

7.4 APPENDIX D: BUGS ED. GRASSHOPPER SURVEY REPORT

**Cadia Valley Operations
Modification 15
Tailings Storage Facility Embankment Buttressing
Key's Matchstick Grasshopper Survey**



March 2024



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Executive Summary

The Cadia Valley Operations (CVO) is located approximately 25 kilometres (km) south-west of Orange, in the Central Tablelands of New South Wales (NSW). Cadia Holdings Pty Ltd (CHPL) is the owner and operator of the CVO and is a wholly owned subsidiary of Newmont Corporation (Australia) (Newmont). CHPL is seeking a modification under the State Significant Development provisions of section 4.55(2) of the NSW *Environmental Planning & Assessment Act 1979* (EP&A Act).

The Biodiversity Development Assessment Report (BDAR) prepared by Premise Australia Pty Ltd (Premise) provided vegetation mapping which shows the presence of Plant Community Types (PCTs) 266 and 277, which are recognised by NSW Department of Climate Change, Energy, the Environment and Water as associated with the Key's Matchstick Grasshopper, *Keyacris scurra*.

A targeted survey was undertaken for *Keyacris scurra* in March 2024, across approximately 54 hectares of potential habitat scattered throughout the surface disturbance area of the Modification. While weather conditions were favourable for grasshoppers in general, no *Keyacris scurra* were recorded. A combination of high disturbance due to grazing of livestock, weed invasion, feral animals and a lack of suitable host plants throughout the area surveyed indicates the potential habitat present is unsuitable to sustain populations of *Keyacris scurra*.

1. Introduction

1.1 Background

The Cadia Valley Operations (CVO) is located approximately 25 kilometres (km) south-west of Orange, in the Central Tablelands of New South Wales (NSW) (Figure 1). Cadia Holdings Pty Ltd (CHPL) is the owner and operator of the CVO and is a wholly owned subsidiary of Newmont Corporation (Australia) (Newmont). CHPL is seeking a modification under the State Significant Development provisions of section 4.55(2) of the NSW *Environmental Planning & Assessment Act 1979* (EP&A Act) (Figure 2).

Premise Australia Pty Ltd (Premise) was engaged by CHPL in July 2021 to prepare a Biodiversity Development Assessment Report (BDAR) and assess the potential environmental impact associated with Modification 15 of Project Approval PA06_0295 for the Cadia East Project.

The BDAR was submitted in November 2023 and comments were received from the Biodiversity, Conservation and Science (BCS) in December 2023. BCS states:

Appendix E in the BDAR provides a justification for excluding Key's matchstick grasshopper based on a history of grazing or grazing exclusion, the absence of recent local records, and the absence of key shelter and indicator floral species. We do not support assertion that the absence of local records as an indicator of species absence. Key's matchstick grasshopper has recently been recorded in a wide range of vegetation types including without indicator floral species. The rationale to exclude Key's matchstick grasshopper does not present the absence of required habitat constraints or microhabitats, nor evidence of vagrancy.

Premise has provided vegetation mapping which shows Plant Community Types (PCTs) 266 and 277, which are recognised by NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) as associated with the Key's Matchstick Grasshopper, *Keyacris scurra*. These PCTs are described by Premise (2023) as:

- PCT 266 - White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
 - VZ1: DNG (1.01 ha)
 - VZ2: Woodland (Poor) (3.22 ha)
- PCT 277 - Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
 - VZ3: DNG (8.03 ha)
 - VZ4: Exotic (21.77 ha)
 - VZ5: Plantings (7.78 ha)
 - VZ6: Woodland (Moderate) (0.16 ha)
 - VZ7: Woodland (Poor) (12.04 ha)

Bugs Ed was commissioned by Newmont to undertake a targeted survey for the Key's Matchstick Grasshopper within PCTs 266 and 277 mapped by Premise (2023) (the Study Area) (Figure 3).

1.2 Key's Matchstick Grasshopper - Species Description and Habitat

Keyacris scurra is listed as Endangered under the NSW *Biodiversity Conservation Act 2016* and under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.



REC-20-94_MOD15_GR_101A

Source: Land and Property Information (2017);
NSW Planning & Environment Resource & Energy (2017)

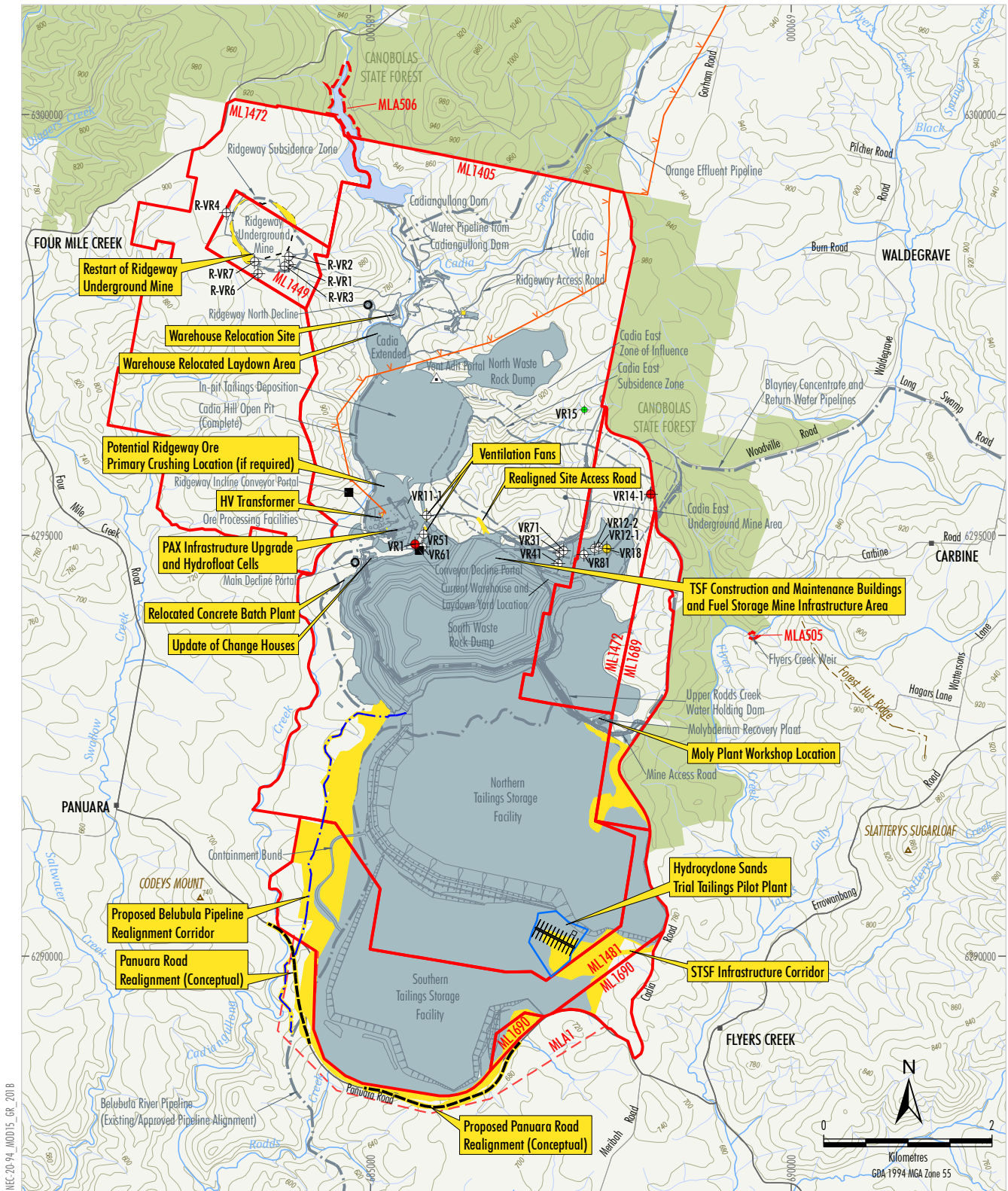


LEGEND	
	Mining Lease Boundary
	Mining Lease Application Boundary
	Proposed Mining Lease Application Boundary
	Local Government Area
	Road
	Railway
	NSW State Forest
	NPWS Reserve

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CADIA VALLEY OPERATIONS
Regional Location

Figure 1



MEC_2019_04_MOD15_GA_2018

Source: Land and Property Information (2017);
NSW Planning & Environment Resource & Energy (2017);
CHPL (2018)

LEGEND

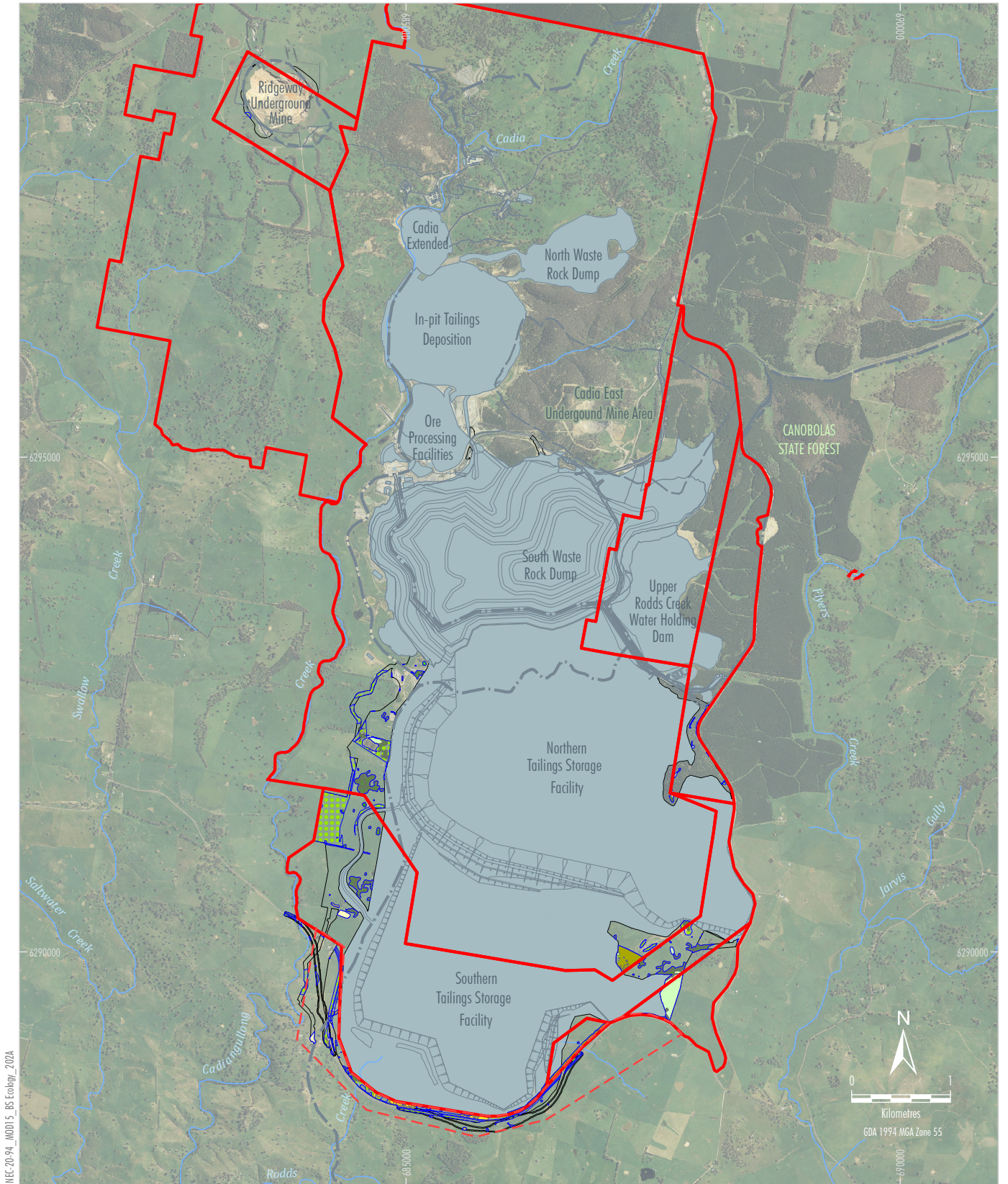
- Mining Lease Boundary
- Mining Lease Application Boundary
- Proposed Mining Lease Application Boundary
- State Forest
- Powerline
- Existing/Approved Mine Infrastructure, Disturbance Footprint and Landform
- Modification Disturbance Footprint for Embankment, Ridgeway Subsidence and Associated Construction and Operational Activities
- Proposed Panuara Road Realignment (Conceptual)
- Declines
- Portals
- Adits

- Vent Raises**
- + Approved but not Constructed
- + Active
- + Decommissioned
- + Proposed for Construction

Note: Excludes some incidental project components such as water management infrastructure, access tracks, topsoil stockpiles, power supply, temporary offices, other ancillary works and construction disturbance.

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CADIA VALLEY OPERATIONS
Key Elements of Modification 15

Figure 2



Source: CHPL (2018); BioNet (2023); BMS (2023)
 Orthophoto: Cadia - Flown November 2019

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary
- Proposed Mining Lease Application Boundary
- Existing/Approved Mine Infrastructure and Landforms
- Modification Disturbance Footprint for Embankment, Ridgeway Subsidence and Associated Construction and Operational Activities
- Key's Matchstick Grasshopper Study Area

Vegetation Communities

- PCT 266 DNG
- PCT 266 Poor
- PCT 277 DNG
- PCT 277 Mod
- PCT 277 Paddock Tree
- PCT 277 Poor
- PCT 277 Planted
- PCT 277 Exotic



CADIA VALLEY OPERATIONS
 Study Area and Vegetation Mapping

Figure 3

Keyacris scurra is a small (females ~25 millimetres (mm), males ~18mm), slender, wingless grasshopper, belonging to the sub-family Morabinae, which is endemic to Australia. It is readily identified by its slanted face, splayed hind femora (the longest section of their back legs), lack of wings or wing buds and sword-shaped antennae. *Keyacris scurra* occurs in several colour forms. Males and females may be grey, brown, or buff and have stripes or other markings, and bright green females, with or without a buff stripe down their back, have also been recorded (White, 1956).

Females bury their eggs in the soil and the nymphs emerge from December to January. While most males reach maturity by May, female nymphs overwinter and do not mature until Spring. Mating occurs from September to November, with most adults dying out by late Spring. There is only one generation per year and fecundity is low.

Keyacris scurra originally had a wide distribution across NSW, Victoria (VIC), and the Australian Capital Territory (ACT) in pre-European times, but land clearing for agriculture and other land uses has reduced its distribution (Cth DCCEEW, 2022; NSW Threatened Species Scientific Committee [TSSC], 2020a and b). Recent (2009-2019) credible records have identified *Keyacris scurra* at 31 well-dispersed sites in NSW, ACT and VIC (TSSC, 2020a). Targeted surveys between 2017-2019 found *Keyacris scurra* at a total of 23 sites: 11 from known sites documented through molecular research on the grasshopper in the 1950s and 1960s; and 12 new sites which were surveyed based on the presence of suitable habitat (e.g. tall grass in the genus *Themeda*) and food plants (TSSC, 2020a). These locations extended from as far north as Boorowa NSW, several sites in the ACT and south to Omeo in Northern VIC. This species does not disperse large distances (<10 metres [m]) as it is flightless (NSW DCCEEW, 2024).

Keyacris scurra is typically recorded in native grasslands and grassy woodland but has also been found in other vegetation associations containing a native grass understory (especially Kangaroo Grass [*Themeda triandra*]) and known food plants (particularly Asteraceae [daisies]) (NSW DCCEEW, 2024). The Common Everlasting daisy (*Chrysocephalum apiculatum*) is an indicator species (NSW DCCEEW, 2024).

Keyacris scurra feeds on a range of plant species, including everlasting and native daisies (e.g. *Chrysocephalum* or *Helichrysum* spp.), groundcovers such as clover (*Trifolium* spp.), sedges (*Scirpus* sp.), small herbaceous and flowering plants (e.g. *Acaena ovina*, *Cerastium glomeratum*) and grasses (e.g. *Aira caryophyllea*) (Blackith and Blackith, 1966). While this grasshopper is often associated with areas that contain Kangaroo Grass (*Themeda triandra*), it appears to use this plant as shelter and not as a source of food (White, 1956).

NSW DCCEEW (2024) states:

Species is generally reliant on an understorey of tussock grasses, typically Themeda triandra or other disturbance-sensitive species for shelter and possibly food (unconfirmed), but may use similar grasses. Food sources include a range of dicotyledon species. Species known to form part of the diet include Aira caryophyllea (Silver hairgrass), Scirpus sp. (sedges), Wurmba dioica (Early Nancy), Bulbine bulbosa (Native Leek), Calochilus paludosus (Red Beard Orchid), Rumex crispus (Curled Dock), Acetosella vulgaris/Rumex acetosella (Sorrel), Cerastium glomeratum (Mouse-ear Chickweed), Ranunculus lappaceus (Common Buttercup), Rosa rubiginosa (Sweet Briar), Acaena ovina (Orchid), Trifolium subterraneum (Subterranean Clover), Trifolium arvense (Haresfoot Clover), Poranthera microphylla, Stackhousia monogyna (Creamy Candles), Hibbertia sericea, Lavandula stoechas (Lavender), Salvia verbenaca (Vervain), Verbascum thapsus (Great Mullein), Sherardia arvensis (Field Madder), Galium tricornatum (Rough Fruited Bedstraw), Helichrysum apiculatum (Common Everlasting), Ozothamnus retusus or O. scaber (Helichrysum bilobum), Podolepis jaceoides (Podolepis acuminata) (Showy Copper-wire Daisy) and Craspedia uniflora.

