# Appendix J

## Charbon Colliery - Biodiversity development assessment report waiver

# CHARBON COLLIERY – MODIFICATION 2 (SSD-08_0211)

## Biodiversity Development Assessment Report (BDAR) Waiver Request

146693
2
11 August 2020

rpsgroup.com

## Document status

| Version | Purpose of document | Authored by | Reviewed by | Approved by | Review date |
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| 1.0 | Draft to Review | Giorginna Xu | Joe May | Arne Bishop | 01 May 2020 |
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## Approval for issue

Arne Bishop  11 August 2020



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# 1 PROPOSED MODIFICATION OVERVIEW

Charbon Coal Pty Limited is proposing a modification to Charbon Colliery's consent SSD 08_0211, under Section 4.55(2) of the Environmental Planning and Assessment Act 1979 (EP&A Act), to import coarse coal reject (CCR) material from Clarence Colliery by train to backfill historical mining areas requiring backfill and rehabilitation. Modification to the SSD consent if approved will authorise:

- Importation of CCR from Clarence Colliery to Charbon by rail. This will involve one fully laden train per day.
- Minimal disturbance to establish a level train unloading area adjacent to the existing rail loop.
- Establish and upgrade haul roads within existing disturbed areas.
- Construction of a link road to facilitate vehicle movements between the proposed hardstand and Charbon's existing haul roads.
- Construction of powerline poles and an additional 11-kV transmission line for Charbon's existing pump shed.
- Use of CCR for ongoing rehabilitation of Charbon.

This Biodiversity Development Assessment Report (BDAR) Waiver Request aims to identify the planned scope and potential impacts of the proposed modification. This report demonstrates that the proposed development is unlikely to have any significant impact on biodiversity values within the Charbon Assessment Area (CAA) (**Figure 1**).

## 1.1 Proponent name and contact details

**Proponent Name:** Centennial Coal Company Limited - Charbon

**Proponent Contact:** Iain Hornshaw (Approvals Coordinator)

**Proponent Contact Number:** +61 (0) 2 4935 8901

**Proponent Address:** 100 Miller Road, Fassifern, NSW 2283

**Project ID:** Charbon Coal Pty Limited is proposing a modification to Charbon Colliery's consent **SSD 08_0211**, under Section 4.55(2) of the EP&A Act.

## 1.2 Persons preparing the application

Giorginna XU prepared this BDAR Waiver Form and a field survey was conducted by Joe May. Giorginna and Joe are suitably qualified persons to prepare this BDAR Waiver application with a Bachelor degrees in Environmental Science and a Master degree in Environmental Management respectively.

Giorginna is a field ecologist with expertise in flora and fauna identification and the preparation of a variety of ecology-based report types.

Joe is an accredited Biodiversity Assessment Method (BAM) Assessor with over 6 years' experience as an ecological consultant. He has experience in a vast array of environmental and biodiversity reports and plans, requiring an in depth understanding of relevant local, state and federal legislation and policies pertaining to each. Joe is accomplished with Fauna and Flora recognition and classification.

## 1.3 Site Details

**Street Address:** Charbon Road, Charbon NSW 2848 Australia

**Lot/Section/Plan no:** 102/-/DP879293

**LGA:** Mid-Western Regional Council

## 1.4 Description of existing development site

The proposed development is situated at Charbon Colliery within a heavily disturbed and cleared Mining Area (MIA; **Figure 1**).

The proposed minor disturbance will be implemented within existing mining infrastructure, specifically adjacent to the rail loop and in several areas along the haul road that is proposed to be widened (see **Figure 2**). The proposed modification will include the widening of a haul road in three locations containing native vegetation (see RDP 1, 6 and 7 on **Figure 2**) and minor disturbance to a proposed area adjacent to the Charbon rail loop required to unload containers from the trains. The three locations contain some scattered trees which are largely devoid of groundcover (see photo points 1, 6 and 7 in **Appendix A**).

## 1.5 Definitions

**Table 1 Terms and definitions used in report**

| Term | Definition |
|---|---|
| BAM | Biodiversity Assessment Method |
| BDAR | Biodiversity Development Assessment Report |
| BOS | Biodiversity Offset Scheme |
| CAA | Charbon Assessment Area |
| CCR | Coarse Coal Reject |
| LGA | Local Government Area |
| MIA | Mining Infrastructure Area |
| TECs | Threatened Ecological Communities |

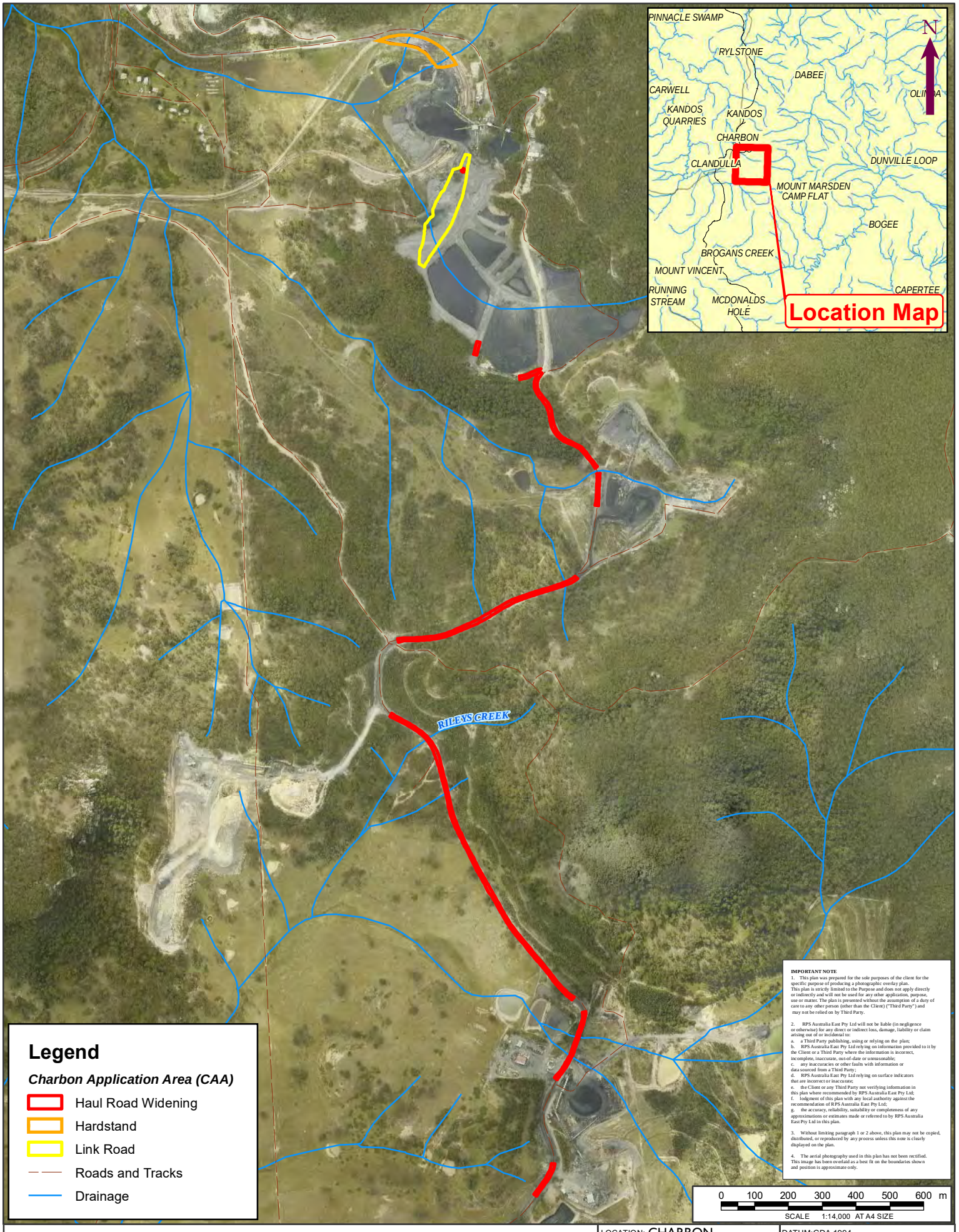



**FIGURE 1: SITE LOCATION**

| | |
|---|---|
| LOCATION: CHARBON | DATUM:GDA 1994<br>PROJECTION: GDA 1994 MGA Zone 56 |
| JOB NO.: **PR 146693**<br>PURPOSE: MONITORING<br>Technician: Natalie.Wood Date: 28/07/2020 | Data Sources:<br>RPS, Client<br>mga56_Charbon_2015 |

CLIENT: CENTENNIAL

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
Unit 2A, 45 Fitzroy Street, Carrington, NSW, Australia, 2294 PO Box 120, Carrington, NSW, 2294
T: 02 4940 4200 F: 02 4940 4299 www.rpsgroup.com.au

Path: S:\Centennial\All Jobs\146693 Charbon Due Diligence Road Widening\10 - Drafting\Arcgis Map Documents\Eco\146693 Figure 1 Location B A4 20200727.mxd

## 1.6 Impacts on Biodiversity Values

Impacts on biodiversity values are addressed in the following section of this report, as detailed in **Table 2** below.

