Centre for Social Responsibility in Mining
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Indigenous groups, land rehabilitation and mine closure: exploring the Australian terrain

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Acknowledgements

This project report is part of a broader initiative, the Social Aspects of Mine Closure Research Consortium. Established in 2019, the consortium is a multi-party, industry-university research collaboration challenging accepted industry norms and practices around mine closure and demanding new approaches placing people at the centre of closure. Industry partners in the consortium include: Anglo American, BHP, MMG, Newcrest, Newmont Corporation, Oceana Gold and Rio Tinto. The initiative falls under the SMI's Transforming Mine Lifecycles cross-cutting program.

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Cover image

Daguragu Ranger Mr P. Jimmy returned to his father's country on the Karlantijpa North Aboriginal Land Trust in the Northern Territory to undertake controlled burning in April 2017.

Photo courtesy of the Central Land Council, Alice Springs, used with permission.

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Ranked in the world's top 50[1], The University of Queensland (UQ) is one of Australia's leading research and teaching institutions. UQ strives for excellence through the creation, preservation, transfer and application of knowledge. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

Sustainable Minerals Institute

The Sustainable Minerals Institute (SMI) is a world-leading research institute[2] committed to developing knowledge-based solutions to the sustainability challenges of the global resource industry, and to training the next generation of industry and community leaders. The Institute is transdisciplinary, and our work is impartial and rigorous. Our research integrates the expertise of production, environmental and social science specialists to deliver responsible resource development.

Centre for Social Responsibility in Mining

The Centre for Social Responsibility in Mining (CSRM) focuses on the social, cultural, economic and political challenges that occur when change is brought about by mineral resource extraction. The Centre contributes to industry change through independent research, teaching and by convening and participating in multi-stakeholder dialogue processes. Our team consists of geographers, anthropologists, sociologists, political scientists, economists, development and natural resource specialists.

1 QS World University Rankings and Performance Ranking of Scientific Papers for World Universities, 2018.

2 The University of Queensland ranks first in the world for mining and mineral engineering, 2018 Shanghai Rankings by subject.

Executive Summary

Background

This study addresses two challenging areas at the interface of mining and Indigenous communities in Australia:

1. The persistent lack of direct employment of Indigenous landowners on mines operating on their land
2. Increasing expectations that mining companies engage local communities in closure planning and closure criteria setting as a prerequisite for relinquishment.

The approach taken seeks to build on one of the greatest assets Indigenous people possess; their attachment to and knowledge of their land. Through this research, CSRM explores the opportunities for local Indigenous groups to conduct fee-for-service environmental management and rehabilitation work on the mining footprint as a way to increase Indigenous landowner participation to achieve beneficial outcomes for closure.

The overarching aim is to understand ways Indigenous groups currently work with Australian mining companies on mine environment management and rehabilitation and identify key themes and questions for further research. The research focuses on the interactions between three main stakeholder groups; mining companies; Indigenous people and their representative agencies; and government.

Method

A rapid appraisal was undertaken across four sites in regional and remote Australia. These include Northern Star's Jundee Mine in the Western Australian goldfields, Newmont Tanami Operations in central Australia, Woodcutters base metal mine near Darwin, and Rio Tinto's Amrun operation south of Weipa in far north Queensland.

One site was a closed mine, the others operating. Three are hard rock open-cut and underground mines, the other a surficial bauxite laterite operation that involves sequential mining, back-filling and progressive rehabilitation. Key representatives of the mining company and respective Indigenous groups were interviewed in each case to learn about their experiences and perspectives on Indigenous engagement in the mine's environmental management and rehabilitation.

Objectives

The specific research objectives were to:

- understand what mine environmental management and rehabilitation activities are currently being undertaken by Indigenous groups in Australia
- document views, issues and opportunities around stakeholder groups working collaboratively on mined land rehabilitation and mine closure
- understand the role of government in enabling or constraining the involvement of Indigenous groups
- generate interest in the topic and build collaborative working relationships and trust with key stakeholder groups

- lay the foundations for the possibility of UQ hosting dialogues and knowledge sharing forums with Indigenous groups and mining companies to scale-up the expertise on innovative mine closure practices.

Findings

The study identified innovative and progressive examples of local Indigenous groups working with mining companies on environmental management and rehabilitation projects.

The case studies exhibit successful collaborations where Indigenous groups are clearly motivated by opportunites to particate in work meaningful to them as custodians of their land.

The value derived from this mode of engagement justifies further investigation into how to consolidate, replicate and scale-up the opportunities.

Outcomes for different stakeholder groups

Several positive outcomes were identified. These are organised below based on where the opportunities have presented themselves.

At the Indigenous/mining company interface

- increased understanding of priorities for managing land that breakdowns barriers and promote opportunities for positive engagement
- promoting a platform for mining companies and Indigenous landowners to collaboratively address rehabilitation issues, closure criteria and relinquishment.

For the mining company

- addressing local employment and contracting commitments as well as industry social and environmental performance standards
- integrating traditional ecological knowledge into the mine's science-based systems, which contribute to Indigenous land management and regional biodiversity
- clearer pathways to relinquishment through improved landowner relationships and trust.

For Indigenous groups

- increasing Indigenous participants' technical skills, self-confidence and ability to engage in the wider economy, including opening options for direct industry employment
- gaining regular access to land and meaningful work to 'look after country', maintaining or reactivating connection to country and passing-on traditional ecological knowledge to younger generations
- acquiring knowledge, methods, and technologies transferrable to management of the Indigenous land estate
- options for developing career pathways across a greater diversity of Indigenous land management work, including access to long term commercial monitoring opportunities.

Other positive outcomes from engagement with Indigenous groups

Structural

- providing services to mining companies enables Indigenous groups to leverage continued government support for Indigenous land management programs

- fee-for-service augments government land management funding so that more people can be employed and critical capital equipment obtained to facilitate Indigenous landowners objectives on their estate
- providing a catalyst for the establishment of highly valued Indigenous Ranger programs.

National-scale impacts

- enhanced environmental outcomes, regional biodiversity, and ecosystem health through Indigenous links to managing the National Reserve System
- increased employment opportunities lead to less reliance on social security transfers and greater Indigenous autonomy
- addressing underlying social, historical, and cultural factors contributing to poor socio-economic conditions in remote Indigenous communities in Australia.

Influencing factors

Enabling factors

- government funding of Indigenous Ranger programs and Indigenous Protected Areas underpins the ability for mining companies to readily secure fee-for-service work from local Indigenous groups
- support for well-resourced Indigenous representative organisations with professional land management expertise and commercial capacity
- local-level agreements between Indigenous landowners and mining companies stimulate the imperative for innovative engagement.

Inhibiting factors

- lack of a systematic approach to engagement with Indigenous landowners on environmental management and rehabilitation on mined land
- perceived impost on time, effort, and resources needed to provide ‘wrap around’ support to Indigenous participants from remote communities
- maintaining an efficient and effective commercial interface for delivery of fee-for-service contracts.

Further research

Further research is proposed to pursue deeper insights and address the limitations associated with the rapid nature of the scoping study.

A second phase of the research could involve either returning to case study sites to share insights with research participants, and/or identifying additional case studies using the existing method and research aims. Several approaches are available for consideration:

Deeper insights from the same sites using a particpatoy feedback loop

- conduct further research using the existing case study sites to gain deeper insights into outcomes and how benefits could be replicated and extended. A collaborative participatory approach would be adopted drawing on the existing networks and participants, and provide participants with the benefit of learning from other locations

- the work would involve packaging the findings into an easily accessible format, and returning to the case study sites to share the collective learnings. The existing participant groups would be actively engaged through a question and reflection process, based on the research findings in order to gain deeper insights.

Additional Australian case studies using the same method

- undertake further case studies at other sites using the same research questions as the scoping study. Stradbroke Island in south east Queensland was previously identified as a highly relevant case study, as was Newcrest's Telfer mine in Western Australia
- an option would be to take the material packaged and tested with existing participants from the current study and use this method to draw further insight from the additional case study sites.

Undertake international case studies

- Indigenous and First Nation groups in other countries such as the USA, Canada and New Zealand are also involved in environmental management and rehabilitation of mines on their traditional estates. The next stage could investigate international case studies as revealed through an initial desktop review.

Linking findings to established theory

- further research is justified to link the empirical findings to established theories on the participation of Indigenous people in development activities
- the empirical findings from this work provide the basis for a significant contribution to the academic literature and practice-based knowledge on this topic.

Other research grant funding

- pursue an Australian Research Council 'Linkage Project' grant in partnership with industry. We would seek advice from UQ's Vice-Chancellor – Indigenous Engagement, including the recruitment of an Indigenous researcher to work on the project with the CSRM team.

Acronyms and abbreviations

ABA	Aboriginals Benefit Account
ABS	Australian Bureau of Statistics
ATV	All-terrain vehicle
CLC	Central Land Council
CHEMP	Communities, Heritage and Environmental Management Plan
CSRM	Centre for Social Responsibility in Mining
DBS	Dead Bullock Soak Mining Lease
DSS	Desert Support Services Pty Ltd
EIS	Environmental Impact Statement
ESG	Environmental, Social and Governance
FIFO	Fly in - Fly Out
IPA	Indigenous Protected Area
LSMP	Land and Sea Management Program
MMP	Mine Management Plan
MWG	Muntjiljtarra Wurrgumu Group
NIAA	National Indigenous Australians Agency
NT	Northern Territory
NTG	Northern Territory Government
NTO	Newmont Tanami Operations
NRS	National Reserve System
ORIC	Office of the Registrar of Indigenous Corporations
PM&C	Prime Minister and Cabinet
PPE	Personal Protection Equipment
QLD	The State of Queensland
RPA	Regional Partnership Agreement
SDG	Sustainable Development Goals
SMI	Sustainable Minerals Institute
TEK	Traditional ecological knowledge
TSF	Tailing storage facility
TRBM	Tanami Regional Biodiversity Monitoring Program
TO	Traditional Aboriginal landowner
UQ	University of Queensland
WA	The State of Western Australia

Key terms

National Reserve System

Australia's National Reserve System (NRS) is a network of parks and reserves aimed at conserving Australia's unique biodiversity and maintaining ecological systems and processes. The NRS is designed to meet Australia's obligations under the 1992 United Nations Convention on Biodiversity ratified in June 1993. For more details see: www.environment.gov.au/land/nrs.

Indigenous Ranger programs

Indigenous Rangers in Australia emerged through the 1990s with establishment of Aboriginal land management groups such as Dhimurru Corporation in northeast Arnhem Land in 1993. These early groups were funded from various sources. For instance, the first Ranger group in central Australia started in Lajamanu in 2001 under the Australian Government's Community Development Employment Projects. Since 2007, the government has funded Indigenous Rangers under 'Working on Country' programs and program variants.

The Ranger programs grew significantly through bi-partisan support. In July 2018, funding was transferred from the National Heritage Trust to the Indigenous Advancement Strategy administered by the National Indigenous Australians Agency (NIAA) established in May 2019. According to the NIAA website, as at 30 September 2018, there were 123 Indigenous Ranger groups and 839 full-time equivalent Ranger positions funded across Australia. The five-year 'Working on Country' funding agreement from 2013 to 2018 was recently extended for a further three years to June 2021.

State and Territory governments also fund Ranger programs. The Queensland Government supports 65 Land and Sea Rangers across 15 regional communities throughout. Since 2017, the Western Australian Government has funded both established and emerging Ranger groups. See the following web sites for further details.

Federal - www.niaa.gov.au/indigenous-affairs/environment/indigenous-rangers-working-country

QLD - www.qld.gov.au/__data/assets/pdf_file/0025/93715/ilsr-partnership-prospectus.pdf

WA - www.dbca.wa.gov.au/sites/default/files/2019-09/Map%20of%20round%20two%20recipients.pdf.

Indigenous Protected Area

The Indigenous Protected Area (IPA) program was established in 1997 by the Australian Government through the federal environment department to support Indigenous landowners manage designated parts of their land, combining traditional knowledge with western science. IPAs by definition form part of Australia's NRS. The first IPA, Nantawarrina covering 58,000 hectares of the northern Flinders Ranges of South Australia, was dedicated in 1998. By 2018, there were 75 dedicated IPAs across some 67 million ha, accounting for some 45% of the NRS.

See www.environment.gov.au/land/indigenous-protected-areas.

Regional Partnership Agreements

Seven Regional Partnership Agreements (RPAs) were implemented under a 2005 Memorandum of Understanding (MoU) between the Minerals Council of Australia and the Australian Government on Indigenous employment and enterprise facilitation 'to work together with Aboriginal people to build sustainable, prosperous communities in which individuals can create and take up social, employment and business opportunities in mining regions'. The MoU is no longer current, however, three of the cases examined in this report were influenced by the respective RPAs (Wiluna, Tanami, and western Cape York).

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1. Introduction

This report presents results of the research project *Indigenous groups, rehabilitation and mine closure: exploring the Australian terrain*.

Dual imperatives drive the project:

- the need to improve levels of participation of Indigenous landowners in mining operations on their land in ways meaningful to them
- increasing expectations that companies engage local communities in closure planning, criteria setting and relinquishment.

The project was designed as a 'scoping study' to:

- understand ways Indigenous groups currently work with mining companies on mine environment management and rehabilitation in Australia
- explore the level of interest amongst stakeholders in the topic and identify key themes and questions for further research.

1.1 Background

CSRM's work over the past decade identifies environmental and rehabilitation activities as key areas to enhance participation by local Indigenous groups in extractive resource operations on their land.[3]

Research conducted for several social impact assessments and reviews of land access agreements in Australia indicate Indigenous groups, particularly Indigenous Ranger groups, are interested in being more involved in environmental management of resource projects.

This study explores whether Indigenous groups providing environmental services to mines is an effective way to:

- enhance Indigenous engagement over mined land rehabilitation, mine closure and post-mining futures
- provide Indigenous groups with broader experience, transferrable skills and added capacity to manage their Indigenous estate.

1.2 Research objectives

The research aims to provide an overview of the current level of Indigenous engagement in rehabilitation and mine closure in Australia, with a focus on Indigenous Rangers.

Future research could extend beyond Ranger groups and explore other models and other jurisdictions, including international settings.

For this study, the specific research objectives are to:

[3] The work by CSRM includes:
- BHP Groote Eylandt (GEMCO) operations SIA 2011 (confidential report)
- Social aspects of closure of the Century Mine www.csrm.uq.edu.au/publications/social-aspects-of-the-closure-of-century-mine-report-on-community-consultations
- Gulf Communities Agreement 15-year review www.csrm.uq.edu.au/publications/gulf-communities-agreement-15-year-review
- Newmont Tanami Operations Social Impact Assessment 2013 (confidential report)
- Newmont Tanami Operations Social Impact Assessment 2018 www.csrm.uq.edu.au/publications/newmont-tanami-operations-social-impact-assessment.

- understand the extent of 'on the ground' activities currently being undertaken by Indigenous groups and mining companies around mine environmental management, rehabilitation and closure
- understand the role of government in enabling or constraining the involvement of Indigenous groups
- generate interest in the topic amongst key stakeholder groups, including Indigenous groups and their organisations, mining companies and relevant government agencies
- build collaborative working relationships and trust with key stakeholder groups, particularly Indigenous groups to explore their level of interest in working on mined land rehabilitation and closure
- conduct a high level scan of the views, issues and opportunities around stakeholder groups working collaboratively on mined land rehabilitation and mine closure
- lay the foundations for UQ to host dialogues and knowledge sharing forums with Indigenous groups and mining companies to scale-up the expertise on innovative mine closure practices using a combination of traditional ecological knowledge and science-based knowledge.

