

RTA Weipa Pty Ltd

Amrun Project Feral Animal Monitoring Annual Report

August 2019

RioTinto



A report prepared in accordance with requirements of the Amrun Project EPBC Act Approval 2010/5642, Terrestrial Management Plan, Construction Marine and Shipping Management Plan, Operational Marine Shipping Management Plan and Feral Pig Management Offset Strategy.

DOCUMENT CONTROL

Document number: CAL.01-0000-HH-PLN-00027

Version	Purpose	Approval	Submission	Date
1.0	Publication on Amrun Website	Weipa Environmental Specialist	Not Applicable	10/08/2019

TABLE OF CONTENTS

1 INTRODUCTION	4
2 METHODOLOGY	4
2.1. AERIAL PIG CONTROL PROGRAM MONITORING	4
2.2. NIGHT-TIME GROUND BASED SHOOTING	5
2.3. FEEDING/BAITING STATION PIG CONTROL PROGRAM MONITORING	6
2.4. FERAL CAT AND DOGS	6
2.4.1. SPOTLIGHT PROGRAM MONITORING	7
2.4.2. FERAL CAT AND DOG TRAPPING PROGRAM	7
3 SURVEY RESULTS	ERROR! BOOKMARK NOT DEFINED.
3.1. AERIAL PIG CONTROL PROGRAM MONITORING	7
3.2. NIGHT-TIME GROUND BASED SHOOTING MONITORING	10
3.3. FEEDING/BAITING STATION PIG CONTROL PROGRAM MONITORING	10
3.4. FERAL CAT AND DOG PROGRAM	13
3.4.1. FERAL CAT AND DOG PROGRAM SPOTLIGHTING	13
3.4.2. FERAL CAT AND DOG TRAPPING PROGRAM	13
4 REFERENCES	14
APPENDIX A FERAL PIG CONTROL AREAS	15
TABLES	
TABLE 1 PIG CULL LOCATION TOTALS	8
TABLE 2 FEED/BAITING STATION CAMERA OBSERVATIONS 01 AUGUST – 20 SEPTEMBER 2018	12
TABLE 3 FEED/BAITING STATION CAMERA OBSERVATIONS 21 OCTOBER – 08 NOVEMBER	ERROR! BOOKMARK NOT DEFINED.
TABLE 4 FEED/BAITING STATION CAMERA OBSERVATIONS 09 NOVEMBER – 20 DECEMBER	ERROR! BOOKMARK NOT DEFINED.
TABLE 5 FERAL CAT AND DOG SPOTLIGHTING OBSERVATIONS	13
TABLE 6 FERAL CAT AND DOG TRAPPING OBSERVATIONS	14
FIGURES:	
FIGURE 1 OVERALL TRACKS AND ENGAGEMENT LOCATIONS	9

1 INTRODUCTION

This report provides the survey methodology and monitoring data for the Amrun (formerly South of Embley Project) Project feral animal monitoring programs. The requirements to conduct monitoring for feral pigs, feral cats and feral dogs are described in the following Amrun Project Management Plans:

- Terrestrial Management Plan
 - Section 5.6 Feral Pig Control Program; and
 - Section 5.7 Control of Feral Cats and Dogs;
- Construction Marine and Shipping Management Plan:
 - Section 8.6 Feral Pig Management Offset Strategy
- Operational Marine and Shipping Management Plan:
 - Section 7.4 Lighting
- Feral Pig Management Offset Strategy:
 - Section 6.2 Feral Pig Monitoring; and
 - Appendix D Section 3. Monitoring Techniques

This report on implementation of the monitoring programs is produced to align with the annual reporting requirements for survey methodology and data in accordance with Condition 57 of the *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999* approval EPBC 2010/5642. This second annual report presents monitoring methodologies and observations as implemented between 12 May 2018 and 12 May 2019.

In accordance with EPBC 2010/5642 Condition 47 the information from this and future annual reports will also be used to inform future revisions of the Operations Marine and Shipping Management Plan.