**Table 2 Impacts on biodiversity values from the proposed modification**

| Biodiversity Value | Meaning | Relevance | Section addressed |
|---|---|---|---|
| Vegetation abundance | Occurrence and abundance of vegetation at a particular site | NA | 1.7 |
| Vegetation integrity | Degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state | NA | 1.8 |
| Habitat suitability | Degree to which the habitat needs of threatened species are present at a particular site | NA | 1.9 |
| Threatened species abundance | Occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site | NA | 1.9 |
| Habitat connectivity | Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range | NA | 1.10 |
| Threatened species movement | Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle | NA | 1.10 |
| Flight path integrity | Degree to which the flight paths of protected animals over a particular site are free from interference | NA | 1.10 |
| Water sustainability | Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site | N/A | 1.11 |

## 1.7 Occurrence and abundance of vegetation within the CAA

The proposed area of modification lies within a heavily disturbed area. The proposed hardstand and widening of haul roads will occur within existing mining infrastructure adjacent to the rail loop and the verges of existing roads.

A field survey was conducted on 19th March 2020 which identified the area as primarily void of native vegetation. A few scattered trees were identified within the CAA; however, none of these trees were hollow-bearing nor do they form part of an Endangered Ecological Community (EEC). The majority of vegetation within the CAA consists of exotic groundcover species and other woody weeds.

### 1.7.1 Impact avoidance

The proposed clearing for the proposed modification is limited to 0.04ha. The proposed modification has been designed to utilise existing access tracks, therefore minimising the need to clear native vegetation. Three locations contain some scattered trees which are largely devoid of groundcover (see photo points 1, 6 and 7 in **Appendix A**). **Appendix C** and **D** provide state and federal Assessments of Significance (AoS) for any state or federally listed species that have a moderate or higher likelihood of occurrence. The AoS's demonstrate that no significant impact is likely to be incurred on any threatened species as a result of the proposed modification.

## 1.8 Vegetation Integrity

The composition, structure and function of vegetation within the CAA and adjacent areas has been subject to a history of disturbance and land clearing greatly altering it from a natural state.

Charbon Colliery has been in operation since the 1920s and initially supplied coal for the former Charbon Cement works until its closure in 1977. The mine continued to produce coal for local consumption until coal reserved were exhausted and mining ceased in 2015.

As such, much of the surrounding area has been subject to land degradation for almost 100 years including, but not limited to:

- Undermining and related subsidence and erosion impacts;
- Land clearing and fragmentation for mining infrastructure;
- Erosion and water table alteration and contamination; and
- Surface water flow obstruction and alteration.

As a result, the vegetation within the CAA persists in a cleared and highly disturbed state.

## 1.9 Habitat Suitability and Threatened Species Abundance

The CAA for the modification lies within disturbed and cleared areas. The proposed minor disturbances will be implemented within existing MIA, specifically adjacent to the rail loop and existing road verges.

No threatened species or ecological communities are considered likely to be impacted as a result of the proposed modification (refer to **Appendix C** and **D)**. The area is void of karsts, cliffs, rocks and other geological features of significance. As such, there are no anticipated potential impacts on these habitat features.

Impacts of the proposed modification will be limited to:

- Clearance of native and non-native vegetation;
- Minor land disturbance during construction;
- Minor dust emissions during construction; and
- Vehicle and plant access to and within the site proximity.

The proposed modification aims to mitigate these impacts by implementing the following controls:

- Construction works to occur during daylight hours to minimise noise disturbance;
- Dust suppression and sediment transport will be managed throughout construction duration; and
- Vehicles and plant equipment are to remain on existing roadways and tracks where practicable, a speed limit of 20km/hr will apply during construction to ensure the risk of fauna strike is adequately managed.

## 1.10 Habitat Connectivity and Threatened Species Movement

Protected species flight paths are not likely to occur over the CAA.

Due to the site's disturbed nature and isolation from remnant native vegetation and associated foraging habitat, it is not expected that the CAA constitutes an active flyway or flight path for avifauna or bat species.

Large tracts of connected vegetation occur within the wider region, fauna generally travel and migrate through existing connected vegetation of higher potential foraging and roosting habitat value and minimise predation pressures. The proposed modification will result in minor disturbances to establish a level train unloading area adjacent to the rail loop, and to establish and upgrade haul roads throughout existing disturbed areas.

Although impacts upon fauna flight path integrity are not anticipated, the following controls will be implemented:

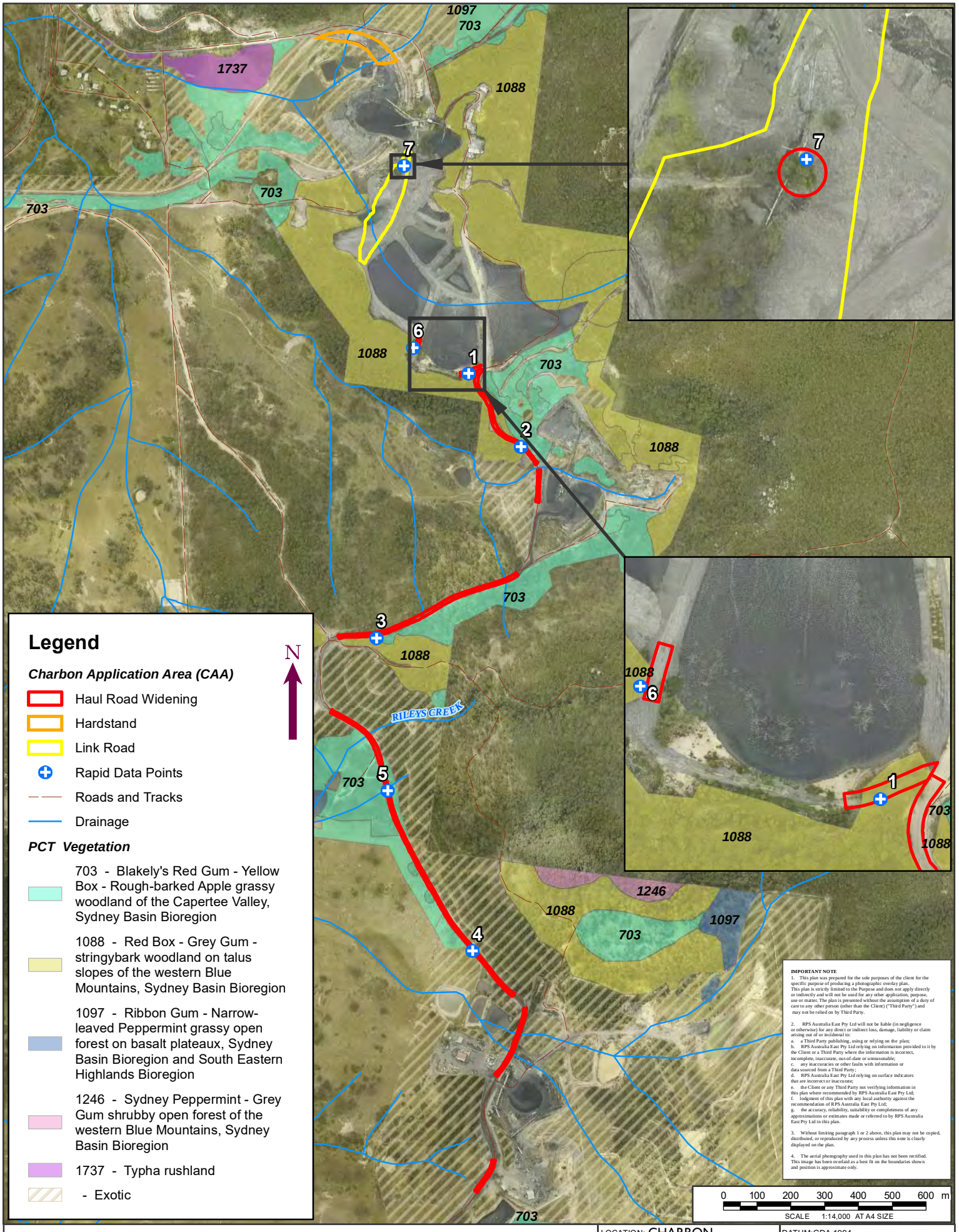
- Construction works to occur during daylight hours to minimise noise disturbance;
- Dust suppression and sediment transport will be managed throughout construction duration; and
- Vehicles and plant equipment are to remain on existing roadways and tracks where practicable, a speed limit of 20km/hr will apply during construction to ensure the risk of fauna strike is adequately managed.

