



TRAVERS BUSHFIRE & ECOLOGY

A TBE ENVIRONMENTAL COMPANY



KOALA ASSESSMENT REPORT

Proposed Development

Lot 2 DP 250359

430-490 Douglas Park Drive

DOUGLAS PARK

16 June 2025

(REF: HTB03ECO)



KOALA ASSESSMENT REPORT

Proposed Development

430-490 Douglas Park Road, Douglas Park

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Date:	16/06/25
Version:	Final
File:	HTB03ECO

As per App. C of the Guideline, the experience and qualifications of the author / surveyor Corrine Edwards is documented in Appendix 1.



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The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features is to be confirmed by a registered surveyor.

Generative AI has not been used in the preparation of this report.

CONSULTANT DECLARATION

Project Details	
Douglas Park Memorial Park – Concept Plan and Stage 1	
Application number	SSD-68287712
Address of subject-land	430-490 Douglas Park Drive, Douglas Park
Lot/ DP	Lot 2 in DP 250359
Applicant Details	
Applicant name	Benima Pty Ltd
Applicant address	PO Box A769, Sydney South, NSW 1235
Report Details	
Name of report this declaration relates	Koala Assessment Report – Douglas Park Memorial Park – Concept Plan and Stage 1
Report reference no	HTB03ECO
Report date	12 June 2025
Company name (ABN/ ACN)	Travers Bushfire & Ecology (ABN: 85 624 419 870/ ACN: 624 419 870)
Author name	Alana Parziani M. App. Sc. - Wildlife Health & Population Management – Fauna Ecologist
Author qualifications	Refer to Appendix 1. Experience / Qualifications
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Declaration By Consultant	
Name	Mr Michael Sheather-Reid - Managing Director of TBE Environmental Pty Ltd
Registration no.	ABN - 85 624 419 870
Organisation registered with	Australian Securities and Investments Commission
Declaration	<p>The undersigned declares that the Koala Assessment Report (KAR)</p> <ul style="list-style-type: none"> • Has been declared in accordance with the following policy, guidelines, or legislative requirements: <ul style="list-style-type: none"> - State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Koala Habitat Protection - Koala SEPP 2021 Fact Sheet – development applications - Koala (Phascolarctos cinereus): Biodiversity Assessment Method Survey Guide • Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the Koala Assessment Report relates. • Does not contain information that is false or misleading. • Identifies and addresses the relevant Planning Secretary's environmental assessment requirements (SEARs) for the project. • Identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments to which the Koala Assessment Report relates. • Contains a consolidated summary of the proposed or necessary mitigation measures.
Signature	
Date	16 June 2025

LIST OF ABBREVIATIONS

APZ	asset protection zone
BAM	Biodiversity Assessment Method (2020)
BAR	Biodiversity Assessment Report
<i>BC Act</i>	<i>Biodiversity Conservation Act (2016)</i>
<i>BC Reg</i>	<i>Biodiversity Conservation Regulation (2017)</i>
BCAR	Biodiversity Certification Assessment Report
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
BPA	bushfire protection assessment
BSSAR	Biodiversity Stewardship Site Assessment Report
CEEC	Critically endangered ecological community
<i>CM Act</i>	<i>Coastal Management Act 2016</i>
DAWE	Commonwealth Department of Agriculture, Water and the Environment (superseded by DCCEEW)
DCCEEW (Cmwlth)	Commonwealth Department of Climate Change, Energy, the Environment and Water
DCCEEW (NSW)	NSW Department of Climate Change, Energy, the Environment and Water
DCP	development control plan
DEC	NSW Department of Environment and Conservation (superseded by DECC from April 2007)
DECC	NSW Department of Environment and Climate Change (superseded by DECCW from October 2009)
DECCW	NSW Department of Environment, Climate Change and Water (superseded by OEH from April 2011)
DEWHA	Commonwealth Department of Environment, Water, Heritage & the Arts (superseded by SEWPAC)
DOEE	Commonwealth Department of Environment & Energy (superseded by DAWE)
DPE	NSW Department of Planning and Environment (superseded by NSW DCCEEW)
DPIE	NSW Department of Planning, Industry and Environment (superseded by DPE)
EEC	endangered ecological community
EPA	Environment Protection Authority
<i>EP&A Act</i>	<i>Environmental Planning and Assessment Act (1979)</i>
<i>EPBC Act</i>	<i>Environment Protection and Biodiversity Conservation Act (1999)</i>
<i>FM Act</i>	<i>Fisheries Management Act</i>
IBRA	Interim Biogeographic Regionalisation for Australia
LEP	local environmental plan
LGA	local government area
<i>LLS Act</i>	<i>Local Land Services Act (2013)</i>
NES	national environmental significance
<i>NPW Act</i>	<i>National Parks and Wildlife Act (1974)</i>
NRAR	Natural Resources Access Regulator (NSW)
NSW DPI	NSW Department of Industry and Investment
OEH	Office of Environment and Heritage (superseded by DPIE from August 2019)
PCT	plant community type
PFC	projected foliage cover
RFS	NSW Rural Fire Service
SAIL	Serious And Irreversible Impacts
SEPP	State Environmental Planning Policy
SEWPAC	Commonwealth Dept. of Sustainability, Environment, Water, Population & Communities (superseded by DOEE)

SIS	species impact statement
TEC	threatened ecological community
TPZ	tree preservation zone
TSC Act	<i>Threatened Species Conservation Act (1995) – Superseded by the Biodiversity Conservation Act (2016)</i>
VMP	vegetation management plan
Core koala habitat	Core koala habitat means— (a) an area of land where koalas are present, or (b) an area of land— (i) which has been assessed by a suitably qualified and experienced person in accordance with the Guideline as being highly suitable koala habitat, and (ii) where koalas have been recorded as being present in the previous 18 years.
KMA	Koala Management Area. These are the regions listed in the Schedules of the SEPP and were derived from the Koala Tree Species Index as part of the Koala Habitat Information Base. Sometimes also referred to as Koala Modelling Region (KMR).
Koala Development Application Map	The Koala Development Application Map in the SEPP.
KPoM	Koala Plan of Management.
Site area	Includes both a development footprint and the broader area of land on which the development is proposed (i.e. the subject lot). The controls within the SEPP apply to both direct and indirect impacts and all potential habitat on the site area therefore needs to be considered even if no vegetation is to be cleared.
Site Investigation Area for Koala Plans for Management Map	The Site Investigation Area for Koala Plans of Management Map in the SEPP.
Study area	The portion of land that encompasses all surveys undertaken and is usually all land contained within the designated property boundary. The study area extends as far as is necessary to assess relevant habitat values known and likely to occur and includes the development footprint and any additional areas which are likely to be affected by the proposal, either directly or indirectly.
Suitably qualified and experienced person	Suitably qualified and experienced person means a person who has— (a) a tertiary qualification in ecology, environmental management, forestry or other equivalent qualifications, and (b) experience in flora and fauna identification, survey and management, including experience in conducting koala surveys in accordance with the techniques specified in the Guideline.

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1. BACKGROUND

This Koala Assessment Report (KAR) has been prepared by *Travers bushfire & ecology* (TBE) on behalf of *Benima Pty Ltd* for a combined Concept Plan approval and Stage 1 detailed works for a multi-denominational cemetery at 430-490 Douglas Park Drive, Douglas Park (Douglas Park Memorial Park - Concept Plan and Stage 1).

The site is located at 430-490 Douglas Park Drive, Douglas Park within the Wollondilly Local Government Area (LGA). The site is irregular in shape with a total size of 16,790m². It is described as Lot 2 in DP 250359. The site is mostly vacant with scattered vegetation and a single dwelling with driveway accessible from Douglas Park Drive. The site comprises two street frontages, to the east is Mitchell Place and to the west is Douglas Park Drive. This lot is shown on Figure 1-1 and will be referred to hereafter as the subject lot.

The subject lot and the adjacent connective vegetation will hereafter be referred to as the 'study area.'

The proposal shall be assessed under the *Biodiversity Conservation Act (BC Act)*, 2016. Site specific SEARs and responses are provided in Table 1-1 whilst agency responses are provided in

Table 1-2. Note, that the agency questions arose in March 2024.

Table 1-1 – Secretary’s Environmental Assessment Requirements (Koala Assessment Report)

Item	SEARS Requirement	SEARS RESPONSE: Koala Assessment Report key principles according to Koala SEPP 2021	Relevant Section of Koala Assessment Report
12	Provide a Koala Assessment Report in accordance with State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 4 Koala habitat protection 2021 and the Koala SEPP 2021 Fact Sheet – development applications.	1. Understand koala habitat values	Section 3
		2. Avoid intensifying land use in koala habitat areas through appropriate landscape planning and site selection	Section 7
		3. Encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas,	Section 7
		4. Minimise potential direct impacts to koalas through koala sensitive design, and	Section 7
		5. Implement best practice measures for the management of identified risks to koalas.	Section 7

Table 1-2 – Agency advice

Agency	Agency Requirement	RESPONSE: This Koala Assessment Report has been written to address the Koalas under the updated legislation including key principles according to Koala SEPP 2021	Relevant Section of Koala Assessment Report
Wollondilly Shire Council	A previous Scoping Report was prepared in accordance with the applicable State Environmental Planning Policy (Koala Habitat) Protection 44. Council Environment Staff have received legal advice that there are no savings provisions between this document and the current applicable State Environmental Planning Policy (Koala Habitat) 2019 (now Chapter 4 of the Biodiversity and Conservation SEPP 2022). The preparation of a Koala Assessment Report in accordance with Section 4.9 of this SEPP is viewed as appropriate given that impacts of the proposal on koala habitat will be likely more than low. This Report is requested to be prepared broadly based on the Template for such reports in Part 3.3 of the Koala Guidelines 2019 in the absence of Guidelines for Koala SEPP 2021 (now Chapter 4 within the Biodiversity and Conservation SEPP).	1. Understand koala habitat values	Section 3
		2. Avoid intensifying land use in koala habitat areas through appropriate landscape planning and site selection	Section 7
		3. Encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas,	Section 7
		4. Minimise potential direct impacts to koalas through koala sensitive design, and	Section 7
		5. Implement best practice measures for the management of identified risks to koalas.	Section 7