1.3 Method

The study focussed on three stakeholder groups represented in Figure 1:

1. **Indigenous groups -** including Indigenous organisations managing Indigenous Ranger groups, Indigenous landowners and Indigenous people involved activities, where available
2. **Mining companies -** particularly those personnel responsible for social performance and environmental compliance
3. **Government -** especially agencies that fund Indigenous Rangers and the environment agencies responsible for managing the NRS.

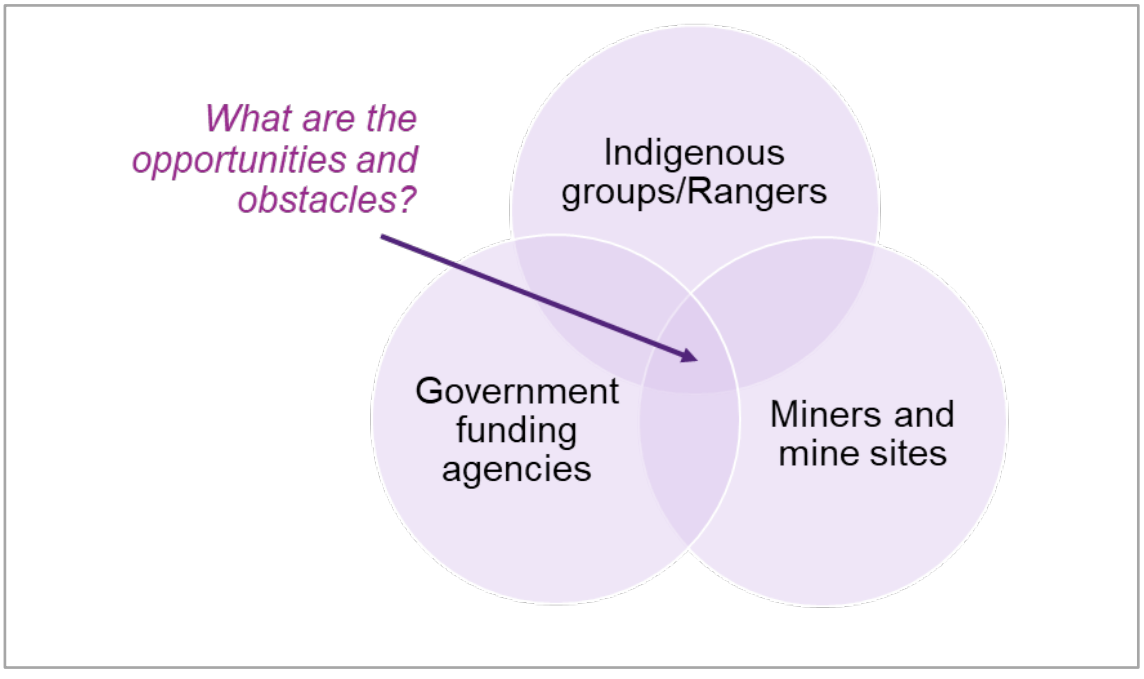

Figure 1 Intersection of stakeholder interests as the subject of this study

A case-study method was used. Four sites across mainly remote Australia, including Western Australia (WA), Northern Territory (NT) and Queensland (QLD) were studied. See Table 1 for summary details and Figure 2 for locations.

The primary criterion for site selection was where there was interest and support from both the mining company and respective Indigenous groups.

Table 1 Summary of case study sites

#	Site	Type	Stakeholders		Comments
			Mining co.	**Indigenous**	
1.	**Jundee** *remote WA*	gold *operating*	Northern Star	Martu Rangers Desert Support Services	Rangers routinely provide mine environmental services
2.	**Tanami** *remote NT*	gold *operating*	Newmont	Tanami Rangers Central Land Council	Rangers work on mine environmental management and partner with company over regional biodiversity monitoring
3.	**Woodcutters** *regional NT*	lead/zinc *closed*	Newmont	Indigenous landowner liaison committee Northern Land Council	Local Indigenous environmental contractor involved in revegetation planting Indigenous civil contractors utilised for rehabilitation works
4.	**Amrun** *remote QLD*	bauxite *new mine*	Rio Tinto Aluminium	Wik Waya Indigenous landowners	Rio Tinto hosted Land & Sea Management Program made up of Wik-Waya land owners

The number of case studies reflects the resources available for the project. Sites were identified through available knowledge of where relevant activity is occurring based on existing case study material, social impact assessments, and industry and Indigenous organisations' publicity. The research utilised both desktop and primary field-based sources. Data for the cases were collected through:

- a review of relevant literature, including 'grey literature', as well as media and communications material
- qualitative interviews with key informants' representative of stakeholder groups' views and interests
- participant observation of Indigenous groups' activities at sites where available.

Of the four sites:

- three are operating sites; the other is closed under rehabilitation
- three of the sites are metalliferous, utilising underground and open-cut methods; the other is surficial mining and recently commissioned.

At each site, local Indigenous groups are engaged in the respective mine's environmental management and/or rehabilitation in some way. Modes of engagement differ across each site.

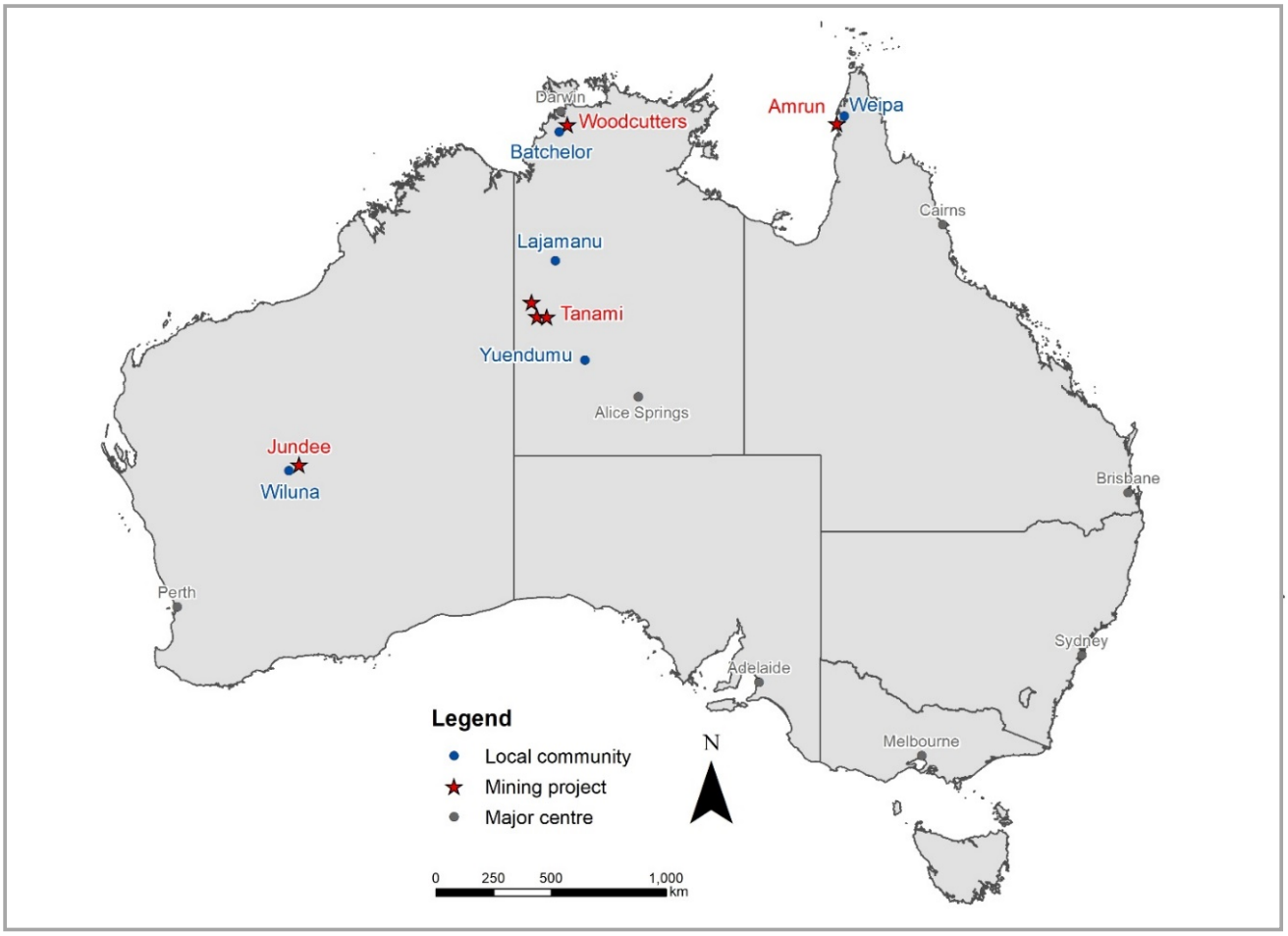

Figure 2 Location of case studies

Forty people participated in interviews for the study. These included a mix of mining company personnel (16) and mostly non-Indigenous people working within Indigenous organisations and contractors, as well as Indigenous people (10), including Indigenous landowners see Table 2.

Table 2 Participant interview summary

#	Case	Total	Mining co.	Indigenous domain
1.	Jundee	10	3	7 (3 Indigenous)
2.	Tanami	9	3	6 (1 Indigenous)
3.	Woodcutters	11	3	8 (3 Indigenous)
4.	Amrun	10	7	3 (3 Indigenous)
	Total	**40**	**16**	**24 (10 Indigenous)**

Researchers were able to observe work of the Indigenous groups at three sites:

- **Jundee** - Martu Rangers involved in planning daily schedule and undertaking work such as collecting tailings storage facility water bore monitoring samples

- **Woodcutters** - site tour with local (non-Indigenous) on-site caretaker responsible for routine water monitoring
- **Amrun** – Rio Tinto Land and Sea Management Program (LSMP) participants monitoring sea turtle nests to protect from feral animal predation.

1.4 Limitations

The study represents a high-level scan of activities, issues and constraints. The primary purpose is to enliven interest and stimulate opportunities in Indigenous land management domain and identify possibilities for further collaborative research. Such research would assist increased Indigenous and industry partnerships toward innovative employment and business outcomes.

It is not intended to be a definitive study. Rather, the emphasis is to collate accurate and up-to-date data on current activities to characterise engagement, identify critical factors and understand how these stakeholders work together to achieve the observed outcomes. As such, not all instances of local Indigenous groups participating in environmental activities on mines in Australia are identified.

Government (federal and state/territory) is identified as a major stakeholder. While government programs essentially underpin the engagement occurring between Indigenous groups and mining companies, particularly funding for Indigenous Rangers and IPAs, the study was not able to directly engage government through interviews.

Although engagement with government was intended, resourcing constraints, on top of the wealth of data obtained from mining and Indigenous participants, restricted gathering of direct views and experience of government. The role of government, however, was clearly identified through the interviews conducted.

Further research would be able to address this limitation by directly involving relevant government agencies.

1.5 Report structure

The following four sections address each of the case studies in turn (sections 2 to 5). The remaining section (section 6) summarises the case studies, drawing together the key themes emerging from the study and offering recommendations for further research.

2. Jundee

Jundee features a mature working relationship between the mine and local Indigenous Ranger groups that has persisted over time and survived a change of mine ownership. Environmental and rehabilitation services are delivered under contracts brokered through a well-resourced Indigenous land management agency. The work performed is focused on mine compliance.

This case has received wide attention through features and vignettes in a range of publicly available resources, as well as receiving awards. As such, it represents a 'base case' where such a relationship has delivered mutually positive outcomes.

2.1 Mine setting and location

Jundee mine is owned and operated by Northern Star Resources Ltd based in Perth, WA.[4] It purchased the operations from Newmont Corporation in July 2014 during the commodities downturn, when global companies were shedding assets. Through this and the acquisition of Barrick's operations the year prior (Kundana 51%, Kanowna Belle, and Plutonic mines), Northern Star has grown into a top-tier Australian gold mining company.[5]

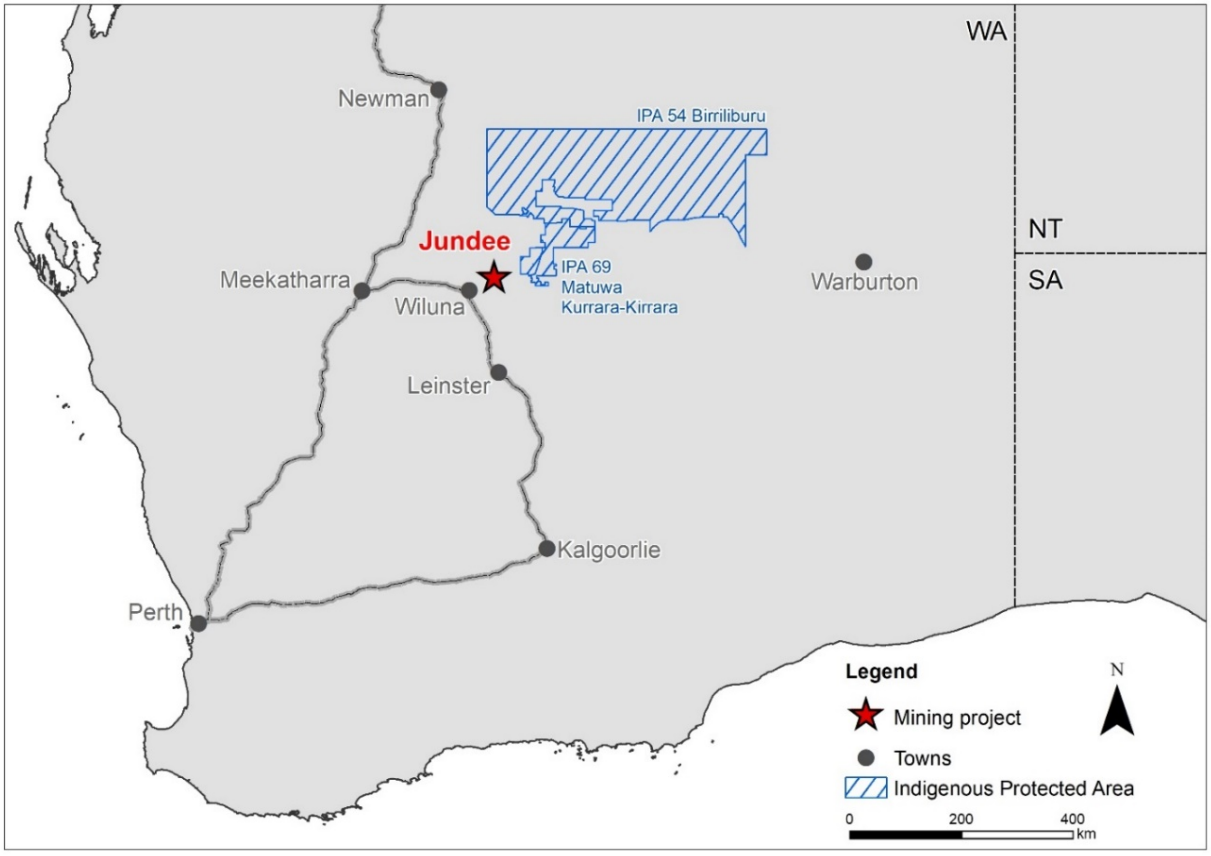

Figure 3 Location of Jundee mine

[4] Northern Star is in the top 100 companies based on market capitalisation on the Australian stock exchange (ASX100). As at Nov 2019, Northern Star is 78 on the ASX 100 ranking. With market capitalisation at $6.05 billion, it is one of Australia's 'top 5' gold companies.

[5] These purchases built on Northern Star's strategic acquisitions that commenced with Paulsens mine in Pilbara in 2010 from Intrepid Mining. In 2016, Plutonic was on-sold to Superior Gold. In Sep 2018, Northern Star purchased the Pogo mine in Alaska, USA, from Sumitomo.

