

## APPENDIX C BIODIVERSITY ASSESSMENT

### C.1 INTRODUCTION

NGH has proposed a site and proposal-specific approach based on our knowledge of the area and complexity of the proposed rezoning and subdivision. The report would assist the relevant authority for the planning proposal to determine how the rezoning and subdivision could be supported and biodiversity values maintained.

This Initial Biodiversity Assessment has been prepared to consider:

- The relevant requirements of the *BC Act* the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- The nature, extent and condition of the flora and fauna at the site.
- The likelihood of any threatened species, communities and populations being present.
- The Biodiversity Offset Scheme (BOS) thresholds assessment.
- Any threatened biota to which a significant effect could occur and propose design or ongoing management measures that could mitigate this.

For the purpose of this report:

**Proposal Area:** All land within Lot 23 and 25 DP757246

**Development footprint:** Area of land directly impacted by the proposal, including the proposal area.

**Study Area:** Encompasses the proposal area as well as all areas surveyed for the purposes of this assessment.

**Locality:** The area within a 10 km radius of the development footprint.

### C.2 STATUTORY CONSIDERATIONS

#### C2.1 NSW Biodiversity Conservation Act 2016

The BC Act aims to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The BC Act contains lists of critically endangered, endangered, and vulnerable species, populations and ecological communities, as well as a list of key threatening processes in NSW.

The primary requirement under the BC Act, is to determine whether a development is likely to significantly affect threatened species. According to clause 7.7(2) of the BC Act, if a proposed development is likely to significantly affect threatened species, the development application is to be accompanied by a biodiversity development assessment report (BDAR). According to this clause, development is considered likely to significantly affect threatened species if:

***(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the BC Act 5-part Test, or***

***(b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or***

***(c) it is carried out in a declared area of outstanding biodiversity value.***

This assessment considers the potential for the future rezoning and subdivision proposal to impact upon biodiversity.

## C2.2 Cwth Environmental Protection and Biodiversity Conservation Act 1999

The EPBC Act protects nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as matters of national environmental significance. Matters of national environmental significance relevant to biodiversity are:

- Wetlands of international importance.
- Nationally threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.

Significance of impacts is determined in accordance with the Significance impact guidelines 1.1 – matters of national environmental significance (DoE 2013).

Where a proposal is likely to have a significant impact on a matter of national environmental significance, the proposal is referred to the Commonwealth Environment Minister via the Department of the Environment (DoE). The Minister then determines whether the proposal is a 'controlled action'. If a proposal is declared a controlled action, an assessment of the action is carried out and the Minister makes a decision to approve, approve with conditions, or not approve the proposed action.

This assessment considers the potential for the future rezoning and subdivision proposal to impact on matters of national environmental significance relevant to biodiversity.

## C.3 METHODOLOGY

### C3.1 Database Searches

Background searches were undertaken prior to carrying out field investigations to determine whether any threatened flora or fauna species, communities or populations were likely to occur in the study area. These background searches are listed in Table 1. The results of the database searches are shown in Section C.8.

Table 1 Background Searches undertaken for the proposal

<i>Resource</i>	<i>Target</i>	<i>Search date NGH</i>	<i>Search area</i>
<b>NSW Office of Environment and Heritage (OEH) Wildlife Atlas Database</b>	Threatened flora and fauna, populations and endangered ecological communities	28/04/2020	10 km buffer around the proposal area
<b>NSW Office of Environment and Heritage Threatened Species regional and habitat search</b>	Threatened flora and fauna, populations and endangered ecological communities	28/04/2020	NSW South Western Slopes, Inlands Slopes Subregion
<b>EPBC Act Protected Matters Search</b>	Threatened flora and fauna, endangered populations and ecological communities and migratory species	28/04/2020	10 km buffer around the proposal area
<b>OEH Vegetation Information System</b>	Plant Community Type (PCT) Descriptions	28/04/2020	Study Area

## C3.2 Field survey

### Survey timing and conditions

A site survey was completed on 4 May 2020 by two ecologists from NGH. Weather conditions for the day are shown in Table 2.

Table 2 Weather conditions during May survey in 2020 (BOM 2020).

Dates	Temperature (min °C)	Temperature (max °C)	Rainfall (mm)	Wind speed (9am km/h)
4 May 2020	2.7	15.7	0.0	Moderate

### Survey methods

The aims of the flora surveys were to:

- Determine the vegetation communities present within the study area, their condition and extent.
- Identify potential Threatened Ecological Communities (TECs) within the study area and determine their condition and extent.
- Identify potential habitat for threatened flora species within the study area.

The study area was surveyed using the 'random meander' method, as documented by Cropper (1993). Species were recorded progressively with abundance recorded within proposal area. Any priority weeds were recorded opportunistically. Based on existing vegetation mapping (Vegetation\_SVTM\_RiverineSVM\_v1p2, SEED 2020) and the field survey, vegetation in the proposal area was assigned to a Plant Community Type (PCT) in accordance with the Vegetation Information System Classification Database (OEH). No threatened species targeted surveys were conducted.

The aims of the terrestrial fauna surveys were to assess the fauna habitat types available and their quality and suitability as threatened species habitat (e.g. trees with hollows, ground cover, vegetation structural complexity).

Opportunistic fauna sightings were also recorded during the site visit. No threatened species targeted surveys were conducted.

### Limitations

The survey undertaken involved an initial site assessment to determine Plant Community Types (PCTs) and key fauna habitat present on site for the purpose of preparing an Initial Biodiversity Assessment, as outlined in Section C.4 of this report.

There is potential for some flora species to have not been recorded during the survey due to the timing of the survey. Some ephemeral or short-lived species such as grasses, orchids and lilies, have a limited growing season and tend to grow during spring and early summer during favourable conditions.

Site surveys were conducted during the mid-morning and some fauna species may not have been present during this time of the day. Opportunistic fauna surveys were undertaken. No targeted fauna surveys were conducted, and assessment of fauna is based on habitat features present.

## C.4 RESULTS

### C4.1 Biodiversity Conservation Act Thresholds

As outlined in Section C.2, the primary requirement under the BC Act, is to determine whether a development is likely to significantly affect threatened species. This is considered to occur if:

- (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the BC Act 5-part Test, or**
- (b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or**
- (c) it is carried out in a declared area of outstanding biodiversity value.**

According to the provisions of the BC Act, a subdivision assessment must also account for any *future* clearing necessary to enable the future development of the lots. A summary of the potential impacts from the proposal against the BC Act thresholds is provided in Table 3.

Table 3 Impact assessment against the BC Act Thresholds.

Threshold		Application to the Proposal	Threshold Exceeded ?
<b>The development is likely to significantly affect threatened species, populations or ecological communities (clause 7.2(1)(a))</b>		No significant effects on threatened species, populations or ecological communities is considered likely at this stage. However, post detailed design, an impact assessment at the DA stage is required to confirm this.	Unlikely
<b>The development exceeds the biodiversity offsets scheme threshold (clause 7.2(1)(b))</b>			
Note; there are two potential BOS thresholds, pursuant to clause 7.1(1) of the BC Regulation.			
<b>Minimum lot size associated with the property</b>	<b>Threshold for clearing of native vegetation</b>	The proponent intends to reduce the minimum lot size of the land to less than 1 hectares, through the planning proposal.	Likely
1 ha or less	0.25 ha or more	In that instance, the clearing threshold would be 0.25 ha of native vegetation across the site.  Given the very low threshold value, compared to the site area, it is considered highly likely the BOS threshold would be exceeded based on the area of anticipated clearing.	
The clearing of native vegetation, or other action prescribed by clause 6.1, on land identified on the Biodiversity Values map;		Part of the land is identified on the Biodiversity Values map (Figure 1). Should clearing, or any other actions under clause 6.1 be considered to occur on land identified on the map, this would trigger the BOS threshold.	Yes

<b>The development is in an area of Outstanding Biodiversity Value (clause 7.2(1)(c))</b>	None occur in the proposal area.	No
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According to clause 7.7(2) of the BC Act, if a proposed development is likely to significantly affect threatened species, the development application is to be accompanied by a biodiversity development assessment report (BDAR). Given the very low threshold value (0.25 hectares of native vegetation clearing), compared to the site area (approximately 100 hectares), it is considered likely the BOS threshold would be exceeded based on the area of anticipated clearing.

The BDAR must follow the Biodiversity Assessment Methodology (BAM). Based on the nature, extent and condition of native vegetation communities on the site, the BAM calculator outputs a list a potentially occurring threatened species that may be affected by development in the area.

Targeted surveys for species identified by the BAM calculator may be required to discount the presence of species on the site. If species are not discounted from occurring on the site, the impact to the species (credit obligation) must be “offset”. This is typically achieved through the payment of a financial contribution to the Biodiversity Conservation Trust (BCT). Figure 2 indicates the areas that would likely generate an offset obligation.





Figure 1 Biodiversity Values Map (BC Regulation) of the proposal area (Source: NGH, 2020)



Figure 2 Potential areas generating offset obligations within the proposal area (Source: NGH, 2020)



## **C4.2 Fauna**

Eight fauna species were recorded during the field survey. A complete fauna species list is provided in C.7. No threatened fauna species were recorded during the surveys.

## **C4.3 Flora**

The vegetation within the study area predominantly comprises patches of Blakely's Red Gum (*Eucalyptus blakelyi*), Yellow Box (*Eucalyptus melliodora*), and White Box (*Eucalyptus albens*). Small areas of planted vegetation include River Red Gum (*Eucalyptus camaldulensis*) and Kurrajong (*Brachychiton populneus subsp. populneus*).

A total of 31 flora species were recorded during the site surveys, comprising 13 native and 18 exotic species. No threatened species were observed. A complete list of all species recorded is provided in C.7.

The understory species within the study area are sparse, and groundcover is dominated by exotic vegetation. Common exotic forbs include Capeweed (*Arctotheca calendula*), Patterson's Curse (*Echium plantagineum*), Shepherd's Purse (*Capsella bursa-pastoris*), Clover (*Trifolium spp.*) and Small-flowered Mallow (*Malva parviflora*). Exotic annual grasses including Witchgrass (*Panicum capillare*), Stinkgrass (*Eragrostis cilianensis*), and Onion Grass (*Romulea rosea*) were common in the understory.

Common native forbs and grasses included Crumbweed (*Dysphania spp.*), Geranium spp., Panicum (*Panicum spp.*) and Windmill Grass (*Chloris truncata*).

## **C4.4 Plant Community Types**

One Plant Community Type was identified in the study area:

- PCT 277 Blakely's Red Gum – Yellow box Grassy Tall Woodland of the NSW south western slopes bioregion.

The condition and extent of this PCT is described in Table 2. The location of the vegetation community within the proposal area are mapped in Figure 3.



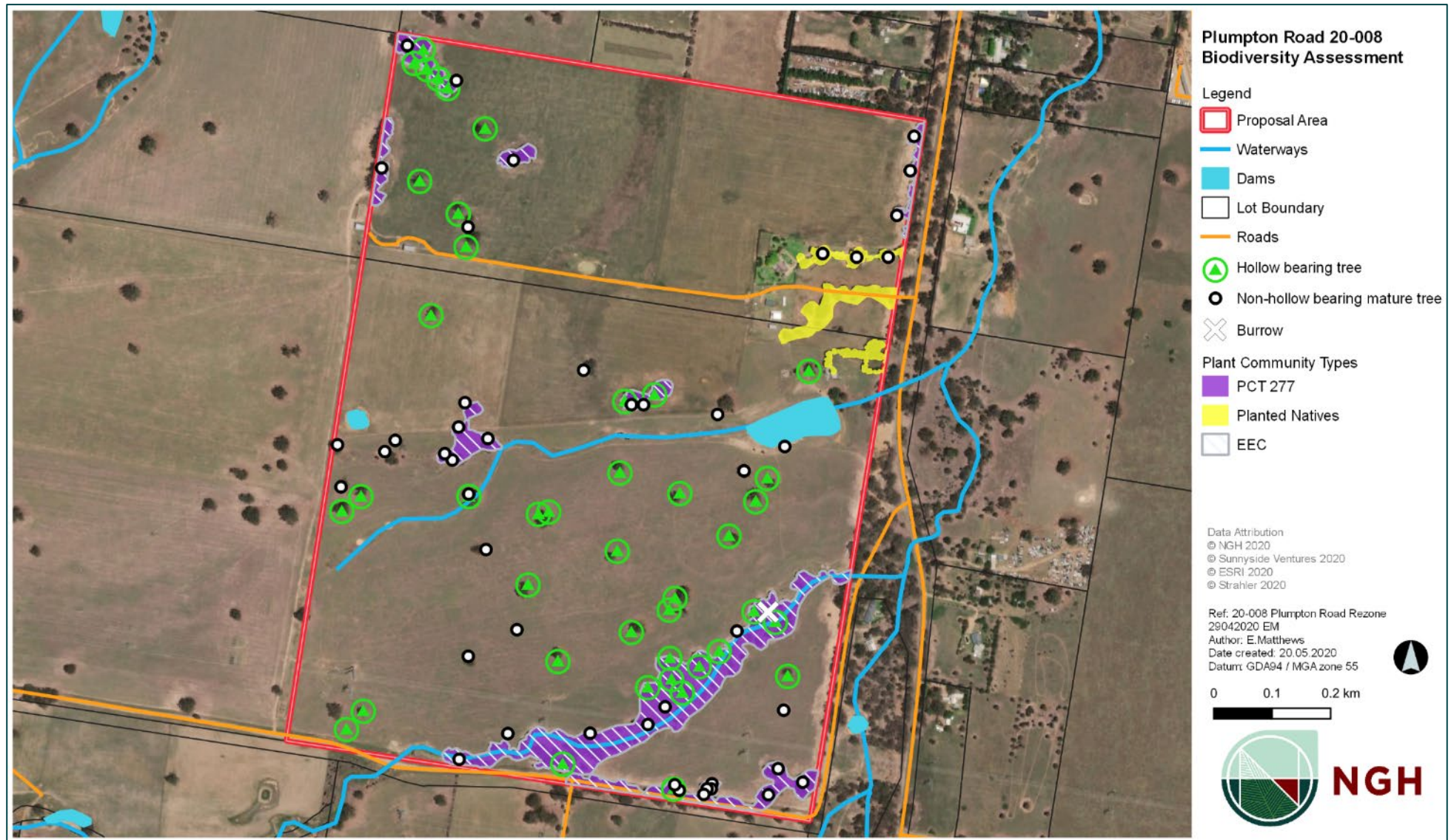



Figure 3 Plant Community Types within the study area. Areas not coloured are exotic grassland (Source: NGH,2020)

Table 2 Description of PCTs within proposal area.

