

NSW DEPARTMENT OF PLANNING &
ENVIRONMENT

DECEMBER 2020

CONFIDENTIAL

BIODIVERSITY ASSESSMENT REPORT - STAGE 1

WAGGA WAGGA
SPECIAL ACTIVATION
PRECINCT

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Biodiversity Assessment Report - Stage 1 Wagga Wagga Special Activation Precinct

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GLOSSARY

TERM	DEFINITION
Activation Precincts SEPP	The SEPP regulatory instrument supporting the SAPs.
Biodiversity Credit Calculator	The computer program that provides decision support to assessors and proponents by applying the BAM, and which calculates the number and class of biodiversity credits required to offset the impacts of a development or created at a biodiversity stewardship site (OEH 2017).
Candidate species	A species that is the focus of a study or intended beneficiary of a conservation action or connectivity measure.
Department of Planning, Industry and Environment, DPIE	The Department, DPIE, Department of Planning, Industry and Environment
Ecosystem species credits	Ecosystem species credits are a measurement of the value of threatened communities and habitat for those species that can be reliably predicted to occur with a Plant Community Type (PCT).
Environment, Energy and Science Group	The NSW Department of Planning, Industry and Environment which holds the Environment, Energy and Science Group repealed the NSW Department Planning and Environment which held the Office of Environment and Heritage (OEH) following the 2019 NSW elections as of July 2019.
Habitat	An area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community, including any biotic or abiotic component.
Inland Rail	Proposed Inland Rail to be constructed.
Investigation area	The Wagga Wagga SAP area subject to biodiversity assessment
Land-use	Permitted/prohibited development types in the SAP and within sub-precincts.
Local Government Area (LGA)	Generic term for a local government geographical area.
Locality	Within 10 km of the investigation area
Master Plan	Generic term for a Master Plan for each SAP (informed by Structure Plan). The Master Plan is a statutory document prepared by DPIE at the conclusion of the technical studies.
Mitchell landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2014).
Regional Growth NSW Development Corporation	The NSW government development corporation responsible for delivering and implementing the Special Activation Precinct and preparing Delivery Plans and Design Guidelines.
Regional NSW	All of regional NSW (excludes metropolitan areas such as Greater Sydney, Newcastle and Wollongong).
Riverina-Murray Region	The NSW region that contains the Wagga Wagga local government area and the township of Wagga Wagga.

TERM	DEFINITION
Special Activation Precinct (SAP)	Generic term for an activation precinct.
Species credits	are generated by those species that were either recorded during field surveys (or recorded during previous surveys) or have been identified as requiring species credit offsets (as per Biodiversity Assessment Methodology).
State Environmental Planning Policy (SEPP)	Generic term for the state-wide regulatory instrument.
Structure Plan	Generic term for a Structure Plan for each SAP (informed by technical studies). The Structure Plan is the document prepared by the master planning consultants engaged by DPIE.
Sub-precinct	Description of a geographical sub-section of the SAP.
Wagga Wagga City Council	The name of the council and consent authority in the local government area of Wagga Wagga.
Wagga Wagga LGA	The local government area named Wagga Wagga.
Wagga Wagga Master Plan	The Masterplan specific to the Wagga Wagga SAP.
Wagga Wagga SAP	The SAP located in the Wagga Wagga local government area, outside the township of Wagga Wagga.
Wagga Wagga township	The township named Wagga Wagga.

ABBREVIATIONS

*	Indicates exotic species
AWS	All Weather Station
BAM	Biodiversity Assessment Method 2017
BAR	Biodiversity Assessment Report
BC Act	NSW <i>Biodiversity Conservation Act</i> 2016
DBH	Diameter at breast height
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act</i> 1999
EES Group	Environment, Energy and Science Group
Ha	Hectares
HT	High Threat
MNES	Commonwealth Matters of National Environmental Significance
OEH	Office of Environment and Heritage
PCT	Plant Community Type
SAP	Special Activation Precinct
TEC	Threatened Ecological Community
WONS	Weeds of National Environmental Significance
VZ	Vegetation Zone

1 PROJECT BACKGROUND

1.1 INTRODUCTION

In July 2018, the NSW Government announced Regional NSW's first Special Activation Precinct (SAP) at Parkes. A second SAP was announced in January 2019 in Wagga Wagga centred around Bomen Business Park. To date, Wagga Wagga City Council has undertaken work identifying the opportunities and constraints of the existing industrial estate. The Wagga Wagga SAP is investigating a broader area of approximately 4,506 hectares, including the additional areas added to the investigation area in October 2019. The landscape is predominantly agricultural land.

SAPs are a place-based approach to 'activate' strategic locations for job creation and regional economic development. SAPs are areas of State or regional significance that are selected based on an assessment of economic enablers, market failures and catalyst opportunities.

The NSW Department of Planning, Industry and Environment (DPIE) has commissioned WSP to prepare an Environmental Assessment for the Wagga Wagga Special Activation Precinct (Wagga Wagga SAP). This assessment is required to support the preparation of a Master Plan. The area subject to assessment is henceforth referred to as the 'investigation area'.

1.2 LOCATION OF WAGGA WAGGA SAP

The Wagga Wagga local government area (LGA) is located approximately 455 kilometres south west of Sydney, in the Riverina Murray Region. The City of Wagga Wagga is the largest inland regional city in NSW and the major centre in the Region with other key centres including Albury and Griffith. The main townships and settlements in the LGA include Gundagai, Tumut, Hay, Temora, Narrandera, Junee and Deniliquin. As of the 2016 census, the City of Wagga Wagga had approximately 62,500 people (ABS, 2016), which is forecast to grow to a population of 100,000 people by 2038.

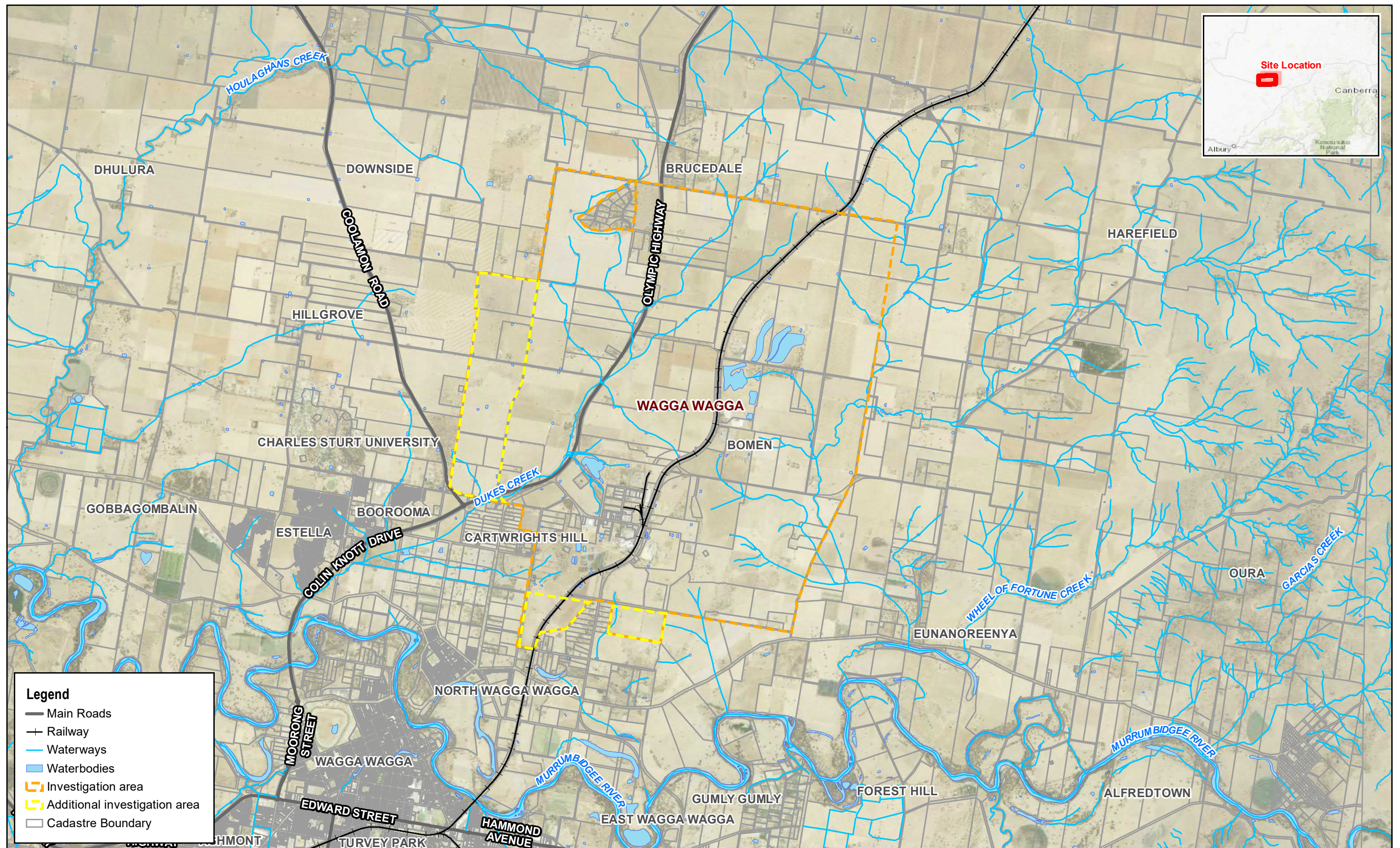
The Wagga Wagga SAP investigation area (shown on Figure 1.1) is located 10 kilometres north-east of Wagga Wagga Central Business District (CBD) and covers approximately 4506 hectares, with approximately 300 to 400 hectares already in the Bomen Business Park.

The Wagga Wagga SAP investigation area is serviced by the Main Southern Railway and several major roads, including the Olympic Highway which connects the area to Brisbane and Melbourne. Wagga Wagga Regional Airport is located approximately nine kilometres south east of the investigation area.

1.3 PURPOSE OF THIS REPORT

This draft Biodiversity Assessment Report (BAR) has been prepared to address Stage 1 of the Biodiversity Assessment Method 2017 (BAM) and provides an assessment of the biodiversity values of the investigation area. Whilst the primary purpose of this report is to provide an assessment of the biodiversity values of the investigation area in the context of the *Biodiversity Conservation Act 2016* (BC Act) it also assesses 'Matters of National Environmental Significance' (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The purpose of this Stage 1 report is to provide an understanding of the baseline biodiversity values of the investigation area. This information will then inform ongoing masterplan evaluation to assist in avoiding and minimising impacts on biodiversity values and to also in identify any existing data gaps.



2 METHODS

The following methods have been undertaken in the preparation of this BAR in accordance with the BAM. All work was carried out under the appropriate licences, including a scientific licence as required under Part 2 of the BC Act (License Number: SL100630) and an Animal Research Authority issued by the DPI (Agriculture).

2.1 PERSONNEL

The contributors to the preparation of this report, their qualifications and roles are provided in Table 2.1.

Table 2.1 Contributors and their roles

NAME	QUALIFICATIONS	ROLE
Alex Cockerill	Bachelor of Science (Hons), accredited BAM assessor BAAS17020	National Ecology Team Executive – technical input
Selga Harrington	Bachelor of Science (Hons), accredited BAM assessor BAAS17079	Principal Ecologist – ecology lead, technical input and review
Mark Stables	Bachelor of Science (Hons), accredited BAM assessor BAAS18097	Principal Ecologist – field surveys, report preparation
Allan Richardson	Bachelor of Environmental Science (Hons)	Senior ecologist – field surveys and report preparation
Julia Emerson	Bachelor of Environment, Cert 3 Conservation and Land Management, accredited BAM assessor BAAS18034	Ecologist – field surveys and report preparation
Lauren Smith	Bachelor of Science, Cert 3 Conservation and Land Management	Ecologist – field surveys and report preparation
Trent Bowman	Bachelor of Science (Hons), Master of Science in Geoscience	GIS consultant – data management and map preparation

2.2 NOMENCLATURE

Names of vegetation communities used in this report are based on the Plant Community Type (PCT) used in the NSW BioNet Vegetation Classification Database (EES Group, 2019b).

These names are cross-referenced with those used for threatened ecological communities listed under the BC Act and/or the EPBC Act. They are also cross-referenced with previous vegetation mapping (Office of Environment & Heritage 2019c) using dominant species and structure of the community.

Names of plants used in this document follow PlantNet (Royal Botanic Gardens, 2019). Scientific names are used in this report for species of plant. Scientific and common names (where available) are provided throughout the report, with only scientific names provided in the plot data provided in Appendix A. The names of introduced species are denoted with an asterisk (*).

For threatened species of plants, the names used in the OEH Threatened Species Website (EES Group, 2019e-f) are also provided in Appendix B where these differ from the names used in the PlantNet database.

Names of vertebrate fauna follow the Australian Faunal Directory maintained by the (Department of Environment and Energy, 2019a). Common names are used in the report for species of animal. Both common and scientific names are provided in the appendices.

For threatened species of animals, the names used in the EES Group Threatened Species Website are provided (EES Group, 2019f) in Appendix D.

2.3 BACKGROUND RESEARCH

2.3.1 DESKTOP REVIEW

The aim of the background research was to identify threatened flora and fauna species, populations and ecological communities, Commonwealth listed Migratory species or critical habitat recorded previously or predicted to occur in the locality of the investigation area.

This allowed for known habitat characteristics of to be compared with those present within the investigation area to determine the likelihood of occurrence of each species or populations. These results informed the identification of appropriate field survey effort and the groups likely to occur.

Records of threatened species, populations and ecological communities known or predicted to occur in the locality of the investigation area were obtained from a range of databases as detailed in Table 2.2.

Table 2.2 Database searches undertaken

DATABASE	SEARCH DATE	AREA SEARCHED	REFERENCE
Bionet Atlas of NSW Wildlife	18/06/2019	10 km search around the investigation area	(Office of Environment & Heritage 2019a)
Atlas of Living Australia	19/06/2019	10 km search around the investigation area	(Atlas of living Australia 2019)
Protected Matters Search Tool	18/06/2019	10 km search around the investigation area	(Department of the Environment and Energy 2019b)
PlantNet Spatial Search	19/06/2019	10 km search around Wagga Wagga, NSW	(Royal Botanic Gardens, 2019)
NSW Department of Primary Industries Critical Habitat register	19/06/2019	Search of the register	(Department of Primary Industries 2019b)
NSW Office of Environment and Heritage Critical Habitat register	19/06/2019	Search of the register	(Office of Environment and Heritage 2019b)

Other relevant documents, existing broad-scale vegetation mapping, aerial photographs including historic aerial photos and maps as well as ecological assessments and surveys within the region were reviewed as part of this study and are referenced throughout the report where appropriate.

It is important to note that whilst much of the investigation area occurs as cleared land that is used for agricultural, industrial and residential purposes a range of biodiversity values have been previously recorded. These values include patches of remnant native vegetation and planted native trees of which most of these areas are within an existing Biodiversity Certification area of the Wagga Wagga Local Environment Plan 2008.

This biodiversity certification was established under the *Threatened Species Conservation Act 1995* and applies to land zoned IN1, IN2, R5 and SP2 under the Wagga Wagga Local Environmental Plan 2010. Part 7 of the BC Act does not apply to zones within the investigation area that are biodiversity certified.

This biocertification provided landscape scale linkages particularly along the Olympic Highway corridor and protection to several native vegetation patches. The values and aims of this have been incorporated into the biodiversity assessment.

The biodiversity certification is due to expire in 2020 and it is likely that the Wagga Wagga SAP would provide an updated certification under the BC Act that covers the entire investigation area. Any consideration of biocertification must be prepared in consultation with the Biodiversity and Conservation directorate of the Department of Planning, Industry and Environment.

Important background documents relating to the biodiversity certification that were reviewed as part of this report are:

- Proposed Biodiversity Certification for the Wagga Wagga Local Environment Plan 2008 (Department of Environment and Climate Change (2009a)
- Wagga Wagga Planning Study – Environmental/Biodiversity report for Bomen (Ecological Australia, 2008).

2.3.2 SPATIAL DATA USED FOR THE ASSESSMENT OF LANDSCAPE FEATURES

The following spatial data and reports was assessed to determine the landscape features and site values in accordance with Chapter 4 and Appendix 6 of the BAM:

- Aerial photographic imagery (Land and Property Information, 2019a)
- Vegetation mapping (State Vegetation Type Map – Riverina VIS ID 4469)
- NSW Mitchell Landscapes (Land and Property Information, 2019b)
- Interim Biogeographic Regionalisation of Australia (IBRA version 7.0) (Thackway & Cresswell, 1995).

2.3.3 LIKELIHOOD OF OCCURRENCE ASSESSMENT

An assessment was completed to assess the likelihood of occurrence of each threatened species, population and community (threatened biodiversity) identified with the potential to occur in the investigation area. All threatened biodiversity identified during background research were considered (see Section 2.3). The habitat assessment was utilised to inform the identification of appropriate targeted surveys. The assessment was based on the habitat profile for the species and other habitat information in the *Threatened Species Profile Database* (EES Group, 2019f) and the *Species Profile and Threats Database* (Department of the Environment and Energy, 2019b). The assessment also included consideration of the dates and locations of nearby records and information about species populations in the locality. The assessment results are summarised in Section 4.6 and are provided in full in Appendix B and Appendix D.

For this study, the likelihood of occurrence of threatened and migratory species and populations was determined based on the criteria shown in Table 2.3 below.

Table 2.3 Likelihood of occurrence criteria for threatened species and populations

CLASSIFICATION	DEFINITION
High	It is highly likely that a species inhabits the investigation area and is dependent on identified suitable habitat (i.e. for breeding or important life cycle periods such as winter flowing resources), has been recorded recently within the locality (10 km) and is known or likely to maintain resident populations in the investigation area. Also includes known or likely to visit the investigation area during regular seasonal movements or migration.
Moderate	Potential habitat is present within the investigation area. Species unlikely to maintain sedentary populations, however may seasonally use resources within the investigation area opportunistically or during migration. The species is unlikely to be dependant (i.e. for breeding or important life cycle periods such as winter flowing resources) on habitat within the investigation area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.

