The Development of Wildlife Volunteer Group and Mining Industry Partnerships

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ABSTRACT: Mining companies employ full-time environmental teams who act in a significant advisory role in relation to minesite operations and report to the registered Mine Manager.

The mining industry receives injured animals on a daily to weekly basis which can be the result of industrial practices, human habitation in areas that were previously undisturbed, and natural occurrences. There is a need for mine sites to not only fulfil their duty of care toward wildlife that may be injured, but to ensure that they have trained staff who can treat wildlife appropriately. Most mine sites are located in remote areas and may or may not be connected to small towns. However, given the climate, distances and nature of the roads in these areas it is often more practical, cost effective and less traumatic for the animal to fly it to Perth on a daily company flight.

This paper discusses how a partnership with a sustainable wildlife group could be made (using the Kanyana – Telfer partnership as an example) with the mining industry, and how easy it is to set up a small first aid post specialising in wildlife care.

From research within the mining industry, animal euthanasia systems are generally poorly developed. An example of acceptable methods using gas and firearms will be discussed, given its importance in the treatment of wildlife. Every mine site needs a system that is practical, cost effective, meets regulations, is easy to use, and humane for both the animal and the person performing the euthanasia. With Telfer's wildlife care protocols now well developed over a period of 2 years, examples will be discussed from a mining perspective to illustrate how more mine sites and wildlife groups can work together to create similar or better systems.

Introduction

Wildlife care on mine sites has often been a frustrating exercise, as environmental scientists/engineers desperately try to save injured animals with the majority ending unsuccessfully. Western Australian mine sites are generally remote from any community population, and have limited access to professional wildlife carers or support facilities. Wildlife treatment is therefore often administered by untrained mine site staff with little access to the correct equipment, medication or facilities. Experience at Telfer Gold Mine has indicated that if wildlife care systems and facilities are set up with the support of a dedicated wildlife care group (such as Kanyana Wildlife Center), wildlife care by environmental staff can be successful as well as cost effective and save the lives of many native fauna that inhabit the mine site.

Previous Situations at Telfer Gold Mine

Telfer Gold Mine is located approximately 485 km south-east of Port Hedland, Western Australia in the Little Sandy Desert. Access to Telfer by road is via Marble Bar from Port Hedland, along the Rippon Hills Road to the Telfer Access Road. Few communities inhabit this stretch of road with nearby places being large cattle stations and some local indigenous communities. Access to the mine site for employees is via aircraft, chartered to cater for the Fly-in-Fly out workforce of Telfer.

The majority of Telfer's surrounds are undisturbed, thus being ideal locations for endangered mammal species such as the Greater Bilby, Marsupial Mole, and Mulgara. Altogether reptiles, amphibian and avian species (as well as the endangered) make Telfer a diversified environment exemplifying the Pilbara area.

The Telfer mine supports over 1000 employees for operation of an open cut and underground mine. It has been operational for over 30 years, where recently the mine was reconstructed to accommodate a higher ore-processing throughput and it is expected to provide another 20+ years of mining at Telfer.

Wildlife at Telfer is prevalent and can sometimes be injured, most often, by interaction with vehicles and daily operations. Natural causes like heat stress or birds of prey, and abandonment of nest sites are also factors. Some injuries are a result of infrastructure such as oil/water separator ponds, chemical units that are accessible and cyclone fencing.

The most commonly injured animals at Telfer are birds. These range from larger species such as Yellow Throated Miners, Pink and Grey Galahs, Magpie Larks, Barn Owl, Pink-Eared Ducks and Nankeen Kestrels to smaller species such as dotterels, diamond doves and small migratory birds such as the Sharp Tailed Sandpiper. Less often injured mammals, macropods and marsupials are found such as Little Red Fruit Bats, Little Red Kaluta, and Euro/Wallaroo. Some amphibian and reptile species such as burrowing frogs and Perentie lizards all make up the diverse range of medical treatment required when found injured.

