



mainroads
WESTERN AUSTRALIA

EPBC 2017/7880 Annual Compliance Report

Marble Bar Road Coongan Gorge Realignment
and MO30 Material Pit Expansion: Pilbara
Region, WA.

16 October 2019

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1 INTRODUCTION

Marble Bar Road is a critical access road for a number of mining operations and local communities between Newman, Nullagine, Marble Bar, Port Hedland and several aboriginal communities including Jigalong and Punmu in the north west of Western Australia. The road is also important for both the agricultural and tourism industries within the East Pilbara Region.

Extending 433 kilometres, Marble Bar Road links Newman to Great Northern Highway, east of Port Hedland. The four (4) km section of road through Coongan Gorge was a narrow and winding road with steep descents. This resulted in reduced sight distances and created a difficult environment for larger commercial vehicles to safely and efficiently operate with other vehicles on this section of road.

The Coongan Gorge Realignment and M030 Material Pit Expansion Project provides a safer route through the gorge, especially for large vehicles.

The scope for the project included:

- Realignment and reconstruction of approximately 5 km of Marble Bar Road between 318.4-323.5 SLK. Road formation width varies significantly due to varying batter slope distances (at the narrowest road formation will be 10 metres (m) wide, and in isolated areas road formation will be up to 170 m wide);
- Associated works including significant road batter construction, minor floodways, culverts and off road drainage;
- Development and use of a side track to divert traffic during stages of construction; and
- Extraction of basecourse material from M030 material pit if excess cut material is not suitable for road base. The M030 material pit is located on the Marble Bar Rd at 356 SLK.

The construction of the Project was completed on 24/07/2019.

2 APPROVAL UNDER THE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

Coongan Gorge Realignment and M030 Material Pit Expansion Project was referred to the Department of the Environment and Energy (DotEE) for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The DotEE issued approval (with conditions) for these works to proceed on 15 May 2018 (EPBC 2017/7880).

3 PURPOSE OF THIS REPORT

Construction of the Project commenced on 20 July 2018. This compliance report has been produced as required by Condition 5 of EPBC approval 2017/7880. Table 1 of this report outlines the compliance with each approval condition for the period between 20 July 2018 to 19 July 2019.

4 COMPLIANCE

Table 1: Conditions compliance status

Condition No.	Condition	Status	Comment
1	For the protection of the Northern Quoll, the approval holder must not clear more than 51.41 hectares within the project area.	Compliant	A total of 44.7 ha was cleared within the project area.
2	To mitigate and manage impacts to the Northern Quoll, the approval holder must:		
2a	Only undertake clearing during the period of 1 April to 1 August of any year.	Compliant	Clearing commenced from 20 July 2018 and was completed by 1 August 2018.
2b	Engage a fauna specialist to undertake a pre-clearance trapping and relocation survey for Northern Quolls within three (3) days prior to the commencement of clearing; clearing at any given location may only take place if there was a pre-clearance trapping and relocation survey undertaken within the last three (3) days. The fauna specialist must relocate any Northern Quolls identified within the Project Area during the Pre-clearance trapping and relocation survey.	Compliant	A fauna specialist was engaged to undertake a pre-clearance trapping and relocation survey for Northern Quolls within three (3) days prior to the commencement of clearing. A total of four (4) Northern Quolls were captured as part of the pre-clearance trapping and relocated – two (2) females and two (2) males. The Northern Quoll Relocation – Coongan Gorge Report August 2018, provided as Attachment 4, details of the Northern Quoll trapping and relocation survey.
2c	Engage a fauna spotter to traverse the project area ahead of clearing machinery at all times during clearing - the fauna spotter must relocate any Northern Quolls identified within the Project Area during clearing.	Compliant	A fauna spotter was engaged to traverse the project area ahead of clearing machinery at all times during clearing. The fauna spotter relocated four (4) Northern Quolls identified within the Project Area during clearing.
