



New Berrima Clay/Shale Quarry

Fauna Assessment

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EXECUTIVE SUMMARY

Aquila Ecological Surveys undertook a fauna survey and assessment of a proposed extraction site at Lot 1 DP 414246, 1 Berrima Road, New Berrima (the "Project Site") to determine likely impacts as a result of a proposal to establish a clay / shale quarry at the Project Site.

It was found that fauna habitat at the Project Site is highly modified consisting of pasture, several hedgerows and five small dams. Consequently, it is only suitable for a narrow range of fauna species, none of which are of conservation significance. The Project Site is not part of any regional corridor for fauna.

No threatened fauna species or endangered fauna populations listed on the *Threatened Species Conservation Act* were found at the Project Site, nor are any such species considered likely to occur. The Project Site does not have any conservation value for fauna. Therefore, the proposal satisfies the guiding principles of threatened species assessment in relation to Part 3A projects.

No threatened fauna species listed on the *Environment Protection and Biodiversity Conservation Act* were found at the Project Site, nor are any such species considered likely to occur. Therefore, the proposal can proceed without referral to the Department of Environment Heritage Water and the Arts.

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1 INTRODUCTION

1.1 Scope

The Austral Brick Company Pty Ltd is seeking approval to extract and transport an average of approximately 120 000tpa shale, weathered shale, brick clay and some friable sandstone, for a period of 30 years, from approximately 8ha of land within the "Mandurama" property, namely Lot 1 DP 414246, 1 Berrima Road, New Berrima which is 100.2ha in area (**Figure 1.1**). Aquila Ecological Surveys has been commissioned by R.W. Corkery & Co Pty Limited on behalf of Austral Brick Company ("the Proponent") to prepare a fauna assessment to accompany the *Environmental Assessment* being prepared for the Project.

This report aims to:

- provide an assessment of the potential impacts of the project on any terrestrial and aquatic threatened fauna species, endangered fauna populations¹ or their habitats, and regional wildlife habitat corridors as per the requirements issued by the Director-general of the NSW Department of Planning in relation to the proposed development; and
- determine whether the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance listed on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Matters of national environmental significance include threatened and migratory fauna species. If a significant impact were likely the proposed action would be deemed a controlled action requiring approval from the federal Minster for the Environment.

With reference to the definitions provided by the, then, Department of Environment and Climate Change [DECC] (DECC 2007) it is noted that for the purposes of this report the:

- subject site is defined as the area directly affected by the Project (i.e. the Project Site); and
- Study Area is defined as the Project Site and any additional areas that are likely to be affected by the Project, either directly or indirectly. This particularly relates to the vegetated land to the west of the Project Site owned by the Commonwealth and managed by the Department of Defence.

¹ As listed on the Threatened Species Conservation Act 1995 and the Fisheries Management Act 1994

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1.2 **Project Overview**

The principal activities of the Project would include the following.

- Campaign stripping of topsoil and subsoil for use in the construction of amenity bunds and progressive site rehabilitation;
- Progressive construction of amenity bunds;
- Two or three extraction campaigns per year, each involving the excavation and stockpiling of the product clay/shale on the floor of the extraction area;
- A water management system to manage water collected in the pit and runoff from disturbed areas;
- Full-time transportation of the product clay/shale to the Bowral Brick Plant; and
- Rehabilitation of affected areas to pasture.

Figure 1.2 shows the proposed site layout.

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Note: A Colour version of this figure is available on the project CD

2 METHODS

2.1 Literature Review

A review of literature and databases relevant to the local area was undertaken. These included the following.

- Point records of the Atlas of NSW Wildlife (Department of Environment, Climate Change and Water [DECCW], 2010a).
- The Bionet online database (NSW Government, 2009²).
- Vegetation Mapping of south-eastern NSW (Tozer et al, 2005).
- Wingecarribee Shire Council's most recent State of the Environment report (Anon, 2008).