As Telfer Gold Mine is a relatively large site, injured animals are commonly found with admissions of up to 4 per week in Springtime reducing to 1-2 per week in other times of the year. Prevention of injured wildlife is paramount at Telfer, where specialized cyanide recovery systems have been developed to avoid potentially large mortalities in the Tailings Storage Facility and bird netting is used in high-risk areas such as Dump Leach Pad ponds. Fauna egresses are provided in most lined dams and even in hot concrete chemical bunds for areas that are considered a risk. These barriers have successfully prevented large fauna mortalities. There are however non-preventable injuries to wildlife that require medical treatment on an occasional basis.

Past practice for treating injured animals at Telfer usually involved a single enthusiastic employee such as on site nursing or emergency services staff, but with limited success. Stress management of animals was often overlooked due to lack of knowledge, and euthanasia systems were not well developed. Animal specific treatment equipment and food was not available.

Telfer Environment staff also tried their best to care for injured animals when the nursing staff were unavailable to care for them. But with limited experience, specialized training and appropriate facilities; the outcome was often not positive. If an animal survived for more than a few hours, for example, it was released (usually the sewage ponds for birds), without

understanding the cause of the injury or any medical treatment. A gun licence was sought from the Police Department for euthanasia of large animals, which is an essential tool for mine sites as an acceptable method.

With this mixture of nursing, emergency services and environmental staff caring for wildlife, the success of animal rehabilitation were poor. Clearly the issue needed to be more systematic with a dedicated animal first aid centre and specialized staff training for all injured animal issues.

Environment employees on mine sites can have poor training in wildlife medical treatment. Most are reliant on methods from past childhood/home experiences, as most Environmental Scientist/Engineers are often employed on mine sites to ensure compliance with legal obligations such as government licenses or conditions, waste management, monitoring of water and air pollution, reporting to the government and site support for all aspects of the mine. Their experience is more industrial than wildlife related, and unfortunately wildlife rehabilitation is not necessarily considered in most environmental qualifications. Wildlife rehabilitation is not a government compliance requirement for mine sites and often the issue is thrown in the "too hard basket". Since most environmental staff have an underlying passion for wildlife care, they assign company time or their own to address such issues using what is available to them.

Telfer Gold Mine decided that it would like to be a little different about wildlife rehabilitation issues. There was also an element of expectation from peers within the mine site to rehabilitate injured wildlife and most often everyone assumed that environmental staff would be the most knowledgeable and trained people to undertake the task. Additionally, there is an element of due diligence to rehabilitate injured wildlife that reside around Telfer and conservation of wildlife is protected under the Environmental Protection Biodiversity Conservation (EPBC) Act 1999.

The Telfer-Kanyana journey began with a telephone call from Telfer to the Department of Conservation and Land Management (CALM) in Karratha requesting assistance on injured animal care. CALM referred Telfer to wildlife care groups such as Kanyana Wildlife Rehabilitation Centre. The Telfer-Kanyana relationship grew from there and was elevated a notch through the establishment of the site animal first aid center and specialist training for site staff managed through Kanyana Chairperson, June Butcher.

We then discovered that we were doing many things incorrectly in regard to wildlife care, not really through lack of trying; but rather through lack of facilities and knowledge. Kanyana was also unaware of the exact situation at remote mine sites, so we agreed to work together to develop a solution that was the first of its kind in Western Australia.

On the 30 June 2005, a formal Kanyana-Newcrest partnership was acknowledged at the Telfer Gold Mine official opening day ceremony, where the Honorable Geoff Gallop and guests were invited to celebrate the reconstructed larger Telfer mine.

Components of Successful Partnerships

Kanyana and Telfer had two common goals; we both needed help and what we could do for each other would prove beneficial on both sides. Telfer needed staff to be trained in wildlife first aid and somewhere to send injured animals when their rehabilitation was going to take more than a days work. Time taken to treat and rehabilitate animals was more than what environmental staff could offer. Kanyana needed funds to support Telfer and knowledge of mine site management conditions to provide an effective solution that could be implemented at other mine sites in Western Australia.