<b>Blakelys Red Gum – Yellow box Grassy Tall Woodland of the NSW south western slopes bioregion. (PCT277)</b>	
<b>Vegetation Formation</b>	Open dry tall grassy woodland
<b>Vegetation Class</b>	Open Grassy Woodland
<b>Description</b>	This vegetation community within the study area is an open woodland lacking any mid storey shrubs. Understory species were sparse and were dominated by exotic species including Capeweed ( <i>Arctotheca calendula</i> ), Patterson's Curse ( <i>Echium plantagineum</i> ), Shepherd's Purse ( <i>Capsella bursa-pastoris</i> ), Clover ( <i>Trifolium spp.</i> ) and Small-flowered Mallow ( <i>Malva parviflora</i> ). Exotic annual grasses including Witchgrass ( <i>Panicum capillare</i> ), Stinkgrass ( <i>Eragrostis cilianensis</i> ), and Onion Grass ( <i>Romulea rosea</i> ).
<b>Approximate extent within study area</b>	This vegetation community covers approximately 6.6 ha of the 111 ha proposal area.
<b>Condition</b>	Low - Moderate
<b>Conservation Status</b>	<p>This vegetation community forms part of the NSW Threatened ecological community (TEC) <i>White Box Yellow Box Blakely's Red Gum Woodland</i> (Box Gum Woodland). This community is listed as an Endangered Ecological Community (EEC) under the <i>Biodiversity Conservation Act 2016</i>.</p> <p>The vegetation is does not conform to the Commonwealth listed <i>White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland</i> under the EPBC Act, due to the ground layer containing less than 50 % of native perennial species.</p>
<b>Image</b>	 <p>Figure 4 Example of PCT 277</p>



## Exotic vegetation

The study area has been highly disturbed (cropping) therefore a prevalence of exotic vegetation was found during the site surveys. Witchgrass (*Panicum capillare*), Stinkgrass (*Eragrostis cilianensis*), and Onion Grass (*Romulea rosea*) were noted as a component of all vegetation communities. The cleared paddocks and understorey of woodland vegetation were dominated by these exotic species (Figure 5). This vegetation type is indicated as having 'low' credit obligation offset value (Figure 2).



Figure 5 Example of exotic vegetation in the proposal area (Source: NGH, 2020)

## Planted Vegetation

Planted native vegetation occurs around the residence within the proposal area. This includes a series of River Red Gum (*Eucalyptus camaldulensis*) along the driveway and Kurrajong (*Brachychiton populneus subsp. populneus*) surrounding the property. 1.3 ha of planted vegetation occurs within the proposal area.

## C4.5 Threatened Species

### Threatened ecological communities

One TEC listed under the BC Act was identified in the proposal area:

- White Box Yellow Box Blakely's Red Gum Woodland (Box Gum Woodland) – EEC under the NSW BC Act

This community is aligned with a TEC under the EPBC Act:

- White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box Gum Woodland) – EEC under the EPBC Act

The community does not conform to the EPBC Listed community due to the ground layer containing less than 50 % of native perennial species.

## Listed threatened flora species

The Atlas of NSW Wildlife database search (BioNet) indicated there were three threatened flora species known from within a 10 km radius of the proposal area:

- *Brachyscome muelleroides* Claypan Daisy
- *Swainsona recta* Small Purple-pea
- *Senecio garlandii* Woolly Ragwort

A threatened species profile search was also undertaken indicating 23 threatened flora species could potentially occur within the locality (Section C6.3).

A habitat evaluation was undertaken for these species (Section C.8). Based on this assessment, 8 of these species listed under the BC Act were identified as having the potential to occur in the study area.

Based on the habitat assessment (Section C.8) seven flora species listed under the EPBC Act were identified as having the potential to occur on the site.

## Endangered populations

No endangered populations are recorded within the proposal area. The nearest population, Squirrel Glider, is recorded about 4 km from the proposal area. Based on the habitat evaluation in C.8. Squirrel glider occurrence within the proposal area was considered 'Possible but Unlikely' to occur in the proposal area.

## Listed threatened fauna species

The Atlas of NSW Wildlife database search (BioNet) found 37 threatened fauna species known from within a 10 km radius of the proposal site (Section C6.2).

A threatened species profile search was also undertaken indicating 54 threatened fauna species could potentially occur within the locality (Section C6.3).

A habitat evaluation was undertaken for these species (C.8). Based on this assessment, 43 of these species listed under the BC Act were identified as having the potential to occur or utilise habitat in the study area.

Based on the habitat assessment (Section C.8) ten of the fauna species listed under the EPBC Act were identified as having the potential to occur on the site.

## Fauna habitat

The proposal area supports foraging habitat for grassland and open woodland fauna species. In general, the fauna habitat quality within the study area is considered to be moderate. Habitat features include juvenile non hollow bearing trees, mature hollow and non-hollow bearing trees, shrubs and open exotic grassland for foraging. Waterbodies are present in the form of two dams with some fringing vegetation. Stringybark Creek and drainage lines currently contain minimal water but provide potential additional aquatic habitat with riparian vegetation. Fallen timber is present in many of the PCT 277 patches. There are some small areas of partially bedded rocks. The landscape has a history of disturbance from clearing vegetation for cropping.





Figure 6 Aquatic habitat in the form of a dam present in the proposal area (Source: NGH, 2020)



Figure 7 Fallen timber present in a PCT 277 patch (Source: NGH, 2020)





Figure 8 Stringybark Creek (Source: NGH, 2020)

### **EPBC Matters of National Significance**

An EPBC Act protected matters search indicated that 3 Threatened Ecological Communities, 5 threatened flora, 10 threatened birds species, 3 threatened fish species, 2 threatened frog, 4 threatened mammal species, 1 insect, 1 reptile and 10 migratory species could potentially occur within the locality (Section C.6).

A habitat evaluation was undertaken for these species (Section C.8).

## C.5 REFERENCES

- Australian Soil Resource Centre (ASRIS) (2014). National Soil Grids <http://www.asris.csiro.au/mapping/viewer.htm> [accessed April 2020]
- Bureau of Meteorology (BOM) (2018). Climate Data Online <http://www.bom.gov.au/climate/data/index.shtml> [accessed April 2020]
- Bureau of Meteorology (BOM) (2018). Groundwater Dependent Ecosystems Atlas <http://www.bom.gov.au/water/groundwater/gde/map.shtml> [accessed April 2020]
- Department of Environment and Energy (2017). Protected Matters Search Tool <https://www.environment.gov.au/epbc/protected-matters-search-tool> [accessed April 2020]
- Environment Protection Authority (EPA) (2018). Contaminated Land Record <http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx> [accessed April 2020]
- NSW Geology Plus (2019), *Geological Survey of NSW* [https://api.tiles.mapbox.com/v4/tybion.a0n6d2t9/page.html?access\\_token=pk.eyJ1IjoiaW9uLiwiYSI6IklJPWkFIRGMifQ.X8c8fyJg11-BDWz3KcOQBw#12/-34.8238/148.9581](https://api.tiles.mapbox.com/v4/tybion.a0n6d2t9/page.html?access_token=pk.eyJ1IjoiaW9uLiwiYSI6IklJPWkFIRGMifQ.X8c8fyJg11-BDWz3KcOQBw#12/-34.8238/148.9581) [accessed April 2020]
- Office of Environment and Heritage (OEH) (2016). South Western Slopes <https://www.environment.nsw.gov.au/bioregions/NSWSouthWesternSlopesBioregion.htm> [accessed April 2020]
- Office of Environment and Heritage, (2019), Threatened Species Profile Search. <https://www.environment.nsw.gov.au/threatenedSpeciesApp/> [accessed May 2020]
- OEH (2017). BioNet: Atlas of NSW Wildlife [http://www.environment.nsw.gov.au/atlaspublicapp/UI\\_Modules/ATLAS\\_/AtlasSearch.aspx](http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx) [accessed May 2020]
- SEED Sharing and Enabling Environmental Data in NSW (2019) SEED Map [https://geo.seed.nsw.gov.au/Public\\_Viewers/index.html?viewer=Public\\_Viewers&locale=en-AU](https://geo.seed.nsw.gov.au/Public_Viewers/index.html?viewer=Public_Viewers&locale=en-AU) [accessed May 2020]

## C.6 BACKGROUND SEARCHES

### C6.1 Matters of National Environmental Significance



Australian Government  
Department of the Environment and Energy

## EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

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

Report created: 28/04/20 11:26:04

[Summary](#)

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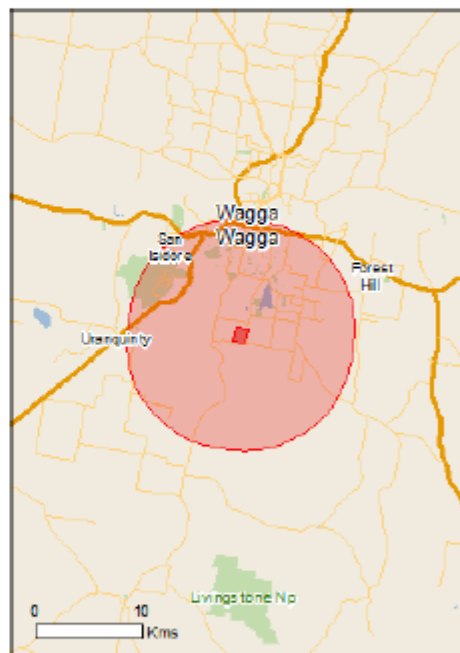
[Matters of NES](#)

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

[Extra Information](#)

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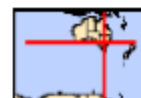
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## Summary

### Matters of National Environmental Significance

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

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	4
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	25
<a href="#">Listed Migratory Species:</a>	10

### Other Matters Protected by the EPBC Act

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

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

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

<a href="#">Commonwealth Land:</a>	9
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	17
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None

### Extra Information

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

<a href="#">State and Territory Reserves:</a>	None
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	29
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine):</a>	None

## Details

### Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[ Resource Information ]
Name	Proximity
<a href="#">Banrock station wetland complex</a>	600 - 700km upstream
<a href="#">Hattah-kulkyne lakes</a>	400 - 500km upstream
<a href="#">Riverland</a>	500 - 600km upstream
<a href="#">The coorong, and lakes alexandrina and albert wetland</a>	600 - 700km upstream

### Listed Threatened Ecological Communities [ Resource Information ]

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

Name	Status	Type of Presence
<a href="#">Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia</a>	Endangered	Community likely to occur within area
<a href="#">Weeping Myall Woodlands</a>	Endangered	Community may occur within area
<a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a>	Critically Endangered	Community likely to occur within area

### Listed Threatened Species [ Resource Information ]

Name	Status	Type of Presence
<b>Birds</b>		
<a href="#">Anthochaera phrygia</a> Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Grantiella picta</a> Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plampton Road, Rowan

Name	Status	Type of Presence
<a href="#"><u>Polytelis swainsonii</u></a> Superb Parrot [738]	Vulnerable	Breeding known to occur within area
<a href="#"><u>Rostratula australis</u></a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<b>Fish</b>		
<a href="#"><u>Galaxias rostratus</u></a> Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area
<a href="#"><u>Maccullochella peelii</u></a> Murray Cod [86633]	Vulnerable	Species or species habitat known to occur within area
<a href="#"><u>Macquaria australasica</u></a> Macquarie Perch [86632]	Endangered	Species or species habitat may occur within area
<b>Frogs</b>		
<a href="#"><u>Crinia sloanei</u></a> Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Litoria raniformis</u></a> Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
<b>Mammals</b>		
<a href="#"><u>Dasyurus maculatus maculatus (SE mainland population)</u></a> Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
<a href="#"><u>Nyctophilus corbeni</u></a> Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u></a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
<a href="#"><u>Pteropus poliocephalus</u></a> Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
<b>Plants</b>		
<a href="#"><u>Austrostipa wakoolica</u></a> [86623]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Brachyscome muelleroides</u></a> Mueller Daisy [15572]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Caladenia arenaria</u></a> Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Prasophyllum petilum</u></a> Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Swainsona recta</u></a> Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area
<b>Reptiles</b>		
<a href="#"><u>Aprasia parapulchella</u></a> Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Listed Migratory Species		[ Resource Information ]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
<b>Migratory Marine Birds</b>		
<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<b>Migratory Terrestrial Species</b>		
<a href="#">Hirundapus caudacutus</a>		
White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
<a href="#">Motacilla flava</a>		
Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Myiagra cyanoleuca</a>		
Satin Flycatcher [612]		Species or species habitat known to occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Actitis hypoleucos</a>		
Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a>		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a>		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a>		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Gallinago hardwickii</a>		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a>		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

### Other Matters Protected by the EPBC Act

Commonwealth Land	[ Resource Information ]
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.	
Name	
Commonwealth Land -	
Commonwealth Land - Australian Broadcasting Corporation	
Commonwealth Land - Australian Telecommunications Commission	
Commonwealth Land - Commonwealth Bank of Australia	
Commonwealth Land - Defence Housing Authority	
Commonwealth Land - Defence Service Homes Corporation	
Commonwealth Land - Director of War Service Homes	
Defence - BLAMEY BARRACKS - KAPOOKA	
Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP	

Listed Marine Species	<a href="#">[ Resource Information ]</a>	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		



**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Name	Threatened	Type of Presence
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Species or species habitat known to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Chrysocolaptes osculans</a> Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
<a href="#">Lathamus discolor</a> Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

## Extra Information

Invasive Species		<a href="#">[ Resource Information ]</a>
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.		
Name	Status	Type of Presence
<b>Birds</b>		
Alauda arvensis Skylark [856]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
<b>Mammals</b>		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Name	Status	Type or Presence
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20128]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [87699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [88408]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [88497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13885]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2824]		Species or species habitat likely to occur within area

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Name	Status	Type of Presence
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

## Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

## Coordinates

-35.185443 147.346286,-35.186706 147.356157,-35.196245 147.354355,-35.194983 147.344227,-35.185443 147.346286



## Acknowledgements

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

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

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

Please feel free to provide feedback via the [Contact Us](#) page.

