the aspect of protected matter.
- Suitable offsets must be built around direct offsets but may include other compensatory measures.
- Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter.
- Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter.

- Suitable offsets must effectively account for and manage the risks of the offset not succeeding.
- Suitable offsets must be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action).
- Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable.
- Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

In assessing the suitability of an offset, government decision-making will be:

- informed by scientifically robust information
- conducted in a consistent and transparent manner.

Environmental offsets can be applied as approval conditions under the EPBC Act.

The EPBC Act offsets policy divides offsets into direct and indirect offsets. Direct offsets are defined as those that provide on-ground protection and improved conservation outcomes for the impacted protected matter, and generally provide more certain conservation outcomes than indirect offsets. For example, the rehabilitation of existing vegetation, or the revegetation of degraded land would be a direct offset. Direct offsets generally provide a more certain conservation outcome than indirect offsets.

Other compensatory measures or indirect offsets include other measures that improve knowledge, understanding and management of environmental values leading to improved conservation outcomes for the impacts protected matter. Indirect offsets could include contributions to an education or research program or the enhancement of habitat quality or reduction of threats on a site that is not part of the direct offset, for example through pest management.

The new policy requires a minimum of 90% of the offset to be direct.

15.4 Proposed offset options

15.4.1 Management and mitigation of effects on greater bilby habitat

During the planning stage of the Twin Bonanza Project, ABM considered the elements of section 15.3.2.2 as part of the planning and design process. This approach has seen ABM invest early in ecological studies and into potential MNES issues and as a result has meant that ABM has been able to develop the project and locate all infrastructure away from areas/habitats that have been identified as potentially suitable habitat for MNES. The site selection and design process in an attempt to mitigate both operational and residual impacts has adopted, where possible, a hierarchy of avoidance, scale reduction, intensity reduction and management controls. The mine pit cannot be moved as it is determined by the ore body, but aspects such as the waste rock dump and associated roads have been located on land identified as potentially unsuitable for bilby burrows. Refer to the Biodiversity Management Plan (Appendix D).

A number of measures have been developed to ensure the impacts on MNES are minimised:

1. Design of Infrastructure to minimise habitat fragmentation and edge effects on bilby and brush-tailed mulgara habitat.
2. Waste rock and tailings characterisation to ensure the design and positioning of waste rock dumps and tailings dams minimise the potential for pollution.
3. Internal vegetation clearing controls to prevent inadvertent clearing beyond approved footprints.
4. Prior to clearing the area of the mine footprint undertake controlled burning to modify the habitat thus promoting the movement if present of burrowing marsupials such as bilby and mulgara.
5. Progressively clear the mine footprint to minimise unnecessary clearing and the effects of soil erosion.
6. Selective collect topsoil and gravel horizons (growth medium) for the construction of soil profiles over mining landforms at closure.
7. The implementation of a fire management plan (Appendix Z) to prevent the localised change in fire regimes.
8. Implementing surface water management measures to minimise the liberation of sediment from the site.

9. Use of groundwater from different aquifers with regular monitoring to prevent draw down effects on sensitive environments and communities.
10. Implementing a biodiversity management plan (Appendix D) to ensure ongoing fauna management.
11. Operational management and mitigation of effects on bilby and brush-tailed mulgara (for example speed limits and restricted access to areas of known activity).
12. Rehabilitation of the mine area thus enabling a self-sustaining ecosystem integrated into the surrounding environs with no artificial water sources. Potentially restoring habitat utility for bilby and brush-tailed mulgara activity.

15.4.2 Offsets best suited for successful implementation

Based on advice from Species Conservation, Department of Land Resources Management and a review of the National Recovery Plan for the Greater Bilby *Macrotis lagotis* (Pavey 2006) the following offsets have been targeted to meet both the advice received and documented recovery actions. Ongoing offsets are intended to involve the Traditional Owners of the land on which ABM operates. By focusing on threats to the survival of the bilby the mitigating actions employed by ABM will also benefit mulgara and the great desert skink.