2d	Install a minimum of eight box culverts during the construction of the road which are suitable for use by the Northern Quolls as fauna underpasses.	Compliant	Eight culverts suitable for use by the Northern Quolls as fauna underpasses were installed during the construction of the road. The locations of the culverts are shown in Attachment 3.
2e	Use remote-sensor cameras to undertake monitoring of all of the culverts for two 14-day periods annually during Northern Quoll breeding season, for a period of three years post construction.	Compliant	Remote-sensor camera monitoring of culverts has not been undertaken to date as the project was completed at the end of the Northern Quoll breeding season. Culvert monitoring will be undertaken during the 2020 Northern Quoll breeding season.
2f	Within one (1) year post-construction, create a minimum of 15 artificial rock habitat mounds within the M030 material pit 356 SLK and/or along the decommissioned roads and side tracks. The positioning of the mounds must be within 2km of existing Northern Quoll denning habitat.	Compliant	23 artificial rock habitat mounds were created within 2km and within the M030 material pit 356 SLK and/or along the decommissioned roads and side tracks. A map showing the locations of the artificial mounds is attached (Attachment 3).
2g	Rehabilitate the decommissioned roads and side tracks to minimise any barrier for movement for Northern Quolls.	Compliant	Decommissioned roads and side tracks were rehabilitated to minimise any barriers to the movement of Northern Quolls. A map showing the areas that were rehabilitated is attached (refer to Attachment 2).
3	Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Compliant	A letter was sent by Main Roads WA to the DotEE on 03 August 2018 advising of the actual date of the commencement of the action being the 20 July 2108 (refer to Attachment 1).
4	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with Section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	Main Roads WA has maintained accurate records in accordance with this condition and their legal obligations, under the <i>State Records Act 2000</i> (Western Australia).
5	Within three months of every 12 month anniversary of the commencement of the action, for five (5) years, the approval holder must publish a report on their website addressing compliance with each of the conditions of this approval. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. The compliance report must include, but is not limited to:	Compliant	The 12 month anniversary of the commencement of the action is on 20 October 2018. This report has been published on the MRWA website. Documentary evidence will provided to the Department prior to 20 October 2019.
5a	the number of Northern Quolls trapped and relocated under Condition 2 (b) and (c)	Compliant	A total of four (4) Northern Quolls were captured as part of the pre-clearance trapping and relocated – two (2) females and two (2) males.
5b	the location of any relocated Northern Quolls	Compliant	The trapped individuals were relocated to one of two suitable habitats 23 km and 30 km west of Coongan Gorge. <ul style="list-style-type: none"> Two females and one male: Zone 50 S768062, E7692892 (23 km west of Coongan Gorge). One male: Zone 50 S768385, E7695037 (30 km west of Coongan Gorge).
5c	the location of culverts and mounds referred to in Condition 2 (d) and 2 (f)	Compliant	Eight culverts suitable for use by the Northern Quolls as fauna underpasses were installed during the construction of the road. The locations of the culverts are shown in Attachment 3.
5d	the results of the remote camera monitoring of culvert use referred to in Condition 2 (e)	Compliant	Remote-sensor camera monitoring of culverts has not been undertaken to date as the project was completed at the end of the Northern Quoll breeding season. Culvert monitoring will be undertaken during the 2020 Northern Quoll breeding season.
6	Upon direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.	Compliant	No direction to undertake an audit by the Minister was received during the reporting period.
7	If, at any time after five (5) years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without written agreement of the Minister.	Compliant	The action was substantially commenced on 20 July 2018.