The key areas addressed when forming the partnership were:

1. Basic first aid for wildlife training.
2. A dedicated first aid facility.
3. A safe, low stress and effective euthanasia facility.
4. Transportation arrangements.
5. Financial support to the volunteer group.
6. A cost effective solution for the mine site.
7. Significant time saving for environmental staff.
8. Promotion and public education.
9. Legal and ethical code obligations.
10. Longevity of the solution.

Implementation of these steps is quite simple for mine sites and requires little financial support. Telfer has implemented this for two years and found it to be a very successful program, and as a result Telfer has gone from little success in wildlife rehabilitation to around a 50-60% success rate. A 50%+ survival rate is considered good by animal care experts. Additionally environmental staff has less pressure and find wildlife care now an interesting part of their work, as the solution and systems have been made to support their long term needs.

Each of the ten steps is explained in more detail in the following sections.

Training

Kanyana Wildlife Rehabilitation Center developed a site specific one day course for Telfer Gold Mine employees. The topics covered were:

1. The basic setup:
    1. Equipment and furnishings;
    2. Food and first aid;
    3. Environmental factors causing stress;
    4. Minimizing stress;
    5. Housing conditions.
2. Reality of wildlife care:
    1. Personal cost;
    2. Euthanasia;
    3. Health and Safety.
3. Admission:
    1. Rescue techniques;
    2. Identification;
    3. Distant observation;
    4. Injury assessment;
    5. Stabilisation.
4. Hands on examination:
    1. Record keeping.

5. Stages of Rehabilitation
    1. Intensive care;
    2. Acclimatisation;
    3. Pre-release.

The training was designed for bird and mammal treatment common to Telfer, and is held annually to refresh trained people and to allow for staff turnover. Emergency services, administration and environmental staff were part of the 2006 training.

Figure 1: Kanyana Wildlife Rehabilitation Centre, June Butcher, training Telfer staff.

Wildlife First Aid Centre

The wildlife first aid centre on site is based in a sea-container that is airconditioned. All shelving and tables were located from site and the overall cost was kept very low, yet it has been very suitable for a first aid centre. Ideally a fully insulated building would be more ideal if it were available. To set up the full facility the cost is generally less than $2000, where the most expensive items were the purchase of a hot box and refrigeration, being essential parts of the facility. The facility took approximately one day to set up, a minimal time commitment.

Kanyana supplied a full starter kit including medical supplies and food, and also sourced a hot box. Since then essential items have been purchased to improve the facility Temperature control in the seacontainer facility is quite difficult if the airconditioner does not have an automated climate control system. In the past this has had to be regularly monitored by staff to ensure a consistent temperature optimal for animals.

Figure 2 Telfer Gold Mine Wildlife First aid Centre

A pre-release aviary has been built by onsite maintenance staff for release of rehabilitated birds. The birds re-acclimatise and gain some environment familiarisation whilst in the aviary so they are in a fit condition prior to release. Considerations were given for a release hatch that allowed the birds to return to the cage, length of bird flight for exercise, vermin and predator proofing, and food containers accessible from outside the cage.

Generally the birds are kept in the aviary for approximately two weeks and fresh food is supplied daily from the onsite Mess or from supplies that are ordered in from Perth. A water spray system has been added for climate control during hot summer months.

Figure 3: Telfer pre-release aviary

Euthanasia Systems

One of the most important welfaredecisions in wildlife care is to accept that it is more important and humaneto promptly relieve the suffering of the animal by euthanasia, rather than make a futile and prolonged attempt to saveits life or allow it to die from its injuries.

Euthanasia is the hardest task a rehabilitator has to perform. Animals which are vision impaired, have severely damaged or missing wings or legs, are diseased, or are imprinted should not be considered for release. These animals may find freedom through euthanasia.