The National Recovery Plan for the Greater Bilby has seven specific recovery objectives; of these objectives ABM's proposed offsets are aligned to:

Objective 1: Reduce impact of predation by introduced carnivores.

Objective 4: Monitor trends in occurrence and abundance.

Objective 5: Assess the impact of predators, fire and other threatening processes on bilby populations.

ABM will endeavour to offset, where reasonably practicable, the impacts of the project through the following initiatives:

1. Bilby research with the involvement of recognised researchers to publish peer reviewed papers into the conservation literature on bilbies.
2. Feral animal control—to reduce predation of native fauna, including bilby and brush-tailed mulgara.
3. Weed management—to reduce impacts and change on local habitats, including bilby and mulgara habitat.

4. Funds, support and information feedback into regional biodiversity monitoring in the Tanami Desert that intersects the Northern Tanami IPA and Southern Tanami IPA.
5. Social and economic contributions to the Indigenous and non-indigenous communities.
6. Potential solar power generation—to reduce fuel consumption and greenhouse gas emissions.

The social licence to operate type offsets are a given and ABM have already developed a solid working relationship with relevant Traditional Owners in an attempt to provide as many 'positive impacts' as possible.

15.4.3 Offsets descriptions

15.4.3.1 Publication of research data on the greater bilby

The intent of this offset program is to provide appropriate resources to facilitate the publication of research on the greater bilby. ABM is currently in discussions with Desert Wildlife Services, an environmental consulting company, involving researcher Rachel Paltridge. The majority of this data is directly related to determining impacts on the aforementioned species, and by facilitating the funding for publication ABM is making important information available to the scientific community, the government and general community.

This offset program will be managed by ABM and will provide many benefits:

- It will assist in improving the knowledge of ecology of the greater bilby, brush-tailed mulgara and the habitat they live in.
- The published research will be able to better inform environmental assessments of future projects that may impact on the greater bilby, brush-tailed mulgara, and the habitats they live in.
- It will contribute to scientific datasets on these species.
- The research will increase the knowledge of the bilby populations in the Tanami Desert.
- It will simultaneously study the effect of mining on bilbies and establish the relationship between mining and desensitisation of the populations.

15.4.3.2 Feral animal control

The intent of this offset programme will be to reduce predation of native fauna, including bilby and mulgara, thereby providing an offset in the form of a potentially improved regional habitat.

A large range of introduced species have been previously recorded from this bioregion (Baker et al 2005). Feral Cat (*Felis catus*) and One-humped Camel (*Camelus dromedaries*) are the most abundant in the bioregion. Hard hoofed species (camels, donkeys and horses) create widespread erosion, damage native vegetation, introduce weeds and foul waterways.

Exotic predators such as feral cats and foxes are efficient hunters that prey on a number of native species, particularly small to medium sized mammals; including bilby and mulgara.

Environmental impacts from feral cat, european rabbit (*Oryctolagus cuniculus*) and european red fox (*Vulpes vulpes*) are listed as Key Threatening Process under the EPBC Act. Refer to Chapter 6: Biodiversity – Section 4.5 for further details.

The Biodiversity Management Plan (Appendix D) and associated management plans that have been developed for the Twin Bonanza project identified feral cats as a major threat to existing populations of the greater bilby and mulgara. As a known threatening process, ABM sees the management of feral cats as an important part of maintaining and conserving populations of these threatened species on and around the site.

Feral cat management will be conducted throughout and surrounding the mine infrastructure. At the present time ABM, are proposing to providing funding and/or employment to an Aboriginal ranger group to carry out cat control over this area. This offset program will be managed by ABM and will provide the following benefits

- helping to mitigate an already known and recognised threatening process to these two species
- enabling the greater bilby and mulgara to safely inhabit or recolonise areas previously home to large densities of feral cats.

15.4.3.3 Weed infestation control program

The Biodiversity Management Plan and associated management plans (including the Weed Management Plan) identified weeds as a major threat to existing populations of the greater bilby and brush-tailed mulgara.