Attachment 1: Letter Notifying of Commencement of Action



Enquiries: Fiona van Rijnswoud
Our Ref: 18/2978
Your Ref: EPBC 2017/7880

03 August 2018

EPBC Monitoring
Department of the Environment and Energy
GPO Box 787
Canberra ACT 2601

Dear Sir/Madam


Marble Bar Road Coongan Gorge Realignment – EPBC 2017/7880 Commencement of Action

In accordance with Condition 3 of EPBC 2017/7880, Main Roads Western Australia (Main Roads) as the approval holder, is required to advise the Department of the Environment and Energy (DotEE) in writing of the actual date of commencement of action within 30 days of commencement.

DotEE is advised that the action commenced on 20 July 2018. The commencement was in the form of clearing native vegetation on the main alignment. In accordance with Condition 2 of EPBC 2017/7880, the necessary pre-clearance trapping and relocation survey for Northern Quoll was undertaken by a fauna specialist prior to the commencement of clearing.

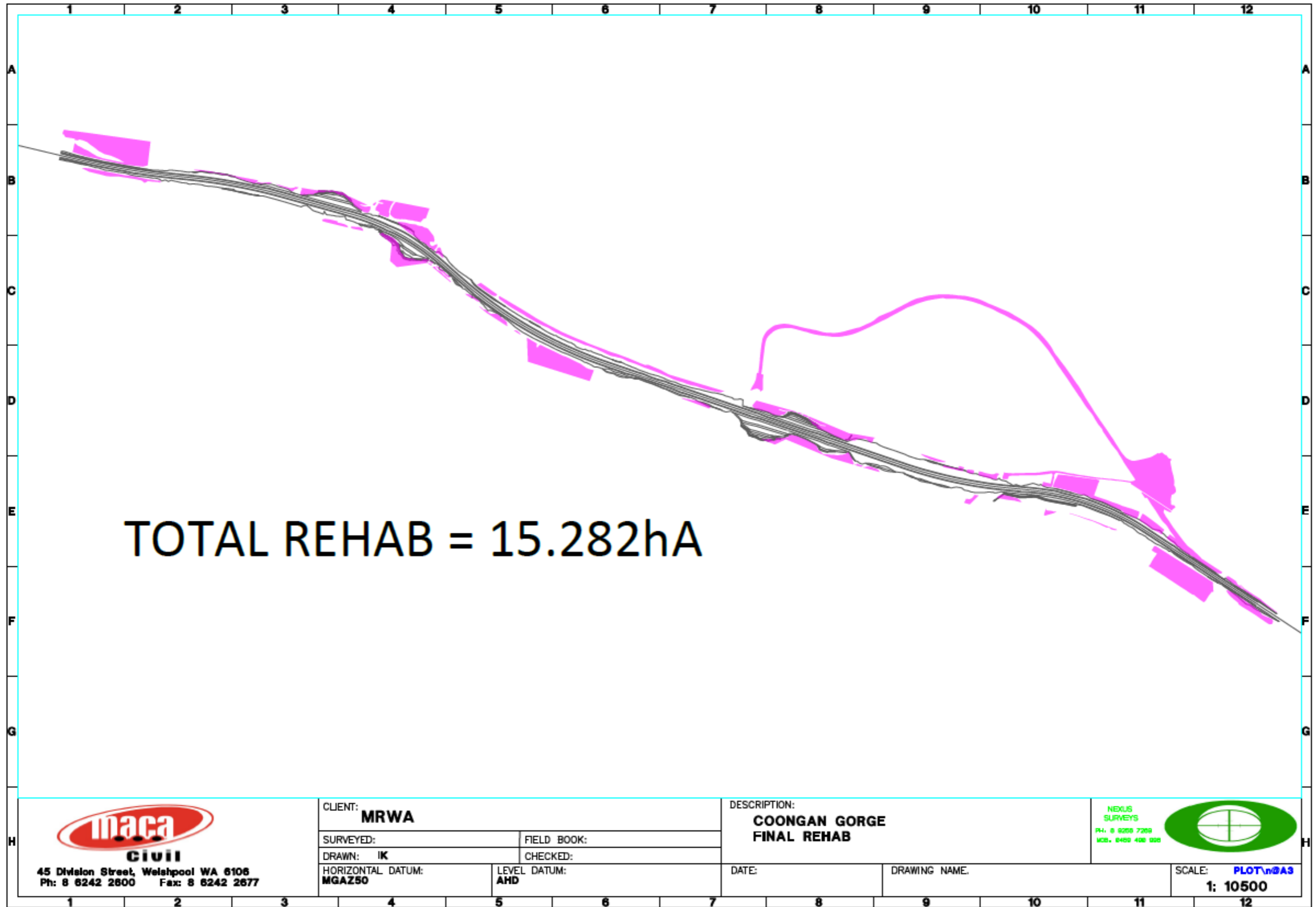
If you have any questions regarding the commencement of EPBC 2017/7880 please contact Fiona van Rijnswoud on (08) 9323 4584 or by email at fiona.vanrijnswoud@mainroads.wa.gov.au.