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## C6.2 BioNet Search Results (species recorded within a 10km radius)

Scientific Name	Common Name
<b>Flora</b>	
<i>Brachyscome muelleroides</i>	Claypan Daisy
<i>Swainsona recta</i>	Small Purple-pea
<i>Senecio garlandii</i>	Woolly Ragwort
<b>Fauna</b>	
<i>Ninox connivens</i>	Barking Owl
<i>Falco subniger</i>	Black Falcon
<i>Macrotis lagotis</i>	Bilby
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)
<i>Petrogale penicillate</i>	Brush-tailed Rock-wallaby
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)
<i>Burhinus grallarius</i>	Bush Stone-curlew
<i>Calidris ferruginea</i>	Curlew Sandpiper
<i>Stagonopleura guttata</i>	Diamond Firetail
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow
<i>Petroica phoenicea</i>	Flame Robin
<i>Stictonetta naevosa</i>	Freckled Duck
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo
<i>Pachycephala iornata</i>	Gilbert's Whistler
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)
<i>Pteropus poliocephalus</i>	Grey-headed Flying Fox
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern subspecies)
<i>Phascolarctos cinereus</i>	Koala
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat
<i>Hieraaetus morphnoides</i>	Little Eagle
<i>Glossopsitta pusilla</i>	Little Lorikeet
<i>Anseranas semipalmata</i>	Magpie Goose
<i>Anthochaera phrygia</i>	Regent Honeyeater
<i>Petroica boodang</i>	Scarlet Robin
<i>Myotis macropus</i>	Southern Myotis
<i>Chthonicola sagittata</i>	Speckled Warbler
<i>Circus assimilis</i>	Spotted Harrier
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll
<i>Petaurus norfolcensis</i>	Squirrel Glider
<i>Petaurus norfolcensis</i>	Squirrel Glider in Wagga Wagga LGA
<i>Polytelis swainsonii</i>	Superb Parrot
<i>Lathamus discolor</i>	Swift Parrot
<i>Neophema pulchella</i>	Turquoise Parrot

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

<i>Daphoenositta chrysoptera</i>	Varied Sittella
<i>Epthianura albifrons</i>	White-fronted Chat
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat

## C6.3 IBRA Subregion Threatened Species Search

[NSW Department of Planning, Industry and Environment](#)

[Home](#) > [Topics](#) > [Animals and plants](#) > [Search for threatened species](#) > [Find by region and habitat](#)

### Combined geographic and habitat search

Use the form below to submit a search

<b>IBRA</b>	Inland Slopes	Choose an Interim Biogeographic Regionalisation of Australia region or sub-region
<b>Habitat Type</b>	Western Slopes Grassy Woodlands	Search by habitat type.
<b>Species Type</b>	All species types	You can search by all species or by a particular species.
		<input type="button" value="Search"/>

Matching records: 79

[Save to CSV](#)

[Click on column headers to sort](#)

IBRA Subregion	Scientific name	Common name	NSW status	Commonwealth status	Occurrence	Vegetation class
Inland Slopes	<i>Acacia ausfeldii</i>	Ausfeld's Wattle	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Ammobium craspedioides</i>	Yass Daisy	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Critically Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Austrostipa wakoolica</i>	A spear-grass	Endangered	Endangered	Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<i>Bossiaea fragrans</i>	<i>Bossiaea fragrans</i>	Critically Endangered	Critically Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Bothriochloa biloba</i>	Lobed Bluegrass	Not listed		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Caladenia concolor</i>	Crimson Spider Orchid	Endangered	Vulnerable	Known	Western Slopes Grassy Woodlands



**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Inland Slopes	<b>Callocephalon fimbriatum</b>	<b>Gang-gang Cockatoo</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Calyptrorhynchus lathamii</b>	<b>Glossy Black-Cockatoo</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Cercartetus nanus</b>	<b>Eastern Pygmy-possum</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Chalinolobus dwyeri</b>	<b>Large-eared Pied Bat</b>	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Chalinolobus picatus</b>	<b>Little Pied Bat</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Chthonicola sagittata</b>	<b>Speckled Warbler</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Circus assimilis</b>	<b>Spotted Harrier</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Climacteris picumnus victoriae</b>	<b>Brown Treecreeper (eastern subspecies)</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Coolac-Tumut Serpentine Shrubby Woodland in the NSW South Western Slopes and South Eastern Highlands Bioregions</b>	<b>Coolac-Tumut Serpentine Shrubby Woodland in the NSW South Western Slopes and South Eastern Highlands Bioregions</b>	Endangered Ecological Community		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Crinia sloanei</b>	<b>Sloane's Froglet</b>	Vulnerable	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Cullen parvum</b>	<b>Small Scurf-pea</b>	Endangered		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Daphoenositta chrysoptera</b>	<b>Varied Sittella</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Dasyurus maculatus</b>	<b>Spotted-tailed Quoll</b>	Vulnerable	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Delma impar</b>	<b>Striped Legless Lizard</b>	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Dichanthium setosum</b>	<b>Bluegrass</b>	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Diuris tricolor</b>	<b>Pine Donkey Orchid</b>	Vulnerable		Known	Western Slopes Grassy

**Preliminary Assessment Report for intended Planning Proposal**  
**456-474 Plumpton Road, Rowan**

						Woodlands
Inland Slopes	<i>Eucalyptus cannonii</i>	Cepertee Stringybark	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Euphrasia arguta</i>	<i>Euphrasia arguta</i>	Critically Endangered	Critically Endangered	Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	Endangered Ecological Community		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Goodenia macbarronii</i>	Narrow Goodenia	Not listed		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Grantiella picta</i>	Painted Honeyeater	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Grevillea wilkinsonii</i>	Tumut Grevillea	Endangered	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Homoranthus darwinioides</i>	<i>Homoranthus darwinioides</i>	Vulnerable	Vulnerable	Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	Vulnerable		Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<i>Lathamus discolor</i>	Swift Parrot	Endangered	Critically Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Hoary Sunray	Not listed	Endangered	Known	Western Slopes Grassy Woodlands

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

Inland Slopes	<b>Litoria booroolongensis</b>	<b>Booroolong Frog</b>	Endangered	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Lophochroa leadbeateri</b>	<b>Major Mitchell's Cockatoo</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Lophoictinia isura</b>	<b>Square-tailed Kite</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Melanodryas cucullata cucullata</b>	<b>Hooded Robin (south-eastern form)</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Melithreptus gularis gularis</b>	<b>Black-chinned Honeyeater (eastern subspecies)</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Miniopterus orianae oceanensis</b>	<b>Large Bent-winged Bat</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Myotis macropus</b>	<b>Southern Myotis</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Neophema pulchella</b>	<b>Turquoise Parrot</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Ninox connivens</b>	<b>Barking Owl</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Ninox strenua</b>	<b>Powerful Owl</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Nyctophilus corbeni</b>	<b>Corben's Long-eared Bat</b>	Vulnerable	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Pachycephala inornata</b>	<b>Gilbert's Whistler</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Petaurus australis</b>	<b>Yellow-bellied Glider</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Petaurus norfolcensis</b>	<b>Squirrel Glider</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Petaurus norfolcensis - endangered population</b>	<b>Squirrel Glider in the Wagga Wagga Local Government Area</b>	Endangered Population		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Petrogale penicillata</b>	<b>Brush-tailed Rock-wallaby</b>	Endangered	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Petroica boodang</b>	<b>Scarlet Robin</b>	Vulnerable		Known	Western Slopes

**Preliminary Assessment Report for intended Planning Proposal**  
456-474 Plumpton Road, Rowan

						Grassy Woodlands
Inland Slopes	<b>Petroica phoenicea</b>	<b>Flame Robin</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Phascogale tapoatafa</b>	<b>Brush-tailed Phascogale</b>	Vulnerabl e		Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<b>Phascogale cinereus</b>	<b>Koala</b>	Vulnerabl e	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Polytelis swainsonii</b>	<b>Superb Parrot</b>	Vulnerabl e	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Pomaderris queenslandica</b>	<b>Scant Pomaderris</b>	Endanger ed		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Pomatostomus temporalis temporalis</b>	<b>Grey-crowned Babbler (eastern subspecies)</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Prasophyllum petilum</b>	<b>Tarengo Leek Orchid</b>	Endanger ed	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Prasophyllum sp. Wybong</b>	<b>Prasophyllum sp. Wybong</b>	Not listed	Critically Endangered	Predicted	Western Slopes Grassy Woodlands
Inland Slopes	<b>Pteropus poliocephalus</b>	<b>Grey-headed Flying-fox</b>	Vulnerabl e	Vulnerable	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Pultenaea humilis</b>	<b>Dwarf Bush-pea</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Saccolaimus flaviventris</b>	<b>Yellow-bellied Sheath-tail-bat</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Senecio garlandii</b>	<b>Woolly Ragwort</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Stagonopleura guttata</b>	<b>Diamond Firetail</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Swainsona recta</b>	<b>Small Purple-pea</b>	Endanger ed	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Swainsona sericea</b>	<b>Silky Swainson-pea</b>	Vulnerabl e		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Synemon plana</b>	<b>Golden Sun Moth</b>	Endanger ed	Critically Endangered	Known	Western Slopes Grassy Woodlands



**Preliminary Assessment Report for intended Planning Proposal**  
**456-474 Plumpton Road, Rowan**

Inland Slopes	<b>Tylophora linearis</b>	<b><i>Tylophora linearis</i></b>	Vulnerable	Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Tyto novaehollandiae</b>	<b>Masked Owl</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Varanus rosenbergi</b>	<b>Rosenberg's Goanna</b>	Vulnerable		Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>White Box Yellow Box Blakely's Red Gum Woodland</b>	<b>White Box Yellow Box Blakely's Red Gum Woodland</b>	Endangered Ecological Community	Critically Endangered	Known	Western Slopes Grassy Woodlands
Inland Slopes	<b>Zieria obcordata</b>	<b>Granite Zieria</b>	Endangered	Endangered	Known	Western Slopes Grassy Woodlands

## C.7 SURVEY SPECIES LIST

### C7.1 Flora Species List

Scientific name	Common name	Family	Exotic	
<b>TREES</b>				
<i>Eucalyptus camaldulensis</i>	River Red Gum	Myrtaceae		O
<i>Eucalyptus melliodora</i>	Yellow Box	Myrtaceae		C
<i>Eucalyptus blakelyi</i>	Blakely's Red Gum	Myrtaceae		C
<i>Eucalyptus albens</i>	White Box	Myrtaceae		C
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	Kurrajong	Malvaceae		C
<i>Schinus mole</i> var. <i>areira</i>	Pepper Tree	Anacrdiaceae	*	C
<b>SHRUBS, SUB-SHRUBS</b>				
<i>Rubus fruticosus</i> sp. agg.	Blackberry complex	Rosaceae	*	O
<b>FORBS</b>				
<i>Arctotheca calendula</i>	Capeweed	Asteraceae	*	c
<i>Echium plantagineum</i>	Patterson's Curse	Boraginaceae	*	c
<i>Dysphania</i> spp.	A Crumbweed	Chenopodiaceae		c
<i>Heliotropium europaeum</i>	Potato Weed	Boraginaceae	*	o
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Brassicaceae	*	c
<i>Vittadinia</i> spp.	Fuzzweed	Asteraceae		o
<i>Trifolium</i> spp. 1	A Clover	Fabaceae (Faboideae)	*	c
<i>Trifolium</i> spp. 2	A Clover	Fabaceae (Faboideae)	*	c
<i>Hypochaeris</i> spp.	A Catsear	Asteraceae	*	c
<i>Malva parviflora</i>	Small-flowered Mallow	Malvaceae	*	c
<i>Portulaca oleracea</i>	Pigweed	Portulacaceae		o
<i>Vittadinia</i> spp.	Fuzzweed	Asteraceae		o
<i>Rumex crispus</i>	Curled Dock	Polygonaceae	*	o
<i>Lepidium africanum</i>	Common Peppergrass	Brassicaceae	*	o
<i>Hypochaeris glabra</i>	Smooth Catsear	Asteraceae	*	c
<i>Chenopodium album</i>	Fat Hen	Chenopodiaceae	*	c
<i>Geranium</i> spp.	Geranium	Geraniaceae		c
<b>GRASSES</b>				

Scientific name	Common name	Family	Exotic	
<i>Cynodon dactylon</i>	Common Couch	Poaceae		c
<i>Avena fatua</i>	Wild Oats	Poaceae	*	o
<i>Chloris truncata</i>	Windmill Grass	Poaceae		c
<i>Panicum capillare</i>	Witchgrass	Poaceae	*	c
<i>Panicum spp.</i>	Panicum	Poaceae		c
<i>Eragrostis cilianensis</i>	Stinkgrass	Poaceae	*	c
<i>Romulea rosea</i>	Onion Grass	Iridaceae	*	o

## C7.2 Fauna Species List

Scientific name	Common name	Observation type
<b>BIRDS</b>		
<i>Cracticus tibicen</i>	Magpie	Seen
<i>Eolophus roseicapilla</i>	Galah	Seen
<i>Nymphicus hollandicus</i>	Cockatiel	Seen
<i>Anthochaera carunculata</i>	Red Wattlebird	Seen
<i>Chenonetta jubata</i>	Australian Wood Duck	Seen
<i>Platycercus eximius</i>	Eastern Rosella	Seen
<i>Manorina melanocephala</i>	Noisy Miner	Seen
<b>MAMMALS</b>		
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	Seen

## C.8 THREATENED SPECIES EVALUATIONS

The tables in this appendix present the habitat evaluation for threatened species, ecological communities and endangered populations listed in a 10km radius from the proposal area in the *Atlas of NSW Wildlife*<sup>3</sup> and those identified as potentially occurring in the area according to the Commonwealth EPBC *Protected Matters Search Tool*<sup>4</sup>.

The likelihood of occurrence is based on presence of habitat, proximity of nearest records and mobility of the species (where relevant). The assessment of potential impact is based on the nature of the proposal, the ecology of the species and its likelihood of occurrence. The following classifications are used:

### **Presence of habitat:**

Present: Potential or known habitat is present within the study area

Absent: No potential or known habitat is present within the study area

### **Likelihood of occurrence**

Unlikely: Species known or predicted within the locality but unlikely to occur in the study area

Possible: Species could occur in the study area

Present: Species was recorded during the field investigations

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<sup>3</sup> The *Atlas of NSW Wildlife* is administered by the NSW Department of Environment & Heritage (OEH) and is an online database of fauna and flora records that contains over four million recorded sightings.

<sup>4</sup> This online tool is designed for the public to search for matters protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It is managed by the Commonwealth Department of the Environment and Energy.



## C8.1 Evaluation of the presence and likelihood of threatened flora species

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>Grasses</b>			
<b><i>Dichanthium setosum</i></b> <b>Bluegrass</b> <b>BC - V</b> <b>EPBC - V</b>	<p>Bluegrass is an upright grass less than 1 m tall. It has mostly hairless leaves about 2-3 mm wide. The flowers are densely hairy and are clustered together along a stalk in a cylinder-shape. The flower-clusters grow in pairs at the end of an 8 cm-long stem and appear mostly during summer. Bluegrass occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas. Associated species include <i>Eucalyptus albens</i>, <i>Eucalyptus melanophloia</i>, <i>Eucalyptus melliodora</i>, <i>Eucalyptus viminalis</i>, <i>Myoporum debile</i>, <i>Aristida ramosa</i>, <i>Themeda triandra</i>, <i>Poa sieberiana</i>, <i>Bothriochloa ambigua</i>, <i>Medicago minima</i>, <i>Leptorhynchus squamatus</i>, <i>Lomandra aff. longifolia</i>, <i>Ajuga australis</i>, <i>Calotis hispidula</i> and <i>Austrodanthonia</i>, <i>Dichopogon</i>, <i>Brachyscome</i>, <i>Vittadinia</i>, <i>Wahlenbergia</i> and <i>Psoralea</i> species. Flowering Mid to late summer.</p>	<b>Present</b> Associated eucalypt species present.	<b>Possible</b> Suitable habitat and within known range.
<b><i>Austrostipa wakoolica</i></b> <b>A spear-grass</b> <b>BC - E</b> <b>EPBC - E</b>	<p>A densely-tufted, perennial spear-grass that grows to 1 m tall. The leaves are flattened or rolled, 1.5 - 2.5 mm wide at their bases, slightly to strongly ribbed, and densely hairy. The flower-heads are spreading and moderately dense, to 36 cm long, comprising gaping spikelets 11 - 15 mm long (excluding the awn). The awn (bristle) is twice-bent and 3.5 - 6 cm long. Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW, with localities including Manna State Forest, Matong, Lake Tooim, Merran Creek, Tulla, Cunninyeuk and Mairjimmy State Forest (now part of South West Woodland Nature Reserve). Associated species include <i>Callitris glaucophylla</i>, <i>Eucalyptus microcarpa</i>, <i>E. populnea</i>, <i>Austrostipa eremophila</i>, <i>A. drummondii</i>, <i>Austrodanthonia eriantha</i> and <i>Einadia nutans</i>.</p>	<b>Absent</b> Murray river tributary floodplain not present.	<b>Unlikely</b> No records and outside of known range.

