

Warrah Ridge Rearing Farm Flora and Fauna Assessment Report



19 October 2021

Document Verification

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Client	Pace Farm

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EXECUTIVE SUMMARY

Pace Farm (**PACE**) is proposing the construction and operation of poultry Rearing farm and associated infrastructure on land at 375 Inverkip Road, Warrah Ridge, approximately 11km South West of Quirindi. The proposal plans to develop approximately 0.9252 ha (building area) and 1.93 ha (hardstand area) of the 15.88ha subject land. This Flora and Fauna Report has been prepared by 28 South Environmental on behalf of Pace.

The aim of this report is to assess the impacts from the proposed development against the provisions of the *Biodiversity Conservation Act 2016* (**BC Act**) and its associated regulations. **Due to the existing agricultural cropping within the development footprint, and presence of exotic pastures, this portion of the site is classified as category 1 land under the *Land Services Act 2013* and does not require assessment of offsets under the Biodiversity Assessment Method.** A small portion of PCT599 is adjacent to the development footprint. This site assessment has determined that the vegetation is comprised of a highly disturbed tree layer comprised of White Box *Eucalyptus albens*, Yellow Box *E. melliodora* and/or Blakely's Red Gum *E. blakelyi*, however, the groundlayer is comprised entirely of exotic species associated with the current agricultural use (and therefore not achieving the EPBC Act listing for the community).

An iterative design process has been undertaken to avoid impacts to onsite and adjacent native vegetation and environmental features. The Site design options have been assessed against key environmental, engineering and economic criteria. The design has been sited to ensure there are no direct impacts to identified and mapped native vegetation or indirect impacts to adjacent environmental features. **There will be no direct or indirect impacts to identified or mapped protected matters under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the mapped PCT, or requirements under the Koala Habitat Protection State Environmental Planning Policy (SEPP) (Koala SEPP).** Careful construction methodology and drainage management will further manage and minimise indirect impacts to the identified PCT599. As such, no habitat or nesting opportunities will be removed as a result of this development, and no credits are required to be retired in accordance with the NSW Biodiversity Offset Scheme (**BOS**) as a result of this development.

1 Introduction

This Flora and Fauna Assessment Report assesses the impacts of the proposed Warrah Ridge - Rearing Farm (the proposal) according to the NSW Biodiversity Assessment Methodology (**BAM**). 28 South Environmental (**28 South**) has prepared this report on behalf of the proponent, Pace Farm.

1.1 Proposal

The proposal involves the construction of 4 poultry sheds, and supporting infrastructure including:

- Four (4) 62,000 bird rearing sheds, roughly north/north west facing;
- 6m Access Road accessing the sheds including two (2) designated truck turning bays;
- 12 x 8 m compost sheds;
- 17 x 8 m ancillary services areas;
- 2 x 2 megalitre water tank and LPG gas tank;
- 12m x 6.7m Amenities block;
- 6 carparks adjacent to Access Road; and
- Screen Planting to Inverkip Road.

An internal access road system will be established for the construction and operation of the Rearing Farm, and to access the balance of the Site.

1.2 The Development Site

1.2.1 Site Location

The proposed Rearing Farm is wholly located in the Liverpool Plains Local Government Area (**LGA**), approximately 11km South West of the Township of Quirindi. The subject land is identified as Lot 391 DP556635, which is owned by Pace Farm. The subject land is part of a larger land holding also owned by Pace Farm.

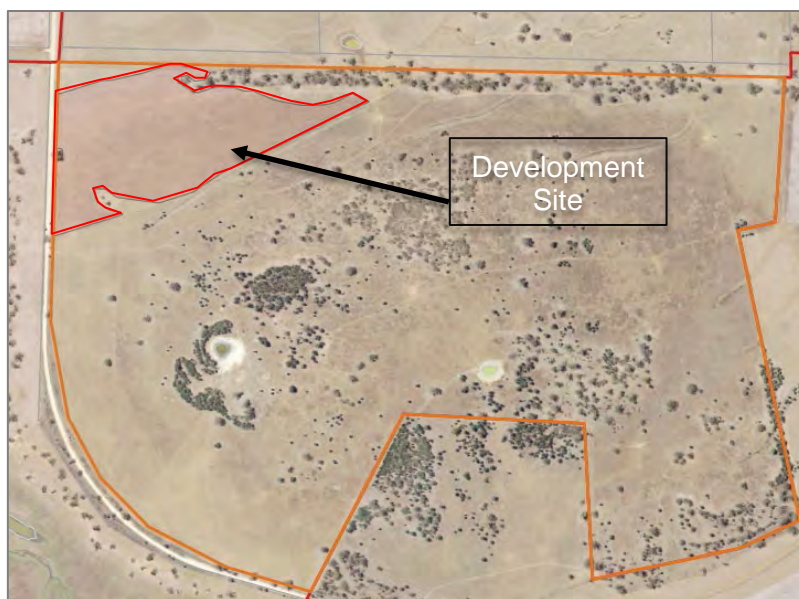
1.2.2 Site Description

The development site is located in the north west corner of Lot 391 and has been historically cleared and cultivated. Similarly, the balance of lot 3961 has also been historically cleared. Minimal areas of paddock trees remain mostly located along the paddock boundaries comprised of local and non - local native species. Some patches of remnant woodland have been retained and are in a poor to moderate condition. They have been highly disturbed and lack native understorey due to historical agricultural

activities and current cropping practices. These areas will not be impacted either directly or indirectly as a result of the development.

Inverkip Road forms the western boundary of the Site. The remainder of the Site is surrounded by Rural RU1 land uses.

The development site is shown in **Figure 1** and **Insert 1 Below**.



Insert 1 Exert Site Map showing the Development Site – Approximate Developemnt Site Boundary in Red (Source: NSW Imagery: 2021)

2 Landscape features

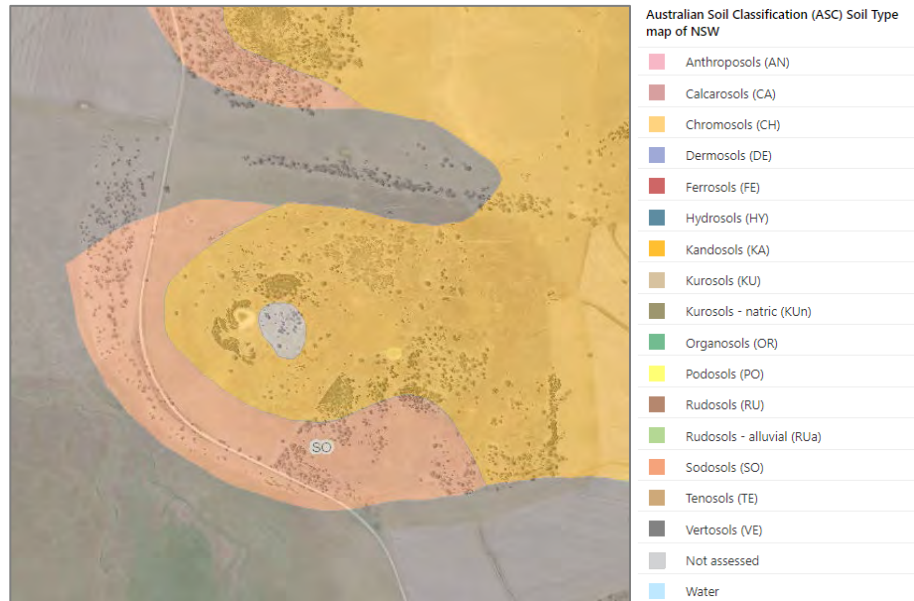
The entire development footprint is currently used as agricultural activities. Review of historical satellite imagery shows a consistent agricultural use since the 1960s. Areas off site are known to retain considerable biodiversity values including a number of threatened or endangered species and communities listed under State and Commonwealth legislation. Landscape features and site context are illustrated in **Figure 2** and discussed further in **Table 1** below.

Table 1 Onsite Landscape Features

Landscape feature	Comment
IBRA Bioregions and sub-regions	The site is located in the Brigalow Belt South Bioregion, Interim Biogeographic Regionalisation for Australia (IBRA), specifically BBS25 (Liverpool plains).
NSW Landscape Regions and Area	The Site is located within the Liverpool Plains alluvial plains (Mitchell Landscapes). Mapped

	soil types, which identify Kandosols and Sodosols over a portion of the study area and development site is shown in Insert 2 below.
Native Vegetation and cleared areas	The entirety of the Development Site is cleared and is currently utilised for cropping (Insert 3 and Insert 4 below and Photo Plates 1-6). These areas have been frequently cultivated and lack any native vegetation. Cleared areas provide very little in terms of native fauna habitat.
Rivers, streams, estuaries and Wetlands	<p>The Development footprint has been sited over 100 metres from the mapped outer edge of the unnamed tributary of Big Jacks Creek and no direct or indirect impacts to Big Jacks Creek are anticipated. No threatened freshwater fish habitat is mapped or identified as present on or adjacent to the development site.</p> <p>No classified wetlands are mapped or identified on or adjacent to the development site.</p>
Connectivity Features	There are no mapped or identified habitat connectivity features in or adjacent to the development site.
Areas of Geological Significance	No karsts, caves, crevices or cliffs or other areas of geological significance occur in or adjacent to the development site.
Areas of Outstanding Biodiversity Value	<p>No areas of outstanding biodiversity value or other biodiversity value occur within the development site (refer Figure 3).</p> <p>There are no listed declared areas of Outstanding Biodiversity Value on the proposed Development Site. Big Jacks Creek, the closest mapped Biodiversity Value is approximately 790m west of the Development Site.</p>
Site Context Components	The entirety of the Development Site has been historically and recently cleared of all vegetation

	under the provisions of the <i>Local Land Services Act 2013 No.51</i> and is under crop.
Plant Community types and vegetation zones	The development areas of the site are entirely cleared and cropped and do not conform to any PCT.
Threatened Ecological communities	The entirety of the development site has been historically cleared of all vegetation and is under crop. As such, there is no threatened ecological communities identified on the development site.
Area of Native Clearing Threshold.	Section 7.2 of the <i>Biodiversity Conservation Regulation 2017</i> sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered. The proposed development is carried out in an area of land that does not exceed the biodiversity offsets scheme (BOS) threshold (Section 7.2 <i>Biodiversity Conservation Regulation 2017</i>).
Grasslands Threshold	Due to the contemporary cropping of the development area (refer Insert 3 and Insert 4 below) field survey conducted by Ecological Australia and 28 South shows the mapped Plant Community Types and habitat features in the Study area are not present within the development footprint.



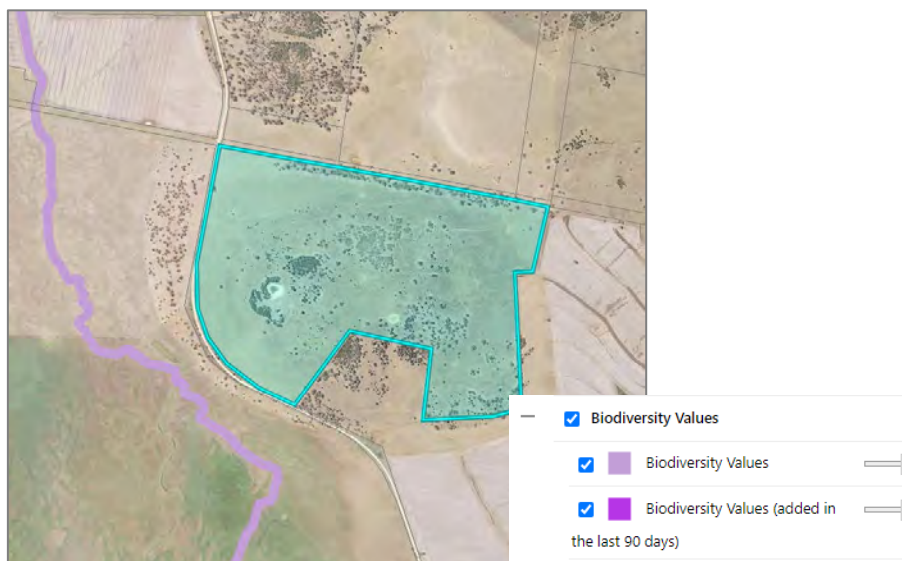
Insert 2 Australian Soil Classification Soil Type Map of NSW showing general Study Area (Source: NSW Government: SEED mapping:2021)



Insert 3- Indicative Development site taken from the central portion of the development site facing south (Source: G. Dunlop: dated 08/10/2021)



Insert 4 Indicative development site taken from the central portion of the site facing east
(Source: G. Dunlop: dated 08/10/2021)



Insert 5 Biodiversity Values Map and Threshold Tool- indicative Development Site in blue.
(Source: NSW Government: available <https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSET> Map: accessed 13/09/2021)

3 Threatened species

3.1 State Environmental Planning Policy (Koala Habitat Protection) 2021

The Koala habitat protection SEPP 2021 and SEPP 2020¹ provides provisions for retaining Koala habitat. Under the SEPP, if the site meets the definition of potential Koala habitat, and is zoned RU1 it must be assessed under the Core Koala habitat guidelines as detailed in the Koala SEPP 2020.

The site was assessed against the criteria for potential Koala habitat and determined that all patches of PCT 435 on the study area meet the definition of potential Koala habitat, as >15 % of the tree species were comprised of primary feed tree species listed in Schedule 2 of the SEPP. While it is identified that additional survey is required to determine if the PCT 435 meets the definition of “Core Koala habitat”² the proposed development has been sited and designed to ensure no direct or indirect impact to PCT 435 will occur (Refer **Figure 5**). The Development Site is completely cleared and does not provide koala habitat.

As such, a Koala Plan of Management consistent with the SEPP 2020 and the Planning Circular B35 is not required for approval by the Department of Planning, Industry and Environment (DPIE) as part of this application.

It is further noted that there is only one (1) record of *Phascolarctos cinereus* (Koala) within 5km of the boundary of the development site. The record is from 2006 and was collected by Dan Lunney's Community Wildlife Survey (BioNet 2020). This record was observed 4,406 m north of the development site. No other listed flora or fauna is identified on either the development site or the study area.

4 Matters of National Environmental Significance (MNES)

We've considered relevant referral guidelines with relation to the available habitats within the development Site and its likely, secondary influence areas. Important considerations in this review include (but are not limited to): flora species, in particular White Box as well as koala, and regent honeyeater.