Yours sincerely



Chris Raykos
Project Director

Attachment 2: Map of Rehabilitated Areas



45 Division Street, Welshpool WA 6106
 Ph: 8 8242 2600 Fax: 8 8242 2677

CLIENT: **MRWA**

SURVEYED: _____ FIELD BOOK: _____

DRAWN: **IK** CHECKED: _____

HORIZONTAL DATUM: **MGAZ50** LEVEL DATUM: **AHD**

DESCRIPTION:
**COONGAN GORGE
 FINAL REHAB**

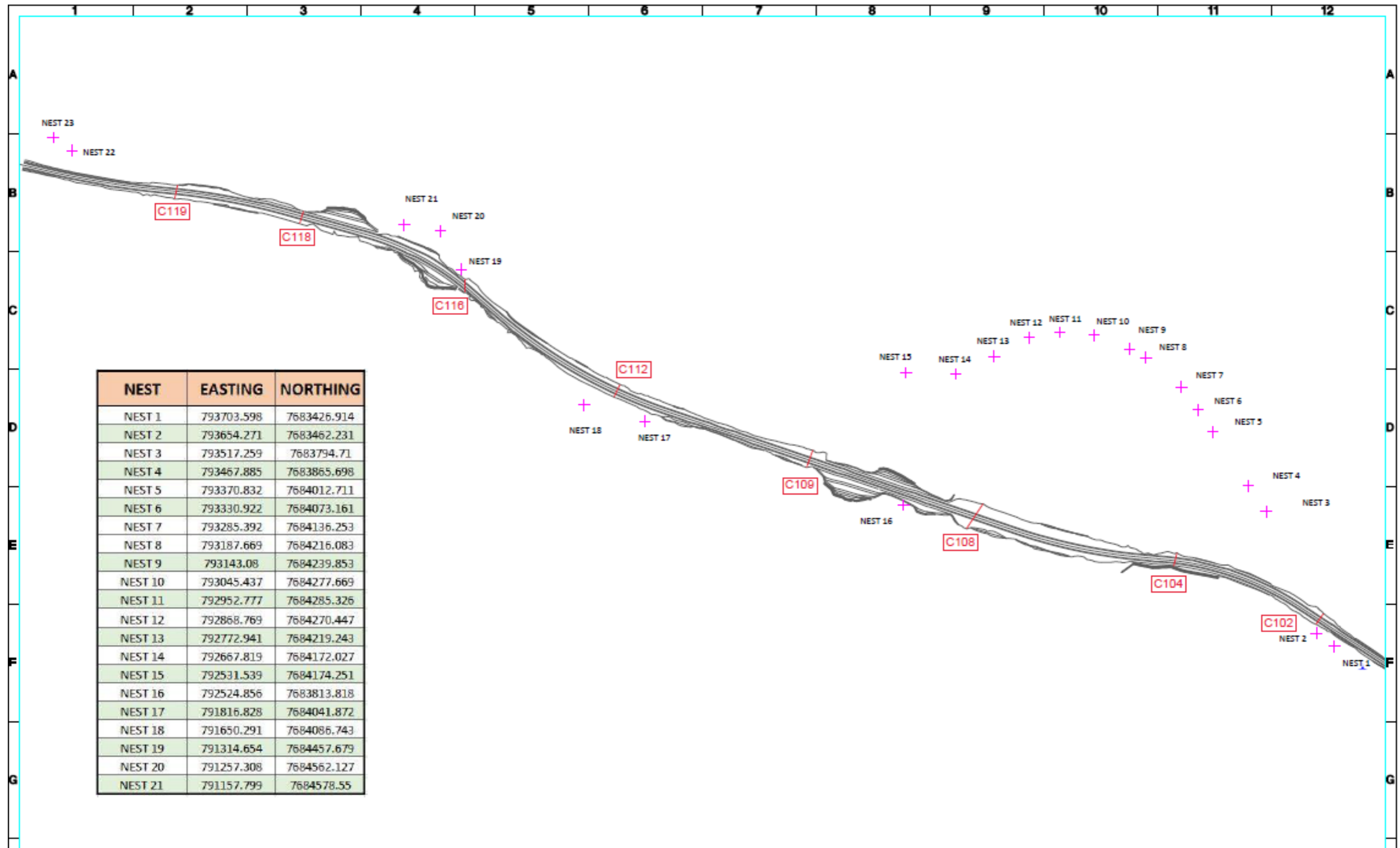
NEXUS
 SURVEYS
 Ph. 8 9288 7288
 Mob. 8488 488 088





DATE: _____ DRAWING NAME: _____

SCALE: **PLOT\m@A3**
1: 10500

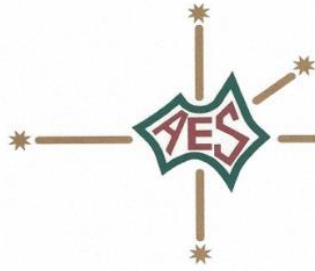
Attachment 3: Map of Artificial Rock Mounds



NEST	EASTING	NORTHING
NEST 1	793703.598	7683426.914
NEST 2	793654.271	7683462.231
NEST 3	793517.259	7683794.71
NEST 4	793467.885	7683865.698
NEST 5	793370.832	7684012.711
NEST 6	793330.922	7684073.161
NEST 7	793285.392	7684136.253
NEST 8	793187.669	7684216.083
NEST 9	793143.08	7684239.853
NEST 10	793045.437	7684277.669
NEST 11	792952.777	7684285.326
NEST 12	792868.769	7684270.447
NEST 13	792772.941	7684219.243
NEST 14	792667.819	7684172.027
NEST 15	792531.539	7684174.251
NEST 16	792524.856	7683813.818
NEST 17	791816.828	7684041.872
NEST 18	791650.291	7684086.743
NEST 19	791314.654	7684457.679
NEST 20	791257.308	7684562.127
NEST 21	791157.799	7684578.55

 Maca Civil 45 Division Street, Welshpool WA 6106 Ph: 8 6242 2800 Fax: 8 6242 2677	CLIENT: MRWA		DESCRIPTION: COONGAN GORGE QUOLL NEST LOCATIONS		NEXUS SURVEYS Ph: 8 6250 7200 Mob: 8459 490 990 
	SURVEYED: _____ FIELD BOOK: _____		DATE: _____ DRAWING NAME: _____		
	DRAWN: IK CHECKED: _____		SCALE: 1: 9500		
	HORIZONTAL DATUM: MGAZ50		LEVEL DATUM: AHD		