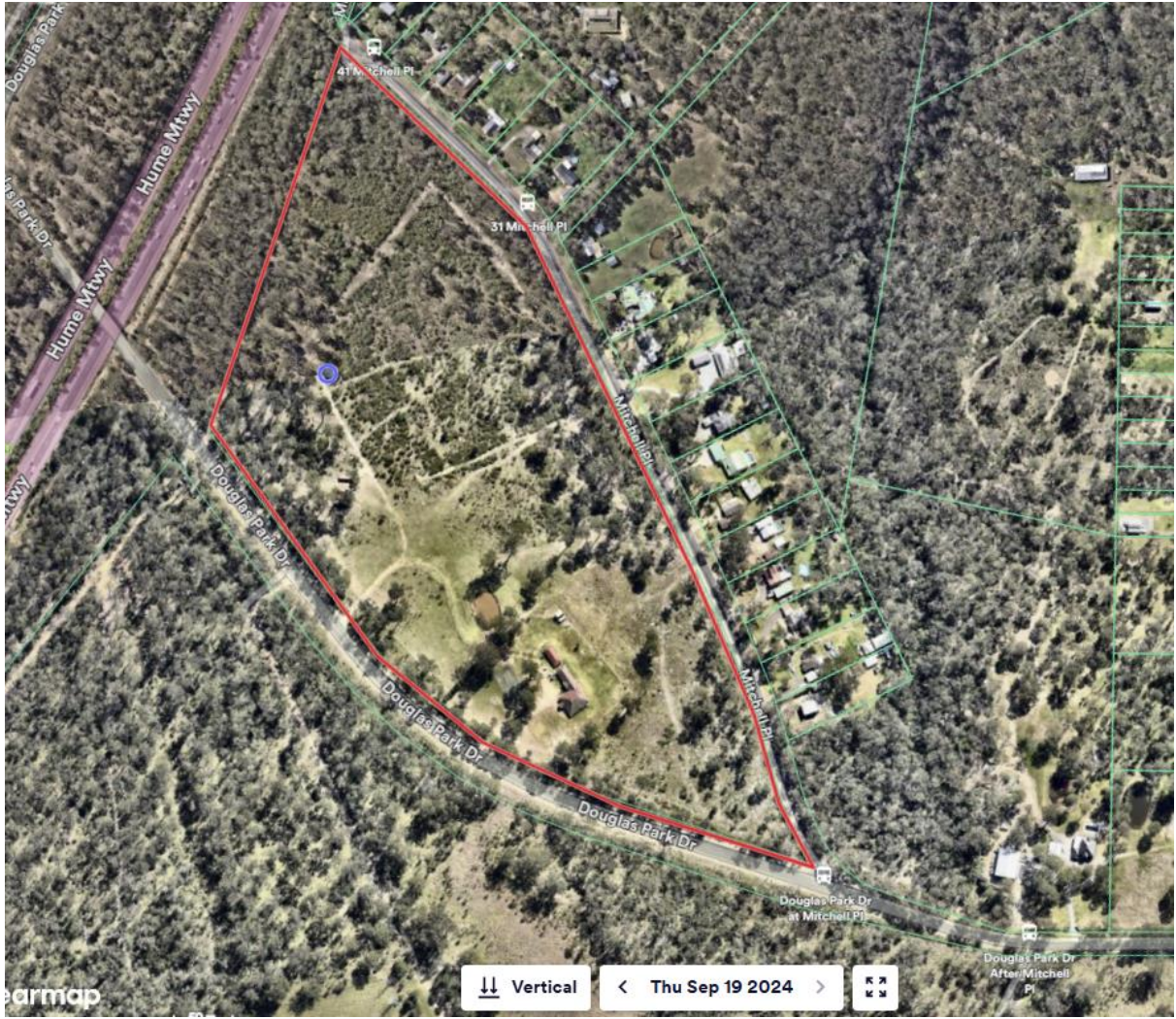


Figure 1-1 – Subject lot

1.1 Site description

1.1.1 Site overview and landscape features

Table 1-3 provides an overview of the planning, cadastral and topographical details of the study area. Table 1-3 also examines the landscape features of the proposed development site.

Table 1-3 – Site and landscape features

<i>Location</i>	430-490 Douglas Park Road, Douglas Park
<i>Area</i>	Approximately 16.79 ha
<i>Development footprint</i>	Approximately 15.52 ha of native vegetation impacted, Approximately 9.83 ha directly impacted through the construction of internal roads, buildings, asset protection zones (APZs) and boundary fences.
<i>Local government area</i>	Wollondilly Shire Council
<i>Zoning</i>	RU2 – Rural Landscape
<i>Grid reference</i>	289030E 6213360N
<i>Elevation</i>	Approximately 132-150 m AHD
<i>Topography</i>	The site has gentle slopes generally between 1-3% and is situated close to a low ridgetop within low rolling hills. Local relief to 30 m, slopes are usually <5%. Broad rounded crests and ridges with gently inclined slopes.
<i>Geology and soils</i>	Gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Blacktown soil landscape.
<i>Catchment, drainage and stream order</i>	On stream is mapped on site. However site investigations reveal that it has not distinct channel development and discharges through a small shallow dam. The stream is not considered to be a watercourse.
<i>Location description and existing land use</i>	The study area is located approximately 1.8 km south of Douglas Park train station situated in the Wollondilly Shire Council LGA. The neighbouring area is predominantly characterised by rural residential properties to the east and the Hume Motorway to the north.
<i>Connectivity features</i>	The site has predominately residential houses to the east and a motorway to the north. The main avenue that offers connectivity is through native bushland offering arboreal secondary connectivity options for fauna passing between the gully to the east and habitat west of Douglas Park Drive (which has a biobanking agreement in place). The main barrier to this connectivity are roads which surround the property. The proposed development aims to retain vegetation, including large remnant trees, around the property boundary which holds a high connectivity value and benefits to local birds, bats, gliders and other arboreal mammals. Given the central parts of the site have already been cleared in the past and used for lightly grazed pasture, the development will not significantly fragment or isolate areas of this remnant vegetation or is unlikely to impede on movement of any native fauna.

In April 2025, development consent was approved by the NSW Land and Environmental Court for the flora and fauna protective fence envisaged as Stage 1 of the concept approval. The construction of the fence is to be / was undertaken in May 2025.

Note that the SSDA will supersede the previous concept approval, and approval for flora and fauna protection fencing will be sought again as part of this SSDA. Figure 6-1 shows the location of this protection fence.

1.3 Proposed development

The SSDA application seeks to improve the cemetery design that reflects the natural surroundings and to provide a modern approach to cemetery design and management. The proposed design is more organic and avoids parts of the site with mature canopy vegetation was envisaged to be protected.

The development layout shown below involves the development of a cemetery and associated facilities including administrative building, café, chapel, crematorium, storage shed/garage, car parking, memorial gardens and lawn / monumental burial plots.

Asset Protection Zones (APZs), internal roads, infrastructure and burial lots where varying impacts on existing vegetation will occur have been depicted.



Figure 1-3 – Proposed development layout (Concept site plan)

(Source: Arcadia Landscape Architecture)

The Stage 1 works comprise the following:

- All preparatory site works including vegetation protection, enhancement and removal, demolition of existing structures, bulk excavation for burial zones, general ground works and utility service augmentation;

- Vehicular access / egress from Douglas Park Drive with separate vehicular egress only to Mitchell Place;
- Construction of internal roads, pathways and parking areas for approximately 118 car parking spaces inclusive of 1 hearse car parking space;
- Perimeter memorial pedestrian pathway with remembrance sanctuaries;
- Burial zones with a maximum capacity of 15,447 comprising shallow, single and triple layered burial plots;
- Construction of single storey chapel, single storey administration building and single storey storage shed and garage;
- Site landscaping, fencing, lighting and entry signage; and
- The cemetery operating hours, including public access, will be between the hours of 6:00am and 6:00pm, 7 days a week. The opening hours of the Chapel and Administration Building (including café) will be between 8:00am and 5:00pm, 7 days a week.

The burial zone preparation works within Stage 1 will be carried out sequentially within each burial zone and will be based on the demand for burial plots.

For a detailed project description refer to the Environmental Impact Statement prepared by Ethos Urban.

Whilst the entire site is approximately 16.79 ha, the amount of native vegetation is estimated at 15.52 ha. 9.83 ha will be directly impacted through the construction of internal roads,