2 METHODOLOGY

2.1. Aerial pig control program monitoring

Aerial pig control was to be implemented on the Northern, Thud – Norman, Amban, Southern Beach Sections, as well as the waterholes shown in Figure 1 of Appendix D of the Feral Pig Management Offset Strategy. Aerial shooting was restricted due to safety risks in close proximity to the active construction areas on the Boyd Bay, Boyd – Pera, Pera – Thud and northern part of the Thud – Norman beach sections. An initial overview flight was conducted the day before the pig control

program commenced to assess the level of pig activity and presence of water. During the aerial pig control program the number and location of pigs shot and high pig activity areas were recorded and mapped. The aerial pig control program was conducted from a Bell 206 'Jet Ranger' conducting a low level (tree top) and low speed strategy. Shooting was conducted across three sorties each day of three hours each, to maximise shooting times. The team utilised GPS tracking software to monitor progress on target areas and plot successful engagement activities. The Program was conducted by professional trained marksmen with a high degree of professionalism in the delivery of humane and ethical program execution which links to its accurate reporting strategies.

Visual monitoring of the scavenger activity was completed by the LSMP team. Records of dogs, pigs or congregations of aerial predators were also captured.

2.2. Night-time ground based shooting

Ground-based shooting was conducted at night in order to successfully remove known nest-predating boars along the Amrun foreshore. Ground based shooting was conducted at beach sections known for previous pig and predation activity, from suitable vantage points for beach coverage.

In 2018 the establishment of bait stations during ground based shooting was trialled to increase the likelihood of removing pigs in those beach sections. If successful going forward the baiting program combined with ground based shooting at bait stations would be used removing the need to use 1080 which takes considerable time and has limited success.

The equipment selected for the night shooting included:

- Specifically equipped vehicle for night operations and safety
- Thermal Rifle Scopes
- Thermal Spotting Equipment
- Infrared Spotting and Scope Equipment
- Mobile Phone / Sat Phone / UHF Radio / VHF Radio and Personal Locator Beacon for Safety and Communication

The Program was conducted by professional trained marksmen with a high degree of professionalism in the delivery of humane and ethical program execution which links to its accurate reporting strategies.

As per the request of the Traditional Owners pigs shot during night time ground based shooting were burnt in-situ to prevent the carcass rotting on country and making elders sick. All carcass were completely burnt through within 24 hours of being shot.

2.3. Feeding/baiting station pig control program monitoring

Due to the ongoing problems faced in the feral pig monitoring program minor changes were made as part of adaptive management to attempt to increase the success of the program. Some of the changes included

- Free feeder stations were not used again, as no pigs were eating from these. Pig boxes were the preferred food source and resulted in quick uptake.
- Fermented grain was not considered a food source
- Use of molasses for an attractant. Various methods were trialled to entice the pigs with the molasses resulting in generally immediate consumption. Carasweet and blood and bone were removed as attractants.
- Pig-out baits were soaked in molasses to entice consumption.
- Pig stations were established at the best ground based shooting vantage points to enable a combine shoot and baiting program. If successful going forward the baiting program combined with ground based shooting at bait stations. This would be used instead of 1080 which is having limited success and takes considerable time.

At each feeding station a Reconyx Hyperfire Covert Camera Trap was deployed. Cameras were mounted on trees approximately 5m away from the feeding station using the camera straps and positioned with a good view of the feeding station. Animal activity was captured when the motion sensor was triggered using either daylight or infra-red at night.

The motion sensor was set to capture a minimum of 5 pictures in quick succession with a 5 minute break between images sets and a 'two second delay' between triggers. Field cameras recorded the date and time each time the sensor was triggered.

At each deployment location, the date, time, feed station #, GPS position of the feed station, distance of camera from feed station. Where possible, the following information was extracted from images.

- Species identification (feral pigs and other animals);
- Number of each species;
- Age class of feral pigs; and
- Sex of feral pigs.

2.4. Feral cat and dogs

Feral cat and dogs are required to be managed around the camp and mine infrastructure area, as the increase in scavenger opportunities may lead to an increased number of feral cats and dogs. This requires quarterly visual monitoring (spotlighting) and implementation of trapping program if feral animals are observed.

Incidental observations from the LSMP program recorded a number of sightings of feral dogs around the camp during afternoons. Accordingly to meet the objectives of the plan where animals were observed repeatedly around infrastructure areas trapping programs were implemented.

During trial trapping in early 2017, concerns were raised about the euthanasia of dingoes as it is the totem of some local traditional owners. Accordingly trapping was stopped until agreement was made on visually distinguishing a wild dog (half bred) from a pure bred dingo and traditional owners were comfortable with the program continuing.