Keyacris scurra appears to be absent from sites that are disturbed during the species lifecycle (NSW DCCEEW, 2024). Recognised threats to *Keyacris scurra* include loss of habitat, small colony size, weed invasion, cultivation, and pasture improvement (TSSC, 2020a).

1.3 Broad Description of the Study Area

The Study Area is located approximately 25 km south-west of Orange, in the Central Tablelands of NSW. The Study Area is on the boundary of two Interim Biogeographic Regionalisation for Australia (IBRA) regions. The northern extent of the Study Area is in the South Eastern Highlands IBRA Region (Orange IBRA Sub-region) and the southern portion is located in the NSW South Western Slopes IBRA Region (Inland Slopes IBRA Sub-region).

Premise identified approximately 54 hectares of potential habitat for *Keyacris scurra* within the Modification area, PCTs 266 and 277 in varying condition. The Study Area included fragmented patches of grassy woodland and plantings around the Northern Tailings Storage Facility; patches of plantings, Derived Native Grasslands (DNG), exotic grasslands and paddock trees in areas of active farming/grazing land within the mining lease; stretches of grassy roadside verge and grassy woodland at the southern border of the Southern Tailings Storage Facility; and strands of pine plantation adjacent to Canobolas State Forest.

2. Methods

The targeted survey for *Keyacris scurra* was undertaken by Michelle Gleeson and Cody-Ellen Murray, entomologists with experience in sampling invertebrates across a range of habitat types.

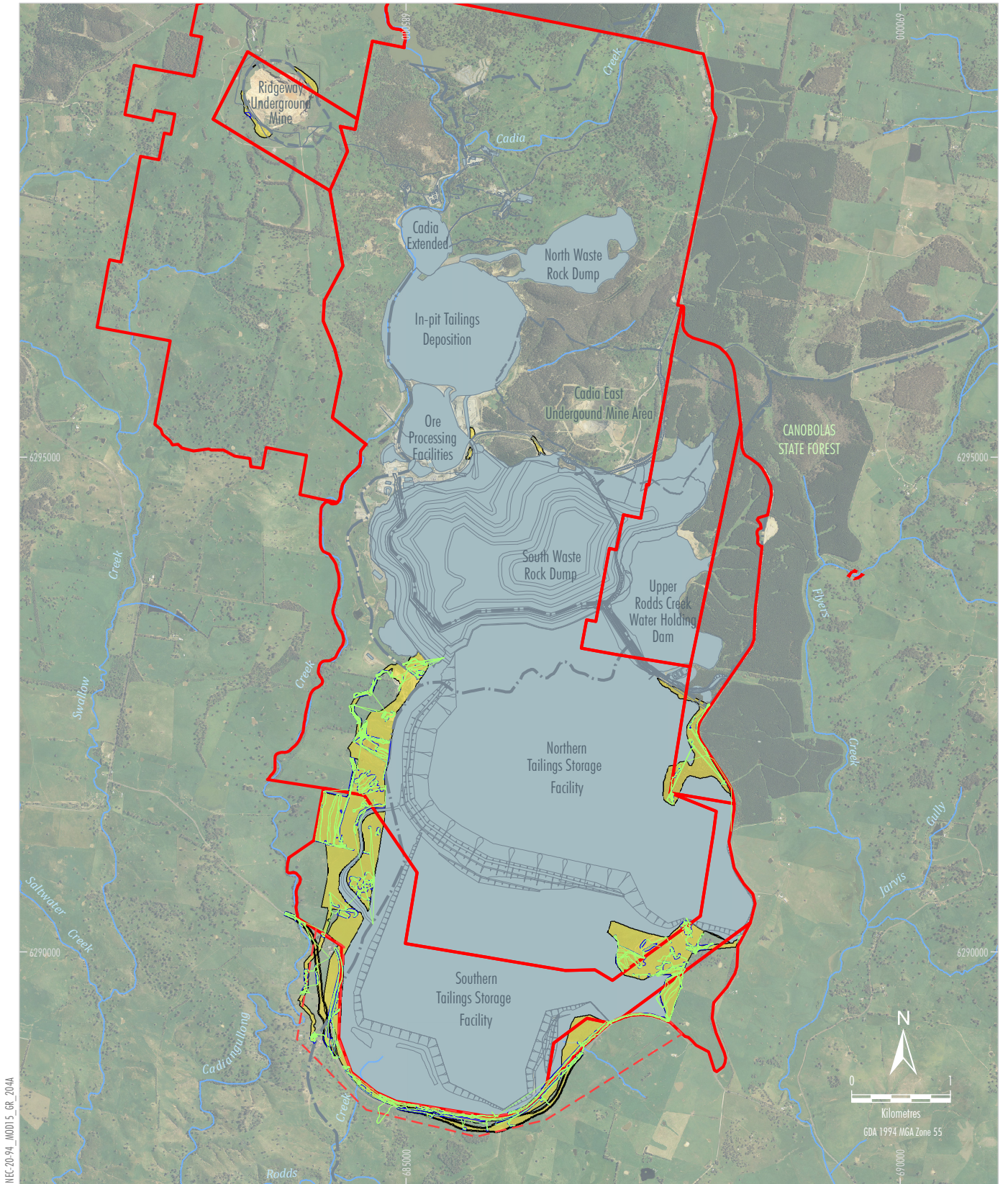
The NSW DCCEEW (2024) indicates that *Keyacris scurra* can be surveyed in March, April, May, August, September, October, November, and December. The targeted survey for *Keyacris scurra* was conducted over five days from 4 to 8 March 2024, to coincide with the optimal timing to detect the presence of late instar males and juvenile females (White, 1956).

The weather conditions during the survey period were favourable for finding *Keyacris scurra*. Conditions were mostly calm and sunny, with no rain and very little cloud cover. Conditions were at times windy in more exposed or elevated sites, however grasshoppers remained active and easy to detect at all times. Temperatures during the day ranged from 17 degrees Celsius (°C) to 31°C. An infrared thermometer was used to monitor ground temperature, which ranged from 17.9°C to 30°C. Surveys were mostly undertaken from 8.00 am to 4.00 pm, to maximise the warmest part of the day.

Parallel transects with separation distances of 5 m were surveyed within PCTs 266 and 277. The survey transects are shown on Figure 4. Two small patches (each consisting of a single, dead tree) were not surveyed. One was deemed unsafe and the second was surrounded by an impenetrable blackberry thicket. A third small isolated patch of exotic grassland was also excluded from the survey due to its close proximity to the unstable edge of the Ridgeway Underground Mine. None of these areas are considered suitable habitat for *Keyacris scurra*.

Entomological sweep nets were used to gently disturb understory vegetation in order to flush out grasshoppers. More vigorous sweeping was used in areas where vegetation was thick (e.g. in thick clumps of grasses). In areas where sweep nets could not be used (e.g. around thorny vegetation such as wild blackberry and thistles), the handle of the net was instead used to probe vegetation.

Close-up photographs were taken of all grasshoppers encountered over the five days in the field. The presence of fully formed wings or wing buds, which are absent in wingless grasshoppers such as *Keyacris scurra*, were examined. Morphological features of the head, antennae and thorax were used to identify the grasshoppers found to Family level.



MEC-20-94_MOD15_GR_20-4A

Source: CHPL (2018); BioNet (2023); BMS (2023)
 Orthophoto: Cadia - Flown November 2019

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary
- Proposed Mining Lease Application Boundary
- Existing/Approved Mine Infrastructure and Landforms
- Modification Disturbance Footprint for Embankment, Ridgeway Subsidence and Associated Construction and Operational Activities
- Key's Matchstick Grasshopper Study Area
- Grasshopper Survey Transects



CADIA VALLEY OPERATIONS

Survey Transects

Figure 4

3. Results

No *Keyacris scurra*, or any other species of matchstick grasshoppers (sub-family Morabinae), were recorded during this survey. The location and conditions were favourable for grasshoppers in general, with the survey finding twelve different species of grasshoppers (see Attachment A) within the Study Area. However, all of these species possess either fully-formed wings or wing buds, which are absent in wingless grasshoppers such as *Keyacris scurra*. The twelve grasshopper species found also lacked key taxonomic features of the head and thorax that are characteristic of the sub-family Morabinae, to which *Keyacris scurra* belongs.

The habitat across the Study Area was generally not representative of the habitat required to support populations of *Keyacris scurra*. Disturbance is a key factor in the distribution of this species (NSW DCCEEW, 2024). Evidence of grazing, erosion and disturbance by both livestock (cows and sheep) and feral animals (pigs and wild cattle) was present in many areas surveyed (see Plate 1). The understorey vegetation was dominated by tall, thick introduced grasses and weeds such as burr, sticky nightshade, blackberry and thistle (see Plate 2). A single isolated patch of native everlasting daisy (a known food plant for *Keyacris scurra*) was located within the Study Area, however no *Keyacris scurra* were present. Premise (2023) note that *Acaena* sp. and *Trifolium subteranneum* are present on site.



Plate 1 - Evidence of Grazing Livestock



Plate 2 – Example of Weeds in the Groundcover

4. Conclusion

The Study Area has been highly disturbed by grazing and dominated by an understorey of introduced grasses and weeds, resulting in an unsuitable habitat to sustain populations of *Keyacris scurra*. The presence of other grasshoppers during the survey suggests that the weather conditions were favourable for grasshoppers in general and that repeating the survey at a different time of year is unnecessary.

5. References

Blackith RE, Blackith RM (1966) The food of morabine grasshoppers. *Australian Journal of Zoology* **14**: 877–894.

Commonwealth Department of Climate Change, Energy, the Environment and Water (2022) *Conservation Advice Keyacris scurra Key's matchstick grasshopper*. Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: Website: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/89739-conservation-advice-05102022.pdf>. In effect under the EPBC Act from 05-Oct-2022.

NSW Department of Climate Change, Energy, the Environment and Water (2024) *BioNet Threatened Biodiversity Data Collection*.
https://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx

NSW Threatened Species Scientific Committee (2020a) *Conservation Assessment of Keyacris scurra (Rehn 1952) Key's Matchstick Grasshopper (Morabidae)*.

NSW Threatened Species Scientific Committee (2020b) *Notice of and Reasons for the Final Determination (Keyacris scurra)*.

Premise Australia Pty Ltd (2023) *Biodiversity Development Assessment Report: Cadia Valley Operations – Tailings Storage Facility Buttressing Modification*.

White MJD (1956) Adaptive chromosomal polymorphism in an Australian grasshopper. *Evolution* **10**: 298– 313.

ATTACHMENT A – Photos of Grasshoppers Recorded



Plate A1 – Acrididae species 1



Plate A2 – Acrididae species 2



Plate A3 – Acrididae species 3



Plate A4 – Acrididae species 4



Plate A5 – Acrididae species 5



Plate A6 - Acrididae species 6



Plate A7 - Acrididae species 7



Plate A8 - Acrididae species 8



Plate A9 - Acrididae species 9



Plate A10 - Acrididae species 10



Plate A11 - Acrididae species 11



Plate A12 - Acrididae species 12



APPENDIX F

CREDIT REPORTS

Proposal Details

Assessment Id 00027936/BAAS18110/21/00027938	Proposal Name Cadia Valley Operations Modification 15 - Offset Phasing 1	BAM data last updated * 14/03/2024
Assessor Name Colin Charles Bower	Report Created 10/05/2024	BAM Data version * 67
Assessor Number BAAS18048	BAM Case Status Finalised	Date Finalised 10/05/2024
Assessment Revision 11	Assessment Type Major Projects	

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

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAI	Ecosystem credits
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Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

3	277_277_ DNG	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	20	20.0	6.5	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	81
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4	277_277_E xotic	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	2.6	2.6	17	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	0
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5	277_277_Plantings	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	29.7	29.7	7.7	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	143
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6	277_277_ Woodland _Poor	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	22.2	22.2	6.2	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	85
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7	277_277_P addockTrees	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	12.3	12.3	1	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	0
										Subtotal	309	

White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

1	266_266_ DNG	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	37.8	37.8	1	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	24
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2	266_266_ Woodland _Poor	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	21.6	21.6	3	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	41
										Subtotal	65	
										Total	374	

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAIL	Species credits
<i>Petaurus norfolcensis / Squirrel Glider (Fauna)</i>									
277_277_Exotic		2.6	2.6	0.01		Vulnerable	Not Listed	False	1
277_277_Plantings		29.7	29.7	7.7		Vulnerable	Not Listed	False	114

BAM Credit Summary Report

266_266_Woodl and_Poor	21.6	21.6	3		Vulnerable	Not Listed	False	32
277_277_Woodl and_Poor	22.2	22.2	6.2		Vulnerable	Not Listed	False	68
277_277_PaddockTrees	12.3	12.3	0.99		Vulnerable	Not Listed	False	6
							Subtotal	221
<i>Polytelis swainsonii / Superb Parrot (Fauna)</i>								
277_277_Exotic	2.6	2.6	1		Vulnerable	Vulnerable	False	1
277_277_Plantings	29.7	29.7	0.03		Vulnerable	Vulnerable	False	1
266_266_Woodl and_Poor	21.6	21.6	0.23		Vulnerable	Vulnerable	False	2
277_277_Woodl and_Poor	22.2	22.2	0.02		Vulnerable	Vulnerable	False	1
							Subtotal	5

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 1	14/03/2024
Assessor Name	Report Created	BAM Data version *
Colin Charles Bower	10/05/2024	67
Assessor Number	Assessment Type	BAM Case Status
BAAS18048	Major Projects	Finalised
Assessment Revision		Date Finalised
11		10/05/2024

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

Common Name	Scientific Name	Vegetation Types(s)
Barking Owl	Ninox connivens	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion 277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Black Falcon	Falco subniger	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion 277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion 277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion 277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Diamond Firetail	Stagonopleura guttata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion 277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

Dusky Woodswallow	Artamus cyanopterus cyanopterus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Flame Robin	Petroica phoenicea	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Gang-gang Cockatoo	Callocephalon fimbriatum	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Grey-headed Flying- fox	Pteropus poliocephalus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Large Bent-winged Bat	Miniopterus orianae oceanensis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Little Eagle	Hieraetus morphnoides	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Little Lorikeet	Glossopsitta pusilla	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Regent Honeyeater	Anthochaera phrygia	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Scarlet Robin	Petroica boodang	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

South-eastern Hooded Robin	Melanodryas cucullata cucullata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Speckled Warbler	Chthonicola sagittata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Spotted Harrier	Circus assimilis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Spotted-tailed Quoll	Dasyurus maculatus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Square-tailed Kite	Lophoictinia isura	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Superb Parrot	Polytelis swainsonii	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Swift Parrot	Lathamus discolor	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Turquoise Parrot	Neophema pulchella	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Varied Sittella	Daphoenositta chrysoptera	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White-bellied Sea-Eagle	Haliaeetus leucogaster	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

White-throated Needletail	Hirundapus caudacutus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Yellow-bellied Sheath-tail-bat	Saccolaimus flaviventris	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Painted Honeyeater	Grantiella picta	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
South-eastern Glossy Black- Cockatoo	Calyptorhynchus lathami lathami	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Painted Honeyeater	Grantiella picta	Refer to BAR
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Refer to BAR

Proposal Details

Assessment Id 00027936/BAAS18110/21/00027938	Proposal Name Cadia Valley Operations Modification 15 - Offset Phasing 1	BAM data last updated * 14/03/2024
Assessor Name Colin Charles Bower	Report Created 10/05/2024	BAM Data version * 67
Assessor Number BAAS18048	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 11	Date Finalised 10/05/2024	

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

List of Species Requiring Survey

Name	Presence	Survey Months
<i>Aprasia parapulchella</i> Pink-tailed Legless Lizard	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<i>Burhinus grallarius</i> Bush Stone-curlew	No (surveyed)	<input checked="" type="checkbox"/> Jan <input checked="" type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input checked="" type="checkbox"/> May <input checked="" type="checkbox"/> Jun <input type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input type="checkbox"/> Oct <input type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	No (surveyed)	<input checked="" type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?

BAM Candidate Species Report

<p><i>Calyptorhynchus lathami lathami</i> South-eastern Glossy Black-Cockatoo</p>	No (surveyed)	<input checked="" type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input checked="" type="checkbox"/> May <input checked="" type="checkbox"/> Jun <input type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input type="checkbox"/> Oct <input type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<p><i>Chalinolobus dwyeri</i> Large-eared Pied Bat</p>	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input type="checkbox"/> Sep <input type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input checked="" type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<p><i>Delma impar</i> Striped Legless Lizard</p>	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input checked="" type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<p><i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle</p>	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<p><i>Hieraaetus morphnoides</i> Little Eagle</p>	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<p><i>Keyacris scurra</i> Key's Matchstick Grasshopper</p>	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input checked="" type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input type="checkbox"/> Sep <input type="checkbox"/> Oct <input type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?

