

Our Ref: AM/N202009/Lw1

16<sup>th</sup> July 2024

Crisjoy Pty Ltd ATF The Lighthouse Unit Trust c/- SLR Consulting Australia Pty Ltd 10 Kings Road New Lambton, NSW 2305

Attention: Stephen O'Connor

Dear Stephen,

# RE: BROKEN HEAD QUARRY PLANNING PROPOSAL - PRELIMINARY ECOLOGICAL ASSESSMENT OF SHARED PATH ALIGNMENT

As you are aware, I recently prepared a Biodiversity Development Assessment Report (BDAR) (JWA 2024) to accompany the Planning Proposal application that was lodged with Byron Shire Council (BSC) to rezone a portion of the former Broken Head Quarry site to allow for residential subdivision.

It is understood that some additional external works are now proposed to allow for the construction of a shared pathway extending from the proposed development site to Clifford Street in Suffolk Park. The proposed shared pathway is approximately 950m in length and will be constructed within the Broken Head Road reserve - approximately 750m of the length of the pathway to be constructed on the western side of Broken Head Road, and approximately 200m on the eastern side of the road. A plan showing the proposed location and extent of the shared pathway is provided as **ATTACHMENT 1**.

An inspection of the proposed shared pathway site was completed on the 7<sup>th</sup> July 2024 and included:

- assessing the condition and mapping of vegetation communities;
- searches for any threatened flora species listed within schedules of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and/or NSW Biodiversity Conservation Act 2016 (BC Act); and
- a brief fauna survey including searches for any threatened fauna species listed within the EPBC Act and/or BC Act, or evidence of their presence.

A total of approximately 4.5 hours was spent on the site inspection. Two (2) separate Plant Community Types (PCTs) as described within the BioNet Vegetation Classification System were identified within and adjoining the proposed works area (FIGURE 1):

www.jwaec.com.au



		Scale 1 : 3000		
0	50m	100m	150m	200m

JWA PTY LTD Ecological Consultants

Shared Path Assessment Lot 1 DP123302 Broken Head Road, Suffolk Park NSW Byron Shire Council LGA

Subject Site Cadastre Photo Point PCT 3147 - Far North Brush Box-Bloodwood Wet Forest PCT 3989 - Far North Paperbark Fern Swamp Forest Proposed Development Layout Proposed 2.0m Path Batter Extents Overhead Electricity & Power Pole

#### FIGURE 1

PREPARED: BW	
DATE: 11 July 2024	
FILE: N202009_PATH_20240711.dw	g

#### IMPACT ON VEGETATION ZONES

TITLE

- PCT 3147 Far North Brush Box-Bloodwood Wet Forest, along the entirety of the works area to the west of Broken Head Road; and
- PCT 3989 Far North Paperbark Fern Swamp Forest, occurring adjacent to, but not within, the portion of the works area on the eastern side of Broken Head Road.

Site photographs (taken at the locations of photo points shown on **FIGURE 1**) are provided in **ATTACHMENT 2**.

The vegetation representative of PCT 3147 was observed to be in similar condition to the areas of this PCT assessed as part of the BDAR prepared for the Broken Head Quarry site (JWA 2024). If the shared path were to be approved by way of development consent (as opposed to Part 5 approval), additional impacts as a result of these external works would need to be offset in accordance with the requirements of the NSW Biodiversity Offset Scheme (BOS) as it involves clearing native vegetation that exceeds the area clearing threshold.

With consideration of the current concept design (ATTCHMENT 1) the construction of the proposed shared pathway would likely require the clearing of approximately 0.18 ha (1,835 m<sup>2</sup>) of PCT 3147. Utilising data collected from PCT 3147 on the Broken Head Quarry site (JWA 2024) this additional area of impact was entered into the online BAM Calculator (BAM-C) to determine the additional offset credit obligations of the proposed shared pathway.

There are two (2) types of offset credit obligations automatically calculated by the BAM-C based on the vegetation type and condition:

- Ecosystem credits related to the removal of the vegetation; and
- <u>Species credits</u> related to the removal of available habitat.