buildings, APZs and boundary fences (illustrated on

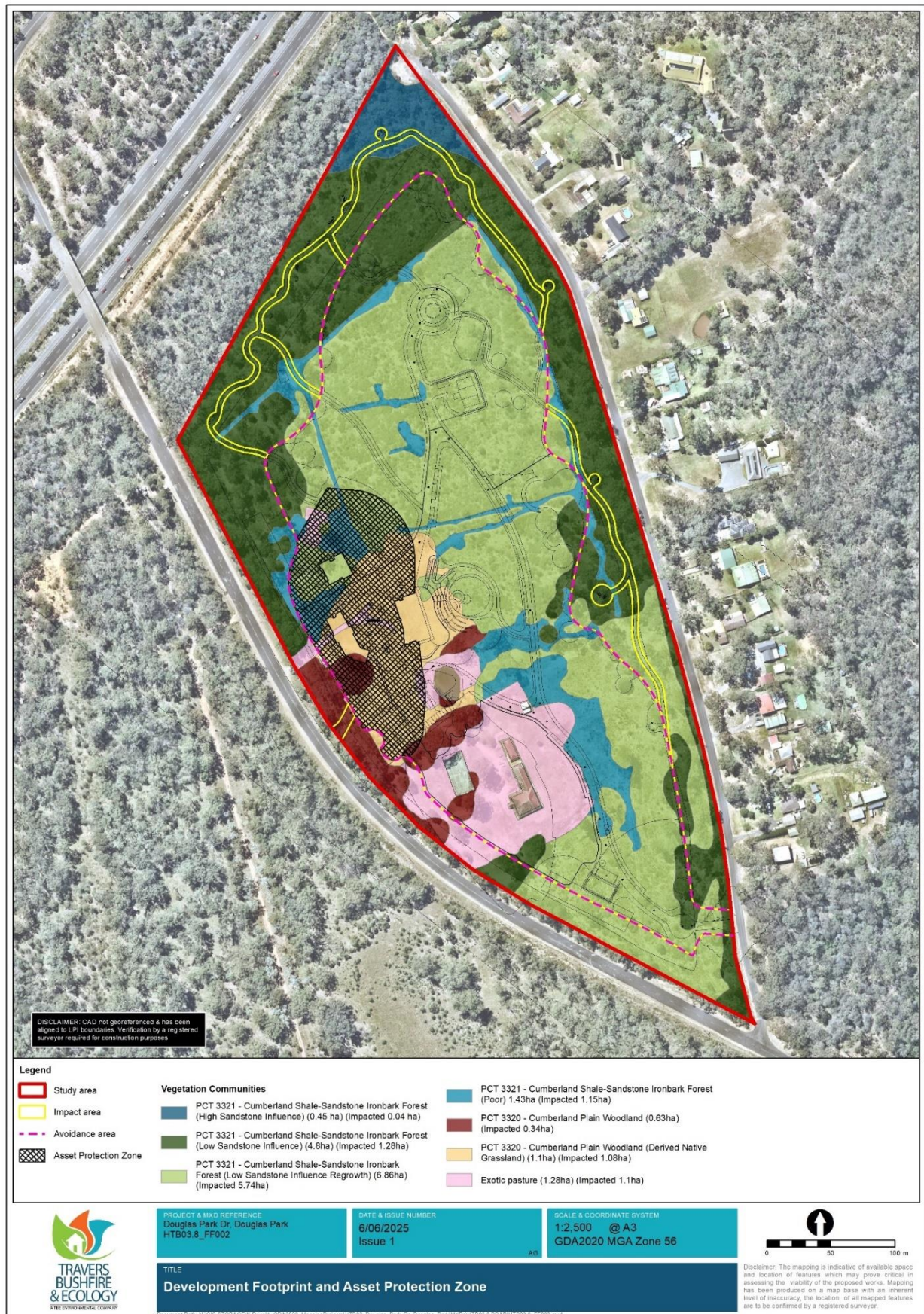


Figure 1-5).



Figure 1-4 – Extent of Stage 1 works

(Source: Arcadia Landscape Architecture)

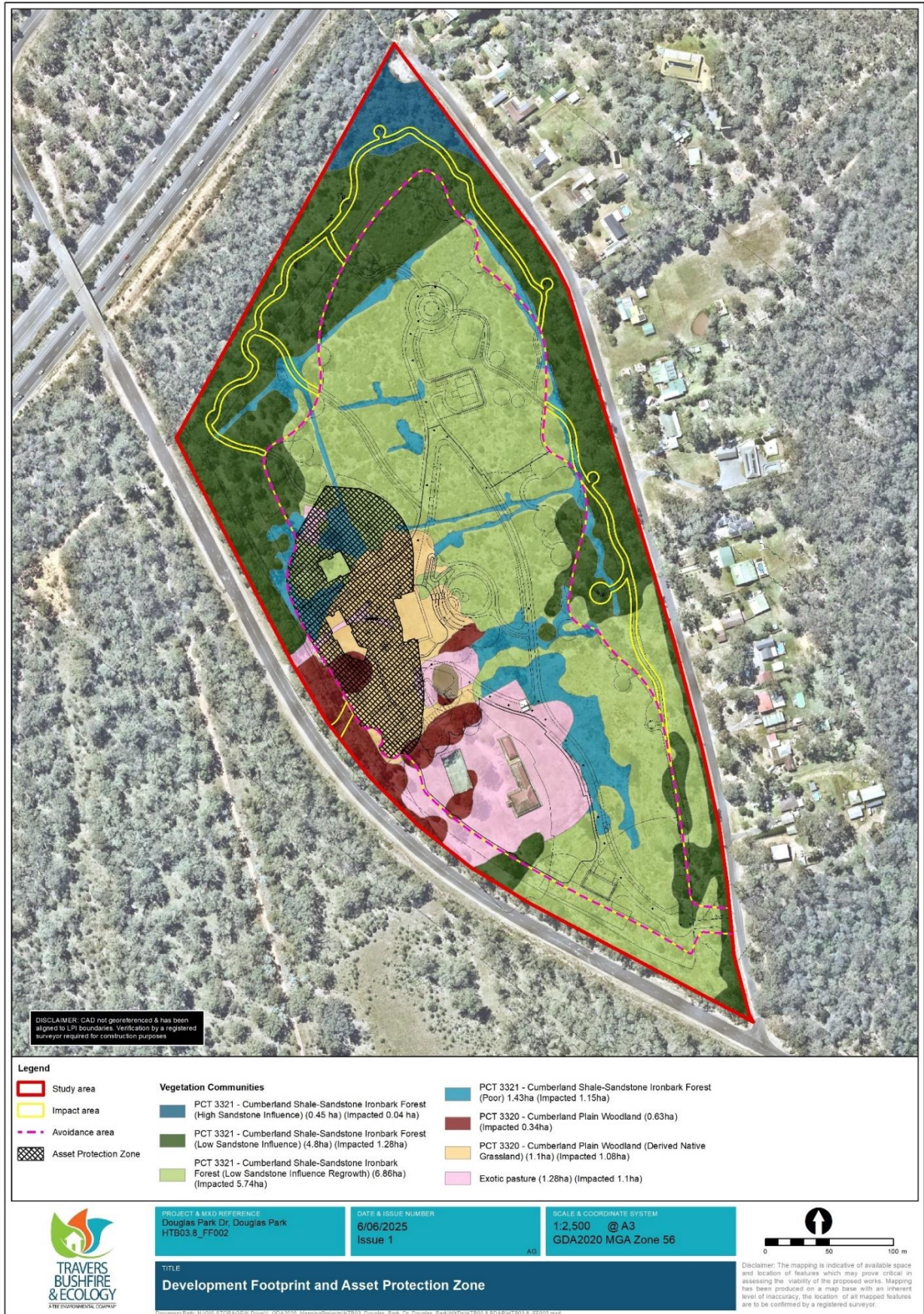


Figure 1-5 – Development footprint and Asset Protection Zone

The boundary of the impact area has been defined to provide a balanced ecological outcome that retains a good proportion of the more mature vegetation that occurs around the perimeter of the site and provides little interruption to the local connectivity for flora and fauna resources.

The development is centered on the lot, such that it will permit retention of native trees with a variable width of 10-65m wide around the property boundary. A cluster of trees located in the north-western corner of the subject site are all in good health and will be retained. Burial plots in this area will be placed at least 3m from the base of trees to avoid root impacts.

There is a total of 21 identified Koala use trees under the definitions of SEPP 2021 Central and Southern Tablelands and Central Coast KMAs proposed for removal within the development footprint according to the AIA prepared by *Travers bushfire & ecology* (2025).

The current proposal will see the removal of no Koala feed tree under Schedule 1 SEPP 2021 and removal of a total of 21 identified Koala use trees under the definitions of SEPP 2021 Central and Southern Tablelands and Central Coast KMAs. Specifically, the following:

- 1 x *Allocasuarina littoralis* (Black She-oak)
- 1 x *Corymbia gummifera* (Red Bloodwood)
- 10 x *Eucalyptus eugenioides* (Thin-leaved stringybark)
- 5 x *Eucalyptus fibrosa* (Broad Leaved Ironbark)
- 4 x *Eucalyptus moluccana* (Grey Box)

2. LEGISLATIVE CONTEXT

2.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Koala Habitat Protection

Chapter 4 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Koala Habitat Protection) applies to land within LGAs listed under Schedule 2 of the Policy. As Wollondilly is listed under Schedule 2 of SEPP 2021, it is considered that Koala SEPP 2021 applies to this development proposal.

Land to which this policy applies in accordance with Section 4.4 of the SEPP 2021 is as follows:

- (1) *This Chapter applies to each local government area listed in Schedule 2.*
- (2) *The whole of each local government area is—*
 - (a) *in the koala management area specified in Schedule 2 opposite the local government area, or*
 - (b) *if more than 1 koala management area is specified, in each of those koala management areas.*
- (3) *Despite subsection (1), this Chapter does not apply to—*
 - (a) *land dedicated or reserved under the [National Parks and Wildlife Act 1974](#), or acquired under Part 11 of that Act, or*
 - (b) *land dedicated under the [Forestry Act 2012](#) as a State forest or a flora reserve, or*
 - (c) *land on which biodiversity certification has been conferred, and is in force, under Part 8 of the [Biodiversity Conservation Act 2016](#), or*
 - (d) *land in the following land use zones, or an equivalent land use zone, unless the zone is in a local government area marked with an * in Schedule 2—*
 - (i) *Zone RU1 Primary Production,*
 - (ii) *Zone RU2 Rural Landscape,*
 - (iii) *Zone RU3 Forestry.*

Please Note that SEPP 2020 applies in lands zoned as RU1, RU2 and RU3 in accordance with SEPP 2020, however Wollondilly LGA is excluded as this LGA is marked with an * in Schedule 2.

Therefore SEPP 2021 applies and relevant considerations are as follows:

- Under Schedule 2 of SEPP 2021, Wollondilly LGA falls within the Central and Southern Tablelands and Central Coast Koala Management Areas;
- Wollondilly LGA is marked with an * and as such SEPP 2021 applies to land zoned RU2;
- There is currently no approved Koala Plan of Management (KPoM) for the LGA that this site is located in; and
- The subject lot includes an area greater than 1 ha.