CLASSIFICATION	DEFINITION
Low	It is unlikely that the species inhabits the investigation area and has not been recorded recently in the locality (10 km). It may be an occasional visitor, but habitat similar to the investigation area is widely distributed in the local areas, meaning that the species is not dependant (i.e. for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the investigation area or the species are a non-cryptic perennial flora species that were specially targeted by surveys and not recorded.
None	Suitable habitat is absent from investigation area

2.3.4 IDENTIFICATION OF CANDIDATE SPECIES

Candidate species are those that have been assessed as having a moderate to high likelihood of occurring in the investigation area based on desktop assessment. Candidate species can form ecosystem credit species or species credit species as defined under the BAM:

- Ecosystem species credits: are a measurement of the value of threatened communities and habitat for those species that can be reliably predicted to occur with a Plant Community Type (PCT).
- Species credits: are generated by those species that were either recorded during field surveys (or recorded during previous surveys) or have been identified as requiring species credit offsets (as per Biodiversity Assessment Methodology).

Targeted surveys were undertaken for candidate species as outlined in Section 2.4 & 2.6 below.

2.4 VEGETATION SURVEYS

The investigation area was inspected between the 8–12, 15–19 July 2019, and 2–4 October 2019. Additional areas were added to the investigation area in October 2019 which were inspected between 20–21 November and 3 December 2019. Across the survey periods, investigations were undertaken by a team of two ecologists. These surveys sought primarily to collect vegetation data and carry out threatened species surveys in accordance with BAM and relevant guidelines to support the BAM Calculator.

2.4.1 NATIVE VEGETATION REGULATORY ASSESSMENT

In accordance with section 6.8 (3) of the BC Act, the BAM is to exclude the assessment of impacts of any clearing of native vegetation and loss of habitat on category 1-exempt land (within the meaning of Part 5A of the *Local Land Services Act 2013* (LLS Act)), other than any impacts prescribed by the regulations under section 6.3. The native vegetation regulatory assessment is used to determine category 1 land within the investigation area.

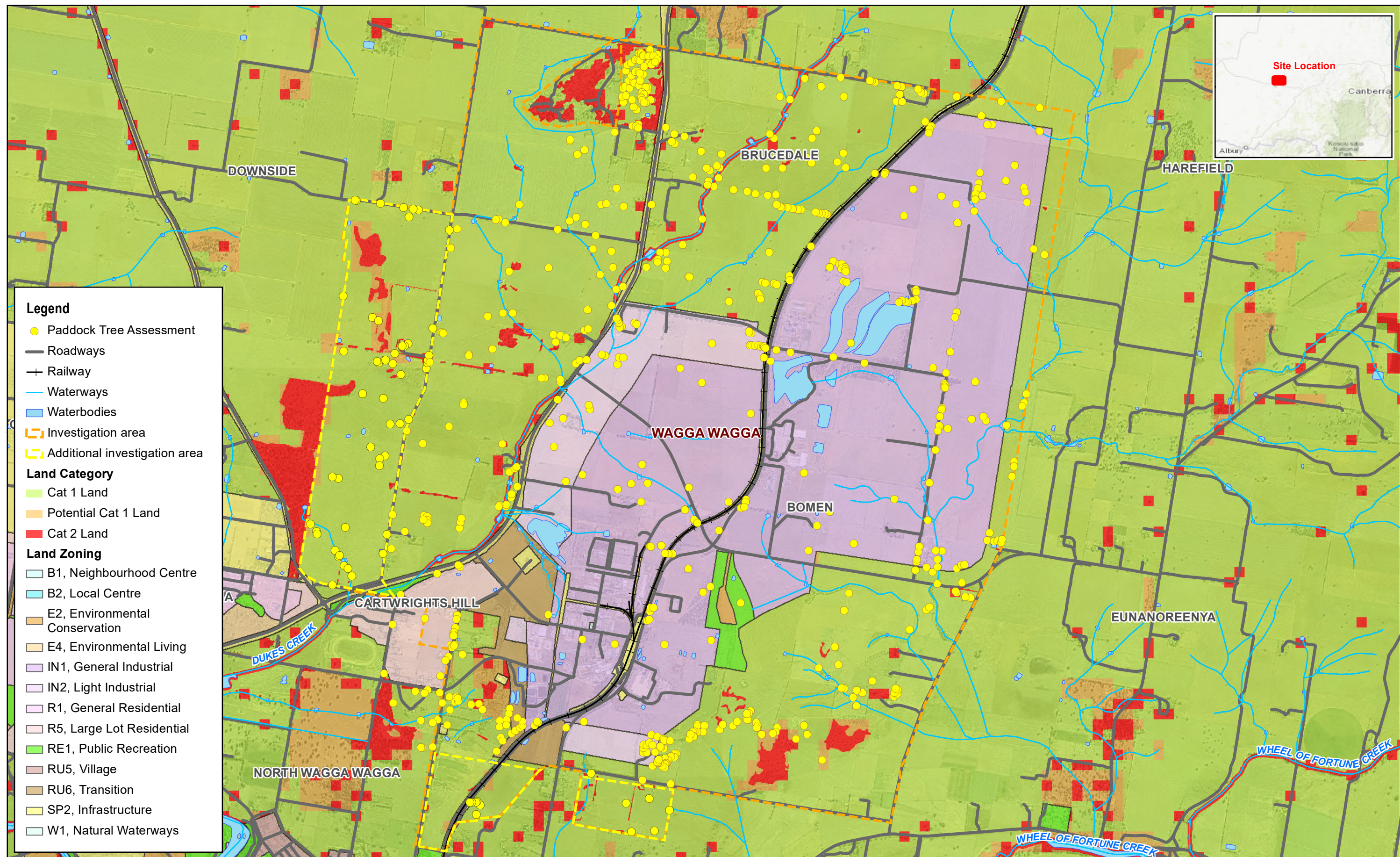
Land zoned as non-rural within the investigation area (such as General Industrial and General Residential) are excluded from this assessment as these areas are regulated by the State Environmental Planning Policy (Vegetation in non-Rural areas) 2017 which are excluded from the LLS Act. In addition, mapped category 2 (regulated land) and land identified on the Biodiversity Threshold Map are also excluded from this native vegetation regulatory assessment and are subject to BAM assessment. These areas are shown on Figure 2.1. All rural-zoned land is subject to the native vegetation regulatory assessment.

Category 1-exempt land has not currently been mapped for use in NSW and as such native vegetation regulatory mapping has been determined based on an analysis of the following datasets:

- Historical and current land use component – NSW Landuse 2013 (<https://data.nsw.gov.au/data/dataset/nsw-landuse>-Office of Environment and Heritage 2018). This dataset is used to classify areas as either cleared/highly disturbed, impacted affected areas of native vegetation and undisturbed or protected areas of native vegetation; and

- Detectable woody vegetation clearing component – NSW Woody Vegetation Extent 2011 (<https://datasets.seed.nsw.gov.au/dataset/nsw-woody-vegetation-extent-2011c0569>). This dataset is used to identify areas of extant remnant vegetation and cleared lands/non-woody vegetation.

The outcome of native vegetation regulatory category 1-exempt land mapping on rural-zoned land is presented in Figure 2.1. It should be noted that these areas have been identified through desktop modelling.



2.4.2 STRATIFICATION – DESKTOP ANALYSIS OF VEGETATION

Preliminary mapping of vegetation community boundaries was undertaken through analysis of existing vegetation mapping and aerial photograph interpretation. Analysis of the aerial photographs was used to identify areas of disturbance (e.g. buildings, vehicle tracks, dams and power lines), vegetation structure and likely native versus exotic species composition throughout the investigation area. This provided an initial definition of vegetation communities into simple structural and disturbance classifications for verification during field surveys.

2.4.3 RANDOM MEANDER SURVEY

Random meander surveys are a variation of the transect type survey and were completed in accordance with the technique described by (Cropper, 1993), whereby the recorder walks in a random meander throughout the investigation area recording dominant and key plant species (e.g. threatened species, priority weeds), boundaries between various vegetation communities and condition of vegetation. The time spent in each vegetation community was generally proportional to the size of the community and its species richness. This survey technique was used to verify vegetation boundaries and stratification from the desktop analysis.

Random meander surveys were undertaken in derived native grassland areas, which were considered candidate EPBC-listed White Box Yellow Box Blakely's Red Gum Woodland. In these areas, understorey species (excluding grasses) were counted within the patch to determine if 12 or more were present and if one important species was present. This method is consistent with the Box Gum Grassy Woodland Identification Flowchart in Appendix 2 of the National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Department of Environment, Climate Change and Water NSW, 2010).

2.4.4 FIELD VERIFICATION OF VEGETATION MAPPING

Field validation (ground-truthing) of the existing vegetation classifications was completed based on random meander surveys and BAM vegetation integrity plots. Field verification was undertaken to confirm the vegetation structure, dominant canopy species, native diversity, condition and presence of threatened ecological communities. Field data was compared and analysed against the regional vegetation mapping key diagnostic species to confirm each vegetation type. Field verification of the vegetation type, class and formation was used to identify vegetation zones and conditions in accordance with the BAM and NSW BioNet Vegetation Classification Database (EES Group).

2.4.5 BAM VEGETATION INTEGRITY PLOTS

Vegetation integrity plots were undertaken following the Biodiversity Assessment Method (BAM) (Office of Environment and Heritage, 2017a) as required under the new *Biodiversity Conservation Act 2016* (BC Act).

A total of 19 vegetation integrity plots were undertaken as outlined in the methodology contained within the BAM as described below and illustrated in Figure 2.2.

Table 2.4 outlines the co-ordinates, orientations and vegetation type sampled for each plot whilst Table 2.5 compares the areas of each vegetation zone and number of plots completed to the requirements of the BAM.

Table 2.4 Location and orientation of biobank quadrats and transects

PLOT ID	VEGETATION TYPE AND CONDITION	EASTING	NORTHING	ORIENTATION
Q1	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	540754	6120761	175
Q2	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	538746	6121916	272
Q3	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	537140	6120926	210
Q4	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	537678	6118299	30
Q5	PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate)	540913	6121321	100
Q6	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	539653	6122418	160
Q7	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	541421	6119626	80
Q8	PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)	535546	6117836	280
Q9	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	538023	6124163	175
Q10	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	536437	6118256	210
Q11	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	538960	6117451	180
Q12	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	539261	6117735	110
Q13	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	539172	6117539	145
Q14	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	536031	6121457	90

PLOT ID	VEGETATION TYPE AND CONDITION	EASTING	NORTHING	ORIENTATION
Q15	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate)	541004	6119255	240
Q16	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	537681	6122248	10
Q17	PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)	535267	6117792	330
Q18	PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)	535306	6118237	280
Q19	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Scattered Trees)	537265	611728	55

Note: Co-ordinate GDA94 Zone 55

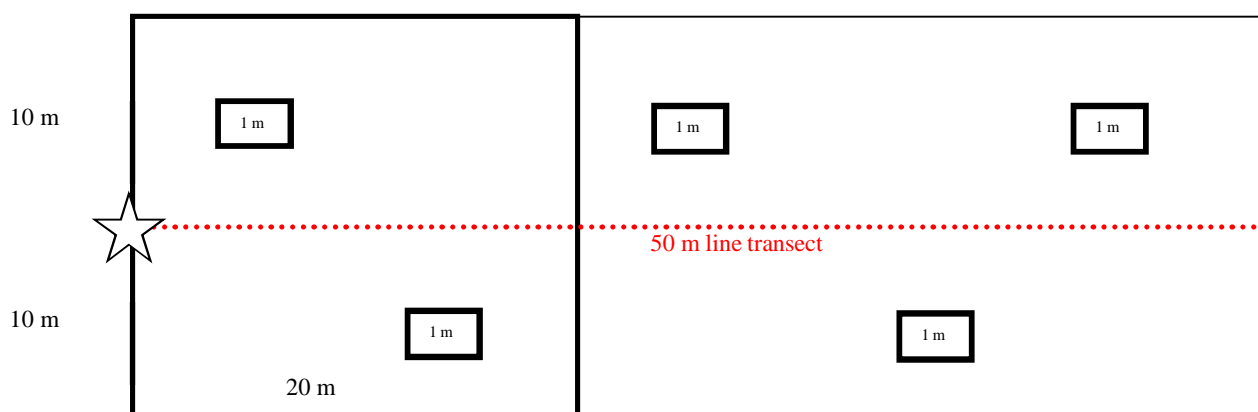


Figure 2.2 Schematic diagram illustrating the layout of the nested 20 x 50 m, 20 x 20 m and 1 x 1 m sub-quadrats used for the assessment of condition attributes at each site

The following site attributes were recorded at each site:

- **Location** (easting – northing grid type MGA 94, Zone 56).
- **Native and exotic species richness** (within a 400 m² quadrat): This consisted of recording all species by systematically walking through each 20 x 20 m quadrat. The cover and abundance (percentage of area of quadrat covered) of each species was estimated. The growth form, stratum/layer and whether each species was native/exotic/high threat weed was also recorded.
- **Number of trees with hollows** (1,000 m² quadrat): This was the frequency of hollows within living and dead trees within each 50 x 20 m quadrat. A hollow was only recorded if (a) the entrance could be seen: (b) the estimated entrance width was at least 5 cm across: (c) the hollow appeared to have depth: (d) the hollow was at least 1 m above the ground and the (e) the centre of the tree was located within the sampled quadrat.

- **Number of large trees and stem size diversity** (1,000 m² quadrat): tree stem size diversity was recorded by measuring the diameter at breast height (DBH) (i.e. 1.3 m from the ground) of living trees (>5 cm DBH) within each 50 x 20 m quadrat. For multi-stemmed living trees, only the largest stem was included in the count. Number of large trees was determined by counting all trees with DBH greater than the DBH large trees for each vegetation formation.
- **Evaluation of regeneration:** This was estimated as the presence/absence of overstorey species present at the site that was regenerating (i.e. saplings with a diameter at breast height ≤5 cm).
- **Total length of fallen logs** (1,000 m² quadrat): This was the cumulative total of logs within each 50 x 20 m quadrat with a diameter of at least 10 cm and a length of at least 0.5 m.
- **Litter cover:** This comprised estimating the average percentage groundcover of litter (i.e. leaves, seeds, twigs, branchlets and branches with a diameter <10 cm which is detached from a living plant) from within five 1 x 1 m sub-plots spaced evenly either side of the 50 m central transect.

Table 2.5 Minimum number of transects/plots required per vegetation zone area

ZONE ID	VEGETATION TYPE AND ZONE	AREA WITHIN INVESTIGATION AREA	MINIMUM PLOTS REQUIRED	NUMBER PLOTS COMPLETED
VZ1	PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)	0.20	1	3 (Q8, Q17, Q18)
VZ2	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate)	0.36	1	1 (Q15)
VZ3	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Scattered Trees)	1.21	1	1 (Q19)
VZ4	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	22.45	4	4 (Q2, Q7, Q9, Q16)
VZ5	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	50.02	5	5 (Q1, Q3, Q4, Q6, Q14)
VZ6	PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate)	0.83	1	1 (Q5)
VZ7	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	25.19	4	5 (Q10, Q11, Q12, Q13)

^ denotes that plot data was not obtained through vegetation integrity plots

2.4.6 CONDITION OF VEGETATION COMMUNITIES

The vegetation within the investigation area was firstly assigned to a PCT and then aligned to a vegetation zone which is defined in the BAM as *'an area of native vegetation on the investigation area that is the same PCT and has a similar broad condition state'* (EES Group, 2017a). A broad condition state infers that the vegetation has a similar tree cover, shrub cover, ground cover, weediness or combinations of these attributes which determine vegetation condition.

The vegetation broad condition states which were applied to vegetation within the investigation area are summarised in Table 2.6. These factors were defined by using factors such as levels of disturbance, weed invasion and resilience.

Table 2.6 Vegetation broad condition categories

CONDITION CLASS	DESCRIPTION
High	Vegetation still retains the species complement and structural characteristics. The vegetation displays resilience to weed invasion due to intact groundcover, shrub and canopy layers. Native species diversity is relatively high. Weeds may exist in this vegetation type but exhibit <5% foliage cover.
Moderate	Vegetation has retained a native canopy but the understorey and groundcover layers are generally co-dominated by exotic species that exhibit between 5–50% foliage cover. The mid and low strata may have been structurally modified because of disturbances such as previous clearing or agricultural practices such as grazing of livestock. This condition category also includes regrowth vegetation where natural regeneration after clearing has resulted in canopy species in the same age cohort.
Scattered Trees	Vegetation has retained a native canopy or the canopy cover is showing signs of regeneration. The understorey and groundcover layers are generally dominated or co-dominated by exotic species that exhibit between >50% foliage cover. Native species diversity is generally relatively low and the mid and low strata have been structurally modified due to weed incursions, clearing, agricultural practices such as cropping or direct seeding. A diversity of age classes in the canopy and natural regeneration was generally absent from this condition class.
Low	Native vegetation generally lacking a native over-storey where more than 50% of the ground cover vegetation is indigenous species.

Note: These categories have been used to define vegetation zones in Section 4.

2.5 Paddock Tree Assessment

The definition for Paddock Trees relevant to the investigation area is outlined in Appendix 1 of the BAM as:

- trees which were located more than 50 m away from any living tree that is greater than 20 cm DBH
- trees in a group of three (3) or fewer living trees within 50 m of each other, that in turn, are greater than 50 m from the next living tree that is greater than 20 cm DBH.

During field surveys Paddock trees were visually inspected and measured to collect the following data:

- the genus and species of each Paddock Tree
- diameter at Breast Height (DBH)
- presence of hollows
- presence of Mistletoes
- surrounding Plant Community Types.