<sup>5</sup> Information sourced from species profiles on NSW OEH's threatened species database or the Australian Government's Species Profiles and Threats database (SPRAT) unless otherwise stated.

OEH threatened species database: <http://www.threatenedspecies.environment.nsw.gov.au/index.aspx>

SPRAT: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>Herbs &amp; Forbs</b>			
<i>Euphrasia arguta</i> BC - CE EPBC - CE	<i>Euphrasia arguta</i> is an erect annual herb ranging in height from 20-35 cm. Collectively, the <i>Euphrasia</i> are commonly known as 'eyebrights'. Its branches are densely covered with stiff hairs and the leaf margins usually have 2-4 pairs of teeth. The flowers vary in colour from white to lilac with yellow, and are borne on flower spikes of 50 to 90 flowers. Plants from the Nundle area have been reported from eucalypt forest with a mixed grass and shrub understorey; here, plants were most dense in an open disturbed area and along the roadside, indicating the species had regenerated following disturbance. <i>Euphrasia arguta</i> has an annual habit and has been observed to die off over the winter months, with active growth and flowering occurring between January and April.	<b>Absent</b> Incorrect region.	<b>Unlikely</b> Outside of known and predicted species ranges.
<i>Homoranthus darwinoides</i> BC - V EPBC - V	Slender hairless shrub, characterised by its distinctive drooping flower heads, each consisting of two flowers on a stalk. Leaves are linear, cylindrical, 2-5 mm long in some populations, 6-11 mm long in others. Rare in the central tablelands and western slopes of NSW, occurring from Putty to the Dubbo district. It is found west of Muswellbrook between Merriwa and Bylong, and north of Muswellbrook to Goonoo SCA. 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, gentle south-facing slopes, and a slight depression on a roadside with loamy sand. Associated species include <i>Callitris endlicheri</i> , <i>Eucalyptus crebra</i> , <i>E. fibrosa</i> , <i>C. trachyphloia</i> , <i>E. beyeri</i> subsp. <i>illaquens</i> , <i>E. dwyeri</i> , <i>E. rossii</i> , <i>Leptospermum divaricatum</i> , <i>Melaleuca uncinata</i> , <i>Calytrix tetragona</i> , <i>Allocasuarina</i> spp. and <i>Micromyrtus</i> spp. Flowers March to December.	<b>Absent</b> Associated species not present.	<b>Unlikely</b> Outside of known range and lack of associated species.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Leucochrysum albicans</i> var. <i>tricolor</i></b> <b>Hoary Sunray</b> <b>BC - 0</b> <b>EPBC - E</b>	A perennial everlasting daisy. Stems are 10–15 cm tall, with narrow leaves 2–10 cm long, covered in white cottony hairs. Yellowish flowerheads are 2–5 cm in diameter, surrounded by numerous papery, white, overlapping ovate-oblong bracts, with the outer layers tinged red, pink, purple or brown. Fruits are brown, ovoid, 2–3 mm long, with 14–20 pappus bristles. <i>Leucochrysum albicans</i> var. <i>tricolor</i> is distinguished from the other varieties within <i>L. albicans</i> by its white involucre bracts and narrow, linear-oblong leaves. Endemic to south-eastern Australia, where it is currently known from three geographically separate areas in Tasmania, Victoria and south-eastern NSW and ACT. In NSW it currently occurs on the Southern Tablelands adjacent areas in an area roughly bounded by Albury, Bega and Goulburn, with a few scattered localities known from beyond this region. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils.	<b>Present</b> Grassy woodland present.	<b>Possible</b> Within known range and suitable habitat.
<b><i>Tylophora linearis</i></b> <b>BC - E</b> <b>EPBC - E</b>	Slender, almost hairless twiner with a clear sap. Leaves dark green, linear, 1-5 cm long, 0.5-3 mm wide. Flowers purplish, 3-6 mm in diameter, in radiating groups of 3-8. Fruit is cigar shaped, up to 100mm long and approximately 5 mm diameter, hairless. Majority of records occur in the central western region. Records from Goonoo, Pillaga West, Pillaga East, Bibblewindi, Cumbil and Eura State Forests, Coolbaggie NR, Goobang NP and Beni SCA. Also has been recorded Hiawatha State Forest near West Wyalong in the south and there are old records as far north as Crow Mountain near Barraba. Grows in dry scrub and open forest. Recorded from low-altitude sedimentary flats in dry woodlands of <i>Eucalyptus fibrosa</i> , <i>Eucalyptus sideroxylon</i> , <i>Eucalyptus albens</i> , <i>Callitris endlicheri</i> , <i>Callitris glaucophylla</i> and <i>Allocasuarina luehmannii</i> . Flowers in spring, with flowers recorded in November or May with fruiting probably 2 to 3 months later.	<b>Present</b> Open eucalypt forest present.	<b>Possible</b> Within known range and suitable habitat.
<b><i>Ammobium craspedioides</i></b> <b>Yass Daisy</b> <b>BC - V</b> <b>EPBC - V</b>	The Yass Daisy is a rosette-forming perennial. Leaves are spoon-shaped, to 12 cm long and 17 mm wide, hairy on top and white and woolly underneath. The spring flowerheads are hemispherical buttons, to 20 mm wide, and surrounded at the base by papery leaf-like structures (bracts). The solitary flowerheads are borne on unbranched stems to 60 cm tall; the stems are sparsely leafed, and edged with narrow "wings". Rosettes die off after fruiting. Found from near Crookwell on the Southern Tablelands to near Wagga Wagga on the South Western Slopes. Most populations are in the Yass region.	<b>Present</b> Box-gum woodland present.	<b>Possible</b> Within known range and suitable habitat.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Brachyscome muelleroides</i></b> Claypan Daisy BC - V EPBC - V	The Claypan Daisy is an annual herb that grows to 14 cm tall. Its single white flowers, only 4 mm across, are produced from September to November, at the ends of thread-like stems to 3 cm long. The 5.5 cm long leaves, growing from the stem, are also thread-like. The Claypan Daisy occurs in the Wagga Wagga, Narranderra, Tocumwal and Walbundrie areas. Also occurs in north-central Victoria (only along the Murray from Tocumwal to the Ovens River).	<b>Present</b> Damp habitat present near Stringybark Creek, drainage lines and dams.	<b>Possible</b> Within known range and suitable habitat. One record from 7.4 km away.
<b><i>Senecio garlandii</i></b> Woolly Ragwort BC - V	Woolly Ragwort is a many-branched perennial herb or shrub growing to 1.2 m tall. It has woolly stems, and large leaves, which are also woolly below, to 15 cm long and 8 cm wide, with toothed edges. The leaves are stalkless and clasp the stem. The numerous small yellow flower-heads are clustered in sprays. This daisy is found between Temora, Bethungra and Albury and possibly Burrinjuck near Yass. The largest populations are at The Rock and Mt Tabletop (and surrounds). There is a single population in Victoria at Chiltern.	<b>Absent</b> No sheltered slopes or rocky outcrops present.	<b>Unlikely</b> One record from 8 km away, however no suitable habitat within proposal area.
<b><i>Bossiaea fragrans</i></b> BC - CE EPBC - CE	An erect shrub that grows to 1-2.5m high. The cladodes (stems with foliage leaves reduced or absent) are flattened, glaucous green and range from 8-14mm wide. Leaf scales are present and ranging from 1.5-1.9mm long. The flowers, which can be seen from September through to October, are yellow with red markings, except for the keel (the pair of petals beneath the flower) which is dark red. The pods are oblong in shape. Currently only known from the Abercrombie Karst Conservation Reserve, south of Bathurst on the NSW central tablelands. It is highly restricted, with only a small number of known populations.	<b>Absent</b> Lack of associated woodland.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Pultenaea humilis</i></b> Dwarf Bush-pea BC - V	<i>Pultenaea humilis</i> is an erect to prostrate shrub, 0.2–0.8 m high with branchlets erect or drooping that are sparsely to moderately hairy. The leaves are alternate, 3.9–12.5 by 1–2.5 mm, flat, straight, smooth, leathery and light green. Leaves are sparsely hairy or may be hair free. The inflorescence is subterminal or apparently terminal and is dense to somewhat lax and leafy with bracts absent. Individual flowers are 10–13 mm long. <i>Pultenaea humilis</i> is rare in New South Wales and Tasmania, but relatively common in Victoria. In NSW, <i>Pultenaea humilis</i> is currently known from three confirmed localities in the NSW South Western Slopes bioregion. The extent of occurrence of <i>Pultenaea humilis</i> in NSW is estimated to be approximately 6000 km <sup>2</sup> . However the total population of <i>Pultenaea humilis</i> in NSW is not known.	<b>Present</b> Native woodland remnants present.	<b>Unlikely</b> Species only known from three localities in NSW.



Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Swainsona recta</i></b> <b>Small Purple-pea</b> <b>BC - E</b> <b>EPBC - E</b>	Small Purple-pea is a slender, erect perennial herb growing to 30 cm tall. The leaves are divided into up to six pairs of 10 mm long, very narrow leaflets, each with a pointed tip. There is also a single leaflet at the end of each divided leaf. It bears one to several sprays of between 10 and 20 purple, pea-shaped flowers, between late September and early December. Flowers are followed by pods up to 10 mm long in summer. Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria.	<b>Absent</b> Assumed extinct in Wagga Wagga.	<b>Unlikely</b> Assumed extinct in Wagga Wagga. Two historical records (1900), nearest from 7.3 km away.
<b><i>Swainsona sericea</i></b> <b>Silky Swainson-pea</b> <b>BC - V</b>	The Silky Swainson-pea is a prostrate or erect perennial, growing to 10 cm tall. The stems and leaves are densely hairy. The leaves are up to 7 cm long, composed of 5 - 13 narrow, pointed leaflets, each up to 15 mm long. The purple pea-shaped flowers are to 11 mm long, and are held in groups of up to 8 flowers, on a stem to 10 cm tall. The spring flowers are followed by hairy pods, up to 17 mm long. Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland.	<b>Present</b> Box-gum woodland present.	<b>Possible</b> Within known range.
<b>Orchid</b>			
<b><i>Prasophyllum sp.</i></b> <b>Wybong</b> <b>EPBC - CE</b>	<i>Prasophyllum sp. Wybong</i> (C. Phelps ORG 5269) is a terrestrial orchid that grows to approximately 30 cm high. It has a single dull-green basal leaf that is tubular and fleshy. The single flower spike has numerous fragrant flowers. Endemic to NSW, it is known from near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell, Tenterfield, Currabubula and the Pilliga area. Most populations are small, although the Wybong population contains by far the largest number of individuals. A perennial orchid, appearing as a single leaf over winter and spring. Flowers in spring and dies back to a dormant tuber over summer and autumn. Known to occur in open eucalypt woodland and grassland.	<b>Present</b> Box-gum woodland present.	<b>Possible but Unlikely</b> No known populations within study area.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Caladenia arenaria</i></b> <b>Sand-hill Spider Orchid</b> <b>BC - E</b> <b>EPBC - E</b>	Sand-hill Spider Orchid is from a group of orchids characterised by five long, spreading petals and sepals around a broad down-curved labellum ('lip'). Its densely hairy leaves are reddish at the base, up to 10 cm long and 6 mm wide. The flower stalk is up to 40 cm tall and has 1 or 2 pale yellow flowers. The petals and lateral sepals are stiffly spread into a cross shape; the tips of all are red and hairy. The labellum is only 8 mm across when flattened out and without lobes; this combination of flower characters is unique. The flowers appear between September and November. <i>Caladenia arenaria</i> is found mostly on the south west plains and western south west slopes. The original description is of a plant from Nangus, west of Gundagai (1865) and there is a report of the species from Adelong near Tumut. A record near Cootamundra needs verifying. The Sand-hill Spider Orchid is currently only known to occur in the Riverina between Urana and Narranderra.	<b>Absent</b> Sandy soils not present in proposal area.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Caladenia concolor</i></b> <b>Spider Orchid</b> <b>BC - E</b> <b>EPBC - V</b>	The Crimson Spider Orchid is from a group of orchids characterised by five long spreading petals and sepals around a broad down-curved labellum ('lip'). It has a single leaf up to 15 cm long. The flower stem is up to 30 cm tall with 1 or 2 deep purplish-red flowers, 80 mm across. Flowering generally occurs in September. The flowers are said to smell strongly like a hot motor. In the area where this species occurs, only the Rosella Spider Orchid <i>C. rosella</i> is similar, but it is musk-scented and has paler pink-streaked flower-parts. The current NSW Scientific Committee listing incorporates two populations which have each been described as separate species by D.L. Jones. One of these populations comprises a few hundred plants on private property near Bethungra and the other of about 100 plants occurs in Burrinjuck Nature reserve. The other occurrences of the Crimson Spider Orchid in NSW are from the Nail Can Hill Crown Reserve near Albury. The species also occurs at two localities in Victoria near Beechworth and Chiltern.	<b>Absent</b> Incorrect location.	<b>Unlikely</b> No known populations within study area.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Diuris tricolor</i></b> <b>Pine Donkey Orchid</b> <b>BC - V</b>	The Pine Donkey Orchid (formerly known as <i>Diuris sheaffiana</i> ) is a terrestrial species (it grows from the ground rather than from rocks or vegetation). It has between one and three leaves, to 30 centimetres long and 4mm wide. The flower stalk is between 20-40cm high and has 2-6 flowers, which are bright yellow to orange, speckled with red to purple and white markings. The sepals (the down-pointing slender green segments) are very long and often crossed. Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the north of NSW. Localities in the south include Red Hill north of Narrandera, Coolamon, and several sites west of Wagga Wagga. Condobolin-Nymagee road, Wattamondara towards Cowra, Eugowra, Girilambone, Dubbo and Cooyal, in the Central West. Pilliga SCA, Pilliga National Park and Bibblewindi State Forest in the north and Muswellbrook in the east.	<b>Absent</b> Lack of Cypress pine.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Prasophyllum petilum</i></b> <b>Tarengo Leek Orchid</b> <b>BC - E</b> <b>EPBC - E</b>	Tarengo Leek Orchid reaches to 35 cm tall. This species can be distinguished from the more common onion orchids ( <i>Microtis spp.</i> ) that grow in its habitat by the pinkish-purple base to the leaf. Each plant produces a solitary, tubular, fleshy, dull green leaf, growing to 35 cm tall. The flower-spike emerges in mid spring to early summer from a hole near the base of the leaf. The spike, reaching to 12 cm tall, has about 20 fragrant flowers with pointed petals. The flowers are usually a pale whitish-green, but can be pink or pale purple. Plants can be very cryptic when growing in small numbers and within tall grasses. The flowering time for this species varies from north to south. Populations around Muswellbrook and Ilford tend to flower in September, with the Boorowa and Hall populations flowering in October and the Queanbeyan area and Delegate populations in December. Annual abundance varies significantly depending on winter and early spring rainfall, biomass and potentially other variables including the severity of winter frosts. Natural populations are known from a total of five sites in NSW. These are near Boorowa, Queanbeyan area, Ilford, Delegate and a newly recognised population c.10 km west of Muswellbrook. It also occurs at Hall in the Australian Capital Territory. This species has also been recorded at Bowning Cemetery where it was experimentally introduced, though it is not known whether this population has persisted.	<b>Absent</b> Associated species not present.	<b>Unlikely</b> Lack of suitable habitat and area has been subject to cropping and grazing.