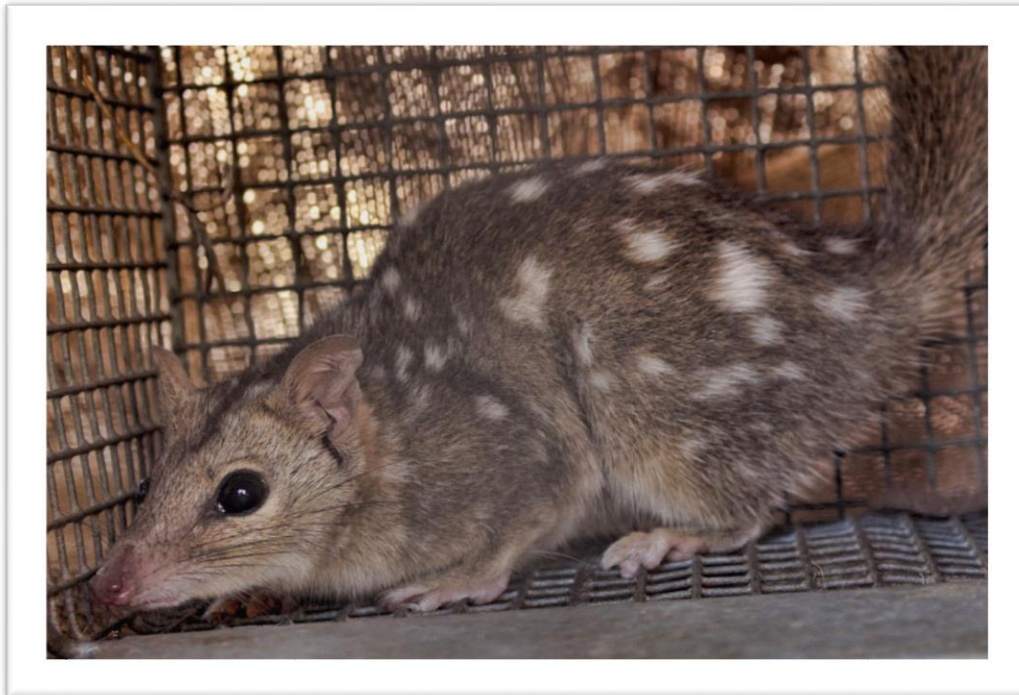
Attachment 4: Northern Quoll Relocation Report



Australasian Ecological Services
PO Box 312 Wanneroo, WA 6946 Tel: 61 8 9306 1642 Mob: 0429 081 702
Email: austecol@bigpond.net.au

Northern Quoll Relocation- Coongan Gorge

Report to Mining and Civil Australia (MACA)



August 2018



Above - Coongan Gorge

Front Cover – Northern Quoll (*Dasyurus hallucatus*) relocated.

Introduction

The Northern Quoll (*Dasyurus hallucatus*) is listed as Endangered under the Commonwealth Environmental Protection Biodiversity Conservation Act (1999) and is listed under Schedule 2 (Endangered) under Western Australia's Biodiversity Conservation Act (2016). This carnivorous marsupial has suffered a substantial decline in numbers, has undergone a large reduction in range and populations have become fragmented. In particular, there is now an isolated population in the Pilbara that is no longer contiguous with populations further north in Western Australia. These changes have occurred as a result of pressures from feral predators and habitat loss from clearing and degradation. In addition, the species is now being threatened by the migration of the poisonous Cane Toad (*Rhinella marina*) into Western Australia, which is lethal to quolls that consume it.

Main Roads Western Australia (Main Roads) is currently upgrading a section of Marble Bar Road at Coongan Gorge in the Shire of East Pilbara. The project includes the realignment and reconstruction of approximately 5 km of Marble Bar Road, connecting Port Hedland to Marble Bar, to improve road safety. The associated works include significant road batter construction, minor floodways, culverts and off-road drainage and some possible development (GHD 2016c). Mining and Civil Australia (MACA) are the Project Managers for this upgrade.

GHD conducted a Level 1 Fauna Survey of Coongan Gorge, in 2016, as part of the environmental impact assessment necessary for this project GHD (2016a). They determined that the Northern Quoll was present based on their finding scats and tracks and capturing photographs of Northern Quoll on camera traps. Quolls were captured on camera in four different locations in the gorge, and this appeared to involve several individuals. Following this, the Draft Marble Bar Road (M030) Coongan Gorge Realignment Northern Quoll Management Plan was produced, and assessed by the Department of Environment and Energy (Astron 2017).

The clearing permit CPS7549 for this project specifies that the Northern Quoll, in the Coongan Gorge area, must be relocated immediately prior to this area being cleared (Figure 1) and the quolls subsequent use of the wildlife underpasses, provided, be monitored for the following three years. MACA awarded a sub-contract to Australasian Ecological Services (AES) to conduct both the relocation and monitoring works. This is a report on the relocation of the Northern Quoll from Coongan Gorge.

Methods

The Northern Quoll relocation method was designed according to best practice relocation procedures under a Department of Biodiversity, Conservation and Attractions (DBCA) Regulation 15 salvage permit and the guidelines described in the draft management plan (Astron 2017).

As described in the management plan, a reconnaissance survey of the rocky habitat and a survey of the foraging habitat were conducted to determine where the traps should be set. A reconnaissance survey was also conducted searching for suitable release sites within 40 km of the Coongan Gorge.