PCTs were assigned to each paddock tree based on the species and proximity to identified PCT zones in the investigation area or the dominant canopy species per the PCT description. The large tree benchmark from the assigned PCT was used to inform the Paddock tree class for each tree. Paddock tree classes include:

- **Class 1:** paddock trees that are ≤ 20 cm DBH and are trees that meet the definition of trees with negligible biodiversity (i.e. do not contain hollows).
- **Class 2:** paddock trees that are ≥ 20 cm DBH and less than the large tree benchmark for the most likely plant community type.
- **Class 3:** paddock trees that are greater than or equal to the large tree benchmark for the most likely plant community type.

The Diameter at Breast Height (DBH) of the tree was assessed and assigned a paddock tree class relevant to the large tree benchmark. Where DBH was unable to be measured due to access restrictions a precautionary approach was adopted and paddock trees were assigned to Class 3. This approach was adopted for the presence of hollows whereby the presence of hollows was assumed for paddock trees unable to be accessed. In areas where visual inspection of paddock trees was not possible, the species and associated PCT was assigned based on the landscape position, surrounding vegetation and knowledge of the investigation area.

Threatened species that would use the paddock trees are assumed to be the same threatened species that are returned by the BAM Calculator for the vegetation zones. Where targeted fauna surveys were required by the BAM Calculations, paddock trees were also included in the surveys.

2.6 THREATENED SPECIES SURVEY

This section outlines the targeted threatened species surveys. Survey methods have been designed based on the species identified as potentially occurring (candidate species) within the investigation area. Survey methods are detailed below in section 2.6.2 and 2.6.3 with locations shown in Figure 2.3.

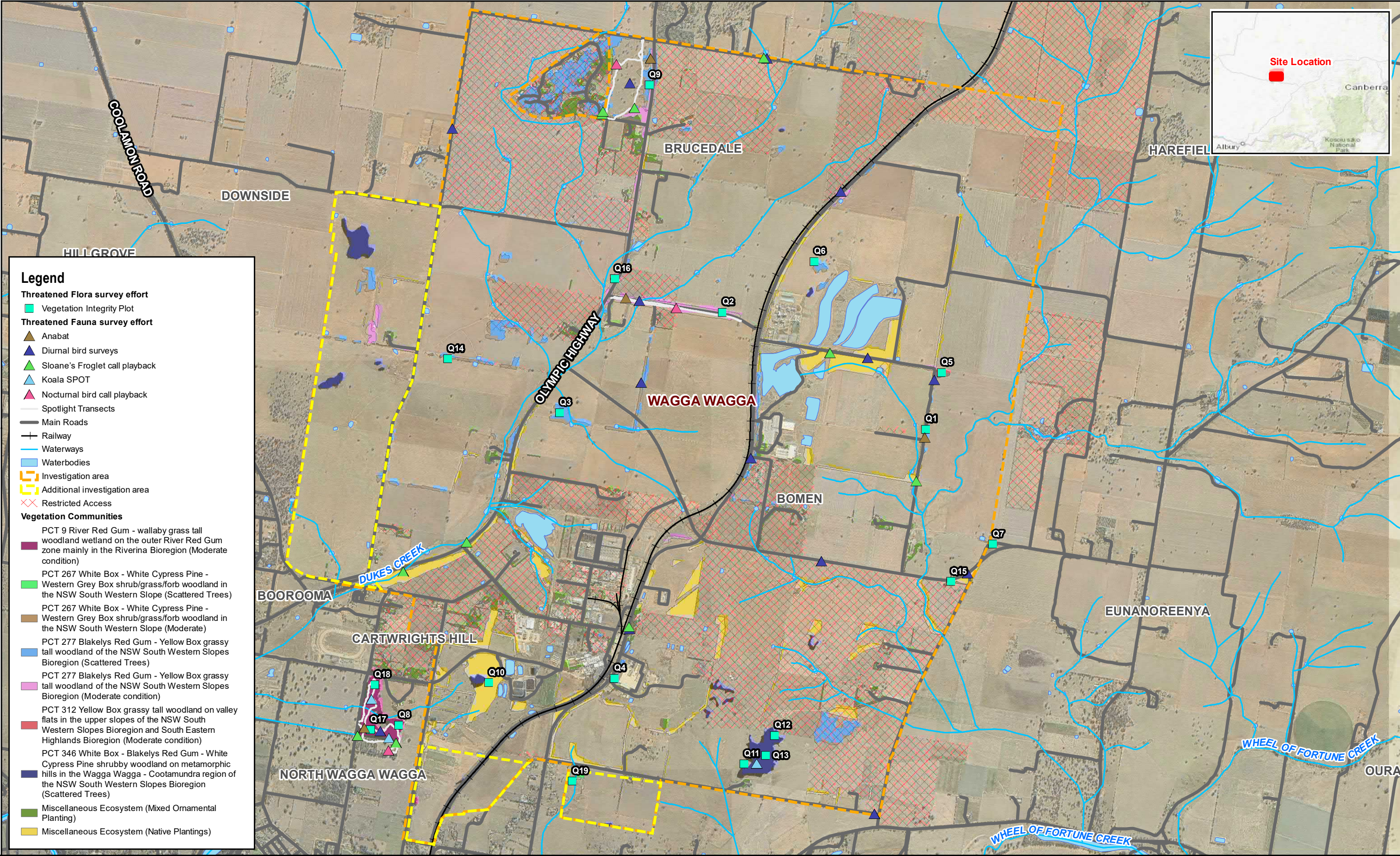
2.6.1 WEATHER CONDITIONS

During the survey period conditions were mild to warm with a minimum temperature of 0.7°C and a maximum of 40.1°C. Scattered rainfall was experienced during the survey period (Table 2.7).

Table 2.7 Weather condition during survey period

DATE	TEMPERATURE (°C)		RAIN (mm)
	Minimum	Maximum	
08.07.19	10.3	15.0	4.8
09.07.19	2.6	12.6	0.2
10.07.19	4.3	13.3	0.4
11.07.19	6.3	13.1	0.2
12.07.19	7.5	12.9	0.2
15.07.19	2.7	12.6	2.0
16.07.19	8	13.4	0
17.07.19	6	11.1	0
18.07.19	5	11.6	0.8
19.07.19	0.7	13.3	0
2.10.19	8.0	28.6	0
3.10.19	11.5	31.9	0
4.10.19	6.1	28.6	0
20.11.19	12.4	34.0	0
21.11.19	20.7	40.1	0
3.12.19	6.1	22.4	0.4

Source: Climate data obtained from Bureau of Meteorology (2019), AWS 072150



2.6.2 TERRESTRIAL FLORA SURVEYS

Results of the threatened species database searches identified 12 threatened plant species listed under the BC Act and/or the EPBC Act as being known to occur or considered likely to occur within the investigation area. Based on desktop assessment of habitat requirements, five species were considered to have a moderate or higher likelihood of occurring within the investigation area and were considered further in the assessment (refer to section 2.6.2.1). The likelihood of occurrence assessment for each species is provided in Appendix B.

Targeted surveys were completed for the threatened flora species identified as candidate species. Several flora species that potentially occur within the investigation area have seasonal survey requirements due to difficulty of detection except at specific times of the year, during its flowering period.

A combination of random meander surveys and parallel transects were undertaken in areas of potential habitat. Microhabitat assessment and habitat constraints assessments were undertaken for all species in areas of potential habitat to determine the suitability.

The BAM outlines survey requirements for threatened species including requirements for seasonal surveys to maximise the likelihood of recording a species if present. Surveys for threatened flora were undertaken as outlined in Table 2.8.

2.6.2.1 CANDIDATE FLORA SPECIES AND SURVEY EFFORT

Species credit species predicted by the Biodiversity Assessment Method (BAM) Calculator (EES, 2019a) identified seven species. A further five species were identified during desktop assessments (section 2.3) and were subject to a likelihood of occurrence assessment (Appendix B). Those candidate species credit species and any other identified species considered to have a moderate or higher likelihood of occurrence (*Austrostipa wakoolica*) became candidate species and were subject to targeted surveys. A total of eight candidate threatened flora species were identified. Table 2.8 outlines each species, conservation status, optimal survey months as prescribed by the BAM calculator and survey effort.

VEGETATION INTEGRITY PLOTS

Thirty-minute searches were conducted at each vegetation integrity plot location. Across the investigation area, a total of 19 vegetation integrity plots were undertaken equating to 9.5 hours of searches for threatened flora species at vegetation integrity plot locations.

RANDOM MEANDERS

The floristic diversity and possible presence of threatened species was assessed using the random meander survey method. Random meander surveys are a variation of the transect type survey and were completed in accordance with the technique described by Cropper (1993), whereby the recorder walks in a random manner throughout each site undertaking habitat assessments and presence of threatened species. The time spent in each vegetation patch was generally proportional to the suitability of habitat for candidate threatened flora species.

PARALLEL TRANSECTS

Targeted threatened species surveys employed parallel line traverses where known or potential habitat for candidate threatened flora species occurred (Table 2.8). This survey technique involved two ecologists walking parallel line traverses. This methodology is consistent with the current guidelines for NSW threatened plant surveys (Office of Environment & Heritage, 2016).

MICROHABITAT AND HABITAT CONSTRAINTS ASSESSMENTS

Microhabitat assessments were undertaken for each candidate threatened flora species. This included a review of the habitat constraints listed in the Threatened Biodiversity Data Collection (EES Group, 2019f) and comparison to the attributes recorded during field survey.

Habitat constraint assessments included a review of vegetation integrity scores of associated vegetation and observations during field surveys to determine if the potential habitat is degraded to the point where the species is unlikely to be present.

Table 2.8 Survey requirements and effort for candidate threatened flora species

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SURVEY MONTHS ³	POTENTIAL HABITAT / HABITAT CONSTRAINTS ⁴	WSP SURVEY EFFORT (2019)
<i>Acacia ausfeldii</i>	Ausfeld's Wattle	V	–	Aug–Oct peak flowering although can be detected outside flowering period	PCT 267 and PCT 277 Footslopes and low rises on sandstone	8–12 July, 15–19 July, 2–4 October, 20–21 November and 3 December 30 minute searches at each vegetation integrity plot location (10 plot locations = effort of 5 hours) Random meander searches Parallel transects for any viscous <i>Acacia</i> species Microhabitat assessment Habitat constraint assessment to determine the presence of footslopes and low rises on sandstone
<i>Austrostipa wakoolica</i>	A spear-grass	E	E	Sept–Dec	PCT 9 and PCT 277 Alluvial plains and plains	8–12 July, 15–19 July, 2–4 October and 20–21 November 30 minute searches at each vegetation integrity plot location (12 plot locations = effort of 6 hours) Random meander searches Microhabitat assessment Habitat constraint assessment to determine the presence of alluvial plains and plains
<i>Cullen parvum</i>	Small Scurf-pea	E	–	Dec–Jan	PCT 9 and 277	8–12 July, 15–19 July, 2–4 October and 20–21 November 30 minute searches at each vegetation integrity plot location (12 plot locations = effort of 6 hours) Random meander searches Microhabitat assessment

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SURVEY MONTHS ³	POTENTIAL HABITAT / HABITAT CONSTRAINTS ⁴	WSP SURVEY EFFORT (2019)
<i>Diuris tricolor</i>	Pine Donkey Orchid	V	–	Sept–Oct	PCT 267	8–12 July, 15–19 July, 2–4 October, 20–21 November and 3 December 30 minute searches at each vegetation integrity plot location (2 plot locations = effort of 1 hour) Random meander searches Microhabitat assessment
<i>Pilularia novae-hollandiae</i>	Austral Pillwort	E	–	All year	Semi-permanent/ephemeral wet areas Periodically waterlogged sites (including table drains and farm dams) PCT 9	8–12 July, 15–19 July, 2–4 October and 20–21 November 30 minute searches at each vegetation integrity plot location (3 plot locations = effort of 1.5 hours) Random meander searches Parallel transects in waterlogged/wet areas Microhabitat assessment Habitat constraint assessment to determine the presence of periodically waterlogged sites/wet areas
<i>Senecio garlandii</i>	Woolly Ragwort	V	–	All year	PCT 346	8–12 July, 15–19 July, 2–4 October and 20–21 November 30 minute searches at each vegetation integrity plot location (3 plot locations = effort of 1.5 hours) Random meander searches Parallel transects in PCT 346 Microhabitat assessment

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SURVEY MONTHS ³	POTENTIAL HABITAT / HABITAT CONSTRAINTS ⁴	WSP SURVEY EFFORT (2019)
<i>Swainsona recta</i>	Small Purple-pea	V	–	Sept–Nov	PCT 277 and PCT 276	8–12 July, 15–19 July, 2–4 October, 20–21 November and 3 December 30 minute searches at each vegetation integrity plot location (11 plot locations = effort of 5.5 hours) Random meander searches Microhabitat assessment
<i>Swainsona sericea</i>	Silky Swainson-pea	V	–	Sept–Oct	PCT 267, 277, 312	8–12 July, 15–19 July, 2–4 October, 20–21 November and 3 December 30 minute searches at each vegetation integrity plot location (12 plot locations = effort of 6 hours) Random meander searches Microhabitat assessment

(1) V = Vulnerable, E = Endangered under the BC Act

(2) V = Vulnerable, E = Endangered under the EPBC Act

(3) Surveys months were prescribed by the BAM Calculator (EES Group, 2019a)

(4) Potential habitat (PCT's) were obtained from BioNet database (EES Group, 2019f), habitat constraints were obtained from the Threatened Biodiversity Data Collection (EES Group, 2019e)

2.6.3 TERRESTRIAL FAUNA SURVEYS

Results of the threatened species database searches identified 67 threatened animal species listed under the BC Act and/or the EPBC Act as being known to occur or considered likely to occur within the investigation area. Based on desktop and field assessment, 16 species were considered to have a moderate or higher likelihood of occurring within the investigation area and were considered further in the assessment. The likelihood of occurrence assessment for each species is provided in Appendix B.

Targeted surveys were completed for the threatened fauna species identified as candidate species by the BAM calculator. Several fauna species that potentially occur within the investigation area have seasonal survey requirements due to difficulty of detection except at specific times of the year. A combination of surveys methods as described below were undertaken in areas of potential habitat. The BAM outlines survey requirements for threatened species including requirements for seasonal surveys to maximise the likelihood of recording a species if present. Surveys for threatened fauna were undertaken as outlined in Table 2.8.

2.6.3.1 FAUNA HABITAT ASSESSMENT

Fauna habitat assessments were undertaken to assess the likelihood of threatened species of animal (those species known or predicted to occur within the locality from the literature and database review) occurring within the investigation area. Fauna habitat characteristics assessed included:

- structure and floristics of the canopy, understorey and ground vegetation, including the presence of flowering and fruiting trees providing potential foraging resources
- presence of mistletoes providing potential foraging resources
- presence of hollow-bearing trees providing roosting and breeding habitat for arboreal mammals, birds and reptiles
- presence of the ground cover vegetation, leaf litter, rock outcrops and fallen timber and potential to provide protection for ground-dwelling mammals, reptiles and amphibians
- presence of waterways (ephemeral or permanent) and water bodies.

Habitat assessments were used to inform seasonal survey requirements for targeted threatened fauna species. During these surveys, a hand-held GPS was used to record the locations of important habitat features including:

- hollow-bearing trees
- aquatic habitat
- rock outcrops
- habitat type boundaries.

The following criteria were used to evaluate the condition of habitat values:

- **Good:** A full range of fauna habitat components are usually present (for example, old-growth trees, fallen timber, feeding and roosting resources) and habitat linkages to other remnant ecosystems in the landscape are intact.
- **Moderate:** Some fauna habitat components are missing or greatly reduced (for example, old-growth trees and fallen timber), although linkages with other remnant habitats in the landscape are usually intact, but sometimes degraded.
- **Poor:** Many fauna habitat elements in low quality remnants have been lost, including old growth trees (for example, due to past timber harvesting or land clearing) and fallen timber, and tree canopies are often highly fragmented. Habitat linkages with other remnant ecosystems in the landscape have usually been severely compromised by extensive clearing in the past.

2.6.3.2 OPPORTUNISTIC SIGHTINGS

Opportunistic sightings of animals were recorded including birds, mammals, frogs, and reptiles. Evidence of animal activity, such as scats, diggings, scratch marks, nests/dreys, burrows etc., was also noted. This provided indirect information on animal presence and activity.

2.6.3.3 MICROHABITAT AND HABITAT CONSTRAINTS ASSESSMENTS

Habitat constraint assessments were undertaken for each candidate threatened fauna species. This included a review of the habitat constraints listed in the Threatened Biodiversity Data Collection (EES Group, 2019e) and comparison to the attributes recorded during field survey. Threatened fauna breeding habitat constraints for candidate threatened species are outlined in Table 2.9.

2.6.3.4 TARGETED SEASONAL SURVEYS

Where species seasonal survey timing aligned with the July 2019 survey period, targeted seasonal surveys were completed for threatened fauna species identified as having a moderate to high likelihood of occurring within the investigation area. Threatened fauna surveys completed within the investigation area were carried out as described below and where applicable, considering the methodology detailed in the *NSW Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft)* (Department of Environment and Conservation, 2004), the Survey Guidelines for Australia's Threatened Birds (Department of Environment Water Heritage and the Arts, 2010a), the *Threatened Species survey and assessment guidelines: field survey and methods for fauna-Amphibians* (Department of Environment and Climate Change, 2009b) and the *Survey guidelines for Australia's threatened frogs* (Department of Environment, Water, Heritage and the Arts, 2010b). The optimum survey period and dates surveyed for threatened fauna are summarised in Table 2.9.

DIURNAL BIRD SURVEYS

Formal 20-minute diurnal bird searches were completed within the investigation area. Diurnal bird surveys were completed by actively walking through the nominated site (transect) over a period of 20 minutes. All birds were identified to the species level, either through direct observation or identification of calls. Diurnal bird surveys were completed during different times of the day, but generally occurred during morning hours or evening. Birds were also recorded opportunistically during other on-site surveys.