#### Trees & Shrubs

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>Acacia ausfeldii</b> <b>Ausfeld's Wattle</b> <b>BC - V</b>	<i>Acacia ausfeldii</i> is an erect or spreading shrub 2 - 4 m high with branchlets angled or flattened, resinous and smooth. The phyllodes (leaves) are narrowly elliptic to linear-oblong, straight to slightly curved, 2 - 7 cm long, 2 - 5 mm wide, hairless and are dotted with resin glands. <i>Acacia ausfeldii</i> phyllodes have a prominent mid-vein and less pronounced lateral veins, they also have an obtuse apex with a short sharp tip. There is a small gland located near the base of the phyllode and the pulvinus is less than 2 mm long. Two or sometimes 3 flower clusters stemming from the leaf axil and the flower stalks are 4 - 9 mm long, hairy and enclosed by small oval shaped bracts. Flower heads are bright yellow and 6 - 8 mm in diameter. Seed pods are straight or slightly curved and 4 - 9 cm long by 2 - 4 mm wide. Found to the east of Dubbo in the Mudgee-Ulan-Gulgong area of the NSW South Western Slopes bioregion, with some records in the adjoining Brigalow Belt South, South Eastern Highlands and the Sydney Basin bioregions. Populations are recorded from Yarrobil National Park, Goodiman State Conservation Area and there is a 1963 record from Munghorn Gap Nature Reserve. A large population is also known from Tuckland State Forest to the northwest of Gulgong.	<b>Absent</b> Some associated eucalpyt species present however no midstorey vegetation.	<b>Unlikely</b> Lack of suitable habitat, not observed during site visit.
<b>Eucalyptus cannonii</b> <b>Capertee Stringybark</b> <b>BC - V</b>	Usually occurs as a tree 10 – 15 m high with persistent, stringy bark. Leaves are lance-shaped, 9 – 15 cm long and 1.5– 2.5 cm wide. Buds and bud stems are angular, and fruits are generally greater than 10 mm diameter, often with a distinct rim around the middle. Can be distinguished from <i>E. macrorhyncha</i> , a closely related species that may grow in similar habitat, by the angular buds and usually larger fruit with a medial rim and shorter pedicels. Hybrids between the two species are common in some places where they co-exist. Hybrids may be distinguished in the field on the basis of fruit diameter, lack of prominence of the medial rim and reduced angularity of buds. The Capertee Stringybark is predominantly restricted to the central tablelands and slopes of NSW between the Golden Highway in the north, and the Mitchell Highway in the south. The species' distribution is bounded from east of Bathurst, to Wallerawang near Lithgow, north along the western edge of Wollemi National Park and north-west to Mudgee; isolated occurrences are known from a short way north of Goulburn River National Park between Dunedoo and Merriwa. Within this area the species is often locally frequent.	<b>Present</b> Some associated eucalpyt species present.	<b>Unlikely</b> Study area is on the fringe of known range. Not observed during site visit.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Grevillea wilkinsonii</i></b> <b>Tumut Grevillea</b> <b>BC - E</b> <b>EPBC - E</b>	<p>The Tumut Grevillea typically grows to a large spreading shrub up to 2.5 m tall and 2 m wide. The plants at Gundagai, however, are essentially prostrate shrubs with a spread of up to 3 m. The leaves are more or less oblong, to 15 cm long by 2 cm wide, with scalloped edges; each scallop is separated by a small sharp tooth. The leaves are green (sometimes bronze on young foliage) and almost hairless on the upper surface; the lower surface has a silky covering of short silvery-grey hairs. The individual flowers are small and distinctive, with pinkish to purple petals and a lilac-pink, green or yellow tipped style. The flowers form toothbrush-like clusters that are usually 3 - 5 cm long. The fruits are woody capsules to 9 mm long; splitting lengthways to release one (rarely two) ovoid dark-brown seed. The seed is 5-6.5 mm long, 2.5-3 mm in diameter and slightly flattened along one side. The Tumut Grevillea has a highly restricted distribution in the NSW South-west Slopes region. Its main occurrence is along a 6 km stretch of the Goobarragandra River approximately 20 km east of Tumut where about 1,000 plants are known. The other occurrence is a small population that straddles the boundary of two private properties at Gundagai where only eight mature plants survive.</p>	<p><b>Absent</b></p> <p>Incorrect location, species distribution is highly restricted.</p>	<p><b>Unlikely</b></p> <p>No known populations within study area.</p>
<b><i>Pomaderris queenslandica</i></b> <b>Scant Pomaderris</b> <b>BC - E</b>	<p>Scant Pomaderris is a medium-sized shrub 2 - 3m tall. The stems are whitish with tiny star-shaped hair clusters. The leaves are oval to narrow elliptical, 2.5 - 7 cm long and 10 - 25 mm wide. They are shiny on the top and woolly underneath. The small creamy yellow flowers appear during spring-summer. Widely scattered but not common in north-east NSW and in Queensland. It is known from several locations on the NSW north coast and a few locations on the New England Tablelands and North West Slopes, including near Torrington and Coolata.</p>	<p><b>Present</b></p> <p>Moist eucalypt forest present.</p>	<p><b>Unlikely</b></p> <p>Lack of shrubby understorey, unlikely preferred habitat. No records and not observed.</p>
<b><i>Zieria obcordata</i></b> <b>BC - E</b> <b>EPBC - E</b>	<p>Dense, rounded, perennial shrub to 0.5 m high. Leaves composed of 3 wedge-shaped leaflets, covered with small warts on the upper surface. The tip of the central leaflet is characteristically recurved to give it a notched appearance. Each leaflet 3-8.5 mm long and 1.3-3.7 mm wide, the margins somewhat toothed. Flowers with 4 petals, each 2-2.5 mm long, pale pink rapidly fading to white. Fruit a capsule about 5 mm across, deeply divided into 4 chambers. Occurs at two sites with a geographic range of 105 km. These are in the Wuuluman area near Wellington, comprising of a single subpopulation over 3 sites comprising 209 plants and Crackerjack Rock/Rock Forests area NW of Bathurst, with a subpopulation comprising of 14 sites, totaling to approximately 700 adults plants.</p>	<p><b>Absent</b></p> <p>No rocky hillside habitat or shrubby understorey.</p>	<p><b>Unlikely</b></p> <p>Lack of suitable habitat.</p>

EECs



Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>Grey Box</b> <b>(<i>Eucalyptus microcarpa</i>)</b> <b>Grassy Woodlands and Derived Native Grasslands of South-eastern Australia</b> <b>BC - EEC</b> <b>EPBC - EEC</b>	Inland Grey Box Woodland includes those woodlands in which the most characteristic tree species, <i>Eucalyptus microcarpa</i> (Inland Grey Box), is often found in association with <i>E. populnea subsp. bimbil</i> (Bimble or Poplar Box), <i>Callitris glaucophylla</i> (White Cypress Pine), <i>Brachychiton populneus</i> (Kurrajong), <i>Allocasuarina luehmannii</i> (Bulloak) or <i>E. melliodora</i> (Yellow Box), and sometimes with <i>E. albens</i> (White Box). Shrubs are typically sparse or absent, although this component can be diverse and may be locally common, especially in drier western portions of the community. A variable ground layer of grass and herbaceous species is present at most sites. At severely disturbed sites the ground layer may be absent. The community generally occurs as an open woodland 15–25 m tall but in some locations the overstorey may be absent as a result of past clearing or thinning, leaving only an understorey. Inland Grey Box Woodland occurs predominately within the Riverina and South West Slopes regions of NSW down to the Victorian border. It includes Albury to the east and may extend out west towards Hay. This community also extends across the slopes and plains in Central and Northern NSW up to the Queensland Border. This includes Yetman and Inverell in the North, Molong to the east of the Central Slopes and plains and out towards Nymagee to the west.	<b>Absent</b> Not present in proposal area.	<b>Absent</b> Not present in proposal area.
<b>Weeping Woodlands</b> <b>BC - EEC</b> <b>EPBC - EEC</b>	<b>Myall</b> This ecological community is scattered across the eastern parts of the alluvial plains of the Murray-Darling river system. The community is also known as Boree particularly in the southern part of its distribution. Typically, it occurs on red-brown earths and heavy textured grey and brown alluvial soils within a climatic belt receiving between 375 and 500 mm mean annual rainfall. The structure of the community varies from low woodland and low open woodland to low sparse woodland or open shrubland, depending on site quality and disturbance history. The tree layer grows up to a height of about 10 metres and invariably includes <i>Acacia pendula</i> (Weeping Myall or Boree) as one of the dominant species or the only tree species present. The understorey includes an open layer of chenopod shrubs and other woody plant species and an open to continuous groundcover of grasses and herbs.	<b>Absent</b> Not present in proposal area.	<b>Absent</b> Not present in proposal area.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland EPBC - CE</b>	White Box Yellow Box Blakely's Red Gum Woodland (commonly referred to as Box-Gum Woodland) is an open woodland community (sometimes occurring as a forest formation), in which the most obvious species are one or more of the following: White Box <i>Eucalyptus albens</i> , Yellow Box <i>E. melliodora</i> and Blakely's Red Gum <i>E. blakelyi</i> . Intact sites contain a high diversity of plant species, including the main tree species, additional tree species, some shrub species, several climbing plant species, many grasses and a very high diversity of herbs. The community also includes a range of mammal, bird, reptile, frog and invertebrate fauna species. Intact stands that contain diverse upper and mid-storeys and groundlayers are rare. The Australian Government listing of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland is slightly different to the NSW listing. Areas that are part of the Australian Government listed ecological community must have either; an intact tree layer and predominately native ground layer; or an intact native ground layer with a high diversity of native plant species but no remaining tree layer. Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the tablelands and western slopes of NSW.	<b>Present</b> White Box – Yellow Box – Blakely's Red gum woodland present.	<b>Possible</b> Woodland observed, however does not meet requirements for derived native grassland due to the ground layer containing less than 50 % of native perennial species.
<b>Coolac-Tumut Serpentine Shrubby Woodland in the NSW South Western Slopes and South Eastern Highlands Bioregions BC - EEC</b>	Coolac-Tumut Serpentine Shrubby Woodland consists of an overstorey of drooping sheoak ( <i>Allocasuarina verticillata</i> ) with the shrubs hickory wattle ( <i>Acacia implexa</i> ), grasstrees ( <i>Xanthorrhoea glauca</i> ) and <i>Ricinocarpos bowmanii</i> . The groundlayer consists of a range of native grasses and herbs, often including kangaroo grass ( <i>Themeda australis</i> ), wiregrasses ( <i>Aristida spp.</i> ), wallaby grasses ( <i>Rytidosperma spp.</i> ), <i>Senecio quadridentatus</i> , rock fern ( <i>Cheilanthes seiberi</i> ) and <i>Carex breviculmis</i> . Scattered trees of white box ( <i>Eucalyptus albens</i> ) and bundy ( <i>Eucalyptus nortonii</i> ) can occur. Many sites are degraded and have a poor level of regeneration, no longer supporting the full complement of species. Serpentine Shrubby Woodland is restricted to soils derived from serpentine in the Tumut-Coolac-Gundagai area. The largest occurrence is on the Honeysuckle range to the east of Tumut which extends from Argalong to the Murrumbidgee River. There are other smaller areas near Coolac and Gundagai.	<b>Absent</b> Not present in proposal area.	<b>Absent</b> Not present in proposal area.

Species	Description of habitat <sup>5</sup>	Presence of habitat	Likelihood of occurrence
<b>Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions BC - EEC</b>	Tall woodland or open forest dominated by Fuzzy Box <i>Eucalyptus conica</i> , often with Grey Box <i>Eucalyptus microcarpa</i> , Yellow Box <i>Eucalyptus melliodora</i> , or Kurrajong <i>Brachychiton populneus</i> . Buloke <i>Allocasuarina luehmannii</i> is common in places. Shrubs are generally sparse, and the groundcover moderately dense, although this will vary with season. Alluvial soils of the South West Slopes, Brigalow Belt South and Darling Riverine Plains Bioregions. Mainly in the Dubbo-Narromine-Parkes-Forbes area.	<b>Absent</b> Not present in proposal area.	<b>Absent</b> Not present in proposal area.
<b>White Box Yellow Box Blakely's Red Gum Woodland BC - EEC</b>	White Box Yellow Box Blakely's Red Gum Woodland (commonly referred to as Box-Gum Woodland) is an open woodland community (sometimes occurring as a forest formation), in which the most obvious species are one or more of the following: White Box <i>Eucalyptus albens</i> , Yellow Box <i>E. melliodora</i> and Blakely's Red Gum <i>E. blakelyi</i> . Intact sites contain a high diversity of plant species, including the main tree species, additional tree species, some shrub species, several climbing plant species, many grasses and a very high diversity of herbs. The community also includes a range of mammal, bird, reptile, frog and invertebrate fauna species. Intact stands that contain diverse upper and mid-storeys and groundlayers are rare. Modified sites include the following: Areas where the main tree species are present ranging from an open woodland formation to a forest structure, and the groundlayer is predominantly composed of exotic species; and Sites where the trees have been removed and only the grassy groundlayer and some herbs remain. The Australian Government listing of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland is slightly different to the NSW listing. Areas that are part of the Australian Government listed ecological community must have either: An intact tree layer and predominately native ground layer; or Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the tablelands and western slopes of NSW. An intact native ground layer with a high diversity of native plant species but no remaining tree layer.	<b>Present</b> Observed during site visit.	<b>Present</b> Observed during site visit.

## C8.2 Evaluation of the presence and likelihood of threatened fauna

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b>Birds</b>			
<b><i>Actitis hypoleucos</i> Common Sandpiper EPBC - M</b>	A small sandpiper of 19–21 cm in length with a wingspan of 32–35 cm. Breeding plumage of the Common Sandpiper is dark brown above, with a greenish gloss to feathers of cap, hindneck and mantle. Brown colouring is interspersed with irregular barring. Feathers are white underneath. The species has a prominent white eye-ring and indistinct dark eye-stripe from the bill to the rear of the ear coverts. White patches amongst darker feathers on the sides of the breast area are also notable. The species has a long tail that extends behind the wings when at rest, short legs, and a medium length bill. Found along all coastlines of Australia and in many areas inland. The population that migrates to Australia breeds in the Russian far east. Roost sites are typically on rocks or in roots or branches of vegetation, especially mangroves. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. The species is known to perch on posts, jetties, moored boats and other artificial structures, and to sometimes rest on mud or 'loaf' on rocks.	<b>Present</b> Creek and dam habitat present.	<b>Possible but Unlikely</b> Species migratory and marine and more often found in coastal areas.

<sup>6</sup> Information sourced from species profiles on NSW OEH's threatened species database or the Australian Government's Species Profiles and Threats database (SPRAT) unless otherwise stated.