2.2 Field Survey

A field survey of that part of Lot 1 DP 414246 proposed as suitable for clay/shale extraction and the associated access road through the property was undertaken on 20/08/2008. The survey transect is shown in **Figure 2.1**. Notes were made of the presence/absence of specific sources of native fauna food and shelter, such as dense shrubs, flowering trees, standing water, tree hollows, caves and rock outcrops. The presence, or lack, of such fauna habitat components was noted to enable predictions of species that would be likely to utilise the site. Accessible tree hollows were inspected for the presence of fauna, any or signs of use, using an infrared camera attached to a LCD screen via a four-metre pole. All species detected during the field survey were also noted. The habitat surrounding the site was also evaluated to gain an appreciation of the relative importance of that which occurs on the site. Conditions during the survey were cool (10^oC) and windy with high cloud.

In relation to aquatic fauna, no formal survey was undertaken, as the man-made dams on the site and the creek traversed by the access road would not be affected by the proposal. Instead, records on the Bionet database, interpretation of aerial photography and notes of stream characteristics taken during the field survey were relied upon to gain an understanding of the likely impacts of the proposal.

Whilst the fauna survey does not meet all the requirements of fauna surveys published in the draft DECCW (2004) guidelines, it is considered that, given the highly modified nature of the Project Site and the completion of a database review, the level of survey is sufficient for the aims of the study.

² When this updated report was prepared in August 2010, the Bionet website was not operational.

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SPECIALIST CONSULTANT STUDIES Part 5: Fauna Assessment

\\SERVER\RWC\744\Reports\74402_EA_2008\CAD\744MGALP_Fauna 2.1.DWG ΤN ΜΝ REFERENCE Property Boundary Project Site Boundary Fauna Survey Transect SCALE 1:7 500 Figure 2.1 0 100 200 300 400m 100 Base Photograph Source: Geo-Spectrum (Australia) Pty Ltd - Date of Photography: 26 August 2008 FAUNA SURVEY TRANSECT

3 RESULTS

3.1 Literature Review

Point records of the Atlas of NSW Wildlife (DECCW, 2010a) were filtered using GIS software (MapInfoTM) to determine which threatened species have been recorded within a ten kilometre radius of the Project Site since 1980. Similarly, a 10km by 10km grid centred on the Project Site was used to garner records that may be on the Bionet (NSW Government 2009) but not on the Atlas of NSW Wildlife (e.g. records of NSW Fisheries, State Forests and the Australian Museum). **Table 3.1** presents the results of this review.

		Page 1 of 2
Species	Status	Habitat (DECCW, 2010b)
	EPBCA TSCA	
Blue-billed Duck	V	Deep water in large permanent wetlands and
Oxyura australis		swamps with dense aquatic vegetation.
Freckled Duck	V	Permanent freshwater swamps and creeks with
Stictonetta naevosa		heavy growth of Cumbungi (<i>Typha</i> spp.), Lignum (<i>Muehlenbeckia</i> sp) or Tea-tree (<i>Leptospermum</i> sp). During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds
Australasian Bittern	V	Favours permanent freshwater wetlands with tall,
Botaurus poiciloptilus		dense vegetation, particularly Cumbungi and spikerushes (<i>Eleocharis</i> spp.).
Gang-gang Cockatoo	V	Forages in forests and woodlands on eucalypts,
Callocephalon fimbriatum		wattles and other seeds. Requires tree hollows for breeding.
Scarlet Robin	V	Dry eucalypt forests and woodlands. The
Petroica boodang		understorey is usually open and grassy with few scattered shrubs
Flame Robin	V	Breeds in upland tall moist eucalypt forests and
Petroica phoenicea		woodlands, often on ridges and slopes. In winter, birds migrate to drier more open habitats in the lowlands.
Grey-headed Flying-fox	V V	Occur in subtropical and temperate rainforests, tall
Pteropus poliocephalus		sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.
Eastern False Pipistrelle	V	Prefers moist habitats, with trees taller than 20
Falsistrellus tasmaniensis		metres. It generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings
Koala	V V	Range of forest and woodland communities
Phascolarctos cinereus		containing certain feed trees.