2.4.1. Spotlight program monitoring

Visual monitoring, through spotlighting, is required to occur around the camp and mine infrastructure area on a quarterly basis.

Spotlighting was completed each quarter at the Mine Infrastructure Area, Hey River Terminal and Amrun Construction Camp. Spotlighting commenced approximately 30 minutes after sunset. The boundary of each site was monitored by either walking or driving at a maximum speed of 10km/h. The observer held the spotlight at eye level searching into the vegetation surrounding the site. When an animal was sighted the team stopped and recorded the species and number of each species. Spotlighting for each area is completed a minimum of two nights to maximise number of animals sighted.

2.4.2. Feral cat and dog trapping program

After identification of dogs or cats through spotlighting a dog or cat trap is set up in the area. Traps were also set in an area after repeated incidental sightings. The animals are naturally cautious and accordingly trapping is completed in a slow manner to acclimatise the animals with the traps. Trapping is ongoing until one of the following is met:

- the animal is captured;
- there are no sighting of the target species for 15 days (trapping event is considered three consecutive nights); or
- potential impact to the animals welfare (eg lactating mother, severe weather).

At each trap a Reconyx Hyperfire camera were mounted across from the trap with a good view of the trap station. Animal activity was captured when the motion sensor was triggered using either daylight or infra-red at night and when the animal is entering freely and the vet is in town the trap is set to live status so the door will close. Live traps are checked first thing the next morning (0630) and captured animals are transported to Weipa vets for euthanasia.

3 RESULTS AND DISCUSSION

3.1. Aerial pig control program monitoring

The initial overview flight identified was conducted the day before shooting with sightings feral pig movements noted in various sections across the lease and target areas however generally focussed on the coastal waterholes and creeks.

An assessment team consisting of the Amrun environmental team, aerial marksmen, GBR manager and pilot determined that the program was to initially focus upon the beach frontage to confirm if any pigs were present and then implement an adaptive program of targeting the available water sources.

Feral pig cull locations reported by each of the four shooting days are presented in **Table 1** below with pig engagement locations shown in **Figure 1**. Shooting was conducted on the coastline with a number of pigs engaged at Boyd Point, the northern beach section and south of Thud Point however high pig activity areas were predominantly at inland water sources (GBR 2017):

- Inland waterholes on Triluck and Winda Winda Creeks (Northern Beach Sections);
- Inland waterholes on an unnamed tributary of Norman Creek (Boyd-Pera and Pera-Thud Beach Sections);
- a series of waterholes on Ina Creek (Southern Beach Section); and
- a small waterhole on an unnamed drainage line south of Ina Creek (Southern Beach Section).

Visual monitoring for scavenger activity did not result in any large numbers of pigs dogs or flocks of predators after completion of shooting.

Table 1 Pig cull location totals

		Morning Sortie	Midday Sortie	Afternoon Sortie	Totals
28 July	All Pigs	8	30	25	63
	Male Boars	6	21	20	47
29 July	All Pigs	6	6	50	62
	Male Boars	4	4	41	49
30 July	All Pigs	9	17	32	58
	Male Boars	5	13	26	44
31 July	All Pigs	13	50	54	117
	Male Boars	8	44	40	92
Total	All Pigs	36	103	161	300
	Male Boars	23	82	127	232



Figure 1 Overall tracks and engagement locations

3.2. Night-time ground based shooting monitoring

Night-time ground based shooting was conducted at three locations over four nights (4th August to 7th August 2018) and covered the Boyd Bay, Boyd – Pera, Pera – Thud beach sections. S outlined in section # bait stations were combined with ground based shooting to increase success of both programs. Eleven pigs were observed and engaged during the ground based shooting (**Table 2**). No pigs were observed at the Boyd Bay or Pera – Thud beach sections.

Table 2 Ground based shooting totals

Date	All Pigs	Boars	Location
04 August	2	2	Boyd – Pera
05 August	7	2	Pera
06 August	2	1	Boyd – Pera
07 August	0	0	Boyd - Pera
Total	11	5	

The carcasses of all pigs shot on the beach were burned in pits at the request of Traditional Owners. All carcasses were completely burnt through within 24 hours of being shot. Positive feedback was given by the traditional elder, Tony Kerindun, about how this process was implemented to meet their wishes and prevent the rotting of carcasses on Country.