OEH threatened species database: <http://www.threatenedspecies.environment.nsw.gov.au/index.aspx>

SPRAT: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Anthochaera phrygia</i></b> <b>Regent Honeyeater</b> <b>BC - CE</b> <b>EPBC - CE</b>	<p>The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. The Regent Honeyeater is a generalist forager, although it feeds mainly on the nectar from a relatively small number of eucalypts that produce high volumes of nectar. Key eucalypt species include Mugga Ironbark, Yellow Box, White Box and Swamp Mahogany. Other tree species may be regionally important. For example the Lower Hunter Spotted Gum forests have recently been demonstrated to support regular breeding events. There are three known key breeding areas, two of them in NSW - Capertee Valley and Bundarra-Barraba regions. The species breeds between July and January in Box-Ironbark and other temperate woodlands and riparian gallery forest dominated by River Sheoak. Regent Honeyeaters usually nest in horizontal branches or forks in tall mature eucalypts and Sheoaks.</p>	<p><b>Present</b></p> <p>Riparian woodland present.</p> <p>box habitat</p>	<p><b>Possible</b></p> <p>Suitable habitat and one record from 8 km away.</p>
<b><i>Apus pacificus</i></b> <b>Fork-tailed Swift</b> <b>BC -</b> <b>EPBC - M</b>	<p>It has a length of 18–21 cm, a wingspan of 40–42 cm and weighs around 30–40 g. It is a medium-sized Swift, with a slim body with long scythe-shaped wings that taper to finely pointed tips. It is characterized by a long and deeply forked tail. There is also a white patch on the chin and throat. In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide, however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The Fork-tailed Swift usually arrives in Australia around October and leaves southern Australia from mid-April. Breeds in siberia.</p>	<p><b>Present</b></p> <p>Riparian woodland and box-gum woodland present in inland areas.</p>	<p><b>Possible but Unlikely</b></p> <p>Species migratory and more often found in coastal areas.</p>



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Botaurus poiciloptilus</i></b> <b>Australasian Bittern</b> <b>BC - E</b> <b>EPBC - E</b>	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes ( <i>Typha spp.</i> ) and spikerushes ( <i>Eleocharis spp.</i> )	<b>Absent</b> Dam habitat present but no bulrushes or spikerushes observed.	<b>Unlikely</b> Lack of suitable habitat and no historical records.
<b><i>Calidris ferruginea</i></b> <b>Curlew Sandpiper</b> <b>BC - CE</b> <b>EPBC - CE</b>	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. 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 inland.	<b>Present</b> Inland water bodies present.	<b>Unlikely</b> Two records, nearest from 2.6 km away, however species predominantly occupies littoral and estuarine habitats.
<b><i>Falco subniger</i></b> <b>Black Falcon</b> <b>BC - V</b>	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres (Marchant & Higgins 1993). The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring.	<b>Present</b> Suitable habitat. Species distribution continuous.	<b>Possible</b> Six records, nearest from 2.6 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Calidris melanotos</i></b> <b>Pectoral Sandpiper</b> <b>EPBC - M</b>	The Pectoral Sandpiper is a small-medium sandpiper. The species has a length of 19–24 cm, a wingspan of 37–45 cm and a weight of 85 g for males and 60 g for females. The species is characterised by a flat back and a plumpish body that tapers to a drawn out rear end. The head is small and rounded, situated on a long neck. The legs are short and the bill varies from short and straight, to medium-length and gently decurved. In New South Wales (NSW), the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum.	<b>Absent</b> Coastal habitat or aquatic habitat with grass, samphire or lignum not present.	<b>Unlikely</b> Lack of suitable habitat and no historical records.
<b><i>Calyptorhynchus lathami</i></b> <b>Glossy Black-cockatoo</b> <b>BC - V</b>	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Dependent on large hollow-bearing eucalypts for nest sites. One or two eggs are laid between March and August. Inhabits open forest and woodlands of the coast and the Great Dividing Range up to 1000 m in which stands of she-oak species, particularly Black She-oak ( <i>Allocasuarina littoralis</i> ), Forest She-oak ( <i>A. torulosa</i> ) or Drooping She-oak ( <i>A. verticillata</i> ) occur. In the Riverina area, inhabits open woodlands dominated by Belah ( <i>Casuarina cristata</i> ). Feeds almost exclusively on the seeds of several species of she-oak ( <i>Casuarina</i> and <i>Allocasuarina</i> species), shredding the cones with the massive bill.	<b>Present</b> Large hollow bearing eucalypts present.	<b>Possible</b> No food tree species however suitable breeding habitat.  Two records, nearest from 8.4 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Gallinago hardwickii</i></b> <b>Latham's Snipe</b> <b>EPBC - M</b>	Latham's Snipe is a medium sized wader, and the largest snipe in Australia, with a length of 29-33 cm, a wingspan of 50-54 cm Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia. occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). known to occur in the upland wetlands of the New England Tablelands and Monaro Plateau.	<b>Absent</b> Lack of aquatic habitat with dense vegetation.	<b>Unlikely</b> Lack of preferred habitat.
<b><i>Chalinolobus dwyeri</i></b> <b>Large-eared Bat</b> <b>BC - EPBC - V</b>	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin ( <i>Petrochelidon ariel</i> ), frequenting low to mid-elevation dry open forest and woodland close to these features. Found in well-timbered areas containing gullies.	<b>Absent</b> No cliffs and caves.	<b>Unlikely</b> No suitable habitat.
<b><i>Haliaeetus leucogaster</i></b> <b>White-bellied Eagle</b> <b>BC - EPBC - M</b>	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. The species also occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest).	<b>Absent</b> No coastal habitat.	<b>Unlikely</b> No suitable habitat.
<b><i>Hirundapus caudacutus</i></b> <b>White-throated Needletail</b> <b>EPBC - M</b>	This large swift has long curved wings and white markings. The plumage of the White-throated Needletail is predominantly grey-brown, glossed with green and the wings are long and pointed. The tail is short and square, with the protruding feather shafts giving a spiky appearance. The throat and undertail are white. White-throated Needletails arrive in Australia from their breeding grounds in the northern hemisphere in about October each year and leave somewhere between May and August. White-throated Needletails are non-breeding migrants in Australia. Breeding takes place in northern Asia.	<b>Present</b> Wooded areas with cleared pasture	<b>Possible but Unlikely</b> Unlikely present as species is aerial.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b>Lathamus discolor</b> <b>Swift Parrot</b> <b>BC - CE</b> <b>EPBC - CE</b>	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. Migrates to the Australian south-east mainland between March and October. No breeding in NSW. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i> , Spotted Gum <i>Corymbia maculata</i> , Red Bloodwood <i>C. gummifera</i> , Mugga Ironbark <i>E. sideroxylon</i> , and White Box <i>E. albens</i> .	<b>Present</b> Box-gum woodland with mature hollow bearing trees present.	<b>Possible</b> Suitable habitat, five records, nearest from 4.4 km away.
<b>Leipoa ocellata</b> <b>Malleefowl</b> <b>BC - E</b> <b>EPBC - V</b>	The Malleefowl is a large (60 centimetres long, 43 centimetres high and weighing between 1.5 and 2.5 kilograms), distinctive, ground-dwelling bird. It possesses robust, powerful legs, a short bill and a flattish head while the wings are short, broad and rounded at the tip. The head and neck is greyish above, topped with black, the chin is chestnut and the throat and chest are white with a central black stripe. A crest extends from the front of the crown to the nape, and is raised when the bird is alarmed. The upper body is boldly barred and is fringed and streaked grey, white, black and rufous. The lower breast and belly are cream. Although strikingly marked, Malleefowl are particularly well camouflaged in the dappled light of their mallee habitat. Most easily seen at their nest mound, this species usually quietly walks away from observers and rarely flies. The most frequently heard call is loud booming made by the male, usually from on or near its mound. 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.	<b>Absent</b> No mallee woodlands or areas with thick understorey.	<b>Unlikely</b> Lack of suitable habitat.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Myiagra cyanoleuca</i></b> <b>Satin Flycatcher</b> <b>BC - M</b> <b>EPBC - M</b>	The Satin Flycatcher is a small blue-black and white bird with a small crest. The sexes are dimorphic (have two forms). Males are glossy blue-black above, with a blue-black chest and white below, while females are duskier blue-black above, with a orange-red chin, throat and breast, and white underparts and pale-edged wing and tail feathers. The Satin Flycatcher is found along the east coast of Australia in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. The Satin Flycatcher nests in loose colonies of two to five pairs nesting at intervals of about 20 m - 50 m apart. It builds a broad-based, cup-shaped nest of shredded bark and grass, coated with spider webs and decorated with lichen. The nest is placed on a bare, horizontal branch, with overhanging foliage, about 3 m - 25 m above the ground.	<b>Absent</b> No heavily forested gullies.	<b>Unlikely</b> Lack of suitable habitat. Species migratory.
<b><i>Ninox strenua</i></b> <b>Powerful Owl</b> <b>BC - V</b>	In NSW the Powerful Owl lives in forests and woodlands occurring in the coastal, escarpment, tablelands and western slopes environments. Specific habitat requirements include eucalypt forests and woodlands on productive sites on gentle terrain; a mosaic of moist and dry types, with mesic gullies and permanent streams; presence of leafy sub-canopy trees or tall shrubs for roosting; presence of large old trees to provide nest hollows. Optimal habitat includes a tall shrub layer and abundant hollows supporting high densities of arboreal marsupials. Roosts in groves of dense mid-canopy trees or tall shrubs in sheltered gullies, typically on wide creek flats and at the heads of minor drainage lines, but also adjacent to cliff faces and below dry waterfalls. Species commonly used for roosting include the She-oaks <i>Allocasuarina</i> spp., rainforest species such as Coachwood <i>Ceratopetalum apetalum</i> , Lilly Pilly <i>Acmena smithii</i> and Sassafras <i>Doryphora sassafras</i> , Black Wattle <i>Acacia melanoxylon</i> , Turpentine <i>Syncarpia glomulifera</i> and eucalypts.	<b>Absent</b> No dense roosting vegetation or large tracts of foraging vegetation.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Numenius madagascariensis</i></b> <b>Eastern Curlew</b> <b>BC - CE</b> <b>EPBC - CE</b>	In NSW the species occurs across the entire coast but is mainly found in estuaries such as the Hunter River, Port Stephens, Clarence River, Richmond River and ICOLLs of the south coast. It generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets.	<b>Absent</b> No coastal habitat, incorrect location.	<b>Unlikely</b> Lack of suitable habitat.



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b>Motacilla flava</b> <b>Yellow Wagtail</b> <b>EPBC - M</b>	This species occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra. In the north of its range it is also found in large forest clearings. It breeds from April to August, although this varies with latitude.	<b>Absent</b>  Damp habitats present in form of drainage lines, creek and damns	<b>Unlikely</b>  Some suitable habitat however species marine and migratory, no historical records.
<b>Tyto novaehollandiae</b> <b>Masked Owl</b> <b>BC - V</b>	Extends from the coast where it is most abundant to the western plains. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. Habitat for this species is also widespread throughout the dry eucalypt forests of the tablelands, western slopes and the undulating wet-dry forests of the coast. Optimal habitat includes an open understorey and a mosaic of sparse (grassy) and dense (shrubby) ground cover on gentle terrain. Roosts in hollows in live or occasionally dead eucalypts; dense foliage in gullies; and caves. Nest in old hollow eucalypts, live or dead, in a variety of topographic positions, with hollows greater than 40 cm wide and greater than 100 cm deep. Hollow entrances are at least 3 m above ground, in trees of at least 90 cm diameter at breast height. A specialist predator of terrestrial mammals, particularly native rodents. Home range has been estimated as 400-1000 ha according to habitat productivity.	<b>Present</b>  Eucalypt forest with large hollow bearing trees.	<b>Possible</b>  No records however habitat is suitable.
<b>Grantiella picta</b> <b>Painted Honeyeater</b> <b>BC - V</b> <b>EPBC - V</b>	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/ Weeping Myall ( <i>Acacia pendula</i> ), Brigalow ( <i>A. harpophylla</i> ) and Box-Gum Woodlands and Box-Ironbark Forests. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus <i>Amyema</i> . Nest from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark or mistletoe branches.	<b>Present</b>  Box-gum woodland present.	<b>Unlikely</b>  Woodland present however no mistletoes observed. No drooping eucalypts, she-oak or paperbark.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Rostratula australis</i></b> <b>Australian Painted Snipe</b> <b>BC - E</b> <b>EPBC - E</b>	The Australian Painted Snipe is small freshwater wader, with a long bill that droops slightly at the tip. The female has a chestnut-black hood with a bold white eye-patch and a cream stripe along the middle of the crown. The back and wings are patterned bronzy-greenish-grey with a few cream streaks and the underparts are white. The male is slightly smaller and has greyer, less contrasting patterns, but also has large cream spots on the wings. The Australian Painted Snipe is restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. 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. The nest consists of a scrape in the ground, lined with grasses and leaves.	<b>Absent</b> No aquatic habitat with dense vegetation.	<b>Unlikely</b> Lack of preferred habitat.
<b><i>Circus assimilis</i></b> <b>Spotted Harrier</b> <b>BC - V</b>	The Spotted Harrier is a medium-sized, slender bird of prey having an owl-like facial ruff that creates the appearance of a short, broad head, and long bare yellow legs. The upperparts are blue-grey with dark barring, and the wingtips are black. The face, innerwing patch, and underparts are chestnut. The long tail is boldly banded, with a wedge-shaped tip. Juveniles are mottled and streaked ginger and brown, with prominent ginger shoulders, fawn rump and banded tail. The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Individuals disperse widely in NSW and comprise a single population.	<b>Present</b> Agricultural and eucalypt woodland.	<b>Possible</b> Suitable habitat. Three records, nearest from 2.3 km away.
<b><i>Hieraaetus morphnoides</i></b> <b>Little Eagle</b> <b>BC - V</b>	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. The species often occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	<b>Present</b> Open eucalypt forest present.	<b>Possible</b> Suitable habitat. 12 records, nearest from 1.9 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Burhinus grallarius</i></b> <b>Bush Stone-curlew</b> <b>BC - E</b>	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. The species is largely nocturnal, being especially active on moonlit nights.	<b>Present</b> Open forest with fallen timber.	<b>Possible</b> Suitable habitat. Two records, nearest from 2.1 km away.
<b><i>Callocephalon fimbriatum</i></b> <b>Gang-gang Cockatoo</b> <b>BC - V</b>	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. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. 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. May also occur in sub-alpine Snow Gum ( <i>Eucalyptus pauciflora</i> ) woodland and occasionally in temperate rainforests.	<b>Present</b> Box-gum woodland and large hollow bearing trees present.	<b>Possible</b> Suitable habitat One record from 4.9 km away.
<b><i>Glossopsitta porphyrocephala</i></b> <b>Purple-crowned Lorikeet</b> <b>BC - V</b>	The Purple-crowned Lorikeet occurs across the southern parts of the continent from Victoria to south-west Western Australia. It is uncommon in NSW, with records scattered across the box-ironbark woodlands of the Riverina and south west slopes, the River Red Gum forests and mallee of the Murray Valley as far west as the South Australian border, and, more rarely, the forests of the South Coast. The species is nomadic and most, if not all, records from NSW are associated with flowering events. Found in open forests and woodlands, particularly where there are large flowering eucalypts. Also recorded from mallee habitats. Feed primarily on nectar and pollen of flowering Eucalypts, including planted trees in urban areas. May rarely raid orchards to feed on ripe fruit. Breeds away from feeding areas, utilising hollow branches or holes in trees. Also roosts in dense vegetation up to several kilometres away from feeding areas.	<b>Present</b> Box-gum woodland and large hollow bearing trees present.	<b>Possible</b> Suitable habitat Three records, nearest from 9 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Glossopsitta pusilla</i></b> <b>Little Lorikeet</b> <b>BC - V</b>	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Occupies isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species.	<b>Present</b> Box-gum woodland, riparian habitat, and large hollow bearing trees present.	<b>Possible</b> Suitable habitat.
<b><i>Neophema pulchella</i></b> <b>Turquoise Parrot</b> <b>BC - V</b>	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland.	<b>Present</b> Eucalypt woodland with adjacent cleared areas, creeks, and farmland present.	<b>Possible</b> Suitable habitat. Three records, nearest from 6 km away.
<b><i>Polytelis swainsonii</i></b> <b>Superb Parrot</b> <b>BC - V</b> <b>EPBC - V</b>	The Superb Parrot is a distinctive large, bright grass-green parrot with a long, narrow tail and sharply back-angled wings in flight. Males have yellow foreheads and throats and a red crescent that separates the throat from the green breast and belly. Females are slightly duller green and have a dull, light blue wash in place of the males' red and yellow markings. 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. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. It is estimated that there are less than 5000 breeding pairs left in the wild.	<b>Present</b> Box-gum woodland and large hollow bearing trees present.	<b>Possible</b> Suitable habitat. 27 records, nearest from 4.6 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Ninox connivens</i></b> <b>Barking Owl</b> <b>BC - V</b>	Although common in parts of northern Australia, the species has declined greatly in southern Australia and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Many populations crashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. Surveys in 2001 demonstrated that the Pilliga Forest supported the largest population in southern Australia. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights.	<b>Present</b> Woodland and open forest present. Timbered creek.	<b>Possible</b> Suitable habitat. Three records, nearest from 6.2 km away.