In accordance with Section 4.9, as there is currently no approved Koala Plan of Management (KPoM) for the LGA that this site is located in the following relevant sections of SEPP 2021 apply, as follows:

Chapter 4 (Part 4.9) - *Development assessment process—no approved koala plan of management for land*

(1) *This section applies to land to which this Chapter applies if the land—*

(a) *has an area of at least 1 hectare (including adjoining land within the same ownership), and*

(b) *does not have an approved koala plan of management applying to the land.*

(2) *Before a council may grant consent to a development application for consent to carry out development on the land, the council must assess whether the development is likely to have any impact on koalas or koala habitat.*

(3) *If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application.*

(4) *If the council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, the council must, in deciding whether to grant consent to the development application, take into account a koala assessment report for the development.*

(5) N/A

(6) *In this section—*

koala assessment report, for development, means a report prepared by a suitably qualified and experienced person about the likely and potential impacts of the development on koalas or koala habitat and the proposed management of those impacts.

Chapter 4 (Part 4.3) states that:

(2) *A Koala Plan of Management must be prepared—*

(a) *on behalf of a council by a suitably qualified and experienced person, and*

(b) *having regard to a survey of the land for core koala habitat conducted by a suitably qualified and experienced person.*

(4) *Land may be identified in a koala plan of management if—*

(a) *the land is identified on the Site Investigation Area for Koala Plans of Management Map as an area where this Chapter applies, and*

(b) *the land is core koala habitat.*

However, as the proposed activity is a State Significant Infrastructure project, the determining body will be the NSW DCCEEW.

2.2 Areas of regional Koala significance (ARKS)

Areas of regional Koala significance in New South Wales (NSW) refer to specific regions or locations that hold significant importance for the conservation and protection of Koala

populations in the state. These areas are recognised for their high levels of Koala activity, presence of essential Koala habitat, and potential for supporting viable Koala populations.

The identification of these significant areas is typically based on a combination of factors, including:

- **Koala Population Density:** Areas with relatively high concentrations of Koalas are recognised as important, as they indicate the presence of suitable habitat and support a viable population.
- **Core Habitat:** Regions that contain core habitat, including areas with mature and dense eucalyptus forests, which are the primary food and shelter source for koalas, are considered significant.
- **Connectivity:** The existence of corridors and linkage areas that allow Koalas to move between different patches of habitat is vital for maintaining genetic diversity and population resilience.
- **Breeding Sites:** Areas where Koalas engage in breeding activities are of particular importance, as they contribute to the replenishment of the population.
- **Genetic Diversity:** Locations that host genetically diverse Koala populations are essential for the species' overall health and adaptation to changing environmental conditions.
- **Conservation Efforts:** Areas where conservation initiatives and efforts are already underway, or where community engagement in Koala protection is active, are recognised for their contribution to Koala preservation.

Figure 2-1 shows that the study site is mapped as an Area of Regional Koala Significance.

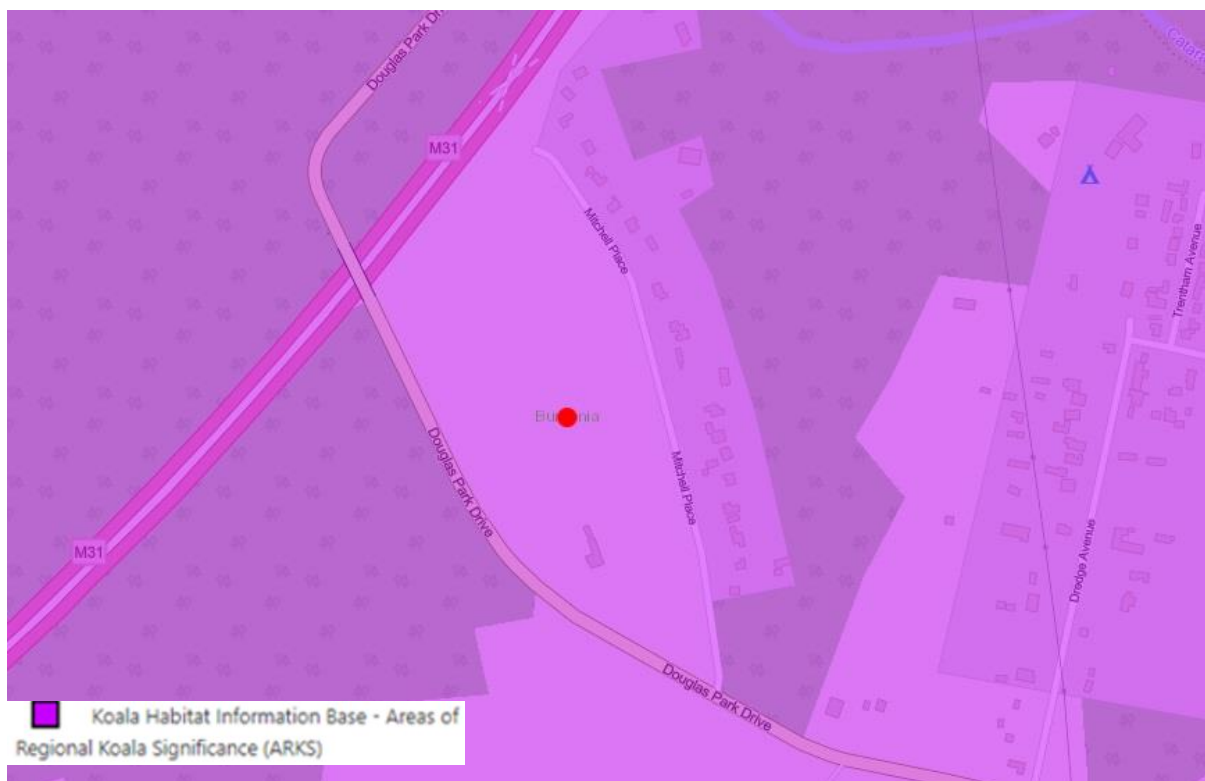


Figure 2-1 – Areas of regional Koala significance

3. KOALA HABITAT

3.1 Site context and connectivity

The vegetation within the subject site has been significantly disturbed in the past. The majority of the native vegetation in the central parts of the site has been removed and used as a lightly grazed pasture.

These central parts are in the early stages of regrowth with few tree saplings and a native shrub layer between 0.7 and 2 metres tall and 50 to 65% cover.

The proposed development will retain native trees within a variable width buffer around the property boundary. These large remnant trees (and variable condition understorey around the perimeter of the site provide a local and mostly arboreal secondary connectivity option for fauna passing between the gully to the east and habitat west of Douglas Park Drive as shown in Figure 3-1.

The perimeter native vegetation buffer provides connectivity around the site, provides a temporary refuge for Koalas in dispersal. The most important and quality habitat for connectivity and corridors for fauna passage in the locality will otherwise be retained.

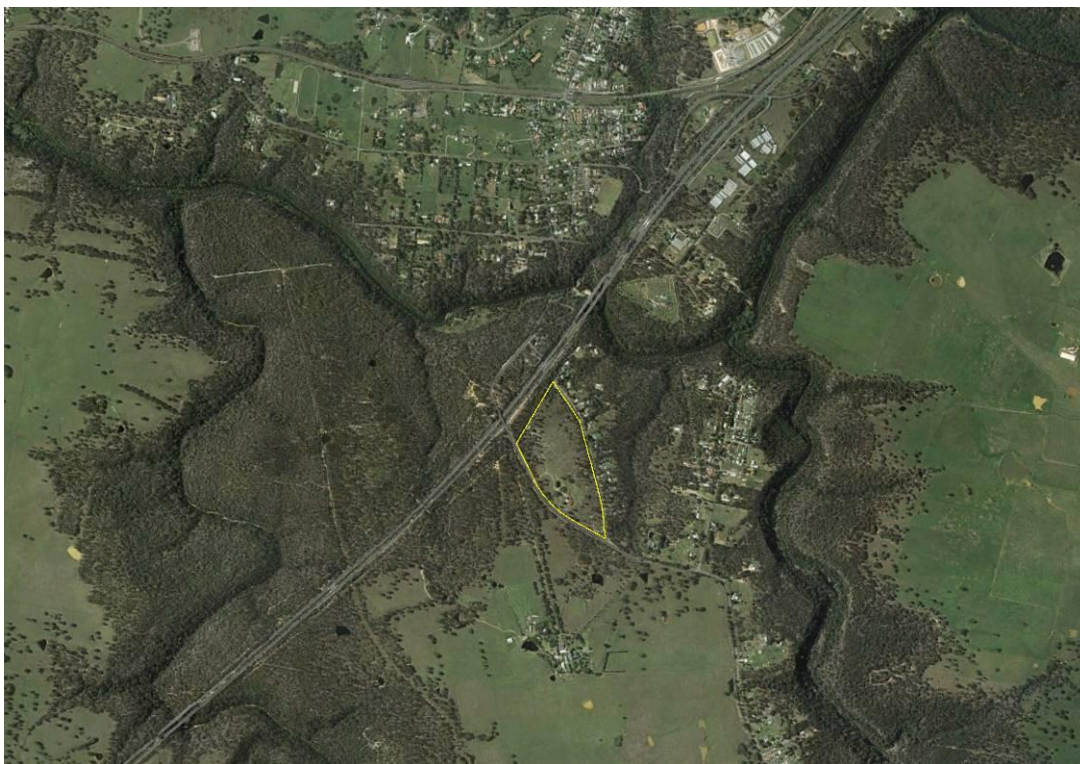


Figure 3-1 – Local connectivity (study site in yellow)

3.2 Existing Koala habitat

Under Chapter 4 Koala habitat protection SEPP 2021, Part 4.1 'core koala habitat' is defined as:

(a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or

(b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.

In Chapter 4 of SEPP 2021, the term "potential koala habitat" in SEPP 2021 refers back to the specific definition as provided in SEPP 2020, as outlined below:

Under Part 3.2 of SEPP 2020 'potential koala habitat' is defined as:

"areas of native vegetation where trees of the types listed in Schedule 1 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component."

One (1) tree species was recorded in the study area which is considered to be a Koala feed tree species under Schedule 1 of SEPP 2021. This species is:

- *Eucalyptus tereticornis* (Forest Red Gum)

Under Schedule 2 of SEPP 2021, Wollondilly falls within the Central and Southern Tablelands and Central Coast Koala Management Areas.