### 1.10.1 Proposed minor disturbances

The proposed minor disturbances will include creating a level train unloading area adjacent to the rail loop, the establishment of a link road and upgrade to haul roads throughout existing disturbed areas.

## 1.11 Water Sustainability

The proposed modification would utilise existing roads with minor impacts to native vegetation. Therefore, it is not expected to cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or EECs.




## Legend

***Charbon Application Area (CAA)***

- Haul Road Widening
- Hardstand
- Link Road
- Rapid Data Points
- Roads and Tracks
- Drainage

***PCT Vegetation***

- 703 - Blakely's Red Gum - Yellow Box - Rough-barked Apple grassy woodland of the Capertee Valley, Sydney Basin Bioregion
- 1088 - Red Box - Grey Gum - stringybark woodland on talus slopes of the western Blue Mountains, Sydney Basin Bioregion
- 1097 - Ribbon Gum - Narrow-leaved Peppermint grassy open forest on basalt plateaux, Sydney Basin Bioregion and South Eastern Highlands Bioregion
- 1246 - Sydney Peppermint - Grey Gum shrubby open forest of the western Blue Mountains, Sydney Basin Bioregion
- 1737 - Typha rushland
- Exotic



# FIGURE 2: VEGETATION MAPPING

| | |
|---|---|
| LOCATION: CHARBON | DATUM:GDA 1994<br>PROJECTION: GDA 1994 MGA Zone 56 |
| JOB NO.: **PR 146693**<br>PURPOSE: MONITORING<br>Technician: Natalie.Wood Date: 28/07/2020 | Data Sources:<br>RPS, Client<br>mga56_Charbon_2015 |

CLIENT: CENTENNIAL

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
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Path: S:\Centennial\All Jobs\146693 Charbon Due Diligence Road Widening\10 - Drafting\Arcgis Map Documents\Eco\146693 Figure 2 Vegetation Mapping B A4 20200727.mxd

# 2 FIELD INVESTIGATION

## 2.1 Methodology

## 2.2 Desktop Assessment

Initial desktop investigations were conducted using the NSW Wildlife Atlas data search tool and EPBC Act Protected Matters search tool to identify threatened flora, fauna and ecological communities with the potential to occur within a 10 km radius of the CAA (see **Table 1)**.

A preliminary Likelihood of Occurrence (LoO) assessment was prepared for species identified through these database searches and was updated following field survey validation (i.e. habitat assessments). The field validated LoO assessment, as provided in **Appendix B**, identifies species with a 'moderate or greater likelihood of occurring', and hence required further assessments under the BC Act and EPBC Act

An EP&A Act 5-Part Test of Significance and/or an EPBC Act Assessment of Significance was prepared for species identified in the Likelihood of Occurrence Assessment as requiring further assessment (refer to **Appendix C** and **D**).

## 2.3 Field Surveys

Site inspections were carried out by RPS Ecologists on 19 March 2020 with the purpose of identifying the potential incidence of threatened flora, fauna and/or ecological communities listed under the BC Act and EPBC Act.

The CAA was inspected on-foot to characterise the ecological attributes of the impact areas. The targeted surveys for threatened flora species, opportunistic fauna surveys and ground truthing of threatened ecological communities included recording and note taking of:

- Threatened flora and fauna locations.
- Threatened Ecological Community (TEC) delineation.
- Opportunistic sightings and secondary indications of fauna.
- Important habitat features such as hollow bearing trees or burrows.

Surveys along proposed link road and areas of proposed haul road widening were conducted either side of the existing tracks to account for a total 5m width.

# 3 RESULTS

## 3.1 Desktop

Desktop assessments identified 48 threatened fauna species and 21 threatened flora species listed as Threatened under the BC Act and/or EPBC Act and having potential to occur.

**Table 3 Combined Threatened Species list generated by the NSW Wildlife Atlas online search tool and the EPBC Act Protected Matters search tool.**

| Scientific Name (Common Name) | BC Act | EPBC Act |
|---|---|---|
| *Anthochaera phrygia* (Regent Honeyeater) | CE | E,M |
| *Aprasia parapulchella* (Pink-tailed Legless Lizard) | V | V |
| *Apus pacificus* (Fork-tailed Swift) | - | M |
| *Artamus cyanopterus cyanopterus* (Dusky Woodswallow) | V | - |
| *Botaurus poiciloptilus* (Australasian Bittern) | E | E |
| *Caladenia attenuata* | CE | CE |
| *Calidris ferruginea* (Curlew Sandpiper) | E | - |
| *Callistemon megalongensis* | CE | CE |
| *Callocephalon fimbriatum* (Gang-gang Cockatoo) | V | - |
| *Calyptorhynchus lathami* (Glossy Black-Cockatoo) | V | - |
| *Chalinolobus dwyeri* (Large-eared Pied Bat) | V | V |
| *Climacteris picumnus victoriae* (Brown Treecreeper (eastern subspecies)) | V | - |
| *Daphoenositta chrysoptera* (Varied Sittella) | V | - |
| *Dasyurus maculatus maculatus* (Spotted-tailed Quoll) | V | E |
| *Delma impar* (Striped Legless Lizard) | V | V |
| *Dichanthium setosum* | V | V |
| *Epthianura albifrons* (White-fronted Chat) | V | - |
| *Eucalyptus aggregata* (Black Gum) | V | - |
| *Eucalyptus alligatrix subsp. Miscella* | V | V |
| *Eucalyptus cannonii* | V | - |
| *Euphrasia arguta* | CE | CE |
| *Falsistrellus tasmaniensis* (Eastern False Pipistrelle) | V | - |
| *Genoplesium superbum* (Superb Midge Orchid) | E | - |
| *Glossopsitta pusilla* (Little Lorikeet) | V | - |

| | | |
|---|---|---|
| *Grantiella picta*<br>(Painted Honeyeater) | V | - |
| *Grevillea evansiana*<br>(Evans Grevillea) | V | V |
| *Grevillea obtusiflora*<br>(Grevillea obstusiflora) | E | E |
| *Heleioporus australiacus*<br>(Giant Burrowing Frog) | V | V |
| *Hieraaetus morphnoides*<br>(Little Eagle) | V | - |
| *Hirundapus caudacutus*<br>(White-throated Needletail) | - | M |
| *Homoranthus darwinioides* | V | V |
| *Hoplocephalus bungaroides*<br>(Broad-headed Snake) | E | V |
| *Lathamus discolor*<br>(Swift Parrot) | E | CE |
| *Leipoa ocellata*<br>(Malleefowl) | E | V, M |
| *Leucochrysum albicans var. tricolor*<br>(Hoary Sunray) | Not listed | V |
| *Litoria booroolongensis*<br>(Booroolong Frog) | E | E |
| *Lophoictinia isura*<br>(Square-tailed Kite) | V | - |
| *Melithreptus gularis*<br>(Black-chinned Honeyeater (eastern subspecies)) | V | - |
| *Miniopterus schreibersii Oceanensis*<br>(Eastern Bentwing-bat) | V | - |
| *Mixophyes balbus*<br>(Stuttering Frog) | E | V |
| *Monarcha melanopsis*<br>(Black-faced Monarch) | - | M |
| *Motacilla flava*<br>(Yellow Wagtail) | - | MAR, MIG |
| *Myiagra cyanoleuca*<br>(Satin Flycatcher) | - | M |
| *Ninox connivens*<br>(Barking Owl) | V | - |
| *Ninox strenua*<br>(Powerful Owl) | V | - |
| *Numenius madagascariensis*<br>(Eastern Curlew) | - | CE |
| *Nyctophilus corbeni*<br>(South-eastern Long-eared Bat) | V | V |
| *Paralucia spinifera*<br>(Bathurst Copper Butterfly) | E | V |
| *Persoonia marginata* | V | V |
| *Petauroides volans*<br>(Greater Glider) | - | V |
| *Petrogale penicillata*<br>(Brush-tailed Rock-wallaby) | E | V |
| *Petroica boodang*<br>(Scarlet Robin) | V | - |

| | | |
|---|---|---|
| *Phascolarctos cinereus* (Koala) | V | V |
| *Polytelis swainsonii* (Superb Parrot) | V | V |
| *Pomaderris cotoneaster* | E | E |
| *Prasophyllum petilum* (Tarengo Leek Orchid) | E | E |
| *Prasophyllum sp. Wybong* (A leek orchid) | - | CE |
| *Prostanthera cryptandroides subsp. Cryptandroides* | V | - |
| *Prostanthera stricta* | V | V |
| *Pseudomys novaehollandiae* (New Holland Mouse) | - | V |
| *Pteropus poliocephalus* (Grey-headed Flying-fox) | V | V |
| *Pultenaea sp. Olinda* | E | - |
| *Rhipidura rufifrons* (Rufous Fantail) | - | M |
| *Rostratula australis* (Australian Painted Snipe) | E | E, M |
| *Saccolaimus flaviventris* (Yellow-bellied Sheathtail-bat) | V | - |
| *Scoteanax rueppellii* (Greater Broad-nosed Bat) | V | - |
| *Swainsona recta* (Small Purple-pea) | E | E |
| *Thesium australe* (Austral Toadflax) | V | V |
| *Veronica blakelyi* | V | - |
| *Vespadelus troughtoni* (Eastern Cave Bat) | V | - |

The Likelihood of Occurrence assessment (**Appendix B**) identified 14 species that require further assessment under the BC Act and EPBC Act to assess the level of impacts, as listed below in **Table 2**.