Table 3.1 Locally Occurring Threatened Fauna Species

Table 3.1 Cont'dLocally Occurring Threatened Fauna Species

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Species	Status	Habitat (DECCW, 2010b)
	EPBCA TSCA	
Eastern Pygmy-possum	V	Heath and woodland where it feeds on pollen and
Cercartetus nanus		nectar of eucalypts, banksias, bottlebrushes, etc.
		Breeds and shelters in tree hollows. Also shelters
		in rotten stumps, holes in the ground, abandoned
		bird-nests, Ringtail Possum (<i>Pseudocheirus</i>
		peregrinus) dreys or thickets of vegetation.
Key		
EPBC – Species listed under the Commonwealth Environment Protection & Biodiversity Conservation Act 1999		
TSC – Species listed under the NSW Threatened Species Conservation Act 1995		
E – Endangered V – Vulnera	able	
Key peregrinus) dreys or thickets of vegetation. EPBC – Species listed under the Commonwealth Environment Protection & Biodiversity Conservation Act 1999 TSC – Species listed under the NSW Threatened Species Conservation Act 1995 E – Endangered V – Vulnerable		

3.2 Survey Results

3.2.1 Terrestrial Fauna

Fauna habitat at the Project Site is highly modified consisting mostly of pasture dominated by introduced grasses and herbs. Within the pasture is a hedgerow of the introduced shrub Cotoneaster (*Cotoneaster glaucophyllus*) and some Pine Trees (*Pinus sp*). This habitat type is of value to a limited range of common, native fauna species such as Willie Wagtail (*Rhipidura fuliginosa*), Australian Magpie (*Gymnorhina tibicens*) and Australian Raven (*Corvus coronoides*), which were detected during the survey.

To the north and north-west of the proposed extraction area and beyond are some remnant eucalypts mostly being Sydney Peppermint (*Eucalyptus piperita*) and Narrow-leaved Peppermint (*E. radiata*). These trees are generally in poor condition and a number of them are in decline. Hollows suitable for habitation by fauna such as birds, arboreal mammals and insectivorous bats are present in some of these trees. Inspection of accessible hollows only revealed the presence of old nesting material, possibly that of Eastern Rosellas (*Platycercus eximius*), a species detected during the survey.

There are five small dams within the Project Site, none of which are within the proposed extraction area. These provide limited habitat for waterfowl such as the Maned Duck (*Chenonetta jubata*) and Australasian Grebe (*Tachybaptus novaehollandiae*), which were observed during the field inspection. The lack of fringing vegetation means that these dams are less likely to be used for breeding by waterfowl or frog species.

The Project Site is not part of a wildlife corridor. A review of aerial photography of the vicinity and vegetation mapping by Tozer et al (2005) indicates significant areas of habitat along the Wingecarribee River extending westwards from approximately 700 metres west of the Project Site. However, given this distance and the poor condition of habitat, the Project Site could not be considered to be associated with it.

Appendix 1 presents a likely fauna assemblage of the Project Site based on DECCW (2010a) records and the type of habitat represented at the site.

3.2.2 Aquatic Fauna

The dams at the Project Site represent minimal fish habitat. They are not connected to any stream by a recognisable permanent or ephemeral stream and do not contain substrates or refuge areas that could be used by fish. The only fish species likely to be present are the occasional Long-finned Eel (*Anguilla reinhardtii*) and the introduced Mosquito Fish (*Gambusia holbrookii*).

3.2.3 Threatened Species

No threatened fauna species was detected during the field survey. It is considered unlikely that any of the threatened species listed in **Table 3.1** would inhabit the Project Site.

Whilst open water is available in the site dams, the lack of dense fringing vegetation reduces the likelihood of the Blue-billed Duck, Freckled Duck and Australasian Bittern occurring.

A limited amount of foraging habitat for the Gang-gang Cockatoo is represented by remnant eucalypts to the north of the proposed extraction area. Tree hollows in these eucalypts are less than 10cm in diameter and are too small to be used for nesting by this species, which requires hollows that are 70-200cm deep with an internal diameter of 25cm (Gibbons & Lindenmayer 2002). It is unlikely that the species inhabits the proposed extraction area given the lack of feed trees.

There are two local records of both the Scarlet Robin and the Flame Robin. Habitat within the Project Site is too modified to support populations of these species.