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Climacteris picumnus victoriae</i></b> <b>Brown Treecreeper</b> <b>(eastern subspecies)</b> <b>BC - V</b>	The Brown Treecreeper, Australia's largest treecreeper, is a grey-brown bird with black streaking on the lower breast and belly and black bars on the undertail. Pale buff bands across the flight feathers are obvious in flight. The face is pale, with a dark line through the eye, and a dark crown. Sexes differ slightly in all plumages, with small patches of black and white streaking on the centre of the uppermost breast on males, while the females exhibit a rufous and white streaking. Juveniles differ from adults mainly by the pattern of the under-body, and by their a pale bill and gape. <i>Subspecies victoriae</i> is distinguished from subspecies <i>picumnus</i> by colour differences on the face, body and tail markings. The two subspecies grade into each other through central NSW. Individuals are active, noisy and conspicuous, and give a loud 'pink' call, often repeated in contact, and sometimes given in a series of 5 - 10 descending notes. Breeds from July to Feb across its range. The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of <i>Climacteris picumnus victoriae</i> runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper <i>Climacteris picumnus picumnus</i> which then occupies the remaining parts of the state. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys. The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years.	<b>Present</b> Box-gum woodland and fallen timber present.	<b>Possible</b> Suitable habitat. 17 records, nearest from 4.6 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Chthonicola sagittata</i></b> <b>Speckled Warbler</b> <b>BC - V</b>	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. There has been a decline in population density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100ha survive. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy.	<b>Present</b> Eucalypt woodland with grassy understorey.	<b>Possible</b> Some suitable habitat. Two records, nearest from 4.9 km away.
<b><i>Melithreptus gularis gularis</i></b> <b>Black-chinned Honeyeater (eastern subspecies)</b> <b>BC - V</b>	The Black-chinned Honeyeater is the largest of its genus, reaching 17 cm in length. The cap is black, with a white crescent around the nape, and there is a diagnostic black 'chin' beneath the bill and extending down the white throat (though this can be difficult to see in the field). There is a small crescent of blue skin above the eye. The back and wings are a dull olive-green and the tail is greyish-brown. The underparts are white, with a greyish-buff tint on the breast. The bill is short, black and slightly downcurved. The call is a ringing, bubbling trill, repeated several times. A combination of larger size, black chin, bright blue eye crescent and call distinguishes this from similar species, such as the White-naped ( <i>Melithreptus lunatus</i> ) and White-throated ( <i>M. lunatus</i> ) Honeyeaters. The Black-chinned Honeyeater has two subspecies, with only the nominate ( <i>gularis</i> ) occurring in NSW. The other subspecies ( <i>laetior</i> ) was formerly considered a separate species (Golden-backed Honeyeater) and is found in northern Australia between central Queensland west to the Pilbara in Western Australia. The eastern subspecies extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter.	<b>Present</b> Box-gum woodland.	<b>Possible</b> Suitable habitat. Two records, nearest from 6 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Pomatostomus temporalis temporalis</i></b> <b>Grey-crowned Babbler (eastern subspecies)</b> <b>BC - V</b>	The eastern subspecies ( <i>temporalis</i> ) occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands.	<b>Present</b> Box-gum woodland.	<b>Possible</b> Suitable habitat. One record from 6.4 km away.
<b><i>Daphoenositta chrysoptera</i></b> <b>Varied Sittella</b> <b>BC - V</b>	In NSW most individuals have a grey head and are streaked with dark brown, but in the extreme north-east they have a white head, and in the extreme south-west a black cap. 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. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades.	<b>Present</b> Box-gum woodland.	<b>Possible</b> Suitable habitat. Two records, nearest from 6 km away.

<p><b><i>Pachycephala inornata</i></b> <b>Gilbert's Whistler</b> <b>BC - V</b></p>	<p>The Gilbert's Whistler is a stocky whistler (17 to 20 centimetres), possessing a short but robust bill. The male is a brownish-grey, with a black patch between the red eyes and bill (the lores), and a distinctive orange-rufous chin and throat. The female is more uniformly brownish-grey, lacking the males lore and throat pattern and has a pale eye-ring. This species, particularly the female, can be difficult to distinguish from other whistlers. Both sexes of the adult Red-lored Whistler (<i>Pachycephala rufogularis</i>) possess red (rather than black or grey) lores, while immatures of this species can be very difficult to separate from female and immature Gilbert's Whistlers. The female Golden Whistler (<i>P. pectoralis</i>) which overlaps with this species in the eastern parts of its distribution (particularly during winter) is separated from the Gilbert's by its slightly smaller size, proportionally smaller bill, and overall browner (rather than grey) colouration (some may also possess a yellow vent). Young birds of this species usually have distinctive rufous feathers in the wing. The Gilbert's Whistler usually occur singly or in pairs and can be unobtrusive and hard to see. Like other whistlers, this species is a wonderful bush songster and is often first detected by its call. Its powerful song is complex and far-carrying (up to 900 metres) and often consists of a series of 'chop' and 'er-whit' calls. The Gilbert's Whistler is sparsely distributed over much of the arid and semi-arid zone of inland southern Australia, from the western slopes of NSW to the Western Australian wheatbelt. The species was probably once distributed almost continuously across the woodlands and mallee of southern NSW, but this range has been greatly reduced, chiefly by clearance of habitat. The eastern population extends from the central NSW mallee (Yathong, Nombinnie and Round Hill NRs), south and east through the Cocoparra Range to Pomingalama Reserve (near Wagga Wagga) then north through the South West Slopes east as far as Cowra and Burrendong Dam, to the Goonoo reserves (with scattered records as far north as Pilliga). The north western limits of this population are poorly known, with records from as far west as Cobar and recent records from Quanda NR, though records further west may be due to confusion with the Golden Whistler. In a number of reserves in this area there have been no recent records (last records from Pulletop NR 1982, Pomingalama Reserve 1995 and Ingalba NR 1999) and this species may be locally extinct. Occasional records are also made of this species in the Capertee Valley. The species is also recorded in River Red Gum forests along the Murray River valley between Mathoura and Wentworth, with the eastern populations (between Mathoura and Barham) apparently isolated from other NSW populations. West of Swan Hill, this population may interact with populations found to the north of the Murray River west of Balranald and as far north as the Scotia country (Tarawi NR and Scotia Sanctuary).</p>	<p><b>Present</b> Eucalypt woodland.</p>	<p><b>Possible</b> Suitable habitat. Three records, nearest from 9 km away.</p>
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Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Artamus cyanopterus cyanopterus</i></b> <b>Dusky Woodswallow</b> <b>BC - V</b>	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.	<b>Present</b> Eucalypt woodland and farmland present.	<b>Possible</b> Suitable habitat. Seven records, nearest from 5 km away.
<b><i>Melanodryas cucullata cucullata</i></b> <b>Hooded Robin (south-eastern form)</b> <b>BC - V</b>	The Hooded Robin is a large Australian robin reaching 17 cm in length. The male is strikingly marked in black and white, with a bold black hood extending down a white breast. The back is black with distinct white shoulder and wing-bar. The tail is black, with prominent white side-panels. Females and immatures are duller, with light brownish-grey upperparts, but the same striking black and white wings. Flight is short and swiftly undulating. The call is a series of descending, fading, mellow notes. The adult male is unmistakable but the female and young males may be confused with other species, such as the Jacky Winter. Hooded Robins are distinguished by their larger size, distinctive white wing bar and different shaped tail markings ('hourglass' shaped). The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies <i>cucullata</i> ) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies <i>picata</i> . Two other subspecies occur outside NSW.	<b>Present</b> Eucalypt woodland, stags and fallen timber present.	<b>Possible but Unlikely</b> Three records, nearest from 6 km away. Some suitable habitat, however lack of structural diversity.



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Petroica boodang</i></b> <b>Scarlet Robin</b> <b>BC - V</b>	The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. 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. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter.	<b>Present</b> Eucalypt woodland and fallen timber.	<b>Possible</b> Suitable habitat. Six records, nearest from 2.6 km away.
<b><i>Petroica phoenicea</i></b> <b>Flame Robin</b> <b>BC - V</b>	The Flame Robin is a small Australian robin that reaches 14 cm in length. The male has a dark grey head and upperparts, a small white forehead patch, and white wing stripes and white tail-edges. The male has a bright orange-red throat, breast and upper-belly. The lower belly is white. The female is brown, darker above, and has a whitish throat and lower belly. The whitish mark on the female's forehead is inconspicuous. Female Flame Robins also have white and buffish marked wings and tail. Immature males resemble females. The main call of the Flame Robin is a thin, pretty, piping descending song. The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands.	<b>Present</b> Eucalypt woodland with open understorey.	<b>Possible</b> Suitable habitat. Four records, nearest from 4.9 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Stagonopleura guttata</i></b> <b>Diamond Firetail</b> <b>BC - V</b>	<p>The Diamond Firetail is a large (length 10 to 12 cm, weight 17 grams), striking finch with a bright red bill, and red eyes and rump. The white throat and lower breast are separated by a broad black breast-band that extends into the strongly white-spotted, black flanks. It has a grey back and head, and ashy-brown wings. The call is a plaintive, drawn-out, nasal 'twoo-wheree'. Flight is low and direct, with slight undulations. Given good views it should not be confused with any other species. The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River.</p>	<p><b>Present</b> Box-gum woodland.</p>	<p><b>Possible</b> Suitable habitat. Five records, nearest from 6.2 km away.</p>
<b><i>Stictonetta naevosa</i></b> <b>Freckled Duck</b> <b>BC - V</b>	<p>The Freckled Duck is a dark, greyish-brown bird with a large head that is peaked at the rear, and a distinctive narrow, slightly up-turned bill. Their dark brownish-black plumage is evenly freckled all over with white or buff. During the winter-spring breeding season, the male's bill becomes crimson at the base. The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times.</p>	<p><b>Absent</b> Farm dams present, however no heavy rush growth.</p>	<p><b>Unlikely</b> One record from 8.5 km away, however preferred habitat not present in proposal area.</p>

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b>Anseranas semipalmata</b> <b>Magpie Goose</b> <b>BC - V</b>	The Magpie Goose is a large, distinctive black and white water-bird (from 70 - 90 cm long) with a prominent knob on the head, and orange legs. It is black at each 'end' - head, neck and upper chest, plus rump and tail - with white body and wings in between. Immature birds have no head-knob and their white parts are mottled grey or brown. It is not a duck or goose, but is regarded as a primitive relative of them. The Magpie Goose is still relatively common in the Australian northern tropics, but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW.	<b>Absent</b> No wetlands with dense growth of vegetation.	<b>Unlikely</b> One record from 7.9 km away, however no suitable habitat within proposal area.
<b>Epthianura albifrons</b> <b>White-fronted Chat</b> <b>BC - V</b>	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas.	<b>Present</b> Bare grassy ground present in proposal area.	<b>Possible</b> Two records, nearest from 2.6 km away. Suitable habitat.
<b>Fish</b>			
<b>Galaxias rostratus</b> <b>Flathead Galaxias,</b> <b>Beaked Minnow,</b> <b>Flat-headed</b> <b>Jollytail, Flat-</b> <b>headed Minnow</b> <b>EPBP - CE</b>	Endemic to the Murray Darling river system, and known historically from Rankins Lagoon, Bathurst, NSW (33°25'S), south and south-west through intermittent localities of as far as Mannum, South Australia (139°18'E).  The Flathead Galaxias inhabits still or gently flowing water on the margins of lakes, billabongs and streams. It usually occurs in shoals in midwater over rocky or sandy bottoms near aquatic vegetation.	<b>Absent</b> No flowing water habitat present currently.	<b>Unlikely</b> Lack of suitable habitat.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Maccullochella peelii</i></b> <b>Murray Cod</b> <b>EPBC - V</b>	<p>The Murray Cod utilises a diverse range of habitats from clear rocky streams, such as those found in the upper western slopes of NSW (including the ACT), to slow-flowing, turbid lowland rivers and billabongs.</p> <p>Murray Cod are frequently found in the main channels of rivers and larger tributaries. The species is, therefore, considered a main-channel specialist. Murray Cod tend to occur in floodplain channels and anabranches when they are inundated, but the species' use of these floodplain habitats appears limited. Juveniles less than one year old have been found in main river channels where it appears they settle at a late larval (newly born) stage.</p> <p>Preferred microhabitat consists of complex structural features in streams such as large rocks, snags (pieces of large submerged woody debris), overhanging stream banks and vegetation, tree stumps, logs, branches and other woody structures. Such structures reduce or influence stream flows and provide Murray Cod with shelter from fast-flowing water. They also serve as predatory ambush points for foraging, particularly during the day.</p> <p>Riparian vegetation, for example River Red Gum (<i>Eucalyptus camaldulensis</i>) woodland in the lowland river systems of the Murray-Darling Basin, not only provides an ongoing supply of structural habitat for the Murray Cod in the form of coarse woody debris or snags, but aids stream bank stability and protects riparian soils from water and wind erosion.</p>	<b>Absent</b> No flowing water habitat present currently.	<b>Unlikely</b> Lack of suitable habitat.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Macquaria australasica</i></b> <b>Macquarie Perch</b> <b>EPBC - E</b>	<p>The Macquarie Perch is a riverine, schooling species. It prefers clear water and deep, rocky holes with lots of cover. As well as aquatic vegetation, additional cover may comprise of large boulders, debris and overhanging banks. Spawning occurs just above riffles (shallow running water). Populations may survive in impoundments if able to access suitable spawning sites.</p> <p>Spawning sites used by the Macquarie Perch in the rivers flowing into Lake Eildon (between 1966–69) consisted of rubble substrate of small boulders, pebbles and gravel. Water depth was 0.2–0.9 m (usually 0.4–0.6 m) and water velocity was 0.3–0.6 m/s. There was also a pool (usually 15–30 m long and at least 1.5 m deep) immediately upstream, and fast-flowing broken water immediately downstream. Although this species can tolerate temperatures of &lt; 9 °C (the temperature of the water at the bottom of Lake Eildon) they appear to require a temperature of at least 16.5 °C for spawning to occur. Newly hatched yolk sac larvae shelter amongst pebbles. In Seven Creeks, this species occurred in deep pools and riffles above falls where the substrate was gravel and boulders.</p>	<b>Absent</b> No flowing water habitat present currently.	<b>Unlikely</b> Lack of suitable habitat.
<b>Amphibians</b>			
<b><i>Litoria booroolongensis</i></b> <b>Booroolong Frog</b> <b>BC - E</b> <b>EPBC - E</b>	<p>The Booroolong Frog is a medium sized tree frog, with adults growing to about 5 cm. Their body-colour may be grey, olive or brown with indistinct black markings. The abdomen is white. The skin usually has a slightly warty appearance. The fingers and toes have well developed discs, and the toes are strongly webbed. The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses with riffles, cobble banks and other rock structures within stream margins. Breeding occurs in spring and early summer and tadpoles metamorphose in late summer to early autumn.</p>	<b>Absent</b> No permanent streams present.	<b>Unlikely</b> Lack of suitable habitat.



