

ANNEXURE A2

SQUATTER PIGEON WATER MANAGEMENT PLAN DABIN HOLDINGS OFFSET AREA MANAGEMENT PLAN

Table of Contents

1.0	INTRODUCTION	1
2.0	SQUATTER PIGEON DRINKING ECOLOGY.....	1
3.0	SQUATTER PIGEON WATER MANAGEMENT STRATEGY	2
4.0	SQUATTER PIGEON WATER MANAGEMENT PLAN	5
5.0	REFERENCES	7

Table of Figures

Figure 3.1 Locations of livestock drinking troughs

Table of Terms and Abbreviations

BMC BHP Mitsui Coal Pty Ltd
EIS Environmental Impact Statement
OAMP Offset Area Management Plan

File No	Author	Reviewer	Date of Issue
0308-007c V3			13/05/2019

BIODIVERSITY ASSESSMENT AND MANAGEMENT PTY LTD
PO Box 1376 Cleveland Qld 4163 | 26-40 Delancey Street Cleveland 4163 | Redlands Research Facility Industry Building
PH +61 7 3286 7788 | info@baamecology.com | ABN 59 097 464 992 | ACN 097 464 992 |

www.baamecology.com

1.0 INTRODUCTION

Following the submission of an Environmental Impact Statement (EIS) for the Poitrel Mine Project, BHP Mitsui Coal Pty Ltd (BMC) received Commonwealth approval in 2004 (EPBC 2004/1770) to mine and process coal at Poitrel near Moranbah in central Queensland and all associated activities.

A variation to the approval dated 8 June 2018, specifies under Condition 2B that:

The approval holder must:

(i) implement the approved offset management plan titled 'Poitrel Mine - Offset Area Management Plan - Dabin Holdings' dated 17 June 2014;

*(ii) before 1 November 2018, submit for the **Minister's** approval a 2018 Squatter Pigeon water management plan to provide water for Squatter Pigeon habitat at the secured offset site approved by the **Minister** pursuant to the offset management plan titled 'Poitrel Mine – Offset Area Management Plan - Dabin Holdings' dated 17 June 2014; and*

*(iii) before 30 November 2019, implement the 2018 Squatter Pigeon offset management plan and the 2018 Squatter Pigeon water management plan as approved by the **Minister** in writing.*

This Squatter Pigeon Water Management Plan, to be included as an annexure to the existing Poitrel Mine – Offset Area Management Plan – Dabin Holdings (OAMP), specifies the management actions to be implemented at the Poitrel Mine offset area known as Dabin Holdings to meet the requirement of Condition 2B(ii) of the variation to the Commonwealth approval 2004/1770 dated 8 June 2018 to provide water for Squatter Pigeon (southern) *Geophaps scripta scripta* at the secured offset site.

2.0 SQUATTER PIGEON DRINKING ECOLOGY

Squatter Pigeons inhabit dry grassy eucalypt woodlands, open forests and scrub that are remnant, regrowth or partly modified vegetation communities. They spend most of their time on the ground, where they both feed and nest, typically only flying up to perch in woodland trees if they are disturbed. Squatter Pigeons are seed-eating birds that eat the seeds of legumes (plants in the family Fabaceae) and native grasses (family Poaceae) in particular (Crome 1976). As seeds have a low water content, Squatter Pigeons need to drink daily to meet their water needs in a typically warm, dry environment. Consequently, they are restricted to feeding and breeding habitats that occur within 3 km of a permanent water source (DoEE 2018). Waterbodies suitable for Squatter Pigeons include permanent or seasonal rivers, creeks, lakes, waterholes and artificial dams; they prefer to drink where there is gently sloping, bare ground on which to approach and stand at the water's edge. Squatter Pigeons are often seen foraging and dustbathing in and around stockyards and stock water points, where they may also pick seeds from livestock droppings (DoEE 2018). Like other ground-dwelling pigeons (e.g. Bendon 2012), they can also drink from livestock drinking troughs (DoEE 2018). To be suitable for ground-dwelling pigeons such as Squatter Pigeon to drink from, a livestock drinking trough should have a broad (at least approximately 5 cm wide), flat edge that the birds can perch on, and the water level must be close enough to the rim of the trough (i.e. within approximately 1cm of the trough rim) that the birds can reach the water when perched on the edge. This design is most similar to their natural drinking sites of flat, open ground at the water's edge with a clear view for early detection of approaching avian predators.

3.0 SQUATTER PIGEON WATER MANAGEMENT STRATEGY

The Dabin Holdings offset area is located in a landscape known to support Squatter Pigeon, with a number of Atlas of Living Australia and WildNet records within 15-20km of the site. The species is also known to occur on the site, with five Squatter Pigeon observed on the property on 6 March 2019 (Easting 606720, Northing 7612790) (C. Keegan pers. comm.) (refer **Figure 3.1**).