**Table 4 Threatened species requiring further assessment**

| Scientific Name (Common Name) | BC Act | EPBC Act |
|---|---|---|
| *Anthochaera phrygia* (Regent Honeyeater) | CE | E,M |
| *Artamus cyanopterus cyanopterus* (Dusky Woodswallow) | V | - |
| *Callocephalon fimbriatum* (Gang-gang Cockatoo) | V | - |
| *Climacteris picumnus victoriae* (Brown Treecreeper (eastern subspecies)) | V | - |
| *Daphoenositta chrysoptera* (Varied Sittella) | V | - |
| *Glossopsitta pusilla* (Little Lorikeet) | V | - |
| *Lathamus discolor* (Swift Parrot) | E | CE |
| *Melithreptus gularis* (Black-chinned Honeyeater (eastern subspecies)) | V | - |

| | | |
|---|---|---|
| *Ninox connivens* (Barking Owl) | V | - |
| *Ninox strenua* (Powerful Owl) | V | - |
| *Petroica boodang* (Scarlet Robin) | V | - |

## 3.2 Field Survey

Eleven species were determined to have a moderate or greater likelihood of occurrence and required surveying within the CAA (**Table 2** and **Appendix B**). None of the targeted species were detected during survey efforts conducted on the 19th March 2020.

# 4 CONCLUSION

Clearing of 0.04 ha of native vegetation is anticipated as a result of the proposed modification. Field surveys identified that the CAA is primarily void of native vegetation. A few scattered trees were identified within the road verges which are proposed to be removed as part of the proposed haulage road widening works; however, none of these trees were hollow-bearing, nor do they form part of an EEC. No threatened species or ecological communities or their habitat were identified within this area. As such, the likelihood of impacts on native vegetation as a result of the proposed modification is considered negligible.

Due to the isolated and disturbed nature of the site and lack of significant vegetation, the proposed minor disturbances are not considered to contribute to a loss of habitat connectivity of remnant vegetation or communities or fragment the movement of threatened species across their range. Furthermore, the narrow and linear nature of the proposed haul road and train unloading area reduces the potential for native species disturbance.

The proposed minor disturbances include the widening of a haul road and minor disturbance to a proposed area adjacent to the Charbon rail loop required to unload containers from the trains. However, the low-lying nature of the proposed infrastructure is not expected to present a barrier to the movement of native fauna or impact potential flight path integrity.

The CAA is void of karsts, cliffs, rocks and other geological features of significance. As such, there are no anticipated impacts on these potential habitat features.

# Appendix A
## Photo Points

RDP 1


RDP 2

RDP 3

RDP 4

RDP 5

RDP 6

**RDP 7**

# Appendix B
# Likelihood of Occurrence (LoO)

| Scientific Name (Common Name) | TSC Act | EPBC Act | Habitat | Number of Records (BCD 2020) | Likelihood of Occurrence |
|---|---|---|---|---|---|
| *Anthochaera phrygia* (Regent Honeyeater) | CE | E,M | The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. The distribution of the species has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Aprasia parapulchella* (Pink-tailed Legless Lizard) | V | V | Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by kangaroo grass. Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Apus pacificus* (Fork-tailed Swift) | - | M | The Fork-tailed Swift is almost exclusively aerial, flying from less then one metre to at least 300 metres above ground and probably much higher. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Artamus cyanopterus cyanopterus (Dusky* Woodswallow) | V | - | The Dusky Woodswallow is widespread in eastern, southern and southwestern Australia. In New South Wales it is widespread from coast to inland, including the western slopes of the Great Dividing Range and farther west. It is sparsely scattered in, or largely absent from, much of the Upper Western region. The Dusky Woodswallow is often reported in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. At sites where Dusky Woodswallows are recorded the understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris (Higgins and Peter 2002). Birds are also often observed in farm land, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Botaurus poiciloptilus* | E | E | The Australasian Bitterns is widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |

| | | | | | |
|---|---|---|---|---|---|
| (Australasian Bittern) | | | state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes and spikerushes. | | |
| *Caladenia attenuata* | CE | CE | Caladenia attenuata is endemic to NSW. It has a highly restricted distribution, having been recorded from 2 localities within the Bathurst Ilford region with an area of occupance estimated to be 8 square kilometres. Recent surveys have only found an unconfirmed specimen from the Ilford site. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Calidris ferruginea* (Curlew Sandpiper) | E | - | The Curlew Sandpiper is distributed around most of the coastline of Australia. It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes the inland | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Callistemon megalongensis* | CE | CE | Occurs in shrubby swamp habitat and swampy woodland. Associated species include Callistemon citrinus, Leptospermum morrisonii, L. juniperinum, L. polygalifolium, L. obovatum, Empodisma minus and Grevillea asplenifoliawith occasional emergent Melaleuca linearifolia and Eucalyptus camphora | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Callocephalon fimbriatum* (Gang-gang Cockatoo) | V | - | In summer, occupies tall montane forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. Also occur in subalpine snow gum woodland and occasionally in temperate or regenerating forest. In winter, occurs at lower altitudes in drier, more open eucalypt forests and woodlands, particularly in box-ironbark | 1 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Species recently observed in the locality (NSW BioNet records). |

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| | | | assemblages, or in dry forest in coastal areas. It requires tree hollows in which to breed. | | |
| *Calyptorhynchus lathami* (Glossy Black-Cockatoo) | V | - | Inhabits forest with low nutrients, characteristically with key Allocasuarina spp. Tends to prefer drier forest types with a middle stratum of Allocasuarina below Eucalyptus or Angophora. Often confined to remnant patches in hills and gullies. Breed in hollows stumps or limbs, either living or dead. Endangered population in the Riverina. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Chalinolobus dwyeri* (Large-eared Pied Bat) | V | V | Located in a variety of drier habitats, including the dry sclerophyll forests and woodlands to the east and west of the Great Dividing Range. Can also be found on the edges of rainforests and in wet sclerophyll forests. This species roosts in caves and mines in groups of between 3 and 37 individuals. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Climacteris picumnus victoriae* (Brown Treecreeper (eastern subspecies)) | V | - | Found in eucalypt woodlands (including box-gum woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and river red gum forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains. | 1 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Species recently observed in the locality (NSW BioNet records). |
| *Daphoenositta chrysoptera* (Varied Sittella) | V | - | Inhabits wide variety of dry eucalypt forests and woodlands, usually with either shrubby under storey or grassy ground cover or both, | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is |

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| | | | in all climatic zones of Australia. Usually in areas with rough-barked trees, such as stringybarks or ironbarks, but also in paperbarks or mature Eucalypts with hollows. | | outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Dasyurus maculatus maculatus* (Spotted-tailed Quoll) | V | E | Spotted-tailed Quoll are found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Queensland. Only in Tasmania is it still considered common. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Delma impar* (Striped Legless Lizard) | V | V | Found mainly in natural temperate grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near natural temperate grassland and occasionally in open box-gum woodland. Sometimes found in grasslands with significant amounts of surface rocks, which are used for shelter. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Dichanthium setosum* | V | V | Occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, as well as in Queensland and Western Australia. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Epthianura albifrons* (White-fronted Chat) | V | - | Low vegetation in salty coastal and inland areas and crops. Runs along ground and is found in local flocks in Winter. | 1 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Eucalyptus aggregata* (Black Gum) | V | - | Found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. Has a moderately narrow distribution, occurring mainly in the | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |

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| | | | wetter, cooler and higher parts of the tablelands in the lowest parts of the landscape, on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Also occurs as isolated paddock trees in modified native or exotic pastures. | | |
| *Eucalyptus alligatrix subsp. Miscella* | V | V | Only known from a single area south-west of Rylstone. Grows in sclerophyll woodland on shallow relatively infertile soils (grey brown loam with ironstone). It may have been part of a more-extensive open woodland community prior to the commencement of clearing and grazing. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Eucalyptus cannonii* | V | - | Restricted to an area of about 100 by 60 km in the central tablelands of NSW. The western border is approximately marked by a line between Bathurst and Mudgee, while the eastern locations occur approximately on a line between Lithgow and the town of Bylong. Within this area the species is often locally frequent. Recorded from Tablelands Grassy woodland Complex communities and Talus Slope woodland, and in Winburndale Nature Reserve within woodland dominated by Eucalyptus macrorhyncha and Eucalyptus goniocalyx. | 2 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Euphrasia arguta* | CE | CE | Occur in eucalypt forest with a mixed grass and shrub understorey within Nundle State forest. Sites have either been logged in the last few decades, or appear to have regrown from past clearing. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Falsistrellus tasmaniensis* (Eastern False Pipistrelle) | V | - | Inhabit sclerophyll forests, preferring wet habitats where trees are more than 20 m high. Two observations have been made of roosts in stem holes of living eucalypts. There is debate about whether or not this species moves to lower altitudes during winter, or whether they remain sedentary but enter | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available |

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| | | | torpor . This species also appears to be highly mobile and records showing movements of up to 12 km between roosting and foraging sites . | | habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Genoplesium superbum* (Superb Midge Orchid) | E | - | The Superb Midge Orchid occurs predominantly in wet heathland on shallow soils above a sandstone cap but has also been found in open woodland interspersed with heath and dry open shrubby woodland. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Species not recently observed in the locality (NSW BioNet records). |
| *Glossopsitta pusilla* (Little Lorikeet) | V | - | Distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range in NSW, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Mostly occur in dry, open eucalypt forests and woodlands. They feed primarily on nectar and pollen in the tree canopy. Nest hollows are located at heights of between 2 m and 15 m, mostly in living, smooth-barked eucalypts. Most breeding records come from the western slopes. | 1 | High. Habitat values generally consistent with description provided in the BCD TSPD. Habitat is located within known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001). If present, the species is likely to depend on the habitat it occurs within for important life cycle processes; however, the importance of this habitat would depend on additional factors (e.g. size and extent of local population). Species recently observed in the locality (NSW BioNet records). |
| *Grantiella picta* (Painted Honeyeater) | V | - | The Painted Honeyeater is nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. Inhabits boree, brigalow and box-gum woodlands and box-ironbark forests. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Grevillea evansiana* (Evans Grevillea) | V | V | Grows in dry sclerophyll forest or woodland, occasionally in swampy heath, in sandy soils, usually over Hawkesbury sandstone. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Grevillea obtusiflora* (Grevillea obstusiflora) | E | E | Occurs as scattered groups in the understorey of low open eucalypt forest at an altitude of 730 metres above sea level. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |

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| | | | Subspecies fecunda occurs in clusters within low, open scrub beneath open, dry sclerophyll forest, on orange, sandy loam soils with sandstone boulders, at an altitude of 570 metres. | | |
| *Heleioporus australiacus* (Giant Burrowing Frog) | V | V | The Giant Burrowing Frog has been recorded breeding in a range of water bodies associated with more sandy environments of the coast and adjacent ranges from the Sydney Basin south the eastern Victoria. It breeds in hanging swamps, perennial non-flooding creeks and occasionally permanent pools, but permanent water must be present to allow its large tadpoles time to reach metamorphosis. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Hieraaetus morphnoides* (Little Eagle) | V | - | Most abundant in lightly timbered areas with open areas nearby. Often recorded foraging in grasslands, crops, treeless dune fields, and recently logged areas. May nest in farmland, woodland and forest in tall trees. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Hirundapus caudacutus* (White-throated Needletail) | - | M | An aerial species found in feeding concentrations over cities, hilltops and timbered ranges. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Homoranthus darwinioides* | V | V | Grows in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Landforms the species has been recorded growing on include flat sunny ridge tops with scrubby woodland, sloping ridges, | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural |

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| | | | gentle south-facing slopes, and a slight depression on a roadside with loamy sand. | | occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Species not recently observed in the locality (NSW BioNet records). |
| *Hoplocephalus bungaroides* (Broad-headed Snake) | E | V | Occurs almost exclusively in association with communities occurring on Triassic sandstone within the Sydney Basin. Typically found among exposed sandstone outcrops with vegetation types ranging from woodland to heath. Within these habitats they spend most of the year sheltering in and under rock crevices and exfoliating rock. However, some individuals will migrate to tree hollows to find shelter during hotter parts of summer. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Lathamus discolor* (Swift Parrot) | E | CE | The Swift Parrot occurs in woodlands and forests of NSW from May to August, where it feeds on eucalypt nectar, pollen and associated insects . The Swift Parrot is dependent on flowering resources across a wide range of habitats in its wintering grounds in NSW . This species is migratory, breeding in Tasmania and also nomadic, moving about in response to changing food availability. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Leipoa ocellata* (Malleefowl) | E | V, M | Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as inland grey box, ironbark or bimble box woodlands with thick understorey, or in other woodlands such dominated by mulga or native cypress pine species. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Leucochrysum albicans* var. tricolor (Hoary Sunray) | Not listed | V | Hoary Sunray occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Plants can be found in natural or semi-natural vegetation | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of |

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| | | | and grazed or ungrazed habitat. Bare ground is required for germination. In NSW, the species is often found in association with yellow box, Blakely's red gum and red box. | | 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Species not recently observed in the locality (NSW BioNet records). |
| *Litoria booroolongensis* (Booroolong Frog) | E | E | The Booroolong Frog is found along permanent western flowing streams of the Great Dividing Range through most of NSW and down into northern Victorua. Streams range from small slow-flowing creeks to large rivers and the adults are found on or near cobble banks and other rock structures within stream margins and shelter under rocks or amongst vegetation near the ground on the stream edge. The species occurs along streams in both forested areas and open pasture, but has been affected by the presence of the introduced willow tree. Booroolong Frogs sometimes basks in the sun on exposed rocks near flowing water during summer. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Lophoictinia isura* (Square-tailed Kite) | V | - | Typically inhabits coastal forested and wooded lands of tropical and temperate Australia. In NSW it is often associated with ridge and gully forests dominated by Eucalyptus longifolia, Corymbia maculata, E. elata or E. smithii. Individuals appear to occupy large hunting ranges of more than 100km2. They require large living trees for breeding, particularly near water with surrounding woodland -forest close by for foraging habitat. Nest sites are generally located along or near watercourses, in a tree fork or on large horizontal limbs. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Melithreptus gularis* (Black-chinned Honeyeater | V | - | Eucalypt woodlands within an approximate annual rainfall range of 400-700mm | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of |

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| (eastern subspecies)) | | | | | 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Miniopterus schreibersii Oceanensis* (Eastern Bentwing-bat) | V | - | Eastern Bent-wing Bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Mixophyes balbus* (Stuttering Frog) | E | V | Associated with streams in dry sclerophyll and wet sclerophyll forests and rainforests of more upland areas of the Great Dividing Range of NSW and down into Victoria. Breeding occurs along forest streams with permanent water where eggs are deposited within nests excavated in riffle zones by the females and the tadpoles swim free into the stream when large enough to do so. Outside of breeding, individuals range widely across the forest floor and can be found hundres of metres from water | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Monarcha melanopsis* (Black-faced Monarch) | - | M | Found along the coast of eastern Australia, becoming less common further south. Inhabits rainforests, eucalypt woodlands, coastal scrub and damp gullies. It may be found in more open woodland when migrating. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Motacilla flava* (Yellow Wagtail) | - | MAR, MIG | 0 | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Myiagra cyanoleuca* (Satin Flycatcher) | - | M | The Satin Flycatcher is found along the east coast of Australia from far northern Queensland to Tasmania, including south- | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of |

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| | | | eastern South Australia. Found in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. | | occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Ninox connivens* (Barking Owl) | V | - | Generally found in open forests, woodlands, swamp woodlands and dense scrub. Can also be found in the foothills and timber along watercourses in otherwise open country. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Ninox strenua* (Powerful Owl) | V | - | Occupies wet and dry eucalypt forests and rainforests. Can occupy both un-logged and lightly logged forests as well as undisturbed forests where it usually roosts on the limbs of dense trees in gully areas. It is most commonly recorded within red turpentine in tall open forests and black she-oak within open forests. Large mature trees with hollows at least 0.5 m deep are required for nesting. Tree hollows are particularly important for the Powerful Owl because a large proportion of the diet is made up of hollow-dependent arboreal marsupials. Nest trees for this species are usually emergent with a diameter at breast height of at least 100 cm. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Numenius* madagascariensis (Eastern Curlew) | - | CE | The Eastern curlew spends its breeding season in northeastern Asia, including Siberia to Kamchatka, and Mongolia. Its breeding habitat is composed of marshy and swampy wetlands and lakeshores. Most individuals winter in coastal Australia, with a few heading to South Korea, Thailand, Philippines and New Zealand, where they stay at estuaries, beaches, and salt marshes. It uses its long, decurved bill to probe for invertebrates in the | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |

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| | | | mud. It may feed in solitary but it generally congregates in large flocks to migrate or roost. Its call is a sharp, clear whistle, cuuue-reee, often repeated. | | |
| *Nyctophilus corbeni* (South-eastern Long-eared Bat) | V | V | The South-eastern Long-eared Bat has a limited distribution that is restricted around the Murray-Darling Basin in south-eastern Australia. Even in this region its distribution is scattered and it is rarely recorded. It occurs in far eastern South Australia, in areas north of the Murray River, east of Canegrass Station and south of the Barrier Highway. These areas include the Riverland Biosphere Reserve, Danggali Conservation Park and the Birds Australia Gluepot Reserve. It is distributed throughout inland NSW except in the north-west area which is dominated by treeless plains. It can be found in the Hunter Valley, extending from central NSW to the eastern Hunter Valley coast. Considered Nyctophilus timorensis south eastern form under TSC Act. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Paralucia spinifera* (Bathurst Copper Butterfly) | E | V | The Copper Butterfly is only found in the Central Tablelands of NSW. Its habitat is restricted to elevations above 900 m where it feeds exclusively on a form of blackthorn. The butterfly's life cycle relies on a 'mutualistic' relationship with the ant Anonychomyrma itinerans, and on the presence of blackthorn (Bursaria spinosa subsp. lasiophylla). | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Persoonia marginata* | V | V | Grows in dry sclerophyll forest and woodland communities on sandstone. Appears to respond well to disturbance, with greater densities found along the edges of tracks and in areas disturbed by forestry activities. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Petauroides volans* (Greater Glider) | - | V | The Greater Glider occurs in eucalypt forests and woodlands. Utilise tree hollows | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of |

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| | | | | | 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Petrogale penicillata* (Brush-tailed Rock-wallaby) | E | V | Found in rocky areas in a wide variety of habitats including rainforest gullies, wet and dry sclerophyll forest, open woodland and rocky outcrops in semi-arid country. Commonly sites have a northerly aspect with numerous ledges, caves and crevices. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Petroica boodang* (Scarlet Robin) | V | - | The Scarlet Robin is found from SE Queensland to SE South Australia and also in Tasmania and SW Western Australia. In NSW, it occurs from the coast to the inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Phascolarctos cinereus* (Koala) | V | V | Inhabits eucalypt forests and woodlands. The suitability of these forests for habitation depends on the size and species of trees present, soil nutrients, climate and rainfall . | 0 | Moderate. Typical habitat types, important habitat features and/ or known habitat surrogates (e.g. PCTs) are present within the CAA. Habitat is located within known 'extent of occurrence'; however, is outside its known area of occurrence (i.e. standard grid size of 2x2km (IUCN 2001). Incidence may be supplementary to proximal incidence in higher value habitat or associated with modified or degraded habitat. Not recently observed in the locality (NSW BioNet records). |
| *Polytelis swainsonii* (Superb Parrot) | V | V | The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. Inhabits box-gum, box-cypress-pine and boree woodlands and river red gum forest. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |

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| *Pomaderris cotoneaster* | E | E | | 0 | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Prasophyllum petilum* (Tarengo Leek Orchid) | E | E | Grows in open sites within Natural Temperate Grassland at the Boorowa and Delegate sites and in grassy woodland in association with River Tussock Poa labillardieri, Black Gum Eucalyptus aggregata and tea-trees Leptospermum spp. near Queanbeyan and within the grassy groundlayer dominated by Kanagroo Grass under Box-Gum Woodland at Ilford (and Hall, ACT) | | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Species not recently observed in the locality (NSW BioNet records). |
| *Prasophyllum sp. Wybong* (A leek orchid) | - | CE | Endemic to NSW. It is known from seven populations in eastern NSW near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell and Tenterfield. | | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Prostanthera cryptandroides subsp. Cryptandroides* | V | - | At Glen Davis, occurs in open forest dominated by Eucalyptus fibrosa. Other eucalypt species may be present as sub-dominants. In the Denman-Gungal and Widden-Baerami Valley areas, occurs on rocky ridgelines on Narrabeen Group Sandstones in association with a range of communities. | | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Prostanthera stricta* | V | V | A locally dominant undershrub in heath or scrub communities along cliff edges, or as an understorey species within a range of open forest or tall open forest types, or in adjacent transitional communities. Grows in areas of both skeletal soil and on deeper, well-drained soil profiles in areas characterised by steep rocky sideslopes, cliff lines, sandstone platforms, or gentle slopes with exposed sandstone outcroppings. | | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Pseudomys novaehollandiae* (New Holland Mouse) | - | V | The New Holland Mouse currently has a disjunct, fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Across the species' range the | | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |

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| | | | New Holland Mouse is known to inhabit open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes. | | |
| *Pteropus poliocephalus* (Grey-headed Flying-fox) | V | V | This species is a canopy-feeding frugivore and nectarivore of rainforests, open forests, woodlands, melaleuca swamps and banksia woodlands. Bats commute daily to foraging areas, usually within 15 km of the day roost although some individuals may travel up to 70 km. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |
| *Pultenaea sp. Olinda* | E | - | Has been found only in a very limited area of pagoda rock formation east of Rylstone. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Rhipidura rufifrons* (Rufous Fantail) | - | M | Found along the east coast of Australia from far northern Queensland to Tasmania, including south-eastern South Australia. Inhabits tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Rostratula australis* (Australian Painted Snipe) | E | E, M | In NSW, this species has been recorded at the Paroo wetlands, Lake Cowell, Macquarie Marshes and Hexham Swamp. Most common in the Murray-Darling Basin. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Saccolaimus flaviventris* (Yellow-bellied Sheathtail-bat) | V | - | Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Not recently observed in the locality (NSW BioNet records). |

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| *Scoteanax rueppellii* (Greater Broad-nosed Bat) | V | - | Prefer moist gullies in mature coastal forests and rainforests, between the Great Dividing Range and the coast. They are only found at low altitudes below 500 m. In dense environments they utilise natural and human-made opening in the forest for flight paths. Creeks and small rivers are favoured foraging habitat. This species roosts in hollow tree trunks and branches. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Swainsona recta* (Small Purple-pea) | E | E | Before European settlement, this species occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's red gum, yellow box, candlebark gum and long-leaf box. Grows in association with understorey dominants that include kangaroo grass, poa tussocks and spear-grasses. | 0 | Low. Typical habitat types are absent from the CAA; however, formation level vegetation habitat surrogates are present. Irrespective of proximity to the species known 'extent of occurrence' and 'area of occurrence' (i.e. standard grid size of 2x2km (IUCN 2001), the presence of this species would likely be incidental or random and generally inconsistent with natural occurrences. The species is unlikely to depend on available habitat for important life cycle processes such as reproduction. Species not recently observed in the locality (NSW BioNet records). |
| *Thesium australe* (Austral Toadflax) | V | V | Grows in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. It is also found in Tasmania and Queensland and in eastern Asia. Occurs in grassland or grassy woodland. Grows on kangaroo grass tussocks but has also been recorded within the exotic coolatai grass. | 0 | None. Suitable 'vegetation formation level' habitat surrogates are absent from the CAA. Species incidence is not expected and, if present, would represent atypical habitat usage. |
| *Veronica blakelyi* | V | - | Restricted to the western Blue Mountains, near Clarence, near Mt Horrible, on Nullo Mountain and in the Coricudgy Range. Occurs at fewer than 20 locations, none of which is in a conservation reserve. Occurs in eucalypt forest, often in moist areas. | 0 | Undecided |
| *Vespadelus troughtoni* (Eastern Cave Bat) | V | - | The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle | 0 | Undecided |

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| | Range, and there is a single record from southern NSW, east of the ACT. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. |

# Appendix C
# 5-Part Test of Significance

Considerations of the effects on the CAA under the guidelines of Section 7.3 of the BC Act for the concerned threatened species / populations / ecological communities are given below.

Most of the information used for the assessment has been sourced from Biodiversity Conservation Division (BCD) Threatened Species Information and Environmental Impact Assessment Guidelines, BCD Atlas of NSW Wildlife and other published or widely available literature sources such as scientific journals and reports. For the purposes of the Five-Part Test, threatened species have been grouped into 'guilds', that is, species sharing similar habitat or ecological requirements have been grouped and assessed together.