Reconnaissance and foraging area surveys were also conducted in the M030 Materials Pit clearing envelope. A rocky cliff area near the pit was identified as possibly supporting Northern Quoll by providing den habitat. However, the *Triodia* habitat between these cliffs and the edge of the existing pit was in poor condition due to cattle trampling it. AES personnel were advised that the actual materials pit would be very small and focused elsewhere in the clearing envelope in order to obtain the materials needed (M. Arnold, MACA pers. comm.). On that basis, it was determined that there was no reason to trap for Northern Quoll there, providing the extraction of material and plant activity was kept at least 100 m from the rocky cliff landscape. It was recommended that at least 100 m of habitat was left between this potential den habitat and the quarrying activities, to ensure the quoll could emerge from their dens, feed immediately outside the dens and also move side-ways out into the wider, better quality, foraging habitat relatively undisturbed.

The DBCA and the management plan require that the local Northern Quoll population be relocated immediately prior to the area being cleared, to prevent neighbouring quoll from repopulating the area before it's cleared (i.e. the trapping will be dovetailed with the clearing, such that no more than three days elapse between relocating and clearing). Due to the large size of the area to be cleared and length of time estimated for the clearing (approximately 5 - 10 days) (Michael Arnold, MACA pers. comm.), the relocation was designed to ensure that this dovetailing could occur. The clearing area was divided into three parts for trapping purposes (Figure 1). The relocation work was then conducted as a rolling relocation, of overlapped trapping, in front of clearing, such that clearing could keep pace with the relocation ensuring the three day limit was adhered to.

Under a DBCA Regulation 15 salvage permit, evidence must be shown to the DBCA that all trappable individuals of the target species, that are potentially using the clearing area, have been relocated. This is normally done by trapping until a substantial decrease in numbers of individuals caught per trap night is obtained, usually to zero. It was expected that this would take a minimum of four nights. After four nights insufficient individuals had been trapped, but there was evidence that quoll were still present, so three extra nights of trapping were conducted.

Trapping was focused, as per the management plan, at intervals of no less than 50 m, but traps were placed to increase the probability of capturing the target species in the vast landscape. Traps were focused initially on drainage lines, which were more likely to support small vertebrates and invertebrates which are the food sources for the Northern Quoll. They were also placed in areas below rocky habitat that looked likely to provide good denning habitat. Traps were not placed in open foraging habitat if there was no rocky habitat closely

associated with it. Fifty cage traps and 10 large Elliot traps were taken to site. The Elliot traps were used specifically to cater for trapping in difficult to access high areas. The traps were rotated through a rolling relocation effort over the three parts. Plates 1 and 2 illustrate the types of fauna habitat trapped.

Part 1 Area

Thirty-two traps were set in Part 1, nominally for four nights. They were set 30 to 50 m apart (Table 1). As insufficient individuals were caught, but were known to be there (see detail in the Results and Discussion section), six extra traps were added and some traps moved, all to higher locations within the rocky landscape, requiring substantial extra effort to place and service them. In consultation with DBCA, it was also decided that two extra nights of trapping be added (i.e. 6 nights trapping was conducted over all of Part 1). Most of the traps were removed after the 6th trap night. However, there was good evidence that there was still quoll present in some of the higher rocky locations. They were clearly visiting/interfering with traps but avoiding being caught (see detail in the Results and Discussion section). Therefore, three traps were left in place in the higher rocky areas and six more traps were added to these areas and left for a further three nights. In total 255 trap nights were conducted in Part 1 (Figure 1 and Table 1).

Part 2 Area

Seventeen traps were set in Part 2 nominally for four nights. Some of these were set in the higher rocky landscape. One extra nights trapping was conducted over the whole area, and five traps were open two extra nights, as per consultation with the DBCA. In total 90 trap nights were conducted in Part 2 (Figure 1 and Table 1).

Part 3 Area

Seventeen traps were set in Part 3 nominally for four nights. Some of these were set in the higher rocky landscape. Four trap nights were conducted (Figure 1 and Table 1). No extra trap nights were conducted, as problems with a very small ant species, prevalent in the Part 3 area, required the closing of many traps (see detail in the Results and Discussion section).

AES personnel serviced traps twice daily. They were closed during the day as Quoll are nocturnal and also because it is dangerous for any animal species to be trapped during the heat of the day. Bait was removed in the morning, in an effort to keep ants away, and then the traps were re-baited in the late afternoon.

The relocation effort was conducted between 14th - 25th July 2018. These relocations were conducted under DBCA Regulation 15 Salvage Permit 11-002466-1. Traps were primarily baited with universal bait including sardines, but omitting the honey, to help avoid the ants. When insufficient individuals were caught, small amounts of cheese, cooked sausage and salami were also added to try and entice the quoll into the traps.