The Koala inhabits forest and woodland where it feeds on certain eucalypts. In the approved recovery plan for the Koala (DECC, 2008) lists Koala food trees for each "Koala Management Area." In the Koala Management Area in which the site is situated (the Central and Southern Tablelands), primary food trees are Ribbon Gum (*Eucalyptus viminalis*) and River Red Gum (*E.camaldulensis*). There are 18 other species regarded as secondary food tree species. None of the primary or secondary food trees occur on the Project Site, which is isolated from large stands of bushland meaning that Koalas are highly unlikely to use it as transitory habitat.

There are two local records of the Eastern False Pipistrelle from 1924. Hollows suitable for habitation by this species are present in the degraded woodland to the north of the extraction area but the abundance of this habitat feature in adjacent land and the provision of superior foraging habitat elsewhere means that the likelihood the species inhabiting these trees is low.

The Eastern Pigmy-possum is unlikely to occur due to the highly modified nature of the land and the lack of profusely flowering eucalypts, banksias and bottlebrushes,

There is only one local record of the Grey-headed Flying-fox and there are no roosting camps in the locality. Whilst some limited foraging habitat is available (eucalypts) these are abundant locally.

The Department of Environment Climate Change and Water also requested that the Giant Dragonfly (*Petalura gigantea*) be considered in this assessment. This species lives in permanent swamps and bogs with some free water and open vegetation (DECCW 2009b). Farms dams do not fit this description, so no such habitat occurs on the Project Site.

4 IMPACT ASSESSMENT

4.1 Habitat Removal and Effect on Fauna

The Project would result in the removal and modification of habitat within the Project Site. As discussed in Section 3.2, the habitat within the Project Site is already highly modified and generally only suitable for a narrow range of native fauna species, all of which are common in similar habitat in the surrounding region. No dams would be removed, and whilst one may undergo some expansion, temporary disturbance to such habitat for waterfowl is not considered significant, as this artificial habitat type is abundant in nearby areas.

It is unlikely that there would be any significant impacts on surrounding habitat as a result of dust settling on vegetation. In relation to fauna, any such impact would be temporary and unlikely to affect the life cycle of any locally occurring native species. Traffic would be confined to daylight hours. Though there is likely to be some mortality of species such as reptiles due to roadkill, it is unlikely this would be significant when comparing it to that caused by the movement of traffic elsewhere in the surrounding region.

No terrestrial or aquatic threatened fauna species or endangered fauna populations listed on either the *Threatened Species Conservation Act* or the *Fisheries Management Act* were detected or considered likely to occur at the Project Site.

The Project Site does not represent a regional wildlife habitat corridor, as it is already cleared and not close to large areas of habitat. No wildlife habitat corridors occur adjacent to the site in which it could be inferred that noise and traffic may affect the functioning of such a corridor.

Developments assessed under Part 3A of the *Environmental Planning & Assessment Act* are exempt from the provisions of the *Threatened Species Conservation Act*. i.e. there is no requirement to undertake seven-part tests (Section 5A of the *EP&A Act*) to determine whether a proposed development would have a significant effect on threatened species, populations or communities, or their habitat.

Instead, draft guidelines for threatened species assessment have been prepared by the Department of Environment and Conservation (now DECCW) the Department of Primary Industry (DEC & DPI 2005). The objective of the assessment process is to provide information to enable decision makers to ensure that developments deliver the following environmental outcomes:

- 1. maintain or improve biodiversity values (i.e. there is no net impact on threatened species or native vegetation).
- 2. conserve biological diversity and promote ecologically sustainable development.
- 3. protect areas of high conservation value (including areas of critical habitat).
- 4. prevent the extinction of threatened species.
- 5. protect the long-term viability of local populations of a species, population or ecological community.
- 6. protect aspects of the environment that are matters of national environmental significance.

No threatened fauna species, populations or ecological communities nor any matters of national environmental significance occur, or are likely to occur, at the Project Site, or be impacted off-site by the proposed development. In terms of fauna there are no areas of high conservation value at the Project Site. Therefore, it is considered that these guiding principles are met by the Proposal.

4.2 Environment Protection and Biodiversity Conservation Act 1999

No threatened or migratory species listed on this Act were detected at the Project Site. Nor were any considered likely to occur. Therefore, referral under this Act is not required in relation to the impact of the 'proposed action' on fauna.