Located 770km northeast of Perth, the environment around Jundee is semi-arid (Figure 3).[6] The area is characterised by vast sand plains covered with spinifex and interspersed with tracts of mulga, rocky outcrops and occasional salt (dry) lakes. The mine sits along the southern boundary of the Jundee pastoral lease, which is owned and managed by Northern Star.

Open-pit mining began in 1995. In 1997, underground operations commenced. By 2007, the near surface resources were exhausted and only underground mining continued.[7] In 2019 financial year, approximately 1.8 million tonnes of ore were processed, producing 295,000 ounces of gold Northern Star 2019). The estimated mine life is over 10 years (Northern Star 2018). The mine employs between 600-800 people, with very low rates of direct Indigenous employment.

2.2 Local Indigenous groups

The nearest town, Wiluna, is 45km to the southeast of the mine. It marks the extremity of the inland passage of the Goldfields Highway that runs between Kalgoorlie and Meekatharra, where the bitumen turns back toward the coast.[8] Famed as the gateway to the Canning stock route, Wiluna offers the last urban respite for those embarking on the arduous overland route to the Kimberley region, which accounts for much of its visitation.

Wiluna's population is small (236 people), mostly Aboriginal (58%), and relatively young (median age is 26 years). The unemployment rate is 22.6% (ABS 2016). The neighbouring Aboriginal community of Bondini lies 4km east of Wiluna on the road to the mine. It is a former garden and orchard site now vested in an Aboriginal land trust. There are some 18 houses with about 100 Aboriginal (Martu) people living in Bondini (WA Government 2012).

The Martu are renowned as some of the last Indigenous groups to make contact with Australia's European colonisers.[9] In 2014, determinations under the Native Title Act recognised the Martu's continuous connection to land surrounding Wiluna.[10] The area is some 3 million hectares, covering Wiluna-surrounds including Jundee and extending over 500kms to the northeast toward the Gibson Desert.

The Tarlka Matuwa Piarku Aboriginal Corporation is the prescribed body corporate that holds (mostly non-exclusive) native title over the Wiluna determination.[11] Part of the Wiluna determination granted exclusive possession over two ex-pastoral leases, Lorna Glen and Earaheedy, which the WA Government had resumed for conservation purposes.[12] These contiguous pastoral leases are approximately 170km northeast of Wiluna and obtained 'Indigenous Protected Area' status. They are known as the Matuwa and Kurrara Kurrara IPA, which was dedicated in 2015 and covers nearly 596,642 hectares.

Contiguous and to the north is the Birriliburu IPA, an even larger area of 6.6 million hectares, which was dedicated in 2013 over areas of exclusive possession following a consent determination in

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6 Mean annual rainfall is 250mm with mean daily maximums in summer of 38°C and 21°C in winter.

7 Byrnecut is the current underground mining contractor. In addition, in Mar 2018, BGC Contracting was awarded the mining contract for a small satellite open-cut operation called Ramone 35km southeast of Jundee (Garmeng 2018).

8 The Goldfields Hwy connects to Leinster (pop. 879) 170km south, and to Meekatharra (pop 931) 130km west. The nearest regional centre is Kalgoorlie (pop. 28,000) 540 km to the south of Wiluna.

9 For instance, see Peasley, W. (1983). The *Last of the Nomads*. Fremantle Press. Documents the 'first contact' with elderly Mandildjara couple in the Western Gibson Desert in 1977.

10 Claims determined by the Federal Court include: Wiluna WAD 6164/98; Wiluna #2 WAD241/2004; Tarlpa WAD 248/07; Wiluna #3 WAD181/2012.

11 Tarlka Matuwa Piarku Aboriginal Corporation was registered on 21 Nov 2014 following recognition by the Federal Court of native title rights and interests within the Wiluna Determination Area as recorded in *WF (Deceased) on behalf of the Wiluna People v State of Western Australia [2013] FCA 755* and *BP v State of Western Australia [2013] FCA 760*.

12 Operation 'Rangelands Restoration' commenced in 2000 with the acquisition of Lorna Glen and Earaheedy pastoral leases by the WA Government. The area of some 600,000ha is now the site for an ecologically integrated project to restore ecosystem function and biodiversity in the rangelands in collaboration with Martu traditional owners (Miller et al. 2010).

2008.[13] Mungarlu Ngurrarankatja Rirraunkaja Aboriginal Corporation is the registered native title body corporate for Birriliburu.

Maintaining language, culture and traditions is of the highest priority of the Martu, many of whom speak Martu as their first language and maintain strong connections to their Indigenous estates. Preferences are for work 'on country' and maintaining traditional connections to their land. The prospect of working at the mines is highly regarded although working underground is not (MWG 2012).

2.3 Mine environment and rehabilitation activities

Rehabilitation requirements are contained in the revised Jundee Operations Mine Closure Plan lodged with WA Department of Mines and Petroleum and the Environmental Protection Authority (not sighted). The plan identifies the relinquishment processes and criteria. Northern Star's Jundee environment department is responsible for the closure and on-going environmental works.

Waste rock landforms are at various stages of rehabilitation. The two underground portals are within the pits, which remain open with some partial backfilling in parts. The area of land directly disturbed by mining operations is over 2,000 hectares.

The mine sits within a pastoral district. Feral animals are a significant environmental issue. The increasing numbers of wild camels on the Jundee pastoral lease are said by participants to this study to be a growing concern. Feral cats are also attracted to human populations and are regular visitors to the mine village.

Vulnerable native species known to have occurred in the region include the Mulgara, which inhabits spinifex country, and the Mallee Fowl, which favours shrubby areas. Habitats have been adversely impacted by cattle grazing (Toro Energy 2011).

2.4 Indigenous engagement in environment and rehabilitation

The principal mode of engagement between the mining company and local Indigenous groups is through the Wiluna Martu Rangers.[14] The Wiluna Martu Rangers arose out of recommendations in 2010 under the Wiluna Regional Partnership Agreement (RPA) following submissions by Central Desert Native Title Services (Central Desert)[15] to co-develop a Martu Ranger environmental contracting service (Morgan et al. 2015). Up to this time, Newmont's Indigenous employment strategy had focussed on mainstream employment, which was fly-in fly-out for two-week rotations at 12hrs work a day. The program was not successful, with challenges with recruitment and retention of Martu employees. Martu wanted flexible ways to engage with the mainstream economy that promoted maintenance of their cultural practices and met their priority to look after country (MCA and GCN 2013).

A new mode of engagement was negotiated between Central Desert and Newmont that identified opportunities to link the Martu Indigenous Ranger program with environment compliance obligations at the mine. A year-long pilot program was tested through 2011. A favourable evaluation by stakeholders led to a memorandum of understanding between Newmont and the Martu (through Central Desert) in early 2013 (Morgan et al. 2015). The success of the Wiluna

[13] Native title was determined by consent for Birriliburu Part A (application WAD6284/98 Part A)) on 20 Jun 2008. Other smaller areas which made up Part B, together with Birriliburu #2 (application WAD108/2008), and Birriliburu #3 (application WAD50/2010), which were litigated, and Birriliburu #4 (application WAD 299/2011) by consent, were all determined on 6 June 2016.

[14] The Wiluna Martu Ranger program received a Certificate of Merit in 2017 under the WA Department of Mines, Industry Regulation and Safety's Community Partnership Awards.

[15] Central Desert Native Title Services Ltd (Central Desert) was established in 2007 to provide native title services to WA native title groups.

Martu Rangers eventually led to Australian Government support through funding under the 'Working on Country' program in association with the Matuwa and Kurrara Kurrara IPA.

Although local level agreements exist between Jundee and native title holders, the Wiluna Rangers was an expressly commercial arrangement driven by the mine's requirements to meet compliance across an array of environmental regulations. From Northern Star's perspective, the activities performed are by no means philanthropic; it is important work that has to happen, i.e. 'real work'. Intrinsically, this means the work is neither demeaning nor tokenistic. In practice also, the locally based service costs less than what a city-based environment service could provide (interviews).

Northern Star engages the Rangers through contracts with Desert Support Services Pty Ltd (DSS), a subsidiary of Central Desert established to provide corporate services to various native title groups in WA.[16] Rangers are contracted to work at the mine for one week per month for 10-months a year i.e. not summer months of December and January when it is hot and the period when traditional ceremonies are held.

The team consists generally of three to four Martu Rangers supported by a non-Indigenous Ranger Coordinator, a professional role employed by DSS. A mine site compliant vehicle is arranged by DSS, as is selecting the participating Rangers from a pool, giving them notice and assisting with their prior organisation, as well as pick-ups and transport to the mine. Arrival is scheduled for Sunday evenings, with work commencing for the week on the Monday morning. Northern Star coordinates with DSS and a schedule of works for each visit developed according to the mine's priority at the time. Rangers report to environment department personnel.

The comprehensive suite of activities undertaken by Wiluna Rangers are listed in Table 3. Not all these are undertaken on any single visit.

Table 3 Activities undertaken by Wiluna Martu Rangers at Jundee mine

Activities undertaken	Comments
Drill hole rehabilitation	Compliance with Mine Management plan - Department of Mines
Waste dump rehab (seeding)	
Weed spraying	
Borefield water monitoring	
Potable water sampling	Health and safety compliance
Camp swimming pool sampling	Local shire requirement
Feral animal and predator control	Trapping feral cats Camel culling on Jundee pastoral lease*
Flora and fauna audit	Environmental management - EPA
Material recycling	Responsible resource use
Reseeding WRL	Comply with closure plan – Department of Mines
Fire management	Traditional fire management practices proposed over Jundee pastoral lease*

*mentioned by the interviewees as potential opportunity to be undertaken by Rangers

[16] In 2011, Central Desert established a non-profit subsidiary DSS. Its principal activities are: 1) labour hire of casual employees, usually regionally-based TOs undertaking 'future act' and land management activities; 2) Accounting, bookkeeping and human resources services for registered native title body corporates and other Indigenous community groups within the Central Desert region (Central Desert 2018).

2.5 Outcomes and influencing factors

A highly significant aspect is that the commercial arrangements at Jundee have operated continuously since the first contract in early 2012. This relationship survived through the sale of the mine by Newmont, which has provided continuity of employment and training as well as trust building between Central Desert and Northern Star. Through the takeover, Northern Star retained many of Newmont's personnel including key members of the environment department who managed the Rangers contract. This continuity became a critical factor when combined with incoming executive management that recognised the value to the business so kept the arrangement in place.

The mine not only achieves compliance across a range of regulatory obligations, but several other corporate imperatives. These include meeting local supplier commitments and Indigenous employment commitments, and meeting criteria for effective environmental and social governance.

As gleaned from interviews with the DSS, the engagement with the mine was an important catalyst for the formation of the Wiluna Martu Rangers. The on-going arrangement provides consistent and regular work that assists in diversifying both the scope of Ranger work and funding sources. As such the fee-for-service work functions as a critical component toward the Wiluna Martu Ranger system.

The system elaborated by DSS encompass three working components; 1) Birriliburu IPA; 2) joint management with the WA Government on the Matuwa and Kurrara Kurrara IPA; and 3) environmental work on mines (Figure 4). The broader Martu Ranger pool circulates through these components. Moving through each component represents a step-up in the demands and responsibilities required of workers. The three steps are as follows:

1. In the first instance, individuals can be brought in 'green' to the Birriliburu IPA to gain exposure of Ranger work and develop the basic formal Indigenous land management skills and offer exposure to a less strictly structured work environment
2. The second step comes with greater experience and knowledge and entails working with government on the jointly managed wildlife enclosures for protecting endangered species, including detailed data collection and reporting[17]
3. Finally, those with sufficient experience and proven acumen can seek to progress to working in mine land rehabilitation context.

Working on mine environmental management and rehabilitation exposes Rangers to a strictly controlled and highly regulated environment. Work is carefully ordered against daily work schedules and deadlines with a major emphasis on adhering to safety priorities. Life on the site is arranged according to formal protocols and procedures, including in the accommodation village.

Rangers experience new equipment and hone their technical skills in a novel context. The mine's demand for accurate data collection, recording and reporting underlines the importance of scientific approaches. The understanding gained by Rangers assists them to appreciate the need for such methods to be applied on the Indigenous estate to monitor species important to them and the overall health of the country.

[17] Martuwa (Lorna Glen) hosts a jointly managed 1100ha predator-proof fenced enclosure that was constructed in 2009 to protect vulnerable native mammals. Boodies and golden bandicoots have been translocated from Barrow Island where the Gorgon gas field was developed by Chevron in 2003. Other threatened species sourced from other areas are also being introduced. Eventually, Matuwa could support one of the most diverse mammal assemblages in arid Australia that would significantly contribute to their long term conservation (Sims et al. 2017*)*.

Rangers live in the mine accommodation, where nutritious food is routinely available, with access to recreational facilities and personal sleeping quarters. This style of living offers respite from the demands of community life. Living and working with the wider workforce provides opportunities for positive inter-cultural interactions and building interpersonal relationships (interviews).

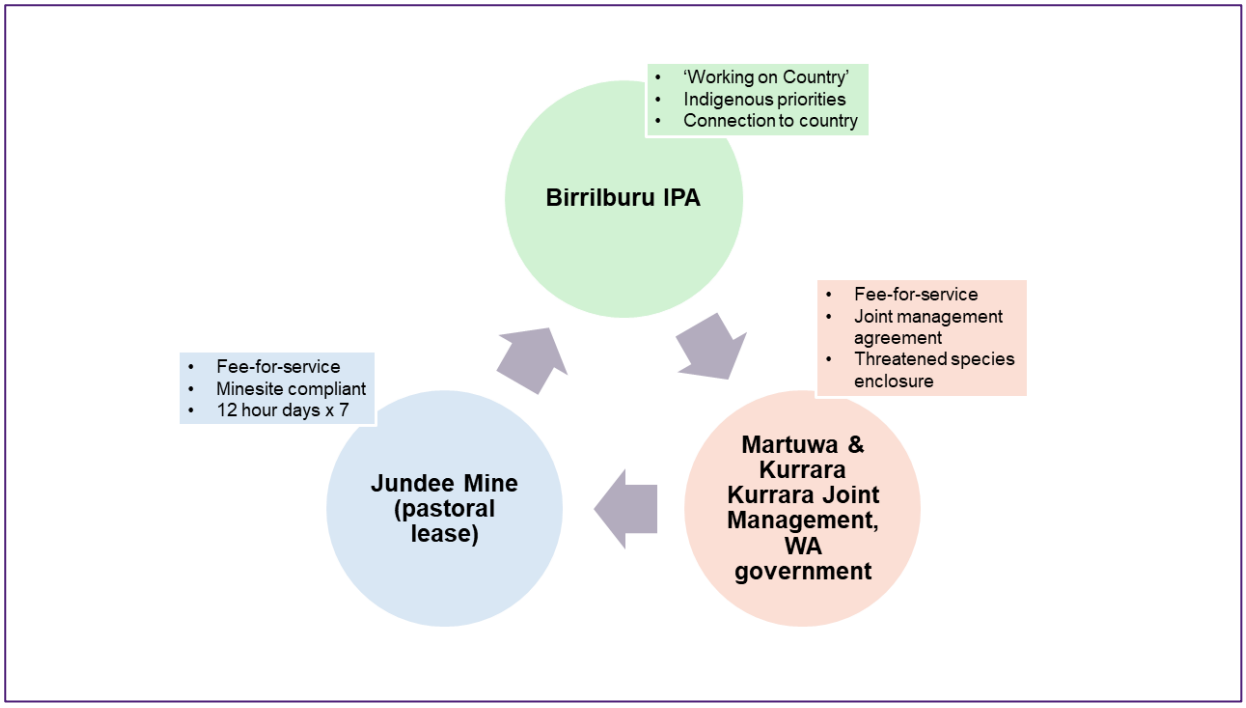

Figure 4 Central Desert DSS Ranger system

At an individual level, such experience builds knowledge of working in a mining context, increases self-confidence, and provides practical opportunities for 'running both cultures together' (Morgan, et al. 2015). For the Martu, these benefits are more sustainable than direct employment. This is because the mode of engagement is not 'fly-in and fly-out' and not based on a repetitive two-week roster. As a result, Martu are still able to participate in community life and meet other cultural obligations (interviews). In spite of the barriers Indigenous people from Wiluna face with gaining direct employment on the mine, it is reported through interviews that at least two Rangers have transitioned into direct employment in other gold mines in WA.