Results and Discussion

The results of the Northern Quoll relocation are summarised in Table 1. A total of 418 trap nights were conducted in the Coongan Gorge between 14th – 25th July 2018. Four Northern Quoll were captured, two females and two males. These were photographed, measured, weighed and their reproductive condition determined and a DNA sample was taken, before being relocated. These individuals were relocated to one of two suitable habitats 23 km and 30 km west of Coongan Gorge (Table 1).

Despite trapping density being higher than the density proposed in the Northern Quoll Management Plan for Coongan Gorge (Astron 2017), initial trapping resulted in only a low capture rate. However, there was evidence of quoll present. The traps were often visited/interfered with. Sometimes bait was taken without setting off the trap, sometimes the trap had been tilted or damaged and/or scats or tracks were evident. Quoll, cats, crows, rats, mice and ants were all possibly responsible for some of this evidence. However, in three cases evidence indicates quoll had visited the traps.

At the western end of Part 1, on the 17th July 2018, a trap was found tilted and damaged with quoll scats in it, indicating the quoll had entered the trap but escaped/eluded actual capture (Table 1, Figure 1). At the eastern end of Part 1, on the 20th July, a quoll had visited a trap that had been placed on loose soil in a steam bed, and left footprints alongside it. In Part 3, on 24th July 18, a quoll visited a trap leaving scats next to the trap. Given the timing and distances between these traps, these visits by quoll are likely to represent the presence of another two or possibly three individuals.

The first female quoll was captured on a rocky hill at the western end of Part 1 on 16/7/18 (Table 1, Figure 1). As a trap interference by a quoll occurred the following night (17/7/18), it was thought that this hill may have been occupied by a number of females. Females are often found denning close together. If this had been the case, then this would have been a very important area for the species. As the male quoll generally die after breeding, the successful rearing of young by female quolls is very important to the continuation of the population. Female quoll have small home ranges and therefore rely on feeding in the nearby landscape. As much of the nearby landscape was about to be completely degraded by clearing, an additional effort was made to trap further on this hill (which was just outside the clearing area) and on a hill next to it (which was scheduled to be cleared including using explosives). This additional trapping took place between 19 – 22 July 18 (Table 1). As a result, an additional female quoll was captured on 20/7/18 in one of the newly placed traps. As there was another trap visit/interference by a quoll the same night as the female was caught, but at the opposite end of Part 1, it is possible that one more quoll was still present when the traps were later removed on the 22/7/18.

One male was captured in Part 2 (20/7/18) (Table 1, Figure 1). One male was captured in Part 3 (23/7/18). As a trap visit/interference occurred by a quoll in Part 3 the following night,

it was concluded that at least one other quoll was present in the area but still avoiding the traps when they were removed on 25/7/18.

	Nights * traps	Total Trap Nights	Dates in July 18	Capture or evidence of Northern Quoll	Relocation site
Part 1 (low)	6 * 32	192	14 th – 20 th		
Part 1 (high but some closed 2 nights)	6 * 6	36	15 th - 22 nd		
			16 th	1* Female Q1(f) Not in, or early in breeding condition	Unnamed Gorge 23km NW of Coongan, Zone 50 S768062 E7692892
			17 th	Quoll captured and escaped leaving scats in trap	
Part 1 (Extra traps in high areas only)	3 * 9	27	19 th - 22 nd		
			20 th	1* Female Q2(f) Early in breeding condition	Unnamed Gorge 23km NW of Coongan, Zone 50 S768062 E7692892
			20 th	Quoll inspected trap leaving footprints	
Part 2	5 * 17 2* 5	85 10	17 th -23 rd		
			20 th	1 * Male Q3(m) In breeding condition	Unnamed Gorge 23km NW of Coongan, Zone 50 S768062 E7692892
Part 3	4 * 17	68	21 - 25		
			23	1 * Male Q4(m) Early in breeding condition.	Unnamed Gorge 30km NW Coongan, Zone S768385 E7695037
			24	Quoll inspected entrance of trap leaving scats	
		Total 418			

Table 1. Trapping effort and results of the Northern Quoll Relocation at Coongan Gorge.

Conclusions

In summary, a total of 418 trap nights were conducted in an attempt to capture and relocate the population of Northern Quoll in the Coongan Gorge. Two female quoll and two male quoll were captured and were successfully relocated to one of two suitable habitats 23 km and 30 km west of Coongan Gorge respectively (Table 1). Indications are that the Northern Quoll population, as a whole, was probably in early breeding condition. It was therefore concluded that the relocation occurred in time to avoid females being caught in traps with large pouch young, and in time to avoid females being separated from their young confined to the den.

The quoll proved to be elusive as is evidenced by the three trap visits/interferences known to have been caused by quoll. It was concluded, that due to trap shyness, at least two individuals were not able to be relocated. However, in consultation with the DBCA, it was considered that 418 trap nights, involving substantial effort moving and adding traps and servicing traps high up in the rocky landscape was a very reasonable effort, made by the proponent, to relocate the population.