Weeds are regarded as a priority management concern for the Tanami Desert region as they reduce habitat quality. Weeds also adversely affect rehabilitation programs leading to

difficult and expensive mine closure operations. Therefore, weed invasion as a result of proposed mining operations is considered a high risk for retaining habitat quality at Twin Bonanza.

As a known threatening process, ABM sees the management of weeds as an important part of maintaining and conserving the habitat and local populations of these threatened species on and around the site. Weed management will be conducted throughout and surrounding the mine infrastructure. At the present time ABM is seeking to provide funding to an Aboriginal ranger group to carry out the weed control over this area. This offset program will be managed by ABM and will provide the following benefits:

- helping to mitigate an already known and recognised threatening process to these two species
- enabling the greater bilby and mulgara to safely inhabit or recolonise areas previously subjected to high weed frequencies.

15.4.3.4 Social and economic contributions to the Indigenous and non-indigenous communities

The intent of this offset program is to provide appropriate resources to mitigate the potential negative socio-cultural impacts of mining and share the economic benefits the project will generate.

Indirect offsets

The following indirect offsets are proposed for the project

1. support of local businesses, suppliers and contractors
2. construction of infrastructure that may be retained for Traditional Owner use after mining activities have ceased for ongoing land management practices
3. increased access for Traditional Owners to potential hunting and bush food gathering areas
4. ad hoc support by virtue of our presence.

The disturbance of habitat in the course of the construction and operation of the mine may not be an entirely negative impact on the Traditional Owners and local communities. ABM's installation of tracks will enable increased access to potential hunting and bush food gathering areas; potentially offsetting the impact on local biodiversity. ABM is committed to biodiversity and habitat protection. Refer to Chapter 6 – Biodiversity.

A mine site and associated accommodation by virtue of its presence is the equivalent of a small and temporary community. As such there will be a certain amount of logistical support available on site in the event of emergencies. For example, if there is a medical emergency close to our site, the on-site paramedic may be the closest to respond. The Wilson's Camp airstrip will be made available for Royal Flying Doctor Service or medical flights if requested.

When travelling on public roads (i.e. the Tanami Road) ABM staff are instructed to carry extra water, fuel and food as well as satellite telephone communications. From time to time ABM's employees have encountered stranded motorists travelling between the remote Aboriginal communities. All employees are instructed to render assistance where they can and have helped with water, fuel, food and communications. On several occasions company employees have also helped to jump start or tow broken down vehicles. ABM considers this ad hoc support as being part of our community relations and responsibilities as being resident in the Central Desert. Employees are requested to assist where appropriate. Spare fuel or other supplies will only be rendered from the camp in the event of emergency.

Direct offsets

The following direct offsets are proposed to provide resources for the development and maintenance of the following activities:

1. voluntary contributions by ABM to individual programs
2. voluntary construction of infrastructure if requested
3. Indigenous employment and training opportunities.

ABM is committed to a close working relationship with the CLC, the communities and the Traditional Owners. ABM is committed to offer employment opportunities to people in local communities and the promotion of knowledge, understanding and respect for Indigenous Australians traditions and culture.

By making funds available for the some or all of the above mentioned offset programmes. ABM hopes to provide positive impacts for the communities that could be affected by the proposed development and provide potential benefits far beyond the life of the mining activities.

15.4.3.5 Voluntary and discretionary contributions by ABM to individual programs for support of Indigenous Australians

ABM intends to set up a discretionary fund. ABM has been approached in the past to assist with individual requests for assistance. The emphasis will be on one off support for

education, health and infrastructure outcomes and each request will be assessed individually. The requesting party will likely need to have a low-level of documentation and justification when requesting funds (an easier process than other grant applications) as long as the ultimate use of proceeds is legitimate and a recognised entity such as a school, sport team, cultural group or health centre. Upon request ABM will consult with the CLC to establish the appropriateness and legitimacy of such a request. The fund may support outcomes for other Traditional Owners in the region as well as ones directly associated with the trust land on which the Twin Bonanza Project resides. ABM proposes that this fund is approximately \$100,000 per annum.