Wherever threatened bird species were absent from the site, habitat assessments were conducted to determine the likelihood that investigation area might support those species that are known to occur in the region.

Targeted seasonal surveys for endangered blossom nomads (i.e. Regent Honeyeater and Swift Parrot) were undertaken during July to identify presence for blossoming eucalypts and nectar resources, along with potential habitat utilisation by threatened blossom nomads. Where seasonal conditions for some species including flowering eucalypts were not suitable during the timing of onsite investigations, likelihood of occurrence assessments were conducted by the presence/absence of suitable habitat and its condition.

MICROCHIROPTERAN BAT SURVEYS

Ultrasonic Anabat bat detection (Titley Electronics) was used to record and identify the echolocation calls of microchiropterans foraging across a number of native vegetation communities in the investigation area. Passive monitoring of these survey sites was achieved by setting Anabat bat detectors to record continuously overnight.

Bat call analysis will be completed by Rob Gratton from Eco Aerial on 09/10/19, with the presentation of data considering the guidelines of the Australasian Bat Society (Appendix C). Bat call of New South Wales Sydney Basin region (Pennay *et al.*, 2004) will be used as a reference collection for bat call identification.

SPOTLIGHTING

Spotlighting would be used to target arboreal, flying and ground-dwelling mammals, as well as, nocturnal birds, reptiles and amphibians. Spotlighting was completed after dusk with surveys transects being completed using high-powered headlamps and hand torches. Sighted animals were identified to the species level.

CALL PLAYBACK

Call playback was used to survey for nocturnal birds and frogs using standard methods (Kavanagh *et al.*, 1993; Debus, S., 2001). Call playback was completed after dusk within a number of sites in the investigation area.

For each survey, an initial listening period of up to 15 minutes would be undertaken, followed by a spotlight search for up to 10 minutes to detect any animals in the immediate vicinity. The calls of the target species would be played intermittently for approximately five minutes followed by a 10-minute listening period. After the calls are played, another 10 minutes of spotlighting would be undertaken in the vicinity to check for animals attracted by the calls, but not vocalising. Calls were broadcast using a portable media player and megaphone.

HERPETOFAUNA ACTIVE SEARCHES

Herpetofauna active searches during the day and at night, involved looking for active specimens and eye shine, turning over suitable ground shelter, such as fallen timber, sheets of iron, exposed rocks, raking debris, other debris, and peeling decorticating bark. Specimens would be either identified visually, by aural recognition of call (frogs only) or were collected and identified.

Herpetofauna surveys were completed by one or two persons in conjunction with diurnal or nocturnal surveys, with all ground shelter returned to their original position. Frogs and reptiles were also surveyed opportunistically during all other surveys in the investigation area. As the survey season occurred in winter, when most reptile species are not active, likelihood of occurrence assessments were conducted by the presence/absence of suitable habitat and its condition.

KOALA SPOT ASSESSMENTS

Systematic Spot Assessment Technique (SAT) was undertaken within the investigation area to identify the presence of Koala usage within native vegetation. The SAT identifies whether local Koala tree species preferences by measuring the rate at which each species is utilised by Koalas.

The SAT involves measuring activity within the immediate area surrounding a tree of any species known to have been utilised by Koalas, or otherwise considered to be of some importance for Koala conservation and/or assessment purposes. A minimum of 29 surrounding trees are sampled systematically for Koala faecal pellets for 1 metre around the base of each tree. The activity of Koala usage for each SAT is then expressed as the percentage equivalent of the proportion of the surveyed trees within each SAT. The percentage is then compared to prescribed ranges for activity levels for Koalas within NSW (Phillips and Callaghan, 2011).

2.6.3.5 CANDIDATE FAUNA SPECIES AND SURVEY EFFORT

Species credit species predicted by or added to the Biodiversity Assessment Method (BAM) Calculator (EES Group, 2019a) identified 12 species. A further 55 species were identified either as ecosystem credit species (predicted species) or during desktop assessments and were subject to a likelihood of occurrence assessment (Appendix D). Those candidate species credit species and any other identified species considered to have a moderate or higher likelihood of occurrence (Little Eagle) became candidate species and were subject to targeted surveys. A total of 12 candidate threatened fauna species were identified. Table 2.9 outlines each species, conservation status, optimal survey months as prescribed by the BAM calculator, habitat constraints and survey effort.

Table 2.9 Survey requirements and effort for candidate threatened fauna species credit species

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	EPBC ACT STATUS ²	SURVEY MONTHS ³	BREEDING HABITAT CONSTRAINTS ⁴	POTENTIAL HABITAT / FORAGING HABITAT CONSTRAINTS ⁴	SURVEY EFFORT (WSP, 2019)
Eastern Bentwing-bat, Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i> (previously <i>Miniopterus schreibersii oceanensis</i>)	V	–	Dec–Feb	Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat code "IC – in cave;" observation type code "E nest-roost;" with numbers of individuals >500	PCT 277, PCT 312	Microchiropteran bat surveys (Anabat) over 3 nights Opportunistic sightings over 4 nights (15–18 July) Habitat constraint assessment to determine the presence of a cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding
Glossy Black-Cockatoo	<i>Calyptorhynchus lathami</i>	V	–	Mar–Aug	Living or dead tree with hollows greater than 15 cm diameter and greater than 5 m above ground	PCT 346/Presence of <i>Allocasuarina</i> and <i>Casuarina</i> species	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence hollow-bearing trees Habitat assessment to determine the presence of <i>Allocasuarina</i> and/or <i>Casuarina</i> species
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	Oct–Dec	Breeding camps	PCT 267, PCT 277	Opportunistic sightings over 5 days (15–19 July) Opportunistic sightings over 4 nights (15–18 July) Habitat constraint assessment to determine the presence of breeding camps

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	EPBC ACT STATUS ²	SURVEY MONTHS ³	BREEDING HABITAT CONSTRAINTS ⁴	POTENTIAL HABITAT / FORAGING HABITAT CONSTRAINTS ⁴	SURVEY EFFORT (WSP, 2019)
Koala	<i>Phascolarctos cinereus</i>	V	V	All year	Areas identified via survey as important habitat (Important' habitat is defined by the density of koalas and quality of habitat determined by on-site survey)	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346	Koala SPOT assessments (3 assessments undertaken) Spotlighting in areas of potential habitat over 4 nights (15–19 July) Opportunistic sightings over 5 days (15–19 July)
Little Eagle	<i>Hieraaetus morphnoides</i>	V	–	Aug–Oct	Nest trees – live (occasionally dead) large old trees within vegetation	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence of nest trees
Major Mitchell's Cockatoo	<i>Lophochroa leadbeateri</i>	V	–	Sept–Dec	Living or dead tree with hollows greater than 10 cm diameter	PCT 9, PCT 346	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence of living or dead tree with hollows greater than 10 cm diameter
Pink-tailed Legless Lizard	<i>Aprasia parapulchella</i>	V	V	Sept–Nov	Rocky areas or within 50 m of rocky areas	PCT 346	Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence of rocky areas

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	EPBC ACT STATUS ²	SURVEY MONTHS ³	BREEDING HABITAT CONSTRAINTS ⁴	POTENTIAL HABITAT / FORAGING HABITAT CONSTRAINTS ⁴	SURVEY EFFORT (WSP, 2019)
Regent Honeyeater	<i>Anthochaera phrygia</i>	CE	CE	Sept–Dec	As per mapped areas (are a species credit, these areas do not require survey)	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July)
Squirrel Glider	<i>Petaurus norfolcensis</i>	V; E2	–	All year	Relies on large old trees with hollows for breeding and nesting. These trees are also critical for movement and typically need to be closely-connected (i.e. no more than 50 m apart).	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346	Spotlighting in areas of potential habitat over 4 nights (15–18 July)
Southern Myotis	<i>Myotis macropus</i>	V	–	Nov–Mar	Hollow bearing trees within 200 m of riparian zone	PCT 9	Microchiropteran bat surveys (Anabat) over 3 nights Habitat constraint assessment to determine the presence of hollow bearing trees within 200 m of riparian zone
Superb Parrot	<i>Polytelis swainsonii</i>	V	V	Sept–Nov	Hollow bearing trees: Living or dead <i>E. blakelyi</i> , <i>E. melliodora</i> , <i>E. albens</i> , <i>E. camaldulensis</i> , <i>E. microcarpa</i> , <i>E. polyanthemos</i> , <i>E. mannifera</i> , <i>E. intertexta</i> with hollows greater than 5 cm diameter; greater than 4 m above ground or trees with a DBH of greater than 30 cm	PCT 9, PCT 267, PCT 277, PCT 346	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence of hollow bearing trees of mentioned species

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	EPBC ACT STATUS ²	SURVEY MONTHS ³	BREEDING HABITAT CONSTRAINTS ⁴	POTENTIAL HABITAT / FORAGING HABITAT CONSTRAINTS ⁴	SURVEY EFFORT (WSP, 2019)
Swift Parrot	<i>Lathamus discolor</i>	E	CE	May–Aug	As per mapped areas. These mapped areas do NOT require survey as it is presumed that the species is present	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July)
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	–	Jul–Dec	Living or dead mature trees within suitable vegetation within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines	PCT 9, PCT 267, PCT 277, PCT 312, PCT 346 / Waterbodies: Within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines	Diurnal Bird Surveys over 5 days (15–19 July) Opportunistic sightings over 5 days (15–19 July) Habitat constraint assessment to determine the presence of living or dead mature trees within suitable vegetation within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines

(1) V = Vulnerable, E = Endangered, E2 = Endangered Population, CE = Critically Endangered as listed under the BC Act

(2) V = Vulnerable, CE = Critically Endangered as listed under the EPBC Act

(3) Survey months have been prescribed by the BAM Calculator

(4) Potential habitat (PCT's) were obtained from BioNet database (EES Group, 2019f), habitat constraints were obtained from the Threatened Biodiversity Data Collection (EES Group, 2019e)

2.7 FIELD SURVEY LIMITATIONS

Detailed desktop assessment was undertaken prior to field surveys to identify the threatened biodiversity likely to occur in the locality and determine the field survey effort required for the scale of the project and its ecological context for a constraints assessment. However, the precise range of habitats utilised by some species is not well understood. Furthermore, the discovery of hitherto unknown populations of threatened species, even well outside their known range, is always present. This applies particularly to cryptic species of plants and animals and plant species which can persist as soil seedbanks and easily go undetected despite intensive survey.

No sampling technique can eliminate the possibility that a species is present within the investigation area. For example, some species of plant may be present in the soil seed bank and some fauna species use habitats on a sporadic or seasonal basis and may not be present within the investigation areas during surveys.

Time and access restrictions during the survey period prevented targeted threatened species surveys from being conducted throughout the investigation area (i.e. limited targeted flora and fauna surveys). As such, targeted surveys were limited to areas where access was available within given timeframes. Additional targeted surveys will be required during later phases of the project for threatened flora and fauna species that are considered likely to occur within the investigation area based on habitat characteristics and previous records. As the actual distribution and the range of habitat utilised by some species is not fully understood, there is always a small possibility that other species could occur within the study despite being considered to have a low likelihood of occurrence based on their known range and known habitats.

Access was restricted within some locations of the investigation area (e.g., private properties etc.) and subsequently some areas could not be accessed and therefore not verified. Where access on foot was restricted or limited but adjacent areas were accessible, vegetation community boundaries, condition and threatened flora and fauna habitat attributes were extrapolated from a distance with the aid of binoculars. Where the vegetation could not be viewed existing vegetation mapping of the area and aerial photo interpretation was used.

The conclusions in this report are based upon data acquired for the investigation area and the known distribution and habitat preferences of species. The conclusions are, therefore, merely indicative of the likely biodiversity values of the investigation area, based on information available at the time of preparing the report, including the presence or otherwise of species. It should be recognised that, as more information becomes available, assessment of the likely presence of threatened species can change with time.

3 LANDSCAPE FEATURES

3.1 SITE LANDSCAPE FEATURES

The investigation area for the SAP is approximately 4506 hectares. An assessment of the landscape value of the investigation area was undertaken in accordance with Chapter 4 and Appendix 3 of the BAM (Office of Environment & Heritage, 2017a). A summary of the landscape features for the investigation area are provided in Table 3.1 and shown in Figure 3.1.

Table 3.1 Landscape features

LANDSCAPE FEATURE	THE INVESTIGATION AREA
IBRA bioregions and subregions	NSW South Western Slopes IBRA region <ul style="list-style-type: none"> — Lower Slopes subregion (majority of investigation area) — Inland Slopes subregion (South eastern corner of investigation area).
NSW landscape regions (Mitchell landscapes)	Junee Hills and slopes (majority of investigation area) Murrumbidgee – Tarcutta Channels and Floodplains (south western corner)
Local Government Area (LGA)	City of Wagga Wagga
Rivers and streams	Dukes Creek and its tributaries run through the investigation area to the southwest into Gobbagombalin Lagoon which occurs to the south west of the investigation area. This includes 1 st , 2 nd and 3 rd order streams.
Important and local wetlands	A sensitive groundwater area is associated with the Murrumbidgee River Corridor to the south and extend to into the south eastern corner of the investigation area. Dukes Creek runs through the investigation area and flows into Gobbagombalin Lagoon which occurs to the south west of the investigation area.
Connectivity features	The investigation area is generally isolated from any surrounding areas of biodiversity value and connectivity is mostly restricted to roadside corridors which were recorded in areas adjacent to Olympic Highway and Trahairs Road. Connectivity for highly mobile species also occurs in the south-western portion within close proximity to the site, associated with River Red Gum Woodland linking to Dukes Creek and more broadly Gobbagombalin Lagoon and the Murrumbidgee floodplain.
Areas of geological significance and soil hazard features	The investigation area does not contain any areas of geological significance or soil hazard feature in relation to biodiversity.
Areas of outstanding biodiversity value	An area of High Biodiversity Value (class protected riparian land) traverses the investigation area along parts of Dukes Creek.

3.2 SITE CONTEXT

As outlined in Subsection 4.2 of the BAM the following landscape attributes of the development footprint require assessment to determine the site context:

- native vegetation cover
- patch size.

The assessments of these two landscape attributes are provided below.

3.2.1 ASSESSING NATIVE VEGETATION COVER

Native vegetation cover of the investigation area and a 1500 m buffer of the investigation area was determined in accordance with Subsection 4.3.2 of the BAM and is summarised in Table 3.2. Figure 3.2 illustrated the vegetation recorded within the investigation area and assessment buffer area.

Table 3.2 Native vegetation cover

ASSESSMENT AREA	AREA (ha)	NATIVE VEGETATION AREA (ha)	NATIVE VEGETATION COVER PERCENT
Investigation area	4506.06	100.26	2.22%
1500 m buffer area	5038.85	521.11	10.34%
TOTAL	9544.90	621.17	6.51%

3.2.2 PATCH SIZE

Patch size is defined under the BAM as an area of native vegetation that:

- occurs on the development site or stewardship site, and
- includes native vegetation that has a gap of less than 100 m from the next area of moderate to good native vegetation (or ≤ 30 m for non-woody ecosystems).

Patch size may extend onto adjoining land that is not part of a development site or a stewardship site. The patch size must include the area of native vegetation that is also within the 1500 m buffer as required in Subsection 4.2.2.1 of the BAM.

All vegetation zones within the investigation area were recorded across several discontinuous patches which could be assigned to more than one patch size class (5–24 ha, 25–100 ha or ≥ 100 ha). The largest patch size assessed was adopted and is outlined in Table 3.3 below.

