Moama Quarry Modification Report DA 10.2017.33.1

79 Rushly Road, Moama NSW

For Echuca Mini Mix

Business name	Green Edge Environmental P/L
ABN	18 654 533 712
Postal address	c/o Springton Post Office, Springton SA 5235
Principle Point of contact	Chris Alderton
Email and Mobile	chris@geenvironmental.com.au 0438 345 109

Rev	Purpose of document	Author	Reviewer	Issue date
A	Internal review	C. Alderton	R. Allwright	1 December 2023
B	For client comment	C. Alderton	C. Alderton	10 January 2024
C	For Council comment	C. Alderton	C. Alderton	20 February 2024
0	For lodgement	C. Alderton	C. Alderton	21 August 2024

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 Introduction

1.1 Background to the development

Echuca Mini Mix (EMM Group) submitted an application to the NSW Department of Planning and Environment through the Murray Shire Council (now the Murray River Council) for Secretary's Environmental Assessment Requirements (SEARs) for the proposed development. This development has been deemed a Designated Local Development under Part 4 of the *Environmental Planning and Assessment Act 1979*. The SEARs for the proposed development of a quarry to extract up to 60,000 m3 of sand per year was issued on the 1 September 2015, and which expired on the 1 September 2017 (Planning and Environment 2015).

It was indicated that the Environmental impact Statement (EIS) for the development must comply with the requirements of Clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (now superseded by the 2021 Regulations). The particular requirements that the EIS must address are outlined in these Regulations. The proposed development approval is shown Table 1.

With the exhaustion of the pre 2015 sand resource, the sourcing of new extraction areas for sand resource was identified by EMM Group as a necessity by the end of 2017 to ensure a continuity of supply. Failure to identify new sources of sand – the "do nothing" standpoint – would result in a loss of viability of the EMM Group business. Therefore, an EIS was developed, lodged, assessed and approved in 2016, with the details shown in Table 1.

The existing extraction areas use a front-end loader to excavate sand to a maximum depth of six metres, which is then stockpiled for dry sieving on-site; sieved resource is then transported to Echuca. The existing operations produce around 20,000-30,000 cubic metres sand/annum, and are likely to have 3-5 years of production remaining within their current extent, and only at the exhaustion of these resources would any new sources of material be utilised.

Table 1: Development approval details

APPLICATION No.:	DA 10.2017.33.1
Western Regional Planning Panel Reference No.:	PPS-2016WES013
Assessment No.: Parcel No.:	11200189 21153
DEVELOPMENT APPLICATION DETAILS	
Applicant Name	Andrew Halloran C/- EMM Group 26-42 Old Aerodrome Road ECHUCA VIC 3564
Subject Land	Lot: 97 DP: 751140
Address of Land	79 Rushy Road MOAMA
Owners Name	EMM Group P/L
Proposed Development	Extractive industry (Extension of area of existing sandpit and increase in extraction volume)
Integrated Referral Bodies	NSW EPA
DETERMINATION	

Consent **approved** subject to conditions described on the following pages.	
Approval Date	15 December 2021
Consent to Operate from (date)	15 December 2021
Consent to Lapse on (date)	16 December 2026
Attachments	Consent Conditions Attachment A (EPA Response)

1.2 Previous studies

The following reports/studies have been completed across the site and provide valuable background.

- Bell Cochrane and Associates, 2015. Construction Sand Investigations and Resource Estimates Report – EMM Group Pty. Ltd. Barmah Sand Pit. Report prepared for EMM Group, Bell Cochrane and Associates, St. Andrews, Victoria.
- Hamilton Environmental Services, 2016. Flora and Fauna Survey Report, Moama Sand Quarry (EAR ID No. 962). 13th April 2016. Report prepared for the EMM Group by Hamilton Environmental Services, Tatong, Victoria.
- Jo Bell Heritage Services, 2016. Proposed Extension to an Existing Sand Quarry, Moama, Aboriginal Cultural Heritage Assessment. 21st June 2016. Report prepared for EMM Group, by Jo Bell Heritage Services, Violet Town, Victoria.
- Hamilton Environmental Services, 2016. Environmental Impact Assessment, Moama Sand Quarry (EAR ID No. 962). 26 July 2016. Report prepared for the EMM Group by Hamilton Environmental Services, Tatong, Victoria.

2.0 Strategic context

2.1 Site location and context

The EMM Group currently extract both coarse and fine sand materials from their quarry on the 11 Mile Road Moama, and they are proposing an expansion of their sand extraction operations at this property to provide them with a wider range of material and a longer-term resource.

The location is in a rural area, with a long history of cropping, grazing and extractive industries. The property comprises undulating dune formations associated with the Barmah Sand Hills, and not surprisingly there are two other sand quarry operations in the area. The eastern boundary of the property is adjacent to the Murray Valley National Park, and the adjacent 11 Mile Road reserve sections to the west and north of the property contain a near continuous canopy of mostly mature Indigenous trees (Hamilton, 2016).

Figure 1 – Site location with other quarries shown to the south of the subject site

Figure 2 -Aerial photo of the site and existing development, historical quarries in purple, approved quarries in blue and proposed footprint outlined in blue