BAM Candidate Species Report

<p><i>Litoria booroolongensis</i> Booroolong Frog</p>	<p>No (surveyed) *Survey months are outside of the months specified in Bionet.</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input checked="" type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Lophoictinia isura</i> Square-tailed Kite</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat</p>	<p>No (surveyed) *Survey months are outside of the months specified in Bionet.</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input checked="" type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Myotis macropus</i> Southern Myotis</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Ninox connivens</i> Barking Owl</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Ninox strenua</i> Powerful Owl</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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BAM Candidate Species Report

<p><i>Petaurus norfolcensis</i> Squirrel Glider</p>	<p>Yes (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Phascogale tapoatafa</i> Brush-tailed Phascogale</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Phascolarctos cinereus</i> Koala</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Polytelis swainsonii</i> Superb Parrot</p>	<p>Yes (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Swainsona recta</i> Small Purple-pea</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Tyto novaehollandiae</i> Masked Owl</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr											
<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug											
<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec											

Threatened species Manually Added

Common Name	Scientific Name
Masked Owl	Tyto novaehollandiae
Striped Legless Lizard	Delma impar

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Eastern Pygmy-possum	Cercartetus nanus	Habitat degraded
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Regent Honeyeater	Anthochaera phrygia	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints
Yellow-spotted Tree Frog	Litoria castanea	Refer to BAR

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 1	14/03/2024
Assessor Name	Assessor Number	BAM Data version *
Colin Charles Bower	BAAS18048	67
Proponent Names	Report Created	BAM Case Status
	10/05/2024	Finalised
Assessment Revision	Assessment Type	Date Finalised
11	Major Projects	10/05/2024

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Biodiversity Credit Report (Like for like)

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
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Species

Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

Grantiella picta / Painted Honeyeater

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

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	4.0	41	24	65
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	38.3	85	224	309

266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	-	266_266_DNG	No	24	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

	<p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	White Box - Yellow Box - -		266_266_Wood	Yes	41	Orange, Bathurst, Crookwell, Hill End,



BAM Biodiversity Credit Report (Like for like)

	<p>Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329,</p>		land_Poor		<p>Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Like for like)

	1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298,	-	277_277_DNG	No	81	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

	<p>302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New</p>	-	277_277_Exotic	No	<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

	<p>England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396,</p>					
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BAM Biodiversity Credit Report (Like for like)

	<p>3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654,</p>		<p>277_277_Plantings</p>	<p>No</p>	<p>143</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

	<p>702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298,</p>	-	277_277_Woodland_Poor	Yes	85	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

	<p>302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New</p>	-	277_277_Padd ockTrees	Yes	0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

	<p>England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396,</p>					
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BAM Biodiversity Credit Report (Like for like)

3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
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Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor, 277_277_PaddockTrees	17.8	221.00
Polytelis swainsonii / Superb Parrot	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor	1.3	5.00

Credit Retirement Options

Like-for-like credit retirement options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW
Polytelis swainsonii / Superb Parrot	Spp	IBRA subregion
	Polytelis swainsonii / Superb Parrot	Any in NSW

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 1	14/03/2024
Assessor Name	Assessor Number	BAM Data version *
Colin Charles Bower	BAAS18048	67
Proponent Name(s)	Report Created	BAM Case Status
	10/05/2024	Finalised
Assessment Revision	Assessment Type	Date Finalised
11	Major Projects	10/05/2024

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
Species		

Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

Calyptrorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

Grantiella picta / Painted Honeyeater

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	4.0	41	24	65.00

BAM Biodiversity Credit Report (Variations)

277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	38.3	85	224	309.00
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266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654,	-	266_266_D NG	No	24	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	<p>702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492,</p>	-	266_266_Woodland_Poor	Yes	41 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276,	-	277_277_D NG	No	81	Orange,Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	<p>277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin,</p>	-	277_277_Extic	No	<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>

BAM Biodiversity Credit Report (Variations)

	<p>South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the</p>	-	277_277_PI	No	143	<p>Orange,Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100</p>

BAM Biodiversity Credit Report (Variations)

	<p>NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				<p>kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Variations)

	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387,</p>	-	277_277_Woodland_Poor	Yes		85 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
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BAM Biodiversity Credit Report (Variations)

	3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's:</p> <p>74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329,</p>	-	277_277_PaddockTrees	Yes	0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
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Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor, 277_277_PaddockTrees	17.8	221.00
Polytelis swainsonii / Superb Parrot	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor	1.3	5.00

Credit Retirement Options Like-for-like options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA region	
	Petaurus norfolcensis /Squirrel Glider	Any in NSW	
	Variation options		
Kingdom	Any species with same or higher category of listing	IBRA region	

BAM Biodiversity Credit Report (Variations)

		under Part 4 of the BC Act shown below	
	Fauna	Vulnerable	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Polytelis swainsonii/ Superb Parrot	Spp	IBRA region	
	Polytelis swainsonii/ Superb Parrot	Any in NSW	
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 2	14/03/2024
Assessor Name	Report Created	BAM Data version *
Colin Charles Bower	10/05/2024	67
Assessor Number	BAM Case Status	Date Finalised
BAAS18048	Finalised	10/05/2024
Assessment Revision	Assessment Type	
12	Major Projects	

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

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAI	Ecosystem credits
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Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

2	277_277_ DNG	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	46.9	46.9	1.2	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	35
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BAM Credit Summary Report

3	277_277_E xotic	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.5	0.5	5 PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	0
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4	277_277_Plantings	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	34.5	34.5	0.04	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	1
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5	277_277_ Woodland _Poor	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	25.2	25.2	5.5	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	86
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6	277_277_P addockTrees	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	12.3	12.3	0.08	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered	2.50	True	0
										Subtotal	122	
Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion												
7	287_287_ Woodland _Mod	Not a TEC	45.1	45.1	0.17	PCT Cleared - 67%	High Sensitivity to Gain			1.75		3
										Subtotal	3	

River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion													
8	85_85_Wo odland_Po or	Not a TEC	27.2	27.2	0.15	PCT Cleared - 73%	High Sensitivity to Gain				2.00		2
											Subtotal	2	
White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion													
1	266_266_ Woodland _Poor	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	19.5	19.5	0.17	PCT Cleared - 94%	High Sensitivity to Gain	Critically Endangered Ecological Community	Critically Endangered		2.50	True	2
											Subtotal	2	
											Total	129	

Species credits for threatened species

BAM Credit Summary Report

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAIL	Species credits
<i>Petaurus norfolcensis / Squirrel Glider (Fauna)</i>									
277_277_Exotic	0.5	0.5	0.01			Vulnerable	Not Listed	False	1
277_277_Plantings	34.5	34.5	0.04			Vulnerable	Not Listed	False	1
266_266_Woodland_Poor	19.5	19.5	0.17			Vulnerable	Not Listed	False	2
277_277_Woodland_Poor	25.2	25.2	5.5			Vulnerable	Not Listed	False	69
277_277_PaddockTrees	12.3	12.3	0.06			Vulnerable	Not Listed	False	1
								Subtotal	74
<i>Polytelis swainsonii / Superb Parrot (Fauna)</i>									
277_277_DNG	46.9	46.9	0.06			Vulnerable	Vulnerable	False	1
277_277_Exotic	0.5	0.5	0.89			Vulnerable	Vulnerable	False	1
277_277_Woodland_Poor	25.2	25.2	0.31			Vulnerable	Vulnerable	False	4
								Subtotal	6

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 2	14/03/2024
Assessor Name	Report Created	BAM Data version *
Colin Charles Bower	10/05/2024	67
Assessor Number	Assessment Type	BAM Case Status
BAAS18048	Major Projects	Finalised
Assessment Revision		Date Finalised
12		10/05/2024

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

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

Common Name	Scientific Name	Vegetation Types(s)
Barking Owl	Ninox connivens	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Black Falcon	Falco subniger	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

Black-chinned Honeyeater (eastern subspecies)	Melithreptus gularis gularis	85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Diamond Firetail	Stagonopleura guttata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Dusky Woodswallow	Artamus cyanopterus cyanopterus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Flame Robin	Petroica phoenicea	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

BAM Predicted Species Report

Gang-gang Cockatoo	Callocephalon fimbriatum	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Grey-headed Flying-fox	Pteropus poliocephalus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
Large Bent-winged Bat	Minopterus orianae oceanensis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Little Eagle	Hieraetus morphnoides	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

BAM Predicted Species Report

Little Lorikeet	Glossopsitta pusilla	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Powerful Owl	Ninox strenua	287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
Regent Honeyeater	Anthochaera phrygia	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Scarlet Robin	Petroica boodang	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
South-eastern Hooded Robin	Melanodryas cucullata cucullata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

BAM Predicted Species Report

Speckled Warbler	Chthonicola sagittata	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Spotted Harrier	Circus assimilis	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Spotted-tailed Quoll	Dasyurus maculatus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Square-tailed Kite	Lophoictinia isura	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Superb Parrot	Polytelis swainsonii	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

BAM Predicted Species Report

Swift Parrot	Lathamus discolor	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
Turquoise Parrot	Neophema pulchella	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Varied Sittella	Daphoenositta chrysoptera	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
White-bellied Sea-Eagle	Haliaeetus leucogaster	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
White-throated Needle-tail	Hirundapus caudacutus	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

BAM Predicted Species Report

White-throated Needletail	Hirundapus caudacutus	287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
Yellow-bellied Sheath-tail-bat	Saccolaimus flaviventris	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion

Threatened species Manually Added

None added

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

Common Name	Scientific Name	Plant Community Type(s)
Painted Honeyeater	Grantiella picta	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
		85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion
South-eastern Glossy Black- Cockatoo	Calyptorhynchus lathami lathami	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

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

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C
Painted Honeyeater	Grantiella picta	Refer to BAR
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Refer to BAR

Proposal Details

Assessment Id 00027936/BAAS18110/21/00027938	Proposal Name Cadia Valley Operations Modification 15 - Offset Phasing 2	BAM data last updated * 14/03/2024
Assessor Name Colin Charles Bower	Report Created 10/05/2024	BAM Data version * 67
Assessor Number BAAS18048	Assessment Type Major Projects	BAM Case Status Finalised
Assessment Revision 12	Date Finalised 10/05/2024	

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List of Species Requiring Survey

Name	Presence	Survey Months
<i>Aprasia parapulchella</i> Pink-tailed Legless Lizard	No (surveyed)	<input type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<i>Burhinus grallarius</i> Bush Stone-curlew	No (surveyed)	<input checked="" type="checkbox"/> Jan <input checked="" type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input checked="" type="checkbox"/> May <input checked="" type="checkbox"/> Jun <input type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input type="checkbox"/> Oct <input type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	No (surveyed)	<input checked="" type="checkbox"/> Jan <input type="checkbox"/> Feb <input type="checkbox"/> Mar <input type="checkbox"/> Apr <input type="checkbox"/> May <input type="checkbox"/> Jun <input type="checkbox"/> Jul <input type="checkbox"/> Aug <input type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input type="checkbox"/> Dec <input type="checkbox"/> Survey month outside the specified months?

BAM Candidate Species Report

<p><i>Calyptorhynchus lathami lathami</i> South-eastern Glossy Black-Cockatoo</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Chalinolobus dwyeri</i> Large-eared Pied Bat</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input checked="" type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec
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<p><i>Delma impar</i> Striped Legless Lizard</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input checked="" type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec
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<p><i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input checked="" type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input checked="" type="checkbox"/> Dec
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<p><i>Hieraaetus morphnoides</i> Little Eagle</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Keyacris scurra</i> Key's Matchstick Grasshopper</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input checked="" type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input checked="" type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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BAM Candidate Species Report

<p><i>Litoria booroolongensis</i> Booroolong Frog</p>	<p>No (surveyed) *Survey months are outside of the months specified in Bionet.</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input checked="" type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Lophoictinia isura</i> Square-tailed Kite</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat</p>	<p>No (surveyed) *Survey months are outside of the months specified in Bionet.</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input checked="" type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Myotis macropus</i> Southern Myotis</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Ninox connivens</i> Barking Owl</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Ninox strenua</i> Powerful Owl</p>	<p>No (surveyed)</p>	<table border="0"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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BAM Candidate Species Report

<p><i>Petaurus norfolcensis</i> Squirrel Glider</p>	<p>Yes (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Phascogale tapoatafa</i> Brush-tailed Phascogale</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Phascolarctos cinereus</i> Koala</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Jan</td> <td><input checked="" type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input checked="" type="checkbox"/> May</td> <td><input checked="" type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input checked="" type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Polytelis swainsonii</i> Superb Parrot</p>	<p>Yes (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input checked="" type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input checked="" type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Swainsona recta</i> Small Purple-pea</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
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<p><i>Swainsona sericea</i> Silky Swainson-pea</p>	<p>No (surveyed)</p>	<table border="1"> <tr> <td><input type="checkbox"/> Jan</td> <td><input type="checkbox"/> Feb</td> <td><input type="checkbox"/> Mar</td> <td><input type="checkbox"/> Apr</td> </tr> <tr> <td><input type="checkbox"/> May</td> <td><input type="checkbox"/> Jun</td> <td><input type="checkbox"/> Jul</td> <td><input type="checkbox"/> Aug</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sep</td> <td><input type="checkbox"/> Oct</td> <td><input checked="" type="checkbox"/> Nov</td> <td><input type="checkbox"/> Dec</td> </tr> </table> <p><input type="checkbox"/> Survey month outside the specified months?</p>	<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr	<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug	<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec
<input type="checkbox"/> Jan	<input type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr											
<input type="checkbox"/> May	<input type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input type="checkbox"/> Aug											
<input checked="" type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input checked="" type="checkbox"/> Nov	<input type="checkbox"/> Dec											

BAM Candidate Species Report

<i>Tyto novaehollandiae</i> Masked Owl	No (surveyed)	<input checked="" type="checkbox"/> Jan	<input checked="" type="checkbox"/> Feb	<input type="checkbox"/> Mar	<input type="checkbox"/> Apr
		<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> Jun	<input type="checkbox"/> Jul	<input checked="" type="checkbox"/> Aug
		<input type="checkbox"/> Sep	<input type="checkbox"/> Oct	<input type="checkbox"/> Nov	<input type="checkbox"/> Dec
		<input type="checkbox"/> Survey month outside the specified months?			

Threatened species Manually Added

Common Name	Scientific Name
Masked Owl	<i>Tyto novaehollandiae</i>
Striped Legless Lizard	<i>Delma impar</i>

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	Habitat degraded
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Habitat constraints
Regent Honeyeater	<i>Anthochaera phrygia</i>	Habitat constraints
Swift Parrot	<i>Lathamus discolor</i>	Habitat constraints
Yellow-spotted Tree Frog	<i>Litoria castanea</i>	Refer to BAR



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 2	14/03/2024
Assessor Name	Assessor Number	BAM Data version *
Colin Charles Bower	BAAS18048	67
Proponent Names	Report Created	BAM Case Status
	10/05/2024	Finalised
Assessment Revision	Assessment Type	Date Finalised
12	Major Projects	10/05/2024

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion



BAM Biodiversity Credit Report (Like for like)

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
--	--	--

Species

Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

Grantiella picta / Painted Honeyeater

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

Assessment Id

00027936/BAAS18110/21/00027938

Proposal Name

Cadia Valley Operations Modification 15 - Offset Phasing 2

Page 2 of 14



BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.2	2	0	2
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	11.8	86	36	122
287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion	Not a TEC	0.2	3	0	3
85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion	Not a TEC	0.2	2	0	2

85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
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BAM Biodiversity Credit Report (Like for like)

	Eastern Riverine Forests This includes PCT's: 42, 85, 1106, 1318, 4070, 4073, 4075, 4077, 4081	Eastern Riverine Forests >=70% and <90%	85_85_Woodla nd_Poor	Yes		2 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.						
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion												
Like-for-like credit retirement options												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Name of offset trading group</th> <th style="width: 20%;">Trading group</th> <th style="width: 15%;">Zone</th> <th style="width: 10%;">HBT</th> <th style="width: 10%;">Credits</th> <th style="width: 15%;">IBRA region</th> </tr> </thead> </table>							Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 30%;"> White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, </td> <td style="width: 20%;">-</td> <td style="width: 15%;">266_266_Woodland_Poor</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;"></td> <td style="width: 15%;"> 2 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site. </td> </tr> </tbody> </table>							White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	266_266_Woodland_Poor	Yes		2 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	266_266_Woodland_Poor	Yes		2 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.							