15.4.3.6 Voluntary construction or infrastructure assistance if requested

ABM will have heavy equipment and drilling capability during the life of the project. Should Traditional Owners request that some of ABM's equipment be utilised to assist with small scale infrastructure projects ABM will respond favourably (subject to availability). Requests may include grading a new or existing track, drilling a new water bore, building a new dam or general earthworks. ABM will ensure that the requestor has all relevant permits in place to conduct the work. The presence of heavy equipment in the region will have a net positive effect and enable response by ABM.

15.4.3.7 Indigenous employment and training opportunities

The mining agreement has provisions for employment opportunities for Indigenous persons whereby ABM must advertise and offer employment to local Indigenous Australians for any role (subject to experience and competency).

Training opportunities will be provided to Indigenous Australians with an emphasis around skills that may be appropriately utilised in their own communities including but not limited to; construction, machinery operation, servicing of vehicles, servicing of generators, servicing and maintenance of water, pumps and sewerage, and operation of heavy machinery. Refer to Chapter 13: Social, economic risks/ historic and cultural heritage for further details.

15.4.3.8 Regional biodiversity monitoring in the Tanami Desert

The intent of this offset program is to contribute and provide funding to the Tanami Desert Regional Biodiversity Monitoring Program. This program is coordinated by the CLC ranger groups in collaboration with mining companies. Specifically the program seeks to establish and obtain monitoring data that can be used for assessing the distribution and abundance of wildlife in the vicinity of mining on Aboriginal lands in the Tanami region. Use of the monitoring data also aids in more informed decisions on effective land management of the

region. By contributing to this program, ABM is providing resources that are directly used to study the impacts of mining on biodiversity in the Tanami region.

This offset program will be managed by ABM and it will improve the knowledge base of these species assisting in the ability for improved management as well as contribute to scientific datasets on these species.

15.4.3.9 Solar power generation

At present ABM is exploring the option of clean technologies for power generation, involving the supplementation of the existing power generators with solar thermal energy, generated on site. Due to the vast distance fuel needs to be transported and the environmental cost of using fuel to generate power of the mine operations, ABM is investigating the feasibility of installing a solar thermal plant to partially power the Twin Bonanza operations. The solar project is in its early stages and will involve research by the University of Sydney and collaboration with Suntruf Australia (Refer to Chapter 3: Project description). If feasible the use of solar thermal energy will supplement the existing power generators and allow ABM to generate cleaner and more environmentally sustainable power, without the need to truck and store large amounts of fuel on site. Fuel will still be required for generators during periods of low sunlight, such as cloudy days and at night.

15.5 Risks associated with the offsets and management actions.

A number of environmental and management risks have been identified for the project by the Northern Territory EPA and a risk assessment completed by ABM (Chapter 5: Risk assessment). During the project design stage each individual risk has been assessed and environmental management measures are to be adopted to reduce the likelihood of the event occurring. In selecting the environment management strategies relevant standards, regularity guidance and leading practice documents have been consulted as detailed in the management plans and EIS chapters. By aligning to the recognised and successful environmental management techniques it is anticipated that the uncertainties surrounding potential management efficacy are reduced. It is acknowledged that on-ground implementation is critical for ultimate success, to this end ABM is focused on employing suitability qualified and skilled employees.

15.6 Residual impacts

The project will result in the clearing of native vegetation that may potentially provide habitat to the greater bilby. The total footprint of the project will cover an area of up to 223.3 ha the majority of the area including tailings dams, concentrate residual dam and waste rock dumps will be rehabilitated. The only mining feature not to be re-vegetated will

be the pit voids totalling 22.5 ha. During the life of the operation ABM has made a commitment to the Traditional Owners of the area to investigate the potential of backfilling the mining voids with waste rock or tailings. However, until further investigations are complete, no definitive commitment can be given. Based on current on ground surveys the proposed mine footprint does not affect any areas containing bilby burrows (Figure 15-1).