Telfer has two systems for euthanasia being Carbon dioxide (CO_2) for small animals in chambers and an onsite rifle for large animals. The carbon dioxide chamber has its advantages in being low stress on the animal, low stress on the person administering, inexpensive, easily available and safe. Telfer has found that black plastic bags over a cage or dark enclosed boxes are the most suitable holding place for the animal to reduce stress levels. Improvements to the system have been installation of a gas regulator and ensuring that backup gas bottles are available.

Figure 4: Example of Co2 euthanasia system

Transport Arrangements

All injured wildlife is sent to Perth via Telfer's airline carrier *National Jet Systems*. Telfer has a procedure on transportation that meets animal transport regulations and ensures low stress on the animal. All animals sent by airline have arrived safely. It is important to know where the warm and pressurized cargo holds are located and to ensure the animal is separated from general freight or cargo. All animals are required to be clearly labelled and sent in an airline approved carrier cage. Usually small birds are kept inside a box within the cage to restrict movement.

Figure 5: National Jet Systems transport arrangements at Telfer

Financial Support for Volunteer Groups

It is critical that mine sites who choose the services of a volunteer group for rehabilitation support treat it with the respect of a business deal. Telfer Gold Mine donates an agreed sum of money annually to Kanyana Wildlife Rehabilitation Centre based on cost of rehabilitation per animal. Generally the cost per animal is approximately $300-$600 depending on the case and therefore these costs should be covered by the mine site. All donations to an incorporated volunteer group are tax deductible.

Although there are some initial small setup costs and donation money to maintain, the cost saving to management could be worth the additional salary of an employee if the full extent of rehabilitation were to be kept onsite. Therefore Telfer and Kanyana benefit in the partnership greatly.

Cost Effectiveness for Mine Sites

It is important that a volunteer incorporated group who approaches a mine site for support and similar systems, offer a cost effective solution. If approached by an emotional agenda rather than business solutions, the outcome of the partnership is likely to be unsuccessful. The General Manager of the mine site must agree to the approach and be supportive of the benefits presented. Relationships between both parties must be informative and solid to be successful. A volunteer group should seek to cater for business needs and get a detailed understanding of mine site processes.

Time Saving for Environmental Staff

The most beneficial business outcome for a mine site partnership with a wildlife volunteer group is the time saved on resources such as environmental staff. The average time to fully rehabilitate one injured animal is generally 2 months. It would require at least a full time employee at most times to complete the full stage of rehabilitation, and this is not a viable option for most mine sites.

Promotion and Public Education

Promotion of the partnership ensures that the relationship is known and maintains enthusiasm for improvement for both parties. In year 2006, Kanyana and Newcrest submitted a joint application for the West Australian Golden Gecko awards. A special mention and promotion of each party was achieved. Education of the benefits of wildlife care on mine sites has been targeted at various environmental conferences as a joint effort. Kanyana Wildlife Rehabilitation Centre has a strong commitment to public education and this also benefits NML as a business by being known in the community as a positive contributor to the environment.

On occasions, Kanyana has been to Telfer to educate mine site employees on endangered species such as the Bilby, and this has been motivational for staff and adds to support of the partnership arrangement.

Posters and a formal certificate signing the commitment by both parties are good tools for promotion of the partnership.

Figure 6: June Butcher and Bilby at the Telfer Open day promoting wildlife conservation

Legal and Ethical Obligations

The main legal concern for a mine site is approval to hold a rifle on site. Telfer has informed the Mines Inspector that is responsible for the Pilbara region and maintains a gun licence with the WA Police Department. Staff using the rifle must be a trained and licenced. The rifle is the responsibility of Telfer's Emergency Services Department where record keeping and safety of storage is managed. A written procedure is in place to manage its use.

Research into animal welfare for use of Co2 was completed thoroughly. Use of Co2 is an approved method by government organisation, Environment Australia, whom has released a paper on different euthanasia methods.