The Development Site, and specifically the development footprint supports highly augmented habitats used for historical and contemporary cropping activities. The proposed works will be solely located within the confines of these cropping areas and will not disturb intact habitats or habitats which are of significance to any MNES. Refer **Attachment 3** for the mapped and identified MNES based on a 5 km buffer from the centre of the site and **Figure 4** for mapped listed communities.

¹ For all RU1, RU2 and RU3 zoned land outside of the Sydney Metropolitan Area and the Central Coast, Koala SEPP 2020 continues to apply.

² Core Koala habitat is defined as “an area of land with a resident population of koalas, evidenced by attributes such as breeding females, being females with young, and recent sightings of and historical records of a population”.

Habitats suitable to regent honeyeater are found in the larger vegetated areas to the south east of the development Site, and are well removed from the direct and indirect impact areas. Koala populations are potentially located in the area, with large tracks of suitable habitat occurring on the Study area and adjoining vegetated areas. Suitable foraging and breeding habitat occurs to the north and south of the development site. Surveys included a visual inspection of the development Site and the adjoining vegetated areas. No visual evidence of scratches or scats was observed.

It is understood the proposed design will not impact areas of foraging or higher quality breeding habitats. The works will not result in any further secondary impacts from human or site interactions, reduction of foraging availability or increase in exotic predators. Refer **Attachment 5**.

5 Avoid and minimise impacts

5.1 Avoiding and Minimising Impacts on Native Vegetation and habitat

The site was intentionally selected with consideration of the following criteria:

- A cleared landscape with no vegetation removal required (Refer **Figure 6**);
- Low environmental constraints (predominantly cleared cropping land with vegetation removal);
- biosecurity considerations, including distance to other poultry farms to the transmission network;
- Accessibility to existing road networks and infrastructure.

The Development Footprint has been sited and designed to allow for flexibility in the construction and civil requirements, allowing impacts on ecological constraints to be avoided.

Due to the iterative design process and the siting and design of the proposed development, it is considered that there are no:

- Impacts from the construction and operational phase unable to be avoided.
- Impacts to biodiversity Values that are Uncertain
- Serious and Irreversible impacts (SAIL)

5.2 Flora and fauna assessment (FFA)

A flora and fauna assessment was completed to support the development application. The assessment assessed the conservation significance of biodiversity values at the site and provided an indication of the potential constraints to the development of the poultry sheds.

The assessment concluded that the proposed poultry sheds are unlikely to significantly impact on native flora and fauna in the project area.

As such, there is no requirement to offset the proposed development under the provisions of the BCA and not further ecological assessment is required for this application.

6 Conclusions

Ecological assessment has determined that the area to be affected by the proposed development (cultivated land) has low inherent ecological values, and minimal strategic value for fauna occupying adjoining parts of the landscape.

The biodiversity impacts of the proposed development are expected to be very low, because effort has been made to locate the development footprint in an area of low ecological value. As the design progressed, further iterations were made to mitigate potential impacts further.

As no habitat for threatened entities will be affected (either directly or indirectly) there is no:

- (i) requirement to make a Controlled Action Referral to the Commonwealth to determine if further assessment and approval is required under the EPBC Act. In turn, there will be no EPBC offset requirement';
- (ii) EPBC Act triggers
- (iii) No requirements under the Koala SEPP
- (iv) BOS offsets.

References

Sources of Information used in this Assessment

The following information sources were used in the preparation of this report:

- Proposal layers, construction methodology and concept designs provided by the Proponent.
- Commonwealth Department of Agriculture, Water and the Environment (DAWE) Species Profiles and Threats database (SPRAT) <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.
- Department of Environment and Climate Change NSW (DECC) (2002). Descriptions for NSW (Mitchell) Landscapes, Version 2.
- NSW OEH's Biodiversity Assessment Method (BAM) calculator (<http://www.environment.nsw.gov.au/bbccapp/ui/mynews.aspx>).
- NSW OEH's BioNet threatened biodiversity database Accessed online via login at <http://www.bionet.nsw.gov.au/>.
- OEH Threatened Species Profiles <http://www.environment.nsw.gov.au/threatenedSpeciesApp/> and www.environment.nsw.gov.au/AtlasApp/UI_Modules/ .
- OEH BioNet Vegetation Classification Database (OEH 2017) Accessed online via login at <http://www.environment.nsw.gov.au/NSWVCA20PRapp/default.aspx>.
- OEH VIS Mapping Accessed online at <http://www.environment.nsw.gov.au/research/VISmap.htm>.
- Office of Environment and Heritage (OEH) (2017). Biodiversity Assessment Method.
- NSW Government SEED Mapping https://geo.seed.nsw.gov.au/Public_Viewor/index.html?viewer=Public_Viewor&locale=enAU.
- NSW Biodiversity Values Map <https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BVMap>.

Photo Plates –



Photo Plate 1-



Photo Plate 2



Photo Plate 3



Photo Plate 4

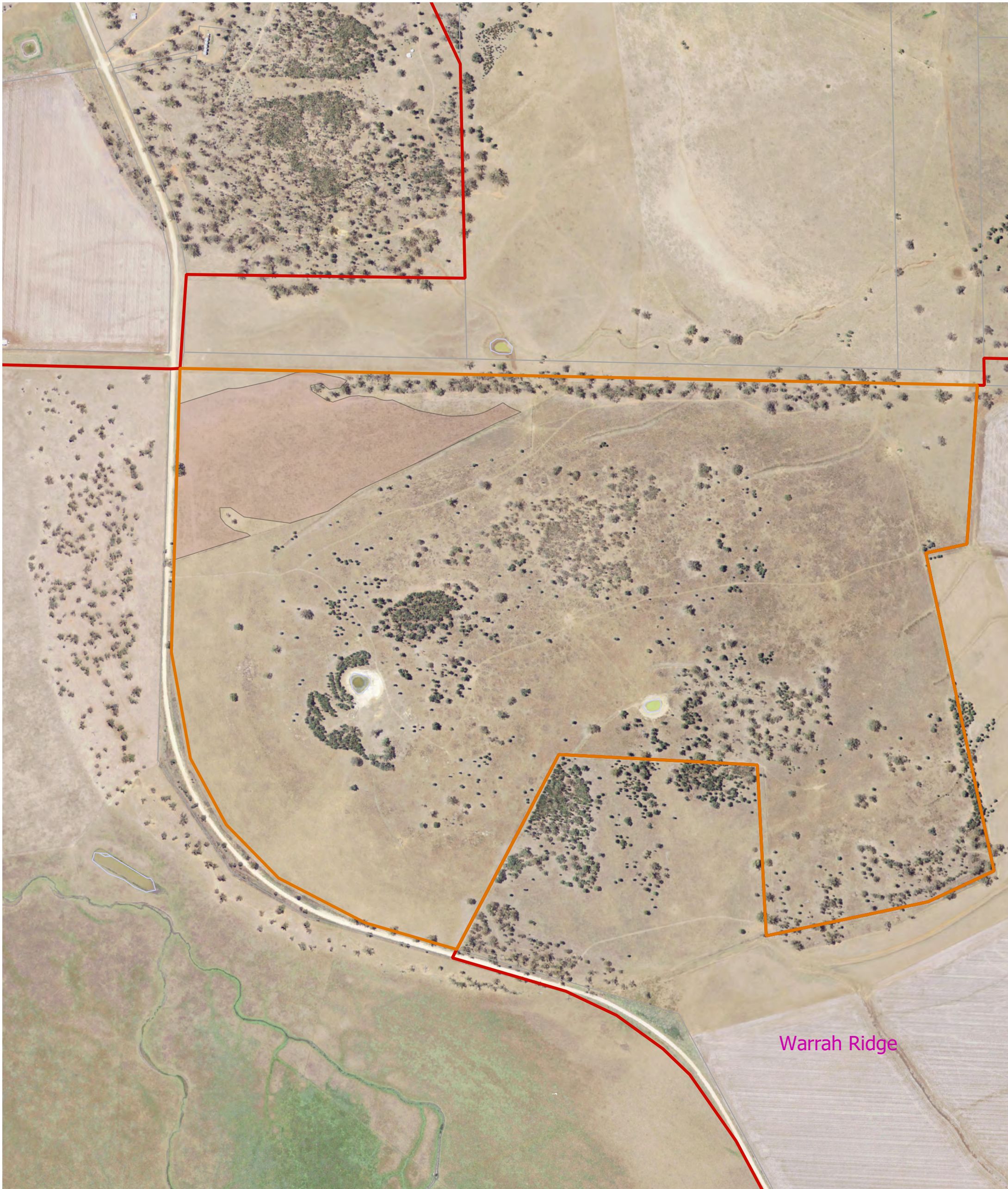


Photo Plate 5



Photo Plate 6

Figures



Warrah Ridge 1 - Rearing Farm

Legend

Figure 1 -Development Site

- Development Site
- Development Footprint
- Suburb

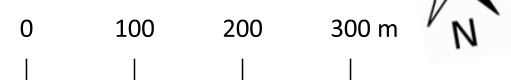
28 South Project Ref: 2020-055

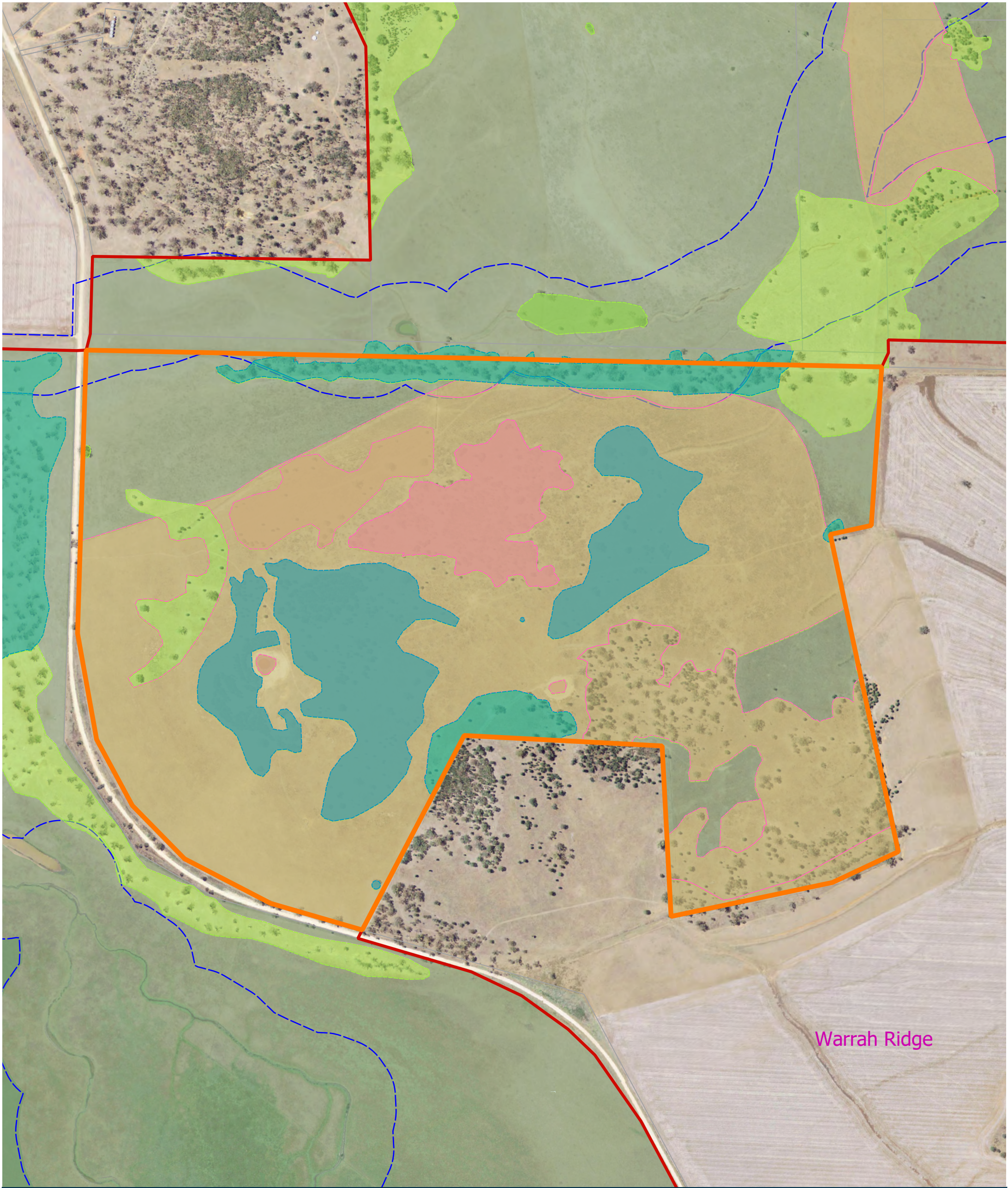
Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).