Eight (8) tree species were recorded in the study area which are considered Koala use tree species within these Management Areas under Schedule 3 of SEPP 2021. These species are:

- *Allocasuarina littoralis* (Black She-oak)
- *Corymbia gummifera* (Red Bloodwood)
- *Angophora floribunda* (Rough-barked Apple)
- *Eucalyptus crebra* (Narrow-leaved Ironbark)
- *Eucalyptus eugenioides* (Thin-leaved Stringybark)
- *Eucalyptus fibrosa* (Broad Leaved Ironbark)
- *Eucalyptus moluccana* (Grey Box)
- *Eucalyptus tereticornis* (Forest Red Gum)

According to the AIA prepared by *Travers bushfire & ecology* (2025), of the 566 trees assessed there are 13 *Eucalyptus tereticornis* on site, which comprises 2.3% (less than 15%) of the total number of trees in the upper or lower strata of the tree component. Therefore, it is concluded that the study site is not classified under SEPP 2021 as 'potential koala habitat'.

One koala food tree species, Forest Red Gum (*Eucalyptus tereticornis*) as listed on Schedule 1 of SEPP 2021 is present within the study area. a denser clump of this species is found at the southern-most tip of the site and would be considered to be greater than 15% and therefore is classified under SEPP 2020 as 'potential koala habitat'. Therefore, a small portion of the site may be suitable for foraging purposes. This area is however being conserved and none of the trees are being removed.

No Koalas were directly observed at the time of fauna survey, which included diurnal searches of trees and spotlighting.

Despite known local activity of Koala shown in Figure 3-2, the study area itself does not appear to form part of an individual's active home range. Most of the trees within the study

area are Ironbarks within the Shale-sandstone Transition Forest Community. The small number of Forest Red Gum (the only listed Koala feed tree under Schedule 1 SEPP) is all contained within a fenced, cleared and grazed area adjoining residential dwellings in nearby blocks. The SATs incorporating most of these trees did not record any Koala scats but also did not record scratches on these smooth-barked trees consistent with Koala historical use.

The number of these trees is also limited and Koalas incorporating them into a home range would need to cross either Douglas Park Drive or Mitchell Place to access the site. One of the residents on site provided anecdotal evidence of a single Koala making passage across the 2018 but said it did not stay long. Another anecdotal record from a resident provided information that a road-kill record was observed on Douglas Park Drive.

It would be expected that transient Koalas from the local population may utilise the surrounding habitat on site temporarily during dispersal. Despite this, most of the site is not considered potential koala habitat overall and further survey results and habitat considerations have concluded that this study site is not considered core koala habitat under the above definitions.

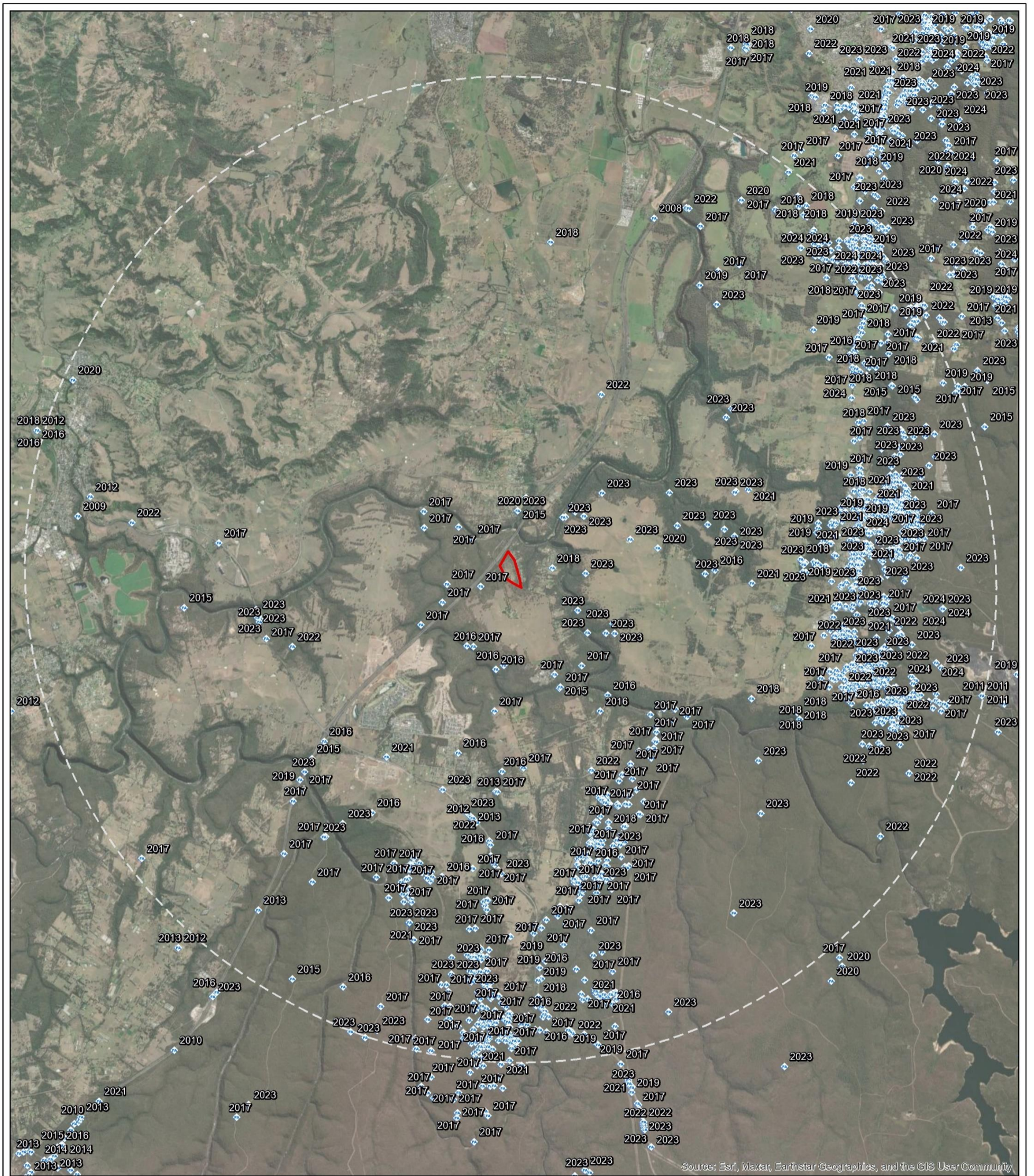
As an outcome of the SEPP (Biodiversity and Conservation) 2021 (Koala Habitat Protection) this Koala Assessment Report is being prepared to satisfy Section 4.9 of the Koala SEPP 2021.

3.3 Localised Koala records

As of February 2025, there have been 2064 recorded Koala observations within a 10km radius from the study site within the last 18 years. Within the surrounding locality Koala observations are concentrated particularly along the connective forest habitats of the nearby Allens Creek and the Bargo River. Records extend to the south of Wilton and to the west along Cordeaux River as well as east to Appin, and beyond.

34 observations have been recorded within ~2.5km of the subject site particularly in the conservation area on Douglas Park Road as recent as 2023. One record from 2017 was located just 500m to the southwest of the study site, a 2018 record 600m to the east. This highlights the potential for Koalas to actively take up residence within the surrounding area where sufficient feed trees are available and provides opportunity to overlap ranges between sexes occur.

Localised Koala sightings are shown below in Figure 3-2 and Figure 3-3.



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

- Study area
- 10km radius
- ◆ Koala sightings (2007- 2025)

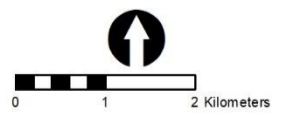
**NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians
Data obtained 06.01.2025



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GDA2020 MGA Zone 56



TITLE
Koala Bionet Records

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

Figure 3-2 – Localised Koala records within 10km (Study area in red)



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

- Study area
- 2.5km radius
- ◆ Koala sightings (2007- 2025)

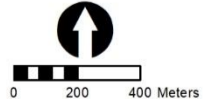
**NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians
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Koala Bionet Records

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Figure 3-3 – Localised Koala records within 2.5km (Study area in red)

4. VEGETATION ASSESSMENT

The following vegetation communities were identified within the development footprint through ground truthing. Threatened ecological communities under the *BC Act* are denoted with 'CEEC'.

- *PCT 3320 - Cumberland Shale Plains Woodland* - CEEC
- *PCT 3320 – Derived Native Grassland* - CEEC
- *PCT 3321 – Cumberland Shale-Sandstone Ironbark Forest (High Sandstone Influence)* - CEEC
- *PCT 3321 – Cumberland Shale-Sandstone Ironbark Forest (Low Sandstone Influence)* - CEEC
- *PCT 3321 – Cumberland Shale – Sandstone Ironbark Forest (Low Sandstone Influence Regrowth)* - CEEC
- *PCT 3321 – Cumberland Shale – Sandstone Ironbark Forest (Low Sandstone Influence Poor)* - CEEC
- Exotic Pasture

Zone 1: PCT 3320 – Cumberland Shale Plains Woodland

This vegetation community occurs in a narrow band along the south-western boundary of the study site and occupies 0.63 ha. Past disturbances and current land use practices, such as intensive grazing by goats and cattle, have resulted in a sparse shrub layer, however the ground layer is still dominated by native species.

Canopy – *Eucalyptus tereticornis* and *E. moluccana* with a projected foliage cover (PFC) of up to 40%.

Mid-storey – Generally limited to a sparse layer of *Bursaria spinosa*.

Groundcovers – dominated by grasses including *Microlaena stipoides*, *Entolasia stricta*, *Themeda triandra* and includes, *Dichondra repens*, *Aristida vagans*, *Asperula conferta*, *Mentha satureioides*, *Cyperus gracilis*, *Desmodium varians*, *Einadia hastata* and *Lobelia purpurascens*.

Classification:

This vegetation community corresponds to *Cumberland Plain Woodland in the Sydney Basin Bioregion* (CPW) which is listed as a Critically Endangered Ecological Community (CEEC) within the NSW *BC Act* (2016). This vegetation community is also commensurate with *Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest* which is listed as a CEEC within the Commonwealth *EPBC Act* (1999).