5 CONCLUSION

The habitat types represented at the Project Site are highly modified and/or well represented in the locality. No threatened species are likely to occur and the Project Site is not part of any regional wildlife corridor.

No threatened fauna species or endangered fauna populations listed on the *Threatened Species Conservation Act* were found nor are any such species considered likely to occur. The Project Site is not part of a regional wildlife corridor and does not have any conservation value for fauna. Therefore, the proposal satisfies the guiding principles threatened species assessment in relation to Part 3A projects.

Similarly, no threatened fauna species listed on the *Environment Protection and Biodiversity Conservation Act* were found nor are any such species considered likely to occur. Therefore, the proposal can proceed without referral to the Department of Environment Heritage Water and the Arts.

6 **REFERENCES**

Anon (2008) Wingecarribee Shire Council Supplementary State of the Environment Report 2007/2008.

Department of Environment and Climate Change (2008) *Approved Recovery Plan for the Koala* (*Phascolarctos cinereus*). NSW Department of Environment and Climate Change, Sydney.

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Appendix 1

Likely Fauna Assemblage

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Appendix 1 Likely Fauna Assemblage

<u>Key</u>

* introduced species

D – Detected during field survey

	Page 1 of 2
SCIENTIFIC NAME	COMMON NAME
FRO	GS
Crinia signifera	Common Eastern Froglet
Limnodynastes peronii	Striped Marsh Frog
Limnodynastes tasmaniensis	Spotted Marsh Frog
Litoria peronii	Peron's Tree Frog
Litoria verreauxii	Verreaux's Tree Frog
REPT	ILES
Lampropholis delicata	Dark-flecked Garden Sunskink
Austrelaps ramsayi	Highlands Copperhead
Pseudechis porphyriacus	Red-bellied Black Snake
BIRI	DS
Anas castanea	Chestnut Teal
Anas gracilis	Grey Teal
Anas superciliosa	Pacific Black Duck
Aythya australis	Hardhead
Chenonetta jubata D	Maned Duck
Tachybaptus novaehollandiae D	Australasian Grebe
Ardea ibis	Cattle Egret
Egretta novaehollandiae	White-faced Heron
Threskiornis molucca	Australian White Ibis
Elanus axillaris	Black-shouldered Kite
Falco berigora	Brown Falcon
Falco cenchroides	Nankeen Kestrel
Fulica atra	Eurasian Coot
Gallinula tenebrosa	Dusky Moorhen
Porphyrio porphyrio	Purple Swamphen
Vanellus miles	Masked Lapwing
Ocvphaps lophotes	Crested Pigeon
Streptopelia chinensis*	Spotted Turtle-Dove
Calyptorhynchus funereus	Yellow-tailed Black-Cockatoo
Cacatua galerita	Sulphur-crested Cockatoo
Cacatua sanguinea	Little Corella
Eolophus roseicapillus	Galah
Platycercus adscitus eximius	Eastern Rosella
Platycercus elegans	Crimson Rosella
Psephotus haematonotus	Red-rumped Parrot
Hirundapus caudacutus	White-throated Needletail
Dacelo novaeguineae	Laughing Kookaburra

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SCIENTIFIC NAME	COMMON NAME	
BIRDS (Cont'd)		
Malurus cyaneus	Superb Fairy-wren	
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	
Manorina melanocephala	Noisy Miner	
Microeca fascinans	Jacky Winter	
Grallina cyanoleuca	Magpie-lark	
Rhipidura leucophrys D	Willie Wagtail	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	
Cracticus torquatus	Grey Butcherbird	
Gymnorhina tibicen D	Australian Magpie	
Strepera graculina	Pied Currawong	
Corvus coronoides D	Australian Raven	
Corvus mellori	Little Raven	
Anthus australis	Australian Pipit	
Hirundo neoxena	Welcome Swallow	
Turdus merula*	Eurasian Blackbird	
Acridotheres tristis*	Common Myna	
Sturnus vulgaris*	Common Starling	
MAMMALS		
Macropus giganteus	Eastern Grey Kangaroo	
Chalinolobus gouldii	Gould's Wattled Bat	
Mus musculus*	House Mouse	
Oryctolagus cuniculus*	European Rabbit	
Lepus capensis*	Brown Hare	
Vulpes vulpes*	Fox	