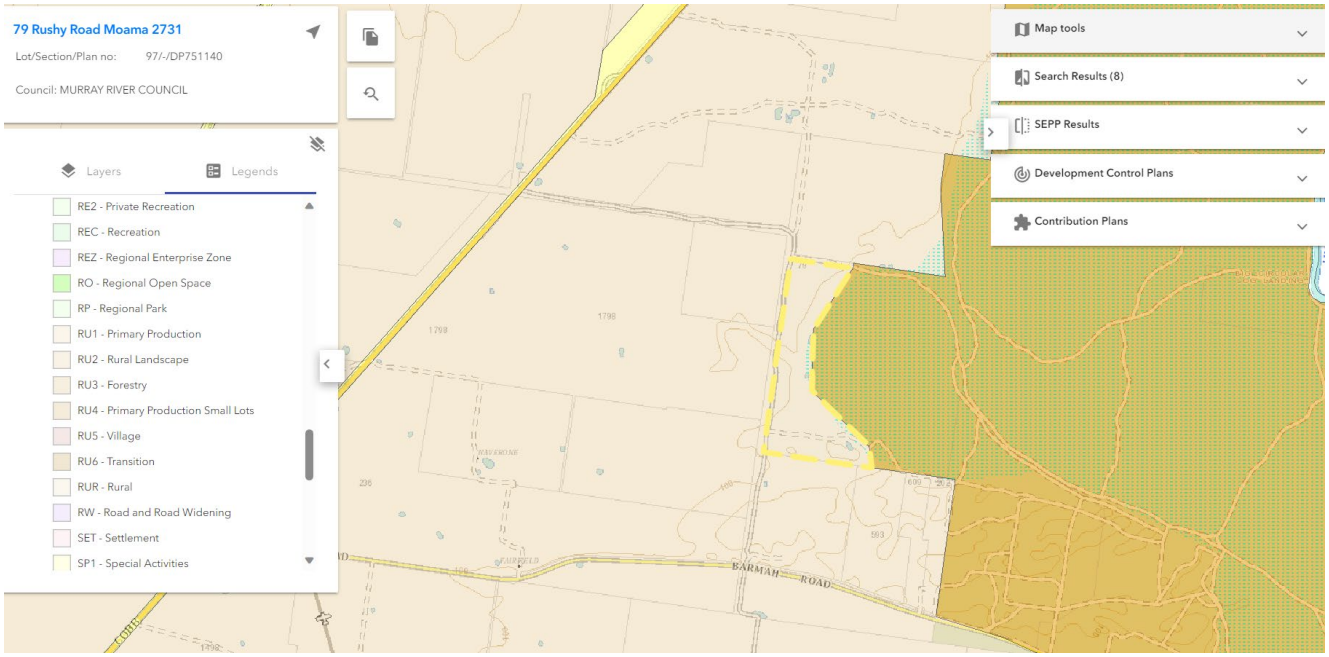


Figure 3 – Site location and context in relation to land zone (RU1)

2.2 Site description

The property is approximately 79.8ha, of which around 6ha is currently utilised for quarry operations in two separate locations, and the balance of which is used for either cropping or stock grazing, the historic land use at the property since the property was settled in the early 1910s. Sand extraction only commenced in 2006 with the purchase of the property in 2005 by the EMM Group (Hamilton, 2016).

The property reflects a history of agricultural land use:

- substantial tree clearing, with only scattered mature trees across the northern and central areas of the property
- no tree recruitment for several decades
- no shrub layer or shrub recruitment
- a ground layer that is predominantly opportunistic annual introduced species-based due to the recurrent cultivation and cropping disturbance over much of the property
- no fallen timber.

3.0 Description of modifications

The proposed modification to the development consent to the extractive industry and conditions. Specifically, it seeks approval to:

- maintain the extraction rate per annum
- alteration of the quarrying area
- amendment of DA conditions.

The proposed modifications are described in more detail below and Table 2.

Table 2: Existing approval conditions propsoed to be modified

Existing approval condition	New proposed
(a)Operation of an extractive industry (sand) with a maximum extraction volume of 30,000m3/pa;	Maintain at 30,000m3/pa
(b) Extraction period of five (5) years only from the date of commencement of extraction operations	Extend extraction period to 25 years
(c) Site disturbance area (including extraction area, processing and stockpiles) is no more than five (5) hectares	Extend to 18ha
(d) Extraction area is limited the areas identified in Figure 2-1 of the accompanying Environmental Impact Statement and detailed as –	
i) Northern Area (Coarse Sand) – 0.815ha	Amend to 17.2ha
ii) Southern Area (Fine Sand) – 0.876ha	Remain the same
(e) Maximum number of heavy vehicle movements (includes loaded and unloaded) per day of - i) Monday to Friday – 16; ii) Saturday – 6; iii) Sunday and Public Holidays – 0;	Maintain at 16 Monday to Friday, 6 on Saturday
(f) Haulage vehicles are limited to a 30 tonne capacity;	Maintain at 30 tonne capacity

3.1 Modifications to the development

As a result of increasing demand for the sand products, EMM are looking to secure a long-term solution. The DA and conditions approved in 2021 will become restrictive due to their limited area. While the DA modification seeks to increase the area proposed for extraction, traffic, noise, dust etc will not change from the original Environmental Impact Statement (Hamilton, 2016).

3.2 Modification to consent conditions

The proposed modifications to DA 10.2017.33.1 described in Table 2 necessitate amendments to the consent conditions which are identified below. Words proposed to be deleted are shown in strike through and words to be inserted are shown in ***bold italics***.

3.2.1 A2 Confirmation of Development

The DA conditions state:

(a) Operation of an extractive industry (sand) with a maximum extraction volume of 30,000 m3/pa;

(b) Extraction period of ~~five (5)~~ ***twenty-five (25)*** years only from the date of commencement of extraction operations;
(c) Site disturbance area (including extraction area, processing and stockpiles) is no more than ~~five (5)~~ *Eighteen* ***(18)*** **hectares;**
(d) Extraction area is limited the areas identified in Figure 2-1 of the accompanying Environmental Impact Statement and detailed as –
~~i) Northern Area (Coarse Sand) – 0.815ha;~~ ***17.2ha***
ii) Southern Area (Fine Sand) – 0.876ha;
(e) Maximum number of heavy vehicle movements (includes loaded and unloaded) per day of -
i) Monday to Friday – 30;
ii) Saturday – 6;
iii) Sunday and Public Holidays – 0;
(f) Haulage vehicles are limited to a 30 tonne capacity;
(g) Haulage route is via Rushy Road and Barmah Road to the Cobb Highway; and
(h) Rehabilitation of the site.

3.3 Modified project summary

Table 3 summaries the proposed project element, while Section 5 assesses the impacts.