Of the 24 native species recorded within Q6 (2024), 19 are listed within the final determination for CPW.

Zone 2: PCT 3320 – Cumberland Shale Plains Woodland – Derived Native Grassland

This vegetation community is present in the centre of the site and covers an area of 1.1 ha. It is dominated by native species, which provide a PFC of 30–50% on average. Common species are *Cynodon dactylon*, *Microlaena stipoides*, *Aristida vagans*, *Lepidosperma laterale*, *Themeda triandra*, *Cyperus gracilis*, *Goodenia hederacea*, *Gahnia aspera* and *Dichondra repens*. Occasional regrowing *Bursaria spinosa*, *Kunzea ambigua* and *Eucalyptus* spp. also occur. Common exotics present include *Eragrostis curvula* and *Setaria parviflora*.

This grassland has strong affiliation with the surrounding SSTF and CPW and is likely to be derived from those communities following past clearing and land use practices. The native grassland within the central parts of the site also contains a minimum 8 diagnostic CPW species and should be treated as derived native grassland commensurate with CPW, as defined in the final determination for this community.

Derived grasslands are not included as part of the national-listed EEC under the *EPBC Act* according to the Commonwealth Listing Advice for that community (Threatened Species Scientific Community, 2009).



Illustration 1 – Derived native grassland (PCT 3320 – Cumberland Shale Plains Woodland) within centre of the site looking west)

Zone 3: PCT 3321 – Cumberland Shale-Sandstone Ironbark Forest (High Sandstone Influence)

This community covers a small area (0.45 ha) in the northern corner of the study area.

Canopy – Provides 20% PFC. Common species present within the community are *Angophora bakeri*, *Eucalyptus fibrosa*, *Eucalyptus eugenioides* and *Acacia binervia*.

Mid-storey – Provides 30-40% PFC. Common species present are *Kunzea ambigua* and *Allocasuarina littoralis*. Less abundant species include *Daviesia squarrosa*, *Callistemon linearis*, *Ozothamnus diosmifolius*, *Persoonia linearis* and *Dillwynia retorta*.

Groundcovers – Quite diverse and provides 25 - 30% PFC. Common species include *Imperata cylindrica*, *Lepidosperma laterale*, *Entolasia stricta*, *Microlaena stipoides*, *Themeda triandra* and *Gahnia aspera*. *Lomandra obliqua*, *Lomandra multiflora*, *Goodenia hederacea* and *Gonocarpus teucroides* are also present.



Illustration 2 – PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest (HSI) within Q3 (2024)

Classification:

This vegetation community corresponds to *Shale Sandstone Transition Forest in the Sydney Basin Bioregion* which is listed as a Critically Endangered Ecological Community (CEEC) within the NSW BC Act (2016) and the Commonwealth EPBC Act (1999).

Of the 33 native species recorded within Q3, 15 are listed within the final determination for SSTF.



Illustration 3 – Shale Plains Woodland within Q6 (2024)

Zone 3, Zone 4 & Zone 5: PCT 3321 – Cumberland Shale-Sandstone Ironbark Forest – Low Sandstone Influence (LSI)

This community covers 12.76 ha of the study area. There is 4.8 ha of moderate-good quality vegetation, and the remainder is regrowth with occasional juvenile trees.

Zone 3 is the more intact vegetation near the site boundaries.

Zone 4 is regrowth with dense shrubs averaging 1 - 3 m high.

Zone 5 is the young regrowth area where edge effects are event, or areas of native vegetation that persist such as on-site tracks. Where shrubs are present, they rarely exceed 10% coverage, and most are below 1.5 m tall. Any juvenile trees are generally below 10 cm DBH.

Canopy – Dominated by *Eucalyptus fibrosa*, contributing 20-30% Projected Foliage Cover (PFC), with *E. tereticornis* and *E. eugenioides* also present.

Mid-storey – Provides 10-20% PFC. Common species present are *Allocasuarina littoralis*, *Kunzea ambigua* and *Bursaria spinosa*. Mid-storey coverage may be up to 85% PFC in some parts of the regrowth area, but below 10% in the poor condition area.

Groundcovers – Provides 25-50% PFC and is dominated by grasses. Some sedges and herbaceous species are also present. Common species include *Aristida vagans*, *Microlaena stipoides*, *Themeda triandra*, *Gahnia aspera*, *Lomandra multiflora* and *Lepidosperma laterale*, *Entolasia stricta*.

Classification:

This vegetation community corresponds to *Shale Sandstone Transition Forest in the Sydney Basin Bioregion* which is listed as a Critically Endangered Ecological Community (CEEC) within the NSW *BC Act* (2016) and within the Commonwealth *EPBC Act* (1999).

Of the 56 native species recorded within the fully structured SSTF, 30 are listed within the final determination for SSTF. Within the regrowth, 23 of native species recorded are listed



within the final determination for SSTF.

Illustration 4 – PCT 3321 – Cumberland Shale – Ironbark Transition Forest (LSI) at Q6 (2024)



Illustration 5 – Regrowth PCT 3321 – Cumberland Shale – Ironbark Transition Forest (LSI) within Q10 (2024)



Illustration 6 – Managed regrowth PCT 3321 (poor) with mixed native and exotic groundcovers around quadrat L2



Illustration 7 – Containers with combined exotic and native groundcovers surrounding



Illustration 8 – Vegetation in quadrat L1 just to the east of the house with managed regrowth (3321 low sandstone influence regrowth – poor)

Exotic Pasture

This vegetation occupies 1.24 ha and occurs surrounding the existing dwellings. Exotic species present include *Eragrostis curvula*, *Setaria parviflora* and *Cenchrus clandestinus* as dominant exotic species present.



Illustration 9 – Exotic pasture dominated groundcovers approximately 20m from the dam

5. SURVEY METHODOLOGY

5.1 Presurvey information collation & resources

Documents reviewed

The following documents, reports and information sources were utilised in the preparation of this report:

- Flora and fauna report prepared by *Travers bushfire & ecology* (2019)
- Arboriculture Impact Assessment Report prepared by *Travers bushfire & ecology* (2025)
- Biodiversity Development Assessment Report by *Travers bushfire & ecology* (2025)

Mapping resources

- Aerial photographs (Google Earth Pro / Spatial Information Exchange / NearMap)
- Topographical maps (scale 1:25,000)
- LiDAR data for contours (Land and Property Information, est. 2015 estimated)
- ESspade – DPE tool for checking soil types

Threatened species records

- BioNet database which holds data from a number of custodians (11/07/2024 to 10 km)

Vegetation mapping/resources

- BioNet Vegetation Classification System

5.2 Field survey methodology

Four (4) complete Spot Assessment Technique described by *Phillips & Callaghan* (2008) were undertaken at survey points in locations where Koala associated PCT's (defined through Bionet's vegetation classification tool and threatened species profile databases) where Koala use trees were present. As the entire subject site was considered to be suitable habitat as defined by Section 3.2 in the Koala (*Phascolarctos cinereus*): Biodiversity Assessment Method Survey Guide (DPE 2022).

All Koala feed trees within quadrats were searched for signs of activity including faecal pellets around the base of each tree. Pellet searches were undertaken by the tree base search methods described in *Phillips & Callaghan* (2008). Spotlighting transects were also undertaken in accordance with the Koala (*Phascolarctos cinereus*): Biodiversity Assessment Method Survey Guide (DPE 2022).

All survey effort and results including SAT survey points, spotlighting transects, and Koala scat locations are provided in Table 5-1.

Survey effort accounting for dates, weather conditions, techniques deployed relevant to Koala and duration are outlined in Table 5-1.