In assessing the success of this model, DSS highlights that over seven years of operation there have been no issues with quality assurance samples taken by the Rangers, and nil safety breaches. Indications are the mine's environmental team would have the Rangers on-site more often if they were available (interviews).

As the model has matured, the retention rate of Indigenous employees has been in the vicinity of 80%. By 2015, some 45 men and 50 women have participated in the delivery of various service contracts, with a core group of 10 Indigenous workers delivering the majority of the work (Tran 2015).[18]

[18] Rangers are offered registered training, with six participants achieving their Certificate II in 2013 and 10 working towards a Certificate III in Conservation and Land Management (Tran 2015).

The fee-for-service Ranger work effectively augments government's 'Working on Country' funding by the Wiluna Rangers. It bolsters the program so it can create further employment opportunities across the Ranger system and affect positively a greater number of people.[19]

Based on the success of the model, DSS anticipates that the Wiluna Ranger team can transition at the appropriate time to an Indigenous-owned land management enterprise managed by Tarlka Matuwa Piarku, the prescribed body corporate for the Wiluna area.

Figure 5 Jundee Martu Rangers measuring tailing standing water level monitoring bores 2019 Source: CSRM

3. Tanami

Mining in the Tanami Desert occurs on Aboriginal freehold land held under statutory land rights. Protection of cultural heritage and the environment are principal concerns of mining agreements made with Indigenous landowners. Early efforts saw newly formed Indigenous Rangers conduct some mine environment management at the region's major long term operation. These arrangements did not persist as an on-going standard. Rather, a hybrid model developed whereby a local community-sourced casual labour hire crew provides general site works, and local Ranger groups are utilised for periodic mine environmental surveys and rehabilitation monitoring. This case also features a unique Indigenous and company collaboration over a regional-scale biodiversity monitoring program conducted over many years until reaching a hiatus. Positive efforts to refine the collaboration in response to the changing mix of asset owners in the region are on-going.

3.1 Mine setting and location

Newmont Corporation's Tanami Operations (NTO) are the region's major current mining operations. NTO are located in the Tanami Desert 545km northwest of Alice Springs along the Tanami Highway, which is mostly unsealed and best suited for four-wheel-drive vehicles. The mine

[19] The annual contract amount is around $150,000. For the company fees equate to the equivalent of a full-time position. For the Martu funds augment government funding and assist the Martu Ranger system to function effectively.

operates on Aboriginal freehold land granted to the Warlpiri landowners under the *Aboriginal Land Rights (NT) Act 1976* (Cwth) and is subject to mining and ancillary agreements signed with the Central Land Council (CLC), a federal statutory body representing Indigenous landowner interests.

Gold production commenced in 1986 and the mine has operated continuously over the 33 years since. Newmont acquired the mine from Normandy in March 2002 (Barnes 2013).[20] With successive expansions, the operation is one of Australia's top five gold producers, with 525,000 ounces of gold produced in financial year 2019.[21] Recent board approval of a second stage expansion pushes life of mine beyond 2040.[22]

The operations comprise an ore processing facility and worker accommodation at The Granites mining lease, and the Callie and Auron underground mine at Dead Bullock Soak (DBS) located 40km to the west. Both underground and open-cut mining has occurred at each site. All current production is from underground at DBS.

As at July 2018, the mine engaged some 1,181 employees and contractors on FIFO rosters via twice-weekly charters (NTO 2018). Approximately 37.4% of the workforce commutes from Darwin, with the remainder from Alice Springs, Perth, and Brisbane. Indigenous employment is 15% (89), mostly occupying operator and mine maintenance positions. Employment from the local communities is very low at 3 to 4 individuals in 2018. Newmont operates a 'Yapa Crew' through a labour hire contract that specifically draws its workers from the Warlpiri communities across the Tanami region. The Yapa Crew is used across the mine on an 'on-needs' basis. The emphasis is on skills development through the provision of general site services, grounds and facilities maintenance, and environmental management activities, as well as supporting Warlpiri landowner site visits and cultural heritage management. The current focus is on revitalising the Yapa Crew as a means to lift local Indigenous participation (NTO 2018).

3.2 Local Indigenous groups

The closest communities are the predominantly Warlpiri communities of Yuendumu (pop. 759) 250km southeast, and Lajamanu (pop. 598) 357km northeast. Over 85% of the population are Indigenous, most of whom speak an Indigenous language at home. The median age is 25 years at Yuendumu and 29 years at Lajamanu. People aged 60 and over constitute only 5% of the population (NTO 2018).

Census data for these remote communities demonstrate high levels of disadvantage. Compared to non-Indigenous households more generally, Indigenous households in these remote communities have lower median incomes, more crowded houses and much lower levels of educational attainment.

Indigenous people are also much less likely to be employed than non-Indigenous people. Indigenous labour force participation (persons over 15 years, who are either employed or unemployed but available and seeking work) is 48%. Employed people, as a proportion of the Indigenous population over 15 years, is 19% (NTO 2018).

Most of the Warlpiri landowners live at these communities. Their long distance from the mine adds logistical complexities in terms of on-going landowner liaison as well as the commute for local Indigenous employees. The population in the communities is highly mobile. As with other remote Indigenous people, Warlpiri practice a 'circular mobility'; often moving between neighbouring communities and regional centres, such as Alice Springs (NTO 2018).

[20] Normandy acquired North Flinders Mines Ltd, which had established the modern day operations in 1986.
[21] Mine expansions occurred in 1989, 1991, 2011, 2015 and 2017. The current expansion is called the Tanami Expansion Project 2.
[22] The *Tanami Expansion Project 2* includes a 1460-metre mineshaft, additional capacity in the processing plant, and supporting infrastructure to enable recovery of ore at a depth to 2140 metres below surface.

NTO lie within the Southern Tanami IPA and is adjacent to the Northern Tanami IPA to the northwest. Details of the Tanami IPAs are summarised in Table 4.

Table 4 Indigenous Protected Areas within the Tanami Area of Influence

IPA name	Declared	Area (ha)	Communities	Ranger group	Manag't plan
Northern Tanami	April 2007	4 million	Lajamanu	North Tanami Rangers	Draft 2006 Current 2015
Southern Tanami	July 2012	10 million	Yuendumu Nyirripi Willowra	Warlpiri Rangers	Jan 2012

Together, the Southern and Northern Tanami IPAs (Figure 6):

- cover more than 14 million hectares of the Tanami Desert, which is 54% of the Tanami Bioregion
- constitute the single largest protected (terrestrial) area in Australia representing 12% of the NSR
- encompass the four main Warlpiri communities where most of the Indigenous landowners of the mine live.

The IPA governance structure is described here as it is a successful model that promotes Indigenous landowner control and decision-making. Understanding this model assists in assessing the value Tanami Rangers bring when engaging them for fee-for-service work. Although the Rangers are primarily focused on IPA objectives, there is an incentive to augment IPA funding through contracts to conduct environment and land rehabilitation activities required by the mine.

Each IPA has a Management Committee made up of Indigenous landowners. It meets twice a year to plan and review management strategies, and set priorities that direct the activities of the respective Ranger groups and the IPA Coordinator.[23] Each IPA also has an Advisory Committee that provides professional guidance.[24] Formal Plans of Management identify the cultural and ecological significance and management priorities. The plans explicitly recognise the cultural importance of the land to Indigenous owners around three priorities areas:

- gaining regular access to country
- ensuring land is looked after
- passing traditional knowledge on to younger generations.

The Australian Government supports IPA projects through multi-year 'Working on Country' funding. Interviews with the CLC confirm that government funding can be supplemented through fee-for-service or other income generating activities, as well as support from private sector and philanthropic organisations.

The CLC administers the funding that supports the Ranger groups and IPA activities. It provides financial and human resource management, manages assets and maintenance services at community-based offices, as well as Ranger training and mentoring. Rangers are engaged as CLC

[23] IPA Coordinator is a CLC Land Management Unit employee accountable to the IPA Management Committee. It coordinates governance arrangements; supervises implementation of the plan of management; coordinates work schedules with Rangers, manages partnerships with other organisations and neighbouring landholders.

[24] The IPA Advisory Committee meets annually and includes the IPA Coordinator, Australian Government IPA program officers, representatives from relevant NT departments, including the Bushfires NT, and conservation agencies.

employees. Each group has a full-time professionally qualified coordinator, which is a CLC land management position.

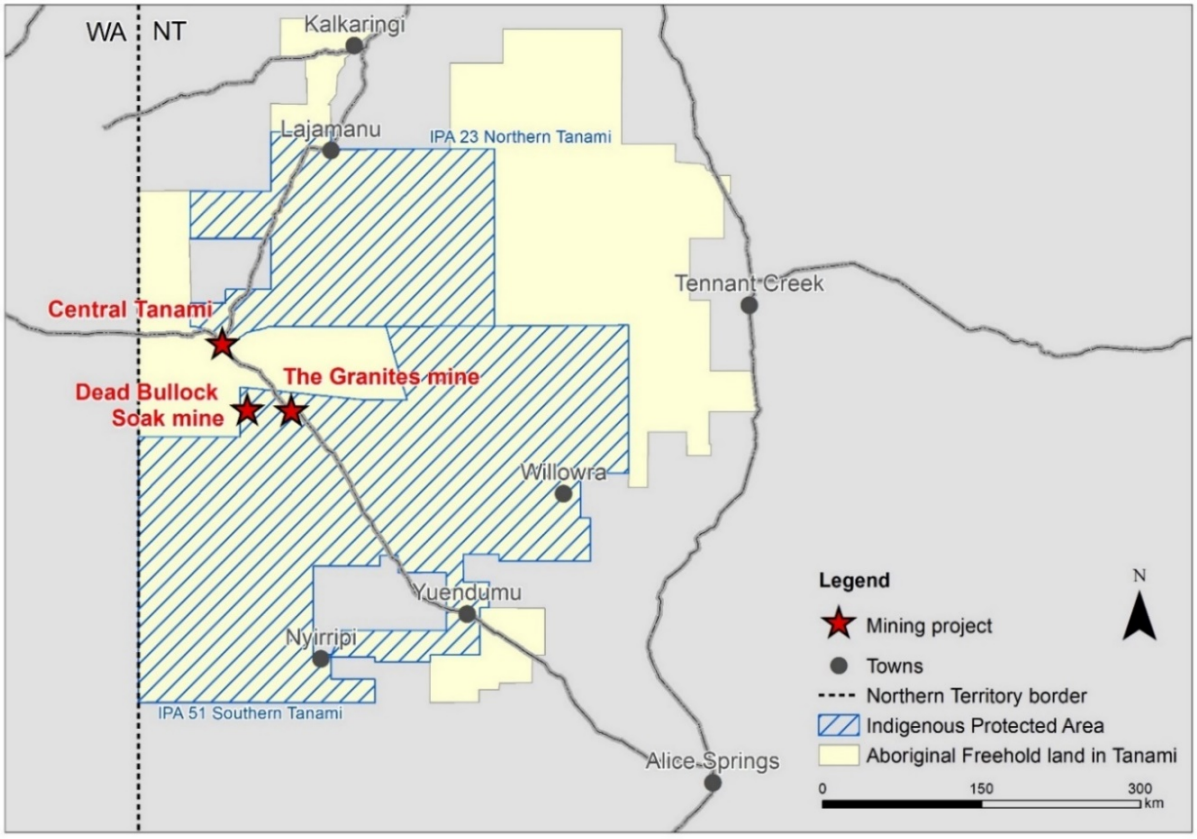

Figure 6 Location of Newmont Tanami Operations and Tanami IPAs

For financial year 2018, the Northern Tanami Rangers had capacity for eight Rangers, working nominally four days per week, generally Monday to Thursday, under flexible arrangements. Southern Tanami Rangers draw Rangers from a pool of some 16 casual Rangers across Yuendumu, Nyirripi and Willowra (NTO 2018).

The following is a list of activities that the Tanami Rangers undertake:

- feral animal management
- weed mapping and control
- fire management (including asset protection burning)
- groundwater monitoring
- biodiversity monitoring
- threatened species protection
- rehabilitation and soil erosion control
- wetland management
- cultural site maintenance
- waste management
- school country visits and community projects.

3.3 Mine environment and rehabilitation activities

NTO rehabilitation requirements are contained in the Mine Management Plan approved by the NT Mines and Energy Division (NTO 2018a); and more broadly, in conditions contained in mine and exploration work program approvals under the mining agreement with the CLC. NTO's environment department manages environmental management and rehabilitation activities and is accountable to the Manager Sustainability and External Relations. The budget is split between environment and closure. Provision is made within the environmental and social responsibility budget for certain rehabilitation and biodiversity monitoring activities. No specific annual budget is made for rehabilitation as funds are allocated based on planned rehabilitation works. An allocation is made against the cost of closure, which is reviewed each year. As with other mines, a security bond is held by the government (interviews).

The site contains open-cut pits at The Granites that have been backfilled with tailings, capped with waste rock and rehabilitated to near surface level. The pit voids at DBS remain open. Some of the disused tailings at The Granites are used as a source of sand for backfilling underground stopes; otherwise the tailing facilities are either currently used or partially rehabilitated. Additional tailings facilities are needed to handle increased storage demand with Tanami Expansion 2. Area under tailings is about 344 hectares. Waste rock dumps cover some 350 hectares (NTO 2018a). Most are rehabilitated and incorporated into the rehabilitation monitoring program. Some are partly used for rock material and/or as operational laydown areas. The total area of disturbed land across the mining leases is some 1600 hectares (800ha at DBS and 800ha at The Granites). Final closure criteria are not yet well defined and will be addressed as life of mine comes to an end (interviews).[25]

Relinquishment processes and criteria are to be put into practice at Windy Hill on the Minotaur mineral lease (ML 23283), located 35km northeast of The Granites.[26] The mine is currently in a rehabilitation monitoring stage of closure. Pit lake water quality is monitored quarterly 'in-house'. The final landscape is to be open void surrounded by abandonment bunds for safety, with a revegetated waste dump representing a low profile hill. Final closure plans being discussed with the CLC are for the return to Indigenous landowners. This site could provide a practical proofing ground for engagement between the mining company, the CLC and Indigenous landowners, and government over relinquishment processes, as currently there are few examples in the NT.

3.4 Indigenous engagement in environment and rehabilitation

Newmont pioneered commercial contracts with local Indigenous groups in the early 2000s using a small team from Lajamanu for weed spraying at The Granites (CLC 2015). These were the 'Wulaign Rangers', established in 2001, being the first Ranger group in the CLC region.[27] According to interviews with Newmont personnel, challenges existed over coordination and readiness of the team. There were issues around ensuring that the participants met the mine safety standards, such as consistency with wearing personal protective equipment and meeting security requirements through criminal checks. Commercial capability was highlighted as a major constraint to effective and sustained engagement (interviews). From the CLC's perspective, the declaration of the Northern Tanami IPA in 2007 brought formal land management objectives to bear that demanded priority over fee-for-service work. As a result, the engagement of the Rangers did not persist as an on-going standard.