Table 3: Modified project elements

Element	Original project	Modified project
Approved areas	1.69ha	18ha
Excavation depth	6m	No change
Native vegetation clearance	0ha	2,314m2
Annual extraction rate	Up to 30,000m3	Maintain 30,000m3
Hours of operation	Monday to Friday: 7.00 am to 5.00 pm Saturday: 7 am to 12 noon; Sunday: closed	No change
Truck movements	16 truck movements per day	Maintain
Truck tonnage	30T	30T

3.4 Substantially the same development

Section 4.55(2) of the EP&A Act states that a consent authority may modify a development consent if "it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all)".

The development, as proposed to be modified, is substantially the same development as that originally approved in that it:

- does not alter the key components of the approved development description
- does not alter the approved use of the development or its level of permissibility

- does not alter the level of compliance against the relevant policies, guidelines and statutory planning instruments that apply to the site and the development

The proposed modifications have been assessed in Section 5 and show there is minimal environmental impact. The proposed modifications will not:

- alter the key components of the approved development
- alter the approved use of the development or its level of permissibility
- alter the level of compliance against the relevant policies, guidelines and statutory planning instruments that apply to the site and the development

4.0 Statutory context

The project is not classed as State Significant Development as it does not trigger any of the criteria specified under State Environmental Planning Policy (Planning Systems) 2021. However, is considered Designated Development as the development is a class of development listed in Schedule 3 of the Environmental Planning and Assessment Regulation 2021, where it disturbs or will disturb a total surface area of more than 2 hectares of land.

The overarching State legislation in relation to this activity is the *Environmental Planning and Assessment Act 1979 (EP&A Act* 1979*)* and Environmental Planning and Assessment Regulation 2021. Part 4 of the Act sets the direction for making decisions in relation to proposed developments, namely state environmental planning policies (SEPP) and local environmental plans (LEP).

This proposal is for a modification to an existing consent under **Section 4.55(2) Other modification, where the development will remain substantially the same as the development that was originally approved** of the EP&A Act 1979, which states:

> (2) Other modifications A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if--
>
> (a) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and that consent as originally granted was modified (if at all), and before
>
> (b) it has consulted with the relevant Minister, public authority or approval body (within the meaning of Division 4.8) in respect of a condition imposed as a requirement of a concurrence to the consent or in accordance with the general terms of an approval proposed to be granted by the approval body and that Minister, authority or body has not, within 21 days after being consulted, objected to the modification of that consent, and
>
> (c) it has notified the application in accordance with--
>
> (i) the regulations, if the regulations so require, or
>
> (ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and
>
> (d) it has considered any submissions made concerning the proposed modification within the period prescribed by the regulations or provided by the development control plan, as the case may be.

Under Part 4 of the *EP&A Act*, extractive industries may require development consent under a LEP or other planning instrument. Extractive industries that are located in sensitive locations, such as in or near water bodies; are greater than two hectares in area or annual/total extraction volumes are greater than regulated volumes are classed as 'designated' and an Environment Impact Statement (EIS) must be prepared.

The EIS was prepared in 2016 following the Secretary's Environmental Assessment Requirements (SEARs).

4.1 Consent proposed to be modified

In 2015, a Secretary's Environmental Assessment Requirements (SEAR's) request was submitted on behalf of EMM for the modified development at 79 Rushy Road Moama, for the construction, Extractive industry (Extension of area of existing sandpit and increase in extraction volume).

A subsequent EIS (Hamiliton, 2016) was lodged in 2016 with an Integrated Development Application (DA 10.2017.33.1), with NSW EPA. The project also went through the Western Joint Regional Planning Panel (PPS-2016WES013) prior to development approval with conditions, being granted on 15 December 2021.

4.2 Previous modification to the development

Since the original approval was granted, one modification application has been submitted and approved by the River Murray Council and the Western Regions Joint Planning Pannel.

4.3 Consultation

A meeting was held with Senior Planner a Murray River Shire Council on 8 September 2023 to discuss the process and requirements. Follow up emails though 2024 have circulated to ensure these requirements have been included in the Modification Report.

The applicant has sought independent legal advice, leading to progressing down the Section 4.55(2) pathway.

5.0 Assessment of impacts

5.1 Assessment against the EIS

This section identifies the environmental assessment elements assessed in the Environmental Impact Statement (EIS) (Hamilton, 2016), and changes from the proposed modification (Table 4).

The 2016 EIS concluded……'This EIS in combination with the Aboriginal Cultural Heritage Assessment (Jo Bell Heritage Services, 2016) and the Flora and Fauna Assessment Report (Hamilton Environmental Services, 2016) that were both prepared for the site, indicate that there is likely to be no or minimal impact of the proposed development across a range of issues:

- No native vegetation loss
- No impact on threatened species or communities
- Minimal risk of soil erosion
- No impact on surface waters or groundwater
- No risk of water pollution
- No change in dust generation from the current low levels
- No risk of other air pollutant generation
- No change in noise or vibration generation from the current low levels
- No change in traffic volume from the current low levels
- Minimal change in visual amenity
- No farm productivity, agricultural support services, and regional employment impacts
- No social impacts.

Table 4: Assessment of elements EIS and proposed modification

Element	Original project	Modified project
Land resources	Extraction of soil, continuation of farming (cropping and grazing)	Additional area used for extraction, increased extraction rate, reduction in farming area (until rehabilitation, when land use will return to farming)
Surface water resources	The existing and proposed quarry operations are 'dry' operations; there is no water utilised as part of the sieving, screening or extraction of sand on the site, and therefore, there is no dedicated water storage or water management as part of current or future quarry operations	No change
Groundwater	No impact	No change
Biodiversity	It is considered highly unlikely that the proposed development would have any impact on any flora, fauna or ecological communities on the property or	Increase in footprint will impact 2,314m2 of scattered trees (Refer section 5.3), below the Area Clearing Threshold of 10,000m2