Threatened species credits are automatically generated by the BAM-C based on the PCTs present and can only be removed from the offset calculations by completing targeted surveys during the designated survey period (and not recording them).

No threatened flora or fauna species were observed during the site inspection. However, as the assessment of the proposed shared pathway included a brief survey only, all species credit fauna species, and any species credit flora species with survey timeframes outside of July, which have been automatically generated by the BAM-C have been "assumed present" for the purposes of this advice. It is likely that many of these species will be able to be excluded following targeted surveys but for the purpose of this preliminary assessment, they have all been assumed to be present. The offset obligations calculated for this report therefore represent a worst-case scenario, based on the current concept design.

Utilising data collected from PCT 3147 on the Broken Head Quarry site (JWA 2024), the additional clearing for the construction of a shared pathway extending from the proposed development site to Clifford Street in Suffolk Park may generate, as a worst case scenario, the additional offset obligations as listed in **TABLE 1** below.

A Predicted Species Report, Candidate Species Report and Biodiversity Credit Report (like for like) generated by the BAM-C are included as **ATTACHMENTS 3 - 5** respectively.

TABLE 1
PROPOSED SHARED PATHWAY - POTENTIAL ADDITIONAL OFFSET OBLIGATIONS

Entity	Additional Offset Credit Obligation
Ecosystem credits	
PCT 3147 - Far North Brush Box-Bloodwood Wet Forest	5 credits
SUBTOTAL	5 credits
Species credits	
Pouched Frog (Assa darlingtoni)	6 credits
Rufous Scrub-bird (Atrichornis rufescens)	6 credits
South-eastern Glossy Black-Cockatoo (Calyptorhynchus lathami lathami)	6 credits
Eastern Pygmy-possum (Cercartetus nanus)	6 credits
Wallum Froglet (Crinia tinnula)	5 credits
Coxen's Fig-Parrot (Cyclopsitta diophthalma coxeni)	9 credits
Eastern Bristlebird (Dasyornis brachypterus)	6 credits
Endangered Emu ( <i>Dromaius novaehollandiae</i> ) population in the New South Wales North Coast Bioregion and Port Stephens local government area	6 credits
Red Goshawk (Erythrotriorchis radiatus)	9 credits
White-bellied Sea-Eagle (Haliaeetus leucogaster)	6 credits
Slender Marsdenia (Marsdenia longiloba)	6 credits
Albert's Lyrebird (Menura alberti)	6 credits
Barking Owl (Ninox connivens)	6 credits
Powerful Owl (Ninox strenua)	6 credits
Parma Wallaby (Notamacropus parma)	6 credits
Atlas Rainforest Ground-beetle (Nurus atlas)	9 credits
Southern Greater Glider (Petauroides volans)	6 credits
Koala (Phascolarctos cinereus)	6 credits
Common Planigale ( <i>Planigale maculata</i> )	6 credits
Long-nosed Potoroo (Potorous tridactylus)	6 credits
Mitchell's Rainforest Snail (Thersites mitchellae)	9 credits
Masked Owl (Tyto novaehollandiae)	6 credits
SUBTOTAL	143 credits

With respect to the principles of 'avoid and minimise', it is understood that consideration was given to several alignment and design options during the design process. The process factored in various constraints such as engineering design standards, topography, land ownership and user safety, but a key criteria for the design team was to avoid and minimise impacts of the pathway to the existing vegetation. This culminated in the proposed alignment being the preferred option, which utilises disturbed land where possible and incorporates raised boardwalks to minimise earthworks. Given the limited area available within the Broken Head Road reserve, prospects for any further avoidance or minimisation of impacts of the proposed development are limited. However, opportunities to retain individual significant trees should be explored during detailed design of the proposed shared pathway.

Similarly, due the linear nature and restricted area of impacts on native vegetation, with consideration of the test of significance outlined in section 7.3 of the BC Act, the construction of the proposed shared pathway is not considered likely to result in a significant impact on any threatened species, populations or ecological communities, or their habitats.