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25 This are also additional exploration activities proposed in the 2019 and 2020 exploration work program. NTO anticipates it unlikely that lease relinquishment will be achieved by lease end date of 2023, in which case renewal is a likely option (interviews).

26 Windy Hill operated as a 'satellite mine' between 2003 and 2004. Following completion of ore haulage, rehabilitation of mine facilities and waste rock dumps was completed in 2005 (NTO 2018).

27 The Wulaign Rangers started in 2001 as a 2-person team employed by the then Wulaign Outstation Resource Centre using Community Development Employment Projects funding. (CLC 2015 NTIPA). In 2007, the CLC took on administration and employment of the Wulaign Rangers and in 2009, established a full-time Ranger Coordinator position based at Lajamanu.

An additional influencing factor was that around this time Newmont established the local community-sourced 'Yapa Crew' to provide general site services used across the mine on an 'on-needs' basis (Barnes 2013).[28] Its remit included weed spraying at the mine, which in part usurped demand for the Rangers. Notably, since the establishment of the Yapa Crew there has been movement of Warlpiri participants between the Yapa Crew and the Tanami Rangers. Several members of the Yapa Crew worked first as Rangers then moved to working on the mine. This highlights the impact of individuals' increased confidence and capacity whereby increased employment options become available to them.

This trend is likely to continue with current investment in training and skills development of the Yapa Crew through completion of machine operating and high-risk training competencies undertaken toward Certificate Levels II and III in Civil Construction Surface Operation. This creates scope for the Yapa Crew to be engaged in larger scale aspects of closure and rehabilitation activities, such as civil works. Since revitalisation of the Yapa Crew in September 2019, the scope of works has expanded to include:

- access track remediation
- drill hole collar cutting and rehabilitation
- historical costean rehabilitation.

Against this context, other forms of Ranger engagement evolved through collaborations that were propelled by objectives common to the mine and Indigenous groups around understanding impacts of exploration and mining on biodiversity across the Tanami. Regional biodiversity issues relate mainly to the threatened species in the Tanami Desert such as *Mala* (Rufous Hare Wallaby), W*alpajirri* (Bilby), W*arrana* (Great Desert Skink), J*ajina* (Mulgara) and P*ujarr-pujurrpa* (Marsupial Mole). The importance of the Tanami Desert as an environmental biodiversity hotspot was a key driver for a unique collaboration between Newmont and the Tanami Ranger groups.

In 2005, Newmont partnered with the CLC, Lajamanu Rangers, and a professional ecological firm (Low Ecological Services) to develop the Tanami Regional Biodiversity Monitoring (TRBM) program to trace regional impacts on biodiversity and at the same time enhance training, employment and enterprise development opportunities for Indigenous landowners (Stoll *et al* 2005). At that time, Newmont held vast exploration licences across the Tanami region. The monitoring program involved 89 sites across the region that were sampled annually at commencement, and then every two years up until 2012 when the last survey was conducted; a total of eight (8) surveys.[29] The Tanami Rangers, supported by the CLC and professional ecologists, undertook the surveys with financial and logistical support from Newmont. Although the total funds and value of in-kind support by Newmont have not been effectively tracked and quantified (interviews), based on mobilisation costs and number of survey sites, it is reasonable to suggest it represents a substantial investment.

Each survey generated a significant body of ecological data, which accumulated prodigiously over the years. During this period, Newmont's regional exploration interests contracted to the point where the relevance of data, coupled with complexity drawing conclusions from it, brought a pause to the program. Engagement of Rangers under the TRBM halted whilst discussions continued between the CLC and Newmont on how best to proceed.

During this time, Ranger involvement persisted through the mine's fauna, biodiversity and bi-annual rehabilitation monitoring programs. In 2014, three Rangers from Yuendumu tracked and trapped fauna as part of the work conducted by Low Ecological Services for The Granites

[28] At the height of this program in 2009, Newmont had up 14 local community-based members working on the mine.

[29] At these sites, flora and fauna were surveyed during the late-dry (usually Nov/Dec) or late-wet (usually Feb/Mar) seasons. Each site comprised a 200m x 300m survey plot from which the data was recorded using various survey methods: site descriptions, vegetation transects, bird surveys, small vertebrate trapping, and tracking surveys (TERN 2018).

'Rehabilitation Classification Report' (not sighted). Furthermore, in 2018, four female Tanami Rangers from Yuendumu were involved for one week in the mine's flora and fauna assessment by the same environmental consultants. Other opportunities such as rehabilitation monitoring in 2016, and flora and fauna monitoring of rehabilitated landforms in 2019, were not taken-up due to the timing of the work and non-availability of Rangers. Instead, four members of the Yapa Crew assisted with fauna trapping and monitoring.

In July 2018, TRBM data was made available publicly via the TERN data portal, which was enabled by collaborative data sharing agreement between Newmont and the CLC.[30] According to TERN, 'the dataset fills a huge information gap and represents an invaluable resource for the conservation and sustainable use of one of Australia's most remote and under-surveyed regions'. The data contains records of a number of threatened species including the Bilby, Great Desert Skink, Mulgara, and the Spectacled Hare-Wallaby (TERN 2018).[31] Further analysis of the data will determine the on-going relevance to respective companies. On this basis Newmont and other companies working in the Tanami will determine how best to support the future conduct of the TRBM.

In early 2019, NTO and CLC jointly commissioned the University of Sydney to conduct an independent analysis of the TRBM objectives and make recommendations over the future of the program. In November 2019, NTO environment and social responsibility personnel, met with the CLC Land Management officers, and IPA and Ranger Coordinators, supported by Low Ecology and experts from the University of NSW, to review the report and recommendations. Significantly, this was the first time the principal parties have met as a group since the commencement of TRBM. There was clear agreement over the value of the TRBM and a commitment to extend the program. At issue is the need to have an effective evaluation framework, which accounts for the return on investment and more clearly aligns the program with NTO's broader environmental and social governance strategies and planning, including the company's priority United Nations Sustainable Development Goals. An independently facilitated workshop is planned in April 2020 to further progress implementation planning.

3.5 Outcomes and influencing factors

Fee-for-service work is seen as increasingly important as it offers a way to augment government Ranger program funding and opens opportunities to employ additional people in different work experience contexts (interviews). The success of the program overall means Ranger positions are highly sought after and Indigenous landowners seek more employment for their family members to continue to meet their responsibility to care for country.

In 2018, the CLC commissioned the consultancy firm, Social Ventures Australia, to evaluate commercial opportunities for fee-for-service work across all sectors including conservation, tourism, and mining. It recommended that 'Ranger groups and supporting staff be progressively exposed and enriched through partnerships and alliances including research, public good agencies and commercial enterprises' (CLC 2019).

Since 2018, the CLC's has been developing a nascent 'Ranger Works' supervisor role, currently located in the Employment and Training Unit. This is a practically oriented position that combines business acumen in order to effectively manage the commercial client interface. Customer service skills are needed so that the position can engage positively with clients, draw up quotes and meet clients' needs and schedules. While the CLC is working on its processes for external engagements

[30] Terrestrial Ecosystem Research Network (TERN) tracks ecosystem changes across Australia.
[31] During 2017 and 2018, the CLC and Newmont contract experts from the University of Sydney to review the data, with a view to make the data accessible and useful. Further analyse of the data will determine the on-going relevance to respective companies. On this basis, Newmont will be making further decisions whether to continue the survey.

such as methods for costing work and drawing-up quotes, it is said also there is lot to negotiate internally (interviews).

All Ranger groups have established work plans that takes precedence over potential services to other parties. There are also varying degrees of aspirations for wanting to do extra work outside the established work plans. Some are very keen for different work opportunities, while other groups are quite hesitant. The team coordinators and program managers are conscious of the priorities established under the funding agreements or 'core funded work'. At this stage, it is a matter of balancing priorities between achieving the core-funded work and the Rangers engaging in commercial work.

Although less than 1% of the Ranger program income in the CLC region comes from cost recovery for external bodies, a trend over recent years is for fee-for-service is being undertaken where the external work aligns with the Ranger's priorities and objectives. While annual work plans determined by the Indigenous landowner management committees will always remain core business, external work is done where it presents positive value. Such value may not necessarily be commercially driven. Value is increasingly recognised through enhanced individual skills and organisational capacity, as well, value is derived from developing strategic partnerships, and participating in programs and initiatives that align with Ranger interests and program objectives. Fee-for-service takes engagement into the commercial realm and gives participants exposure to the fundamental mechanisms of business management, such as tendering, contracting, and contract performance.

Evidence for such outcomes also exist at nearby mining assets in the Tanami. Since 2017, the North Tanami Rangers have successfully serviced a two-year contract to collect water samples and standing water levels measurement of groundwater monitoring bores at Central Tanami Mine owned by Northern Star, 100km north of NTO. Northern Star and the North Tanami Rangers have established a good working relationship, which led to an additional contract to conduct perimeter asset protection burning to protect mine infrastructure from wildfires. The first burn was in September 2018 (Figure 7).

Interviews with the CLC revealed that the Rangers find the work with Northern Star empowering as they are being valued for their Indigenous land management expertise and they are consequentially proud of conducting paid work. The Senior Rangers supervise the work as the relationship with the company has developed to the point where the company has determined that no additional supervision is needed. Results of the assays of samples to date indicated high degree of quality assurance with no spurious samples. Also, the service is delivered on a highly competitive cost basis as the Rangers are located in relative proximity compared to mainstream environmental service providers found in the capital cities (interviews).

A further example at Central Tanami is where Indigenous landowners recently identified the need to install protective fencing around a site within the mining lease to which they hold strong historical and cultural attachment. Although the Rangers were technically capable to construct the fence, the caveat was that members of the landowner group should be employed on the task.

In this instance, the senior Rangers could offer supervision and landowners would be engaged as casual workers under the commercial and organisational structures established through the preceding contracts. As the Indigenous landowners mainly reside in a community a fair distance away from the Rangers' base, additional effort and cost is entailed. The value proposition, however, exceeds the impost; as the workers from the landowning group are not simply wanting the benefits gained from employment but also seek to exercise their customary responsibilities and maintain connection to their land.

Figure 7 North Tanami Rangers preparing for asset protection burning at Central Tanami Mine 2018 Source: CSRM

From the IPA management perspective, the extra income creates options to purchase capital equipment; a bobcat in this case. Such equipment would not only facilitate the contracted work but opens the potential to do work on their IPA that is not possible without such equipment.[32]

This example exemplifies the need for personnel and resources dedicated to pursuing the range of beneficial outcomes on offer from fee-for-service work.

From an analysis of these examples from Central Tanami, the research identified a range of capacity and skills development that has resulted from the current engagement of the North Tanami Rangers by the mine on a fee-for-service basis, including:

- **capacity building** - team supervision; management experience and taking responsibility for a commercial arrangement; troubleshooting, solution-finding, developing contingencies; dealing with mine personnel in both professional (work orientated) and casual (camp orientated) settings
- **skills development** - communication and coordination skills, leadership, honing formal interactions in technical and commercial setting, additional technical competencies (i.e. with pumps, meters, water sampling techniques), adjusting to life on the mine site, techniques for managing long working days, enhanced working safely (e.g. toolbox meetings and following mine safety procedures).

These are capacities and skills highly relevant and applicable to the Rangers' other work settings, particularly work on the Indigenous estate. For the mining company, the fee-for-service work using local Rangers accords with obligations under land access agreements, including provisions for environmental protection and rehabilitation; cooperation between the parties; and preferential Aboriginal employment, training, and contracting.

While beneficial social outcomes of Ranger engagement for Indigenous groups are evident, there is also evidence for enhanced outcomes for companies through sharing of Indigenous ecological

[32] Such capital purchases area not necessarily available under government funding agreements.

knowledge. Through engagement of Tanami Rangers on NTO's mine flora and fauna survey, Newmont environmental personnel report gaining new knowledge and survey techniques for threatened species. The female Rangers, in particular, were able to show how the presence of target species can be discerned through their tracks and particular styles of boroughs. This offers a reliable non-intrusive way to determine presence of species.

4. Woodcutters

Woodcutters is presently undergoing rehabilitation and environmental monitoring toward relinquishment. During its operational life there was limited local Indigenous employment. Nor was closure planning adequately covered in the agreement with Indigenous landowners. Since ceasing production, however, the company has pursued Indigenous engagement through mine closure planning and rehabilitation activities. There has been opportunities for landowners to be involved in environmental management and rehabilitation. Additionally, an Indigenous civil and construction business has been involved in earth works undertaken as part of the rehabilitation.

4.1 Mine setting and location

Woodcutters is a closed lead and zinc mine owned by Newmont Corporation located 83kms south of Darwin along the Stuart Highway (National Route 1) and 14kms northeast of the nearest town of Batchelor (Figure 8).

The mining leases straddle Aboriginal freehold land, vacant crown land, and other freehold land. The Stuart Highway forms the eastern boundary of the mineral lease and its north and western boundaries are the Finniss River Aboriginal Land Trust administered by the Northern Land Council (NLC). Nearby is the old Rum Jungle Uranium mine.

Woodcutters is located in Australia's 'top end' that lies in the tropical monsoonal zone. Daily maximum temperatures are warm all year round and well-defined annual wet and dry seasons with an annual rainfall of around 1500mm, which falls mainly between December and April. Vegetation is open eucalyptus savannah. Prior land uses include Aboriginal customary harvest and unimproved pastoral use. Nearby there are commercial crops and orchards.

Woodcutters operated from 1984 to 1999 when ore was depleted. The 15 years of operation targeted near surface high-grade deposits through open-cut mining, then in 1987 underground operations commenced (Noler et al, 2003). It was developed by Northern Territory-based Nicron Resources (now delisted) and taken over by Normandy Mining.

Newmont acquired Woodcutters as a legacy site through its takeover of Normandy in 2002. Since then, Newmont continued decommissioning, rehabilitation, and monitoring activities. The area of mining lease is 700ha, of which 260 hectares are Aboriginal freehold. The intention is to return the part of the mining area not already Aboriginal land to the Aboriginal land trust at the time of relinquishment. Ensuring no environmental liability is passed to Indigenous landowners is a major priority.