	any adjacent freehold or public land.	
Aboriginal Archaeology	Three scatters of stone artefacts on property, no impact	No change
European heritage	There are no structures or remnants of any significant European heritage on the property; the site has no residual historic plant, and the only structure on the property more than 10 years of age is the domestic dwelling that was built in the 1950s/1960s.	No change
Air quality	Given that quarry operations are mostly a one person operation on-site (implying a limited commute energy requirement and minimal emissions), and that delivery of products from Echuca to the end user only occurs once (and generally within the greater Echuca district only), then it is expected that Scope 3 emissions would be significantly less than the estimated Scope 1 emissions; the cumulative emissions would be expected to be less than 700 tCO2e/annum.	No change
Noise and vibration	With a likely maximum of 16 highway truck movements only per day and then along 11 Mile Road and the Barmah Road, and with no residences with a frontage on 11 Mile Road, it is highly unlikely that road traffic noise would exceed the Environmental Criteria for Road Traffic Noise indicates that for a residence in a rural area, an acceptable recommended noise level during the day is 55 dB (EPA 1999).	Increase in truck movements not impacting noise or vibration limits
Traffic and transport	The proposed development is restricted to Stage 1 and a maximum traffic generation of 20 truck movements per day as per to the submitted Environmental Impact Statement dated July 2016 prepared by Hamilton Environmental Services.	Increase in truck movements and carrying capacity
Visual	There being no residences with a frontage on 11 Mile Road that will regularly pass the property There will be very limited visibility of the quarries from 11 Mile Road	No change

	All of the closest dwellings and properties to the proposed Stage 1 quarries have a frontage on the Barmah Road, and none of these have a line-of-site view of the EMM Group property because of intervening sand hills There are only an estimated maximum of 11 vehicle movements along 11 Mile Road per day that are not associated with the EMM Group property The more westerly location of the proposed new quarries relative to the existing quarries makes the new quarries less visible from within the Murray Valley National Park than currently There is no night lighting on the property.	
Waste	There is therefore no waste generated on the site, and no waste products to either store or dispose of.	No change
Hazards	There are no hazardous or dangerous goods stored on-site or transported to or from the property; this will not change with the commissioning of the proposed Stage 1 quarries.	No change
Social and economic	There being no residences with a frontage on 11 Mile Road that can be impacted by the property All of the closest dwellings and properties to the proposed Stage 1 quarries have a frontage on the Barmah Road, and none of these have a daily interaction with the property The proposed Stage 1 quarry development will not lead to any change in the rate of sand production or the traffic volume associated with the transport of the material	No change
Land use conflict risk assessment	Potential impacts of the proposed development on such issues as weed management, soil erosion, stormwater runoff, water pollution, native vegetation, farm productivity, agricultural support services, regional employment and social are very low, as they are unlikely or rare in probability, and negligible or minor in consequence	No change

	Potential impacts of the proposed development on Aboriginal cultural heritage are moderate, because it is possible in occurrence and moderate in consequence Potential impacts of the proposed development on such issues as dust and noise generation and vehicle volume are moderate, as they are almost certain to occur, and negligible in consequence.	

5.2 Consistency with planning instruments

The proposed modification remains consistent with the development approval and does not trigger any additional legislation, planning policy requirements.

5.3 Impact assessment of proposed modification

Since the EIS developed in 2016, the land use has not changed, and additional species have been added to State and Commonwealth threatened species lists, including six flora, 17 fauna and eight threatened ecological communities. These species have been reassessed for likelihood of occurrence in the following sections.

5.4 Threatened flora

5.4.1 Existing environment

A database search was undertaken on 31 January 2024 of the NSW Department of Planning and Environment (BioNet Atlas of NSW Wildlife) and the Department of Climate Change, Energy the Environment and Water (DCCEEW) websites to identify threatened species that may be found within the proposed project site as listed under the *Biodiversity Conservation Act 2016* and the *Environmental Protection and Biodiversity Act 1999* (EPBC Act).

A desktop search of the online databases was undertaken as follows:

- DPE BioNet Atlas of NSW Wildlife (refer to Appendix B)
- DCCEEW Protected Matters Report (refer to Appendix B).

Six threatened flora species were identified in search area that were not included as part of the original EIS (Hamilton, 2016). Table 5 identifies these species, their threat level, predicted occurrence and a comment on their potential to occur on site. While some species have the potential to occur at the site, they were not observed on site, and are unlikely to occur under future management scenarios. None of these species were subject to the 'assessment of significance', as set out in Section 7.3 of the BC Act.

Table 5: Threatened flora from database searches

Type	Scientific name	Common name	Level of threat		Suitable habitat	Likelihood of occurrence
			State	Federal		
Plant	*Swainsonia plagiotropis*	Red Darling pea	V	V	Grows on flat grassland and in heavy red soil, often on roadsides and especially in table drains. Soils are derived from quaternary sediments and are usually red-brown clay-loams.	Unlikely to occur in the study area. Was not identified in the field survey.
Plant	*Pimelea spinescens*	Plains rice-flower	-	CE	The spiny rice-flower occurs in grassland habitats including native temperate grasslands, grassy woodlands and open shrublands. More commonly found in southern Victoria.	Unlikely to occur in the study area. Was not identified in the field survey.
Plant	*Lepidium monoplocoides*	Winged Peppercress	E	E	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by *Allocasuarina luehmannii* (Bulloak) and/or eucalypts, particularly *Eucalyptus largiflorens* (Black Box) or *Eucalyptus populnea* (Poplar Box).	No suitable habitat for the species to occur. Not identified in the field survey.
Plant	*Maireana cheelii*	Chariot Wheels	V	V	Recorded on the Hay Plain in *Atriplex vesicaria, Maireana aphylla* and *Acacia homalophylla* shrublands. Soils include heavy brown to red-brown clay-loams, hard cracking red clay, other heavy texture-contrast soils.	Unlikely habitat, usually found on heavier, grey clay soils with *Atriplex vesicaria* (Bladder Saltbush). Not identified in the field survey.