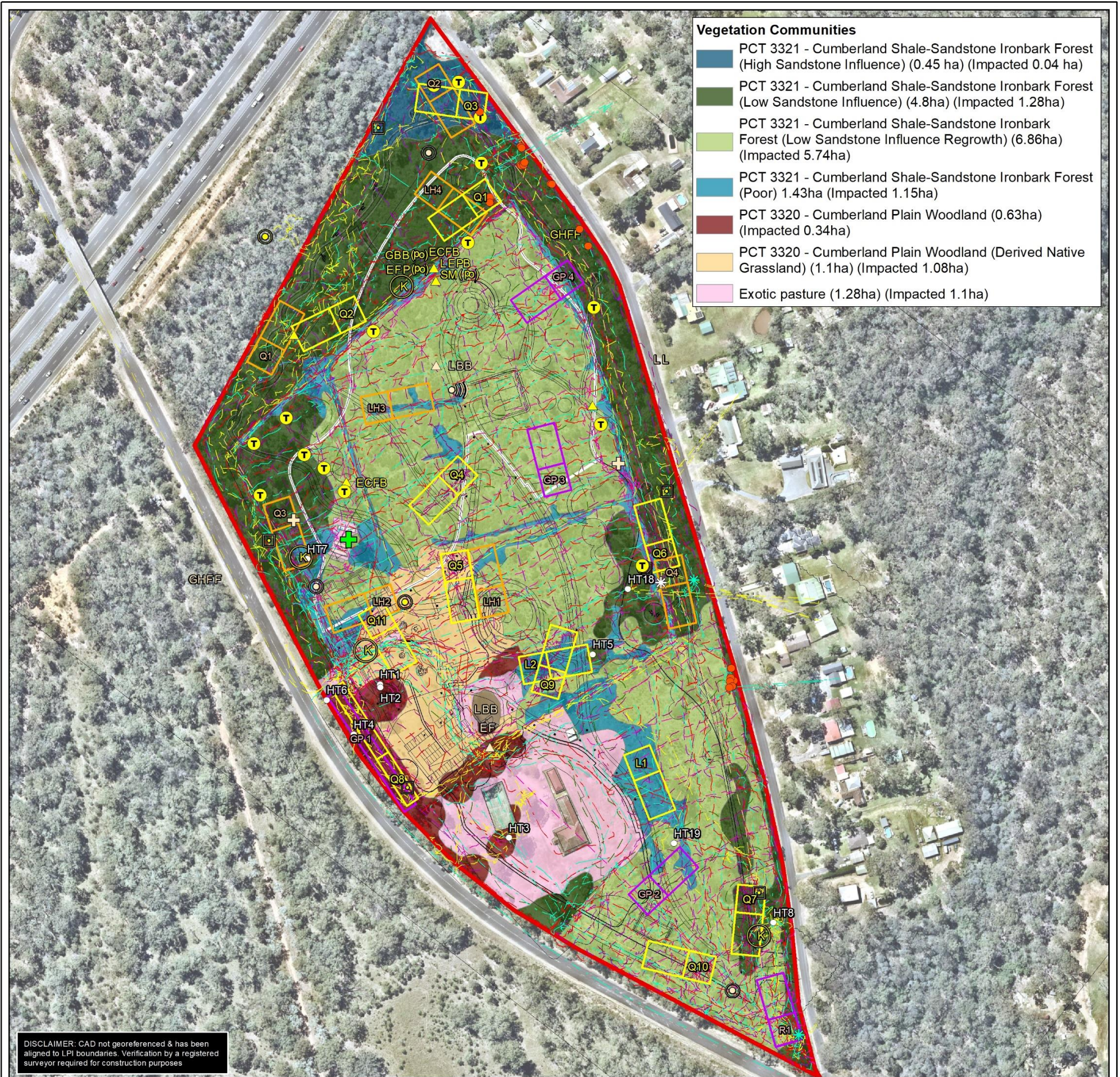
Table 5-1 – Fauna survey effort

Fauna group	Date	Weather conditions	Survey technique(s)	Time effort (24hr)
Target Koala survey	3/06/24	4/8 cloud, Light wind W, no rain, temp 4.3-17 °C	Spotlighting transects	2 hrs 25 min 17:50 – 18:15
	4/06/24	4/8 cloud, Light wind SSW, no rain, temp 4.5-16.9 °C	3 x Koala SAT assessment Spotlighting transects	5 hrs 30 min 10:00-12:30 13:20-16:20 1hr 17:30 – 18:30
	20/06/24	2/8 cloud, Light wind N, no rain, temp 0-16.5 °C	1 x Koala SAT assessment	1 hr 20 min 14:06 – 15:26

6. SURVEY RESULTS

No Koala activity in the form of pellets were found within 1m of the sampled tree basal trunks of trees surveyed during SAT assessments, and no Koala were observed during spotlighting transects.

All survey effort and results including SAT survey points, spotlighting transects and Koala scat locations are provided in Figure 6-1.



Vegetation Communities

- PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest (High Sandstone Influence) (0.45 ha) (Impacted 0.04 ha)
- PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest (Low Sandstone Influence) (4.8ha) (Impacted 1.28ha)
- PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest (Low Sandstone Influence Regrowth) (6.86ha) (Impacted 5.74ha)
- PCT 3321 - Cumberland Shale-Sandstone Ironbark Forest (Poor) 1.43ha (Impacted 1.15ha)
- PCT 3320 - Cumberland Plain Woodland (0.63ha) (Impacted 0.34ha)
- PCT 3320 - Cumberland Plain Woodland (Derived Native Grassland) (1.1ha) (Impacted 1.08ha)
- Exotic pasture (1.28ha) (Impacted 1.1ha)

DISCLAIMER: CAD not georeferenced & has been aligned to LPI boundaries. Verification by a registered surveyor required for construction purposes

Legend

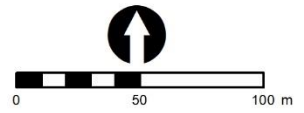
Study area	Fauna Survey Results (2019)	Fauna Survey Effort (2024/25)	Fauna Survey Results (2024/25)
Flora Survey Effort (2018)	Corvid nest	Denning tube	Eastern Coastal Free-tailed bat
Random meander (TBE 2018)	Little Lorikeet	Diurnal bird Census	Eastern False Pipistrelle (Po)
Flora quadrats (20x20m)(20x50m) (10x100m)	Eastern Falsistrelle	Koala SAT	Greater Broad-nosed Bat (Po)
Flora Survey Effort (2019)	Large Bent-winged Bat	Surveillance camera	Grey-headed Flying-fox
Targeted threatened flora transect (TBE 2019)	Grey-headed Flying-fox	Ultrasonic bat recorder	Large-eared Pied Bat (Pr)
Flora quadrats (20x20m)(20x50m) (10x100m)	Flora Survey Effort (2024/25)	Threatened fauna transect	Southern Myotis (Po)
Fauna Survey Effort (2019)	Flora quadrats (20x20m/ 20x50m, 10x40m/ 10x100m)	Threatened Flora Transects (March 2025)	Whitewash
Koala SAT point	Flora transect survey June	<i>Epacris purpurascens</i> var. <i>purpurascens</i> , <i>Genoplesium baueri</i> , <i>Leucopogon exolasius</i> , <i>Leucopogon fletcheri</i> subsp. <i>fletcheri</i> , <i>Pimelia curviflora</i> var. <i>curviflora</i> .	Habitat Tree
Diurnal bird census	Flora transect survey July	<i>Callistemon linearifolius</i> , <i>Grevillea parviflora</i> subsp. <i>parviflora</i> , <i>Persoonia bargoensis</i> , <i>Persoonia glaucescens</i>	
Nocturnal call-playback station	Flora Survey Results (2024/25)		
Ultrasonic bat recorder	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>		
Spotlighting/Active monitoring transect	<i>Persoonia bargoensis</i>		



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SCALE & COORDINATE SYSTEM
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GDA2020 MGA Zone 56



TITLE
Flora and Fauna Survey Effort & Results

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

Figure 6-1 – Flora and fauna survey effort and results



Legend

- Lot boundary (source:LPI)
- Retain (13)
- Remove (0)
- Koala Feed trees**
- *Eucalyptus tereticornis*

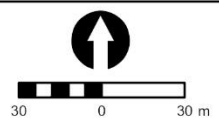
Aerial source: Nearmap



PROJECT & MXD REFERENCE
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DATE & ISSUE NUMBER
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Issue 1

SCALE & COORDINATE SYSTEM
1:2,500 @ A3
GDA 1994 MGA Zone 56



TITLE
Schedule 1 - Koala Feed Tree Species

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

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Figure 6-2 – Koala feed tree species



Legend Lot boundary (source:LPI) Retain (511) Remove (21)		Koala Use Trees <i>Allocasuarina littoralis</i> (Black She-oak) <i>Angophora floribunda</i> (Rough-barked Apple) <i>Corymbia gummifera</i> (Red Bloodwood) <i>Eucalyptus crebra</i> (Narrow-leaved Ironbark) <i>Eucalyptus eugenioides</i> (Thin-leaved Stringybark) <i>Eucalyptus fibrosa</i> (Broad Leaved Ironbark) <i>Eucalyptus moluccana</i> (Grey Box) <i>Eucalyptus tereticornis</i> (Forest Red Gum)	SCALE & COORDINATE SYSTEM 1:2,500 @ A3 GDA 1994 MGA Zone 56
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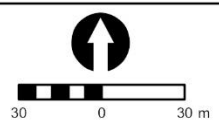
Aerial source: Nearmap



PROJECT & MXD REFERENCE
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DATE & ISSUE NUMBER
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 Issue 1

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TITLE
Schedule 2 - Koala Use Tree Species

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Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

Figure 6-3 – Koala use tree species

7. CONCLUSION

7.1 Potential direct impacts on Koala and its habitat

The proposal will not result in the clearing of any Koala feed trees listed under Schedule 1 of SEPP 2021 and will remove a total of 21 identified Koala use trees listed under Schedule 3 of SEPP 2021. Specifically, the following:

- 1 x *Allocasuarina littoralis* (Black She-oak)
- 1 x *Corymbia gummifera* (Red Bloodwood)
- 10 x *Eucalyptus eugenioides* (Thin-leaved stringybark)
- 5 x *Eucalyptus fibrosa* (Broad Leaved Ironbark)
- 4 x *Eucalyptus moluccana* (Grey Box)

The location and proposed impacts on recorded Koala feed and use trees are provided on Figure 6-2 and Figure 6-3 respectively.

Table 7-1 below provides details of the trees required for removal as determined by the AIA prepared by *Travers bushfire & ecology* (2025).

Table 7-1 – Trees required for removal

Tag no	Common Name	Scientific	DBH	Koala feed tree (y/n)	Koala use tree (y/n)
T25	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	18	No	Yes
T26	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	18	No	Yes
T27	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	22	No	Yes
T28	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	26	No	Yes
T38	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	18	No	Yes
T41	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	18	No	Yes
T42	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	18	No	Yes
T43	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	21	No	Yes
T44	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	21	No	Yes
T45	Red Bloodwood	<i>Corymbia gummifera</i>	80	No	Yes
T146	Ironbark	<i>Eucalyptus fibrosa</i>	62	No	Yes
T207	Ironbark	<i>Eucalyptus fibrosa</i>	19	No	Yes
T210	Grey box	<i>Eucalyptus moluccana</i>	115	No	Yes
T211	Thin-leaved stringybark	<i>Eucalyptus eugenioides</i>	15	No	Yes
T212	Grey box	<i>Eucalyptus moluccana</i>	73	No	Yes
T216	Ironbark	<i>Eucalyptus fibrosa</i>	90	No	Yes
T217a	Grey box	<i>Eucalyptus moluccana</i>	95	No	Yes
T233	Black She-oak	<i>Allocasuarina littoralis</i>	23	No	Yes
T234	Grey box	<i>Eucalyptus moluccana</i>	42	No	Yes

Tag no	Common Name	Scientific	DBH	Koala feed tree (y/n)	Koala use tree (y/n)
T273	Ironbark	<i>Eucalyptus fibrosa</i>	29	No	Yes
T279	Cypress	<i>Cupressus spp</i>	19	No	No
T283	Exotic	<i>Exotic</i>	21	No	No
T284	Jacaranda	<i>Jacaranda mimosifolia</i>	17	No	No
T286	Cypress	<i>Cupressus spp</i>	32	No	No
T287	Cypress	<i>Cupressus spp</i>	22	No	No
T288	Cypress	<i>Cupressus spp</i>	31	No	No
T289	Cypress	<i>Cupressus spp</i>	33	No	No
T290	Cypress	<i>Cupressus spp</i>	23	No	No
T291	Cypress	<i>Cupressus spp</i>	25	No	No
T292	Cypress	<i>Cupressus spp</i>	28	No	No
T293	Cypress	<i>Cupressus spp</i>	27	No	No
T300	Cypress	<i>Cupressus spp</i>	20	No	No
T302	Exotic	<i>Exotic</i>	18	No	No
T327	Ironbark	<i>Eucalyptus fibrosa</i>	73	No	Yes

In terms of habitat connectivity for Koala, the proposal will not isolate any valuable areas of Koala habitat or impact on any local connectivity for the species. Other similar habitat will remain in the adjacent lands where it is expected that Koalas would inhabit more frequently.