It is also likely that the offset obligations identified above could be significantly reduced following targeted surveys completed in accordance with the relevant survey guidelines and at the appropriate time of year as detailed in the relevant species data within the NSW Threatened Biodiversity Data Collection (TBDC).

Although these additional works are proposed as part of a Planning Proposal, it is acknowledged that, should the development application pathway be used for the shared path, under future Part 4 development applications, the consent authority will have discretion over what measures are necessary to avoid and minimise impacts in accordance with Section 7.13(6) of the NSW BC Act. In this regard, assuming BSC will be the consent authority, it is anticipated BSC will consider compliance with the relevant planning framework including any relevant requirements of the Byron Shire Development Control Plan 2014 (Byron DCP), the Byron LEP 2014 and the Byron Coast Comprehensive Koala Plan of Management (BCCKPoM) in order to be satisfied that sufficient steps have been taken to avoid and minimise impacts on biodiversity values.

Further to the above, any future detailed assessments of the proposed shared pathway as part of the development application process will need to identify any red flagged values and applicable ecological setbacks defined within Chapter B1 of the Byron DCP, as well as any variations to the relevant development standards in accordance with Clause 6.

In relation to the requirements of the BCCKPoM, the site assessment determined that the proposed shared pathway works area <u>does not</u> include vegetation in which koala trees listed within Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component, and vegetation within the works area therefore <u>does not</u> contain preferred koala habitat PKH as defined in the BCCKPoM, and the requirements of the BCCKPoM therefore <u>do not apply</u>.

Please don't hesitate to contact me if you wish to discuss any aspects of the above advice.

Yours faithfully, JWA Pty Ltd

Adam McArthur Director / Principal Ecologist

### Attachment 1



### Attachment 2 - Site Photographs



































# Attachment 3



## **BAM Predicted Species Report**

Proposal Details		
Assessment Id	Proposal Name	BAM data last updated *
00049628/BAAS18069/24/00049629	Broken Head Quarry - external works	14/03/2024
Assessor Name	Report Created	BAM Data version *
Adam Michael McArthur	08/07/2024	67
Assessor Number	Assessment Type	BAM Case Status
BAAS18069	Part 4 Developments (General)	Open
Assessment Revision	BOS entry trigger	Date Finalised
0	BOS Threshold: Area clearing threshold	To be finalised

\* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

# Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Barred Cuckoo- shrike	Coracina lineata	3147-Far North Brush Box-Bloodwood Wet Forest
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	3147-Far North Brush Box-Bloodwood Wet Forest
Common Blossom- bat	Syconycteris australis	3147-Far North Brush Box-Bloodwood Wet Forest
Dusky Woodswallow	Artamus cyanopterus cyanopterus	3147-Far North Brush Box-Bloodwood Wet Forest
Eastern Coastal Free-tailed Bat	Micronomus norfolkensis	3147-Far North Brush Box-Bloodwood Wet Forest
Eastern Long-eared Bat	Nyctophilus bifax	3147-Far North Brush Box-Bloodwood Wet Forest
Eastern Osprey	Pandion cristatus	3147-Far North Brush Box-Bloodwood Wet Forest
Eastern Tube-nosed Bat	Nyctimene robinsoni	3147-Far North Brush Box-Bloodwood Wet Forest
Flame Robin	Petroica phoenicea	3147-Far North Brush Box-Bloodwood Wet Forest
Golden-tipped Bat	Phoniscus papuensis	3147-Far North Brush Box-Bloodwood Wet Forest