Type	Scientific name	Common name	Level of threat		Suitable habitat	Likelihood of occurrence
			State	Federal		
Plant	*Myriophyllum porcatum*	Ridged Water-milfoil	CE	V	The ridged water-milfoil occurs in shallow, ephemeral and seasonal wetlands, including lakes, swamps, rock pools in granite outcrops, waterholes in claypans, and highly modified habitats including farm dams and drainage lines.	No suitable habitat for the species to occur. Not identified in the field survey.
Plant	*Senecio behrianus*	Stiff Groundsel	CE	E	Remaining populations grow on poorly drained sedimentary grey clays or sandy clays on or close to floodplains, and on basalt-derived grey cracking clays in periodically flooded depressions.	No suitable habitat for the species to occur. Not identified in the field survey.

Note CE= Critically endangered, V=vulnerable, E/E1=endangered

5.4.2 Threatened communities

The above-mentioned databases were also searched for threatened ecological communities (TEC). Nine TEC's were listed has having potential habitat from the searches:

- *Acacia melvillei* shrubland in the Riverina and Murray-Darling Depression bioregions
- Mallee bird community of the Murray Darling Depression Bioregion
- Myall woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes Bioregion.
- Natural Grasslands of the Murray Valley Plains.
- Buloke woodlands of the Riverina and Murray-Darling Depression Bioregions
- Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and derived native grasslands of south-eastern Australia
- Weeping Myall Woodlands
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

These communities did not occur at the proposed project site or will not be impacted upon by the proposed modification.

5.4.3 Impact assessment

The proposed modification will not impact these species or ecological communities.

Flora assessments over a number of years have revealed no vegetation species; populations or communities, that are of local, regional or state conservation significance.

5.4.4 Biodiversity Conservation Regulations 2017

The Biodiversity Offsets Scheme threshold is a simple, objective, risk-based test used to determine when the biodiversity assessment method and the Biodiversity Offsets Scheme apply. The Biodiversity Offsets Scheme applies to:

- local development (assessed under Part 4 of the *Environmental Planning and Assessment Act 1979*) that triggers the Biodiversity Offsets Scheme threshold or is likely to significantly affect threatened species based on the test of significance in section 7.3 of the *Biodiversity Conservation Act 2016*
- state significant development and state significant infrastructure projects, unless the Secretary of the Department of Planning and Environment and the Chief Executive of OEH determine that the project is not likely to have a significant impact
- biodiversity certification proposals
- clearing of native vegetation in urban areas and areas zoned for environmental conservation that exceeds the Biodiversity Offsets Scheme threshold and does not require development consent
- clearing of native vegetation that requires approval by the Native Vegetation Panel under the *Local Land Services Act 2013*
- activities assessed and determined under Part 5 of the *Environmental Planning and Assessment Act 1979* (generally, proposals by government entities), if proponents choose to 'opt in' to the Scheme.

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered. The threshold has two elements:

- whether the amount of native vegetation being cleared exceeds a threshold area set out below
- whether the impacts occur on an area mapped on the Biodiversity Values map published by the Minister for the Environment.

If clearing and other impacts exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed development including biodiversity impacts prescribed by clause 6.1 of the Biodiversity Conservation Regulation 2017.

The area threshold applies to all proposed native vegetation clearing associated with a proposal, regardless of whether this clearing is across multiple lots. The minimum lot size in the locality is 120ha, so the 40ha to less than 1,000ha applies, meaning the threshold for vegetation clearing is 1ha or more to commence the BOS. In this project 2,314m2 is proposed to be cleared.

Minimum lot size associated with the property	**Threshold for clearing, above which the BAM and offsets scheme apply**
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	**1 ha or more**
1000 ha or more	2 ha or more

The proposed development area is not located on land mapped under the biodiversity values (BV) map. If development within areas on the BV Map does not involve clearing native vegetation (including groundcover, trees and understorey plants) or a prescribed impact (as set out in clause 6.1 of the Biodiversity Conservation Regulation 2017) within the mapped area, the BOS is not applied based on the BV Map.

However, the proponent must also consider other criteria for the BOS:

- whether the area of native vegetation clearing in areas not on the BV Map exceeds the clearing area thresholds as specified in clause 7.2 of the Biodiversity Conservation Regulation 2017
- whether the proposed development or activity is likely to significantly affect threatened species, or ecological communities or their habitats based on the test of significance in section 7.3 of the BC Act.

Division 6.1 of the Biodiversity Conservation Regulations lists the following additional biodiversity impacts to which scheme applies:

(1) The impacts on biodiversity values of the following actions are prescribed (subject to subclause (2)) as biodiversity impacts to be assessed under the biodiversity offsets scheme:

(a) the impacts of development on the following habitat of threatened species or ecological communities:

(i) karst, caves, crevices, cliffs and other geological features of significance

(ii) rocks

(iii) human made structures

(iv) non-native vegetation

(b) the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range,

(c) the impacts of development on movement of threatened species that maintains their lifecycle

(d) the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development)

(e) the impacts of wind turbine strike on protected animals

(f) the impacts of vehicle strike on threatened species of animals or on animals that are part of a threatened ecological community.

(2) The additional biodiversity impacts prescribed by this clause:

(a) are prescribed for the purposes of assessment and biodiversity assessment reports under the Act, but are not additional biodiversity impacts for the purposes of calculating the number and class of biodiversity credits that are required under a biodiversity assessment report to be retired to offset the residual impact on biodiversity values of proposed development, proposed clearing of native vegetation or proposed biodiversity certification of land

(b) may be taken into account in the determination of the biodiversity credits required to be retired (or other conservation measures required to be taken) under a planning approval or vegetation clearing approval or under a biodiversity certification of land.

Based on additional species assessment, assessment of ecological communities and the clearing threshold, the BOS is not triggered. The project will also not impact any of the prescribed impacts as outlined in clause 6.1 of the Biodiversity Conservation Regulations 2017. The outcome of this assessment is shown in Appendix E, with no exceedance of the area clearance threshold.

5.5 Fauna

5.5.1 Threatened species

A database search was undertaken on 31 January 2024 of the NSW Department of Planning and Environment (DPE) (BioNet Atlas of NSW Wildlife) and the DCCEEW websites to identify threatened species that may be found within the proposed project site as listed under the *Biodiversity Conservation Act 2016* and the *Environmental Protection and Biodiversity Act 1999* (EPBC Act).