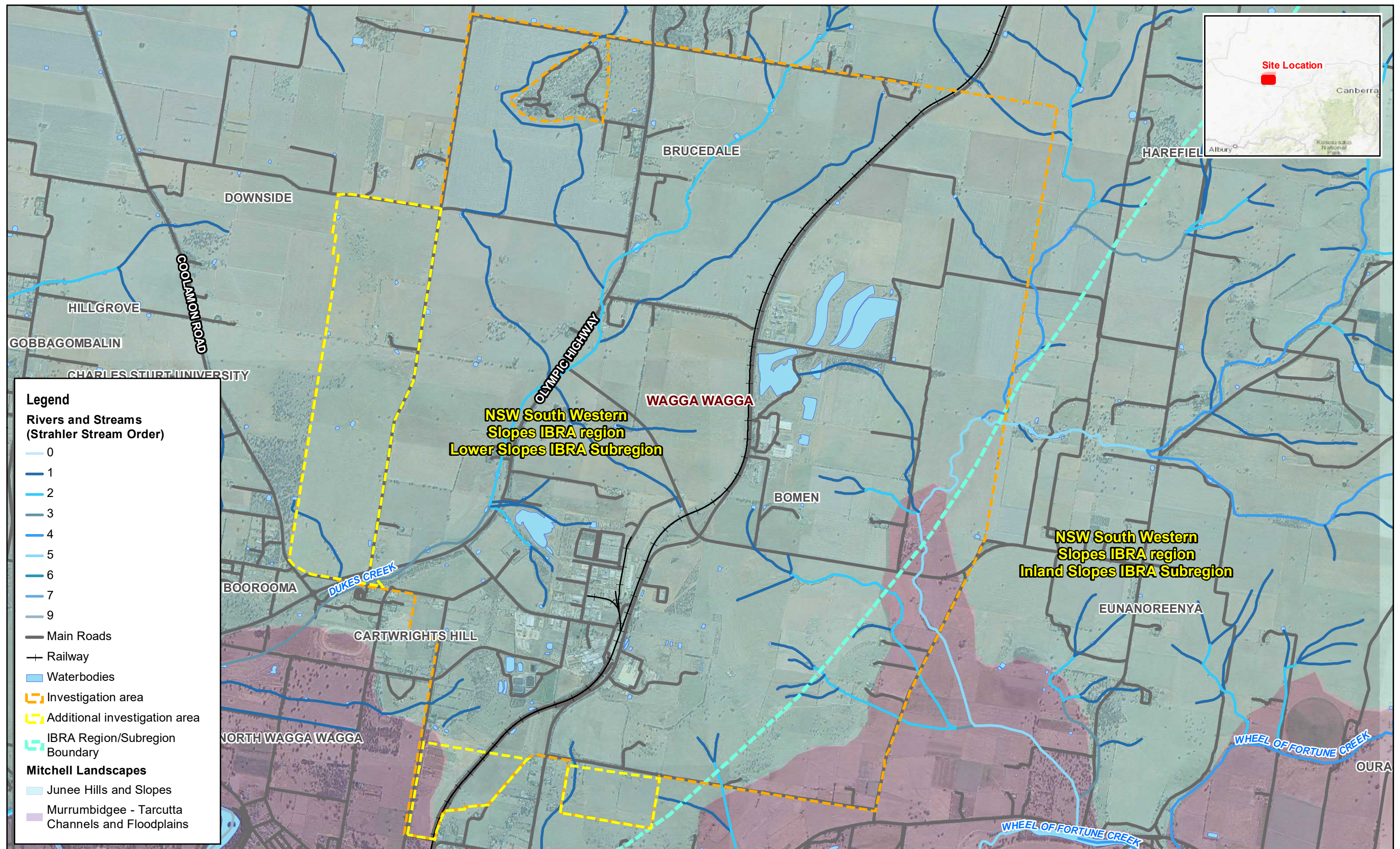
Table 3.3 Patch sizes assigned to PCTs recorded within the investigation area

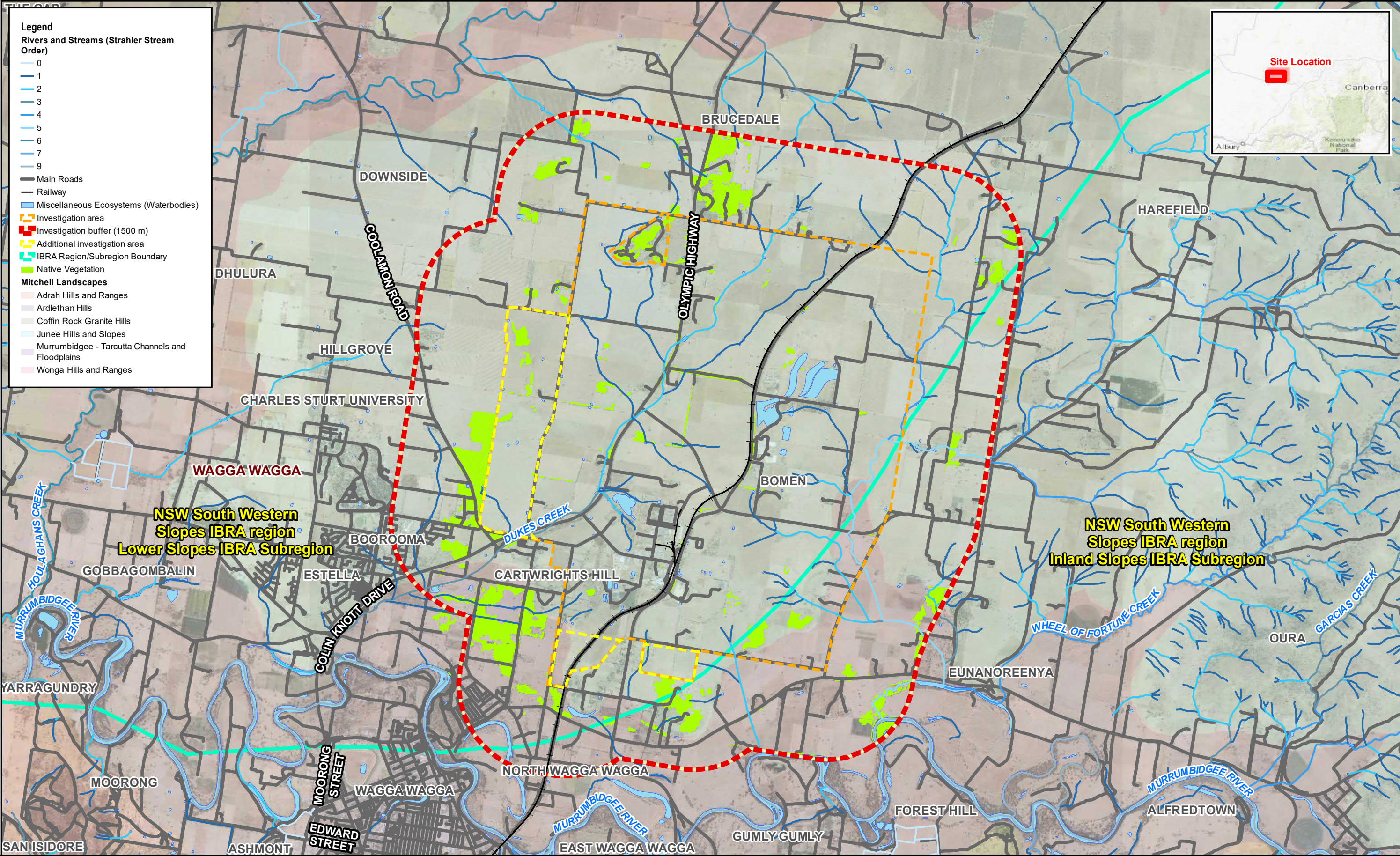
VEGETATION TYPE	PATCH SIZE CLASS
PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)	5–24 ha
PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate)	<5 ha
PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Scattered Trees)	<5 ha
PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)	5–24 ha
PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)	5–24 ha
PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate)	<5 ha
PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)	5–24 ha

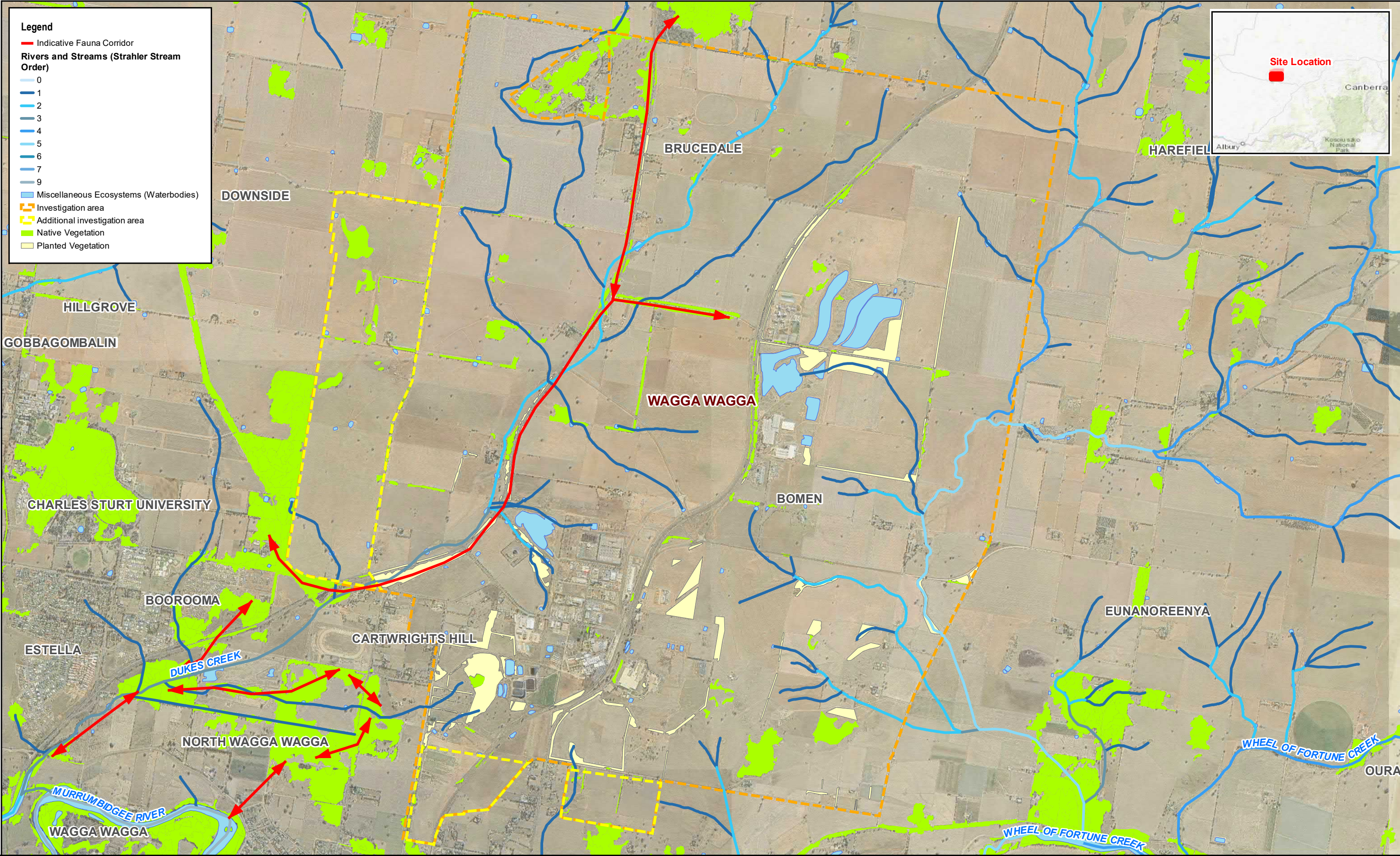
3.2.3 CONNECTIVITY

The investigation area occurs within an agricultural context that is a generally fragmented landscape where native vegetation was recorded in small, isolated patches. Connectivity was restricted to roadside corridors which were recorded in areas adjacent to Olympic Highway and Trahairs Road. These corridors are formed mostly from native planted vegetation recorded as Miscellaneous Ecosystem (Native Plantings) and was generally comprised of indigenous endemic species such as *Eucalyptus melliodora* (Yellow Box), *Eucalyptus blakelyi* (Blakley's Red Gum), *Eucalyptus sideroxylon* (Mugga Ironbark) and *Brachychiton populneus* (Kurrajong) funded from the Natural Heritage Trust between 2000 and 2002. Isolated patches of PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (moderate condition) were also recorded along these stretches, particularly along Trahairs road.

This roadside vegetation has connectivity to the south-west and south-east to larger patches of vegetation. All potential areas of connectivity which run through or adjacent to the investigation area have illustrated in Figure 3.3.







4 NATIVE VEGETATION

The section has been prepared to address section 5 of the BAM. Specifically, this section maps and identifies all native and non-native vegetation types within the investigation area and provides an assessment of vegetation integrity and whether any recorded vegetation types correspond to threatened ecological communities listed under the BC Act.

4.1 OVERVIEW

A total of five native vegetation PCTs were mapped as occurring within the investigation area. Native vegetation was mapped as occurring over a total of 100.26 hectares of the 4506.06 hectares of the investigation area.

The five native vegetation PCTs were assigned to six vegetation zones based on broad condition state, these included:

- PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate condition)
- PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate condition)
- PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Scattered Trees)
- PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate condition)
- PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)
- PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate condition)
- PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees).

In addition, two non-native vegetation types were recorded, being:

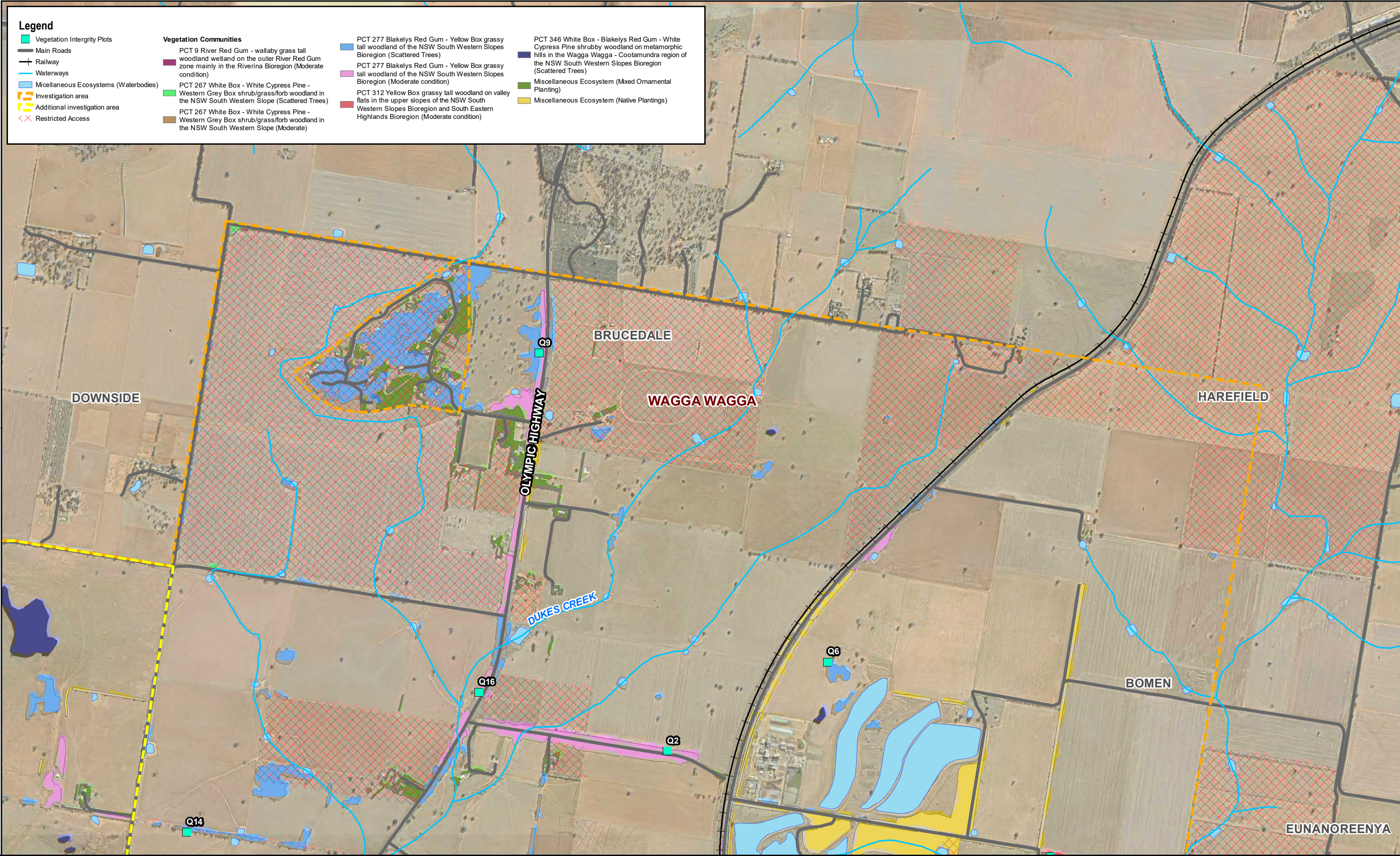
- Miscellaneous ecosystem – Native Plantings
- Miscellaneous ecosystem – Mixed Ornamental Plantings.

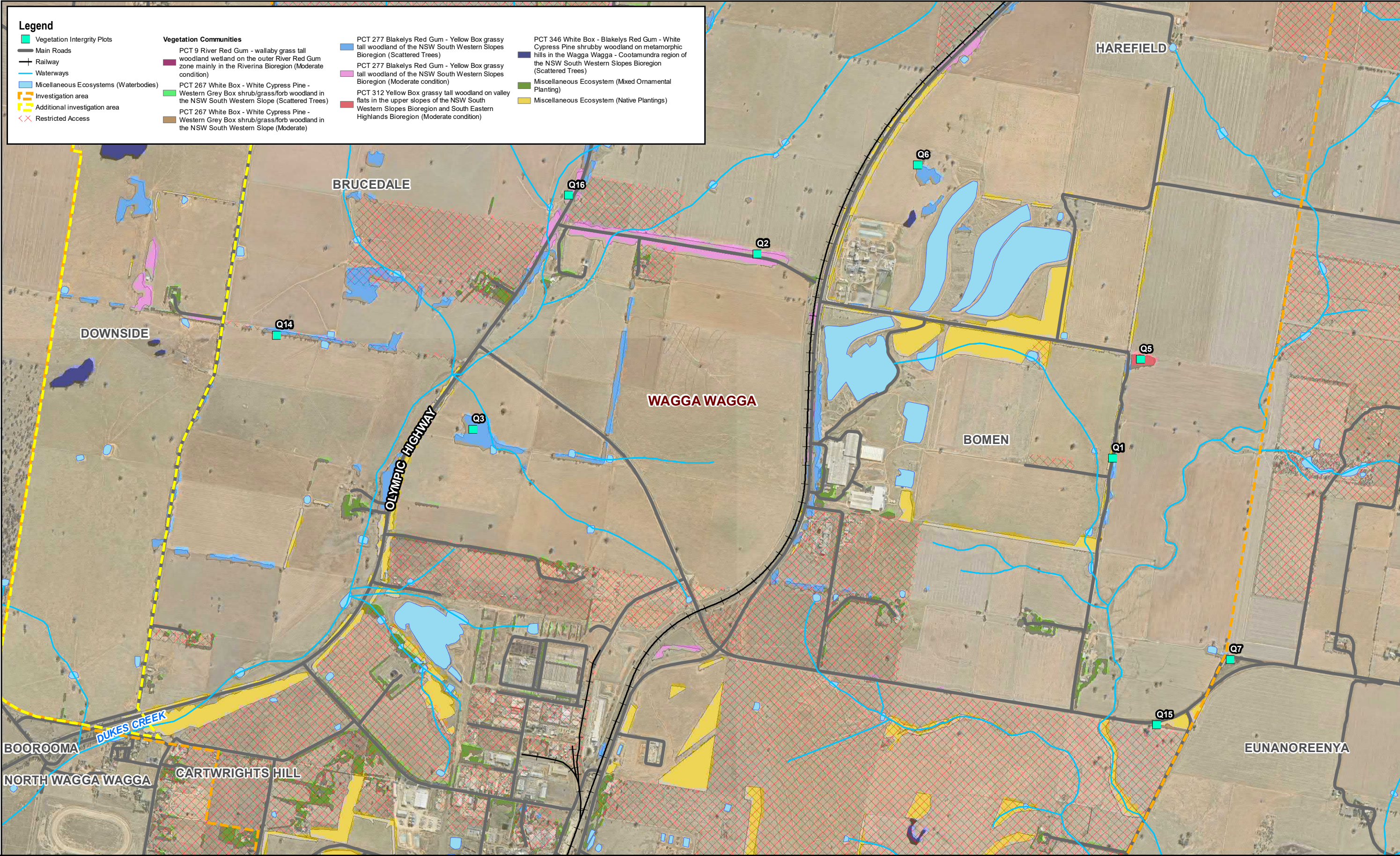
An overview of native and non-native vegetation types and zones identified within the investigation area is presented in Table 4.1 with the extent shown in Figure 4.1. All vegetation integrity plot data is presented in Appendix A.