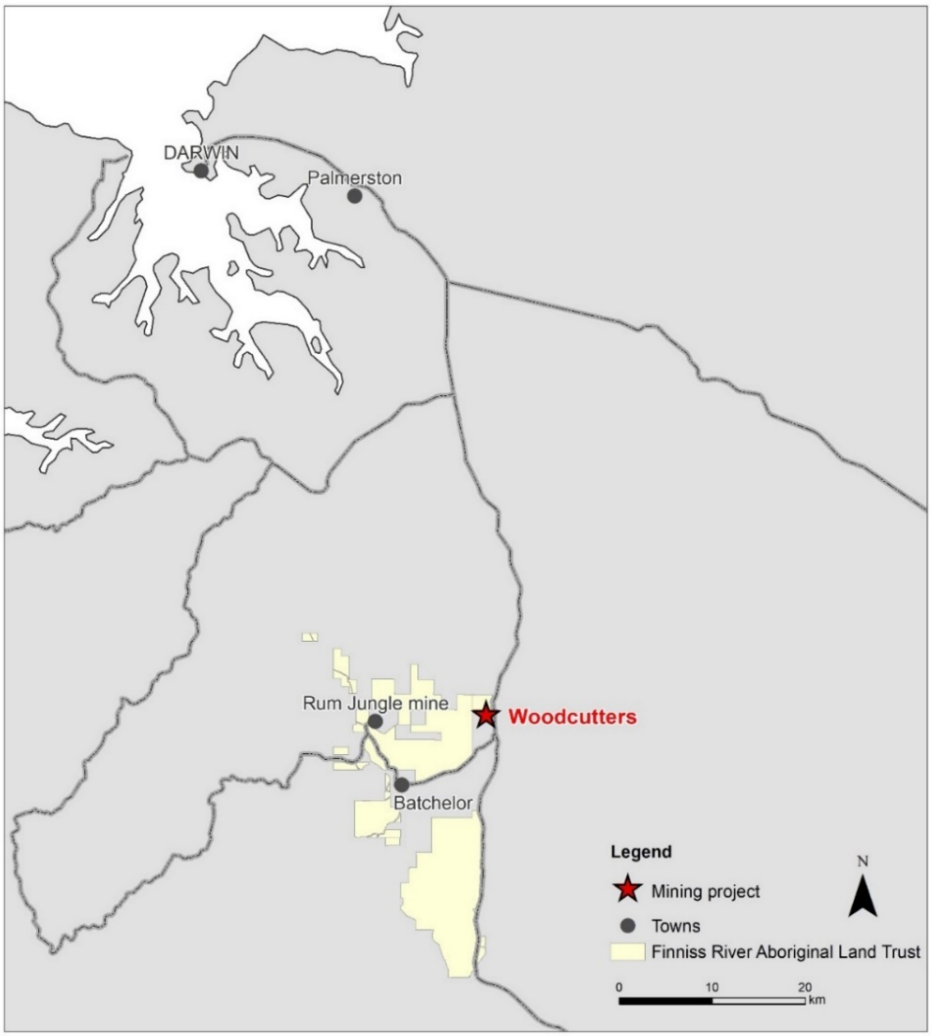

Figure 8 Location of Woodcutters mine

4.2 Local Indigenous groups

Indigenous landowners predominantly live in Batchelor, Adelaide River and Darwin. They comprise two language groups, Kungarakany and Warai. Significant areas of land are held under freehold title under the *Aboriginal Land Rights (NT) Act 1976*, including the Finniss River Aboriginal Land Trust granted following a successful land claim by the NLC.

The Finniss River land claim was heard by the Aboriginal Land Commissioner in 1979, as one of the earliest land claims in the NT. Though the Commissioner's findings were made in 1981 (see Justice Toohey, Finniss River Land Claim) it appears that the mining company at the time did not enter an agreement with Indigenous landowners nor seek any form of consent over the Woodcutters mine. As the deposits were discovered on crown land, it is likely the company's mineral interests pre-dated the land claim in which case an agreement would not be mandatory.

In 1995, over a decade after the mining had begun, Normandy signed the 'Woodcutters Agreement' with the Kungarakany and Warai Indigenous landowning groups. When Newmont acquired Woodcutters as a legacy site, they also acquired the agreement. The agreement contains commitments to local Indigenous employment, training, and Indigenous landowner engagement. The agreement also commits Newmont to undertake closure activities with the objective of handing

over the land to the Indigenous landowners once all agreed-upon closure criteria and objectives have been met.[33]

Though the agreement contained employment provisions for preferential Indigenous employment, it did not contain targets. It seems that very few local Indigenous people or landowners worked at the operation. The focus of the mining company during operation was on production and interviews indicate that at that time they had an 'inside the fence' attitude, with little or no interest in engaging with external stakeholders. As a result, productive relationships were not well developed with local Indigenous people during the operation and opportunities for participation and for direct benefits were missed.

Another feature of the Indigenous governance is the level of contestation that is evident between the main landowner groups that were claimants in the Finniss River land claim. A convoluted and long history is associated with the land claim and subsequent grant of freehold title. This process surfaced tensions between landowning groups and how they are represented. Even though the land claim was successful, contestation persists which creates a challenging environment for Indigenous landowner consultation (interviews).

No Indigenous Ranger groups relevant to this case study were identified. Although the NLC was instrumental in the establishment of the Ranger groups in Australia and sponsors many Rangers across its region, no such groups or associated Indigenous corporations are functioning around Woodcutters. This is predominantly due to the lack of unity between Indigenous landowning groups and the ongoing contestation over various claims of attachment to country. Several Indigenous landowners interviewed were keen to establish a Ranger group. Issues over exactly where they would operate and who would be entitled to participate is not straightforward, which presumably dampens any effort to actively pursue this possibility.

Nevertheless, through engagement over closure, consideration has been given to use the mine site as a Ranger training centre. Many opportunities exist through this kind of initiative, as there are a range of ongoing rehabilitation activities, in particular environmental monitoring and maintenance that will be required for the foreseeable future.

4.3 Mine environment and rehabilitation activities

Active rehabilitation of Woodcutters occurred between 1999 and 2005. The site has been in post-closure monitoring and maintenance since 2006. Currently no infrastructure remains at the mine that is associated with the mine site's history.

Two key projects underpin Newmont's goals and obligations for closure. The first is rehabilitation of the mine site. This project included consolidating waste materials to reduce the impacted footprint, moving contaminated materials away from ecologically sensitive areas, addressing environmental and safety risks by filling the pit void, and creating a more natural landscape (interviews). This included the design and installation of a low infiltration cover over the waste rock facility, relocation of tailings into the open pit, and rehabilitation of the tailings facility footprints. The majority of rehabilitation works are now complete and the site is in a post-closure monitoring and management phase.

The second project addressed an issue that arose in 2011 when salt precipitates formed within the footprints of the reclaimed tailings dams. The precipitates formed in the dry season due to groundwater with elevated sulphate concentrations expressing at the surface in low-lying areas of

[33] The Woodcutters Mine Agreement was negotiated between the NLC, Normandy Metals Ltd, Nicron Resources Ltd and the Finniss River Land Trust in 1995. The Agreement provided for compensation and focussed on recognising of Indigenous interests, and the common desire of the Indigenous landowners and the company for the mine to continue. The mine closed in 1999 and the NLC has been negotiating for rehabilitation of the site on behalf of the Warrai People Kungarakan people.

the reclaimed tailings dams. Newmont consulted extensively with the Indigenous landowners and other relevant stakeholders on remediation options to avoid potential impacts to waterways.

A remediation plan was agreed that involved raising the ground elevation of the reclaimed tailings dam footprints to above the maximum predicted (modelled) future groundwater elevation. The project involved significant earthworks that required bulk material to backfill the tailings dams. Material used came from a specially constructed borrow pit, which was reclaimed at completion and transformed into a wetland, the preferred option of Indigenous landowners. Aquatic ecological experts were consulted on a design that would make the borrow pit conducive to forming a wetland, and hydrologists helped determine seasonal water levels so the borrow pit would be deep enough to retain water year-round and maintain aquatic life.

Newmont's objective is to relinquish the site to the NT Government and Indigenous landowners. Primary on-going environmental and rehabilitation activities at Woodcutters consist of:

- routine surface water, groundwater, soil and vegetation monitoring
- weed and fire management
- drainage upgrades and erosion control.

4.4 Indigenous engagement in environment and rehabilitation

The Woodcutters agreement provides a crucial platform for engagement through the landowner Liaison Committee, which contains representatives of each Indigenous landowner group, the NLC, and Newmont personnel. The Liaison Committee is required to develop and agree on post-mining land use options. Through these processes, Newmont is attempting to develop its own pathway to relinquishment as these processes are not well established in the NT where, as far as can be ascertained, no examples of relinquishment exist.

Stakeholders indicate that the agreement is very 'dated' and is not considered a 'contemporary' agreement in terms of precision given to the relinquishment process. Although the agreement contains commitments for relinquishment and transfer of land to a nominated entity, the company has struggled to identify or establish this pathway with the NT Government. For instance, under the agreement, the administration building was to be handed over to landowners. On testing the building, however, it was found to be contaminated with lead and arsenic. Storage of mine concentrate had not been contained so that dust contaminated the building with metals. It therefore had to be demolished. The building was buried on site, with compensation paid instead.

According to interviews with current and past company personnel, consultation with Indigenous landowners in relation to rehabilitation and developing closure criteria have occurred in two intensive phases. The first period from 2004 to 2009, supervised by a closure expert who had worked in the Tanami, and the second period from 2012 to the present. As a non-operational site, the Newmont legacy manager represents a key individual who determines the nature of Indigenous engagement at any given time.

Since 2005, as part of the engagement processes discussed above, Newmont began to pursue Indigenous employment through the environmental and rehabilitation works. Though there was an approximately four-year lull between 2009 and 2012, prioritising local Indigenous employment was continued by the current legacy manager.

Furthermore, Newmont has worked with Indigenous landowners to revise the agreement, with a focus on closure and closure criteria in particular. The legacy manager organised a series of workshops to develop land management plans and to facilitate landowners to pursue possible business opportunities through rehabilitation. By 2008, agreed closure criteria were developed that included wetlands and conservation areas.

In 2009, Newmont advised the NT Mines and Energy Division of the agreed plan. However, a lack of response from government combined with redundancies within Newmont undermined momentum that led to a lull in planning for several years. It was only once a new legacy manager picked up the task again in 2014 that this was advanced further. Through this reinvigorated engagement, plans were put in place and over the three years from 2016 Newmont spent some $6 million on earthworks and other rehabilitation activities. Indigenous landowner groups as well as other Indigenous people have been engaged in the earthmoving, weed spraying, fire management, and water management. The main vehicle for Indigenous involvement has been through an Indigenous-owned company, Rusca Bros Services (Ruscas), which was awarded two earthmoving contracts.

Ruscas is a well-established civil and construction company based in Darwin. It conducted works between 2016 and 2019.[34] A feature of the contract is to prioritise engagement with Indigenous landowners over training and employment. More than 20,000 hours were logged on the project in 2016/2017 without injury and with an Indigenous employment rate by hours of 85%. A feature of Ruscas' approach is it has 'a job first, train later policy'. At Woodcutters they offered tickets in loaders, watercarts, excavators, rollers and forklifts. They also applied a range of adaptive support mechanisms, including providing transport to site; a bus from Noonamah on the outskirts of Darwin and another from Batchelor.

Ruscas indicate that being an Indigenous company carries culturally-based understanding of mentoring and support needed, particularly for their Indigenous workers who are adjusting to full-time employment for the first time and whose demands from family are not always conducive to consistent work performance. They have wrap-around mental health and well-being programs in place to support workers, which they say is essential to successful Indigenous employment. Cross-cultural awareness training is provided for non-Indigenous senior and administrative staff (interviews).

Through this engagement, Newmont has found that rehabilitation works performed by Indigenous contractors is an effective way to achieve participation by Indigenous landowners and other Indigenous people (interviews).[35]

Other locally based Indigenous companies and Indigenous landowner entities have been involved in other parts of the rehabilitation works. Between 2017 and 2020, Newmont seeded and planted wetland vegetation in the backfilled pit, reclaimed tailings dam footprint, and constructed wetlands using a local Indigenous workforce. Other contracts include weed spraying, provision of tube stock for site revegetation, fire management, and water monitoring. Indigenous landowners' businesses are encouraged by Newmont to tender for the work.

The expertise that exists amongst the landowner groups, some of which have businesses engaged in land management, include:

- a Warai landowner who is contracted as site supervisor and conducts routine environmental monitoring, site maintenance, and weed spraying

- a Kungarakany landowner company, Northern Revegetation, based in Batchelor, which operates a four-person crew on weed spraying and seedling planting. The company also has an established nursery providing native tube stock, seeding and planting services to Woodcutters over the last decade (Figure 9).

[34] Rusca Bros Services Pty Ltd is the civil and construction division of Indigenous Northern Territory family-owned Rusca Group.
[35] Gaining precise figures of Indigenous landowner employed has not been possible due to the confidentiality embedded in the NLC statutory responsibilities and because of contestation over traditional landowning status.

Figure 9 *Wetlands transplanting at Woodcutters by local Indigenous landowner contracting company Source: courtesy of Newmont*

4.5 Outcomes and influencing factors

The Liaison Committee has functioned as an important mechanism to bring Indigenous landowning groups together. Up to three Woodcutters Liaison Committee meetings are required to be held each year, attended by Newmont, Indigenous landowners, and the NLC. The standing agenda includes site updates, progress reports on the rehabilitation, monitoring results, site safety, as well as upcoming employment opportunities.

To assist this process, Newmont has engaged experts in Indigenous facilitation and mediation to assist with the meetings. The consultants have worked with the groups to develop meeting protocols and mechanisms to address substantive issues of the committee in spite of differing views on other matters such as traditional land ownership.

Between 2014 and 2015, Newmont sponsored a number of strategic planning meetings to facilitate reaching agreement on land capability and potential post mining land-use options. A range of options were analysed with final options agreed. While bringing all parties along the rehabilitation planning process has been challenging, the outcomes are positive and impressive. Most importantly, the Liaison Committee represents virtually the only forum where the groups that claim connection and attachment to the area will actively come together. The series of workshops and third party facilitation has effectively contributed to 'breaking the deadlock' that has paralysed productive inter-relationship building between the landowning groups. As an interviewee stated, '… there are many social legacies we had to pick up and engage with'.

The rehabilitation work and post-mining land use discussions has been an opportunity to repair past disputation and through the process also begin to 'heal the country' (interviews). Traditional connections with the land were interrupted by the mining operation. That few Indigenous landowners were previously employed by the mine exacerbated alienation from the country, which is a legacy the company has to currently deal with. The company's engagement with landowners offers opportunities toward their reclaiming of country and re-establishing or consolidating traditional knowledge and attachment.

As part of its site update on the mine closure planning to government during both periods of Indigenous engagement, Newmont prioritised information sharing with the NT Government of its consultative processes with Indigenous landowners. Newmont highlighted the value of engagement as an integral element of the completion criteria thereby enhancing the closure process (interviews). By bringing the government along the journey, one of the key aims has been to set an example as to how to engage Indigenous landowners through the relinquishment process. This is a move toward 'normalising' the engagement process and potentially establishing a basis for developing policies and processes that promote such engagement as standard industry practice. In this way, Newmont sees that it is contributing to the development of clearer and more certain pathways for relinquishment in the NT.

5. Amrun

Amrun is a new mine extending existing long term operations on western Cape York Peninsula in north Queensland. The case features a company-hosted Indigenous environmental management unit made up of landowners from the local Indigenous communities. Indigenous landowners have been involved from the proposal and planning stages, through construction, and into the current operational phase. As skills and capacity are developed, the intention is for landowners to manage their own Ranger group to service the mine's environmental management and on-going progressive rehabilitation.

Amrun is nested amongst other operations on western Cape York and is featured here as an important example of a mining company partnering with local Indigenous landowners over mine environmental management and rehabilitation in the absence of a suitable pre-existing Ranger group.

5.1 Mine setting and location

Amrun is Rio Tinto's newly commissioned bauxite mine located across the Embley River, south of Rio Tinto's Weipa operations on western Cape York Peninsula in far north Queensland, 600km from Cairns.[36]

Rio Tinto's has mined bauxite around Weipa since 1963.[37] Bauxite deposits on Cape York occur as horizontal laterites layers within a few metres of the surface. Surficial mining involves sequenced development of new areas that are mined to three metres maximum depth. The implications are that although large areas are disturbed through this style of mining, the technique lends itself to on-going backfilling and progressive rehabilitation of mined areas as new areas are opened.

Production in 2018 was some 30 million tonnes of bauxite, mostly destined to Rio Tinto's refinery in Gladstone on Queensland's east coast. The total workforce is around 1600, with some 417 Indigenous, including 226 local Indigenous people (interviews).

Amrun initially adds 10 million tonnes to Weipa operations' annual output with an estimated mine life of 50 years. Annual output at capacity is expected to be 22.8 million tonnes, which will replace existing reserves as they are exhausted across other Weipa operations.