A desktop search of the online databases was undertaken as follows:

- DPE BioNet Atlas of NSW Wildlife (refer to Appendix B)
- DCCEEW Protected Matters Report (refer to Appendix B).

None of these species were recorded during previous site assessments.

Table 6 lists the fauna species not assessed under the EIS (Hamilton, 2016) with State and National conservation significance that have potential to occur within the study area. The column in Table 6 headed 'comment', identifies if critical habitat will be impacted.

Although some habitat preference is available at the proposed works site, none of these will be impacted upon.

Table 6: Listed fauna species from databases

Type	Scientific name	Common name	Level of threat		Suitable habitat
			State	Federal	
Aves	*Falco hypoleucos*	Grey Falcon	V	V	No. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.
Aves	*Artamus cyanopterus cyanopterus*	Dusky woodswallow	V	-	No. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris.
Aves	*Hirundapus caudacutus*	White throated needletail	-	V	No. Migratory and usually seen in eastern Australia from October to April. More common in coastal areas, less so inland.
Aves	*Lophoictinia isura*	Square tailed Kite	V	-	No. The Square-tailed Kite prefers open eucalypt forest and woodlands with mature trees.
Aves	*Aphelocephala leucopsis*	Southern Whiteface	-	V	No. Southern whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains.
Aves	*Calidris acuminata*	Sharp-tailed Sandpiper	-	V	No. The species utilises fresh and hypersaline environments, feeding along the edge of water on mudflats, coastal and inland wetlands, and sewage ponds. This species is migratory and only found in Australia in non-breeding season.

Type	Scientific name	Common name	Level of threat		Suitable habitat
			State	Federal	
					Individuals arrive in Victoria between September-December.
Aves	*Lophochroa leadbeateri leadbeateri*	Major Mitchell's Cockatoo	-	E	No. The eastern Major Mitchell's cockatoo lives in arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*). Within these vegetation types, the subspecies main requirements are fresh surface water, and trees with suitable nesting hollows.
Aves	*Neophema chrysostoma*	Blue-winged Parrot	-	V	No. Blue-winged parrots inhabit a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones.
Aves	*Tringa nebularia*	Common Greenshank	E	E	No. The common greenshank forages at the edge of wetlands, in soft mud on mudflats, in channels, or within shallows around the edge of waterbodies. These locations are often situated near or among mangroves or other sparse, emergent or fringing vegetation such as sedges or saltmarsh. The bird occasionally feeds amongst seagrass beds.
Frogs	*Crinia sloanei*	Sloane's froglet	V	E	No. Sloane's Froglet lives and breeds in temporary and permanent waterbodies including oxbows off creeks and rivers, farm dams, large and small natural wetlands, constructed frog ponds and temporary puddles. It prefers wetlands that contain riparian and aquatic vegetation.

Type	Scientific name	Common name	Level of threat		Suitable habitat
			State	Federal	
Fish	*Bidyanus bidyanus*	Silver Perch	V	CE	No. Fresh water aquatic species.
Fish	*Galaxias rostratus*	Flathead Galaxias	CE	CE	No. Fresh water aquatic species.
Fish	*Maccullochella macquariensis*	Trout Cod	E	E	No. Fresh water aquatic species.
Fish	*Macquaria australasica*	Macquarie Perch	E	E	No. Fresh water aquatic species.
Fish	*Craterocephalus fluviatilis*	Murray Hardyhead	-	E	No. Fresh water aquatic species.
Fish	*Maccullochella peelii*	Murray Cod	-	V	No. Fresh water aquatic species.
Insect	*Synemon plana*	Golden sun moth	V	V	No. Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which groundlayer is dominated by wallaby grasses Austrodanthonia spp.

Note V=vulnerable, P=protected, E/E1=endangered and E4/CE= critically endangered; Mig= Migratory under EPBC Act/International convention; *listed under the *Fisheries Act 1994*

5.5.2 Impact assessment

The fauna assessment revealed no species; population or communities, which are of local, regional or state conservation significance. No species progressed to requiring an assessment for significance or species impact statement (SIS) required a as outline by the BC Act.

6.0 Justification of the proposed modification

The proposed modification to the development consent to the extractive industry and conditions. Specifically, it seeks approval for:

- the alteration of the quarrying area
- amendment of DA conditions.

The proposed modification will support the ongoing use of the site, economic development in the larger area, support direct and indirect jobs. The modification is essential to the long-term supply of the resource.

6.1 Site suitability

The site is highly suitable for the purpose. The property is the site of two existing sand quarries, and there are a further two long-standing sand quarry operations within 2km of the property (Hamilton, 2016).

Further investigation has revealed a significant sand resource remaining on the property, and as the site has been heavily modified by European settlement, this sand resource can be utilised without having any impact on native vegetation and threatened species and communities (Hamiliton, 2016)

While much of the surrounding landscape is utilised for mixed grazing/cropping, the area in the vicinity of the property is sparsely populated and located on a relatively infrequently used road where there are no property frontages, and the current operations and proposed development are isolated enough to not cause any impact on the district community (Hamilton, 2016).

6.2 Benefits of the project

EMM Group are the major suppliers of sand and sand-derived products in the Echuca district, without a long-term sand supply, the viability of the business, the jobs it supports and in turn the availability of sand and sand products within the Echuca district, would have been compromised.

Clearly, the provision of such products is a necessity to the construction industry, the activity of which is an important economic driver of communities.

EMM Group and a significant employer in the Echuca-Moama community, and continued viability of the business is critical to maintain that on-going employment.

The continued development of the site and utilisation of the sand resource can be achieved with no or minimal environmental impact, and with no impact on the local community and regional agriculture and agricultural services and employment (Hamilton, 2016).

6.3 Ecologically sustainable development

The sand deposits found on the EMM Group property at Moama are a non-renewable resource. However, the provision of sand and sand-derived products is of great importance to the economy of the Echuca-Moama community and district.