BAM Biodiversity Credit Report (Like for like)

	282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Like for like)

	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099,</p>		277_277_DNG	No		<p>35 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Like for like)

	<p>1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381,</p>		277_277_Exotic	No		<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

<p>382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland,</p>	<p>-</p>	<p>277_277_Plantings</p>	<p>No</p>	<p>1</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

	<p>Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388,</p>					
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BAM Biodiversity Credit Report (Like for like)

	<p>3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p> <p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654,</p>		<p>277_277_Woodland_Poor</p>	<p>Yes</p>		<p>86 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Like for like)

	<p>702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,</p>	-	277_277_PaddockTrees	Yes	0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
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BAM Biodiversity Credit Report (Like for like)

287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Western Slopes Dry Sclerophyll Forests This includes PCT's: 54, 110, 217, 255, 273, 287, 330, 333, 341, 343, 346, 348, 358, 403, 455, 456, 472, 577, 581, 592, 617, 673, 676, 713, 940, 956, 1277, 1279, 1313, 1316, 1381, 1610, 1661, 1668, 1709, 3753, 3754, 3756, 3768, 3769, 4153	Western Slopes Dry Sclerophyll Forests >=50% and <70%	287_287_Woodland_Mod	Yes		3 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor, 277_277_PaddockTrees	5.8	74.00



BAM Biodiversity Credit Report (Like for like)

Polytelis swainsonii / Superb Parrot	277_277_DNG, 277_277_Exotic, 277_277_Woodland_Poor	1.3	6.00
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Credit Retirement Options

Like-for-like credit retirement options

Petaurus norfolcensis / Squirrel Glider	Spp	IBRA subregion
	Petaurus norfolcensis / Squirrel Glider	Any in NSW
Polytelis swainsonii / Superb Parrot	Spp	IBRA subregion
	Polytelis swainsonii / Superb Parrot	Any in NSW

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00027936/BAAS18110/21/00027938	Cadia Valley Operations Modification 15 - Offset Phasing 2	14/03/2024
Assessor Name	Assessor Number	BAM Data version *
Colin Charles Bower	BAAS18048	67
Proponent Name(s)	Report Created	BAM Case Status
	10/05/2024	Finalised
Assessment Revision	Assessment Type	Date Finalised
12	Major Projects	10/05/2024

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
Species		

BAM Biodiversity Credit Report (Variations)

Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

Calyptrorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

Grantiella picta / Painted Honeyeater

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.2	2	0	2.00

BAM Biodiversity Credit Report (Variations)

277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	11.8	86	36	122.00
287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion	Not a TEC	0.2	3	0	3.00
85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion	Not a TEC	0.2	2	0	2.00

85-River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Eastern Riverine Forests This includes PCT's: 42, 85, 1106, 1318, 4070, 4073, 4075, 4077, 4081	Eastern Riverine Forests >=70% and <90%	85_85_Wo odland_Po or	Yes	2	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
Formation	Trading group	Zone	HBT	Credits	IBRA region	
Forested Wetlands	Tier 2 or higher threat status	85_85_Wo odland_Po or	Yes (includi ng artificia l)	2	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	

BAM Biodiversity Credit Report (Variations)

266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332,	-	266_266_Woodland_Poor	Yes	2	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511,	-	277_277_D NG	No	35	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	

BAM Biodiversity Credit Report (Variations)

	<p>528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347,</p>	-	277_277_Ext	No	0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	<p>350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's:</p>	-	277_277_PI antings	No	1 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Variations)

	<p>74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New</p>	<p>-</p>	<p>277_277_Woodland_Poor</p>	<p>Yes</p>	<p>86</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the</p>

BAM Biodiversity Credit Report (Variations)

	<p>England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150</p>					<p>impacted site.</p>
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BAM Biodiversity Credit Report (Variations)

	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698,</p>	-	277_277_P addockTrees	Yes	<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon.</p> <p style="text-align: center;">or</p> <p>Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Variations)

	3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
287-Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Western Slopes Dry Sclerophyll Forests This includes PCT's: 54, 110, 217, 255, 273, 287, 330, 333, 341, 343, 346, 348, 358, 403, 455, 456, 472, 577, 581, 592, 617, 673, 676, 713, 940, 956, 1277, 1279, 1313, 1316, 1381, 1610, 1661, 1668, 1709, 3753, 3754, 3756, 3768, 3769, 4153	Western Slopes Dry Sclerophyll Forests >=50% and <70%	287_287_Woodland_Mod	Yes	3	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options					
Formation	Trading group	Zone	HBT	Credits	IBRA region	
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 3 or higher threat status	287_287_Woodland_Mod	Yes (including artificial)	3	IBRA Region: South Eastern Highlands, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	

Species Credit Summary

BAM Biodiversity Credit Report (Variations)

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	277_277_Exotic, 277_277_Plantings, 266_266_Woodland_Poor, 277_277_Woodland_Poor, 277_277_PaddockTrees	5.8	74.00
Polytelis swainsonii / Superb Parrot	277_277_DNG, 277_277_Exotic, 277_277_Woodland_Poor	1.3	6.00

Credit Retirement Options Like-for-like options

Petaurus norfolcensis / Squirrel Glider	Spp		IBRA region
	Petaurus norfolcensis /Squirrel Glider		Any in NSW
	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
Fauna	Vulnerable	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	
Polytelis swainsonii / Superb Parrot	Spp		IBRA region
	Polytelis swainsonii /Superb Parrot		Any in NSW

BAM Biodiversity Credit Report (Variations)

Polytelis swainsonii/ Superb Parrot	Variation options		
	Kingdom	Any species with same or higher category of listing under Part 4 of the BC Act shown below	IBRA region
	Fauna	Vulnerable	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



APPENDIX G

MIGRATORY SPECIES ASSESSMENT

Table 43. Likelihood of Migratory Species Utilising the Subject Land

Migratory Species		BC Act	EPBC Act	Description and Assessment of Likelihood to Occur on Subject Land	Likelihood of Occurring on Subject Land
Scientific Name	Common Name				
<i>Actitis hypoleucos</i>	Common Sandpiper	-	-	Within NSW, the Common Sandpiper occurs within coastal and inland wetlands (DCCEEW 2023b). Wetland habitat is absent from the Subject Land.	Nil
<i>Apus pacificus</i>	Fork-tailed Swift	-	-	The Fork-tailed Swift is a non-breeding visitor to Australia which occurs predominantly east of the Great Dividing Range in NSW (DCCEEW 2023b). This species is almost exclusively aerial but can inhabit riparian woodland, swamps or saltmarshes. Species may utilise riparian woodland on the Subject Land, however this is considered unlikely due to its predominantly aerial lifestyle.	Low/Nil
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	-	V	This species is a non-breeding visitor to south-eastern Australia, occurring in freshwater and saline habitats along the coast and inland (DCCEEW 2023b). Suitable freshwater habitat (i.e., lakes, swamps) is absent from the Subject Land.	Nil
<i>Calidris ferruginea</i>	Curlew Sandpiper	E	CE	Assessed in Table 16 and Table 17 within Section 5.1 of the BDAR.	Nil
<i>Calidris melanotos</i>	Pectoral Sandpiper	-	-	The Pectoral Sandpiper is widespread throughout NSW in shallow fresh to saline wetlands (DCCEEW 2023b). Freshwater wetlands are absent from the Subject Land.	Nil
<i>Gallinago hardwickii</i>	Latham's Snipe	-	V	Latham's Snipe is a non-breeding visitor to south-eastern Australia, inhabiting permanent and ephemeral wetlands (DCCEEW 2023b). Wetland habitat is absent from the Subject Land.	Nil
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	V	Assessed in Table 16 within Section 5.1 of the BDAR.	Low/Nil
<i>Monarcha melanopsis</i>	Black-faced Monarch	-	-	The Black faced-Monarch is widespread in eastern Australia within rainforests (DCCEEW 2023b). Rainforest habitat is absent from the Subject Land.	Nil

<i>Motacilla flava</i>	Yellow Wagtail	-	-	Yellow Wagtails inhabit damp habitats with low vegetation including bogs, meadows, marshes, waterside pasture and tundra (Birdlife International 2022). Suitable habitat is absent from the Subject Land.	Nil
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	-	-	Satin Flycatchers are widespread east of the Great Dividing Range with scattered records on the western slopes (DCCEEW 2023b). Species occurs within heavily vegetated gullies which are absent from the Subject Land.	Nil
<i>Numenius madagascariensis</i>	Eastern Curlew	-	CE	Assessed in Table 16 and Table 17 within Section 5.1 of the BDAR.	Nil
<i>Rhipidura rufifrons</i>	Rufous Fantail	-	-	Rufous Fantails are found in gullies east of the Great Dividing Range containing wet sclerophyll forests dominated by <i>Eucalyptus microcorys</i> (Tallow-wood), <i>Eucalyptus cypellocarpa</i> (Mountain Grey Gum), <i>Eucalyptus radiata</i> (Narrow-leaved Peppermint), <i>Eucalyptus regnans</i> (Mountain Ash), <i>Eucalyptus delegatensis</i> (Alpine Ash), Blackbutt or <i>Eucalyptus resinifera</i> (Red Mahogany) (DCCEEW 2023b). Suitable habitat and associated species are absent from the Subject Land.	Nil



APPENDIX H

THREATENED SPECIES DATABASE ASSESSMENT

Table 44. Threatened Species Habitat Assessment

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
Plants											
Yass Daisy	<i>Ammobium craspedioides</i>	V	V	-	✓	Sp	-	This perennial daisy is found from near Crookwell to near Wagga Wagga with most records occurring near Yass (DCCEEW 2024b). The closest recorded sighting is 16 km south of the Subject Land near Lyndhurst (DCCEEW 2024b). The Yass Daisy is found in Box Gum Woodland and Derived Native Grasslands, growing in association with Blakely's Red Gum, Apple Box, Bundy Box and Yellow Box which are all present on the site. Species may occur in remnant woodland and native grassland areas on the Subject Land.	Low	Yes (Species credit)	No (surveyed)
A Speargrass	<i>Austrostipa wakoolica</i>	E	E	-	✓	Sp	-	Perennial grass confined to open woodland on grey, silty clay or sandy loam alluvial soils on the floodplains of the Murray River tributaries (DCCEEW 2024b). This species has not been recorded near Orange as the closest recorded sightings are associated with the Lachlan River near Forbes (DCCEEW 2024b). The only alluvial soils on the Subject Land are located along the Cadiangullong Creek, which has been highly disturbed by pasture modification, fertiliser use and grazing. The species is not associated with any PCTs identified on the Subject Land and no further assessment is required as per BAM section 5.2.1 (2c and 5).	Nil	No	N/A
Black Gum	<i>Eucalyptus aggregata</i>	V	V	-	✓	Sp	-	Black Gum is found alluvial soils, on cold, poorly-drained flats on the lowest part of the landscape across the Central and Southern Tablelands (DCCEEW 2024b). Associated species include the trees Snow Gum, Ribbon Gum, Candlebark and Swamp Gum, and the grasses River Tussock and Kangaroo Grass. Black Gum has been recorded numerous times in the Orange-Bathurst surrounds, including 13 km north-east of the Subject Land near Campbells Corner (DCCEEW 2024c). Species may occur in low lying woodland areas. There are no records	Nil	Yes (Species credit)	No (surveyed)

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								on the Subject Land and all trees were evaluated during the vegetation assessment.			
Silver-leaved Candlebark	<i>Eucalyptus canobolensis</i>	V	E	✓	✓	Sp	-	Silver-leaved Candlebark is restricted to high altitude areas (1100-1300 m A.S.L) in the Mt Canobolas State Conservation Area and is often associated with Snow Gum and Ribbon Gum. Numerous records occur in proximity to the Subject Land including 1 km north-east of the Subject Land along Cadia Road (DCCEEW 2024c). All trees were evaluated during the vegetation assessment and none were identified.	Nil	Yes (Species credit)	No (surveyed)
Silver-leafed Gum	<i>Eucalyptus pulverulenta</i>	V	V	-	✓	Sp	-	Silver-leafed Gum occurs in two areas: Lithgow to Bathurst and the Monaro (DCCEEW 2024c). This species is associated with Brittle Gum, Red Stringybark, Broad-leaved Peppermint and Apple Box, and grows on shallow soils in open forest communities. Silver-leafed Gum has not been recorded near Orange and the closest record is 45 km east, south of Bathurst. Red Stringybark and Broad-leaved Peppermint are present as planted trees on the Subject Land, but the species is not likely to occur due to its highly restricted geographic range. This species is not associated with any PCTs identified on the Subject Land and no further assessment is required as per BAM section 5.2.1 (2c and 5).	Nil	No	N/A
-	<i>Euphrasia arguta</i>	CE	CE	-	✓	Sp	-	<i>Euphrasia arguta</i> was re-discovered in the Nundle area in 2008 but has historically been known to occur from Sydney to Bathurst and north to Walcha (DCCEEW 2024c). This species occurs within eucalypt forest with a mixed grass and shrub understorey, mostly in humid or moist local conditions. Two historical records occur near Kandos, however all recent (within the last 30 years) records occur near Nundle. Habitat near creeks on the site have been heavily modified through pasture conversion, fertiliser application and grazing, therefore this species is not likely to persist if it once occurred in the area.	Nil	No	N/A

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
Spiny Peppercress	<i>Lepidium aschersonii</i>	V	V	-	✓	Sp	-	This perennial herb occurs in the marginal central-western slopes and north-western plains regions of NSW on ridges of gilgai clays. Recorded sightings occur near West Wyalong and Narrabri. Gilgai clays are absent from the Subject Land. This species is not associated with any PCTs identified on the Subject Land and no further assessment is required as per BAM section 5.2.1 (2c and 5).	Nil	No	N/A
Aromatic Peppercress	<i>Lepidium hyssopifolium</i>	E	E	-	✓	Sp	-	This perennial herb occurs in small populations near Bathurst, Bungendore and Crookwell in grassy woodland and grassland communities (DCCEEW 2024c). This species has not been recorded near Bathurst for almost 20 years however may occur in woodland and DNG areas on the Subject Land as it is a disturbance opportunist.	Low	Yes (Species credit)	No (surveyed)
Hoary Sunray	<i>Leucochrysum albicans var. tricolor</i>	-	E	-	✓	Sp	-	Within NSW, this perennial daisy occurs on the Southern Tablelands between Albury, Bega and Goulburn with scattered records occurring outside this area including near Gulgong, Mudgee and Hill End (DCCEEW 2024c). Hoary Sunrays grow in grassland, woodland and forests on heavy soils. This species relies on bare ground for germination and can occur along roadsides and in semi-urban areas. Species may occur on the Subject Land in woodland and DNG habitats as it is a disturbance opportunist.	Low	Yes (Species credit)	No (surveyed)
Tarengo Leek Orchid	<i>Prasophyllum petilum</i>	E	E	-	✓	Sp	-	Species is known from five areas near Boorowa, Queanbeyan, Ilford, Delegate and Muswellbrook (DCCEEW 2024c). The Tarengo Leek Orchid occurs in grasslands and grassy woodlands and is associated with River Tussock, Black Gum and <i>Leptospermum</i> spp. The closest recorded sightings occur near Ilford, >95 km north-east of the Subject Land. The Subject Land is considered too degraded to support this species due to its intensive grazing history.	Nil	No	N/A
-	<i>Prasophyllum sp. Wybong</i>	-	CE	-	✓	Sp	-	<i>Prasophyllum sp. Wybong</i> is known to occur near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell, Tenterfield, Currabubula and the Pilliga with a stronghold for the species	Nil	No	N/A

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								occurring at Wybong (DCCEEW 2024c). This species occurs in open woodland and grassland but is highly unlikely to occur on the Subject Land due to its intensive grazing history.			
	<i>Prostanthera gilesii</i>	CE	-	-	✓	Sp	-	This species is only known from two sites in the Mt Canobolas SCA, occurring on steep, protected slopes within the shrubby understorey of open forest on basaltic clay-loam soils (DCCEEW 2024c). Species is highly unlikely to occur on the Subject Land due to its restricted geographic range, and the lack of remnant shrub cover within natural woodlands on the Subject Land due to the historical land use. This species is not associated with any PCTs identified on the Subject Land and no further assessment is required as per BAM section 5.2.1 (2c and 5).	Nil	No	N/A
Small Purple-pea	<i>Swainsona recta</i>	E	E	-	✓	Sp	Sp	The historical range of this species included Carcoar, Culcain and Wagga Wagga, however the species is currently only known from the Queanbeyan and Wellington-Mudgee areas (DCCEEW 2024c). Species occurs in the grassy understorey of woodland and is associated with Blakely's Red Gum, Yellow Box, Candlebark Gum, Bundy Box, Kangaroo Grass, <i>Poa</i> spp. and <i>Austrostipa</i> spp. The Small Purple-pea has not been recorded near Orange but occurs near Wellington and Mudgee. Species is very unlikely to occur on the Subject Land.	Low	Yes (Species credit)	No (surveyed)
Silky Swainson-pea	<i>Swainsona sericea</i>	V	-	-	-	Sp	Sp	Silky Swainson-peas occur between the Northern and Southern Tablelands with its stronghold on the Monaro. This species occurs in Box Gum Woodland and has been <15 km south-west of the Subject Land (DCCEEW 2024c). Species may occur in moderate to good condition Box Gum Woodland on the Subject Land. Species is very unlikely to occur on the Subject Land.	Low	Yes (Species credit)	No (surveyed)
Austral Toadflax	<i>Thesium australe</i>	V	V	-	✓	Sp	-	Austral Toadflax occurs in small, scattered populations across eastern NSW in grassy woodland and grassland with or without trees (DCCEEW 2024c). This species is a root parasite associated with Kangaroo Grass. Species is highly unlikely to	Nil	No	N/A