## Fauna

### Woodland and Insectivorous Birds

- *Anthochaera Phrygia* (Regent Honeyeater)
- *Artamus cyanopterus cyanopterus* (Dusky Woodswallow)
- *Climacteris picumnus victoriae* (Brown Treecreeper (eastern subspecies))
- *Daphoenositta chrysoptera* (Varied Sittella)
- *Glossopsitta pusilla* (Little Lorikeet)
- *Lathamus discolour* (Swift Parrot)
- *Melithreptus gularis* (Black-chinned Honeyeater (eastern subspecies))
- *Petroica boodang* (Scarlet Robin)

### Nocturnal Birds of Prey

- *Ninox connivens* (Barking Owl)
- *Ninox strenua* (Powerful Owl)

### Hollow-dependent diurnal Birds

- *Callocephalon fimbriatum* (Gang-gang Cockatoo)

### Phascolarctos cinereus (Koala)

### Factors to be Considered for Threatened Species

a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

c. in relation to the habitat of a threatened species or ecological community:

i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality

d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)

e. whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

## Woodland and Insectivorous Birds

*Anthochaera Phrygia* (Regent Honeyeater)

The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. The distribution of the species has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.

*Artamus cyanopterus cyanopterus* (Dusky Woodswallow)

The Dusky Woodswallow is widespread in eastern, southern and southwestern Australia. In NSW it is widespread from coast to inland, including the western slopes of the Great Dividing Range and farther west. It is sparsely scattered in, or largely absent from, much of the Upper Western region. The Dusky Woodswallow is often reported in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. At sites where Dusky Woodswallows are recorded, the understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris (Higgins and Peter 2002). Birds are also often observed in farmland, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber.

*Climacteris picumnus victoriae* (Brown Treecreeper)

Found in eucalypt woodlands (including box-gum woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; Brown Treecreepers mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. They are also found in mallee and river red gum forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses. They are usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging. They are also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains.

*Daphoenositta chrysoptera* (Varied Sittella)

The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.

*Glossopsitta pusilla* (Little Lorikeet)

Distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range in NSW, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Mostly occur in dry, open eucalypt forests and woodlands. They feed primarily on nectar and pollen in the tree canopy. Nest hollows are located at heights of between 2 m and 15 m, mostly in living, smooth-barked eucalypts. Most breeding records come from the western slopes.

*Lathamus discolour* (Swift Parrot)

The Swift Parrot occurs in woodlands and forests of NSW from May to August, where it feeds on eucalypt nectar, pollen and associated insects. The Swift Parrot is dependent on flowering resources across a wide range of habitats in its wintering grounds in NSW. This species is migratory, breeding in Tasmania and also nomadic, moving about in response to changing food availability.

*Melithreptus gularis* (Black-chinned Honeyeater (eastern subspecies))

Eucalypt woodlands within an approximate annual rainfall range of 400-700mm

*Petroica boodang* (Scarlet Robin)

The Scarlet Robin is found from South East Queensland to South East South Australia and also in Tasmania and South West Western Australia. In NSW, it occurs from the coast to the inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs.

**a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

The proposed development will include the removal of trees, shrubs and groundcover within the CAA. No hollow-bearing trees were found within the CAA.

Given the extensive habitat adjacent to the CAA, and the lack of breeding activities (nesting of courtship) observed within it, the proposed modification is unlikely to cause significant impact upon the breeding cycle and habitat of these woodland birds. Due to the disturbed nature of the CAA and proximity to higher value habitat it is considered that the proposed modification is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.

**b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

**i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or**

**ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction**

This is not applicable for woodland and insectivorous birds

**c. in relation to the habitat of a threatened species or ecological community:**

**i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity;**

**ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity;**

**iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality;**

Approximately 0.04 of suitable habitat will be modified as part of the proposed modification. The proposed habitat loss represents minimal habitat that is potentially suitable for this species within the region.

The area of habitat is not expected to become fragmented due to works as connectivity throughout the area will not be significantly altered.

Limited habitat will be modified as part of works. Suitable habitat exists immediately adjacent to the CAA and throughout the Kandos State Forest. Therefore, habitat to be modified is not considered important for the long-term survival of the species in the locality.

**d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

There is no area of outstanding biodiversity value identified for this species within the CAA.

**e. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

Key threatening processes relevant to the proposed modification may include the following:

- Weed invasion causing degradation of habitat.
- Clearing of native vegetation.
- Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*).

The proposed modification has the potential to contribute to the spread of weeds and *Phytophthora cinnamomi* within the CAA. This is considered a low likelihood as individuals carrying out installation will follow set protocol, involving de-weeding of clothing, boots and equipment, and disinfecting of boots and equipment. Clearing of native vegetation has been minimised where possible.

## Nocturnal Birds of Prey

*Ninnox connivens* (Barking Owl)

Generally found in open forests, woodlands, swamp woodlands and dense scrub. Can also be found in the foothills and timber along watercourses in otherwise open country.

*Ninnox strenua* (Powerful Owl)

Occupies wet and dry eucalypt forests and rainforests. Can occupy both un-logged and lightly logged forests as well as undisturbed forests where it usually roosts on the limbs of dense trees in gully areas. It is most commonly recorded within red turpentine in tall open forests and black she-oak within open forests. Large mature trees with hollows at least 0.5 m deep are required for nesting. Tree hollows are particularly important for the Powerful Owl because a large proportion of the diet is made up of hollow-dependent arboreal marsupials. Nest trees for this species are usually emergent with a diameter at breast height of at least 100 cm.

**a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

The proposed modification will include the removal of trees, shrubs and groundcover within the CAA. No hollow-bearing trees were found within the CAA.

Given the extensive habitat adjacent to the CAA, and the lack of breeding activities (nesting of courtship) observed within it, the proposed modification is unlikely to cause significant impact upon the breeding cycle and habitat of these nocturnal birds of prey. Due to the disturbed nature of the CAA and proximity to higher value habitat it is considered that the proposed modification is unlikely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.

**b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

**i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or**

**ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction**

This is not applicable for nocturnal birds of prey.

**c. in relation to the habitat of a threatened species or ecological community:**

**i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity;**

ii. **whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity;**

iii. **the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality;**

Approximately 0.04 of suitable habitat will be modified as part of the proposed modification. The proposed habitat loss represents minimal habitat that is potentially suitable for this species within the region.

The area of habitat is not expected to become fragmented due to works as connectivity throughout the area will not be significantly altered.

Limited habitat will be modified as part of works. Suitable habitat exists immediately adjacent to the CAA and throughout the Kandos State Forest. Therefore, habitat to be modified is not considered important for the long-term survival of the species in the locality.

**d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

There is no area of outstanding biodiversity value identified for this species within the CAA.

**e. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

Key threatening processes relevant to the proposed modification may include the following:

- Weed invasion causing degradation of habitat.
- Clearing of native vegetation.
- Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*).

The proposed modification has the potential to contribute to the spread of weeds and *Phytophthora cinnamomi* within the CAA. This is considered a low likelihood as individuals carrying out installation will follow set protocol, involving de-weeding of clothing, boots and equipment, and disinfecting of boots and equipment. Clearing of native vegetation has been minimised where possible.

## Hollow-dependent Birds

*Callocephalon fimbriatum* (Gang-gang Cockatoo)

In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Nests are located in eucalypt hollows that are 10 cm in diameter or larger and at least 9 m above the ground.

**a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Disturbance is to include the removal of trees, shrubs and groundcover within the CAA. No hollow-bearing trees were found within the CAA.

Given the extensive habitat adjacent to the CAA, and the lack of breeding activities (nesting of courtship) observed within it, the proposed modification is unlikely to cause significant impact upon the breeding cycle and habitat of these hollow-dependent birds. Due to the disturbed nature of the CAA and proximity to higher value habitat it is considered that the proposed modification is unlikely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.

**b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

i. **is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or**

ii. **is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction**

This is not applicable for this species.

**c. in relation to the habitat of a threatened species or ecological community:**

i. **the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity;**

ii. **whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity;**

iii. **the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality;**

Approximately 0.04 ha of suitable habitat will be modified as part of the proposed modification. The proposed habitat loss represents a minimal portion of habitat that is potentially suitable for this species within the region.

The area of habitat is not expected to become fragmented due to works as connectivity throughout the area will not be significantly altered.

Limited habitat will be modified as part of works. Suitable habitat exists immediately adjacent to the CAA and throughout the Kandos State Forest. Therefore, habitat to be modified is not considered important for the long-term survival of the species in the locality.