While the resource is non-renewable, the EIS (Hamilton, 2016) has demonstrated that the utilisation of it can and will be achieved without environmental degradation and social disruption; the isolated nature of the site relative to other activities and dwellings, and its soil, water and topographical characteristics render it relatively benign in terms of loss of ecological capacity and hazard risk.

When these characteristics are combined with responsible management that avoids hazards and risks to the environment, then despite the removal of the sand and the commensurate change in the landform of the site, the property can remain as an agriculturally productive landscape into the future.

7.0 References

Bell Cochrane and Associates, 2015. Construction Sand Investigations and Resource Estimates Report – EMM Group Pty. Ltd. Barmah Sand Pit. Report prepared for EMM Group, Bell Cochrane and Associates, St. Andrews, Victoria.

DCCEEW (2024), *Protected Matters Search Tool*, Environment Protection and Biodiversity Conservation Act 1999, Retrieved 31 January 2024, from https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool

DPE (NSW) (2024) BioNet Atlas of NSW Wildlife, [Online, accessed 31 January 2024] http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx

Hamilton Environmental Services, 2016. Flora and Fauna Survey Report, Moama Sand Quarry (EAR ID No. 962). 13th April 2016. Report prepared for the EMM Group by Hamilton Environmental Services, Tatong, Victoria.

Hamilton Environmental Services, 2016. Flora and Fauna Survey Report, Moama Sand Quarry (EAR ID No. 962). 26 July 2016. Report prepared for the EMM Group by Hamilton Environmental Services, Tatong, Victoria.

Jo Bell Heritage Services, 2016. Proposed Extension to an Existing Sand Quarry, Moama, Aboriginal Cultural Heritage Assessment. 21st June 2016. Report prepared for EMM Group, by Jo Bell Heritage Services, Violet Town, Victoria.

Appendix A: Map series

greenedge environmental

Figure **1**

Moama Sand Quarry Modification
Site Map

LEGEND

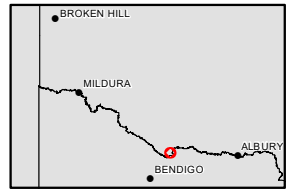
- DA Mod Application Footprint
- Approved Extraction Area
- Historical Extraction Area
- Site
- Cadastre

N

0 50 100 150 200 m

Scale 1:12,500 @ A4

Coordinate System: GDA 1994 MGA Zone 55



Appendix B: Threatened species searches

NSW Threatened Flora

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Plants in selected area [North: -35.94 West: 144.83 East: 144.93 South: -36.04] returned a total of 4,158 records of 217 species.
Report generated on 31/01/2024 6:34 AM

Kingdom	Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status
Plantae	Flora	Chenopodiaceae	6371	*Sclerolaena napiformis*	Turnip Copperburr	E1	E

NSW Threatened Fauna

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Animals in selected area [North: -35.94 West: 144.83 East: 144.93 South: -36.04] returned a total of 1,053 records of 103 species.

Report generated on 31/01/2024 6:32 AM

Kingdom	Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status
Animalia	Aves	Ardeidae	0189	*Ardea pacifica*	White-necked Heron	P	
Animalia	Aves	Ardeidae	0197	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E
Animalia	Aves	Accipitridae	0230	*^^Lophoictinia isura*	Square-tailed Kite	V,P,3	
Animalia	Aves	Falconidae	0238	*Falco subniger*	Black Falcon	V,P	
Animalia	Aves	Gruidae	0177	*Grus rubicunda*	Brolga	V,P	
Animalia	Aves	Strigidae	0246	*^^Ninox connivens*	Barking Owl	V,P,3	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P	
Animalia	Aves	Meliphagidae	8303	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P	
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*	Varied Sittella	V,P	
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P	
Animalia	Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P	
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*	Diamond Firetail	V,P	

NSW Engangered Ecological Communiites

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Search criteria : Public Report of all Valid Records of Communities in selected area [North: -35.94 West: 144.83 East: 144.93 South: -36.04] returned 0 records for 12 entities.

Report generated on 31/01/2024 6:35 AM

Kingdom	Class	Family	Species Code	Scientific Name	Common Name	NSW status	Comm. status	Records	Info
Community				*Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions*	Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions	E3		K	
Community				*Allocasuarina luehmannii Woodland in the Riverina and Murray-Darling Depression Bioregions*	Allocasuarina luehmannii Woodland in the Riverina and Murray-Darling Depression Bioregions	E3		K	
Community				*Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions*	Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		E	K	
Community				*Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia*	Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		E	K	
Community				*Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3		K	

Community	*Mallee Bird Community of the Murray Darling Depression Bioregion*	Mallee Bird Community of the Murray Darling Depression Bioregion		E	K	
Community	*Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3		K	
Community	*Natural Grasslands of the Murray Valley Plains*	Natural Grasslands of the Murray Valley Plains		CE	K	
Community	*Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions*	Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3		K	
Community	*Weeping Myall Woodlands*	Weeping Myall Woodlands		E	K	
Community	*White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and*	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and	E4B		K	
Community	*White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		CE	K	