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								occur on the Subject Land due to microhabitat constraints as no Kangaroo Grass was recorded on the site.			
-	<i>Vincetoxicum forsteri</i> (syn. <i>Tylophora linearis</i>)	V	E	-	✓	Sp	-	This species is widespread between southern QLD, through central NSW to Temora, with most records occurring in the central west region (DCCEEW 2024c). <i>Tylophora linearis</i> occurs in dry scrub and open forest between 300-400 m a.s.l. This species is considered highly unlikely to occur on the Subject Land (600-900 m a.s.l.) due to its restricted elevation range.	Nil	No	N/A
Birds											
Regent Honeyeater	<i>Anthochaera phrygia</i>	CE	CE	-	✓	Dual	Dual	Regent Honeyeaters occur within temperate woodlands and open forests containing high bird species richness on the inland slopes of south-eastern Australia (DCCEEW 2024c). Suitable habitat also contains a significant number of large trees, high canopy cover and an abundance of mistletoe. This generalist forager feeds on mistletoe fruit/nectar and nectar from a small number of eucalypts including Yellow Box and White Box. Species may utilise the Subject Land for foraging but is considered unlikely to breed on the Subject Land as it is not a mapped Important Area. Regent Honeyeaters have also not been recorded near Orange and suitable foraging habitat is absent from the Subject Land.	Low	Yes (Ecosystem credit)	Foraging only: retained as Ecosystem Credit
Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	V	-	✓	-	Ec	Ec	Dusky Woodswallows occur throughout NSW in dry, open eucalypt forests and woodlands with an open or sparse understory of eucalypt saplings and shrubs, and a grassy understory with high covers of fallen woody debris (DCCEEW 2024c). This species also occurs in farmland, foraging on invertebrates, nectar, fruits and seeds. Dusky Woodswallows have previously been recorded on CVO, including on and within 1 km of the Subject Land (DCCEEW 2024c). Therefore, woodland areas on the Subject Land are considered suitable for foraging.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Southern Whiteface	<i>Aphelopcephala leucopsis</i>	-	V	-	✓	-	-	The Southern Whiteface occurs over most of inland NSW east to the Great Dividing Range (DCCEEW 2023c).	Low	No	No (surveyed)

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								Suitable habitat is open dry woodland and shrublands with an understorey of grasses or shrubs with ample leaf litter and logs. Breeding takes place in nests in hollows and crevices, and sometimes low bushes (DCCEEW 2023c). Potentially suitable habitat occurs on the Subject Land. Surveys in spring have failed to detect this species.			
Australasian Bittern	<i>Botaurus poiciloptilus</i>	E	E	-	✓	Ec	-	Australasian Bitterns are widespread but uncommon over south-eastern Australian, occurring in brackish or freshwater wetlands (DCCEEW 2024c). Suitable microhabitat is absent from the Subject Land.	Nil	No	N/A
Bush Stone-Curlew	<i>Burhinus grallarius</i>	E	-	-	-	Sp	Sp	Bush Stone-Curlews are widespread throughout mainland Australia except for the central southern coast and inland, the far south-east corner (DCCEEW 2024c). This species inhabits open forest and woodlands with a sparse grassy groundcover and fallen timber. Breeding occurs in nests on the ground. This species has been recorded near Neville and Borenore and has the potential to utilise the moderate to good condition remnant woodland on the Subject Land due to the presence of habitat constraints (fallen/standing dead timber including logs).	Low	Yes (Species credit)	No (surveyed)
Sharp tailed Sandpiper	<i>Calidris acuminata</i>	-	V	-	✓	-	-	This species is a non-breeding visitor to south-eastern Australia, occurring in freshwater and saline habitats along the coast and inland (DCCEEW 2023b). Suitable freshwater habitat (i.e., lakes, swamps) is absent from the Subject Land.	Nil	No	N/A
Curlew Sandpiper	<i>Calidris ferruginea</i>	E	CE	-	✓	Dual	-	Curlew Sandpipers occur around most of the Australian coastline and within freshwater wetland habitats in the Murray-Darling Basin. The Subject Land is not a mapped Important Area for this species, therefore breeding is not considered likely to occur on the site. Similarly, the site also lacks suitable habitat in the form of mudflats and wetlands.	Nil	No	N/A
Gang-Gang Cockatoo	<i>Callocephalon fimbriatum</i>	V	E	-	✓	Dual	Dual	Within NSW, Gang-Gang Cockatoos are found from the south-east coast to the Hunter region and inland to the Central Tablelands and south-west slopes (DCCEEW 2024c). This	Low	Yes (Dual credit)	No (surveyed); retained as

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								species breeds in old growth woodlands with hollows >3m above ground and >7 cm diameter. Suitable nesting and foraging habitat is likely to occur in woodland habitat on the Subject Land.			Ecosystem credit only
Glossy Black-Cockatoo	<i>Calyptorhynchus lathami</i>	V	-	-	✓	Dual	Dual	Glossy Black-Cockatoos have a wide but sparse distribution throughout the Southern Tablelands and Central Western Plains of NSW, occurring in open forest and woodlands. Suitable nesting hollows are >15 cm diameter and >8 m above ground, while suitable foraging trees include <i>Allocasuarina</i> spp. and <i>Casuarina</i> spp (DCCEEW 2024c). Suitable nesting and foraging habitat are likely to occur on the Subject Land within woodland habitat.	Low	Yes (Dual credit)	No (surveyed); retained as Ecosystem credit only
Speckled Warbler	<i>Chthonicola sagittata</i>	V	-	-	-	Ec	Ec	Speckled Warblers have a sparse distribution across eastern NSW in grassy Eucalypt dominated communities, often on rocky ridges or gullies (DCCEEW 2024c). This species requires high habitat complexity in the form of scattered native tussock grasses, a sparse shrub layer, eucalyptus regrowth and an open canopy. Foraging primarily occurs on the ground for seeds and insects. This species is well known in the surrounding area and has been recorded ~10 km west and south of the Subject Land. Suitable foraging habitat may be present within woodland areas on the Subject Land.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Spotted Harrier	<i>Circus assimilis</i>	V	-	-	-	Ec	Ec	Spotted Harriers are distributed throughout mainland Australia, except for in densely forested or wooded habitats of the coast. This species utilises open grassland and woodland, inland riparian woodland, shrub steppe and agricultural land (DCCEEW 2024c). Foraging occurs over open habitats including inland wetlands. Sparse recorded sightings of this species occur in the surrounding area, including ~23 km north-west of the site near Cargo (DCCEEW 2024c). Suitable open foraging habitat may be present on agricultural land on the site.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)

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Brown Treecreeper	<i>Climacteris picumnus victoriae</i>	V	V	-	✓	Ec	Ec	Brown Treecreepers inhabit grassy eucalypt forests and woodlands (including Box Gum Woodland) on the inland slopes and plains of the Great Dividing Range (DCCEEW 2024c). This species is found in woodland with a sparse shrub layer, foraging on the ground and among fallen timber. Brown Treecreepers were observed in proximity to the Subject Land near the Orange, Belubula River and Four Mile Creek Road (BMS 2024), as well as numerous times ~5 km south of the site (DCCEEW 2024c). This species is likely to occur in moderate to good condition woodland on the Subject Land.	Moderate	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	-	✓	-	Ec	Ec	This sedentary species inhabits eucalypt forests and woodlands throughout most of Australia. Varied Sittellas feed on arthropods by foraging on crevices, dead branches and rough-bark. This species is well known in the Orange area and has previously been recorded on CVO (northern extent) (DCCEEW 2024c). Suitable foraging habitat is likely to occur in woodland areas on the Subject Land.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Grey Falcon	<i>Falco hypoleucos</i>	E	-	-	✓	Ec	-	Grey Falcons are sparsely distributed in NSW throughout the Murray Darling Basin in areas receiving <500 mm rainfall annually (DCCEEW 2024c). This species is restricted to shrubland, grassland and wooded watercourses in arid and semi-arid regions. Foraging occurs in open areas for birds, reptiles and mammals. Grey Falcons are considered unlikely to utilise the Subject Land for foraging due to geographic limitations as the Subject Land does not occur in an arid or semi-arid area and average annual rainfall is >900 mm.	Nil	No	N/A
Black Falcon	<i>Falco subniger</i>	V	-	-	-	Ec	Ec	This species has a wide but sparse distribution throughout arid and semi-arid NSW, occurring along tree-lined watercourses and in isolated woodlands (Birdlife Australia n.d.; DCCEEW 2024c). This highly mobile species forages for birds, small mammals, insects and reptiles. The Black Falcon may utilise open areas on the Subject Land for foraging as it has been	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)

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								sparingly recorded in the surrounding area including ~15 km south of the site near Mandurama (DCCEE 2024c).			
Latham's Snipe	<i>Gallinago hardwickii</i>	-	V	-	✓	-	-	Latham's Snipe is a non-breeding visitor to south-eastern Australia, inhabiting permanent and ephemeral wetlands (DCCEE 2023b). Wetland habitat is absent from the Subject Land.	Nil	No	N/A
Little Lorikeet	<i>Glossopsitta pusilla</i>	V	-	✓	-	Ec	Ec	The Little Lorikeet is widely distributed across the coastal and Great Divide regions of eastern Australia, occurring in open eucalypt forest, woodland and paddock trees in farmland. This species forages on eucalypt nectar/pollen and mistletoe fruits. Species has been recorded within 1 km of the Subject Land near Panuara Road multiple times, therefore Little Lorikeets are likely to utilise woodland on the Subject Land for foraging (DCCEE 2024c).	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Painted Honeyeater	<i>Grantiella picta</i>	V	V	-	✓	Ec	Ec	This nomadic species occurs at low densities throughout the inland slopes of the Great Dividing Range in NSW. Painted Honeyeaters inhabit Box Gum Woodlands, foraging on insects, eucalypts and mistletoes. Species is highly unlikely to occur on the Subject Land due to habitat constraints as mistletoe occurs on the site at a density of <5 per hectare (DCCEE 2024c).	Nil	No	N/A
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	-	✓	-	Dual	Dual	White-bellied Sea-Eagles are widespread along the eastern coast of NSW and have been recorded along all major rivers and waterways. This species is known to occur in grassland and woodland within 1 km of rivers, lakes, large dams or creeks, and has been recorded on CVO in the past, including within 1 km of the Subject Land (DCCEE 2024c). Species is considered likely to utilise the Subject Land for foraging and breeding.	Moderate	Yes (Dual credit)	No (surveyed); retained as Ecosystem credit only
Little Eagle	<i>Hieraaetus morphnoides</i>	V	-	-	-	Dual	Dual	The Little Eagle is found throughout mainland Australia except for the most densely forested parts of the Dividing Range (DCCEE 2024c). This species inhabits open eucalypt forest or woodland, as well as riparian woodlands. Little Eagles forage on birds, reptiles and mammals, while nesting occurs in tall living trees in remnant woodland. The Little Eagle has been	Low	Yes (Dual credit)	No (surveyed); retained as Ecosystem credit only

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								recorded numerous times in the Orange surrounds, including ~8 km east of the site near Forest Reefs (DCCEE 2024c). Species is considered likely to utilise the Subject land for foraging and breeding.			
White-throated Needletail	<i>Hirundapus caudacutus</i>	-	V	✓	✓	Ec	Ec	Migratory species found in Australian from October to April. This species has been recorded in a wide variety of habitats including flying above farmland and wooded areas. White-throated Needletails are predominantly aerial birds but have been recorded on CVO in 2002 (DCCEE 2024c). Species may utilise the Subject Land for foraging, however this is considered highly unlikely due to its predominantly aerial lifestyle.	Low	Yes (Ecosystem credit)	N/A
Swift Parrot	<i>Lathamus discolor</i>	E	CE	-	✓	Dual	Dual	This migratory species breeds in Tasmania during spring/summer, migrating to south-eastern Australia for autumn/winter (DCCEE 2024c). In NSW, this species mostly occurs on the coast and south west slopes in areas where winter-flowering eucalypts are flowering profusely. The Subject Land is not a mapped Important Area for this species, therefore Swift Parrots are considered highly unlikely to utilise the site for breeding. This species has not been recorded near Orange but may utilise the site for foraging due to the presence of winter flowering eucalypts.	Low	Yes (Ecosystem credit)	Foraging only: retained as Ecosystem Credit
Malleefowl	<i>Leipoa ocellata</i>	E	V	-	✓	Ec	-	The stronghold for Malleefowl is mallee communities in the south west near Mallee Cliffs National Park (NP), Mungo NP and near Balranald (DCCEE 2024c). This species inhabits mallee communities which are absent from the Subject Land.	Nil	No	N/A
Square-tailed Kite	<i>Lophoictinia isura</i>	V	-	-	-	Dual	Dual	Within NSW, this species is known to occur in the north, north-east and along the major west-flowing rivers within dry woodlands, open forest and timbered watercourses (DCCEE 2024c). Foraging occurs in the tree canopy, while nesting occurs along or near watercourses. The species has been recorded east of Blayney (~25 km east of the site). Suitable potential nest trees and foraging habitat are present on the Subject Land.	Low	Yes (Dual credit)	No (surveyed); retained as Ecosystem credit only

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Hooded Robin	<i>Melanodryas cucullata</i>	V	E	-	✓	Ec	Ec	The Hooded Robin is widespread throughout Australia, except for in deserts and coastal areas (DCCEEW 2024c). This species is often found near clearings or open areas and prefers structurally diverse open eucalypt woodland with eucalypt saplings, small shrubs, a moderately tall native grass groundcover and abundant fallen timber. Hooded Robins have been recorded ~12 km south-west of the Subject Land and are likely to utilise good to moderate condition remnant woodland on the site.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Black-chinned Honeyeater	<i>Melithreptus gularis</i>	V	-	-	-	Ec	Ec	The eastern subspecies <i>gularis</i> is widespread throughout NSW, occurring on the tablelands, slopes and plains of the Great Dividing Range (DCCEEW 2024c). This species occurs in the upper levels of dry open forests and woodlands, preferring the largest woodland patches in the landscape. Foraging for nectar and insects occurs throughout the home range (>5 ha). Black-chinned Honeyeaters are rarely recorded east of the Great Diving Range but has been recorded once, ~12 km south-west of the Subject Land. This species may utilise remnant woodland areas across the central extent of the site (south of the northern dam) that are connected to a ~300 ha woodland patch north of the Subject Land.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Blue-winged Parrot	<i>Neophema chrysostoma</i>	V	V	-	✓	-	-	Mainly found in Tasmania and Victoria, sparse populations in western NSW in a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Found near wetlands. There are no wetlands near the Subject Land and it is unlikely to occur (Cth DCCEEW 2023).	Nil	No	N/A
Turquoise Parrot	<i>Neophema pulchella</i>	V	-	-	-	Ec	Ec	Within NSW, the Turquoise Parrot occurs from the coastal plains to the western slopes of the Great Dividing Range, inhabiting the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks (DCCEEW 2024c). Foraging occurs in the shade, on the ground searching for seeds and vegetation matter. This species is not known from the Orange area but has been recorded near Eugowra, Cowra and Grenfell	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)

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								(DCCEEW 2024c). Turquoise Parrots are disturbance tolerant and may utilise the edges of moderate to good condition woodland on the Subject Land.			
Barking Owl	<i>Ninox connivens</i>	V	-	✓	-	Sp	Sp	Core populations of Barking Owl occur on the western slopes and plains within woodland, open forest and partly cleared farmland (DCCEEW 2024c). This species breeding in hollows >20 cm diameter, > 4m above ground, and forages on small arboreal mammals, birds, invertebrates and terrestrial mammals. One Barking Owl record occurs on the CVO, within 1 km of the Subject Land (DCCEEW 2024c). Suitable breeding and foraging habitat are likely to occur in woodland habitat on the Subject Land.	Moderate	No	No (surveyed)
Powerful Owl	<i>Ninox strenua</i>	V	-	-	-	Sp	Sp	The Powerful Owl occurs throughout eastern Australia, predominantly on the eastern side of the Great Dividing Range (DCCEEW 2024c). Within NSW, this species occurs in woodland and open sclerophyll forest to tall wet forest and rainforest. Foraging occurs in open or closed sclerophyll woodlands and occasionally in open habitats, while nesting occurs in living or dead trees with hollows >20 cm diameter (DCCEEW 2024c). Scattered sightings have been recorded west of Bathurst, including within 5 km of the northern extent of the site, in the Canobolas SCA (DCCEEW 2024c). Species is likely to utilise the Subject Land for foraging and breeding.	Low	No	No (surveyed)
Scarlet Robin	<i>Petroica boodang</i>	V	-	✓	-	Ec	Ec	Within NSW, the Scarlet Robin occurs from the coast to the inland slopes, migrating to the lower valleys and plains of the tablelands and slopes after breeding (DCCEEW 2024c). This species inhabits dry eucalypt forests and woodland containing an open, grassy understorey with scattered shrubs, abundant logs and saplings. Scarlet Robins have also been recorded in grasslands and grazing paddocks with isolated paddock trees. Foraging occurs in the shrub or canopy layer, on the ground and among logs. This species is frequently recorded in the Orange area including a record near the central access roads	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)

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								(DCCEEW 2024c). Scarlet Robins may utilise grassland and woodland areas on the site for foraging.			
Flame Robin	<i>Petroica phoenicea</i>	V	-	✓	-	Ec	Ec	Within NSW, the Flame Robin breeds in upland areas before migrating to the inland slopes and plains in winter (DCCEEW 2024c). On the slopes and plains, this species favours clearings or areas with habitat complexity including open understoreys, native grasses, shrub mid-storeys, low perches, logs, stag and woody debris. Suitable foraging habitat may occur within woodland habitat on the Subject Land as this species has been recorded on CVO along Cadia Road.	Moderate	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Superb Parrot	<i>Polytelis swainsonii</i>	V	V	✓	✓	Dual	Dual	Superb Parrots are found throughout eastern inland NSW with their core breeding habitat occurring on the South West slopes between Cowra, Yass, Grenfell, Cootamundra and Coolac (DCCEEW 2024c). Suitable habitat includes Box Gum Woodland, where foraging occurs in trees, understorey shrubs and on the ground for grass seeds and herbaceous plants, fruits, berries, nectar, buds and insects. Superb Parrots breed within eucalypts (i.e., Blakely's Red Gum, Yellow Box, White Box) with a DBH of >30 cm and hollows >5 cm diameter, >4 m above the ground. This species is well known in the Orange area and has been recorded on CVO and the Subject Land numerous times (DCCEEW 2024c). Suitable breeding and foraging habitat may occur within woodland habitat on the Subject Land.	Low	Yes (Dual credit)	Yes (Dual credit)
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>	V	-	-	-	Ec	Ec	In NSW, the eastern subspecies <i>temporalis</i> occurs on the western slopes and plains of the Great Dividing Range within open Box Gum woodland. Foraging for invertebrates occurs on trunks and branches, as well as on the ground, digging and probing amongst litter and native tussock grasses (DCCEEW 2024c). Extensive recorded sightings occur west of Canowindra with the closest records occurring <10 km west of the Subject Land. This species may utilise the Subject Land for foraging within moderate to good condition woodland.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)