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Warrarah Ridge 1 - Rearing Farm

Legend

Figure 2 - Landscape Features

- Suburb
- Development Footprint
- Potential EPBC Woodland and DN Grasslands
- EPBC Woodland and DN Grasslands
- NSW Threatened Ecological Communities
- Exotic Pasture

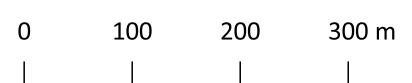
28 South Project Ref: 2020-055

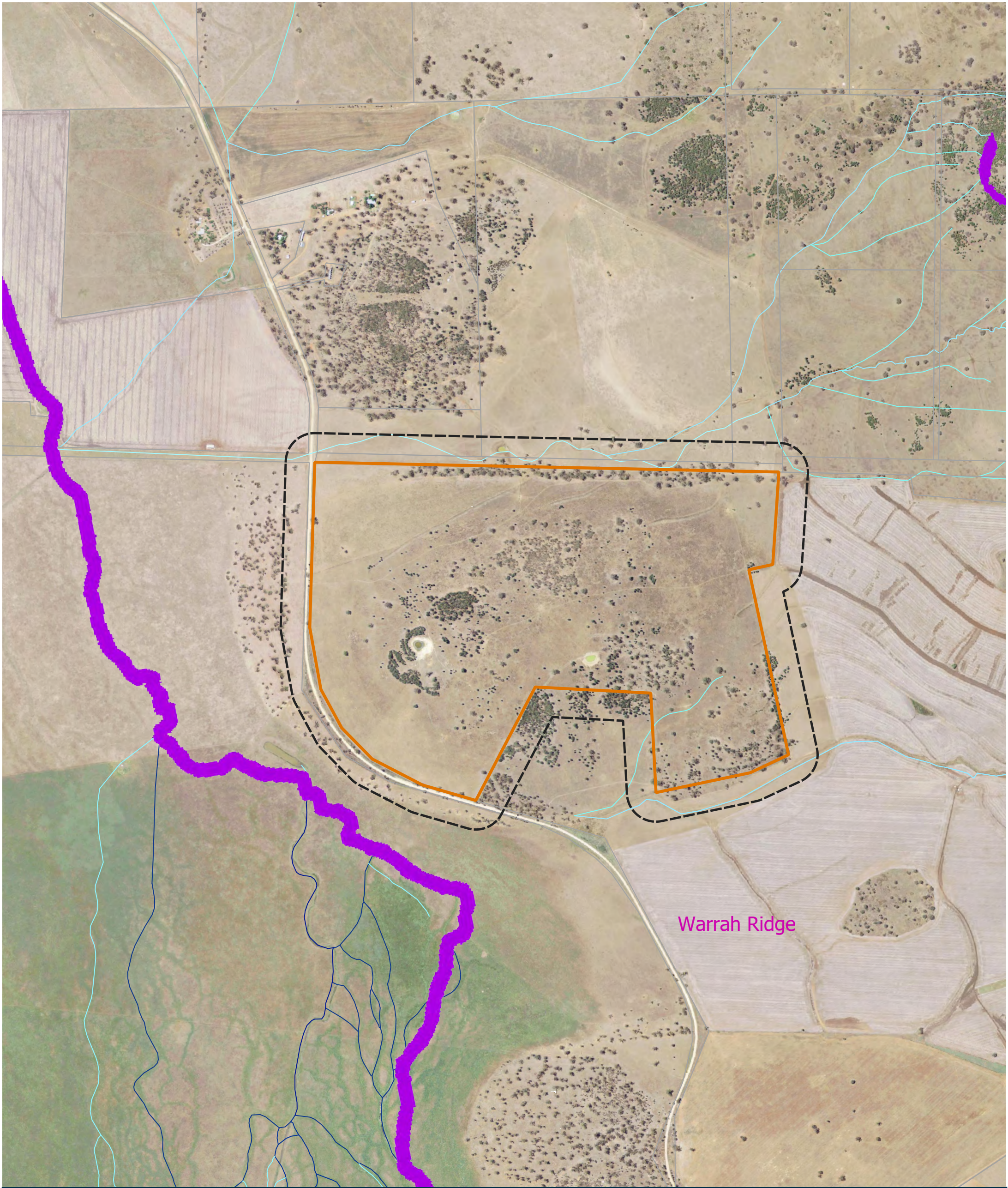
Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).



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Warrah Ridge

Warrah Ridge 1 - Rearing Farm

Legend

Figure 3 - Biodiversity Values

-  Suburb
-  Lot 391
-  100m Buffer Area
-  Biodiversity Values
-  1st - 3rd Order
-  4th Order and Greater

28 South Project Ref: 2020-055

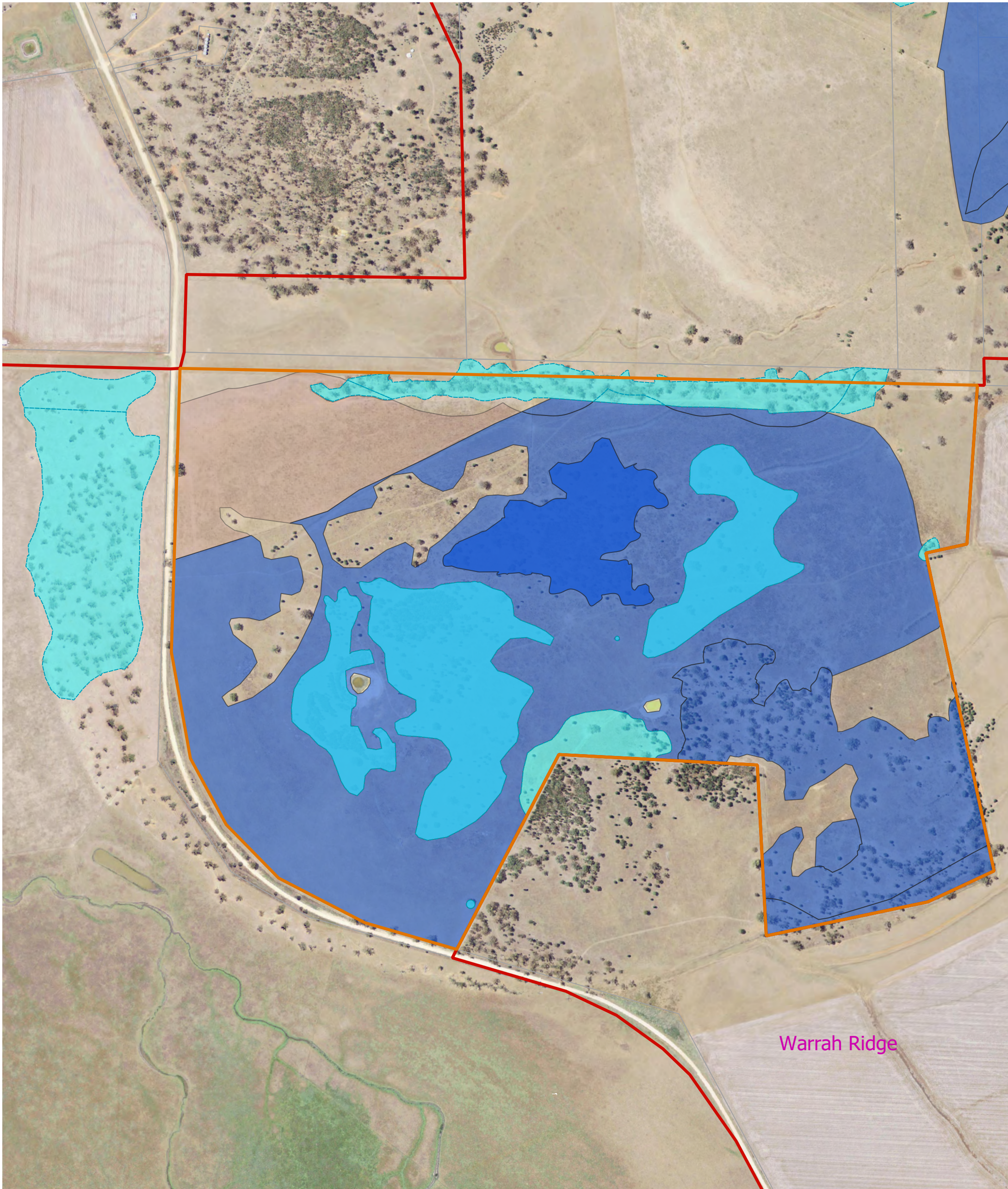
Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).



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Warrah Ridge 1 - Rearing Farm

Legend

Figure 4 - EPBC Act Listed Communities

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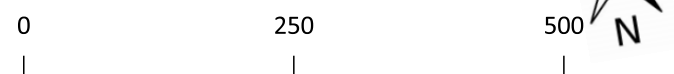
Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).

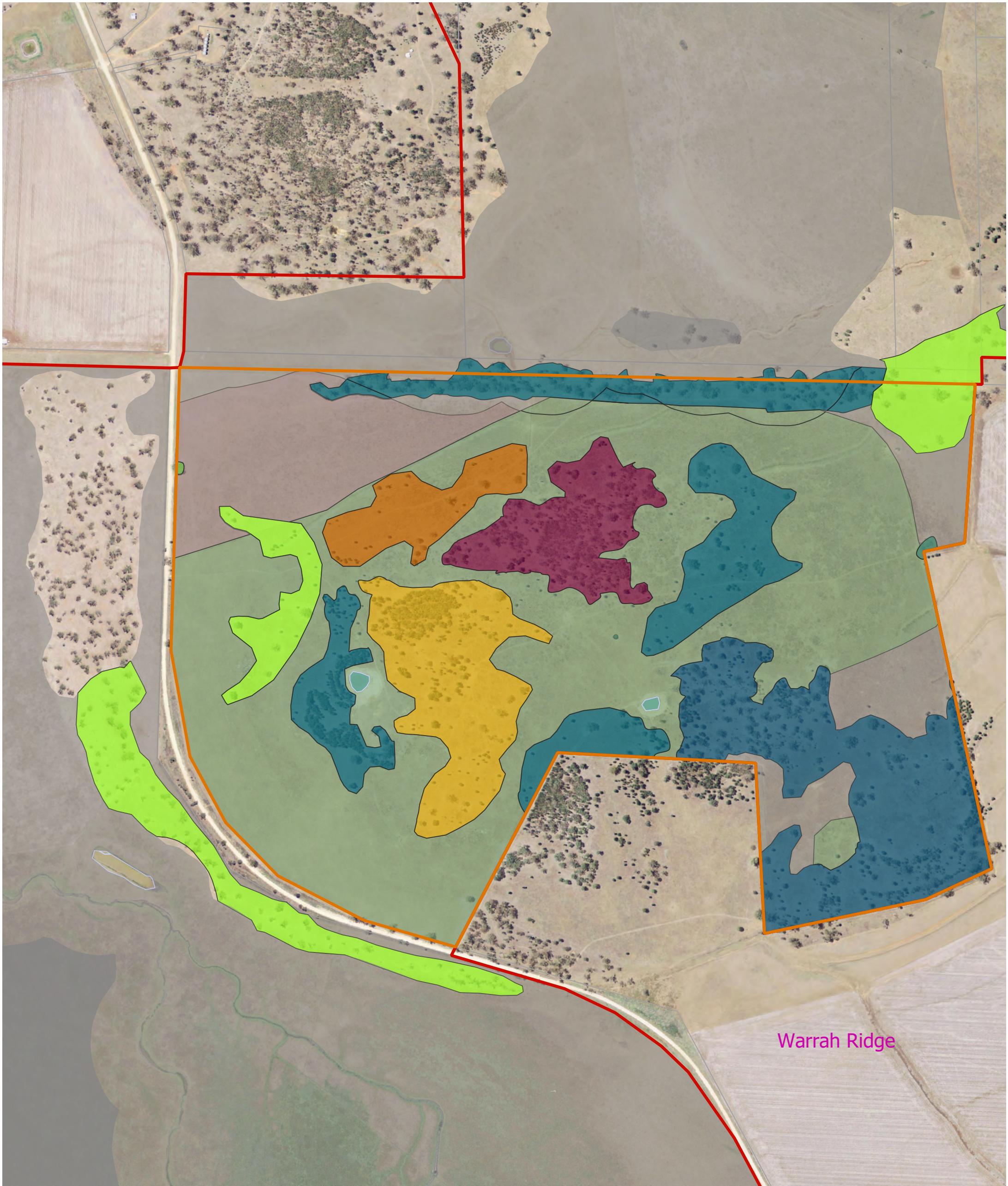


- Suburb
- Lot 391
- Development Footprint
- EPBC Act White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and Derived Native grasslands - critically endangered
- Potential EPBC Woodland and DN Grasslands

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Warrah Ridge 1 - Rearing Farm

Legend

Figure 5 - Validated Plant Community Types

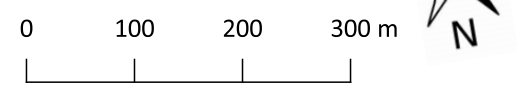
- Development Site
- Development Footprint
- Suburb
- Cleared Areas
- Poor
- Dam
- DN Grasslands PCT 435
- Good
- Moderate
- Poor
- PCT 599 Good
- Moderate

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Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).



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Warrah Ridge 1 - Rearing Farm

Legend

Figure 6 - Native Vegetation

- Development Site
- Development Footprint
- Suburb
- Cleared Areas

NSW Threatened Ecological Communities

- Native Grassland
- Native Vegetation

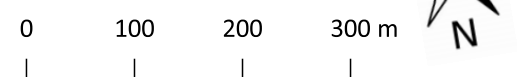
28 South Project Ref: 2020-055

Data Sources: NSW Imagery (Department of Customer Service 2020); Digital Cadastre Database (Department of Finance, Services & Innovation 2021).