No large groupings of birds with the exception of those at fire fronts were observed during the shooting activities.

3.3. Feeding/baiting station pig control program monitoring

The 2018 feral pig baiting continued to learn from the 2016 and 2017 program. The 2018 program continued to implement adaptive management measures to increase the success of the program and reduce pig predation on turtle nests.

The 2018 program was initiated from the 14 July to 14 November 2018. A total of 12 bait stations were set with the program split into two stages:

- 14/07 – 08/07 combined shooting and baiting program (stage 1)
- 08/07 – 14/11 – baiting only (stage 2)

In 2018 shooting was combined with bait stations in 2018. Three bait stations were established on the Boyd – Pera head beach section as part of the trial and to have reconnaissance data for the shooters. Bait stations were established on 14 July, bait station were set up as follows:

- Pig box with no lid;
- Only cracked corn and molasses were used as attractants;
- Boxes were monitored using Reconyx cameras; and
- Stations were set at good vantage for shooters to ensure kill shots were possible at all stations.

Combining the shooting and baiting program was exceptionally successful, results identified:

- Number of pigs shot increased from two to eleven individuals (550% increase);
- 100% of pigs identified in the reconnaissance were killed during the effort;
- Pigs did not require extensive training (eg opening the box, identifying the food source) and turnaround time from installation of bait station to killing the pig reduced from six-eight weeks to two weeks and had the potential to be reduced further.
- Understand the timing of movements will enable shooting on multiple beaches each night and will increase efficiency of the program reducing the cost per pig.
- Successful turtle hatchling was recorded on the beach 09 August.

The baiting only component of the program was continued on from the completion of shooting (08 August) until 14 November 2018. Bait stations were situated based on the following information:

- Pig presence and activity;
- Nesting turtles; and
- Access to beach area.

Throughout the baiting while turtle nest predation was recorded at nesting beaches pigs were not consuming the non-poisoned Piggout baits. As part of adaptive management the amount of corn was reduced to try to increase the uptake before live baits with 1080 were set. In addition to minimal consumption the use of live bait was delayed for the following reasons:

- No pigs were regularly eating at a station;
- Volume of pigs eating at a station
- Pigs repeatedly broke the bait boxes and would uplift them out of the ground. Numerous techniques were trialled to attach the to the ground; and
- Teaching the pigs to open the stations without breaking them

Regular eating and presence of pigs was recorded in November and poison baits were set. Field observations and footage recorded pigs has consumed the baits however all pigs returned the following day. Based on information from all years it is likely because of the regurgitation of some of the baits or the effectiveness of the bait may have been compromised due to heat degradation on bait, volume ingested or potentially the impact of molasses on integrity of wax pill.

Based on the success of the combination of the bait stations and ground based shooting in 2019 this combination will be utilised instead of using 1080. This combination was shown to be more time and cost effective with kills easily identifiable. A total of twenty days of ground based shooting has been scheduled in May, July, August and September. If additional pigs are recorded 1080 may be implemented if feasible.

Observations from the cameras feeding stations established during the feeding and baiting station program are presented in **Table 3** below. A pig visitation rate (pigs/night) is provided in order to provide a monitoring index for long term comparisons each year.