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Crinia sloanei</i></b> <b>Sloane's BC - V Froglet</b>	Sloane's Froglet is a small ground-dwelling frog belonging to the family Myobatrachidae. This species superficially resembles other frogs of the genus <i>Crinia</i> , but it can be readily identified by its physical characteristics and call. <i>C. sloanei</i> shows far less variation in back colour pattern than other <i>Crinia</i> species, having a mustard yellow or greyish back with large patches of darker pigment over the body. The throat of males is greyish green. The call is described as a short metallic 'chick chick chick chick' repeated frequently. Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. At a number of sites where records are verified by museum specimens, the species has not been subsequently detected during more recent frog surveys in the vicinity (e.g. Holbrook, Nyngan, Wagga Wagga and Tocumwal). The low number of sites, low number of recorded individuals per site, and the low proportion of records of this species in regional surveys all indicate that a moderately low number of mature individuals exist. The apparent loss from previous recorded sites and decline in recording rates indicates that this is not just a rare or uncommonly encountered species, but that there has been a reduction in population size and range.	<b>Absent</b> No inundated areas.	<b>Unlikely</b> Lack of suitable habitat and no historical records.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Litoria raniformis</i></b> <b>Southern Bell Frog</b> <b>BC - E</b> <b>EPBC - V</b>	One of the largest frog species in Australia, these animals may reach up to 104 mm in length, with females usually larger than males. Animals vary greatly in colour and pattern but are typically olive to bright emerald green, with irregular gold, brown, black or bronze spotting with a pale green stripe down the centre of the back. Undersides are white and coarsely granular, although during the breeding season males may become yellow or dark grey/black under the throat. The groin and posterior of the thighs are turquoise blue. They lack webbing on their fingers but the toes are almost fully webbed and toe discs are small and approximately equal in width to the digits. The male's call is a growling, engine-like "waaa waaa waaa", heard during the breeding season. In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered.	<b>Absent</b> No swamps present, no dense aquatic vegetation.	<b>Unlikely</b> Lack of suitable habitat or historical records.
<b>Mammals</b>			
<b><i>Dasyurus maculatus maculatus</i></b> <b>Spot-tailed Quoll</b> <b>BC - E</b> <b>EPBC - E</b>	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. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks. The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common.	<b>Present</b> Potential den sites present.	<b>Possible but Unlikely</b> Some suitable habitat and one record from 4 km away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Nyctophilus corbeni</i></b> <b>Corben's Long-eared Bat</b> <b>BC - V</b> <b>EPBC - V</b>	Overall, the distribution of the south eastern form of Corben's Long-eared Bat coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including mallee, bullocke <i>Allocasuarina leuhmanni</i> and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark. Mating takes place in autumn with one or two young born in late spring to early summer.	<b>Present</b> Hollow bearing trees present.	<b>Possible</b> Suitable habitat.
<b><i>Petrogale penicillata</i></b> <b>Brush-tailed Rock-wallaby</b> <b>BC - E</b> <b>EPBC - V</b>	In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges facing north. Throughout their range, Brush-tailed Rock-wallabies feed on a wide variety of grasses and shrubs, and have flexible dietary requirements. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night.	<b>Absent</b> Rocky habitat not present.	<b>Unlikely</b> One record 6.5 km away however no suitable habitat.
<b><i>Phascolarctos cinereus</i></b> <b>Koala</b> <b>BC - V</b> <b>EPBC - V</b>	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. Generally solitary, but have complex social hierarchies based on a dominant male with a territory overlapping several females and sub-ordinate males on the periphery.	<b>Present</b> Eucalypt woodland present.	<b>Possible Unlikely</b> Six records, nearest from 250 m away however this record is from 1965, no recent records.
<b><i>Pteropus poliocephalus</i></b> <b>Grey-headed Flying-fox</b> <b>BC - V</b> <b>EPBC - V</b>	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	<b>Present</b> Hollow bearing trees present. Water bodies present.	<b>Possible</b> Twenty records, nearest from 320 m away.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Saccolaimus flaviventris</i></b> <b>Yellow-bellied Sheathtail-Bat</b> <b>BC - V</b>	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. 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. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible</b> One record from 5.2 km away, suitable habitat.
<b><i>Phascogale tapoatafa</i></b> <b>Brush-tailed Phascogale</b> <b>BC - V</b>	The Brush-tailed Phascogale is tree-dwelling marsupial carnivore. It has a characteristic, black, bushy 'bottlebrush' tail, with hairs up to 4 cm long. Its fur is grey above and pale cream below and it has conspicuous black eyes and large naked ears. Adults have a head and body length of about 20 cm, a tail length of about 20 cm and weigh 110 - 235 grams. The Brush-tailed Phascogale has a patchy distribution around the coast of Australia. In NSW it is mainly found east of the Great Dividing Range although there are occasional records west of the divide.	<b>Present</b> Eucalypt woodland present.	<b>Possible</b> Suitable habitat.
<b><i>Cercartetus nanus</i></b> <b>Eastern Pygmy Possum</b> <b>BC - V</b>	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible but Unlikely</b> Some suitable habitat present however lack of food sources.
<b><i>Petaurus australis</i></b> <b>Yellow-bellied Glider</b> <b>BC - V</b>	The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south.	<b>Present</b> Eucalypt woodland present.	<b>Possible</b> Suitable habitat.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Petaurus norfolcensis</i></b> <b>Squirrel Glider in the Wagga Wagga Local Government Area</b> <b>BC - E</b>	Adult Squirrel Gliders have a head and body length of about 20 cm. They have bluish-grey to brownish-grey fur above, white on the belly and the end third of the tail is black. There is a dark stripe from between the eyes to the mid-back and the tail is soft and bushy averaging about 27 cm long. This species is up to twice the size of the Sugar Glider <i>Petaurus breviceps</i> , its facial markings are more distinct and it nests in a bowl-shaped, leaf-lined nest in a tree-hollow. This species is also less vocal than Sugar Gliders.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible but Unlikely</b> Numerous records, nearest from 4 km away. Lack of midstorey vegetation.
<b><i>Petaurus norfolcensis</i></b> <b>Squirrel Glider</b> <b>BC - V</b>	The species is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible but Unlikely</b> Numerous records, nearest from 4 km away. Lack of midstorey vegetation.
<b><i>Falsistrellus tasmaniensis</i></b> <b>Eastern False Pipistrelle</b> <b>BC - V</b>	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible</b> Suitable habitat.
<b><i>Myotis macropus</i></b> <b>Southern Myotis</b> <b>BC - V</b>	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.	<b>Present</b> Eucalypt woodland with hollow bearing trees present.	<b>Possible</b> Suitable habitat. Two records, nearest from 6 km away.



Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Miniopterus orianae oceanensis</i></b> <b>Large Bent-winged Bat</b> <b>BC - V</b>	This species has recently been renamed to <i>Miniopterus orianae oceanensis</i> or the large bent-winged bat, from <i>Miniopterus schreibersii subsp. oceanensis</i> or the eastern bent-wing bat. The Eastern Bentwing-bat has chocolate to reddish-brown fur on its back and slightly lighter coloured fur on its belly. It has a short snout and a high 'domed' head with short round ears. The wing membranes attach to the ankle, not to the base of the toe. The last bone of the third finger is much longer than the other finger-bones giving the "bent wing" appearance. It weighs up to 20 grams, has a head and body length of about 6 cm and a wingspan of 30 - 35 cm. Eastern Bentwing-bats occur along the east and north-west coasts of Australia.	<b>Present</b> Eucalpyt woodland with hollow bearing trees present.	<b>Possible</b> Suitable habitat. One record from 8.5 km away.
<b><i>Macrotis lagotis</i></b> <b>Bilby</b> <b>BC - CE</b> <b>EPBC - V</b>	The Bilby is an important part of traditional indigenous culture in the deserts of Central Australia. The large rabbit like ears of the Greater Bilby (referred to as Bilby) have also made it a popular Australian icon at Easter. Through habitat loss and competition with introduced animals, the number of these small mammals has dramatically reduced over the last 100 years. Bilbies have an excellent sense of smell and sharp hearing. Their fur is blue-grey with patches of tan and is very soft. The tail is black and white with a distinct crest. Bilbies have strong forelimbs and thick claws, which they use to dig for food and make burrows. They are about 29–55 cm in length. Compared to bandicoots, they have a longer tail, bigger ears, and softer, silky fur. At 1 to 2.4 kg, the male Bilby is about the same size as a rabbit; although male Bilbies in exceptional health have been known to grow up to 3.7 kg in captivity. The female Bilby is smaller, and weighs around 0.8 to 1.1 kilograms. A hundred years ago, Bilbies were common in many habitats throughout Australia, from the dry interior to temperate coastal regions. Changes to the Bilby's habitat have seen their numbers greatly reduced and today the species is nationally listed as vulnerable, and is presumed extinct in NSW. They now occur in fragmented populations in mulga shrublands and spinifex grasslands in the Tanami Desert of the Northern Territory; in the Gibson and Great Sandy Deserts and the Pilbara and Kimberley regions of Western Australia; and the Mitchell Grasslands of southwest Queensland.	<b>Absent</b> No suitable grasslands present.	<b>Unlikely</b> One record from 8.3 km away however no suitable habitat present.
<b>Insects</b>			

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b>Synemon plana</b> <b>Golden Sun Moth</b> <b>BC - E</b> <b>EPBC - CE</b>	The Golden Sun Moth is a medium-sized, day-flying (diurnal) moth. Females have a wing-span of 31 mm; the male's wingspan is 34 mm. The female has a reduced hind-wing and is a very poor flyer. The female's upperside of the fore-wing is dark grey, patterned with paler grey, and the hindwing is bright orange with black spots near the edge. The undersides of both wings is white with small black spots near the edges. The male's upperside of the fore-wing is dark brown, patterned with pale grey, and the hind-wing is bronzy-brown with dark brown patches. The undersides of both wings is pale grey with dark brown spots. Both males and females have clubbed antennae. Functional mouthparts are lacking in both sexes. The immature stages have not been described. The Golden Sun Moth's NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. The species' historical distribution extended from Bathurst (central NSW) through the NSW Southern Tablelands, through to central and western Victoria, to Bordertown in eastern South Australia.	<b>Absent</b> Associated grass species no present.	<b>Unlikely</b> Lack of suitable habitat.
<b>Reptiles</b>			
<b>Aprasia parapulchella</b> <b>Pink-tailed Worm-lizard</b> <b>BC - V</b> <b>EPBC - V</b>	The Pink-tailed Legless Lizard (also known as the Pink-tailed Worm-lizard) is worm-like, with a dark-brown head and nape, gradually merging with the pale grey or grey-brown body. The tail, nearly as long as its body, is pink or reddish-brown towards the tip. Its snout and tail are both rounded. There are no external ear openings. The broad, non-forked tongue, frequently used to wipe the eyes, and the presence of small hind-limb flaps, distinguishes it from a juvenile snake. Specimens grow to about 25 cm in length. The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South Western Slopes. There is a concentration of populations in the Canberra/Queanbeyan Region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury and West Wyalong. Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass ( <i>Themeda australis</i> ). Commonly found beneath small, partially-embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites.	<b>Absent</b> Native grassy woodland not present. No bushrocks.	<b>Unlikely</b> Lack of suitable habitat.

Species	Description of habitat <sup>6</sup>	Presence of habitat	Likelihood of occurrence
<b><i>Delma impar</i></b> <b>Striped Legless Lizard</b> <b>BC - V</b> <b>EPBC - V</b>	The Striped Legless Lizard differs most obviously from a snake in having external ear openings, small scaly flaps for hind limbs, a long tail and a broad, undivided tongue. It is pale grey-brown above, with a darker head, and almost white below. The most distinguishing characteristic is a pattern of light and dark parallel lines running along the length of the body, although these may be very pale or even absent in some individuals. This parallel stripe pattern breaks up into a diagonal pattern on the tail. They grow to about 30 cm in length, with up to three-quarters of this being the tail. The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes, the Upper Hunter and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas. Also occurs in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass <i>Themeda australis</i> , spear-grasses <i>Austrostipa</i> spp. and poa tussocks <i>Poa</i> spp., and occasionally wallaby grasses <i>Austrodanthonia</i> spp. Sometimes present in modified grasslands with a significant content of exotic grasses.	<b>Absent</b> Native grassy woodland not present. Area disturbed.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Varanus rosenbergi</i></b> <b>Rosenberg's Goanna</b> <b>BC - V</b>	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component.	<b>Absent</b> No termite mounds present.	<b>Unlikely</b> Lack of suitable habitat.
<b><i>Hoplocephalus bitorquatus</i></b> <b>Pale-headed Snake</b> <b>BC - V</b>	In NSW it has historically been recorded from as far west as Mungindi and Quambone on the Darling Riverine Plains, across the north west slopes, and from the north coast from Queensland to Sydney. A small number of historical records are known for the New England Tablelands from Glenn Innes and Tenterfield; however, the majority of records appear to be from sites of relatively lower elevation. Although the Pale-headed snake distribution is very cryptic, it now appears to have contracted to a patchy and fragmented distribution.	<b>Present</b> Eucalypt woodland with hollows. Riparian area present.	<b>Possible</b> Suitable habitat.