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Pilotbird	<i>Pycnoptilus floccosus</i>	-	V	-	✓	Ec	-	This ground-dwelling bird is restricted to above 600 m in the Brindabella Ranges (ACT), Snowy Mountains (NSW), and wet forests between the Blue Mountains (west of Newcastle) and Dandenong (near Melbourne) (DAWE 2022c). Pilotbirds have not been recorded west of Portland and is highly unlikely to occur on the Subject Land due to geographic limitations (DCCEEW 2024c).	Nil	No	N/A
Australian Painted Snipe	<i>Rostratula australis</i>	E	E	-	✓	Ec	-	Australian Painted Snipes occur within the Murray Darling Basin in wetland, inland lakes and swamps (DCCEEW 2024c). This species prefers the fringes of swamps, dams and marshy areas containing tall vegetation and mud flats. Australian Painted Snipes have not been recorded near Orange and are highly unlikely to utilise the Subject Land due to unsuitable microhabitat.	Nil	No	N/A
Diamond Firetail	<i>Stagonopleura guttata</i>	V	V	✓	✓	Ec	Ec	The Diamond Firetail occurs between central QLD to the Eyre Peninsula in South Australia within grassy eucalypt woodlands, including Box Gum Woodlands, native grasslands, riparian areas and lightly wooded farmland. Foraging occurs on the ground on grass and herb seeds/leaves and insects. Species has been recorded within 5 km of the Subject Land along Four Mile Creek Road and is likely to utilise moderate to good condition woodland and DNG for foraging.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Masked Owl	<i>Tyto novaehollandiae</i>	V	-	-	-	Sp	Sp	Masked Owls are a distinctive, medium sized bird that is found throughout 90% of NSW (DCCEEW 2024c). This species lives in dry eucalypt forests and woodlands however often hunts along forest edges including roadsides (DCCEEW 2024c). Their roosting sites involve moist eucalypt forested gullies, utilising living or dead tree hollows >20 cm in diameter, or occasionally caves for nesting. They prey on both tree dwelling and ground mammals including rats (DCCEEW 2024c). This species has been recorded to the east of Orange, although the majority of recorded sightings are in the Blue Mountains. However, there is the presence of suitable habitat within the Subject Land.	Low	No	No (surveyed)

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Mammals											
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	V	-	-	-	Sp	Sp	In NSW, this species occurs from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga (DCCEEW 2024c). Eastern Pygmy-Possums occur in a variety of habitats including rainforest, sclerophyll forest and woodland and may inhabit small patches of vegetation containing a rich shrub understorey in fragmented landscapes. This species feeds on nectar and pollen from banksias, eucalypts and bottlebrushes. This species is not well-known west of the Great Dividing Range with the closest recorded sighting occurring near Parkes (DCCEEW 2024c). Habitat assessment carried out by BMS (2024) ruled out the requirement to survey for the Eastern Pygmy Possum due to the degraded nature of microhabitat (well-spaced eucalypts with little to no shrub layer and little to no coarse woody debris) and presence of foxes.	Nil	No	No
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	V	V	✓	✓	Sp	Sp	Large-eared Pied Bats occur within 2 km of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within 2 km of old mines or tunnels (DCCEEW 2024c). This species has been recorded on the northern extent of CVO in the past and is likely to utilise the Subject Land for breeding habitat.	Low	Yes (species credit)	No (surveyed)
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	V	E	-	✓	Ec	Ec	The Spotted-tailed Quoll is found throughout eastern NSW in a range of habitats including woodland and inland riparian forest (DCCEEW 2024c). This species utilises hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites, foraging on arboreal mammals and roosting birds. Scattered recorded sightings of Spotted-tailed Quolls occur in the Orange/Bathurst area, and this species may utilise remnant woodland with high connectivity for foraging.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	V	-	✓	-	Dual	Dual	This species breeds in caves, tunnels, mines, culverts or other structures, roosting in colonies between 100-150,000 individuals (DCCEEW 2024c). Foraging occurs in foraging areas. Large Bent-winged Bats have been recorded on CVO and	Low	Yes (Dual credit)	No (surveyed); retained as

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								within 1 km of the Subject Land in the past with numerous records occurring along the Belubula River (DCCEEW 2024c). This species is likely to utilise the Subject Land for foraging due to the presence of suitable breeding habitat in the surrounds.			Ecosystem credit only
Southern Myotis	<i>Myotis macropus</i>	V	-	✓	-	Sp	Sp	The Southern Myotis is found in the coastal band from the north-west of Australia across the top-end and south to western Victoria, and is rarely found >100 km inland, except along major rivers (DCCEEW 2024c). This species forages in ground of 10-15 close to water in caves, hollow-bearing trees and man-made structures, while foraging occurs over streams and pools for insects and small fish. The Southern Myotis has been recorded once on CVO within 1 km of the Subject Land (DCCEEW 2024c). Suitable breeding habitat may occur on the Subject Land in areas within 200 m of waterbodies containing permanent pools/stretchers ≥ 3 m wide.	Low	Yes (Species credit)	No (surveyed)
Corben's Long-eared Bat	<i>Nyctophilus corbeni</i>	V	V	-	✓	Ec	-	Corben's Long-eared Bat is found throughout south-eastern Australia with a stronghold in the Murray Darling Basin and the Pilliga scrub. This species occurs in a range of habitats including box eucalypt dominated communities with foraging occurring within the understorey and on the ground for insects. Corben's Long-eared Bat has not been recorded near the Subject Land and is unlikely to occur due to its specific geographic distribution.	Nil	No	N/A
Greater Glider	<i>Petauroides volans</i>	E	E	-	✓	Sp	-	The Greater Glider occurs in eucalypt forests and woodlands, feeding on eucalypt leaves, buds, flowers and mistletoe (DCCEEW 2024c). This species roosts in tree hollows and has been recorded numerous times in the Mt Canobolas SCA, ~5 km north of the Subject Land. Species has been excluded from assessment as it is not associated with any PCTs on the Subject Land (as per BAM section 5.2.1 [2c and 5]) (AMBS 2023).	Nil	No	N/A
Yellow-bellied Glider	<i>Petaurus australis</i>	V	V	-	✓	Ec	-	The Yellow-bellied Glider occurs along the eastern coast to the western slopes of the Great Dividing Range within tall mature eucalypt forest, tall montane forests or creek flats (DCCEEW	Nil	No	N/A

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								2024c). This species forages on insects, nectar, sap, pollen and honeydew. Most recorded sightings for this species occur along the western slopes of the Great Dividing Range, extending west to the Winburndale Nature Reserve (west of Bathurst) (DCCEEW 2024c). This species was recorded once on the Mt Canobolas SCA in the 1980s. This species is not associated with any PCTs identified on the Subject Land (as per BAM section 5.2.1 [2c and 5]).			
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	✓	-	Sp	Sp	The Squirrel Glider is widely but sparsely distributed in eastern Australia within mature or old growth box eucalypt woodlands, preferring mixed species stands with a shrubby mid-storey. Nesting occurs in tree hollows with communities with trees <50 m apart. Squirrel Gliders have been recorded on CVO in the past, including within 500 m of the site near the subsidiary zone (DCCEEW 2024c). Species is likely to utilise woodland fragments on the Subject Land that have high connectivity to the surrounding landscape.	Low	Yes (Species credit)	Yes (Species credit)
Brush-tailed Rock Wallaby	<i>Petrogale penicillata</i>	E	V	-	-	Sp	-	Brush-tailed Rock Wallaby occurs in a broad from north to south along the Great Dividing Range to the Warrumbungle Ranges in the east (DPE, 2022c). They require rocky escarpments, outcrops and cliffs with crevices, caves and overhangs for shelter. The Subject Land does include steep boulder slopes, but they are man-made mine pits or dam embankments and do not provide suitable shelter for the species. Therefore, habitat constraints are absent from the Subject Land.	Nil	No	N/A
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	V	-	-	-	Sp	Sp	This species has a patchy distribution within NSW, occurring along the coast and predominantly east of the Great Dividing Range with scattered records occurring west of the divide (DCCEEW 2024c). The Brush-tailed Phascogale favours rough-barked, dry sclerophyll open forest with a sparse groundcover of grasses, herbs and leaf litter. This species feeds on arthropods, invertebrates and nectar. Recorded sightings are	Low	Yes (Species credit)	No (surveyed)

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		BC Act	EPBC Act	BioNet	PMST	TDBC					
								almost exclusively east of the divide, with the closest inland record occurring >100 years ago near Condobolin. There is potentially suitable nesting habitat in sclerophyll woodland on the site.			
Koala	<i>Phascolarctos cinereus</i>	E	E	-	✓	Sp	Sp	Koalas have a fragmented distribution throughout eastern Australia from north-east QLD to the Eyre Peninsula in South Australia within eucalypt woodland and forests (DCCEEW 2024c). This species is well known in the Newbridge area, however is rarely recorded near Orange (DCCEEW 2024c). Species was recorded in Black Rock Range, 11 km west of the Subject Land. Koalas may utilise the Subject Land due to the presence of koala use trees (i.e., White Box, Yellow Box, Blakely's Red Gum).	Low	Yes (Species credit)	No (surveyed)
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	✓	✓	Dual	Dual	The Grey-headed Flying-fox is generally found within 200 km of the eastern coast of Australia in a variety of habitats including woodland, urban gardens and fruit crops (DCCEEW 2024c). Roosting camps are generally located within 20 km of a regular food source and include Cook Park and Ploughmans Lane in Orange. No breeding camps have been recorded on CVO, however has been recorded along Cadia Road within 1 km of the Subject Land (DCCEEW 2024c). Suitable foraging habitat may occur on the Subject Land.	Low	Yes (Ecosystem credit)	Foraging only: retained as Ecosystem credit only
Yellow-bellied Sheathtail-bat	<i>Saccolaimus flaviventris</i>	V	-	✓	-	Ec	Ec	The Yellow-bellied Sheathtail-bat roosts in tree hollows and buildings in woody and non-woody areas (DCCEEW 2024c). Foraging occurs predominantly occurs over the forest canopy for insects, but also occurs over open areas. This species has been recorded at the northern extent of CVO and may utilise the Subject Land for foraging.	Low	Yes (Ecosystem credit)	Yes (Ecosystem credit)
Reptiles											
Pink-tailed Legless Lizard	<i>Aprasia parapulchella</i>	V	V	-	✓	Sp	Sp	The Pink-tailed Legless Lizard occurs on the Central and Southern Tablelands and the South Western Slopes. It is found on rocky outcrops or within 50 m of rocky areas in sloping, open grassy woodland areas and is often associated with	Low	Yes (Species credit)	No (surveyed)

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								Kangaroo Grass (DCCEEW 2024c). Scattered recorded sightings occur in the surrounding area, including a small population near Canowindra, ~20 km west of the Subject Land (DCCEEW 2024c). Species is likely to occur in rocky areas or within 50 m of rocky habitat on the Subject Land			
Striped Legless Lizard	<i>Delma impar</i>	V	V	-	✓	Sp	Sp	This species is known to occur in the Southern Tablelands, South Western Slopes (south of the Mid-Western Highway), Upper Hunter and possibly on the Riverina (DCCEEW 2024c). Populations in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas are known to inhabit Natural Temperate Grassland or DNG dominated by Kangaroo Grass, <i>Austrostipa</i> spp. and <i>Poa</i> spp. in open Box Gum Woodland or exotic grassland containing large tussocks. Striped Legless Lizards are also sometimes associated with surface rocks. Suitable habitat is present on the Subject Land in the form of large tussock grasses (<i>Phalaris</i>) and surface rock.	Low	Yes (Species credit)	No (surveyed)
Bathurst Grassland Earless Dragon	<i>Tympanocryptis mcartneyi</i>	CE	CE	-	✓	Sp	-	Restricted to the grasslands and open country on the alluvial plains around Bathurst in the Central Tablelands of NSW (Melville et al. 2019). The grasslands occur at altitudes up to approximately 1200 m and are naturally treeless or sparsely treed, with native tussock grasses being the dominant vegetation (Melville et al. 2019). There is no suitable habitat on the Subject Land due to the landscape position that does not include alluvial plains.	Nil	No	N/A
Insects											
Key's Matchstick Grasshopper	<i>Keyacris scurra</i>	E	E	-	-	Sp	Sp	The northern boundaries of the Key's Matchstick Grasshopper's distribution are poorly defined, but the historical distribution ranged from the NSW Central Tablelands near Orange to the Omeo district in Victoria (DCCEEW 2024c). This species occurs in grassland and grassy woodlands containing Kangaroo Grass which is used for shelter and possibly food. Other feed sources include native and exotic Asteraceae and dicotyledon species. The closest recorded sighting of this species is near Boorowa,	Low	Yes (Species credit)	No (surveyed)

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								>100 km south of the Subject Land. Suitable shelter habitat for this species (Kangaroo Grass/socks) and indicator species (<i>Chrysocephalum apiculatum</i>) are not present on the Subject Land (DCCEEW 2024c) and therefore the species is unlikely to occur.			
Golden Sun Moth	<i>Synemon plana</i>	V	V	-	✓	Sp	-	NSW Populations of this species are found between Queanbeyan, Gunning, Young and Tumut with the species historical distribution extending to Bathurst (DCCEEW 2024c). Golden Sun Moths inhabit Natural Temperate Grassland and grassy Box Gum Woodlands dominated by <i>Rytidosperma spp.</i> , <i>Austrostipa spp.</i> or <i>Nassella neesiana</i> (Chilean Needlegrass). Rytidosperma species are present in low densities over the Subject Land, including within rehabilitated areas. This species has been excluded from further assessment due to geographic limitations as it is only known to occur south of the Mid-Western Highway in the Inland Slopes IBRA sub-region (as per BAM section 5.2.1 [2b and 5]).	Nil	No	N/A
Amphibians											
Sloane's Froglet	<i>Crinia sloanei</i>	E	E	-	✓	Sp	-	Sloane's Froglet inhabits wetlands and swamps and areas with periodic inundation. The species' range extends east only as far as Cowra: the closest record is Darby's Falls. The Subject Land is well outside of the range for the species which is not associated with any PCTs identified on the site. It has also not been observed incidentally over surveys within the Subject Land and surrounds in the last 5 years.	Nil	No	N/A
Booroolong Frog	<i>Litoria booroolongensis</i>	E	E	-	✓	Sp	Sp	The Booroolong Frog has a restricted distribution within NSW, occurring along the western-flowing streams of the Great Dividing Range (DCCEEW 2024c). This species occurs in cobble-bedded permanent streams with fringing vegetation, rock crevices and exposed rocks. The closest records of this species occur along the Macquarie River near Bathurst (DCCEEW 2024c). Only one stretch of creek within the Subject Land (Cadiangullong Creek where it is crossed by Panuara Rd)	Low	Yes (Species credit)	No (surveyed)

Common Name	Scientific Name	Threat Status		Database Source			BAM-C Credit	Description and Assessment	Likelihood of Occurrence on Subject Land	Retained in / added to the BAM-C	Confirmed present on the Subject Land
		BC Act	EPBC Act	BioNet	PMST	TDBC					
								has any potential habitat in the form of a rocky stream bed. However, this habitat is considered too degraded to support this species.			
Yellow-spotted Tree Frog	<i>Litoria castanea</i>	CE	CE	-	✓	Sp	Sp	The historical distribution of this species included the New England Tablelands and the southern and central tablelands between Bathurst and Bombala (DCCEEW 2024c). This species inhabits large permanent ponds or slow flowing 'chain-of-ponds' systems with emergent vegetation. The Yellow-spotted Tree Frog is unlikely to occur on the Subject Land due to geographic limitations as this species is only known to occur as one population near Yass. This species occurs within the Orange IBRA sub-region and is associated with PCT 85. However, this species has been excluded from further assessment as PCT 85 is absent from the Orange sub-region (as per BAM section 5.2.1 [2a/c and 5]).	Nil	No	N/A
Southern Bell Frog	<i>Litoria raniformis</i>	E	V	-	✓	Sp	-	This species has conservatively been included in this assessment due to its association with the Inland Slopes IBRA subregion (AMBS, 2023). The Southern Bell Frog was once distributed along the Murray and Murrumbidgee Rivers as far north as Tarana, near Bathurst (DCCEEW 2024c). The Southern Bell Frog inhabits permanent or ephemeral swamps or billabongs along floodplains and river valleys. This species is unlikely to occur on the Subject Land due to geographic limitations as the species only known to occur as isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria.	Nil	No	N/A



APPENDIX I

SERIOUS AND IRRIVERSIBLE IMPACTS

White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland CEEC (Box Gum Woodland)

Box-Gum Woodland CEEC has been listed as a possible SAI due to the following Principles in accordance with the BC Act:

- i. Principle 1: species or ecological community currently in a rapid rate of decline
- ii. Principle 2: species or ecological communities with a very small population size.