The potential impacts of the project relating to protected fauna as defined by the Northern Territory EPA are:

- *The clearing and loss of potential habitat and individuals of a number of species listed as threatened under the EPBC Act and the TPWC Act.*
- *An increased risk of environmental damage or degradation to the site. In the absence of suitable mitigation or management measures, ongoing degradation could result in significant impacts to the environment, in particular flora and fauna and remnant vegetation.*
- *Potential ongoing impacts to groundwater resources through the establishment and abstraction of water from at least two borefields.*

It appears the proposed action is likely to have a significant impact on threatened species and communities. For example:

- Disturbance of approximately 700ha of potential critical habitat to the listed vulnerable Greater Bilby. This may result in reduction of the area of occupancy of an important population and adversely affect habitat critical to the survival of the species.
- Without further assessment of distribution and potential impacts, there is a real chance or possibility that the action will significantly impact the great desert skink.

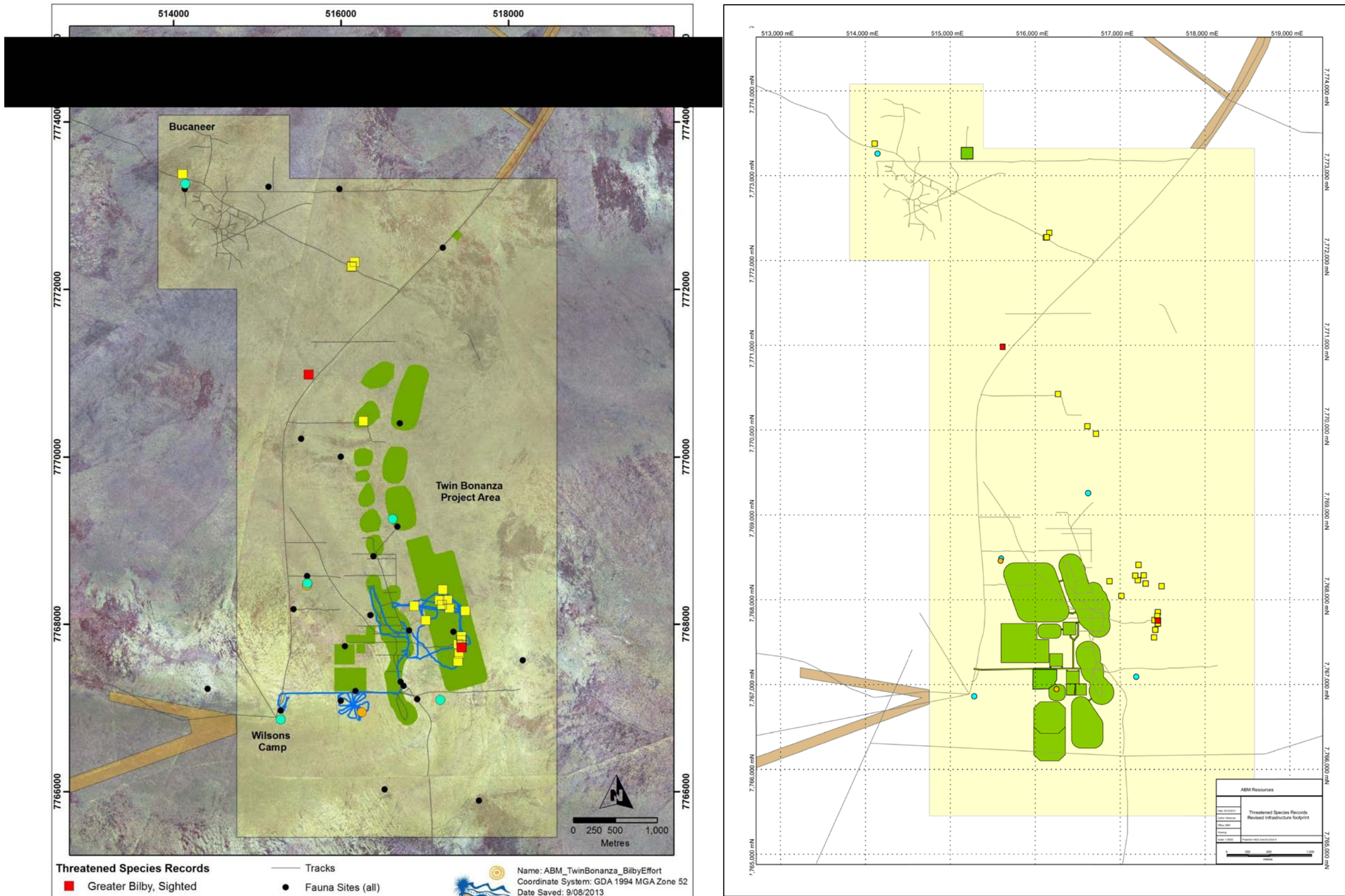


Figure 15-1. Infrastructure maps outlining proximity of infrastructure to identified threatened species activity and sightings. Left: Flora and Fauna Survey Threatened species locations in relation to proposed infrastructure May 2013 (EcOz 2013). Right: Revised infrastructure footprint in relation to Flora and Fauna Threatened Species locations October 2013.

The vegetation and thus habitat of the bilby and brush-tailed mulgara within the proposed footprint appears to be of typical conservation status for the region. It is hoped with the repositioning of the infrastructure that bilbies will not be displaced, however the realignment has the potential to displace individual brush-tailed mulgara. Surveys outside of the footprint have captured individual brush-tailed mulgara and identified areas of activity highlighting that individuals are known to persist outside of the proposed mine footprint. Mulgara fauna habitats are well represented across the Tanami region, and impacts of the project will be localised, therefore it is unlikely that the project will significantly impact on protected species at a regional level. In addition, the EIS has detailed a number of management measures that aim to minimise the environmental impact.