7.2 Potential indirect impacts on Koala habitat

The potential indirect impacts of the proposal on Koala and its habitat are considered as:

- Removal of 21 x Koala use trees
- disturbance to potential transient individuals
- physical obstructions
- increased potential of vehicle strikes

It is not considered that the development proposal will fragment, isolate or bottleneck important connectivity in the local landscape given that the site contains limited highly palatable Koala feed tree species and existing barriers.

There is not expected to be any significant barrier effect on extant Koala.

The vehicle traffic post construction is not expected to have a marked increase; however, all protective measures including appropriate signage and protective fencing is recommended to be installed during construction to prevent any transient Koala and other fauna species from being impacted.

7.3 Recommended mitigation measures

The following mitigation measures are recommended to ameliorate and minimise the impacts to Koala habitat. These recommendations are as follows:

Project Stage Design (D) Construction (C) Operation (O)	Action / Technique	Outcome	Timing / Frequency	Responsibility
D / C / O	<p>Prepare a Vegetation Management Plan (VMP), establish a C2 conservation zone and planting of Koala feed trees within the site:</p> <ul style="list-style-type: none"> • Revegetation works in weed dominated areas to promote natural and assisted regeneration. • Prioritised weed control; undertake weed management and habitat restoration within retained habitat areas to enrich use potential of remaining fragments. • Replacement tree plantings of listed Koala feed tree species (including <i>Eucalyptus tereticornis</i>) in restoration areas (tree species commensurate with Cumberland Plain Woodland) and cleared areas outside the APZ to provide some compensation for the loss of habitat as part of the proposed development, expand Koala foraging habitat and enhance existing core Koala habitat. • The proposed development should retain trees where possible that contribute to the regenerating vegetation which is seen to currently be expanding areas with vegetated lands. • Prioritise habitat restoration areas in highly degraded understory areas. 	<p>Prevent indirect impacts, maintain integrity of C2 conserved habitats, reduce loss of Koala foraging habitat and maintain connectivity</p>	<p>Prior to construction / any clearing works. Ongoing</p>	<p>Project Ecologist as guided by the VMP/ Bushland regenerator / Landscaper</p>

Project Stage Design (D) Construction (C) Operation (O)	Action / Technique	Outcome	Timing / Frequency	Responsibility
C / O	Prior to any habitat removal, and prior to and during construction a comprehensive search for fauna and habitat is to be undertaken to relocate any fauna located.	Prevent direct impacts on fauna species	Prior to any removal	Project Ecologist

7.4 Impacts avoided / minimised

The following actions and designing of works have been undertaken to either avoid or minimise impacts on Koala:

- Development has been located taking advantage of the pre-existing disturbed zones, however further avoidance is recommended by locating the proposal where no Koala use trees need removal.
- Access roads located on existing tracks or through existing cleared zones.

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APPENDIX 1. EXPERIENCE / QUALIFICATIONS

Team member (role)	Accreditations and qualifications	Experience	Employment history	Skills and expertise
Michael Sheather-Reid (Managing Director)	<ul style="list-style-type: none"> Bachelor of Natural Resources (Hons), University of New England BioBanking Assessor Engineering Assistant – CAD Drafting MUSIC Modelling – Stormwater quality and quantity modelling (RMIT) Bush Regeneration II Certificate, Ryde TAFE NSW WorkCover OHS Construction Induction Chemical Handling Certificate, Ryde TAFE 	<p>Michael has a wealth of experience in environmental consulting and on ground management of bushland, wetland and riparian habitats having undertaken environmental assessment, ecological consultancy and restoration in both the private and public sectors for over 22 years.</p>	<ul style="list-style-type: none"> 2007- Current: Senior Ecologist, Travers bushfire & ecology 2004 -2007: Senior Ecologist, Conacher Travers Pty Ltd 2002-2004: Project Manager, Urban Bushland Management Projects Pty Ltd 1999-2002: Project Manager Sustainable Vegetation Management Pty Ltd 1995-1999: Managing Director Sheather-Reid & Associates Pty Ltd 1996-1997: NSW Landcare Liaison Officer, Australian Conservation Foundation 1992-1995: Environmental Officer, Dept. Land & Water Conservation 1990-1992: Scientific Officer Dept. of Water Resources 	<ul style="list-style-type: none"> Ecological assessment Rezoning studies Biodiversity offset planning Restoration management and coordination Biotic and soil translocation Watercourse assessment Project ecologist services EPBC Act referrals Controlled Activity Approvals Vegetation management plans
Alana Parziani (Fauna Ecologist)	<ul style="list-style-type: none"> Master of Applied Science (Wildlife Health and Population Management) (University of Sydney, NSW) Captive Animals Certificate III (Richmond TAFE, NSW) NSW WorkCover OHS Construction Induction Senior First Aid Certificate 	<p>Alana has over 10 years' experience working across various roles within the environmental sector specialising in fauna behaviour and ecology, sustainable land management and project management. She has experience working for government and fauna field experience ranging from Tasmania, New South Wales to Queensland.</p>	<ul style="list-style-type: none"> 2024 – Current: Fauna Ecologist / Assistant Project Manager, Travers Bushfire and Ecology, NSW 2016-2024: Senior Project Officer / Wildlife Officer, Department of Environment and Science, QLD 2015-2016: Ecological Consultant / Bush Regenerator / Project Assistant, Toolijooa Environmental and Narla Environmental, NSW 2014-2015: Wildlife (Koala) Keeper, Featherdale Wildlife Park, NSW 2013-2014: Australian Wildlife Keeper, Dreamworld, QLD 	<ul style="list-style-type: none"> Fauna survey, assessment identification, morphology, and behaviour Sustainable land management Scientific report writing Legislative knowledge Project Management Stakeholder engagement
Corrine Edwards (Fauna Ecologist)	<ul style="list-style-type: none"> Bachelor of Environmental Science and Management. (Hons) (University of New South Wales) (2016-2020) 	<p>Corrine has over 10 years' experience in fauna survey techniques, researching</p>	<ul style="list-style-type: none"> 2021 – Current: Fauna Ecologist, Travers Bushfire and Ecology 2020 – Recipient of the Marilyn Fox 	<ul style="list-style-type: none"> Survey techniques for all major vertebrate fauna groups (including threatened species)

Team member (role)	Accreditations and qualifications	Experience	Employment history	Skills and expertise
		<p>ecological interactions and identification of vertebrate fauna within a magnitude of Australian habitats. She is experienced in leading research projects, experimental design, data collection, data analysis and report writing.</p>	<p>Environmental Science Prize</p> <ul style="list-style-type: none"> • 2019 – 2020: Research scholarship fellow at the Fowlers Gap Research Station • 2019 – Research assistant at University of NSW • 2015-2016 – Reptile Research Assistant, Adelaide Museum • 2014 – 2015 Amphibian Research Assistant, University of Western Australia • 2012-14 – Reptile Zookeeper – Australian Reptile Park 	<p>target searches)</p> <ul style="list-style-type: none"> • Fauna identification, morphology and behaviour • Koala habitat and impact assessment • Target Koala survey • Fauna field assessment • Microhabitat identification • Project ecology • Experimental design and statistical analysis • Scientific report writing
Sandy Cardow (GIS officer)	<ul style="list-style-type: none"> • Bachelor of Science (Biological Sciences) (Macquarie University) 	<p>Sandy has over twenty years of experience in Spatial Information (Geographic Information Systems (GIS)), which includes preparation of mapping in local government roles and has completed a Bachelor of Science (Biological Sciences).</p>	<ul style="list-style-type: none"> • 2017 – Current: GIS Officer, Travers bushfire & ecology • 2014 – 2017: GIS Consultant, Forestry Corp. NSW • 2005 – 2011: GIS Analyst, Forests NSW • 2002 – 2005: GIS Data Librarian, Forests NSW • 2000 – 2002: GIS Operator, Forests NSW • 2000 – 2002: GIS Data Import / Export Officer, Forests NSW • 1999 2000: GIS Project Officer DECC • 1998 – 1999: GIS Support Officer DECC • 1998 – 1999: Wildlife Atlas Data Entry Officer DECC 	<ul style="list-style-type: none"> • Geographic Information Systems • Data management and analysis • Spatial databases and database administration • GPS • Cartography • Natural resource management • Client liaison
Sara Peters (Botanist)	<ul style="list-style-type: none"> • Bachelor of Plant Science, University of New England • Horticulture Certificate II, OTEN NSW • First Aid Certificate 	<p>Sara is a botanist with 13 years' worth of experience in horticulture and farming management, with key skills in plant identification and taxonomy and weed management.</p>	<ul style="list-style-type: none"> • 2023-Current: Botanist, Travers bushfire & ecology • 2010-Current: Farm Manager, Self-employed • 2009-2023: Greenlife Team member 	<ul style="list-style-type: none"> • Botanical Survey • Plant Identification and Taxonomy • Noxious Weed Identification and control • SULE Assessment • Habitat tree analysis and assessment • Threatened species, ecological communities and endangered

Team member (role)	Accreditations and qualifications	Experience	Employment history	Skills and expertise
				population surveys and analysis.