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Attachment 1 –

INVERKIP ROAD

ASSUMED WATERCOURSE incl 100m BUFFER

WARRAH RIDGE 1
REARING FARM - 248,000 BIRDS

LOT 391 DP556635
150.88 ha

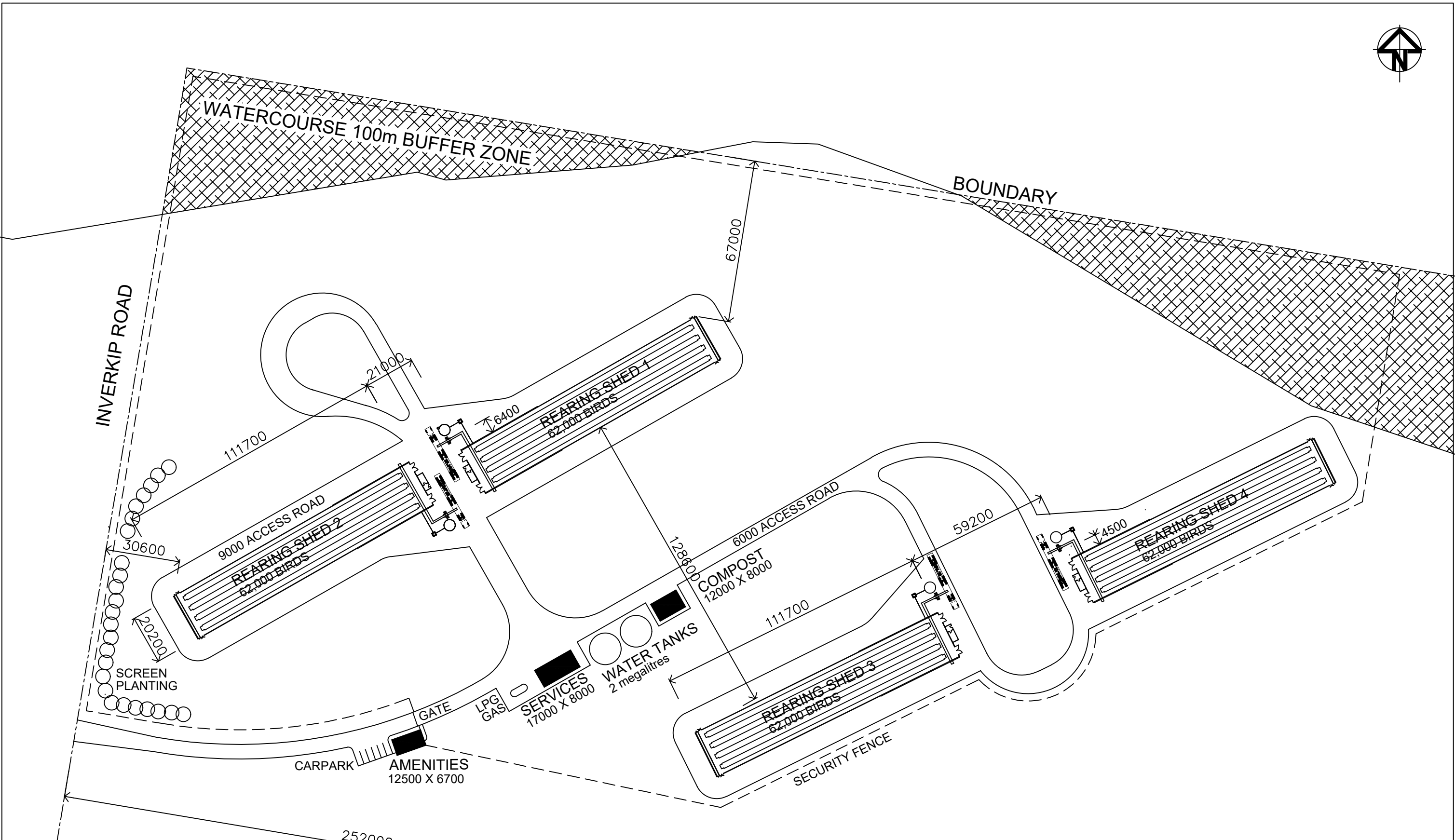


WARRAH RIDGE 1 - REARING FARM
LOT 391 DP556635



0m 1:5000 @ A3 300m
File: 210928_Warrah Ridge_WR1 Site_GD

DA1.01j



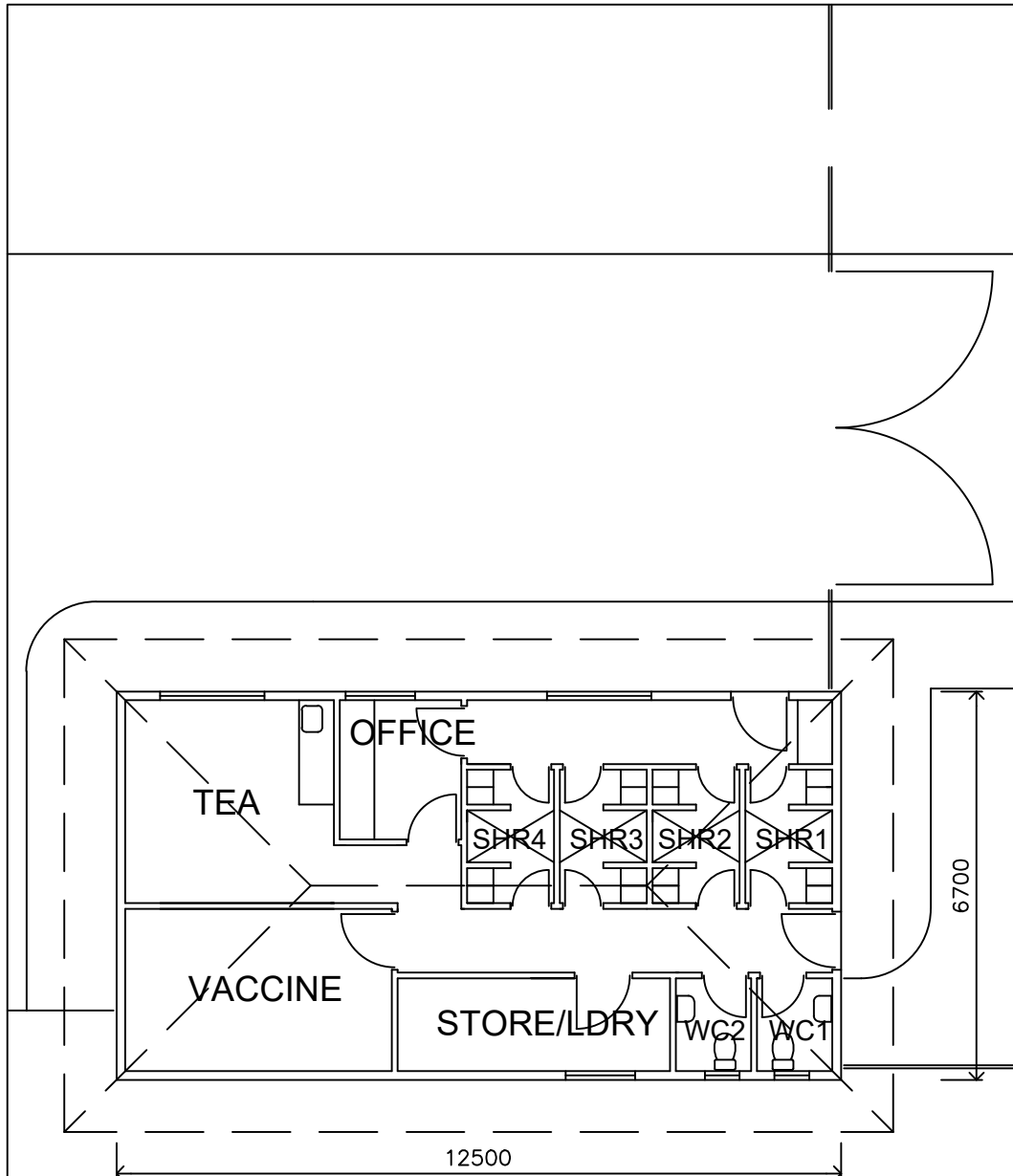
Site Area = 150,880 sqm
 Building Area = 9,340 sqm
 Paved Area = 18,700 sqm