Assessment Id



## **BAM Predicted Species Report**

Greater Broad-nosed Bat	Scoteanax rueppellii	3147-Far North Brush Box-Bloodwood Wet Forest
Grey-headed Flying- fox	Pteropus poliocephalus	3147-Far North Brush Box-Bloodwood Wet Forest
Hoary Wattled Bat	Chalinolobus nigrogriseus	3147-Far North Brush Box-Bloodwood Wet Forest
Large Bent-winged Bat	Miniopterus orianae oceanensis	3147-Far North Brush Box-Bloodwood Wet Forest
Little Bent-winged Bat	Miniopterus australis	3147-Far North Brush Box-Bloodwood Wet Forest
Little Lorikeet	Glossopsitta pusilla	3147-Far North Brush Box-Bloodwood Wet Forest
Marbled Frogmouth	Podargus ocellatus	3147-Far North Brush Box-Bloodwood Wet Forest
Northern Free-tailed Bat	Ozimops lumsdenae	3147-Far North Brush Box-Bloodwood Wet Forest
Olive Whistler	Pachycephala olivacea	3147-Far North Brush Box-Bloodwood Wet Forest
Red-legged Pademelon	Thylogale stigmatica	3147-Far North Brush Box-Bloodwood Wet Forest
Rose-crowned Fruit- Dove	Ptilinopus regina	3147-Far North Brush Box-Bloodwood Wet Forest
Spotted-tailed Quoll	Dasyurus maculatus	3147-Far North Brush Box-Bloodwood Wet Forest
Square-tailed Kite	Lophoictinia isura	3147-Far North Brush Box-Bloodwood Wet Forest
Superb Fruit-Dove	Ptilinopus superbus	3147-Far North Brush Box-Bloodwood Wet Forest
Swift Parrot	Lathamus discolor	3147-Far North Brush Box-Bloodwood Wet Forest
Varied Sittella	Daphoenositta chrysoptera	3147-Far North Brush Box-Bloodwood Wet Forest
White-bellied Sea- Eagle	Haliaeetus leucogaster	3147-Far North Brush Box-Bloodwood Wet Forest
White-throated Needletail	Hirundapus caudacutus	3147-Far North Brush Box-Bloodwood Wet Forest
Wompoo Fruit-Dove	Ptilinopus magnificus	3147-Far North Brush Box-Bloodwood Wet Forest
Yellow-bellied Glider	Petaurus australis	3147-Far North Brush Box-Bloodwood Wet Forest

Threatened species Manually Added

00049628/BAAS18069/24/00049629

None added

#### Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Assessment Id



## **BAM Predicted Species Report**

Common Name	Scientific Name	Plant Community Type(s)
Black Bittern	Ixobrychus flavicollis	3147-Far North Brush Box-Bloodwood Wet Forest
Black-necked Stork	Ephippiorhynchus asiaticus	3147-Far North Brush Box-Bloodwood Wet Forest
Black-striped Wallaby	Macropus dorsalis	3147-Far North Brush Box-Bloodwood Wet Forest
Hastings River Mouse	Pseudomys oralis	3147-Far North Brush Box-Bloodwood Wet Forest
Pale-vented Bush- hen	Amaurornis moluccana	3147-Far North Brush Box-Bloodwood Wet Forest
South-eastern Glossy Black- Cockatoo	Calyptorhynchus lathami lathami	3147-Far North Brush Box-Bloodwood Wet Forest

#### **Threatened species assessed as not within the vegetation zone(s) for the PCT(s)** Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Black Bittern	Ixobrychus flavicollis	Habitat constraints
Black-necked Stork	Ephippiorhynchus asiaticus	Habitat constraints
Black-striped Wallaby	Macropus dorsalis	Refer to BAR
Hastings River Mouse	Pseudomys oralis	Refer to BAR
Pale-vented Bush-hen	Amaurornis moluccana	Habitat constraints
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Habitat constraints

# Attachment 4



### **BAM Candidate Species Report**

### **Proposal Details**

Assessment Id	Proposal Name	BAM data last updated *
00049628/BAAS18069/24/00049629	Broken Head Quarry - external works	14/03/2024
Assessor Name	Report Created	BAM Data version *
Adam Michael McArthur	08/07/2024	67
Assessor Number	Assessment Type	BAM Case Status
BAAS18069	Part 4 Developments (General)	Open
Assessment Revision	Date Finalised	BOS entry trigger
0	To be finalised	BOS Threshold: Area clearing threshold

\* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

### List of Species Requiring Survey

Name	Presence	Survey Months
<b>Acronychia littoralis</b> Scented Acronychia	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Archidendron hendersonii</b> White Lace Flower	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Assa darlingtoni</b> Pouched Frog	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

Proposal Name



Atrichornis rufescens	Yes (assumed present)	
Rufous Scrub-bird		□ Jan □ Feb □ Mar □ Apr
		🗆 May 🗆 Jun 🗆 Jul 🗆 Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
<b>Calyptorhynchus lathami lathami</b> South-eastern Glossy Black-	Yes (assumed present)	🗆 Jan 🗆 Feb 🗆 Mar 🗖 Apr
Cockatoo		🗆 May 🗆 Jun 🗆 Jul 🗆 Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
<b>Cercartetus nanus</b> Eastern Pygmy-possum	Yes (assumed present)	🗆 Jan 🗆 Feb 🗖 Mar 🗖 Apr
Lastern rygny possum		🗆 May 🗆 Jun 🗖 Jul 🗖 Aug
		Sep Cct Nov Dec
		Survey month outside the specified months?
<b>Corokia whiteana</b> Corokia	No (surveyed)	🗆 Jan 🗆 Feb 🗖 Mar 🗖 Apr
COTORIa		□ May □ Jun ☑ Jul □ Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
<b>Crinia tinnula</b>	Yes (assumed present)	🗆 Jan 🗆 Feb 🗖 Mar 🗖 Apr
Wallum Froglet		□ May □ Jun □ Jul □ Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
Cryptocarya foetida	No (surveyed)	🗆 Jan 🗆 Feb 🗖 Mar 🗖 Apr
Stinking Cryptocarya		□ May □ Jun ☑ Jul □ Aug
		□ Sep □ Oct □ Nov □ Dec
		□ Survey month outside the
		specified months?

Proposal Name



<b>Cyclopsitta diophthalma coxeni</b> Coxen's Fig-Parrot	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Dasyornis brachypterus</b> Eastern Bristlebird	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Davidsonia johnsonii</b> Smooth Davidson's Plum	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Dendrocnide moroides</i> Gympie Stinger	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Diospyros mabacea</b> Red-fruited Ebony	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Diploglottis campbellii</i> Small-leaved Tamarind	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

Broken Head Quarry - external works

Proposal Name



<b>Dromaius novaehollandiae -</b> <b>endangered population</b> Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Drynaria rigidula</b> Basket Fern	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Endiandra floydii</b> Crystal Creek Walnut	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Endiandra muelleri subsp.</b> <b>bracteata</b> Green-leaved Rose Walnut	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Erythrotriorchis radiatus</b> Red Goshawk	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

Proposal Name



<i>Hicksbeachia pinnatifolia</i> Red Boppel Nut	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Macadamia integrifolia</b> Macadamia Nut	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Macadamia tetraphylla</i> Rough-shelled Bush Nut	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Marsdenia longiloba</i> Slender Marsdenia	Yes (assumed present)	Jan       Feb       Mar       Apr         May       Jun       Jul       Aug         Sep       Oct       Nov       Dec         Survey month outside the specified months?
<i>Melicope vitiflora</i> Coast Euodia	No (surveyed)	□       Jan       □       Feb       □       Mar       □       Apr         □       May       □       Jun       □       Jul       □       Aug         □       Sep       □       Oct       □       Nov       □       Dec         □       Survey month outside the specified months?       □       □       □       □
<b>Menura alberti</b> Albert's Lyrebird	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