Relinquishment processes and closure criteria at Amrun will accord with Weipa operations rehabilitation requirements. These processes are quite mature having evolved over 50 years working with Weipa Indigenous landowners and the relevant Queensland Government

[36] Amrun project was officially opened on 8 Mar 2019. The first ore was shipped Dec 2018.
[37] Rio Tinto (formerly Comalco Aluminium Ltd) have collectively mined at Weipa since 1963. Current mining areas are East Weipa and Andoom deposits located on ML7024 north of the Embley River. It also mines the adjacent Ely deposit (on ML7031) held by Alcan South Pacific Pty Ltd (acquired by Rio Tinto in 2007) under Ely agreement with Indigenous landowners.

departments. The rehabilitation process aims to return the mined land to near pre-mining conditions. As Amrun is a new mine, the forecast is for progressive rehabilitation to start in 2021.

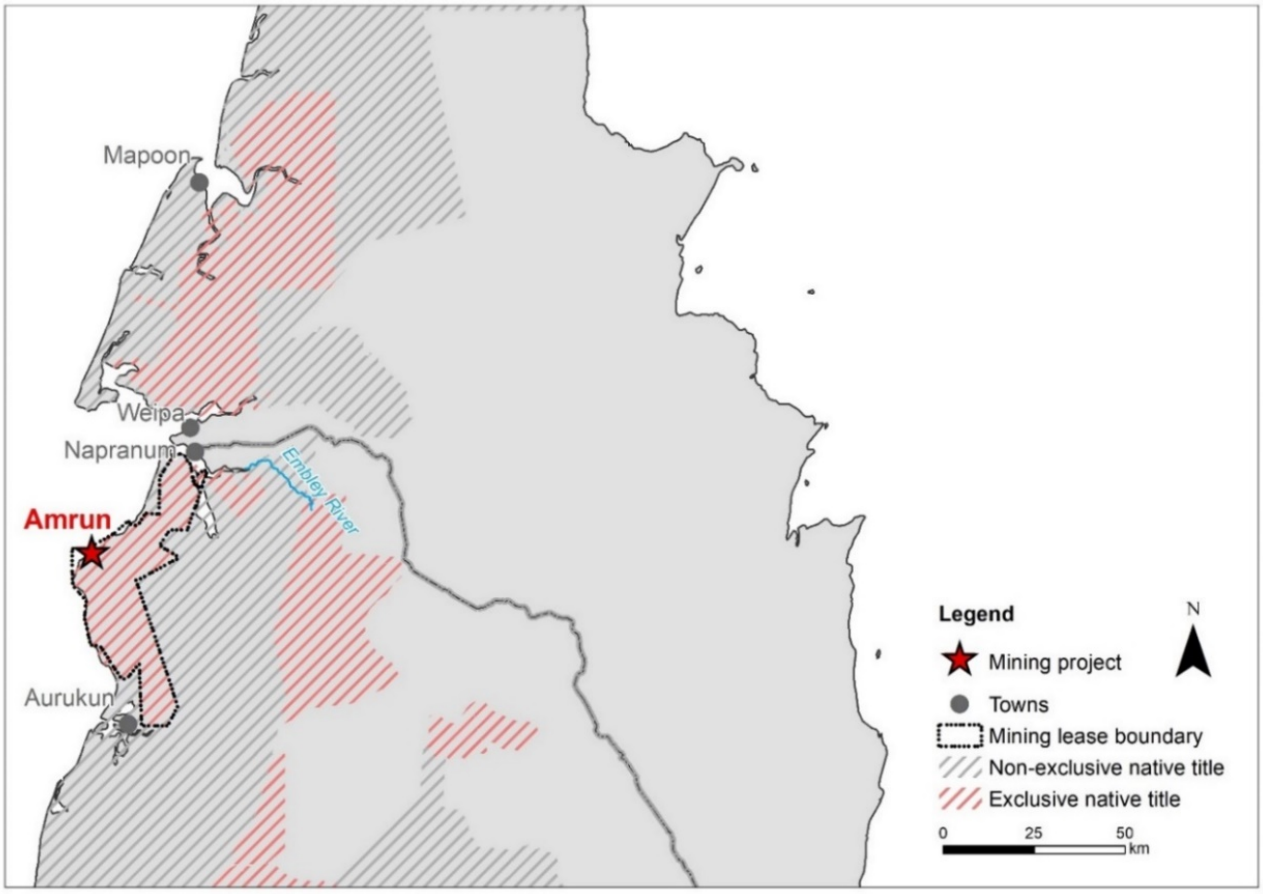

Figure 10 Location of Amrun operation

5.2 Local Indigenous groups

Comprehensive local level agreements exist between Rio Tinto and Indigenous landowners of Weipa operations. The main agreement is the Western Cape Communities Cooperation Agreement (WCCCA) signed in 14 March 2001 with two landowner groups.[38] Affected communities are the Napranum (South Weipa), Mapoon, Aurukun.

The Amrun mining leases (ML7024 and ML6024) are situated between Weipa and Aurukun, which is located to the south and across the Embley River. This is land belonging to the Wik-Waya people. Wik-Waya's exclusive native title rights and interests over the Amrun lease were formally recognised in 2009 through a native title consent determination. Most of the Indigenous landowners live in Aurukun, some 50km south of Weipa.

Each of the affected Indigenous communities hosts an active Ranger program. The programs are funded under either the Australian Government's 'Working on Country' program and/or the Queensland Government's Indigenous Land and Sea Ranger Program.[39] The Mapoon Aboriginal Shire Council hosts the Mapoon Rangers to the north of Weipa operations. The Nanum Wungthim

[38] Another agreement, the ELY agreement is separate agreement. Ely Bauxite Mining Project Agreement (EBMPA) 1997 also applies north of the Embley River.

[39] The Queensland Government also has a Looking after Country Grant program that offers grants up to $75,000 to Indigenous groups for projects that conserve the environment and cultural heritage on country www.qld.gov.au/environment/plants-animals/conservation/community/land-sea-rangers/grants-program.

Land and Sea Rangers care for the Napranum community land adjacent to Weipa. Mapoon and Nanum Rangers are part of the Western Cape Turtle Threat Abatement Alliance (WCTTAA) focused on protecting turtle nests.[40]

In Aurukun there is Aak Puul Ngantam (APN), which is a not-for-profit company established in 2011. APN works with the Wik Prescribed Body Corporate, Ngan Aak-Kunch, and the Aurukun Shire Council to manage land of the southern Wik people mostly south of the Watson River on which Aurukun is situated. For Amrun on Wik-Waya, however, no ready-made Rangers group existed.

Rio Tinto has been working with Wik-Waya landowners to develop a group to look after their land and work on rehabilitation across the full mine life cycle. The aim is that once the skill base within the Wik-Waya are sufficiently developed, along with capacity to independently undertake environmental work, it is intended that the program will transition to a landowner-controlled Ranger program. Wik-Waya landowners' aspirations are for expanded work across other parts of their land.

5.3 Mine environment and rehabilitation activities

Rio Tinto's Land and Rehabilitation Department is responsible for environmental management and land rehabilitation across Weipa operations. It is accountable to government regulating agencies, including the Queensland Department of Natural Resources Mines and Energy, and the Environment Protection Agency.

A rough estimate of area of disturbed land across the total operations is around 20,000 hectares. The Land and Rehabilitation Department rehabilitates around 1,000 hectares per year across the entire Weipa operations. The department operates a plant nursery, manages a native seed collection program with local communities, and employs two five-person crews that conduct rehabilitation activities and report to the Land and Rehabilitation Superintendent.

The department has well established techniques for progressive rehabilitation of mined areas. The first step is for the mining department to contour the area using heavy machinery. The environment department then prepares the surface for seeding using tractors with ploughs. Direct seeding follows using a seeding machine over the prepared area. The nursery supplies root stock for supplementary planting of particular plant species that are required to meet species composition criteria for successful rehabilitation. These include 'cultural keystone species' such as plants that are important to local Indigenous people for food and traditional resources. The progress of rehabilitation is monitored with Indigenous landowner input. External scientific input is facilitated through an advisory panel.[41]

Specific environmental issues in the area include protecting threatened species, such as the Red Goshawk, the rarest bird of prey in north Queensland. The Land and Rehabilitation Department commenced a research program in partnership with the Queensland Government into the Red Goshawk, after a nest was found on the mining leases located towards Mapoon (Rio Tinto 2017). Northern Quolls were also found in the northern lease areas, which is significant as it was thought that the species had been wiped out by feral cats and poisonous introduced cane toads.[42] Since the find, monitoring using motion sensor cameras and tracking studies has been undertaken annually, which has provided valuable insights into Northern Quoll ecology and population

[40] WCTTAA is a partnership of five Cape York Ranger groups, Mapoon, Napranum, Pormpuraaw and Kowanyama, which have been working together for the protection of marine turtles since 2013. APN Rangers do similar work protecting turtles in collaboration with CSIRO apncapeyork.org/.

[41] A Rehabilitation Advisory Panel was established in 2013 to provide leading management of environmental risks associated with rehabilitation and give technical rehabilitation management advice in the application of rehabilitation management for whole of Weipa operations.

[42] Partnership with Aust Wildlife Conservancy to study Red Goshawk Northern Quolls, Nanum Wungthim Land and Sea Rangers work collaboratively on Northern Quoll studies. Not related to Amrun.

management.[43] The Palm Cockatoo, Australia's largest cockatoo, is rare and vulnerable due to habitat loss from mining and other land clearing on Cape York. Rio Tinto partners with conservation agencies to manage habitat offsets to help protect the species, as well as undertakes leading research into species behaviours and habitats to better inform offsets and management of mine operations.

With the port facilities and associated dredging marine, species such as sea turtle rookeries are also monitored for any impact. In rivers to the north of Weipa operations significant populations of the vulnerable freshwater sawfish are also monitored.

5.4 Indigenous engagement in environment and rehabilitation

Local Indigenous input into environmental management and rehabilitation is an integral feature through the mining life cycle at Weipa operations. For instance, local Indigenous people are employed within the Land Management and Rehabilitation teams that operate in the established mining areas north of Amrun (East Weipa and Andoom).

Indigenous landowners, in particular, are also involved through pre-mining environmental and cultural surveys, particularly the identification and management of culturally important 'scar trees'. These trees exhibit markings made by ancestors through the collection of wild bee honey. Landowners also assist in the selection of environmental buffers to help protect areas of environmental significance especially creeks and waterways across Weipa operations.

Other well-established activities include seed collection by the western Cape York Indigenous communities. The seed collection system has evolved over a long period and opens involvement of the whole of community. Each season a list of priority seeds required for rehabilitation is circulated along with a price list Rio Tinto will pay collectors. Community members choose the style and level of involvement. Some individuals take an entrepreneurial approach and enlist family members for mass collection; others are strategic, and target species receiving the highest return. In 2018, seed collection involved 121 Aboriginal people from Napranum, Mapoon and Aurukun. They collected 785kg local native seed. Seed collectors are essentially independent service providers, with seeds paid for by Rio Tinto on a per-kilogram basis (interviews).

At Amrun, special arrangements exist with Indigenous landowners over how environmental management operates. Rio Tinto worked with senior Wik-Waya landowners to develop a dedicated Indigenous Land and Sea Management Program (LSMP) at Amrun. The LSMP is responsible for the environmental and rehabilitation activities. It primarily conducts activities at Amrun, carrying out the same work as other Land and Rehabilitation teams across Weipa operations but informed by Wik-Waya traditional knowledge and practices. LSMP is similarly accountable to the Land and Rehabilitation Superintendent.

The LSMP is made up of two teams of five Wik-Waya landowners. Recruitment of Wik-Waya people into to LSMP is mainly from Aurukun. LSMP candidates are put forward by Wik-Waya elders and employed by Rio Tinto. The teams operate on a 4/5/5 'lifestyle roster'.[44]

Each team is supervised by a crew leader, who is not necessarily a landowner. The LSMP Coordinator supervises the teams' work programs. At this stage, primary activities include fire management, weed control, threatened species management, and feral animal control. As mining operations ramp up, rehabilitation activities will commence around 2021 utilising Rio Tinto's established rehabilitation techniques.

[43] Northern Quolls were also discovered on Napranum Aboriginal community land that neighbours Weipa operations. In 2017, Rio Tinto partnered with the Nanum Wungthim Land and Sea Rangers to work collaboratively to learn more about Northern Quoll populations in the area.

[44] The 4,5,5 roster is 4 days on, 5 days off; 5 days on, 5 days off; 5 days on, 4 days off.

Type of activities being undertaken by LSMP at Amrun include:

- fire management including burning around culturally and environmentally sensitive areas
- feral animal management (pigs/dogs/cats control) through spotlighting, trapping and baiting
- weed management including surveys, manual removal and chemical treatment
- turtle management through tagging and turtle nest monitoring work with Western Cape Turtle Threat Abatement Alliance. A Rio Tinto project-imposed target is to reduce predation by 70% (Figure 11)
- marine works including marine pest monitoring, annual dolphin surveys and beach clean-ups.

During construction the LSMP team, along with senior Indigenous landowners, participated in cultural heritage management, including archaeological site surveys and mapping.

Land management activities in 2019 include turtle and dolphin surveys, weed management, orchid monitoring, fire management, feral animal management, and scarred tree relocation. As Amrun transitions into a fully operational site, the LSMP team will work alongside the existing Land and Rehabilitation teams in other parts of Weipa operations to ensure consistency in environmental approaches across the multi-mine operations (i.e. Amrun, East Weipa and Andoom).

Figure 11 Amrun LSMP senior traditional owner mentor on turtle nest protection work 2019
Source: CSRM

5.5 Outcomes and influencing factors

The genesis of the LSMP lies in the Queensland Coordinator General's report on the Amrun (South of Embley) project environmental impact assessment (EIS). Condition 9 of the Coordinator General's report, required Rio Tinto to work with Indigenous landowners to implement a Communities, Heritage and Environmental Management Plan (CHEMP). A CHEMP Working Group was established through the development phase of the project, which consisted of Wik-Waya elders, other interested Indigenous landowners, and Rio Tinto's South of Embley project staff. According to the EIS, the aim of the CHEMP was to 'develop a long term strategy for the management of land access, fire, flora and fauna, signage, feral animals, weeds, environmental

buffer establishment and management, land and sea management, ballast water management, environmental monitoring and cultural heritage' (Rio Tinto 2011). The driver for Rio Tinto is the need to develop collaborative working relationships with the Indigenous landowners on whose land it is mining.

The CHEMP formalised involvement of Wik-Waya landowners in planning and implementation of annual land, sea and cultural heritage management activities in the project in accordance with the WCCCA. The Wik-Waya also used the CHEMP process to pursue their aspirations to support the younger generation with the opportunity to work on their own country, and secure upskilling and training opportunities related to land and sea management activities. Wik-Waya landowners maintain a strong connection to their land and hold important aspirations for the younger generations to understand their culture and responsibilities as traditional owners. Maintaining their sense of cultural identity is one of the Wik-Waya peoples' main priorities (CHEMP 2011).

The Wik-Waya wanted this to happen through their own landowner-controlled Ranger group. The APN Rangers (mentioned above) already operated in Aurukun. Their focus is largely to the south of Aurukun, and with the Amrun project lying to the north, the Wik-Waya saw the opportunity to establish a Ranger program to operate on their land. The immediate prospect for creating a new northern Ranger group, however, was limited by the lack of community-based resources and capacity to support a new Ranger group. As such, the LSMP was established in partnership with Rio Tinto to assist catalyse such a group over time via direct involvement in the environmental management of the Amrun project as Rio Tinto employees.

The LSMP has been operating full-time for the last three years during the construction phase of the Amrun project as part of the Land and Rehabilitation Department. As experience and capacity is gained, the aim is to transition to an independent Indigenous Ranger group auspiced by a community-based organisation in Aurukun. Skills and knowledge developed by the Rangers include adhering to safety procedures, operating ATVs, proficiency with fauna traps, weed spraying equipment and chemical handling, fire management and equipment handling.