**d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

There is no area of outstanding biodiversity value identified for this species within the CAA.

**e. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

Key threatening processes relevant to the proposed modification may include the following:

- Weed invasion causing degradation of habitat.
- Clearing of native vegetation.
- Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*).

The proposed modification has the potential to contribute to the spread of weeds and *Phytophthora cinnamomi* within the CAA. This is considered a low likelihood as individuals carrying out installation will follow set protocol, involving de-weeding of clothing, boots and equipment, and disinfecting of boots and equipment. Clearing of native vegetation has been minimised where possible.

## Phascolarctos cinereus (Koala)

Inhabits eucalypt forests and woodlands. The suitability of these forests for habitation depends on the size and species of trees present, soil nutrients, climate and rainfall.

**a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Disturbance is to include the removal of trees, shrubs and groundcover within the CAA. No hollow-bearing trees were found within the CAA.

Due to the sites disturbed nature and proximity to higher value habitat it is considered that the proposed modification is unlikely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.

**b. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

i. **is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or**

ii. **is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction**

This is not applicable for this species.

**c. in relation to the habitat of a threatened species or ecological community:**

i. **the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity;**

ii. **whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity;**

iii. **the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality;**

Approximately 0.04 ha of suitable habitat will be modified as part of the proposed modification. The proposed habitat loss represents a minimal portion of habitat that is potentially suitable for this species within the region.

The area of habitat is not expected to become fragmented due to works as connectivity throughout the area will not be significantly altered.

Limited habitat will be modified as part of works. Suitable habitat exists immediately adjacent to the CAA and throughout the Kandos State Forest. Therefore, habitat to be modified is not considered important for the long-term survival of the species in the locality.

**d. whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

There is no area of outstanding biodiversity value identified for this species within the CAA.

**e. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

Key threatening processes relevant to the proposed modification may include the following:

- Weed invasion causing degradation of habitat.
- Clearing of native vegetation.
- Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*).

The proposed modification has the potential to contribute to the spread of weeds and *Phytophthora cinnamomi* within the CAA. This is considered a low likelihood as individuals carrying out installation will follow set protocol, involving de-weeding of clothing, boots and equipment, and disinfecting of boots and equipment. Clearing of native vegetation has been minimised where possible.

# Appendix D
# EPBC Act Assessment of Significance

## *Anthochaera Phrygia* (Regent Honeyeater)

**Lead to a long-term decrease in the size of a population of the species**

As there is a vast extent of suitable habitat within adjacent areas within Kandos State Forest, and Regent Honeyeaters are not known to occupy the CAA the removal of a small area (0.04 ha) of habitat is not considered likely to lead to a long decrease in the size of a population.

**Reduce the area of occupancy of a population**

As there is a vast extent of suitable habitat within adjacent areas within Kandos State Forest, and Regent Honeyeaters are not known to occupy the CAA the removal of a small area (0.04 ha) of habitat is not considered likely reduce the area of occupancy of a population.

**Fragment an existing population into two or more populations**

Disturbances to habitat values would be restricted to the haul road and CAA adjacent to the rail loop required to unload containers from trains. The loading zone and associated access tracks would not present a barrier for movements of this mobile species. Furthermore, high availability of suitable habitat exists in the vicinity of the CAA.

**Adversely affect habitat critical to the survival of a species**

No areas of critical habitat will be adversely affected, therefore proposed activities will not compromise the survival of this species.

**Disrupt the breeding cycle of a population of the species**

The predicted impact from the proposed activities is not expected to disrupt the breeding cycle of a population as the proposed modification will impact only a small portion (maximum of 0.04 ha) of potential breeding habitat for this species, and any Regent Honeyeaters within the vicinity of the CAA are not considered a population. In the context of surrounding available breeding habitat, it is unlikely that the breeding cycle of this species would be adversely affected by the proposed modification.

**Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline**

The proposed activities will modify a minor portion of potential habitat adjacent to the Kandos State Forest landscape, therefore, will not decrease the availability or quality of habitat to the extent that the species is likely to decline.

**Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat**

Due to the remote nature of the CAA, the proposed modification is unlikely to contribute to an increase in invasive species, such as foxes and cats, which may be harmful to this species.

**Introduce disease that may cause the species to decline, or**

The proposed modification is unlikely to introduce diseases that may cause this species to decline as hygiene protocols will be followed during clearing and construction activities.

**Interfere substantially with the recovery of the species.**

The proposed modification is unlikely to interfere with the recovery of Regent Honeyeater due to the nature of disturbance and small-scale and the availability of adjacent foraging and breeding habitat.

## *Lathamus discolour* (Swift Parrot)

**Lead to a long-term decrease in the size of a population of the species**

As there is a vast extent of suitable habitat within adjacent areas within Kandos State Forest, and Swift Parrots are not known to occupy the CAA the removal of a small area (0.04 ha) of habitat is not considered likely to lead to a long decrease in the size of a population.

**Reduce the area of occupancy of a population**

As there is a vast extent of suitable habitat within adjacent areas within Kandos State Forest, and Swift Parrots are not known to occupy the CAA the removal of a small area (0.04 ha) of habitat is not considered likely reduce the area of occupancy of a population.

**Fragment an existing population into two or more populations**

Disturbances to habitat values would be restricted to the haul road and CAA adjacent to the rail loop required to unload containers from trains. The loading zone and associated access tracks would not present a barrier for movements of this mobile species. Furthermore, high availability of suitable habitat exists in the vicinity of the CAA.

**Adversely affect habitat critical to the survival of a species**

No areas of critical habitat will be adversely affected, therefore proposed activities will not compromise the survival of this species.

**Disrupt the breeding cycle of a population of the species**

The predicted impact from the proposed activities is not expected to disrupt the breeding cycle of a population as the proposed modification will impact only a small portion (maximum of 0.04 ha) of potential breeding habitat for this species, and any Swift Parrots within the vicinity of the CAA are not considered a population. In the context of surrounding available breeding habitat, it is unlikely that the breeding cycle of this species would be adversely affected by the proposed modification.

**Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline**

The proposed activities will modify a minor portion of potential habitat adjacent to the Kandos State Forest landscape, therefore, will not decrease the availability or quality of habitat to the extent that the species is likely to decline.

**Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat**

Due to the remote nature of the CAA, the proposed modification is unlikely to contribute to an increase in invasive species, such as foxes and cats, which may be harmful to this species.

**Introduce disease that may cause the species to decline, or**

The proposed modification is unlikely to introduce diseases that may cause this species to decline as hygiene protocols will be followed during clearing and construction activities.

**Interfere substantially with the recovery of the species.**

The proposed modification is unlikely to interfere with the recovery of Swift Parrot due to the nature of disturbance and small-scale and the availability of adjacent foraging and breeding habitat.

## *Phascolarctos cinereus* (Koala)

**Lead to a long-term decrease in the size of an important population of a species**

An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species range

As there is a vast extent of suitable habitat within adjacent areas within Kandos State Forest, any Koalas occupying the CAA are not considered part of an important population.

**Reduce the area of occupancy of an important population**

As there is a vast extent of suitable habitat within adjacent areas and across Kandos State Forest, any Koalas occupying the CAA are not considered part of an important population.

**Fragment an existing important population into two or more populations**

Disturbances to habitat values would be restricted to the haul road and CAA adjacent to the rail loop required to unload containers from trains. The loading zone and associated access tracks would not present a barrier for movements of this mobile species. Furthermore, high availability of suitable habitat exists in the vicinity of the CAA.

**Adversely affect habitat critical to the survival of a species**

No areas of critical habitat will be adversely affected, therefore proposed activities will not compromise the survival of this species.

**Disrupt the breeding cycle of an important population**

The predicted impact from the proposed activities is not expected to disrupt the breeding cycle of a population as the proposed modification will not impact potential breeding habitat for this species, and any Koalas within the vicinity of the CAA are not considered an important population. In the context of surrounding available breeding habitat, it is unlikely that the breeding cycle of this species would be adversely affected by the proposed modification.

**Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline**

The proposed activities will modify a minor portion of potential habitat adjacent to the Kandos State Forest landscape, therefore, will not decrease the availability or quality of habitat to the extent that the species is likely to decline.

**Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat**

Due to the remote nature of the CAA, the proposed modification is unlikely to contribute to an increase in invasive species, such as foxes and cats, which may be harmful to this species.

**Introduce disease that may cause the species to decline, or**

The proposed modification is unlikely to introduce diseases that may cause this species to decline as hygiene protocols will be followed during clearing and construction activities.

**Interfere substantially with the recovery of the species.**

The proposed modification is unlikely to interfere with the recovery of Koalas due to the nature of disturbance and small-scale and the availability of adjacent foraging and breeding habitat.