Table 3 Feed/baiting station camera observations for 2019

	Beach Section	Coordinates	Period established/ maintained	Culling implement	Kills	Number of pigs photographed	Visitation rate	Other animals	Comments
Bait station camera 1	Boyd – Pera	00567855 8571329	14/07 – 10/08	Gun	2	Mob of 8 and 2 boars	1.8		2 boars. Pigs were sighted at other locations
Bait station camera 2	Boyd - Pera	00566994 8569889	14/07 – 10/08	Gun	2	Mob of 8 and 2 boars	1.1	Birds	2 piglets killed. Remaining animals from mob at feeding station
Bait station camera 3	Boyd – Pera	00566019 8568516	14/07 – 10/08	Gun	7	Mob of 8	3.6	Birds	7 pigs including 2 boars at feeding station
Bait station camera 4	Boyd – Pera	00567847 8571325	11/08 -14/11	1080	0	2 boars	0.9	Dog, birds, cat	
Bait station camera 5	Boyd - Pera	00566994 8569889	13/08 -14/11	1080	0	3 boars	1.2	Dogs	
Bait station camera 6	Boyd – Pera	00566019 8568516	22/07-12/11	Nil	0	2 boars	0.7	Birds	
Bait station camera 7	Pera Head	565554 8568174	04/08/ - 14/11	Nil	0	3 boars	0.7	Cattle, dog, cats	
Bait station camera 8	Thud Beach	579125 8578355	06/09 – 14/11	Nil	0	1 boar	0.1	Bird	
Bait station camera 9	Thud Access	563766 8562526	08/09 – 13/11	Nil	0	3 boars	1.1	Dogs, bird	
Bait station camera 10	Thud - Norman	579661 8560824	08/09 – 13/11	Nil	0	3 boars	0.4	Bird	
Bait station camera 11	Boyd Bay	568853 8572586	10/08-14/11	Nil	0	2 boars	0.9		
Bait station camera 12	Northern Beach	579251 8578332	24/09 – 06/10	Nil	0	Nil	0	Dogs	No pigs recorded at bait station. No activity on beach
Bait station camera 13	Northern Beach	00579661 8578536	24/09 – 06/10	Nil	0	Nil	0	Dogs	No pigs recorded at bait station. No activity on beach
Total Kills					11				

3.4. Feral cat and dog program

3.4.1. Feral cat and dog program spotlighting

Feral cat and dog observations from the quarterly spotlighting monitoring during the reporting periods are reported in **Table 4** below. A low level of feral cat and dog activity was recorded in the reporting period.

An increase in dogs were sighted in the 2018 reporting period. Accordingly cages were set around the camp to capture the animals (see **Section 3.3.2**).

Table 4 Feral cat and dog spotlighting observations¹

Survey Event	Mine Infrastructure Area	Amrun construction camp	Hey River Terminal
June – July 2018	No sightings recorded	No sightings recorded	Cattle
September 2018	Cat near export facility	No sightings recorded	No sightings recorded
November 2018	No sightings recorded	No sightings recorded	No sightings recorded
February – March 2019	No sightings recorded	1 dog	Cattle

3.4.2. Feral cat and dog trapping program

A summary of the trapping efforts for the reporting period is summarised in **Table 5** below. Trapping events for the year resulted in the capture and euthanasia of two dogs. The trapping program included the following trap set ups:

- MIA
 - Incidental observation of two feral cats was observed near Pera Head, just outside the MIA. A trap was set for 15 days and no subsequent sightings of feral cats were confirmed.
 - A cat was recorded during nightly spotlighting works near the Chith export facility in October 2018 with no subsequent observation by October 31st.
 - A domesticated dog was observed at the MIA. The animal was captured in January and taken back to the vet in Weipa and reunited with its owner. The animal was not euthanised.

¹ The May 2019 monitoring event fell outside of the reporting period (after May 12) and will be reported in the 2020 report

- Camp– ongoing trapping effort has been completed at this station since July 2017. During this reporting period two dogs were captured at this station. The animals were transported in good condition to Weipa vet for euthanasia. Back-burning was completed in August 2018 and since then no animals have been sighted at this location, likely due to the reduction in cover. During Early 2019 the trap was set off by crows and as part of adaptive management the trap was relocated.

Table 5 Feral cat and dog trapping observations

Month	Dogs		Cats		Notes
	Traps	Captures	Traps	Captures	
May 2018	1	Nil	0	Nil	
June 2018	2	1	0	Nil	Dog captured
July 2018	2	1	0	Nil	Dog captured
August 2018	1	Nil	0	Nil	No dogs returning, trap collapsed
September 2018	1	Nil	1	Nil	No dogs sighted at dog trap, no cats sighted for cat trap.
October 2018	0	Nil	1	Nil	Cat trap, no cats sighted on camera, no dogs sighted at camp, likely due to recent back burning
November 2018					
December 2018					
January 2019	1	1			Domestic dog sighted and captured
February 2019	2	Nil			
March 2019	1	Nil			
April 2019	1	Nil			Trap was being set off by crows.
May 2019					
Total	Nil	3	2	Nil	

4 REFERENCES

GBR (2018). *Feral Pig Control Program September 2017*. A report prepared for RTA Weipa Pty Ltd by GBR Helicopters Pty Ltd.

APPENDIX A FERAL PIG CONTROL AREAS