Proposal Name



Niemeyera whitei	No (surveyed)	🗆 Jan 🗖 Feb 🗖 Mar 🗖 Apr
Rusty Plum, Plum Boxwood		□ May □ Jun ☑ Jul □ Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
<i>Ninox connivens</i> Barking Owl	Yes (assumed present)	🗆 Jan 🗆 Feb 🗆 Mar 🗆 Apr
		🗆 May 🗖 Jun 🗖 Jul 🗖 Aug
		Sep Cct Nov Dec
		Survey month outside the specified months?
<i>Ninox strenua</i> Powerful Owl	Yes (assumed present)	🗆 Jan 🗆 Feb 🗆 Mar 🗆 Apr
		🗆 May 🗆 Jun 🗆 Jul 🗆 Aug
		Sep Cct Nov Dec
		Survey month outside the specified months?
<b>Notamacropus parma</b> Parma Wallaby	Yes (assumed present)	🗆 Jan 🗆 Feb 🗆 Mar 🗆 Apr
		🗆 May 🗖 Jun 🗖 Jul 🗖 Aug
		Sep Cct Nov Dec
		Survey month outside the specified months?
<b>Nurus atlas</b> Atlas Rainforest Ground-beetle	Yes (assumed present)	□ Jan □ Feb □ Mar □ Apr
		🗆 May 🗖 Jun 🗖 Jul 🗖 Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?
<b>Petauroides volans</b> Southern Greater Glider	Yes (assumed present)	🗆 Jan 🗆 Feb 🗆 Mar 🗆 Apr
		🗆 May 🗖 Jun 🗖 Jul 🗖 Aug
		□ Sep □ Oct □ Nov □ Dec
		Survey month outside the specified months?

Proposal Name



<b>Phascolarctos cinereus</b> Koala	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Planigale maculata</b> Common Planigale	Yes (assumed present)	<ul> <li>Jan</li> <li>Feb</li> <li>Mar</li> <li>Apr</li> <li>May</li> <li>Jun</li> <li>Jul</li> <li>Aug</li> <li>Sep</li> <li>Oct</li> <li>Nov</li> <li>Dec</li> </ul>
<b>Potorous tridactylus</b> Long-nosed Potoroo	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Randia moorei</b> Spiny Gardenia	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Rhodamnia rubescens</b> Scrub Turpentine	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Rhodomyrtus psidioides</b> Native Guava	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

Proposal Name



<b>Syzygium hodgkinsoniae</b> Red Lilly Pilly	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Syzygium moorei</b> Durobby	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<i>Thersites mitchellae</i> Mitchell's Rainforest Snail	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Tyto novaehollandiae</b> Masked Owl	Yes (assumed present)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       □ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?
<b>Xylosma terrae-reginae</b> Queensland Xylosma	No (surveyed)	□ Jan       □ Feb       □ Mar       □ Apr         □ May       □ Jun       ☑ Jul       □ Aug         □ Sep       □ Oct       □ Nov       □ Dec         □ Survey month outside the specified months?

#### **Threatened species Manually Added**

None added

**Threatened species assessed as not on site** Refer to BAR for detailed justification



Common name	Scientific name	Justification in the BAM-C
Brush-tailed Rock-wallaby	Petrogale penicillata	Refer to BAR
Cassia marksiana	Cassia marksiana	Refer to BAR
Eastern Osprey	Pandion cristatus	Habitat constraints
Fine-leaved Tuckeroo	Lepiderema pulchella	Refer to BAR
Fleay's Barred Frog	Mixophyes fleayi	Habitat constraints Geographic limitations
Giant Barred Frog	Mixophyes iteratus	Habitat constraints
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Large-eared Pied Bat	Chalinolobus dwyeri	Habitat constraints
Little Bent-winged Bat	Miniopterus australis	Habitat constraints
Long-nosed Potoroo, Cobaki Lakes and Tweed Heads West population	Potorous tridactylus - endangered population	Refer to BAR
Loveridge's Frog	Philoria loveridgei	Habitat constraints
Marblewood	Acacia bakeri	Refer to BAR
Mountain Frog	Philoria kundagungan	Habitat constraints
Philoria richmondensis	Philoria richmondensis	Habitat constraints Geographic limitations
Square-tailed Kite	Lophoictinia isura	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints

## Attachment 5



### **BAM Biodiversity Credit Report (Like for like)**

#### **Proposal Details**

Assessment Id	Proposal Name	BAM data last updated *
00049628/BAAS18069/24/00049629	Broken Head Quarry - external works	14/03/2024
Assessor Name	Assessor Number	BAM Data version *
Adam Michael McArthur	BAAS18069	67
Proponent Names	Report Created	BAM Case Status
	16/07/2024	Open
Assessment Revision	Assessment Type	Date Finalised
0	Part 4 Developments (General)	To be finalised
BOS entry trigger	* Disclaimer: BAM data last updated may indicate either complete	
BOS Threshold: Area clearing threshold	BAM calculator database. BAM calculator database may not be co	mpletely aligned with Bionet.

#### Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		
Species		
Cyclopsitta diophthalma coxeni / Coxen's Fig-	Parrot	
Erythrotriorchis radiatus / Red Goshawk		
Nurus atlas / Atlas Rainforest Ground-beetle		

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629



#### Thersites mitchellae / Mitchell's Rainforest Snail

#### Additional Information for Approval

PCT Outside Ibra Added

None added

#### PCTs With Customized Benchmarks

PCT
No Changes
Predicted Threatened Species Not On Site
Name
Amaurornis moluccana / Pale-vented Bush-hen

Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

Ephippiorhynchus asiaticus / Black-necked Stork

Ixobrychus flavicollis / Black Bittern

Macropus dorsalis / Black-striped Wallaby

Pseudomys oralis / Hastings River Mouse

#### Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629



Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3147-Far North Brush Box-Bloodwood Wet Forest	Not a TEC	0.2	5	0	5

3147-Far North Brush Box- Bloodwood Wet Forest	Like-for-like credit retirement options					
	Class	Trading group	Zone	НВТ	Credits	IBRA region
	North Coast Wet Sclerophyll Forests This includes PCT's: 3067, 3073, 3078, 3088, 3102, 3136, 3145, 3147, 3171, 3177	North Coast Wet Sclerophyll Forests >=50% and <70%	3147_VZ4a	Yes		<ul> <li>Scenic Rim, Burringbar-Conondale Ranges, Clarence Lowlands and Woodenbong. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</li> </ul>

### Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Assa darlingtoni / Pouched Frog	3147_VZ4a	0.2	6.00
Atrichornis rufescens / Rufous Scrub-bird	3147_VZ4a	0.2	6.00
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo	3147_VZ4a	0.2	6.00
Cercartetus nanus / Eastern Pygmy-possum	3147_VZ4a	0.2	6.00

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629



Crinia tinnula / Wallum Froglet	3147_VZ4a	0.2	5.00
Cyclopsitta diophthalma coxeni / Coxen's Fig-Parrot	3147_VZ4a	0.2	9.00
Dasyornis brachypterus / Eastern Bristlebird	3147_VZ4a	0.2	6.00
<b>Dromaius novaehollandiae - endangered population</b> / Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	3147_VZ4a	0.2	6.00
Erythrotriorchis radiatus / Red Goshawk	3147_VZ4a	0.2	9.00
Haliaeetus leucogaster / White-bellied Sea-Eagle	3147_VZ4a	0.2	6.00
Marsdenia longiloba / Slender Marsdenia	3147_VZ4a	0.2	6.00
Menura alberti / Albert's Lyrebird	3147_VZ4a	0.2	6.00
Ninox connivens / Barking Owl	3147_VZ4a	0.2	6.00
Ninox strenua / Powerful Owl	3147_VZ4a	0.2	6.00
Notamacropus parma / Parma Wallaby	3147_VZ4a	0.2	6.00
Nurus atlas / Atlas Rainforest Ground-beetle	3147_VZ4a	0.2	9.00
Petauroides volans / Southern Greater Glider	3147_VZ4a	0.2	6.00
Phascolarctos cinereus / Koala	3147_VZ4a	0.2	6.00
Planigale maculata / Common Planigale	3147_VZ4a	0.2	6.00
Potorous tridactylus / Long-nosed Potoroo	3147_VZ4a	0.2	6.00
Thersites mitchellae / Mitchell's Rainforest Snail	3147_VZ4a	0.2	9.00
Tyto novaehollandiae / Masked Owl	3147_VZ4a	0.2	6.00