WARRAH RIDGE 1 - REARING FARM
 LOT 391 DP556635
 SITE LAYOUT PLAN

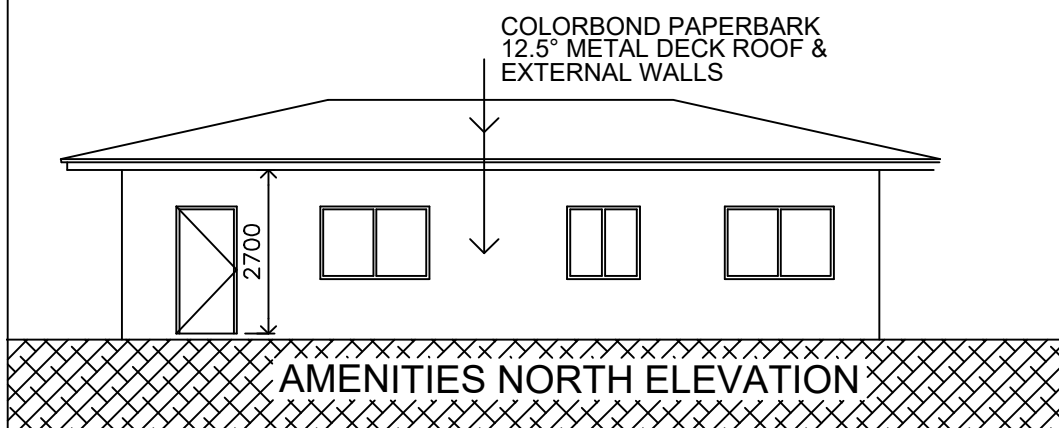


0m 1:1500 @ A3 100m
 File: 210928_WARRAH RIDGE_WR1_DA_GD

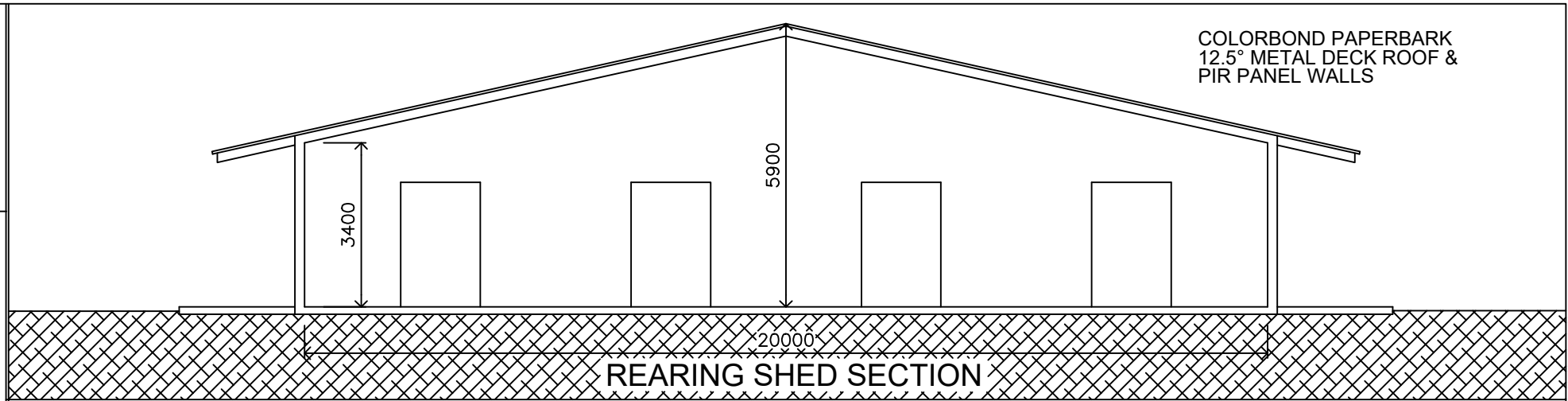
DA1.02j



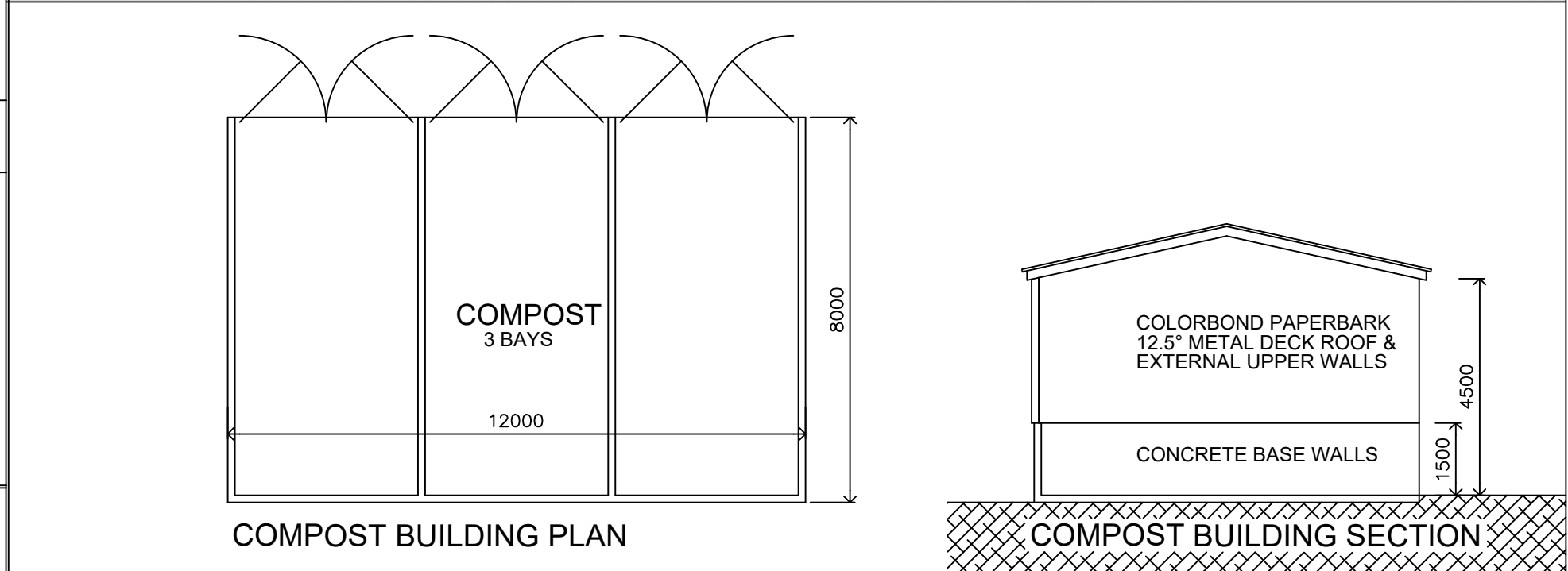
AMENITIES NORTH PLAN



AMENITIES NORTH ELEVATION

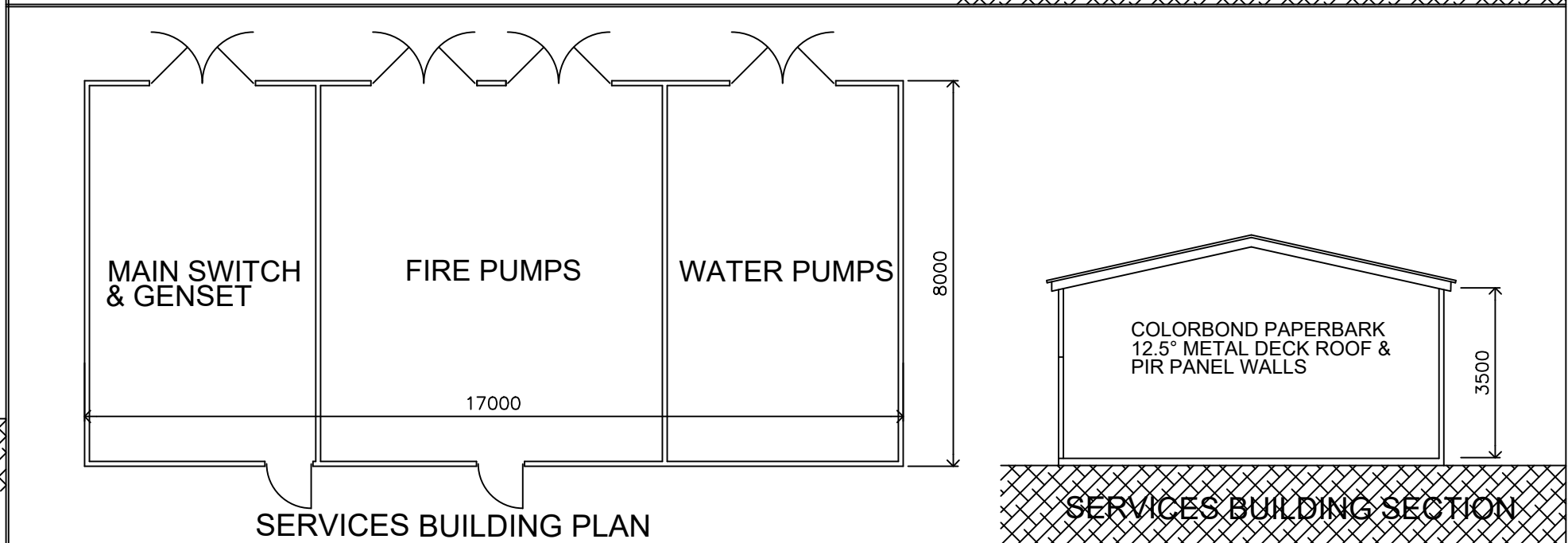


REARING SHED SECTION



COMPOST BUILDING PLAN

COMPOST BUILDING SECTION

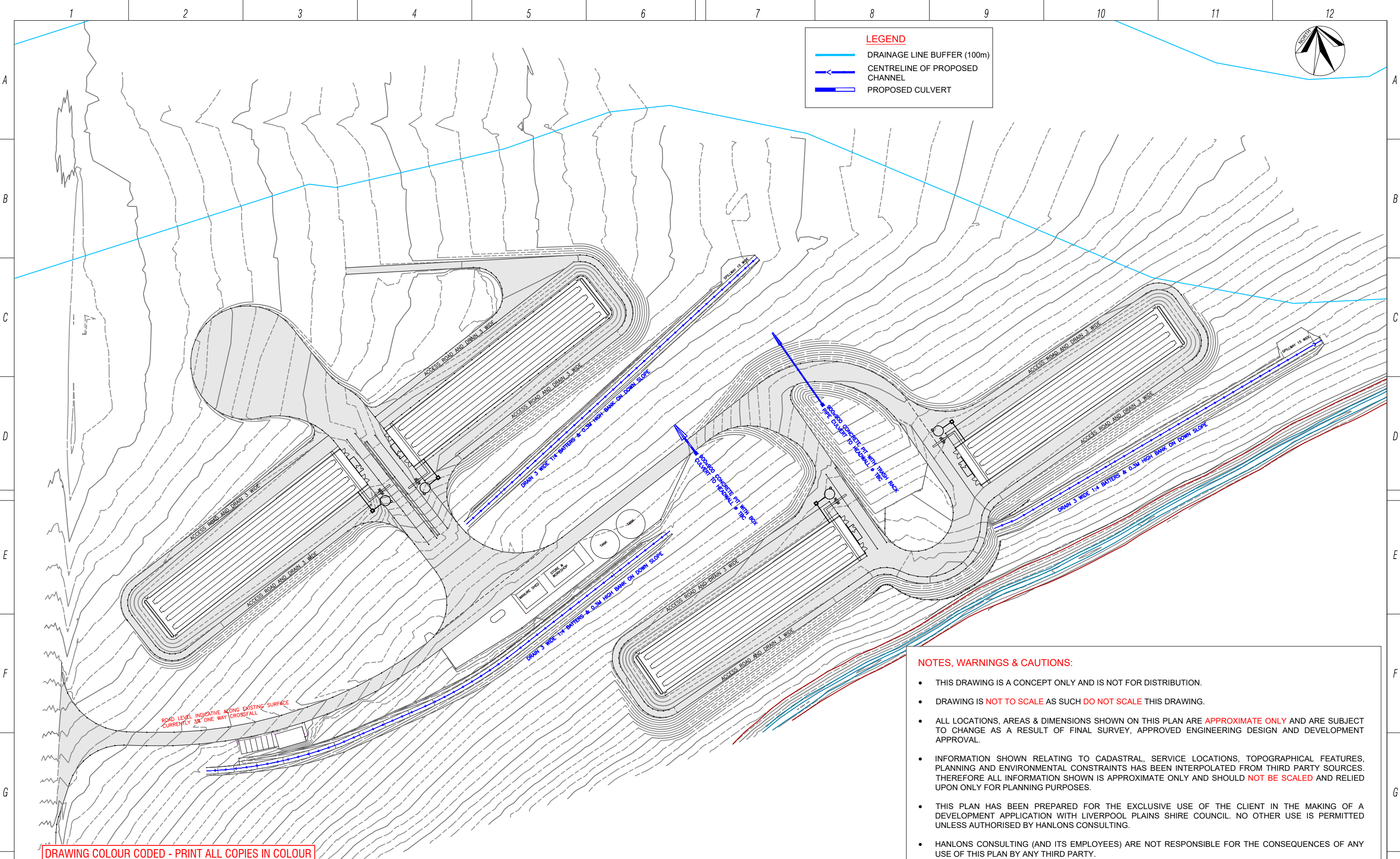


SERVICES BUILDING PLAN

SERVICES BUILDING SECTION



Attachment 2 –



LEGEND

- DRAINAGE LINE BUFFER (100m)
- CENTRELINE OF PROPOSED CHANNEL
- PROPOSED CULVERT



NOTES, WARNINGS & CAUTIONS:

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ROAD LEVEL INDICATIVE ALONG EXISTING SURFACE CURRENTLY 3/4 ONE WAY CROSSFALL

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 ABN 51 104 693 736

REV	BY	DATE	DESCRIPTION	APPD.
A	TMC	30/09/2021	ISSUED TO CLIENT FOR DISCUSSION	MBH

A1 Original Co-ordinate System: MGA Zone 56 Height Datum: A.H.D. Scale:

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DRG CHECK	T McLean
DESIGNED	M Hanlon
DESIGN CHECK	
APPROVED	

PROJECT: WARRAH RIDGE RARING FARM 1

PROPOSED DRAINAGE LAYOUT

FILE No. 21064
 STATUS: **PLANNING PURPOSES ONLY**

FIGURE: 1

A1
 ©
 A

Attachment 3 –



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 12/10/21 14:42:20

[Summary](#)

[Details](#)

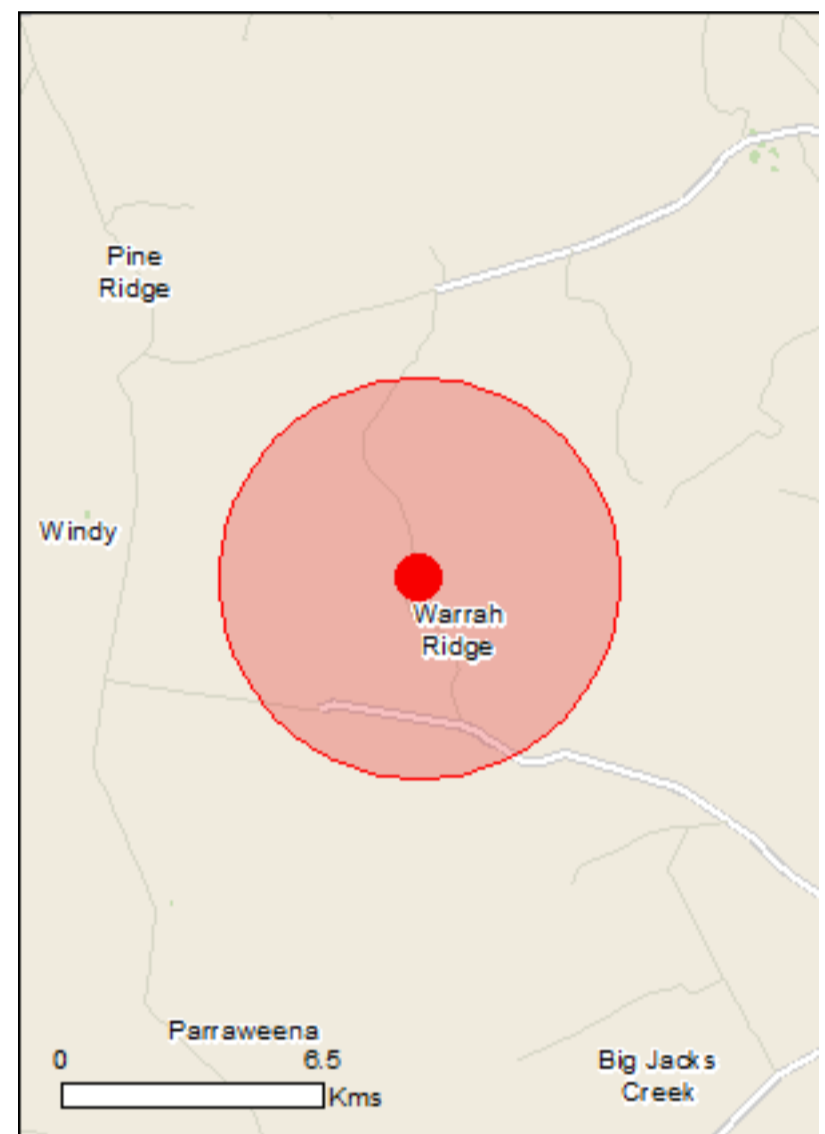
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

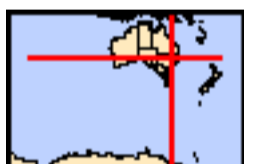
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

[Coordinates](#)

Buffer: 5.0Km



Summary

Matters of National Environmental 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:	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	26
Listed Migratory Species:	10

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 <http://www.environment.gov.au/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 Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	27
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	900 - 1000km upstream
Riverland	900 - 1000km upstream
The coorong, and lakes alexandrina and albert wetland	1100 - 1200km

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.

Name	Status	Type of Presence
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species

Name	Status	Type of Presence
Lathamus discolor Swift Parrot [744]	Critically Endangered	habitat likely to occur within area Species or species habitat likely to occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within 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]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Androcalva procumbens [87153]	Vulnerable	Species or species habitat likely to occur within area
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Lepidium monoplacoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area
Uvidicolus sphyrurus Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-31.6032 150.54655

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.

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Attachment 4 –

Fauna and Flora Coding Sheet for BioNet Atlas reports

The following tables explain the coding used in the results of searches from BioNet Atlas for fauna and flora data. Please note that not all fields may be populated in your data supply. This is dependent on both the information supplied by the observer, as well as your user level.

Please see Page 6 for information regarding sensitive species data.

To use this data in GIS, database or spreadsheet software, first open in Notepad (open the zipfile, right-click on the filename and select 'Open with > Notepad') and remove the disclaimer information at the top of the dataset, save and close. This will enable your software to recognise the header row as the field names for the data.

If using earlier versions of Excel (2003 or earlier), please be aware BioNet Atlas data can exceed the row limit (65,536 records) which may result in truncation and data loss if you open and/or resave the data. Excel may also reformat some of the fields, such as the dates.

BioNet Atlas data can exceed the ArcGIS .dbf file size limit of 2 gigabytes when converting to a shapefile.

If you are renaming the files to use in ArcGIS you should avoid using spaces or non-alphanumeric characters (such as &, \$, @, #).

Field	Description and relevant coding
DatasetName	Refers to the dataset the observation is linked to. The most common type for this field is 'OEH Default Sightings'.
SightingKey	A unique code automatically assigned to each sighting. If you would like to query a particular record, please supply us with this unique identifier.
SpeciesCode	A unique code attributed to an individual species, genus or family.
KingdomName	Refers to whether the organism is flora (FL) or fauna (FA).
ClassName	Refers to the Class name.
FamilyName	Refers to the Family name.
SortOrder	Systematic placement of taxonomic hierarchy.
ScientificName	The internationally recognised Latin name given to an organism, following the International Codes of Botanical and Zoological Nomenclature.
Exotic	Denoted by * for all non-native species.
CommonName	Refers to the common name of an organism.
NSWStatus	This code identifies the Legal Status of the species within NSW under the Biodiversity Conservation Act 2016 No. 63 (BC Act 2016), the Fisheries Management Act 1994 No. 38 (FM Act 1994) and the Sensitive Species Data Policy (SSDP).

Code	Description	Definition under the BC Act 2016 No. 63, the FM Act 1994 No. 38, or the SSDP.
P	Protected	Refers to species listed in Schedules 5 and 6 of the BC Act 2016.
V	Vulnerable	Refers to fauna and flora species that are likely to become endangered unless the circumstances & factors threatening its survival or evolutionary development cease to operate (Schedule 1, part 3, BC Act 2016).
E1	Endangered	Refers to fauna and flora species that are likely to become extinct in nature in NSW unless the circumstances and factors threatening its survival or evolutionary developments cease to operate; or, its numbers have been reduced to such a critical level, or its habitats have been so drastically reduced, that it is in immediate danger of extinction; or, it might already be extinct, but it is not presumed extinct (Schedule 1, part 2, BC Act 2016).
E2	Endangered Population	Refers to a population where, in the opinion of the Scientific Committee, its numbers have been reduced to such a critical level, or its habitat has been so drastically reduced, that it is in immediate danger of extinction and it is not a population of a species already listed in Schedule 1, and: (a) it is disjunct and at or near the limit of its geographic range, or (b) it is or is likely to be genetically distinct, or (c) it is otherwise of significant conservation value (Schedule 1, part 2, BC Act 2016).
E4	Extinct	Refers to fauna and flora species that have not been located in nature during the preceding 50 years despite searching of known and likely habitats of that period (Schedule 3, part 1, BC Act 2016).
E4A	Critically Endangered Species	Refers to a species that is eligible to be listed as a critically endangered species if, in the opinion of the Scientific Committee, it is facing an extremely high risk of extinction in New South Wales in the immediate future, as determined in accordance with criteria prescribed by the regulations (Schedule 1, part 1, BC Act 2016).
KTP	Key threatening processes	Refers to a threatening process that is eligible to be listed as a key threatening process if, in the opinion of the Scientific Committee, it adversely affects threatened species or ecological communities, or it could cause species or ecological communities that are not threatened to become threatened (Schedule 4, BC Act 2016).
2	Category 2 sensitive species	Refers to species for which Atlas sightings' coordinates will be supplied denatured to public web applications and denatured to licensed clients. Such species are classed as highly sensitive, and provision of precise locations would subject the species to high risk from threats such as disturbance and collection.
3	Category 3 sensitive species	Refers to species for which sightings' coordinates will be supplied denatured to public web applications but supplied 'as-held' to licensed clients. Current denaturing specifications are set out in Appendix 2. Such species are classed as of medium sensitivity, and provision of precise locations would subject the species to medium risk from threats such as collection/deliberate damage. Data are supplied under the conditions of a written data agreement, usually a Data Licence Agreement.