Principle 3 (species or area of ecological community with very limited geographic distribution) is not applicable to Box-Gum Woodland as the extent of occurrence (EOO), area of occupancy (AOO) and number of threat-defined locations is unknown in the Threatened Biodiversity Data Collection (TBDC) (DPE 2024).

Principle 4 (species of ecological community is unlikely to respond to improvement measures) does not apply to this CEEC as White Box Woodland has been shown to respond well to measures to improve its habitat and vegetation integrity (VI) (DEH 2006).

1. Actions to Avoid and Minimise Direct and Indirect Impacts

Actions to avoid and minimise direct and indirect impacts are detailed in **Sections 7** and **8**.

Impacts from clearing Box-Gum Woodland CEEC have been avoided or minimised through the design of the Modification by:

Preferentially locating disturbance in areas lacking Box-Gum Woodland CEEC (e.g. Category 1 – exempt land) or where the vegetation/habitat is in the poorest condition (e.g. low quality Derived Native Grassland [DNG]) and;

Condensing the Subject Land by locating infrastructure areas immediately adjacent to open cut mining areas and tailing dams

As a result of the above, areas of more intact Box-Gum Woodland CEEC in the surrounding area would be avoided by the Modification.

Measures to mitigate indirect impacts of the Modification on retained CEEC in adjacent areas would be implemented (e.g. weed, pest animal control as well as dust suppression).

The ecosystem credits described in Section 11.1 are to be offset as a Biodiversity Stewardship Site. This site would facilitate the ecological restoration and ongoing maintenance of Box Gum Woodland through habitat enhancement and revegetation efforts.

Residual impacts to Box-Gum Woodland CEEC include removal of 32.29 ha of Box-Gum Woodland within the Subject Land, comprising 23.63 ha of woody vegetation, and 8.66 ha of derived native grassland. Indirect impacts to remaining Box-Gum Woodland CEEC within the surrounds (e.g. weeds, animal pests, Noisy Miners and dust) are likely to be minimal due to proposed mitigation measures listed above. These indirect impacts are assessed in detail in Section 8.2.

The loss of CEEC has been assessed in accordance with the BAM (DPIE 2020a) and would require offsetting under the Biodiversity Offset Scheme established under the BC Act. The Modification would generate a total of 503 ecosystem credits (PCT 266 and 277) (**Table 37**).

2. Current status

Detailed assessment of the current status of this community is provided in **Table 45**. Box-Gum Woodland CEEC is distributed between the southern Queensland and central Victoria on the western slopes and tablelands of the Great Dividing Range, occurring in NSW in the 'Brigalow Belt South, Nandewar, New England Tableland, South Eastern Queensland, Sydney Basin, NSW North Coast, South Eastern Highlands, South East Corner, NSW South Western Slopes, Victorian Midlands and Riverina Bioregions' (TSSC 2020a).

Table 45. Current Status – Box Gum Woodland

Criteria	Data/ information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
2a. Evidence of reduction in geographic distribution (excluding impacts of the Project) (Principle 1)			
Evidence of reduction in geographic distribution as the current total geographic extent of the TEC in NSW AND the estimated reduction in geographic extent of the TEC since 1970 (not including impact of the proposal)	According to the TSSC (2020b), Box-Gum Woodland 'has undergone a very large historical reduction in geographic distribution (since approximately 1750)' and less than 5% of the original distribution remains. This is supported by Gellie (2005), who estimates 65,070 ha of Box-Gum Woodland CEEC remains in south-eastern NSW from the pre-1750 extent of 917,500 ha (93% cleared). The estimated reduction in geographic extent of Box-Gum Woodland since 1970 is unknown.	Conservation Assessment of White Box – Yellow Box – Blakeley's Red Gum Grassy Woodland and Derived Native Grassland (TSSC 2020a), Forest ecosystem classification and mapping for the Southern CRA region, Volume II Appendices (Thomas <i>et al.</i> 2000).	The exact current total geographic extent of Box-Gum Woodland in NSW is unknown due to data deficiency.
2b. Extent of reduction in ecological function for the TEC (Principle 2)			
Evidence that describes the degree of environmental degradation or disruption to biotic processes	<p>- <i>Change in community structure</i> Unmodified woodland remnants contain 15-30 m tall widely-spaced trees with <30% canopy cover, (Keith 2004; Prober <i>et al.</i> 2017). The understory shrub layer is often sparse or absent, while the groundcover is dominated by perennial tussock grasses and contains high forb diversity (Prober <i>et al.</i> 2017). The Modification would lead to the loss of 23.63 ha of woody vegetation and 8.66 ha of DNG. This would result in the loss of Box-Gum Woodland structure on the Subject Land and may impact the structure of adjacent TEC due to edge-effects.</p> <p>- <i>Change in species composition</i> Because all Box-Gum Woodland CEEC on the Subject Land is to be cleared, all species</p>	Ocean Shores to Desert Dunes: the native vegetation of New South Wales and the ACT (Keith 2004), Temperate Eucalypt Woodlands (Prober <i>et al.</i> 2017) and Notice of and reason for the Final Determination: White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (TSSC 2020a).	

	<p>associated with this TEC would be removed from the site. The groundcover species composition of adjacent Box-Gum Woodland CEEC remnants may be altered due to edge effects.</p> <ul style="list-style-type: none"> - <i>Disruption of ecological processes</i> The loss of 32.29 ha of Box-Gum Woodland on the Subject Land may alter ecological processes in adjacent areas of the TEC through changes in food web interactions and biophysical interactions. Further addressed in Section 8.2. - <i>Invasion and establishment of exotic species</i> Addressed in Section 8.2. - <i>Degradation of habitat</i> Addressed in Section 8.2 and 8.3.1 - <i>Fragmentation of habitat</i> Box-Gum Woodland occurs as small, isolated and highly fragmented ecological community (TSSC 2020a). The Modification would require the removal of 32.29 ha of Box-Gum Woodland CEEC including remnant woodland patches, DNG, exotic grassland and hollow-bearing large trees. This has the potential to indirectly impact adjoining Box-Gum Woodland CEEC remnant woodland patches. The Modification is in a highly fragmented landscape with poor connectivity between remnant woodland patches on and adjacent to subject land. The Modification may lead to the further fragmentation of Box-Gum Woodland CEEC in the local area by increasing the distance between adjoining patches. 		
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3. Deficient or unknown data in the TBDC

Not applicable.

4. Impact Assessment

The impact assessment for Box Gum Woodland CEEC according to Principle 1 and Principle 2 of the BC Act is provided in **Table 46** below.

Table 46. Impact Assessment - Box Gum Woodland CEEC

Criteria	Data/ information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
4a. Impact on the geographic extent of the TEC (Principles 1 and 3) presented by:			
i) Area of TEC to be impacted by the Project (ha)	32.29 ha		
ii) Area of TEC to be impacted by the Project as a percent (%) of the current geographic extent in NSW	According to Gellie (2005) 65,070 ha of Box-Gum Woodland CEEC remains in south-eastern NSW (93%). The loss of 32.29 ha of TEC on the Subject Land accounts for 0.05 per cent of the known geographic extent in south-eastern NSW.	Native vegetation of the Southern Forests: South-east highlands (Gellie 2005)	The total current geographic extent of Box-Gum Woodland in NSW is unknown due to data deficiency.
Area of TEC affected by indirect impacts. The assessor should consider for example, changes to fire regime (frequency, severity), hydrology, pollutants, species interactions (increased competition, changes to pollinators or dispersal), fragmentation, increased edge effects and disease, pathogens and parasites, which are likely to contribute to the loss of flora and/or fauna species characteristic of the TEC	<p>Indirect impacts are discussed in Section 7.1 and 8.2. The area of TEC within 500 m of the Subject Land is 100.89 ha.</p> <p><i>Changes to fire regimes (frequency, severity)</i> The landscape in which the Modification would occur is not prone to fire due to the patchy nature of remnant woodland, and conversion of woodland and native grassland to cropping and intensive grazing. The Modification would not lead to a reduction or an increase in bushfire risk, nor would it significantly affect fire regimes in the surrounds. Measures to mitigate bushfire risk is addressed in the CVO Landscape Management Plan (2021).</p> <p><i>Hydrology (groundwater and surface water)</i></p>	State Vegetation Type Map layer (DPE 2019)	

Criteria	Data/ information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
	<p>Management of changes to surface flows would be carried out as per the CVO Landscape Management Plan (2021). These include management of erosion risk and run-off quality through measures including diversion banks and sediment ponds.</p> <p><i>Pollutants</i> Section 8.2, Table 29.</p> <p><i>Species interactions (increased competition and effects on dispersal)</i> Section 8.2, Table 29.</p> <p><i>Fragmentation</i> Section 8.2, Table 29.</p> <p><i>Increased edge effects</i> Section 8.2</p> <p><i>Likelihood of disturbance</i> Section 8.2</p> <p><i>Disease, pathogens and parasites</i> Section 8.2</p>		
4b. Extent that the proposed impacts are likely to contribute to further environmental degradation or the disruption of biotic processes (Principle 2) of the TEC presented by:			
<i>i)</i> Estimated size of any remaining, but now isolated, areas of the TEC; including areas of the TEC within 500 m of the Subject Land or equivalent area for other types of proposals	<p>Areas of remaining TECs within 500 m of the Subject Land has been calculated by applying PCT filters to the State Vegetation Mapping and VIS.</p> <p>Within the 500 m buffer, 100.89 ha is considered the TEC. This accounts for 4.64% of the overall buffer.</p>	State Vegetation Type Map layer (DPE 2019)	

Criteria	Data/ information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
<p>ii) Impacts on connectivity and fragmentation of the remaining areas of TEC measured by:</p>	<p><i>Average distance between remaining remnants – remnant is retained (m):</i> 50 m.</p> <p><i>Average distance between remaining remnants – remnant is removed (m):</i> 50 m</p> <p><i>Estimated maximum dispersal distance for native flora species characteristic of the TEC:</i> Due to the location of the Subject Land, predominantly adjacent to agricultural land of a similar condition, the distance between the Subject Land and the nearest area of TEC is less than 100 metres. This is the distance measured from the edge of the site to the closest known occurrence of Box-Gum Woodland CEEC adjacent to the Subject Land.</p> <p><i>Area to perimeter ratio of remaining remnants as a result of the development (ratio):</i> The area to perimeter of remaining remnants cannot be calculated as all Box Gum Woodland on the Subject Land would be cleared.</p>		
<p>iii) Condition of the TEC according to the vegetation integrity score for the relevant vegetation zones. The assessor must also include the relevant condition, structure and function condition scores for each vegetation zone.</p>	<p>VI scores for each vegetation zone associated with this TEC are provided in Section 4.5.2. Because the majority of VI scores are >15, ecosystem credit obligations apply, with the exception of PCT 277 exotic which has a VI score of 2.6 (offset phase 1) and 0.5 (offset phase 2) and does not require offsetting.</p>		

Swift Parrot (*Lathamus discolor*)

The Swift Parrot has been listed as a possible SAI due to:

- Principle 1: Rapid Rate of Decline.

Principle 1 applies to the Swift Parrot as per Section 9.1.2 (2.a) of the BAM (DPIE 2020a) as this species is “unlikely to respond to management” because:

- *decline in population of the species in NSW in the past 10 years or three generations (whichever is longer), or*
- *decline in population of the species in NSW in the past 10 years or three generations (whichever is longer) as indicated by: an index of abundance appropriate to the species; decline in geographic distribution and/or habitat quality; exploitation; effect of introduced species, hybridisation, pathogens, pollutants, competitors, or parasites”.*

Principle 2 (species or ecological communities with a very small population size) does not apply to the Swift Parrot as the total NSW population, estimated rate of decline in three years or one generation, number and percentage of mature individuals in each subpopulation, and whether the species is likely to undergo extreme fluctuations is unknown for this species (TSSC 2016c).

Principle 3 (species or area of ecological community with very limited geographic distribution) is not applicable to the Swift Parrot as the species' EOO and AOO are not geographically limited. Principle 3 also does not apply to the Swift Parrot as the threat-defined locations have not been identified and the likelihood of the species' population undergoing extreme fluctuations is unknown (TSSC 2016c).

Principle 4 (species or ecological community that is unlikely to respond to management and is therefore irreplaceable) is also not applicable to the Swift Parrot as: known reproductive characteristics do not severely limit the ability to increase the existing population on a biodiversity stewardship site; the species is not reliant on abiotic habitat which cannot be restored or replaced on a biodiversity stewardship site; and life history traits and/or ecology is known and threatened processes can be controlled on a biodiversity stewardship site (TSSC 2016c).

1. Actions to avoid and minimise direct and indirect impacts

Actions to avoid and minimise direct and indirect impacts are detailed in Sections 7.1 and 8.4 This species is considered an ecosystem credit species, and while the Biodiversity, Conservation and Science Directorate (BCS) within NSW DCCEEW confirmed that the Subject Area is not within a mapped important area for the species. 23.80 ha of potential foraging habitat (winter flowering eucalypts) would be impacted by the Modification, including remnant woodland and plantings. Pre-clearing surveys would be conducted to ensure impacts to any potential individuals are avoided.

No individuals were recorded on site during fauna surveys (BMS 2024) indicating it a Swift Parrot subpopulation would be fragmented by the Modification. The Subject Land would be rehabilitated post construction. The restoration of key habitat features may encourage populations in the surrounding area to re-colonise the site.

2. Current status

Detailed assessment of the Swift Parrot's current status as per Section 9.1.2 of the BAM is in **Table 47**. The Swift Parrot breeds in Tasmania, before migrating to south-eastern mainland Australia between

February and October. In NSW, the Swift Parrot occurs predominantly in woodlands and forests where it feeds on insects, pollen and nectar, favouring winter flowering trees such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Forest Red Gum, Mugga Ironbark and White Box (DCCEEW 2024c). According to the Saving Our Species program, there are three Priority Management Sites for the Swift Parrot: Central Coast, Riverina and Tarcutta Hills (SOS n.d.).

Item listed above (*decline in population of the species in NSW in the past 10 years or three generations [whichever is longer]*) is applicable to the Swift Parrot which has experienced a population decline of $\geq 80\%$ in 10 years or three generations (DCCEEW 2024g). The Subject Land is not mapped within the Important Area Habitat Map for the Swift Parrot (SOS n.d.). However, 23.80 ha of vegetation to be cleared is considered potential foraging habitat and the species is an ecosystem credit species.

Table 47. Current Status – Swift Parrot

Criteria	Data/ information	Data sources	Details of data deficiency, assumptions, reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
2a. evidence of rapid decline (Principle 1) presented by an estimate of the:			
<i>i. decline in population of the species in NSW in the past 10 years or three generations (whichever is longer)</i>	The Swift Parrot experienced significant population decline in NSW and is projected to continue declining at a rate of 87% over three generations (TSSC 2016c).	Threatened Species Scientific Committee (TSSC)	TSSC listing advice states current population numbers are unknown and declining rates may be higher.
<i>ii. decline in population of the species in NSW in the past 10 years or three generations (whichever is longer) as indicated by: an index of abundance appropriate to the species; decline in geographic distribution and/or habitat quality; exploitation; effect of introduced species, hybridisation, pathogens, pollutants, competitors or parasites</i>	<ul style="list-style-type: none"> - Swift Parrots experience reduction in geographic distribution through ongoing land clearing and agricultural expansion in NSW and production forestry in Tasmania. In NSW, over 70% of important habitat has been cleared since European settlement. Additionally, habitat quality is reduced by wildfires through destruction of nesting trees (TSSC 2016c). - The Swift Parrot is a valued species by international bird collectors and has been targeted by illegal trade, however the extent of this impact is unknown. - The Swift parrot has been critically impacted by predation from Sugar Gliders, which target not only the eggs but also the breeding female. The species is also impacted by competition for resources from large, more aggressive birds like honey eaters. - The species has been impacted by the Psittacine Beak and Feather Disease (PBFD) disease 	Threatened Species Scientific Committee (TSSC) Conservation advice	The extent of illegal trade impacts is unknown.

3. Deficient or unknown data in the TBDC

Not applicable.

4. Impact Assessment

The impact assessment for the Swift Parrot according to Principle 1 of the BC Act is in **Table 48** below.