### **Credit Retirement Options**

Like-for-like credit retirement options

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629



<b>Assa darlingtoni</b> / Pouched Frog	Spp	IBRA subregion
	Assa darlingtoni / Pouched Frog	Any in NSW
Atrichornis rufescens / Rufous Scrub-bird	Ѕрр	IBRA subregion
	Atrichornis rufescens / Rufous Scrub-bird	Any in NSW
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo	Spp	IBRA subregion
	Calyptorhynchus lathami lathami / South-eastern Glossy Black- Cockatoo	Any in NSW
<b>Cercartetus nanus</b> / Eastern Pygmy-possum	Spp	IBRA subregion
	Cercartetus nanus / Eastern Pygmy-possum	Any in NSW
<b>Crinia tinnula</b> / Wallum Froglet	Ѕрр	IBRA subregion
	Crinia tinnula / Wallum Froglet	Any in NSW
<b>Cyclopsitta diophthalma coxeni</b> / Coxen's Fig-Parrot	Spp	IBRA subregion
	Cyclopsitta diophthalma coxeni / Coxen's Fig-Parrot	Any in NSW

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629

Broken Head Quarry - external works

Page 5 of 8



Dasyornis brachypterus / Eastern Bristlebird	Ѕрр	IBRA subregion
	Dasyornis brachypterus / Eastern Bristlebird	Any in NSW
Dromaius novaehollandiae - endangered population / Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	Ѕрр	IBRA subregion
	<b>Dromaius novaehollandiae - endangered population /</b> Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	Any in NSW
<b>Erythrotriorchis radiatus</b> / Red Goshawk	Spp	IBRA subregion
	Erythrotriorchis radiatus / Red Goshawk	Any in NSW
Haliaeetus leucogaster / White-bellied Sea-Eagle	Spp	IBRA subregion
	Haliaeetus leucogaster / White-bellied Sea-Eagle	Any in NSW
<b>Marsdenia longiloba</b> / Slender Marsdenia	Spp	IBRA subregion
	Marsdenia longiloba / Slender Marsdenia	Any in NSW
Menura alberti / Albert's Lyrebird	Ѕрр	IBRA subregion
	Menura alberti / Albert's Lyrebird	Any in NSW

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629

Broken Head Quarry - external works

Page 6 of 8



Ninox connivens / Barking Owl	Spp	IBRA subregion
	Ninox connivens / Barking Owl	Any in NSW
<b>Ninox strenua</b> / Powerful Owl	Spp	IBRA subregion
	Ninox strenua / Powerful Owl	Any in NSW
<b>Notamacropus parma</b> / Parma Wallaby	Spp	IBRA subregion
	Notamacropus parma / Parma Wallaby	Any in NSW
Nurus atlas / Atlas Rainforest Ground-beetle	Spp	IBRA subregion
	Nurus atlas / Atlas Rainforest Ground-beetle	Any in NSW
<b>Petauroides volans</b> / Southern Greater Glider	Spp	IBRA subregion
	Petauroides volans / Southern Greater Glider	Any in NSW
<b>Phascolarctos cinereus</b> / Koala	Spp	IBRA subregion
	Phascolarctos cinereus / Koala	Any in NSW
<b>Planigale maculata</b> / Common Planigale	Spp	IBRA subregion
Assessment Id	Proposal Name	Page 7 of 8

00049628/BAAS18069/24/00049629



	Planigale maculata / Common Planigale	Any in NSW
Potorous tridactylus / Long-nosed Potoroo	Spp	IBRA subregion
	Potorous tridactylus / Long-nosed Potoroo	Any in NSW
Thersites mitchellae / Mitchell's Rainforest Snail	Spp	IBRA subregion
	Thersites mitchellae / Mitchell's Rainforest Snail	Any in NSW
<b>Tyto novaehollandiae</b> / Masked Owl	Spp	IBRA subregion
	Tyto novaehollandiae / Masked Owl	Any in NSW

Assessment Id

Proposal Name

00049628/BAAS18069/24/00049629

Broken Head Quarry - external works

Page 8 of 8