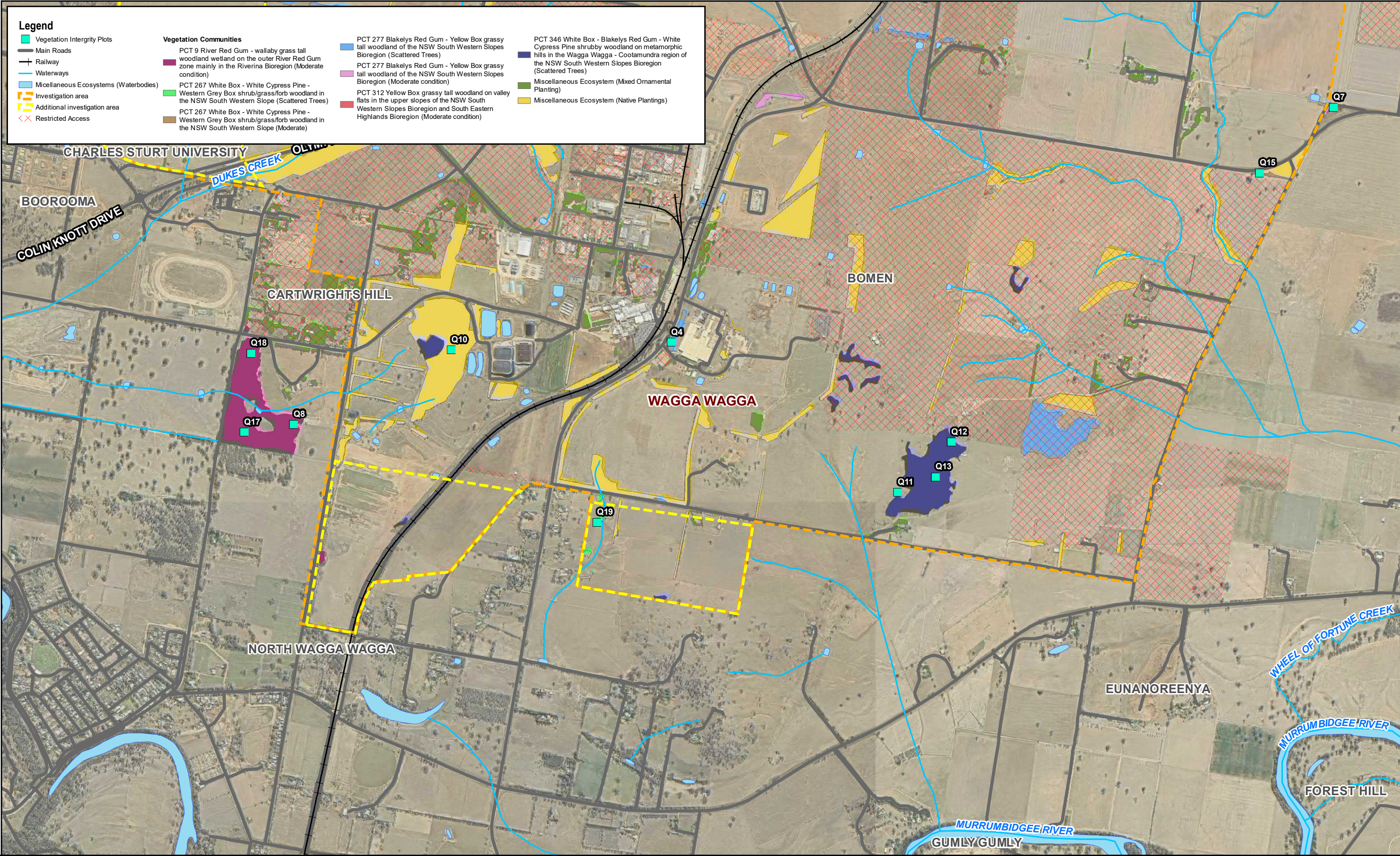
Table 4.1 Overview of native and non-native vegetation types and zones identified within the investigation area

VEGETATION TYPE	ZONE	THREATENED ECOLOGICAL COMMUNITY (BC ACT)	FORMATION	CLASS	PCT % CLEARED	PATCH SIZE (ha)	VEGETATION INTEGRITY SCORE	EXTENT IN INVESTIGATION AREA (ha)
Native vegetation								
PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion	VZ1 – Moderate	Not listed	Forested Wetlands	Inland Riverine Forests	66	5–24	29.4	0.20
PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	VZ2 – Moderate	White Box Yellow Box Blakely's Red Gum Woodland	Grassy Woodlands	Western Slopes Grassy Woodlands	89	<5	56.9	0.36
	VZ3 – Scattered Trees	–				<5	23.4	1.21
PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	VZ4 – Moderate	White Box Yellow Box Blakely's Red Gum Woodland	Grassy Woodlands	Western Slopes Grassy Woodlands	94	5–24	82.4	22.45
	VZ5 – Scattered Trees	–				5–24	24.4	50.02
PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion	VZ6 – Moderate	White Box Yellow Box Blakely's Red Gum Woodland	Grassy Woodlands	Southern Tableland Grassy Woodlands	93	<5 ha	36	0.83

VEGETATION TYPE	ZONE	THREATENED ECOLOGICAL COMMUNITY (BC ACT)	FORMATION	CLASS	PCT % CLEARED	PATCH SIZE (ha)	VEGETATION INTEGRITY SCORE	EXTENT IN INVESTIGATION AREA (ha)
PCT 346 White Box – Blakely’s Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion	VZ7 – Scattered Trees	–	Dry Sclerophyll Forests (Shrubby sub-formation)	Western Slopes Dry Sclerophyll Forests	60	5–24 ha	20	25.19
Total area of native vegetation								100.26
Non-native vegetation								
Miscellaneous ecosystem – Native plantings	–	–	–	–	–	–	–	128.20
Miscellaneous ecosystem – Mixed Ornamental Plantings	–	–	–	–	–	–	–	47.96
Total area of non-native vegetation								176.17
Total area of all vegetation types								276.43







4.2 PCT DESCRIPTIONS

4.2.1 PCT 9 RIVER RED GUM – WALLABY GRASS TALL WOODLAND WETLAND ON THE OUTER RIVER RED GUM ZONE MAINLY IN THE RIVERINA BIOREGION

The occurrence of this vegetation type within the investigation area is illustrated in Figure 4.1 with photographic representation provided in Photo 4.1 to Photo 4.4. A profile of this PCT is provided in Table 4.2 and a comparison of recorded vegetation integrity data against community condition benchmark data is presented in Table 4.3.

Table 4.2 Summary of PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion

PCT 9 - RIVER RED GUM – WALLABY GRASS TALL WOODLAND WETLAND ON THE OUTER RIVER RED GUM ZONE MAINLY IN THE RIVERINA BIOREGION	
PCT Justification	This vegetation occurred as an open woodland in riparian areas associated with tributaries of the Dukes Creek. <i>Eucalyptus camaldulensis</i> (River Red Gum) was the only canopy species and occurred in a range of age cohorts. Shrub stratum was sparse to absent and consisted mainly of juvenile <i>Eucalyptus camaldulensis</i> (River Red Gum). The understorey of this vegetation was highly modified due to a long history of agricultural practices including grazing which was observed during field survey. The ground stratum was dominated by exotic annual grasses with scattered native forbs and native grasses such as <i>Rytidosperma</i> species indicating a grassy understorey would naturally occur. This vegetation was consistent with the landscape position, structure and canopy floristics of PCT 9.
Vegetation formation	Forested Wetlands
Vegetation class	Inland Riverine Forests
Conservation status	Not listed
SAII entity	No
Percent cleared	66%
Landscape position	This vegetation was recorded in low-lying floodplain and riparian areas associated with tributaries of Dukes Creek and as isolated patched within proximity to the Murrumbidgee floodplain.
Species upper stratum	<i>Eucalyptus camaldulensis</i> (River Red Gum)
Species middle stratum	Mostly absent although juvenile <i>Eucalyptus camaldulensis</i> (River Red Gum) occur within this stratum
Species ground stratum	<i>Alternanthera nana</i> , <i>Avena fatua</i> *, <i>Bromus diandrus</i> *, <i>Hypochaeris radicata</i> *, <i>Marsilea drummondii</i> , <i>Medicago polymorpha</i> *, <i>Romulea rosea</i> *, <i>Rytidosperma caespitosum</i> , <i>Rytidosperma duttonianum</i> , <i>Senecio cunninghamii</i> var. <i>cunninghamii</i>
Vegetation zone and condition	VZ1 Moderate condition (vegetation integrity score 29.4) – This vegetation was assigned to moderate condition due to the range of age cohorts recorded of <i>Eucalyptus camaldulensis</i> (River Red Gum) including large hollow bearing trees and natural regeneration. Though the vegetation integrity score was relatively low and the understorey was highly modified, native forbs and grass species characteristic of PCT 9 were recorded indicating some resilience in the ground stratum. This vegetation zone covers an area of about 0.20 hectares.



Photo 4.1 *Eucalyptus camaldulensis* (River Red Gum) was the dominant canopy species (Q8)



Photo 4.2 A range of age classes including mature remnant canopy species were recorded (Q18)



Photo 4.3 Agricultural practises such as grazing recorded during field surveys (Q17)



Photo 4.4 A grassy understorey dominated by exotic annual grass species recorded in Q17

Table 4.3 Comparison of PCT 9 – River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion – vegetation integrity plot data against PCT condition benchmark data

PLOT	TREE RICHNESS	SHRUB RICHNESS	GRASS RICHNESS	FORB RICHNESS	FERN RICHNESS	OTHER RICHNESS	TREE COVER	SHRUB COVER	GRASS COVER	FORB COVER	FERN COVER	OTHER COVER	LENGTH TIMBER	LEAF LITTER	LARGE TREE	HTW COVER
BM ¹	3	2	7	9	1	1	62	0	41	7	0	0	78	65	50(4)	–
Q8	1	0	3	1	1	0	25	0	1.3	0.1	0.4	0	3	76	1	6
Q17	6	1	0	1	3	1	0	27	0	0.9	1.3	2	0	63	1	40.8
Q18	1	0	2	2	0	0	30	0	0.6	1.2	0	0	12	80	1	37.9

- (1) Benchmark data for equivalent community in NSW South Western Slopes IBRA Bioregion; Vegetation Type - PCT 9 - River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion; Vegetation Formation: Forested Wetlands; Keith Class: Inland Riverine Forests; source (NSW BioNet Vegetation Classification PCT benchmarks power query database and cross referenced with BAM Credit Calculator)

4.2.2 PCT 267 WHITE BOX – WHITE CYPRESS PINE – WESTERN GREY BOX SHRUB/GRASS/FORB WOODLAND IN THE NSW SOUTH WESTERN SLOPES BIOREGION

The occurrence of this vegetation type within the investigation area is illustrated in Figure 4.1 with photographic representation provided in Photo 4.5 to Photo 4.8. A profile of this PCT is provided in Table 4.4 and a comparison of recorded vegetation integrity data against community condition benchmark data is presented in Table 4.5.

Table 4.4 Summary of PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion

PCT 267 WHITE BOX – WHITE CYPRESS PINE – WESTERN GREY BOX SHRUB/GRASS/FORB WOODLAND IN THE NSW SOUTH WESTERN SLOPES BIOREGION	
PCT Justification	This vegetation occurred as a grassy woodland and was recorded in areas where the overstorey was co-dominated by <i>Eucalyptus albens</i> (White Box) and <i>Eucalyptus microcarpa</i> (Grey Box). This community generally lacked a mid-stratum though scattered juvenile <i>Callitris glaucophylla</i> (White Cypress Pine) and <i>Acacia</i> species (including <i>Acacia deanei</i> and <i>Acacia implexa</i>) were recorded. The ground stratum was dominated by native grasses and forbs. This PCT was recorded in elevated areas such as foot slopes and low rises intergrading with PCT 277 in lower areas and PCT 346 in higher areas. Unlike PCT 346 surface rock was generally sparse or absent. This vegetation is consistent with the landscape position, structure and floristics of PCT 267.
Vegetation formation	Grassy Woodlands
Vegetation class	Western Slopes Grassy Woodlands
Conservation status	Aligns to White Box Yellow Box Blakely's Red Gum Woodland, listed as Endangered under the BC Act and Critically Endangered under the EPBC Act.
SAII entity	Yes
Percent cleared	89%
Landscape position	Recorded in elevated areas such as foot slopes and low rises.
Species upper stratum	<i>Eucalyptus albens</i> , <i>Eucalyptus microcarpa</i> , <i>Allocasuarina luehmanni</i>
Species middle stratum	<i>Callitris glaucophylla</i> , <i>Acacia deanei</i>
Species ground stratum	<i>Acaena novae-zelandiae</i> , <i>Austrostipa scabra</i> , <i>Avena fatua</i> *, <i>Einadia nutans subsp. nutans</i> , <i>Glycine tabacina</i> , <i>Hordeum vulgare</i> *, <i>Maireana enchylaenoides</i> , <i>Rytidosperma caespitosum</i> , <i>Sida corrugata</i>
Vegetation zone and condition	<p>VZ2 Moderate condition (vegetation integrity score 56.9) – This vegetation was assigned to moderate condition due to the overall low foliage cover of exotic species (i.e. <40%). A variety of native grasses and forbs were recorded in the ground stratum indicating moderate resilience. This vegetation zone covers an area of about 0.36 hectares.</p> <p>VZ3 Scattered Trees (vegetation integrity score 23.4) – This vegetation was recorded as scattered trees due to the lack of mid stratum vegetation and predominately exotic understorey. This vegetation zone covers an area of approximately 1.21 hectares.</p>



Photo 4.5 *Eucalyptus albens* recorded within patch of PCT 267 (moderate)



Photo 4.6 Native grassy understorey dominated by *Austrostipa scabra* recorded near Q15



Photo 4.7 *Allocasuarina luehmannii* (Buloke), *Eucalyptus albens* (White Box) and *Eucalyptus microcarpa* (Western Grey Box) were the co-dominant canopy species (Q19)



Photo 4.8 PCT 267 (scattered trees) with an understorey dominated by exotic species

Table 4.5 Comparison of PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion integrity plot data against PCT condition benchmark data

PLOT	TREE RICHNESS	SHRUB RICHNESS	GRASS RICHNESS	FORB RICHNESS	FERN RICHNESS	OTHER RICHNESS	TREE COVER	SHRUB COVER	GRASS COVER	FORB COVER	FERN COVER	OTHER COVER	LENGTH TIMBER	LEAF LITTER	LARGE TREE	HTW COVER
BM ¹	4	3	8	9	1	1	18	1	30	6	0	0	49	56	50(2)	0
Q15	1	0	2	5	0	1	24	0	21	11.1	0	1	2	29.6	3	2.8
Q19	2	0	1	0	0	0	21	0	0.4	0	0	0	0	19	4	3

- (1) Benchmark data for equivalent community in NSW South Western Slopes IBRA Bioregion; Vegetation Type - PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion; Keith Formation: Grassy Woodlands; Keith Class: Western Slopes Grassy Woodlands; source (NSW BioNet Vegetation Classification database and cross referenced with BAM Credit Calculator)

4.2.3 PCT 277 BLAKELY'S RED GUM – YELLOW BOX GRASSY TALL WOODLAND OF THE NSW SOUTH WESTERN SLOPES BIOREGION

The occurrence of this vegetation type within the investigation area is illustrated in Figure 4.1 with photographic representation provided in Photo 4.9 to Photo 4.12. A profile of this PCT is provided in Table 4.6 and a comparison of recorded vegetation integrity data against community condition benchmark data is presented in Table 4.7.