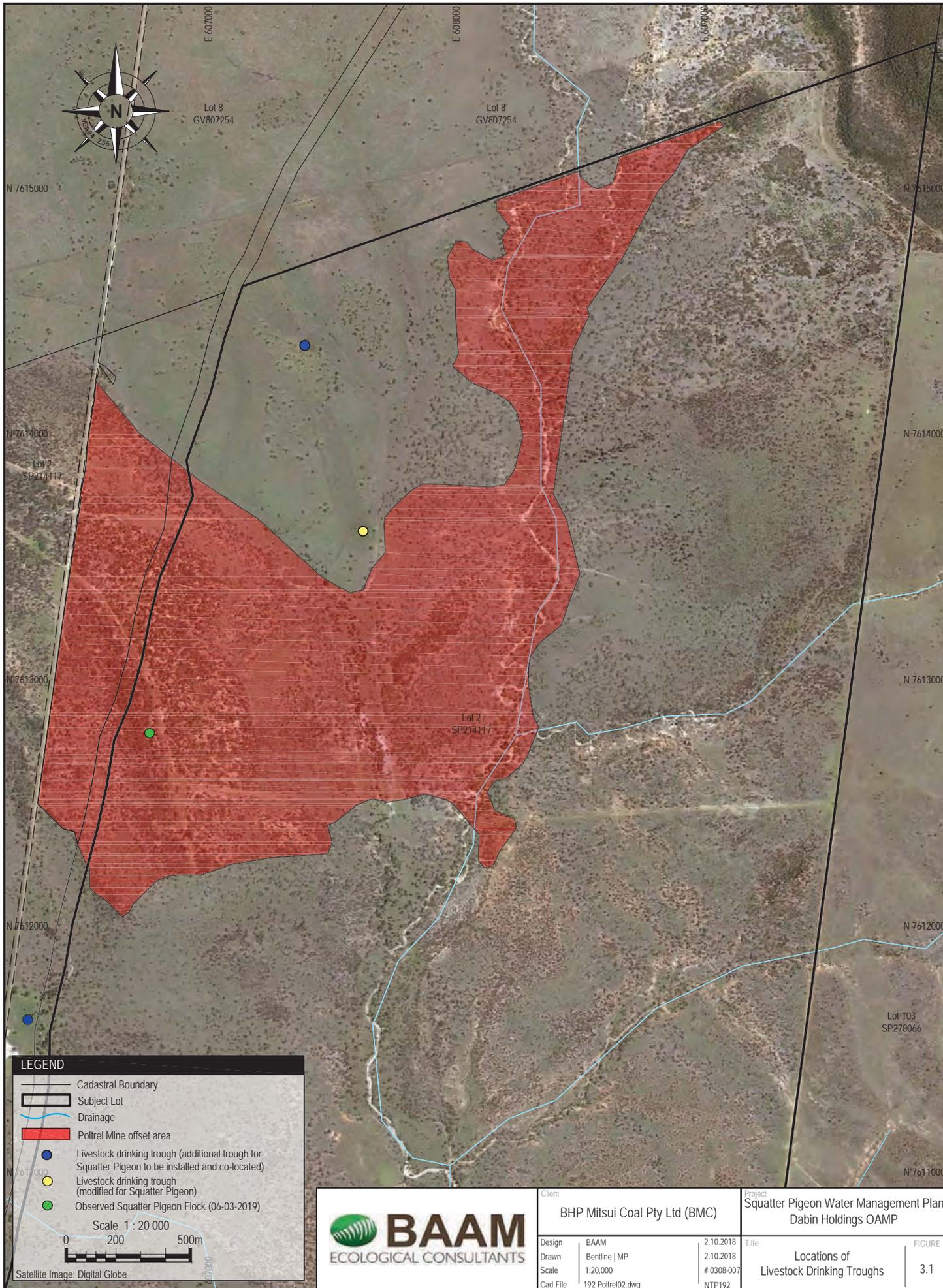
The property is currently managed for conservation purposes, with livestock grazing only to reduce fuel loads in accordance with the OAMP. This livestock grazing is facilitated by three livestock drinking troughs located on the property (see **Figure 3.1** for locations).

The most central of the three drinking troughs is located close to remnant woodland vegetation and has a broad, flat edge suitable for Squatter Pigeon to perch on (**Photo 3.1**); however, the float controlling the water level is currently set such that the water level in the drinking trough is too far below the rim of the trough for the water to be accessible to Squatter Pigeon. This drinking trough is located within 3 km of all portions of the Poitrel Mine offset lands. The southernmost drinking trough is also located within 3km of the majority of the offset area, and is located close to open woodland vegetation that connects to the offset area; therefore, there is a suitable open woodland habitat link that Squatter Pigeon can use to fly between the offset area and the southernmost drinking point. The northernmost drinking trough is located within relatively sparse vegetation, but is also located within 3 km of the majority of the offset area.

Besides livestock drinking troughs, there are no other permanent sources of water within a 3 km radius of the Dabin Holdings offset area. Therefore, to provide permanently suitable sources of drinking water for Squatter Pigeon, the existing livestock trough at the central location will be fenced and retro-fitted / repaired to maintain the water level within 1cm of the rim of the broad, flat edges of the trough. At the northern and southern locations, new, suitable troughs that have a broad, flat edge and can permanently maintain the water level within 1cm of the rim will be provided adjacent to and connected to the existing livestock troughs, and fenced to prevent livestock access. The provision of these three suitable drinking troughs provides substantial redundancy to ensure an alternative drinking source is available if water supply to one of the troughs is disrupted for a period of time before the issue is detected and repaired.