Table 48. Impact assessment – Swift Parrot

Impact	Data / information	Data sources	Details of data deficiency, assumptions or reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
4a. The impact on the species' population (Principles 1 and 2) presented by:			
i. <i>An estimate of the number of individuals (mature and immature) present in the subpopulation on the Subject Land (the site may intersect or encompass the subpopulation) and as a percentage of the total NSW population</i>	The Swift Parrot may utilise the Subject Land for foraging (DCCEEW 2024c) due to the presence of winter flowering eucalypts, however the species has not been recorded near Orange and no individuals were recorded during BMS threatened species targeted surveys (BMS 2024). The number of individuals in NSW is not accurately known. Garnett <i>et al.</i> (2011) estimate approximately 2,000 mature individuals occur in the wild based on the Bird Action Plan 2010 assessment process. However, the current total population is likely considerably less than 2,000 birds (TSSC 2016c).	Baseline Fauna Survey Report (BMS 2024) TSSC Conservation Advice <i>Lathamus discolor</i> . Swift Parrot (TSSC 2016c) The Action Plan for Australia Birds 2010 (Garnett <i>et al.</i> 2011) Bionet TBDC (DPE 2024)	Details of the total NSW population is unknown due to data deficiency. Therefore, the estimate of the number of individuals present on the site as a percentage of the total NSW population cannot be calculated.
ii. <i>An estimate of the number of individuals (mature and immature) to be impacted by the proposal and as a percentage of the total NSW population, or</i>	Not applicable. Species unit of measure is area. See iii below.		
iii. <i>If the species' unit of measure is area, provide data on the number of individuals on the site, and the estimated number that would be impacted, along with the area of habitat to be impacted by the proposal</i>	No individuals were recorded during targeted threatened species surveys (BMS 2024). This species is considered an ecosystem credit species and 23.80 ha of potential foraging habitat would be impacted by the Modification, including remnant woodland and plantings.	Baseline Fauna Survey Report (BMS 2024)	

4b. Impact on geographic range (Principles 1 and 3) presented by:			
<p><i>i. The area of the species' geographic range to be impacted by the proposal in hectares, and a percentage of the total AOO, or EOO within NSW</i></p>	<p>According to the TSSC, the current estimated EOO for this species is 57,000 km² (Garnett et al. 2011). The estimated AOO is difficult to predict; over a six-year period (2009-2014), Webb estimated the Swift Parrot AOO ranged from 18.5 km² to 355 km² (TSSC 2016c), however the TSSC considers this restrictive taking into account these fluctuations. The area of the species' geographic range to be impacted by the Modification is 23.80 ha, or 0.2380 km². This accounts for 0.0004% of the overall EOO and between 0.07% to 1.3% of the overall AOO.</p>	<p>TSSC Conservation Advice <i>Lathamus discolor</i>: Swift Parrot (TSSC 2016c) The Action Plan for Australia Birds 2010 (Garnett <i>et al.</i> 2011)</p>	
<p><i>ii. The impact on the subpopulation as either: all individuals would be impacted (subpopulation eliminated); OR impact will affect some individuals and habitat; OR impact will affect some habitat, but no individuals of the species would be directly impacted</i></p>	<p>The Modification would affect some potential foraging habitat, but no individuals of the species would likely be directly impacted. No Swift Parrot individuals were recorded on the Subject Land during targeted threatened species searches (BMS 2024). While some suitable habitat occurs within the Subject Land, species presence is considered unlikely based on relative proximity of previous records; one sighting in Emu Swamp and with scattered records occurring west beginning at Canowindra (DCCEEW 2024c). The area of suitable foraging habitat to be affected by the Modification is 23.80 ha of remnant woodland and plantings; pre-clearing surveys would be conducted to ensure impacts to any potential individuals be avoided.</p>	<p>Baseline Fauna Survey Report (BMS 2024) BioNet Atlas (DCCEEW 2024c)</p>	
<p><i>iii. To determine if the persisting subpopulation that is fragmented will remain viable, estimate (based on published and unpublished sources such as scientific publications, technical reports, databases or documented field observations) the habitat area required to support the remaining population, and habitat available within dispersal distance, and distance over which genetic exchange can occur (e.g. seed dispersal) and pollination distance for the species</i></p>	<p>No Swift Parrot subpopulation would be fragmented by the Modification (BMS 2024). The Subject Land would be rehabilitated post construction. The restoration of key habitat features may encourage populations in the surrounding area to re-colonise the site.</p>	<p>Baseline Fauna Survey Report (BMS 2024)</p>	
<p><i>iv. to determine changes in threats affecting remaining subpopulations</i></p>	<p><i>Changes to fire regimes (frequency, severity)</i></p>		

<p><i>and habitat if the proposed impact proceeds, estimate changes in environmental factors including changes to fire regimes (frequency, severity); hydrology, pollutants; species interactions (increased competition and effects on pollinators or dispersal); fragmentation, increased edge effects, likelihood of disturbance; and disease, pathogens and parasites. Where these factors have been considered elsewhere in relation to the target species, the assessor may refer to the relevant sections of the BDAR or BCAR.</i></p>	<p>The landscape in which the Modification would occur is not prone to fire due to the patchy nature of remnant woodland, and conversion of woodland and native grassland to cropping and intensive grazing. The Modification would not lead to a reduction or an increase in bushfire risk, nor would it significantly affect fire regimes in the surrounds. Measures to mitigate bushfire risk is addressed in the CVO Landscape Management Plan (2021).</p> <p><i>Hydrology</i> Management of changes to surface flows would be carried out as per the CVO Landscape Management Plan (2021). These include management of erosion risk and run-off quality through measures including diversion banks and sediment ponds.</p> <p><i>Pollutants:</i> Section 8.2</p> <p><i>Species interactions (increased competition and effects on dispersal):</i> Section 8.2</p> <p><i>Fragmentation:</i> The Modification would not result in significant habitat fragmentation for the Swift Parrot as the Modification would occur within a highly fragmented landscape.</p> <p><i>Increased edge effects:</i> Section 8.2</p> <p><i>Likelihood of disturbance:</i> Section 8.2.</p> <p><i>Disease, pathogens and parasites:</i> Section 8.2.</p>		
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Large-eared Pied Bat (*Chalinolobus dwyeri*)

The Large-eared Pied Bat has been listed in the TBDC as a possible SAI due to:

- Principle 4: species or ecological community that is unlikely to respond to management and is therefore irreplaceable.

Principle 4 applies to the Large-eared Pied Bat as per Section 9.1.2 (2.d) of the BAM (DPIE 2020a) as this species is *“unlikely to respond to management because:*

- Known reproductive characteristics severely limit the ability to increase the existing population on, or occupy new habitat (e.g. species is clonal) on, a biodiversity stewardship site*
- The species is reliant on abiotic habitats which cannot be restored or replaced (e.g. karst systems) on a biodiversity stewardship site, or*
- Life history traits and/or ecology is known but the ability to control key threatening processes at a biodiversity stewardship site is currently negligible (e.g. frogs severely impacted by chytrid fungus)”.*

Principle 1 (species or ecological community currently in a rapid rate of decline) does not apply to the Large-eared Pied Bat due to insufficient data surrounding the total NSW population and evidence of rapid decline in the last 10 years or three generation (TSSC, 2012).

Principle 2 (species or ecological communities with a very small population size) also does not apply as there is insufficient data to determine the total NSW population, estimate the rate of decline in three years or one generation, and the number and percentage of mature individuals in each subpopulation or whether the species is likely to undergo extreme fluctuations is unknown for this species (TSSC, 2012).

Similarly, Principle 3 (species or area of ecological community with very limited geographic distribution) is also not applicable to the Large-eared Pied Bat as the species' extent of occurrence (EOO) and AOO are not geographically limited (Woinarski et al. (2014). Principle 3 additionally does not apply to the Large-eared Pied Bat as the threat-defined locations have not been identified and the likelihood of the species' population undergoing extreme fluctuations is unknown (TSSC, 2012)

1. Actions to avoid and minimise direct and indirect impacts

Actions to avoid and minimise direct and indirect impacts are detailed in Sections 7.1 and 8.4. Targeted fauna surveys recorded possible ultrasonic readings for this species within 2 km of the Subject Land (BMS 2024). This species has been recorded on the northern extent of CVO in the past and is likely to utilise the Subject Land for breeding habitat, however the population identified was not identified as a maternity roost (BMS 2024). All mapped habitat for the Large-eared Pied Bat would be avoided by the Modification.

2. Current status

Detailed assessment of the Large-eared Pied Bat's current status as per Section 9.1.2 of the BAM is in **Table 49**.

Table 49. Current Status – Large-eared Pied Bat

Impact	Data / information	Data sources	Details of data deficiency, assumptions or reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
2d. evidence that the species is unlikely to respond to management (Principle 4) because:			
<p><i>i. known reproductive characteristics severely limit the ability to increase the existing population on, or occupy new habitat (e.g. species is clonal) on, a biodiversity stewardship site</i></p>	<p>The Large-eared Pied Bat relies on rocky outcrops for breeding and revisits the same locations over many years (DCCEEW 2024b).</p> <p>There is insufficient understanding of this species habitat requirements and reproduction timeframes, which may limit the success of interventions through establishment of offset sites (DCCEEW 2024b).</p>	<p>BioNet TBDC (DPE 2024)</p>	
<p><i>ii. the species is reliant on abiotic habitats which cannot be restored or replaced (e.g. karst systems) on a biodiversity stewardship site, or</i></p>	<p>The species is reliant on canopied environments adjacent to suitable roosting caves or overhangs, often sandstone. This combination of suitable foraging and roosting habitat is rare, which is greatly exacerbated by clearing of fertile woodland and alluvial habitats (DECC 2007). However, the species has been recorded in narrow, connected alluvial woodland environments, indicating a high priority for retainment of connected patches (DECC 2007). The species was recorded at the northern extent of CVO in 2021 (DCCEEW 2024b).</p>	<p>Terrestrial Vertebrate Fauna of the Greater Southern Sydney Region (DECC 2007)</p> <p>BioNet TBDC (DPE 2024)</p>	
<p><i>iii. life history traits and/or ecology is known but the ability to control key threatening processes at a biodiversity stewardship site is currently negligible (e.g. frogs severely impacted by chytrid fungus).</i></p>	<p>A large percentage of habitat has already been lost for this species through the clearing and burning of highly fertile woodland landscapes for agricultural and commercial purposes (DECC 2007).</p> <p>Further threats are disturbance to roosting and maternity sites from mining operations, recreational cave divers, goats and predators (DCCEEW 2024b). The species occupy the outer reaches of caves, increasing the risk of disturbance (DERM 2011). These threats can be adequately managed at a stewardship site if maternity sites are protected.</p>	<p>Terrestrial Vertebrate Fauna of the Greater Southern Sydney Region (DECC 2007)</p> <p>BioNet TBDC (DPE 2024)</p>	

3. Deficient or unknown data in the TBDC

Not applicable.

4. Impact Assessment

Under the BC Act an allocation of Principle 4 does not trigger any further impact assessment as any impacts are considered serious and irreversible and the species is unlikely to respond to management measures to mitigate impacts. Additionally, the TBDC hasn't specified any further criteria according to SAII Principle 4 for the Large-eared Pied Bat.

Large Bent-winged Bat (*Miniopterus orianae oceanensis*)

The Large Bent-winged Bat has been listed in the TBDC as a possible SAII due to:

- Principle 4: species or ecological community that is unlikely to respond to management and is therefore irreplaceable.

Principle 4 applies to the Large Bent-wing Bat as per Section 9.1.2 (2.d) of the BAM (DPIE 2020a), which states the species is "*unlikely to respond to management because:*

- Known reproductive characteristics severely limit the ability to increase the existing population on, or occupy new habitat (e.g. species is clonal) on, a biodiversity stewardship site*
- The species is reliant on abiotic habitats which cannot be restored or replaced (e.g. karst systems) on a biodiversity stewardship site, or*
- Life history traits and/or ecology is known but the ability to control key threatening processes at a biodiversity stewardship site is currently negligible (e.g. frogs severely impacted by chytrid fungus)".*

Principle 1 (species or ecological community currently in a rapid rate of decline) and Principle 2 (species has a small population size) do not apply to the Large Bent-wing Bat because the species has large distribution area and it is not possible to determine total population size (DCCEEW 2024b).

Principle 3 (species has a limited geographic location) does not apply to the species as it occurs across much of eastern Australia (Mills 2020).

1. Actions to avoid and minimise direct and indirect impacts

Actions to avoid and minimise direct and indirect impacts are detailed in Sections 7.1, and 8.4. During targeted surveys this species was recorded using an adit within 2 km of the Subject Land by BMS (BMS 2024). This species has been recorded on the northern extent of CVO in the past and is likely to utilise the Subject Land for breeding habitat, however the population identified was not identified as a maternity roost (BMS 2024).

2. Current status

Detailed assessment of the Large Bent-winged Bat's current status as per Section 9.1.2 of the BAM is in **Table 50** below. This species has highly specific reproductive habitat requirements and a low birth rate that lowers its rate of survival and responding to management actions. Furthermore, this species is impacted by exotic pathogens, in particular white nose fungus, further lowering rate of survival.

Table 50. Current Status – Large Bent-winged Bat

Impact	Data / information	Data sources	Details of data deficiency, assumptions or reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
2d. evidence that the species is unlikely to respond to management (Principle 4) because:			
<p><i>i. known reproductive characteristics severely limit the ability to increase the existing population on, or occupy new habitat (e.g. species is clonal) on, a biodiversity stewardship site</i></p>	<p>Large Bent-winged Bats breeding habitat is highly specific and females do not successfully give birth often as they often miscarry; any impacts is considered potentially serious and irreversible (DCCEEW 2024b).</p>	<p>BioNet TBDC (DPE 2024)</p>	
<p><i>ii. the species is reliant on abiotic habitats which cannot be restored or replaced (e.g. karst systems) on a biodiversity stewardship site, or</i></p>	<p>Large Bent-winged Bats utilise caves and manmade structures such as buildings and stormwater tunnels for habitat, however maternity habitat has highly specific temperature and humidity regimes that may be difficult to replicate (DCCEEW 2024b)</p>	<p>BioNet TBDC (DPE 2024)</p>	
<p><i>iii. life history traits and/or ecology is known but the ability to control key threatening processes at a biodiversity stewardship site is currently negligible (e.g. frogs severely impacted by chytrid fungus).</i></p>	<p>The species is vulnerable to a number of threats, particularly exotic pathogens such as white-nose fungus (DCCEEW 2024b). Further threats include:</p> <ul style="list-style-type: none"> - Cave disturbance the public - Loss of high productivity foraging habitat - Cave entrances blocked by human intervention or overgrown vegetation - Inappropriate fire regimes disrupting feeding/breeding activities - Feral cat predation <p>(DCCEEW 2024b)</p>	<p>BioNet TBDC (DPE 2024)</p>	

3. Deficient or unknown data in the TBDC

Not applicable.

4. Impact Assessment

Under the BC Act an allocation of Principle 4 does not trigger any further impact assessment as any impacts are considered serious and irreversible and the species is unlikely to respond to management measures to mitigate impacts. Additionally, the TBDC hasn't specified any further criteria according to SAII Principle 4 for the Large Bent-winged Bat.

Silver-leaf Candlebark (*Eucalyptus canobolensis*)

The Silver-leaf Candlebark has been listed in the TBDC as a possible SAI due to:

- Principle 3: species has a limited geographic distribution and therefore impacts are considered serious and irreversible.

The Silver-leaf Candlebark has a restricted distribution, occurring only in altitudes between 900m – 1,300m on Mount Canobolas in New South Wales.

Principle 1 (species or ecological community currently in a rapid rate of decline) does not apply to this species due to no data indicating rapid decline (TSSC 2010).

Principle 2 (species has a small population size) does not apply to this species currently does not apply as population estimates to be great than 10,000 individuals (TSSC 2010). However, it is noted that future decline is considered likely due to pest infestations and development encroachment by infrastructure and forestry (TSSC 2010).

Principle 4 (species or ecological community that is unlikely to respond to management and is therefore irreplaceable)

1. Actions to avoid and minimise direct and indirect impacts

Actions to avoid and minimise direct and indirect impacts are detailed in Sections 7.1, and 8.4.

2. Current status

Detailed assessment of the Silver-leaf Ironbark's current status as per Section 9.1.2 of the BAM is in **Table 51** below.

Table 51. Current Status – Silver-leaved Candlebark

Impact	Data / information	Data sources	Details of data deficiency, assumptions or reasons for low confidence in information (e.g. TBDC indicates data is unknown or deficient)
2c. Evidence of limited geographic range for the threatened species (Principle 3) presented by:			
i. <i>extent of occurrence</i>	The EOO of this species is estimated at 171 km ² (TSSC 2022).	Conservation Assessment of <i>Eucalyptus canobolensis</i> (TSSC 2022)	
ii. <i>area of occupancy</i>	The AOO of the Silver-leaf Candlebark is 104 km ² (TSSC 2022).	Conservation Assessment of <i>Eucalyptus canobolensis</i> (TSSC 2022)	
iii. <i>number of threat-defined locations (geographically or ecologically distinct areas in which a single threatening event may rapidly affect all species occurrences), and</i>	This species occurs at one threat-defined location, and as such any threatening event has the potential to rapidly affect all species occurrences, such as high intensity fires at short intervals destroying revegetation (TSSC 2022).	Conservation Assessment of <i>Eucalyptus canobolensis</i> (TSSC 2022)	
iv. <i>whether the species' population is likely to undergo extreme fluctuations</i>	Not applicable: this species is long lived and is unlikely to undergo extreme population fluctuations (TSSC 2022).	Conservation Assessment of <i>Eucalyptus canobolensis</i> (TSSC 2022)	

3. Deficient or unknown data in the TBDC

Not applicable.

4. Impact Assessment

The impact assessment for the Silver-leaf Candlebark according to Principle 3 is *4b impact on geographic range (Principles 1 and 3)*. During targeted vegetation surveys no Silver-leaf Candlebark species were recorded within the Subject Land, as such zero hectares of the species AOO and EOO within NSW would be impacted by the Modification, negating the need for further impact assessment.



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