References

Astron (2017). Marble Bar Road (M030) Coongan Gorge Realignment Northern Quoll Management Plan, May 2017. Unpublished report to Main Roads Western Australia.

GHD (2016a). Coongan Gorge Road Realignment: Biological Assessment. Unpublished report to Main Roads Western Australia, August 2016.

GHD (2016b). M030 Material Pit Extraction area 356 SLK Biological Assessment. Unpublished report to Main Roads Western Australia, September 2016.

GHD (2016c). Coongan Gorge Realignment Environmental Impact Assessment and Environmental Management Plan, January 2017. Unpublished report to Main Roads Western Australia, January 2017.

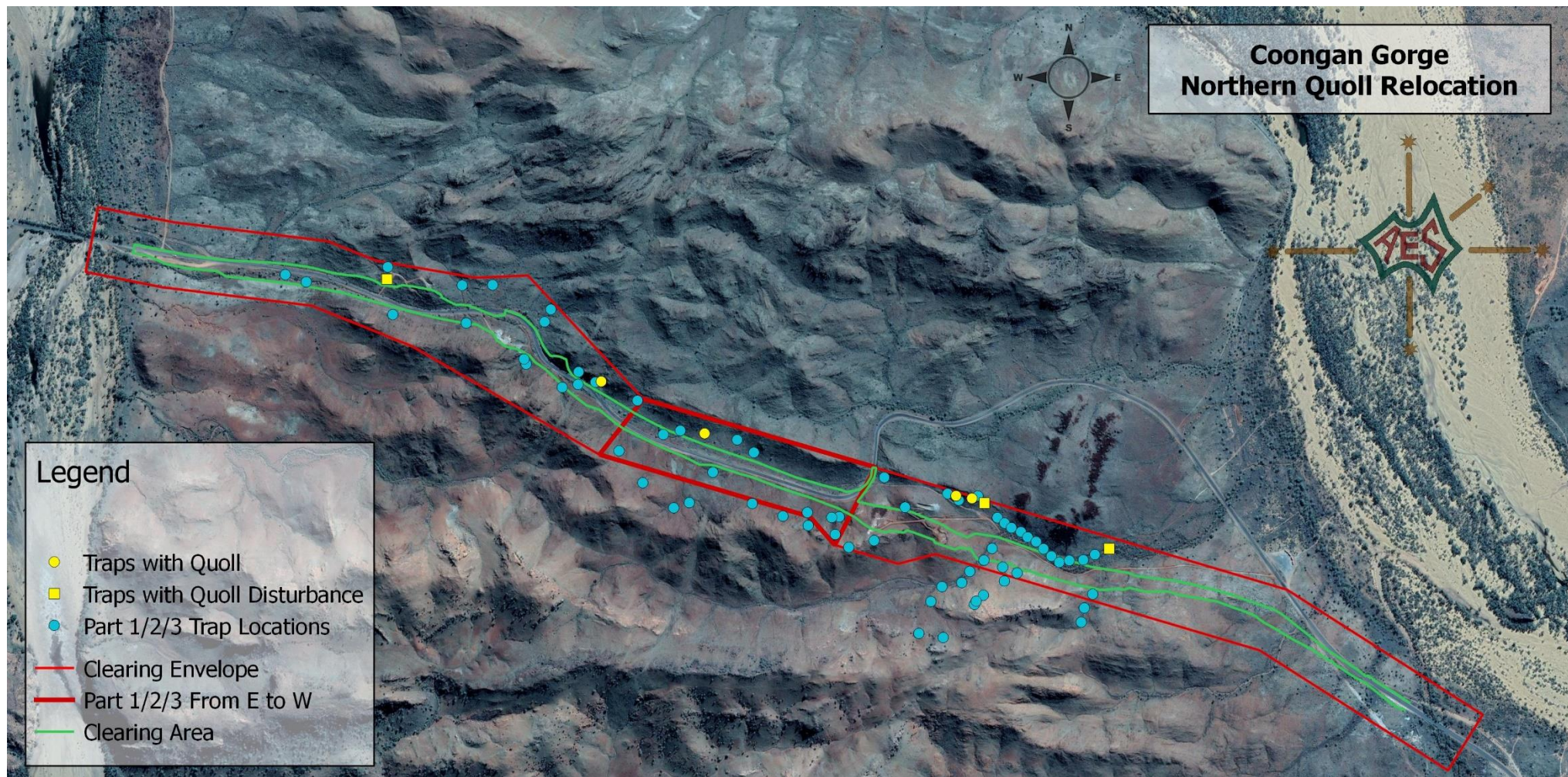


Figure 1. Location of trap sites within Coongan Gorge and the locations Northern Quoll were captured in, or where they were known to visit/interfere with traps.



Plate 1. Rocky fauna habitat suitable for denning with relatively sparse *Triodia* in Coongan Gorge.



Plate 2. Rocky fauna habitat suitable for denning with relatively dense *Triodia* in Coongan Gorge.