CommStatus	This code identifies the Legal Status of the species under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act), and Migratory Bird agreements (JAMBA, CAMBA and ROKAMBA).		
	Code	Description	Definition under the EPBC Act 1999, and Migratory Birds agreement.
	C	CAMBA	China-Australia Migratory Bird Agreement: Refers to species listed in the Bilateral Agreement between the Government of Australia and the Government of the People's Republic of China for the protection of Migratory Birds and their Environment (Subdivision A of Division 1 of Part 5, Commonwealth EPBC Act 1999).
	CD	Conservation Dependent	Refers to A native species is eligible to be included in the conservation dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).
	CE	Critically Endangered	Refers to a native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).
	E	Endangered	Refers to a native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (Subdivision A of Division 2 of Part 13, Commonwealth EPBC Act 1999).
	J	JAMBA	Japan-Australia Migratory Bird Agreement: Refers to species listed in the Bilateral Agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (Subdivision A of Division 1 of Part 5, Commonwealth EPBC Act 1999).
	K	ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement: Refers to species listed in the Bilateral Agreement between the Government of Australia and the Government of the Republic of Korea for the protection of Migratory Birds and their Environment (Subdivision A of Division 1 of Part 5, Commonwealth EPBC Act 1999).
	KTP	Key Threatening Process	Refers to a key process that threatens or may threaten the survival, abundance or evolutionary development of a native species or ecological community (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).
	V	Vulnerable	Refers to a native species is eligible to be included in the

	<p>vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).</p> <p>X Extinct Refers to a native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).</p> <p>XW Extinct in the Wild Refers to a native species is eligible to be included in the extinct in the wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form (Subdivision A of Division 1 of Part 13, Commonwealth EPBC Act 1999).</p>												
SensitivityClass	<p>Indicates whether a species is listed in the Sensitive Species data policy. Geographic co-ordinates for sensitive species may be denatured, or with-held, depending on user access permissions.</p> <p>Denatured records will be flagged with: ^ ^ - coordinates rounded to 0.01° ^ - coordinates rounded to 0.1°</p> <p>The policy in full including the sensitive species listings can be located at http://www.environment.nsw.gov.au/policiesandguidelines/SensitiveSpeciesPolicy.htm.</p>												
ProfileID	<p>For threatened entities (those listed on the BC Act, plus a subset of listings from the EPBC Act where the entity is also known to occur in NSW), a unique profile number is assigned. Profiles can be viewed via the Threatened Species app.</p>												
DateFirst	<p>Refers to the date (dd/mm/yyyy) the species was sighted at a particular location. If the date that the species was sighted is uncertain, then First Date will indicate the earliest date on which the sighting may have occurred.</p>												
DateLast	<p>Where the exact date of a sighting is known, DateLast will be equal to DateFirst. If the date that the species was sighted is uncertain, then Last Date will indicate the latest date on which the sighting may have occurred.</p>												
NumberIndividuals	<p>Refers to the number of individuals recorded.</p>												
EstimateTypeCode	<p>Refers to the accuracy of the NumberIndividuals field.</p> <table border="1" data-bbox="597 1606 1304 1829"> <thead> <tr> <th>Code</th> <th>Definition of Code</th> </tr> </thead> <tbody> <tr> <td>+</td> <td>At least</td> </tr> <tr> <td><</td> <td>Less than</td> </tr> <tr> <td>></td> <td>Greater than</td> </tr> <tr> <td>E</td> <td>Estimate</td> </tr> <tr> <td>X</td> <td>Exactly</td> </tr> </tbody> </table>	Code	Definition of Code	+	At least	<	Less than	>	Greater than	E	Estimate	X	Exactly
Code	Definition of Code												
+	At least												
<	Less than												
>	Greater than												
E	Estimate												
X	Exactly												
SourceCode	<p>Refers to the source of the data.</p> <table border="1" data-bbox="597 1906 1304 1932"> <tr> <td></td> <td></td> </tr> </table>												

		Code	Definition of Code
		1	Specimen with Public Museum. Eg. National Herbarium / Australian Museum
		2	Specimen with other collection
		3	Voucher specimen used in identification
		4	Sighting
		5	Sighting – probable ID
		6	Sighting – possible ID
ObservationType	Refers to the mode of observation. Coding is as follows:		
		Code	Definition of Code
		A	Stranding/beached
		AR	Acoustic recording
		B	Burnt
		C	Cat kill
		CI	Cat Injured
		D	Dog Kill
		DI	Dog Injured
		E	Nest/roost
		F	Tracks, scratchings
		FB	Burrow
		G	Crushed Cones
		H	Hair, feathers or skin
		I	Subfossil/Fossil remains
		J	Floristics Record from Systematic Flora Survey
		K	Dead
		L	Flora record
		M	Miscellaneous
		MT	Movement Tracking Data
		N	Not located
		O	Seen
		OW	Seen and heard
		P	Scat
		Q	Camera
		R	Road kill
		RI	Road Injured
		S	Shot
		T	Trapped or netted
		U	Ultrasonic recording
		V	Fox kill
		VI	Fox Injured
		W	Heard call
		WR	Wildlife Rehabilitation Record
		X	In scat
		Y	Bone, teeth, shell
		Z	In raptor/owl pellet
Status	<p>To reduce the likelihood of incorrect records being added to BioNet Atlas, the database checks against the species accepted distribution layer as well as for potential duplicates. Each record is then assigned a status:</p> <ul style="list-style-type: none"> • Valid and accepted without modification, or • Invalid, in quarantine <p>Subject to review, the record can be assigned a new status;</p> <ul style="list-style-type: none"> • Accepted as Valid from Quarantine • Rejected as certainly incorrect • Suspect • Vagrant or escaped animal, or planted specimen, or • Valid record from population that is no longer extant (X). 		
Validation	If a record had failed a validation check, the reason is stored in the Validation field with one		

	<p>or both of the following codes;</p> <ul style="list-style-type: none"> • ACD (the record was flagged as being outside of the accepted distribution) • DUP (the record was flagged as a potential duplicate of an existing record)
LocationKey	<p>A code automatically assigned to each unique location. If you would like to query a particular location (e.g. co-ordinates do not match the description) please supply us with this unique identifier.</p> <p>Note: For sensitive species, this data is withheld from public users (provided to licensed clients and relevant DPIE staff only).</p>
Description	<p>Detailed description of the geographic location as provided by the observer, such as street, nearest cross-street, town, landmark or reserve.</p> <p>Note: For sensitive species, this data is withheld from public users (provided to licensed clients and relevant DPIE staff only).</p>
Latitude_GDA94	The position South of the Equator, measured in decimal degrees.
Longitude_GDA94	The position East of the Greenwich meridian, measured in decimal degrees.
Zone	<p>A 6° band of longitude, divided according to the Universal Transverse Mercator (UTM) coordinate system.</p> <p>NSW Is divided into 4 Zones;</p> <ul style="list-style-type: none"> Zone 56 is 150° – 156° longitude, which encompasses much of eastern NSW. Zone 55 is 144° – 150° longitude. Zone 54 is 138° – 144° longitude, encompassing most of Western NSW. Zone 57 covers Lord Howe Island. <p>The Zone in Atlas reports has been calculated from the Latitude and Longitude values. Data provided in MGA.</p>
Easting	The reference in metres, measured east of an arbitrary origin (also referred to as the x-coordinate). The Easting provided in Atlas reports has been calculated from the Latitude and Longitude values. Data provided in MGA.
Northing	The reference in metres, measured north of an arbitrary origin (also referred to as the y-coordinate). The Northing provided in Atlas reports has been calculated from the Latitude and Longitude values. Data provided in MGA.
Accuracy	How accurately the coordinates represent the location of the species (in metres). For example, a value of 100 would mean that the location is accurate to the nearest 100 metres.
SightingNotes	<p>Observer comments on sighting.</p> <p>Note: For sensitive species, this data is withheld from public users (provided to licensed clients and relevant DPIE staff only).</p>
LocationNotes	<p>Additional observer comments on location.</p> <p>Note: For sensitive species, this data is withheld from public users (provided to licensed clients and relevant DPIE staff only).</p>

Sensitive Species Information

The full Sensitive Species Data policy including the sensitive species listings is located at:
<http://www.environment.nsw.gov.au/policiesandguidelines/SensitiveSpeciesPolicy.htm>

To further protect sensitive species, DPIE requests that clients with their own location data for sensitive species consider not publishing precise locations, or detailed location descriptions, for these species.

Please note - BioNet is only one of a number of sources of fauna and flora information for NSW. Other sources include the [Atlas of Living Australia](#) and [BirdLife Australia](#).

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. Location accuracy varies. Records of species listed under the Sensitive Species Data Policy are identified in the Sensitivity Class column (^ rounded to 0.1°C; ^^ rounded to 0.01°C).

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Search criteria : Public Report of all Valid Records of Entities in selected area [North: -31.56 West: 150.50 East: 150.60 South: -31.66] recorded since 01 Jan 1980 until 12 Oct 2021 returned a total of 76 records of 67 species. Report generated on 12/10/2021 2:48 PM

DatasetName	SightingKey	SpeciesCode	KingdomName	ClassName
FamilyName	SortOrder	ScientificName	Exotic	CommonName
NSWStatus	CommStatus	SensitivityClass	ProfileID	
DateFirst	DateLast	NumberIndividuals	EstimateTypeCode	
SourceCode	ObservationType	Status	ValidationFlags	LocationKey
Description	Latitude_GDA94	Longitude_GDA94	Zone	Easting Northing
Accuracy	SightingNotes	LocationNotes		
DPIE Data from Scientific Licences dataset			SJJSI0079504	2331 Fauna
Reptilia	Scincidae	788	Cryptoblepharus virgatus	
Cream-striped Shinning-skink		P		24/09/2009
24/09/2009	1	4	0	Valid and accepted without modification
		LJJSI0014663	Bonny Rigg rd	-31.561506542
150.591727258	56	271419	6505651	200.0000
DPIE Data from Scientific Licences dataset			SJJSI0079511	2526 Fauna
Reptilia	Scincidae	1180	Morethia boulengeri	
South-eastern Morethia Skink		P		24/09/2009
24/09/2009	3	4	0	Valid and accepted without modification
		LJJSI0014663	Bonny Rigg rd	-31.561506542
150.591727258	56	271419	6505651	200.0000
DPIE Data from Scientific Licences dataset			SPJGI6529237	0202 Fauna
Aves	Anatidae	1749	Chenonetta jubata	Australian Wood Duck
Duck	P		04/05/2009 19:43:00	04/05/2009
19:43:00	1	4	W	Valid and accepted without modification
		LPJGI0616963	Bonny Rigg Road, Warrah Ridge, Liverpool Plains Shire Council, 2343	-31.561479893 150.591749077 56 271421 6505654 500.0000
DPIE Data from Scientific Licences dataset			SPJGI6529235	0313 Fauna
Aves	Podargidae	1846	Podargus strigoides	Tawny Frogmouth
P			04/05/2009 19:43:00	04/05/2009 19:43:00
1	4	W		Valid and accepted without modification
LPJGI0616963			Bonny Rigg Road, Warrah Ridge, Liverpool Plains Shire Council, 2343	-31.561479893 150.591749077 56 271421 6505654 500.0000
DPIE Data from Scientific Licences dataset			SJJSI1091543	0288 Fauna
Aves	Psittacidae	2469	Platycercus eximius	Eastern Rosella
P			14/10/2018 08:00:00	16/02/2019 08:00:00
5	X	4	0	Valid and accepted without modification
LJJSI0207254			Tamworth	-31.650000000 150.570000000 56 269575 6495793 5.0000
DPIE Data from Scientific Licences dataset			SJJSI1091545	0288 Fauna
Aves	Psittacidae	2469	Platycercus eximius	Eastern Rosella
P			14/10/2018 08:00:00	25/11/2018 08:00:00

2	X	4	0	Valid and accepted without modification				
LJJSI0207254		Tamworth		-31.650000000	150.570000000	56	269575	
6495793		5.0000						
DPIE Data from Scientific Licences dataset				SJJSI1091548	0288	Fauna		
Aves	Psittacidae	2469	Platycercus eximius			Eastern Rosella		
P			14/10/2018 08:00:00			11/12/2018 08:00:00		
8	X	4	0	Valid and accepted without modification				
LJJSI0207254		Tamworth		-31.650000000	150.570000000	56	269575	
6495793		5.0000						
DPIE Data from Scientific Licences dataset				SPJGI6529234	0705	Fauna		
Aves	Artamidae	3217	Gymnorhina tibicen			Australian		
Magpie P			04/05/2009 19:43:00			04/05/2009		
19:43:00		1	4	0	Valid and accepted without			
modification		LPJGI0616962	Bonny Rig Road, Warrah Ridge, Liverpool					
Plains Shire Council, 2343		-31.561479893	150.591749077	56	271421			
6505654		100.0000						
DPIE Data from Scientific Licences dataset				SPJGI6529349	0705	Fauna		
Aves	Artamidae	3217	Gymnorhina tibicen			Australian		
Magpie P			25/05/2009 17:45:00			25/05/2009		
17:45:00		1	4	0	Valid and accepted without			
modification		LPJGI0616962	Bonny Rig Road, Warrah Ridge, Liverpool					
Plains Shire Council, 2343		-31.561479893	150.591749077	56	271421			
6505654		100.0000						
DPIE Data from Scientific Licences dataset				SPJGI6529348	0364	Fauna		
Aves	Rhipiduridae	3268	Rhipidura leucophrys			Willie Wagtail		
P			25/05/2009 17:45:00			25/05/2009 17:45:00		
1		4	0	Valid and accepted without modification				
LPJGI0616962		Bonny Rig Road, Warrah Ridge, Liverpool				Plains Shire Council,		
2343		-31.561479893	150.591749077	56	271421	6505654		100.0000
DPIE Data from Scientific Licences dataset				SPJGI6529236	0415	Fauna		
Aves	Monarchidae	3304	Grallina cyanoleuca			Magpie-lark		
P			04/05/2009 19:43:00			04/05/2009 19:43:00		
1		4	W	Valid and accepted without modification				
LPJGI0616963		Bonny Rig Road, Warrah Ridge, Liverpool				Plains Shire Council,		
2343		-31.561479893	150.591749077	56	271421	6505654		500.0000
DPIE Data from Scientific Licences dataset				SJJSI1091544	0998	Fauna		
Aves	Sturnidae	3473	Acridotheres tristis	*		Common Myna		
			14/10/2018 08:00:00			29/01/2019 08:00:00		
10	X	4	0	Valid and accepted without modification				
LJJSI0207254		Tamworth		-31.650000000	150.570000000	56	269575	
6495793		5.0000						
DPIE Data from Scientific Licences dataset				SJJSI1091546	0998	Fauna		
Aves	Sturnidae	3473	Acridotheres tristis	*		Common Myna		
			02/12/2018 08:00:00			30/12/2018 08:00:00		
2	X	4	0	Valid and accepted without modification				
LJJSI0207254		Tamworth		-31.650000000	150.570000000	56	269575	
6495793		5.0000						
DPIE Data from Scientific Licences dataset				SJJSI1091547	0998	Fauna		
Aves	Sturnidae	3473	Acridotheres tristis	*		Common Myna		
			18/11/2018 08:00:00			11/12/2018 08:00:00		
2	X	4	0	Valid and accepted without modification				
LJJSI0207254		Tamworth		-31.650000000	150.570000000	56	269575	