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 31-Jan-2024

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	42
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	400 - 500km upstream from Ramsar site	In feature area
Barmah forest	Within Ramsar site	In feature area
Gunbower forest	20 - 30km upstream from Ramsar site	In feature area
Hattah-kulkyne lakes	200 - 300km upstream from Ramsar site	In feature area
Nsw central murray state forests	Within Ramsar site	In feature area
Riverland	400 - 500km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	400 - 500km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In feature area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Natural Grasslands of the Murray Valley Plains	Critically Endangered	Community likely to occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only
FISH			
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Craterocephalus fluviatilis Murray Hardyhead [56791]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Galaxias rostratus](#) Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Maccullochella macquariensis](#) Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Maccullochella peelii](#) Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Macquaria australasica](#) Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
[Crinia sloanei](#) Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
[Litoria raniformis](#) Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat may occur within area	In feature area
INSECT			
[Synemon plana](#) Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
[Nyctophilus corbeni](#) Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
[Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)](#) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Brachyscome muelleroides Mueller Daisy [15572]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat likely to occur within area	In feature area
Maireana cheelii Chariot Wheels [8008]	Vulnerable	Species or species habitat may occur within area	In feature area
Myriophyllum porcatum Ridged Water-milfoil [19919]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pimelea spinescens subsp. spinescens Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pterostylis despectans Lowly Greenhood [6272]	Endangered	Species or species habitat may occur within area	In buffer area only
Sclerolaena napiformis Turnip Copperburr [11742]	Endangered	Species or species habitat known to occur within area	In feature area
Senecio behrianus Stiff Groundsel, Behr's Groundsel [14030]	Endangered	Species or species habitat may occur within area	In buffer area only
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Swainsona plagiotropis Red Darling-pea, Red Swainson-pea [10804]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Neophema chrysostoma](#) Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Murray Valley	Regional Park	NSW	In buffer area only
Murray Valley	National Park	NSW	In feature area
River Murray Reserve	Natural Features Reserve	VIC	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Barmah-Millewa Forest	VIC	In buffer area only
Millewa Forest	NSW	In feature area

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Ecological thinning trial in NSW River Red Gum Forests	2013/6713	Controlled Action	Post-Approval	In buffer area only
The Modified Operation of the Goulburn Murray Irrigation District	2009/5123	Controlled Action	Post-Approval	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Referral decision				
Rehabilitation of Moira Lake Wetland System Stage 3	2009/4975	Referral Decision	Completed	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix C: Tree impacts

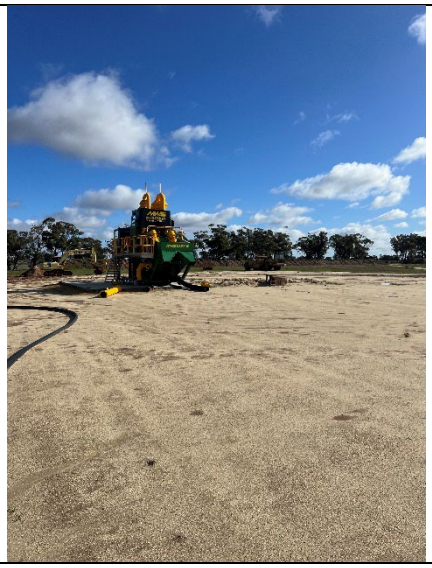
Tree number	Species[1]	DBH[2]	Tree location[3]		Health[4]	Hollows[5]
			Easting	*Northing*		
8	White Cypress-pine	30	308483	6015091	4	A
10	White Cypress-pine	30	308522	6015116	4	A
15	White Cypress-pine	30	308713	6015221	4	A
16	White Cypress-pine	30	308695	6015212	4	A
17	White Cypress-pine	32	308702	6015200	3	A
22	White Cypress-pine	55	308590	6015205	4	S
23	White Cypress-pine	68	308629	6015181	1	S,L
26	White Cypress-pine	45/45	308540	6015261	4	S
27	White Cypress-pine	35	308546	6015335	4	A
30	White Cypress-pine	35	308553	6015337	3	A
31	White Cypress-pine	35	308568	6015346	4	A
33	White Cypress-pine	58	308466	6015163	3	S
35	White Cypress-pine	35	308429	6015176	0	S
36	White Cypress-pine	38	308430	6015185	3	A
40	White Cypress-pine	40	308378	6015193	3	S
41	White Cypress-pine	25	308379	6015190	3	A
42	White Cypress-pine	55	308386	6015167	4	S
44	White Cypress-pine	40	308404	6015168	2	S
45	White Cypress-pine	20	308410	6015172	0	A
47	White Cypress-pine	35	308377	6015087	3	A
48	White Cypress-pine	60	308382	6015024	4	S
52	Grey Box	100	308638	6015087	4	S
54	Grey Box	50	308709	6015215	3	S,L
55	Grey Box	75	308560	6015066	4	S,L
60	Buloke	40	308352	6015007	3	A

(Adapted from Hamilton, 2016)

Note:

1. River Red Gum is Eucalyptus camaldulensis, Grey Box is E. microcarpa, Yellow Box is E. melliodora, White Cypress-pine is Callitris glaucophylla and Buloke is Allocasuarina luehmanni;
2. DBH is diameter at breast height over bark in cm (at 1.30 m above ground);
3. Location data are northings and eastings of MGAz55 coordinates;
4. Health: Dead; 1 = 1-20 % projective foliage cover (pfc); 2 = 21-40 % pfc; 3 = 41-60 % pfc; 4 - 61-80 % pfc; 5 = 81-100 % pfc;
5. Hollows: A = absent; S = small hollows present; L = large hollows present;

Appendix D: Site photos

	
Photo 1 –Existing haulage road will be utilised	Photo 2 – Existing norther quarry area, with product ready to be moved
	
Photo 3 – Existing landscape of the northern area	Photo 4 – overburden from existing pit awaiting rehabilitation
	
Photo 5 – Areas outside the existing quarry are cropped	Photo 6 – Mobile sieve to be used around the quarry

Appendix E: Biodiversity Assessment and Approvals Decision Support tool

Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		21/08/2024 2:12 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	Was ALL BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	2,313.7 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	1,191.6 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	1,200,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	10,000 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	no

REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)	**no**

What do I do with this report?

• If the result above indicates the BOS Threshold has been exceeded, your local council may require a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor.

• If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is '"likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.

• If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.

• If all Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the Interpreting the evaluation report section of the Biodiversity Values Map Threshold Tool User Guide .

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the Guide for reviewing area clearing threshold results from the BMAT Tool.

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date: _____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

21/08/2024 02:12 PM

Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the Biodiversity Values Map webpage.

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the Biodiversity Values Map Review webpage.

If you need help using this map tool see our Biodiversity Values Map and Threshold Tool User Guide or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

Biodiversity Values Map

269.8 0 134.90 269.8 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

21/08/2024 02:12 PM

The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.