Minesites have the ability to lead change to wildlife rehabilitation in the industry. Influence of its suppliers such as education of transport companies may also be considered as a whole

approach. Telfer has held 'toolbox talks' with its transport companies in wildlife first aid procedures and created awareness by handing out Kanyana's "Glove Box Guides". Many truck drivers considered this as a good moral approach from Telfer.

Longevity of Solution

The wildlife care system will only be successful if the whole company embraces the system and it is led by a central team such as Telfer's Environment Department and supported by interested volunteers. This occurs when systems are set up so they are easy to maintain and cost effective. Telfer's partnership with Kanyana has now been going for 2 years and gets stronger everyday. The system is well developed and it continues to operate even throughout staff turnover. When new environment staff are selected it is important to make sure that they are aware that wildlife care is part of the job description as not all people are enthusiastic to get involved.

Conclusion

Telfer Gold Mine has set up a well developed wildlife rehabilitation system that is likely to continue for the next 20 years of its operational life. Without the support of Kanyana Wildlife Rehabilitation Centre, this would not have been possible and wildlife rehabilitation at Telfer would not have been as successful. The most important lesson that we have learnt is the hard work and dedication that volunteer groups contribute to wildlife care.

Mining companies can make a difference to wildlife rehabilitation by implementing simple processes or systems which will benefit themselves long term. It is important to recognise the economics behind wildlife care systems so that both volunteer groups and mines sites enjoy their partnerships benefits.

We must not however lose sight of the real reward, and that is rescuing animals and working together for the conservation of wildlife.

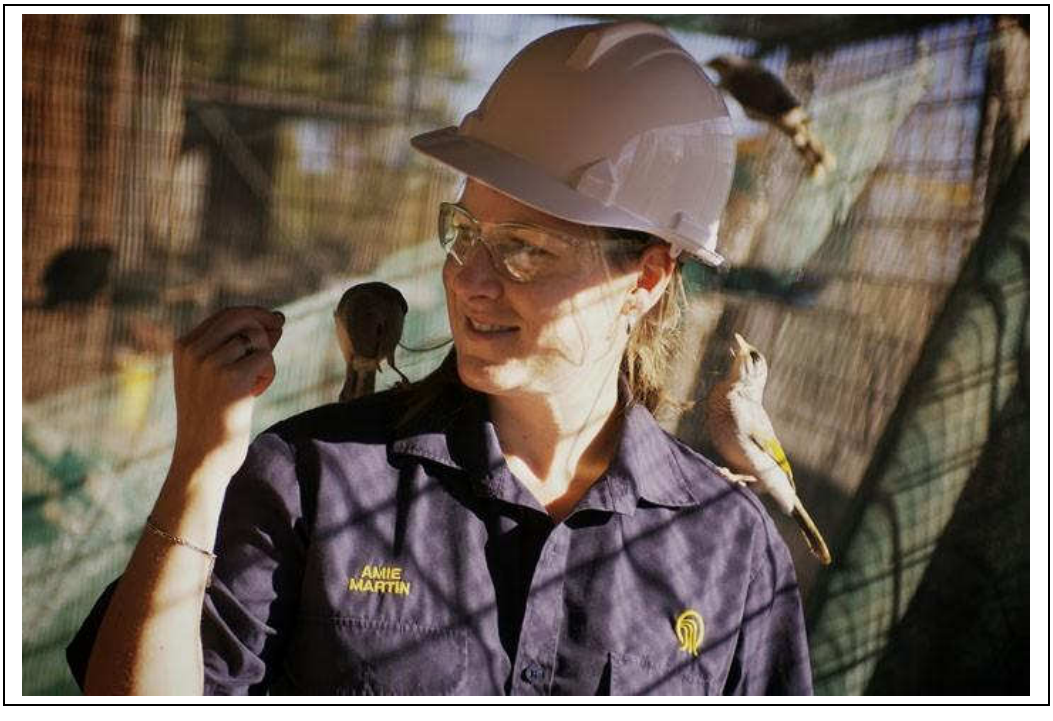

Figure 6: Amie Martin, Telfer Environmental Graduate for Newcrest Mining Limited with friends