Most of the equipment training is conducted by Rio Tinto on-site. All LSMP team members have commenced a Certificate III in Conservation and Land Management, which is consistent with other Ranger programs offered around Cape York and Australia. The LSMP team also works with specialist ecologists engaged by Rio Tinto to advise and manage specific environmental program. For example, experts in managing turtle rookeries are working with the LSMP to monitor sea turtle nests to prevent predation by feral pigs. Sites are identified, tagged, and some equipped with motion cameras to track the hatching process. Specially designed metal mesh covers are also used to prevent animals digging into the nests.

Through such collaborations, the LSMP team also gain new knowledge and skills in ecological management techniques. As well, the LSMP team members bring cultural knowledge to the fore in the mine's environmental management. For instance, in distinguishing between the four species of turtles, ecologists recognise the distinctive pattern of each species shell. Indigenous landowners too identify species using the same method, with certain species holding particular cultural significance to different groups (interviews). They have intimate knowledge of the particular habits of species acquired over many generations of co-existence and harvest that assist with present day scientific monitoring. The LSMP use specially designed 'cyber tracker' tablets to record turtle nesting data. Resource pages within the tablet offer 'identikits' to prompt users over distinguishing features, including shell pattern and turtle tracks. As the tablets are programmable, local Indigenous language names can be incorporated. In this way, the traditional cultural aspects are learned and continued by younger generations (interviews).

As the LSMP is a functional unit within Rio Tinto, it is the company that provides the mentoring and support to the team members. Not all team members have previous employment experience so the

immediate focus is achieving satisfactory levels of attendance and performing effectively through a full-day's work. Adjusting to life on the camp, adherence to the work and camp rules and meeting corporate behaviour standards along with ensuring timeliness and meeting schedules are areas where additional support is needed for some remote community-based people. Understanding and adherence to the 'safety-first' workplace culture is critical. Team members learn standard industry practice such as pre-start processes and checking all equipment is safe prior to use.

LSMP testimonials prepared by Rio Tinto indicate that the experience gained from working on the mine site is highly valued by participants:

> *Since starting, I've completed my first aid and fire extinguishing certificates, and obtained a white card. When I go home, I'm seen as a role model in the community and that's something I am really proud of.*
>
> *People often say the money is good, but for me it's about learning skills in new areas, completing certificates, working hard, and working alongside my older brother – we're trying to encourage our siblings and friends to join us on the project. There's also a great group of people here. Through the project I've been able to meet a lot of new locals and people outside the region who I wouldn't have had the chance to know before.*

Although it may not be about the money for some, others with growing confidence through successful performance in the LSMP are considering other operational roles that attract higher pay such as truck driving (interviews). In this way, Amrun's LSMP is opening valuable opportunities for people in remote Indigenous communities to participate in the mainstream economy through working on their land to assist the company meet its environmental obligations. Through such participation, there are clear indications of increased skills and capacity of participants. Their experience offers family and other community members an important role model and examples of available career options.

6. Summary and conclusions

The study identified innovative and progressive examples of local Indigenous groups working with the mining company on mine environmental management and rehabilitation at each of the sites. These are summarised below.

6.1 Case study summaries

6.1.1 Jundee

Jundee highlighted the effectiveness of collaboration between the mining company and Indigenous repesentative agency in finding innovative ways for landowners to be involved in mining on their land. Progressive options were pursued in light of disappointing results from direct employment in operational roles.

The intersection of priorities was fundamental, with each party identifying a clear business case to drive their engagement. Whereas the mining company achieves cost effective environmental compliance, the Indigenous groups used the fee-for-service contracts as a catalyst for the establishment of a Ranger group. As the surrounding Indigenous-controlled estate expanded through recognition under native title laws, work at the mine was built into a system of regional Indigenous land management that engenders broad participation of local Indigenous groups. The persistence of the arrangements have led to individual Indigenous Rangers accumulating nearly a decade of experience on mine evironmental work and gaining intimate knowledge of the mining footprint. The progam's success brings into consideration how to build-on the postive outcomes and the nature of its further evolution.

6.1.2 Tanami

In contrast, the genesis of Rangers in this case was wholly through government funding available to Indigenous goups holding land of high biodiversity value that qualifies for inclusion in the NRS. Being Aboriginal freehold land, Indigenous rights and interests are well articulated to the extent that the mining operation rests on agreements with Indigenous landowners. Preventing pollution and care of the environment is a fundamental condition under these agreements. Environmental compliance is effectively built into the mine's operation and undertaken 'in-house'.

Early efforts saw Indigenous landowners conduct work on the mining footprint as a way to support the local community's fledging Ranger group. Capacity and coordination was an issue, however, such that arrangements did not persist as an on-going standard. Rather, Rangers are used periodically, when available, on the mine's on-going flora and fauna surveys and rehabiliation monitoring.

With Indigenous groups taking responsibility for managing vast areas of their land through the declaration of IPAs, grant funding compliance and meeting immediate landowner objectives on the Indigenous estate holds primacy. Against this backdrop, a unique partnerhip between Indigenous groups and the minining company coalesced over the need to understand understand regional impacts on biodiversity. An innovative regional biodiversity monitoring program that has operated over many years demonstrates the possibilities available through collaboration around common goals. As the Ranger program has matured and steps are being taken to enhance commercial capacity, further synegies appear available as diversity in work experience and funding sources are increasingly valued.

6.1.3 Woodcutters

Woodcutters highlights the legacy of disengagement of Indigenous landowners during the development and operation of the mine. Resolving Indigenous rights and interests in this area has also proven contentious. These are dual factors confounding the ordered pathway to relinquishment. In this case, the mining company's engagement over environmental management and rehabilitation is the centrepiece of relationship building with Indigenous groups. As the land will revert to Indigenous control, landowner agreement over closure criteria is a pre-requisite to relinquishment. Engagement through the Liaison Committee established under the agreement with the representative body has provided a platform for landowner groups to work cooperatively with the mining company on closure planning. Opportunities for Indigenous groups to be involved in rehabilitation work have resulted, as have contracts to Indigenous businesses to undertake significant civil and other works. Through positive engagement and creating opportunities, the company is carving a clearer path to relinquishment.

6.1.4 Amrun

Rio Tinto's LSMP at Amrun offers insights into a unique company-hosted model for involvement of Indigenous landowners in environmental management and rehabilitation. The company has built-on long established practices and protocols that actively engage Indigenous landowners in cultural heritage and rehabilitation works on their land. As an area stripping operation, the mining company is highly attuned to the benefits from good landowner relationships, particularly on-going access to land.

Through the permitting processes for Amrun, Indigenous landowners articulated their desire to participate in the operation through land management work. At the core of their aspirations is to have their own Ranger group and capacity to manage their land. As no such group existed, the company responded positively to build an environmental management unit integral to the Amrun operation made up of Indigenous landowners. Innovative lifestyle orientated work arrangements that cater to Indigenous priorities and realities of community life are essential elements that support the success of the program. In the absence of a well-resourced Indigenous agency operating in the area, the company has taken responsibility for the necessary wrap-around support for participants who may not possess extensive prior work histories.

The remarkable aspect from this model is the prospect for landowners to be intimately involved through the entire mining life cycle from planning and development through operation and ultimately closure. The benefits available from the engagement have the potential to span decades and benefit multiple generations from the landowning group.

6.2 Analysis of benefits and influencing factors

It is clear that Indigenous landowners value the opportunity to provide professional services to mining companies within the domain of environmental management and rehabiliation. Despite the obsticles and challenging local conditions, the case studies exhibit working and successful collaborations over the provision of environmental services by Indigenous people. Indigenous groups are clearly motivated by opportunites to particate in work meaningful to them as custodians of their land.

While the overall number of Indigenous people participating are modest, the engagement is significant in terms of participation by Indigenous people from the landowning groups and resultant positive outcomes. The opportunities for remote Indigenous communities are significant considering the paucity of jobs in these locations. These are predominantly young populations that have low rates of workforce participation and low rates of employment. Furthermore, at each of the

sites there have been low rates of direct employment of Indigenous landowners in the mining operation, either historically or currently.

The case studies demonstrate various modes of engagement and how these are highly contextual. Where effective engagement occurs, it is a function of coalescing interests of both Indigenous groups and mining companies willing to invest in good environmental outcomes. A central motivating factor for Indigenous groups is to exercise responsibility to look after their land. Mining companies are driven by environmental regulations and obligations under local level agreements.

The presence of a local Indigenous Ranger groups does not necessarily lead to land management work on mines. Conversely, not having a Ranger group does not necessarily prevent Indigenous groups from undertaking land management and rehabilitation work. What is common across the sites are Indigenous landowners' aspirations to have functioning Ranger groups actively managing their land and passing on knowledge of traditional land management practices.

Two of the case studies show how engagement creates valuable pathways to the establishment, development and evolution of Ranger groups. Where Ranger groups do exist, contracts with mining companies offer diversity in career development and augmented funding. Being constituted and controlled by Indigenous owners, the Ranger groups offer an important ready-made interface for relationship building between the mining company and landowners.

From this analysis it is clear that engagement by mining companies with Indigenous groups on environmental management and rehabilitation creates significant opportunities that should be further enhanced, expanded and replicated.

The following section summarises the positive outcomes identified across the zones of intersecting interests of stakeholders as representated in Figure 1. Foremost are those at the interface between Indigenous groups and mining companies. Benefit for each stakeholder group are also identifed, as are the larger scale outcomes that impact structural arrangements between stakholders, as well as outcomes at the national scale.

The preliminary findings regarding key enablers and inhibitors evident in this study are also summarised.

6.2.1 Beneficial outcomes

At the Indigenous/mining company interface

- increased understanding of respective priorities and imperatives for managing land, which breakdowns barriers and promotes further opportunities for positive engagement
- providing a platform for mining companies and Indigenous landowners to collaboratively address rehabilitation issues, closure criteria, and relinquishment
- intimate knowledge of the mine site gained plus greater awareness of environmental and mine rehabilitation equips Indigenous landowners to engage with mining companies in a substantive way on closure criteria and post-closure options
- creating space for individual cross-cultural exchanges that increase mutual understanding and enriching people's lives.

For the mining company

- meeting environmental compliance at the same time as addressing local employment and contracting commitments and industry social performance standards
- mining companies actively contribute to Indigenous land management and regional biodiversity through the skills transfer, enhanced capacity and experience Indigenous

landowners gain from working on the mining footprint. As well, many Indigenous groups manage their own estates under Australia's National Reserve System

- Indigenous landowners bring traditional ecological knowledge that can be integrated into the mine's science-based systems
- increased operational certainty and clearer pathway to relinquishment through improved landowner relationships and trust.

For Indigenous groups

- increasing participants' technical skills, self-confidence, and ability to engage in the wider economy, including opening options for direct industry employment
- fee-for-service carries a level of self-esteem that is discernible on the part of Rangers. These individuals are much needed role models in their home, usually remote Indigenous communities
- gaining regular access to land and meaningful work to 'look after country', maintaining or reactivating connection to country and passing on traditional ecological knowledge to younger generations
- acquiring transferrable knowledge and learning new technologies and methods applicable to managing the Indigenous land estate
- options for developing career pathways across a greater diversity of Indigenous land management work, including access to long term commercial monitoring opportunities
- opportunities for Indigenous civil construction companies to develop specialised expertise in mine-site rehabilitation works.

Structural consequences

- greater recognition of the unique Indigenous land management skill-set that Indigenous land owners bring to bear on environmental management and eco-system services
- contracting to mining companies enables Indigenous groups to leverage continued government support for Indigenous land management on the basis they are providing important locally sourced environmental and rehabilitation services valued highly be the mining industry
- fee-for-service augments government land management program funding so that additional people can be employed and critical capital equipment obtained to facilitate Indigenous landowners objectives on their estate
- providing a catalyst for the establishment of highly valued Indigenous Ranger programs
- creating opportunities for development of Indigenous civil construction companies with specialised expertise in mine-site rehabilitation works, and on-going care and maintenance.

National-scale impacts

- enhanced environmental outcomes, regional biodiversity, ecosystem health through Indigenous links to managing the National Reserve System
- increased employment opportunities leads to less reliance on social security transfers and greater Indigenous autonomy
- addressing underlying social, historical, and cultural factors contributing to poor socio-economic conditions in remote Indigenous communities in Australia.

6.2.2 Influencing factors

Enabling

- mutual understanding of the positive outcomes available and aligning mining company and Indigenous respective priorities objectives
- government funding of Indigenous Ranger programs and Indigenous Protected Areas underpins the ability for mining companies to readily secure fee-for-service work from local Indigenous groups
- support for well-resourced Indigenous representative organisations focussed on positive land management outcomes with professional expertise and commercial capacity
- local-level agreements between Indigenous landowners and mining companies stimulate the imperative for innovative engagement. In each case, local level agreements existed that help bring the parties together and drive the engagement
- Individual champions who provide consistently press their organisations and companies to create and pursue opportunities for positive engagement
- ensuring participants from remote communities have culturally informed ‘wrap around’ support available them and are sustained through a system of mentoring, work ready training, and flexible work arrangements.

Inhibiting

- lack of awareness of the extent of the Indigenous land management skill-set and capacity to undertake a wide range of technical work
- lack of a systematic approach to engagement with Indigenous landowners on environmental management and rehabilitation on mined land
- perceived impost on time, effort, and resources needed to provide ‘wrap around’ support to Indigenous participants from remote communities
- increased complexity where there is disputation between Indigenous landowning groups
- maintaining an efficient and effective commercial interface for delivery of fee-for-service contracts.

6.3 Further research

The value derived from this mode of engagement justifies further investigation into how to consolidate, replicate, and scale-up the opportunities. Further research is proposed to pursue deeper insights and address the limitations associated with the rapid nature of the scoping study.

A second phase of the research could involve either returning to case study sites to share insights with research participants, and/or identifying additional case studies using the existing method and research aims. Several approaches are available for consideration below.

6.3.1 Deeper insights from the same sites using a particpatoy feedback loop

An immediate option would be to conduct further research using the existing case study sites to gain deeper insights into outcomes and how benefits could be replicated and extended.

A collaborative participatory approach would be adopted drawing on the existing networks and participants, and provide participants with the benefit of learning from other locations.

The work would involve packaging the findings into an easily accessible format, and returning to the case study sites to share the collective learnings. The existing participant groups would be actively engaged through a question and reflection process, based on the research findings in order to gain deeper insights.

Such engagement would be a catalyst for creating opportunities and benefits within the domain of this research topic.

6.3.2 Additional Australian case studies using the same method

A further options is to undertake additional case studies at other sites using the same research questions as this scoping study.

Several other mine sites were identified as prospective sites but were not able to be researched because of time and resourcing limitations. Stradbroke Island in south east Queensland was previously identified as a highly relevant case study, as was Newcrest's Telfer mine in Western Australia. Other mines could also be considered.

An option would be to take the material packaged and tested with existing participants from the current study and use this method to draw further insight from the additional case study sites.

6.3.3 Undertake international case studies

Indigenous and First Nation groups in other countries such as the USA, Canada and New Zealand are also involved in environmental management and rehabilitation of mines on their traditional estates. The next stage could investigate international case studies as revealed through an initial desktop review. Such case studies could then be examined through field research and interviews.

The value of this would be to provide a wider range of good practice examples, focusing on enabling factors and test findings in the international setting.

6.3.4 Linking findings to established theory

Further research is justified to link the empirical findings to established theories on the participation of Indigenous people in development activities. The empirical findings provide the basis for a significant contribution to the academic literature and developing practice-based knowledge and frameworks to further enliven this topic.

6.3.5 Other research grant funding

Pursue an Australian Research Council 'Linkage Project' grant in partnership with industry. We would seek advice from UQ's Vice-Chancellor – Indigenous Engagement, including the recruitment of an Indigenous researcher to work on the project with the CSRM team.

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