6495793 5.0000
DPIE Data from Scientific Licences dataset SJJSI1091549 0998 Fauna
Aves Sturnidae 3473 Acridotheres tristis * Common Myna
02/12/2018 08:00:00 07/01/2019 08:00:00
2 X 4 0 Valid and accepted without modification
LJJSI0207255 Tamworth -31.640000000 150.570000000 56 269550
6496902 5.0000
Dan Lunney's Community Wildlife Survey WS-35484 1162 Fauna
Mammalia Phascolarctidae 3709 Phascolarctos cinereus Koala
V,P V 10616 01/07/2004 30/06/2006
4 0 Valid and accepted without modification WS-35484
-31.560698155 150.546952242 56 267166 6505646 10000.0000
Data Entry: Laura Kelly.
Wildlife Rehab Database SPJGI6050543 1266 Fauna Mammalia
Macropodidae 3829 Osphranter robustus Common Wallaroo P
10/12/2017 10/12/2017 4
WR Valid and accepted without modification LPJGI0570560 601
Inverkip Road Quirindi, 2343 -31.596345500 150.547982700 56 267353
6501696 30.0000 Encounter broad: Unknown; Encounter narrow: Unknown

Dan Lunney's Community Wildlife Survey WS-15253 1532 Fauna
Mammalia Canidae 4124 Vulpes vulpes * Fox
01/01/1980 30/06/2006 1 4 0
Valid and accepted without modification WS-15253
-31.619738160 150.564709072 56 268998 6499137 10000.0000 Data
Entry: Alison Foster.
Dan Lunney's Community Wildlife Survey WS-15252 9112 Fauna
Mammalia Cervidae 4151 Cervus sp. * Unidentified
Deer 01/01/1980 30/06/2006 1
4 0 Valid and accepted without modification
WS-15252 -31.618548407 150.563519325 56 268882 6499267
10000.0000 Data Entry: Alison Foster.
Dan Lunney's Community Wildlife Survey WS-34452 9112 Fauna
Mammalia Cervidae 4151 Cervus sp. * Unidentified
Deer 01/07/2004 30/06/2006
4 0 Valid and accepted without modification
WS-34452 -31.629702606 150.521967969 56 264968 6497941
10000.0000 Data Entry: Laura Kelly. Seen 5-6 tomes per yr
GEDBSWF Vegetation Survey SPJGI5068118 3517 Flora Flora
Anthericaceae 5987 Arthropodium milleflorum Pale
Vanilla-lily 06/12/2006 06/12/2006
4 J Valid and accepted without modification
LPJGI0251504 Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge
behind house Area in ha: 10 -31.587970794 150.569953285 56 269417
6502671 10.0000 Lithology (Notes):Sandstone
GEDBSWF Vegetation Survey SPJGI5067565 10896 Flora Flora
Apocynaceae 6241 Marsdenia viridiflora subsp. viridiflora
Native Pear 21/12/2006 21/12/2006
4 J Valid and accepted without modification
LPJGI0251449 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below
gate Area in ha: 50 -31.575418951 150.565378810 56 268952 6504053
10.0000
GEDBSWF Vegetation Survey SPJGI5068125 1344 Flora Flora
Asteraceae 6717 Calotis lappulacea Yellow Burr-daisy

		06/12/2006	06/12/2006		
4	J	Valid and accepted without modification		LPJGI0251504	
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house					
Area in ha:	10	-31.587970794	150.569953285	56	269417 6502671 10.0000
Lithology (Notes):Sandstone					
GEDBSWBF Vegetation Survey		SPJGI5067576	1711	Flora	Flora
Asteraceae	7531	Vittadinia cuneata			
	21/12/2006	21/12/2006		4	J
Valid and accepted without modification			LPJGI0251449	Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50	
-31.575418951	150.565378810	56	268952	6504053	10.0000
GEDBSWBF Vegetation Survey		SPJGI5068139	1719	Flora	Flora
Asteraceae	7550	Vittadinia sulcata			
	06/12/2006	06/12/2006		4	J
Valid and accepted without modification			LPJGI0251504	Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10	
-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone					
GEDBSWBF Vegetation Survey		SPJGI5068122	BRAS	Flora	Flora
Brassicaceae	7805	Brassica spp. *	Brassica		
	06/12/2006	06/12/2006		4	J
Valid and accepted without modification			LPJGI0251504	Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10	
-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone					
GEDBSWBF Vegetation Survey		SPJGI5068132	LEPI	Flora	Flora
Brassicaceae	7893	Lepidium spp.			
	06/12/2006	06/12/2006		4	J Valid
and accepted without modification			LPJGI0251504	Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10	
-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone					
GEDBSWBF Vegetation Survey		SPJGI5067569	1872	Flora	Flora
Cactaceae	7991	Opuntia aurantiaca *		Tiger Pear	
	21/12/2006	21/12/2006			4
J	Valid and accepted without modification		LPJGI0251449	Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50	
-31.575418951	150.565378810	56	268952	6504053	10.0000
GEDBSWBF Vegetation Survey		SPJGI5067570	7659	Flora	Flora
Cactaceae	8005	Opuntia stricta var. stricta *		Common Prickly Pear	
		21/12/2006		21/12/2006	
4	J	Valid and accepted without modification			
LPJGI0251449	Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50				
-31.575418951	150.565378810	56	268952	6504053	10.0000
GEDBSWBF Vegetation Survey		SPJGI5068140	1934	Flora	Flora
Campanulaceae	8058	Wahlenbergia gracilis		Sprawling Bluebell	
		06/12/2006	06/12/2006		
4	J	Valid and accepted without modification		LPJGI0251504	
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house					
Area in ha:	10	-31.587970794	150.569953285	56	269417 6502671 10.0000
Ex 20x20m, inside 20x50m Lithology (Notes):Sandstone					

GEDBSWBF Vegetation Survey	SPJGI5068137	13845	Flora	Flora
Caryophyllaceae 8154	Petrorhagia dubia	*		
06/12/2006	06/12/2006		4	J
Valid and accepted without modification		LPJGI0251504	Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10	
-31.587970794	150.569953285	56	269417	6502671 10.0000
Lithology (Notes):Sandstone				
GEDBSWBF Vegetation Survey	SPJGI5068128	2111	Flora	Flora
Chenopodiaceae 8418	Einadia nutans		Climbing Saltbush	
	06/12/2006	06/12/2006		4
J	Valid and accepted without modification		LPJGI0251504	
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house		Area in ha: 10		
-31.587970794	150.569953285	56	269417	6502671 10.0000
Lithology (Notes):Sandstone				
GEDBSWBF Vegetation Survey	SPJGI5067562	2128	Flora	Flora
Chenopodiaceae 8441	Maireana enchylaenoides		Wingless Fissure-weed	
	21/12/2006	21/12/2006		
4	J	Valid and accepted without modification		LPJGI0251449
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate		Area in ha: 10		
50	-31.575418951	150.565378810	56	268952 6504053 10.0000
GEDBSWBF Vegetation Survey	SPJGI5068135	2137	Flora	Flora
Chenopodiaceae 8450	Maireana microcarpa			
	06/12/2006	06/12/2006	4	J
Valid and accepted without modification		LPJGI0251504	Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10	
-31.587970794	150.569953285	56	269417	6502671 10.0000
Lithology (Notes):Sandstone				
GEDBSWBF Vegetation Survey	SPJGI5067563	2138	Flora	Flora
Chenopodiaceae 8451	Maireana microphylla		Small-leaf Bluebush	
	21/12/2006	21/12/2006		
4	J	Valid and accepted without modification		LPJGI0251449
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate		Area in ha: 10		
50	-31.575418951	150.565378810	56	268952 6504053 10.0000
GEDBSWBF Vegetation Survey	SPJGI5068127	2222	Flora	Flora
Convolvulaceae 8700	Dichondra repens		Kidney Weed	
	06/12/2006	06/12/2006		4
J	Valid and accepted without modification		LPJGI0251504	
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house		Area in ha: 10		
-31.587970794	150.569953285	56	269417	6502671 10.0000
Lithology (Notes):Sandstone				
GEDBSWBF Vegetation Survey	SPJGI5067559	15127	Flora	Flora
Convolvulaceae 8701	Dichondra sp. Inglewood			
	21/12/2006	21/12/2006	4	J
Valid and accepted without modification		LPJGI0251449	Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50	
-31.575418951	150.565378810	56	268952	6504053 10.0000
GEDBSWBF Vegetation Survey	SPJGI5068124	6379	Flora	Flora
Cupressaceae 8885	Callitris glaucophylla		White Cypress Pine	
	06/12/2006	06/12/2006		
4	J	Valid and accepted without modification		LPJGI0251504
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house		Area in ha: 10		

Area in ha: 10 -31.587970794 150.569953285 56 269417 6502671 10.0000
Lithology (Notes):Sandstone
GEDBSWBF Vegetation Survey SPJGI5067557 2374 Flora Flora
Cyperaceae 9064 Cyperus gracilis Slender Flat-sedge
21/12/2006 21/12/2006
4 J Valid and accepted without modification LPJGI0251449
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha:
50 -31.575418951 150.565378810 56 268952 6504053 10.0000
NAMOI_CMA Vegetation Survey SPJGI5153222 ELEO Flora Flora
Cyperaceae 9136 Eleocharis spp. Spike-rush, Spike-sedge
06/01/2009 06/01/2009 4
J Valid and accepted without modification LPJGI0257749 No
description provided -31.629310854 150.542599430 56 266924 6498029
100.0000
GEDBSWBF Vegetation Survey SPJGI5067573 8494 Flora Flora
Fabaceae (Caesalpinioideae) 9933 Senna artemisioides subsp. zygophylla
21/12/2006 21/12/2006
4 J Valid and accepted without modification
LPJGI0251449 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below
gate Area in ha: 50 -31.575418951 150.565378810 56 268952 6504053
10.0000
GEDBSWBF Vegetation Survey SPJGI5068131 2860 Flora Flora
Fabaceae (Faboideae) 10181 Glycine clandestina Twining glycine
06/12/2006 06/12/2006
4 J Valid and accepted without modification LPJGI0251504
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house
Area in ha: 10 -31.587970794 150.569953285 56 269417 6502671 10.0000
Lithology (Notes):Sandstone
GEDBSWBF Vegetation Survey SPJGI5067567 2922 Flora Flora
Fabaceae (Faboideae) 10330 Medicago polymorpha * Burr Medic
21/12/2006 21/12/2006
4 J Valid and accepted without modification LPJGI0251449
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha:
50 -31.575418951 150.565378810 56 268952 6504053 10.0000
GEDBSWBF Vegetation Survey SPJGI5067558 15128 Flora Flora
Fabaceae (Faboideae) 10379 Oxytes brachypoda Large
Tick-trefoil 21/12/2006 21/12/2006
4 J Valid and accepted without modification
LPJGI0251449 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below
gate Area in ha: 50 -31.575418951 150.565378810 56 268952 6504053
10.0000
GEDBSWBF Vegetation Survey SPJGI5067575 3041 Flora Flora
Fabaceae (Faboideae) 10513 Swainsona galegifolia Smooth Darling
Pea 21/12/2006 21/12/2006
4 J Valid and accepted without modification
LPJGI0251449 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below
gate Area in ha: 50 -31.575418951 150.565378810 56 268952 6504053
10.0000 Ex 20x20m, inside 20x50m
Royal Botanic Gardens Herbarium Specimen Register NSW376131 3854
Flora Flora Fabaceae (Mimosoideae) 10888 Acacia polybotrya
Western Silver Wattle 25/08/1989
25/08/1989 1 L Valid and accepted without

modification NSW376131 Warrah Ridge. -31.565093586
 150.517807794 56 264410 6505096 10000.0000 Determination status:
 det. Determiner: P.G. Kodela Date Determined: 20 Jan 1995
 NAMOI_CMA Vegetation Survey SPJGI5153223 JUNC Flora Flora
 Juncaceae 11652 Juncus spp.
 06/01/2009 06/01/2009 4 J Valid
 and accepted without modification LPJGI0257749 No description
 provided -31.629310854 150.542599430 56 266924 6498029
 100.0000
 GEDBSWBF Vegetation Survey SPJGI5068134 8802 Flora Flora
 Lomandraceae 12148 Lomandra multiflora subsp. multiflora
 Many-flowered Mat-rush 06/12/2006
 06/12/2006 4 J Valid and accepted without
 modification LPJGI0251504 Bonnyrigg (Site 1081A) LOCATION
 DETAILS: Top of sandstone ridge behind house Area in ha: 10 -31.587970794
 150.569953285 56 269417 6502671 10.0000 Lithology
 (Notes):Sandstone
 GEDBSWBF Vegetation Survey SPJGI5068117 AMYE Flora Flora
 Loranthaceae 12183 Amyema spp. Mistletoe
 06/12/2006 06/12/2006 4 J
 Valid and accepted without modification LPJGI0251504 Bonnyrigg (Site
 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
 -31.587970794 150.569953285 56 269417 6502671 10.0000
 Lithology (Notes):Sandstone
 GEDBSWBF Vegetation Survey SPJGI5067549 ABUT Flora Flora
 Malvaceae 12327 Abutilon spp. Lantern-bush
 21/12/2006 21/12/2006 4 J
 Valid and accepted without modification LPJGI0251449 Red Braes (Site
 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
 -31.575418951 150.565378810 56 268952 6504053 10.0000

 GEDBSWBF Vegetation Survey SPJGI5067555 6128 Flora Flora
 Malvaceae 12343 Brachychiton populneus Kurrajong
 21/12/2006 21/12/2006 4
 J Valid and accepted without modification LPJGI0251449 Red
 Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
 -31.575418951 150.565378810 56 268952 6504053 10.0000