ABM is committed to rehabilitate the area to restore natural and ecological processes. This is reflected in our commitment to the Traditional Owners of the land and early mine planning to selective handle and stockpile topsoil, siltstone, sandstone and the gravels overlying the pits to provide suitable rehabilitation medium. It is acknowledged that the rehabilitated area will require time to reach ecological sustainability. The only item remaining un-rehabilitated is the mining void.

In light of the concerns raised by the NT EPA and the SEWPAC the offset package is intended to add value by contributing to published scientific research and regional monitoring to aid in sound land management decisions.

15.7 Implementation process

Based on the current known information, ABM will offset the residual significant impacts on MNES in relation to the proposed development. The following MNES are applicable

- Listed threatened species and ecological communities
 - greater bilby (vulnerable)— confirmed on the lease
 - brush-tailed mulgara (vulnerable only under TPWC Act)—confirmed on the lease

As discussed above, ABM has developed a number of proposed offset options, which have been discussed with relevant stakeholders in order to develop priorities etc.

ABM is committed to the implementation of an environmental offset program for the Twin Bonanza project and has initiated the stakeholder engagement process. Once local stakeholders have been fully informed and consulted, ABM will directly consult with the Northern Territory and Commonwealth Government concerning the development of an offset proposal that

- delivers lasting environmental, economic and social benefits by fostering coordination of offset/condition of approval requirements
- delivers an overall conservation outcome that improves or maintains the viability of the protected matter.

15.7.1 Timeframe

ABM's EIS and this chapter on proposed offsets formally begins further consultation with all potential stakeholders of the proposed offsets and allowing informed comment and input thus aiding further refinement.

As the Traditional Owners of the land around the proposed mine site are the major stakeholders in the project and the people identified to receive and/or be involved in the delivery of the proposed offsets, further consultation regarding this offset package will be undertaken with them. This important obligation makes suggesting appropriate timeframes difficult due to a wide range of aspects associated with the remoteness of the site, the large numbers of people to consult with as well as the need to work consultations around social and cultural obligations.

These offset subjects have already been discussed with the Traditional Owners via the CLC, and regulatory authorities.