Table 4.6 Summary of PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

PCT 277 BLAKELY'S RED GUM – YELLOW BOX GRASSY TALL WOODLAND OF THE NSW SOUTH WESTERN SLOPES BIOREGION	
PCT Justification	This vegetation occurred as a grassy woodland and was recorded in areas where the overstorey was co-dominated by <i>Eucalyptus melliodora</i> (Yellow Box) and <i>Eucalyptus blakelyi</i> (Blakey's Red Gum). Generally, this community occurred in low-lying areas and lower slopes and was the most dominant vegetation type within the investigation area. A grassy understorey was recorded in moderate condition vegetation with the shrub layer being generally sparse although small patches of <i>Acacia</i> regrowth were recorded. This vegetation was consistent with the landscape position, structure and floristics of PCT 277.
Vegetation formation	Grassy Woodlands
Vegetation class	Western Slopes Grassy Woodlands
Conservation status	Aligns to White Box Yellow Box Blakely's Red Gum Woodland, listed as Endangered under the BC Act and Critically Endangered under the EPBC Act.
SAII entity	Yes
Percent cleared	94%
Landscape position	Recorded on lower slopes, plains and valley flats in some instances associated with ephemeral overland flow paths.
Species upper stratum	<i>Eucalyptus blakelyi</i> , <i>Eucalyptus melliodora</i>
Species middle stratum	<i>Acacia deanei</i> , <i>Acacia paradoxa</i>
Species ground stratum	<i>Austrostipa scabra</i> , <i>Avena fatua</i> *, <i>Bothriochloa macra</i> , <i>Dianella revolute</i> , <i>Digitaria divaricatissima</i> , <i>Enteropogon acicularis</i> , <i>Hypericum perforatum</i> *, <i>Maireana enchylaenoides</i> , <i>Medicago polymorpha</i> *, <i>Raphanus raphanistrum</i> *, <i>Romulea rosea</i> *, <i>Sida corrugata</i>
Vegetation zone and condition	<p>VZ4 Moderate condition (vegetation integrity score 82.4) – Vegetation assigned to this condition class displayed exotic foliage cover less than 30% in the ground stratum. A range of age cohorts in the canopy were generally recorded including natural regeneration. Native vegetation which occurred as regrowth was also assigned to moderation condition due to the natural resilience of the vegetation. This vegetation zone covers an area of about 22.45 hectares.</p> <p>VZ5 Scattered Trees (vegetation integrity score 24.4) – Vegetation assigned to this condition class displayed no natural resilience in the understorey which was generally dominated by perennial and annual exotic grass and herb species. Agricultural practices such as livestock grazing, direct seeding and cropping were evident within vegetation zone or in adjacent areas. Large remnant trees formed the upper stratum with no or very limited diversity in age classes of canopy species. This vegetation zone covers an area of about 50.02 hectares.</p>



Photo 4.9 Moderate condition vegetation displaying natural regeneration (Q2)



Photo 4.10 Moderate condition vegetation displaying a predominately native grassy understorey (Q16)



Photo 4.11 Scattered Trees – A limited diversity of canopy species age classes is evident (Q14)



Photo 4.12 Scattered Trees – A mostly exotic understorey dominated by exotic annual grass species (Q3)

Table 4.7 Comparison of PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion integrity plot data against PCT condition benchmark data

PLOT	TREE RICHNESS	SHRUB RICHNESS	GRASS RICHNESS	FORB RICHNESS	FERN RICHNESS	OTHER RICHNESS	TREE COVER	SHRUB COVER	GRASS COVER	FORB COVER	FERN COVER	OTHER COVER	LENGTH TIMBER	LEAF LITTER	LARGE TREE	HTW COVER
BM ¹	4	3	8	9	1	1	18	1	30	6	0	0	49	56	50(2)	-
Q1	1	0	9	7	0	2	15	0	0	0.6	0	0	5	5	4	0.1
Q2	1	0	0	2	0	0	25	0	34.8	18.1	0	0.6	9	60	2	12
Q3	2	0	0	1	0	0	20	0	0	0.5	0	0	0	0	4	0
Q4	2	1	6	1	0	0	15	0.4	2.2	0.3	0	0	0	2	1	2
Q6	2	0	0	0	0	0	20	0	0	0	0	0	12	4.2	3	0
Q7	2	1	9	7	0	0	25	0.1	59.3	12.5	0	0	2	56	1	1.2
Q9	2	1	6	9	0	0	19	0.1	48.3	11.4	0	0	2	57	4	10.2
Q14	2	0	0	2	0	0	30	0	0	1	0	0	23	1.2	7	0.1
Q16	3	1	6	3	1	0	35.5	10	62.5	1.2	0.1	0	16	44	3	3.7

- (1) Benchmark data for equivalent community in NSW South Western Slopes IBRA Bioregion; Vegetation Type - PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion; Keith Formation: Grassy Woodlands; Keith Class: Western Slopes Grassy Woodlands; source (NSW BioNet Vegetation Classification database and cross referenced with BAM Credit Calculator)

4.2.4 PCT 312 YELLOW BOX GRASSY TALL WOODLAND ON VALLEY FLATS IN THE UPPER SLOPES OF THE NSW SOUTH WESTERN SLOPES BIOREGION AND SOUTH EASTERN HIGHLANDS BIOREGION

The occurrence of this vegetation type within the investigation area is illustrated in Figure 4.1 with photographic representation provided in Photo 4.13 and Photo 4.14. A profile of this PCT is provided in Table 4.8 and a comparison of recorded vegetation integrity data against community condition benchmark data is presented in Table 4.9.

Table 4.8 Summary of PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion

PCT 312 YELLOW BOX GRASSY TALL WOODLAND ON VALLEY FLATS IN THE UPPER SLOPES OF THE NSW SOUTH WESTERN SLOPES BIOREGION AND SOUTH EASTERN HIGHLANDS BIOREGION	
PCT Justification	This vegetation occurred as a grassy woodland in areas where <i>Eucalyptus mellidora</i> (Yellow Box) was the only canopy species recorded. A shrub stratum was absent from this community with the understorey displaying a variety of grasses and herbs. This vegetation was consistent with the landscape position, structure and floristics of PCT 312.
Vegetation formation	Grassy Woodlands
Vegetation class	Southern Tableland Grassy Woodlands
Conservation status	Aligns to White Box Yellow Box Blakely's Red Gum Woodland, listed as Endangered under the BC Act and Critically Endangered under the EPBC Act.
SAII entity	Yes
Percent cleared	93%
Landscape position	Recorded in flat low-lying areas.
Species upper stratum	<i>Eucalyptus mellidora</i>
Species middle stratum	Juvenile <i>Eucalyptus mellidora</i>
Species ground stratum	<i>Austrostipa bigeniculata</i> , <i>Austrostipa scabra</i> , <i>Avena fatua</i> *, <i>Einadia nutans subsp. nutans</i> , <i>Maireana enchylaenoides</i> , <i>Oxalis perennans</i> , <i>Rumex brownii</i> , <i>Rytidosperma caespitosum</i>
Vegetation condition	VZ6 Moderate condition (vegetation integrity score 36) – This vegetation was assigned to moderate condition due to the low exotic foliage cover in the ground stratum and presence of a range of age classes including natural regeneration. Few scattered large remnant trees were recorded, indicating this vegetation may have been subject to historic clearing. This vegetation zone covers an area of about 0.83 hectares.



Photo 4.13 A range of age classes were recorded in Q5, including natural regeneration



Photo 4.14 A large remnant *Eucalyptus melliodora* recorded on the edge of the PCT 312 patch

Table 4.9 Comparison of PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion integrity plot data against PCT condition benchmark data

PLOT	TREE RICHNESS	SHRUB RICHNESS	GRASS RICHNESS	FORB RICHNESS	FERN RICHNESS	OTHER RICHNESS	TREE COVER	SHRUB COVER	GRASS COVER	FORB COVER	FERN COVER	OTHER COVER	LENGTH TIMBER	LEAF LITTER	LARGE TREE	HTW COVER
BM ¹	4	6	8	11	1	1	40	2	26	8	0	0	50	45	50(2)	-
Q5	1	0	3	4	0	0	26	0	1.6	2.8	0	0	0	76	0	0

- (1) Benchmark data for equivalent community in NSW South Western Slopes IBRA Bioregion; Vegetation Type – PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion; Keith Formation: Grassy Woodlands; Keith Class: Southern Tableland Grassy Woodlands; source (NSW BioNet Vegetation Classification database and cross referenced with BAM Credit Calculator)

4.2.5 PCT 346 WHITE BOX – BLAKELY'S RED GUM – WHITE CYPRESS PINE SHRUBBY WOODLAND ON METAMORPHIC HILLS IN THE WAGGA WAGGA – COOTAMUNDRA REGION OF THE NSW SOUTH WESTERN SLOPES BIOREGION

The occurrence of this vegetation type within the investigation area is illustrated in Figure 4.1 with photographic representation provided in Photo 4.15 and Photo 4.18. A profile of this PCT is provided in Table 4.10 and a comparison of recorded vegetation integrity data against community condition benchmark data is presented in Table 4.11.

Table 4.10 Summary of PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

PCT 346 WHITE BOX – BLAKELY'S RED GUM – WHITE CYPRESS PINE SHRUBBY WOODLAND ON METAMORPHIC HILLS IN THE WAGGA WAGGA – COOTAMUNDRA REGION OF THE NSW SOUTH WESTERN SLOPES BIOREGION	
PCT Justification	This vegetation was recorded in areas where <i>Eucalyptus albens</i> (White Box) and <i>Eucalyptus blakelyi</i> (Blakleys Red Gum) were the co-dominant canopy species and exposed metamorphic rock was apparent. Generally, this community was restricted to hill crests and ridgelines, and intergraded with PCT 277 at the footslopes and lower lying areas. The shrub and ground strata of this community was absent and/or highly modified. This vegetation was consistent with the landscape position, structure and canopy floristics of PCT 346.
Vegetation formation	Dry Sclerophyll Forests (Shrubby sub-formation)
Vegetation class	Western Slopes Dry Sclerophyll Forests
Conservation status	Not listed
SAII entity	No
Percent cleared	60%
Landscape position	Recorded on rocky hill crests
Species upper stratum	<i>Eucalyptus albens</i> , <i>Eucalyptus blakelyi</i>
Species middle stratum	Absent
Species ground stratum	<i>Arctotheca calendula</i> *, <i>Avena fatua</i> *, <i>Bromus diandrus</i> *, <i>Chenopodium album</i> *, <i>Echium plantagineum</i> *, <i>Hypericum perforatum</i> *, <i>Malva parviflora</i> *, <i>Raphanus raphanistrum</i> *, <i>Romulea rosea</i> *
Vegetation condition	VZ7 Scattered Trees (vegetation integrity score 20) – Vegetation assigned to this condition class was structurally modified and displayed no natural resilience in the understorey. The ground strata was dominated by exotic annual grass and herb species. Agricultural practices such as livestock grazing, direct seeding and cropping were evident within the patch and in adjacent areas. Large remnant trees formed the upper stratum with no or very limited diversity in age classes of canopy species. This vegetation zone covers an area of about 25.19 hectares.



Photo 4.15 A limited diversity of canopy age classes was recorded (Q13)



Photo 4.16 Exotic annual grass and herb species dominated the understorey of this vegetation (Q10)



Photo 4.17 Exposed metamorphic surface rock was a characteristic feature of this community



Photo 4.18 The landscape position of PCT 346 was restricted to hill crests and ridgelines (Q12)

Table 4.11 Comparison of PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion integrity plot data against PCT condition benchmark data

PLOT	TREE RICHNESS	SHRUB RICHNESS	GRASS RICHNESS	FORB RICHNESS	FERN RICHNESS	OTHER RICHNESS	TREE COVER	SHRUB COVER	GRASS COVER	FORB COVER	FERN COVER	OTHER COVER	LENGTH TIMBER	LEAF LITTER	LARGE TREE	HTW COVER
BM ¹	5	8	6	8	1	1	56	9	14	4	0	0	59	66	50 (1)	-
Q10	2	0	3	1	1	0	23	0	1.5	0.2	0.1	0	16	36	2	6.8
Q11	2	0	0	1	0	0	12	0	0	1	0	0	6	0	2	2
Q12	2	0	0	1	0	0	25	0	0	0.5	0	0	5	0	2	0
Q13	1	0	0	1	0	0	18	0	0	1	0	0	17	2	2	0

- (1) Benchmark data for equivalent community in NSW South Western Slopes IBRA Bioregion; Vegetation Type – PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion; Keith Formation: Dry Sclerophyll Forests (Shrubby sub-formation); Keith Class: Western Slopes Dry Sclerophyll Forests; source (NSW BioNet Vegetation Classification database and cross referenced with BAM Credit Calculator)

4.3 NON-NATIVE VEGETATION

4.3.1 MISCELLANEOUS ECOSYSTEM (NATIVE PLANTINGS)

Planted native vegetation which was not able to be assigned to a recognised NSW Plant Community Type was recorded as Miscellaneous Ecosystem (Native plantings). Vegetation assigned to this vegetation type occurred as large patches of planted native vegetation and generally comprised of indigenous endemic species such as *Eucalyptus melliodora* (Yellow Box), *Eucalyptus blakelyi* (Blakley's Red Gum), *Eucalyptus sideroxylon* (Mugga Ironbark) and *Brachychiton populneus* (Kurrajong).

Large patches of Miscellaneous Ecosystem (Native plantings) were recorded along Olympic Highway, Byrnes Road and within proximity to commercial operations such as Teys Australia. These areas of plantings were either a large patch size (such as the large-scale planting near Teys Australia) or provided connectivity within the landscape (i.e. plantings adjacent to Olympic Highway). Though these native plantings are not remnant and do not form part of a native plant community type, they do have environmental importance and have been considered further in section 7 of this report. Native plantings covered approximately 128.20 hectares within the investigation area.



Photo 4.19 Plastic plant protection bags observed amongst planted *Eucalyptus sideroxylon*



Photo 4.20 A patch of planted *Eucalyptus blakelyi* exhibiting the same age cohort

4.3.2 MISCELLANEOUS ECOSYSTEM (MIXED ORNAMENTAL PLANTINGS)

Vegetation which was not able to be assigned to a recognised NSW Plant Community Type and was comprised of either a mix of native and exotic plantings or non-endemic native plantings was recorded as Miscellaneous Ecosystem (Mixed Ornamental Plantings).

This vegetation class was recorded within proximity to residential and commercial buildings and were a mixture of exotic species such as *Schinus molle** (Peppercorn Tree), *Liquidambar styraciflua** (Liquidambar) and *Platanus × acerifolia** (London Plane Tree) and non-endemic native species such as *Brachychiton rupestris* (Queensland Bottle Tree), *Grevillea robusta* (Silky Oak), *Corymbia citriodora* (Lemon-scented Gum) and *Eucalyptus cladocalyx* (Sugar Gum).

Typically, Miscellaneous Ecosystem (Mixed Ornamental Plantings) was recorded in small patches and appear to have been planted for aesthetic rather than environmental purpose. The environmental importance of this vegetation class is negatable and is not considered further in section 7 of this report. Mixed ornamental plantings covered approximately 47.96 hectares within the investigation area.



Photo 4.21 Planted *Corymbia citriodora* recorded near a commercial building



Photo 4.22 Scattered plantings recorded near a closed road

4.4 Paddock TREES

A total of 605 Class 2 and Class 3 paddock trees were recorded within the investigation area. A breakdown of each paddock tree class and associated PCT is provided in Table 4.12. The paddock trees recorded within areas subject to survey are shown in Figure 4.4. Paddock trees with negligible biodiversity value are those trees identified as Class 1 paddock trees and do not contain hollows.

Paddock trees within the investigation area were assigned to the following associated PCTs based on the tree being one of its dominant tree species per information in the BioNet Vegetation Classification and that the PCT is associated with all threatened species assessed as likely to use the paddock tree as habitat (see Appendix 1 of the BAM):

- PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion
- PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
- PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
- PCT 282 Blakely's Red Gum – White Box – Yellow Box – Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
- PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion.

The large tree benchmark for all PCT's assigned is 50cm DBH. This benchmark was used to determine the Class category for each Paddock tree in accordance with Appendix 1 of the BAM. A description of each condition class is provided in section 2.5 with specific data for each tree provided in Appendix E.

Table 4.12 Class 2 and Class 3 Paddock trees recorded within the investigation area

CLASS OF Paddock TREE	ASSOCIATED PCT	NUMBER OF Paddock TREES
Class 3 – with hollows	PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion	2
	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	4
	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	243
	PCT 282 Blakely's Red Gum – White Box – Yellow Box – Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion	36
	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion	55
Total Class 3 paddock trees with hollows		340
Class 3 – with no hollows	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	92
	PCT 282 Blakely's Red Gum – White Box – Yellow Box – Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion	6
	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion	23
Total Class 2 paddock trees with no hollows		121
Class 2 – with hollows	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	5
	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion	2
Total Class 2 paddock trees with hollows		7
Class 2 – with no hollows	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	106
	PCT 282 Blakely's Red Gum – White Box – Yellow Box – Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion	10
	PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion	21
Total Class 2 paddock trees with no hollows		137
Total Class 3 and Class 2 paddock trees		605



Photo 4.23 Isolated *Eucalyptus melliodora* paddock tree



Photo 4.24 Scattered paddock trees recorded amongst forage crops

4.5 PRIORITY WEEDS

During field surveys 16 flora species which were listed as High Threat weeds under the *Biodiversity Conservation Act 2016* were recorded. Of these, five species were listed as Priority Weeds for the Riverina region under the *Biosecurity Act 2015* (Department of Primary Industries, 2019a) and four are listed as Weeds of National Significance (WoNS) (Australian Weeds Committee, 2019).