Photo 3.1 Existing livestock drinking trough located centrally in the Dabin Holdings offset area, photographed on 19 April 2018.



LEGEND

- Cadastral Boundary
- Subject Lot
- Drainage
- Poitrel Mine offset area
- Livestock drinking trough (additional trough for Squatter Pigeon to be installed and co-located)
- Livestock drinking trough (modified for Squatter Pigeon)
- Observed Squatter Pigeon Flock (06-03-2019)

Scale 1 : 20 000
0 200 500m

Satellite Image: Digital Globe

Client	BHP Mitsui Coal Pty Ltd (BMC)	
Design	BAAM	2.10.2018
Drawn	Bentline MP	2.10.2018
Scale	1:20,000	# 0308-007
Cad File	192 Poitrel02.dwg	NTP192

Project	Squatter Pigeon Water Management Plan Dabin Holdings OAMP	
Title	Locations of Livestock Drinking Troughs	FIGURE 3.1

© Biodiversity Assessment and Management Pty Ltd. While every care is taken to ensure the accuracy of this data, Biodiversity Assessment and Management makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation liability in negligence) for all expenses, losses, damages (including indirect consequential damage) and costs which might be incurred as a result of the data being inaccurate or incomplete in any way and for any reason.

Modified livestock drinking troughs are preferred as an approach to providing a water source for Squatter Pigeon for the following reasons:

- construction of an earth-walled dam to store water and function as an artificial watering point (one of the few alternatives to a drinking trough) would require land clearing and is not guaranteed to store water through extended dry spells; and
- a watering point that serves a dual function of providing water for livestock and Squatter Pigeon i.e. a solution to providing water for Squatter Pigeon that also fits with current management of the property, is more likely to be successfully implemented and maintained in working order.

4.0 SQUATTER PIGEON WATER MANAGEMENT PLAN

Table 4.1 below summarises the management activities schedule for establishing and maintaining drinking water sources for Squatter Pigeon at Dabin Holdings. Costs associated with the establishment and maintenance of the drinking water sources will be the responsibility of the lessee, subject to the finalisation of an agreement between BMC and the lessee.

Table 4.1. Management activities schedule.

Management activity	Performance objectives	Where and how will the activity will be carried out	When the activity will be carried out	Who will be carrying out the activity	Monitoring method	Reporting	Corrective Action Trigger	Corrective Action
Establish drinking points	Establish, fence and maintain three drinking troughs suitable for Squatter Pigeon to drink from, i.e. troughs with a broad (>5cm wide), flat edge and water level within 1cm of the trough rim).	Three drinking troughs installed/retrofitted with design features including fencing, and water level remaining within 1cm of the trough rim.	Within six months of the approval of this Squatter Pigeon Water Management Plan.	Lessee or person appointed by BMC	Photo monitoring – a photo of each drinking trough to confirm that each is fenced from stock, and has a suitable broad, flat edge and maintains water within 1cm of the trough rim.	Photos and date of drinking point establishment to be included in the existing reporting under the OAMP.	Less than three suitable drinking troughs installed/retrofitted and fenced from stock within 6 months of approval of this plan.	Install/retrofit and fence remaining trough(s) within 2 months
Maintain drinking points	Maintenance of the three drinking troughs to ensure they are fenced and provide a permanent water source for Squatter Pigeon.	Visual inspection of fencing and water levels in the drinking troughs.	For drinking troughs co-located with cattle drinking troughs (northern and southern): during the existing regular inspections (at least quarterly) of infrastructure critical to the grazing enterprise. For non-co-located troughs (central):	Lessee or person appointed by BMC	Annual photo monitoring of the condition of the drinking troughs, including condition of fencing and measurement of water levels. Records of Squatter Pigeon presence will be made while	Photos, monitoring results and records to be included in the existing reporting under the OAMP.	The water level is >1cm below the trough rim.	Investigate why water levels are not being maintained and, within 1 month, ensure the water level is not >1cm below the trough rim and trough

Management activity	Performance objectives	Where and how will the activity will be carried out	When the activity will be carried out	Who will be carrying out the activity	Monitoring method	Reporting	Corrective Action Trigger	Corrective Action
			during annual photo monitoring.		photo monitoring occurs.			is fenced from stock.

5.0 REFERENCES

Bendon, J. (2012). Photographs of Crested Pigeon, Spinifex Pigeon and Diamond Dove drinking from a livestock drinking trough: https://www.flickr.com/photos/jim_bendon_1957/7984939073/in/photostream/.

Crome, F.H.J. (1976). Breeding, moult and food of the Squatter Pigeon in north-eastern Queensland. *Australian Wildlife Research* 3: 45-59.

Department of the Environment and Energy (DoEE) (2018). *Geophaps scripta scripta* in Species Profile and Threats Database. Department of the Environment and Energy, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed 4 October 2018.