 GEDBSWBF Vegetation Survey SPJGI5068121 6128 Flora Flora
 Malvaceae 12343 Brachychiton populneus Kurrajong
 06/12/2006 06/12/2006 4
 J Valid and accepted without modification LPJGI0251504
 Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house
 Area in ha: 10 -31.587970794 150.569953285 56 269417 6502671 10.0000
 Ex 20x20m, inside 20x50m Lithology (Notes):Sandstone
 GEDBSWBF Vegetation Survey SPJGI5067564 7206 Flora Flora
 Malvaceae 12438 Malvastrum americanum * Spiked Malvastrum
 21/12/2006 21/12/2006
 4 J Valid and accepted without modification LPJGI0251449
 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha:
 50 -31.575418951 150.565378810 56 268952 6504053 10.0000

 GEDBSWBF Vegetation Survey SPJGI5067574 3664 Flora Flora
 Malvaceae 12464 Sida corrugata Corrugated Sida

	21/12/2006	21/12/2006		4	J	
Valid and accepted without modification			LPJGI0251449			Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
-31.575418951	150.565378810	56	268952	6504053	10.0000	
NAMOI_CMA Vegetation Survey		SPJGI5153224	MARI	Flora	Flora	
Marsileaceae	12513	Marsilea spp.				
	06/01/2009	06/01/2009		4	J	Valid
and accepted without modification			LPJGI0257749			No description
provided	-31.629310854	150.542599430	56	266924	6498029	
100.0000						
GEDBSWBF Vegetation Survey		SPJGI5067560	4039	Flora	Flora	
Myrtaceae	12853	Eucalyptus albens		White Box		
		21/12/2006	21/12/2006			4
J	Valid and accepted without modification		LPJGI0251449			Red
Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50						
-31.575418951	150.565378810	56	268952	6504053	10.0000	
GEDBSWBF Vegetation Survey		SPJGI5068129	4039	Flora	Flora	
Myrtaceae	12853	Eucalyptus albens		White Box		
		06/12/2006	06/12/2006			4
J	Valid and accepted without modification		LPJGI0251504			
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house						
Area in ha: 10	-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone						
GEDBSWBF Vegetation Survey		SPJGI5068130	11385	Flora	Flora	
Myrtaceae	12886	Eucalyptus blakelyi <--> dealbata				
		06/12/2006	06/12/2006			
4	J	Valid and accepted without modification		LPJGI0251504		
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house						
Area in ha: 10	-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone						
GEDBSWBF Vegetation Survey		SPJGI5067561	6398	Flora	Flora	
Oleaceae	13603	Jasminum lineare		Desert Jasmine		
		21/12/2006	21/12/2006			4
J	Valid and accepted without modification		LPJGI0251449			Red
Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50						
-31.575418951	150.565378810	56	268952	6504053	10.0000	Ex 20x20m, inside 20x50m
GEDBSWBF Vegetation Survey		SPJGI5067568	6695	Flora	Flora	
Oleaceae	13625	Notelaea microcarpa var. microcarpa				
		21/12/2006	21/12/2006			
4	J	Valid and accepted without modification		LPJGI0251449		
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50						
50	-31.575418951	150.565378810	56	268952	6504053	10.0000
GEDBSWBF Vegetation Survey		SPJGI5068123	4674	Flora	Flora	
Pittosporaceae	14689	Bursaria spinosa		Native Blackthorn		
		06/12/2006	06/12/2006			
4	J	Valid and accepted without modification		LPJGI0251504		
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house						
Area in ha: 10	-31.587970794	150.569953285	56	269417	6502671	10.0000
Lithology (Notes):Sandstone						
GEDBSWBF Vegetation Survey		SPJGI5067572	11202	Flora	Flora	

Pittosporaceae 14697 Pittosporum angustifolium Butterbush
21/12/2006 21/12/2006
4 J Valid and accepted without modification LPJGI0251449
Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha:
50 -31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5067551 4767 Flora Flora Poaceae
14893 Aristida personata
21/12/2006 21/12/2006 4 J Valid and
accepted without modification LPJGI0251449 Red Braes (Site 1037A)
LOCATION DETAILS: Midslope just below gate Area in ha: 50 -31.575418951
150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5067553 9918 Flora Flora Poaceae
14947 Austrostipa ramosissima Stout Bamboo Grass
21/12/2006 21/12/2006 4 J
Valid and accepted without modification LPJGI0251449 Red Braes (Site
1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
-31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5067554 10377 Flora Flora Poaceae
14952 Austrostipa scabra Speargrass
21/12/2006 21/12/2006 4 J Valid
and accepted without modification LPJGI0251449 Red Braes (Site
1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
-31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5068120 10371 Flora Flora Poaceae
14964 Austrostipa verticillata Slender Bamboo Grass
06/12/2006 06/12/2006 4
J Valid and accepted without modification LPJGI0251504
Bonnyrigg (Site 1081A) LOCATION DETAILS: Top of sandstone ridge behind house
Area in ha: 10 -31.587970794 150.569953285 56 269417 6502671 10.0000
Lithology (Notes):Sandstone

GEDBSWBF Vegetation Survey SPJGI5067556 4834 Flora Flora Poaceae
15052 Chloris ventricosa Tall Chloris
21/12/2006 21/12/2006 4 J Valid
and accepted without modification LPJGI0251449 Red Braes (Site
1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
-31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5068126 4897 Flora Flora Poaceae
15125 Dichelachne crinita Longhair Plumegrass
06/12/2006 06/12/2006 4 J
Valid and accepted without modification LPJGI0251504 Bonnyrigg (Site
1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
-31.587970794 150.569953285 56 269417 6502671 10.0000
Lithology (Notes):Sandstone

GEDBSWBF Vegetation Survey SPJGI5068133 5032 Flora Flora Poaceae
15390 Lolium perenne * Perennial Ryegrass
06/12/2006 06/12/2006 4 J Valid
and accepted without modification LPJGI0251504 Bonnyrigg (Site
1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
-31.587970794 150.569953285 56 269417 6502671 10.0000
Lithology (Notes):Sandstone

GEDBSWBF Vegetation Survey SPJGI5068136 5037 Flora Flora Poaceae
 15400 *Microlaena stipoides* Weeping Grass
 06/12/2006 06/12/2006 4 J Valid
 and accepted without modification LPJGI0251504 Bonnyrigg (Site
 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
 -31.587970794 150.569953285 56 269417 6502671 10.0000
 Lithology (Notes):Sandstone

GEDBSWBF Vegetation Survey SPJGI5067571 PASA Flora Flora Poaceae
 15482 *Paspalidium* spp.
 21/12/2006 21/12/2006 4 J Valid and
 accepted without modification LPJGI0251449 Red Braes (Site 1037A)
 LOCATION DETAILS: Midslope just below gate Area in ha: 50 -31.575418951
 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5067552 14304 Flora Flora Poaceae
 15600 *Rytidosperma bipartitum* Wallaby Grass
 21/12/2006 21/12/2006 4 J Valid
 and accepted without modification LPJGI0251449 Red Braes (Site
 1037A) LOCATION DETAILS: Midslope just below gate Area in ha: 50
 -31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5068119 RYTI Flora Flora Poaceae
 15625 *Rytidosperma* spp.
 06/12/2006 06/12/2006 4 J Valid and
 accepted without modification LPJGI0251504 Bonnyrigg (Site 1081A)
 LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
 -31.587970794 150.569953285 56 269417 6502671 10.0000
 Lithology (Notes):Sandstone

NAMOI_CMA Vegetation Survey SPJGI5153225 RANU Flora Flora
 Ranunculaceae 16525 *Ranunculus* spp.
 06/01/2009 06/01/2009 4 J Valid
 and accepted without modification LPJGI0257749 No description
 provided -31.629310854 150.542599430 56 266924 6498029
 100.0000

GEDBSWBF Vegetation Survey SPJGI5067550 7085 Flora Flora
 Sapindaceae 17339 *Alectryon oleifolius* subsp. *elongatus*
 21/12/2006 21/12/2006
 4 J Valid and accepted without modification LPJGI0251449
 Red Braes (Site 1037A) LOCATION DETAILS: Midslope just below gate Area in ha:
 50 -31.575418951 150.565378810 56 268952 6504053 10.0000

GEDBSWBF Vegetation Survey SPJGI5068138 6237 Flora Flora
 Urticaceae 18038 *Urtica incisa* Stinging Nettle
 06/12/2006 06/12/2006 4 J
 Valid and accepted without modification LPJGI0251504 Bonnyrigg (Site
 1081A) LOCATION DETAILS: Top of sandstone ridge behind house Area in ha: 10
 -31.587970794 150.569953285 56 269417 6502671 10.0000
 Lithology (Notes):Sandstone

Attachment 5 –

Environment Protection and Biodiversity Conservation Act 2000 Protected Matters Assessment

The Environment Protection and Biodiversity Conservation Act 1999 specifies factors to be taken into account in deciding whether a development is likely to significantly affect Endangered Ecological Communities, threatened species and migratory species, listed at the Commonwealth level. The Matters of Environmental Significance – Significant Impact Guidelines (DoE 2013) identify the factors the need to be considered.

The following assessment assesses the significance of the likely impacts associated with the proposed works on these species and ecological communities listed under the EPBC Act:

1 Wetlands of International Importance

Three (3) Wetlands were returned from the protected matters report (refer **Attachment 3**). 2 wetlands are approximately 900km upstream of the site and the other 1100km downstream. Based on distance from these wetlands, the proposal is unlikely to impact on any wetland of international importance.

2 Threatened Ecological Communities (TEC)

White Box Yellow Box Blakely's Red Gum Woodland and Derived Native Grassland (Box Gum Woodland) was identified in areas adjoining the development footprint during survey. Due to the historical and contemporary utilisation of the development site for cropping activities, there are no mapped TEC's on the Development Site (Refer **Figure 5**)

Identification of highly augmented adjoining mapped TEC - White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland, has resulted in a 30 m buffer applied to ensure all civil and construction works can occur without causing direct or indirect impact. Additionally, TEC- Natural grasslands on basalt and fine-textured alluvial plains of

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northern New South Wales and southern Queensland are identified as likely to occur in the southern and eastern adjoining area's however none was found in or immediately adjoining the Development Site.

3 Threatened Species

One threatened fauna species was identified (by Eco Logical Australia:2020) opportunistically during survey of the larger Study Area:

- *Artamus cyanopterus cyanopterus* (Dusky Woodswallow).

This species is listed as vulnerable under the BC Act and an ecosystem credit species under the BAM. This species is not listed as a SAIL entity or under the EPBC Act. No other threatened flora or fauna species were identified on or adjoining the development site (refer **Attachment 4**).

3.1.1 Threatened species habitat

26 threatened species were returned from the protected matters report, comprising seven birds, one fish, three mammals, five plants and one reptile species. Based on results from Eco Logical on site assessment (19-23 October 2020) and 28 South Ecological survey (30/03/2021), there are 13 threatened fauna species that are considered as likely or having potential to occur in the study area, including the areas of potential habitat. The Koala habitat assessment determined that all patches of PCT 435 met the definition of potential Koala habitat, as >15 % of the tree species were comprised of primary feed tree species listed in Schedule 2 of the SEPP.

Table 1 Threatened fauna species likely or with potential to occur in study area

Scientific name	Common name	BCA Listing	EPBC Act listing	Other considerations	Potential habitat
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	Species credit species under BAM for breeding SAIL candidate for breeding and mapped important areas	PCT 435 and PCT 599
<i>Aprasia parapulchella</i>	Pink-tailed legless Lizard	V	V	Species credit species under BAM	PCT 435 and PCT 599
<i>Burhinus grallarius</i>	Bush Stone Curlew	E	-	Species credit species under BAM	PCT 435 and PCT 599
<i>Cercartetus nanus</i>	Eastern Pygmy Possum	V	-	Species credit species under BAM	PCT 435 and PCT 599
<i>Grantiella picta</i>	Painted Honeyeater	V	V	Ecosystem credit species	PCT 435 and PCT 599
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	Species credit species under BAM for breeding	PCT 435 and PCT 599
<i>Lathamus discolor</i>	Swift Parrot	E	CE	Species credit species under BAM for breeding SAIL candidate for mapped important areas	PCT 435 and PCT 599
<i>Ninox connivens</i>	Barking Owl	V	-	Species credit species under BAM for breeding	PCT 435 and PCT 599
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	Species credit species under BAM	PCT 435 and PCT 599
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	Species credit species under BAM	PCT 435 and PCT 599
<i>Phascolarctos cinereus</i>	Koala	V	V	Koala SEPP 2020, Species credit species under BAM for breeding	PCT 435 and PCT 599
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Species credit species under BAM for breeding	PCT 435 and PCT 599
<i>Uvidicolus sphyrurus</i>	Border Thick-tailed Gecko	V	V	PCT 435 and PCT 599	

3.1.2 Threatened species habitat assessment

Threatened species habitat was opportunistically mapped throughout the study area and focused on:

- hollow bearing trees
- large stick nests
- woody and rocky debris
- riparian corridors.

Where these features were present, they were marked spatially using ArcCollector on a smart phone or noted as a PCT associated.

An assessment of any patches of native vegetation containing potential Koala feed tree species listed in Schedule 2 of the SEPP was completed. Where a feed tree species was

present, its percentage of the total number of trees was assessed. This was not completed for all patches of native vegetation across the Study area.

The literature and data review identified four vegetation communities (OEH 2012) as present in the study area:

- *Austrostipa aristiglumis* grassland of the Liverpool Plains
- *Eucalyptus albens* grassy woodland on basalts of the Upper Hunter and Liverpool Plains
- *Eucalyptus melliodora* / *Angophora floribunda* grassy woodland of the upper Hunter and Liverpool Plains
- Non-native Vegetation

Two (2) threatened fauna species; *Phascolarctos cinereus* (Koala) and *Artamus cyanopterus cyanopterus* (Dusky Woodswallow) have been recorded within the study area. The koala record is from 2006 and was collected by Dan Lunney's Community Wildlife Survey (BioNet 2020), while the Dusky Woodswallow was Opportunistically identified on the larger study area. No other threatened flora species have been previously recorded on or in proximity to the development site.

4 Migratory Species

Ten listed migratory species were returned from the protected matters report. Based on a habitat assessment (**Appendix H**), two of these species could occur on the site on occasion. – the Fork-tailed Swift and the White-throated Needletail. However, as these species are almost exclusively aerial (DoE, 2015) they are considered unlikely to rely on the habitats present within the development site.