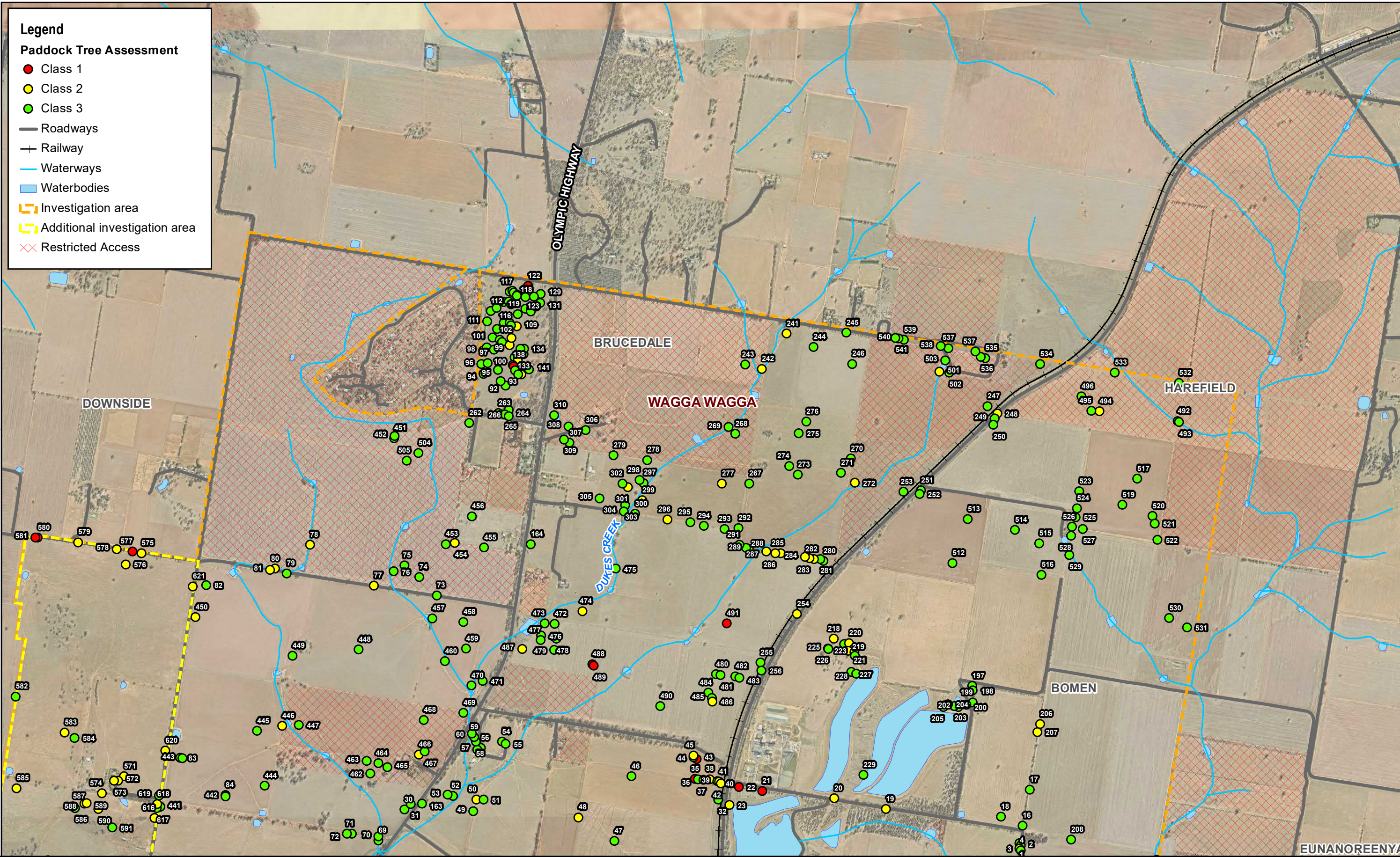
Table 4.13 Priority weeds identified within the investigation area

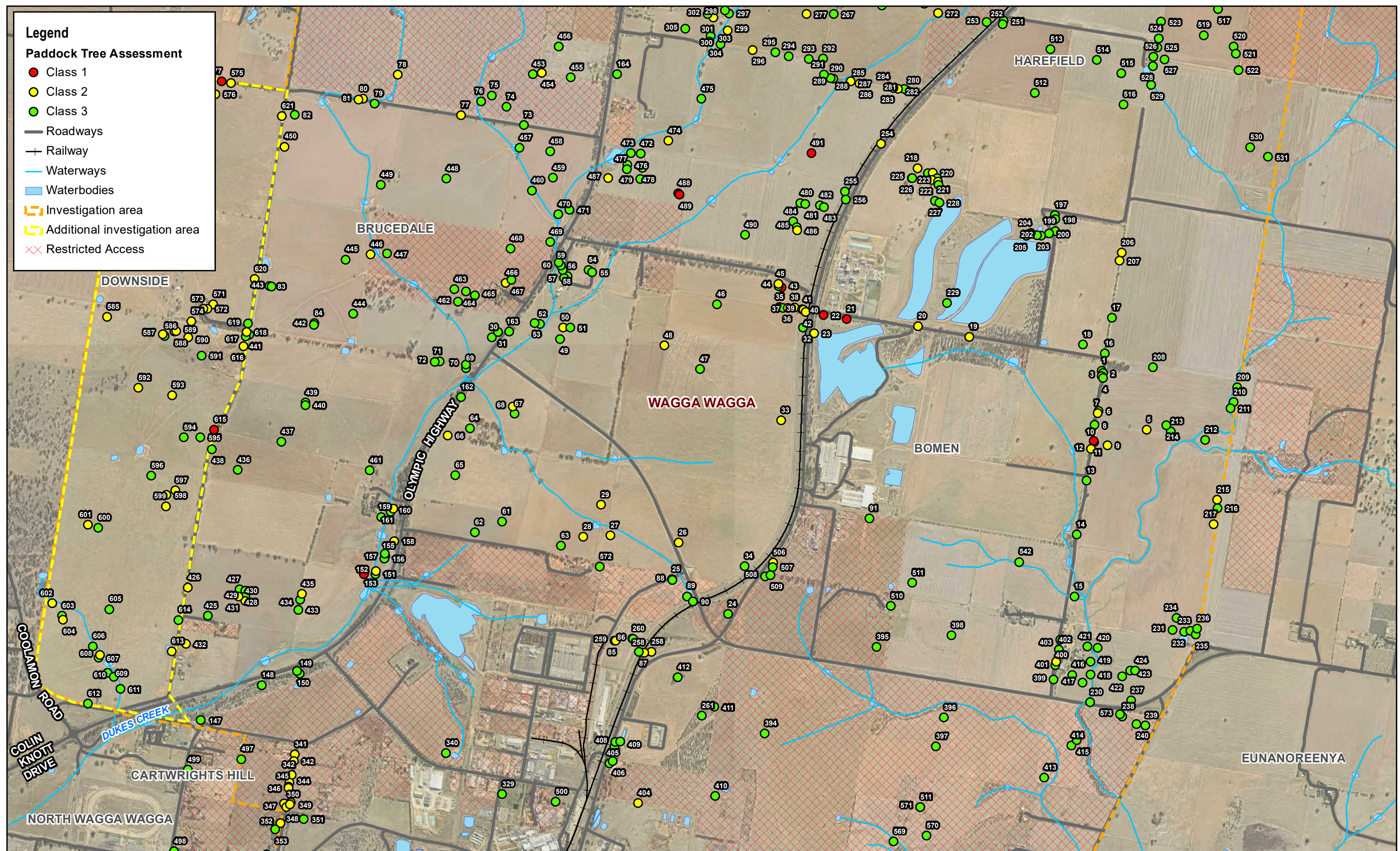
SCIENTIFIC NAME	COMMON NAME	BAM	PRIORITY WEED LISTING ¹	WONS
<i>Alternanthera pungens</i> *	Khaki Weed	HT	—	—
<i>Bromus diandrus</i> *	Giant Broome	HT	—	—
<i>Carthamus lanatus</i> *	Saffron Thistle	HT	—	—
<i>Cenchrus clandestinum</i> *	Kikuyu	HT	—	—
<i>Eragrostis curvula</i> *	African Lovegrass	HT	—	—
<i>Heliotropium amplexicaule</i> *	Blue Heliotrope	HT	—	—
<i>Hyparrhenia hirta</i> *	Coolatai Grass	HT	Regional Recommended Measure	—
<i>Hypericum perforatum</i> *	St Johns Wort	HT	—	—
<i>Lycium ferocissimum</i> *	African Boxthorn	HT	Prohibition on dealings	YES
<i>Olea europaea</i> *	African Olive	HT	—	—
<i>Paspalum dilatatum</i> *	Paspalum	HT	—	—
<i>Romulea rosea</i> *	Onion Grass	HT	—	—

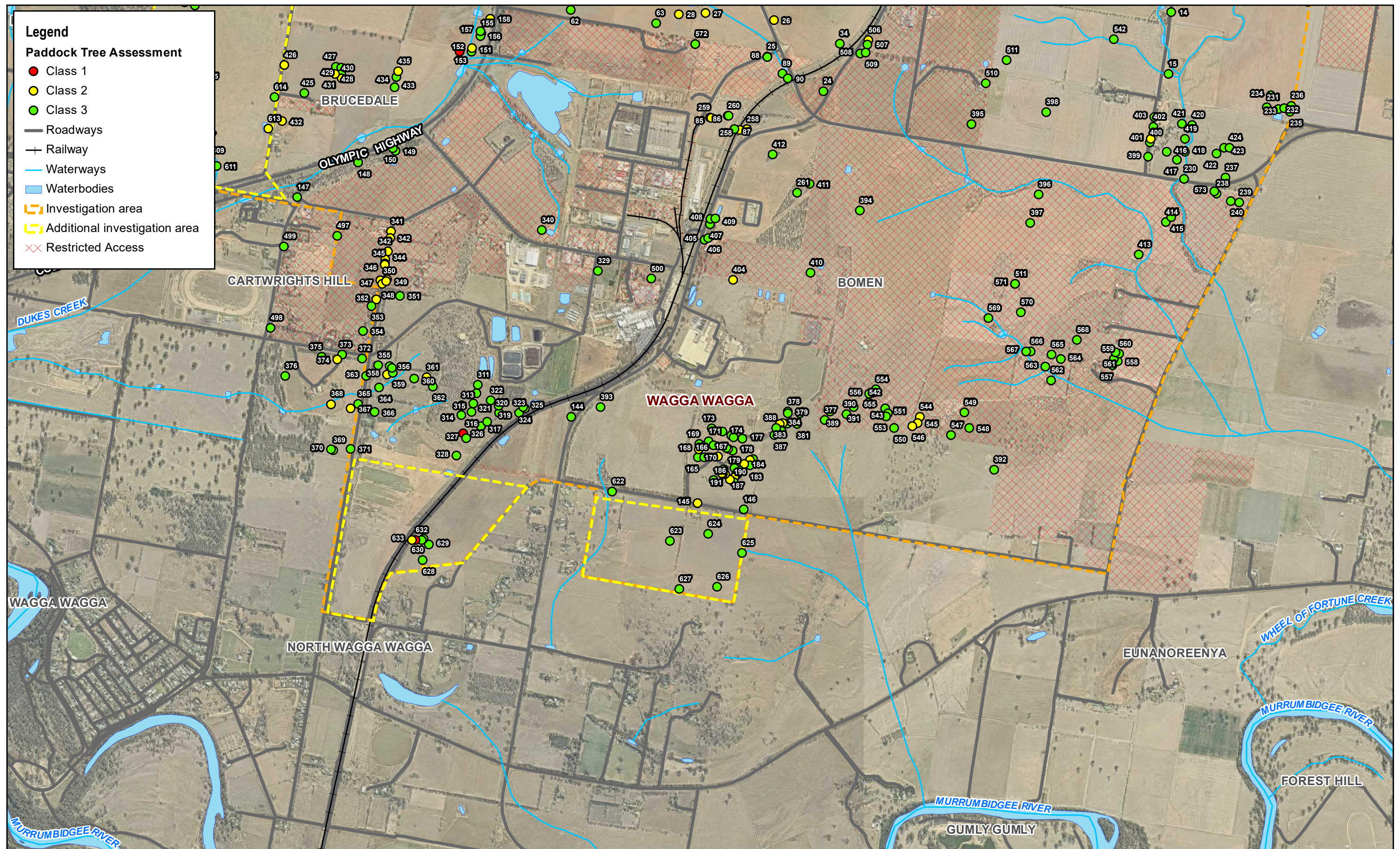
SCIENTIFIC NAME	COMMON NAME	BAM	PRIORITY WEED LISTING ¹	WONS
<i>Rubus fruticosus species aggregate</i> *	Blackberry	HT	Prohibition on dealings	YES
<i>Senecio madagascariensis</i> *	Fireweed	HT	Prohibition on dealings	YES
<i>Solanum elaeagnifolium</i> *	Silver-leaved Nightshade	HT	Prohibition on dealings	YES
<i>Xanthium occidentale</i> *	Noogoora Burr	HT	—	—

(1) Prohibition on dealings: Must not be imported into the State or sold

Regional Recommended Measure: Land managers should mitigate the risk of the plant being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Land managers to reduce impacts from the plant on priority assets.







4.6 AQUATIC HABITAT

Within the investigation area aquatic habitat occurs in the form of freshwater streams and creeks (i.e. Strahler 1st, 2nd & 3rd order streams) that either have the potential contain mapped key fish habitats or are connected to mapped key fish habitat. Other aquatic habitat occurs as open water bodies such as agricultural dams and low depressions that provide periodical pond water. Majority of the aquatic habitat within the investigation area is predominately ephemeral in nature with some more permanent water bodies associated with agricultural dams. The most significant aquatic habitat includes the Murrumbidgee River, which runs approximately 1.5 km south of the investigation area.

Areas of mapped key fish habitat have been considered to provide potential habitat for freshwater species and have been mapped (Figure 4.7) for the potential occurrence for two threatened species listed under the FM Act within these mapped tributaries. These species are:

- Trout Cod (*Maccullochella macquarensis*) listed as Endangered under the FM Act
- Silver Perch (*Bidyanus bidyanus*) listed as Vulnerable under the FM Act.

The investigation area does have one tributary (Dukes Creek (3rd order stream)) that is mapped as key fish habitat. None of the above mentioned species have any mapped habitat within the investigation area, despite the ephemeral nature of the mapped water bodies, these habitats do still provide marginal habitat for aquatic species, and due to their connection to important mapped aquatic habitat associated with the Murrumbidgee River should be considered important in maintaining their ecological integrity.

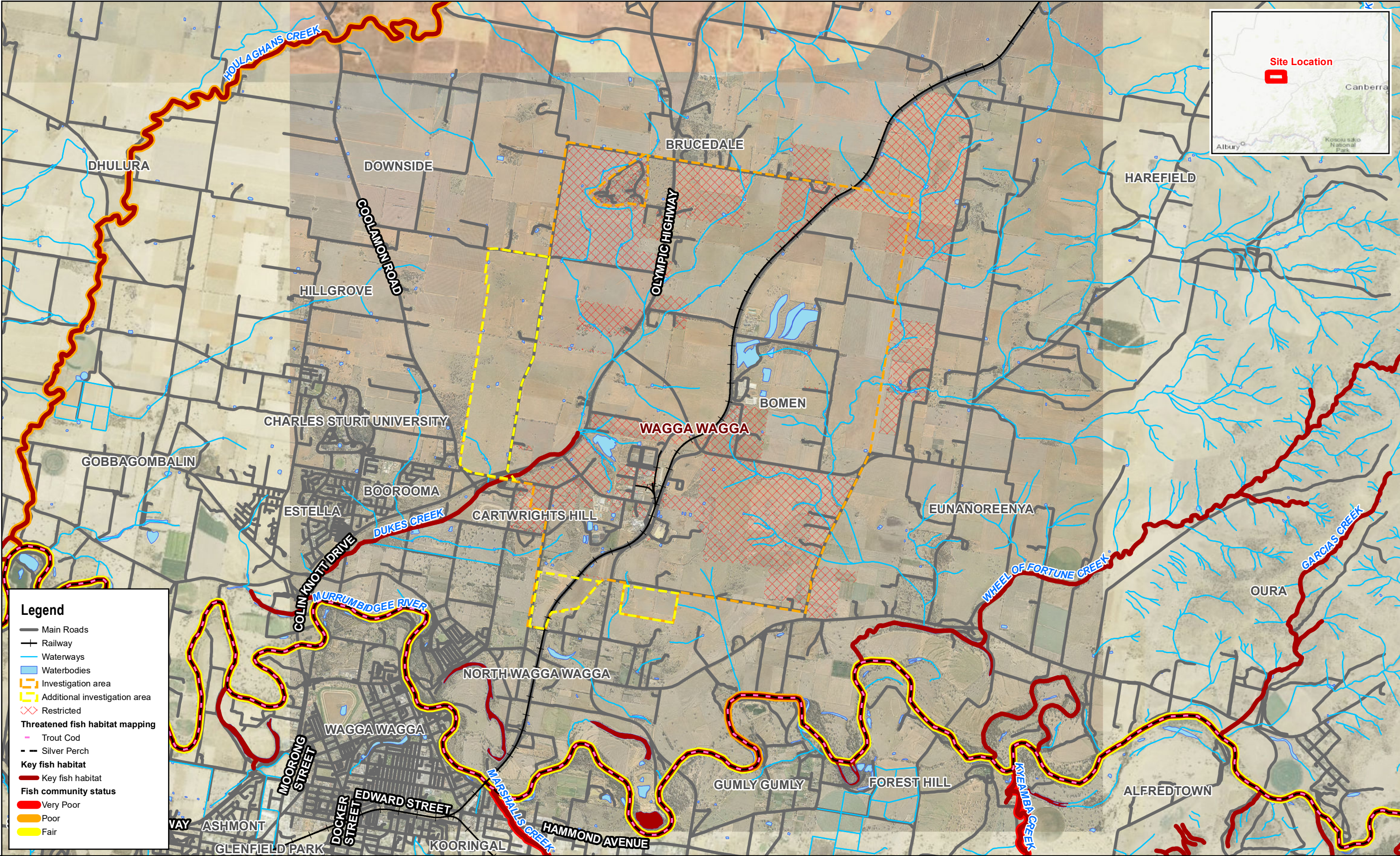
4.6.1 AQUATIC ECOLOGICAL COMMUNITY IN THE NATURAL DRAINAGE SYSTEM OF THE LOWLAND CATCHMENT OF THE MURRAY RIVER LOWLAND

The Aquatic Ecological Community in the Natural Drainage System of the Lowland Catchment of the Murray River (Lowland Catchment of the Murray River) is listed as an Endangered ecological community under the FM Act.

The lowland catchment of the Murray River ecological community includes all native fish and aquatic invertebrates within all natural creeks, rivers, and associated lagoons, billabongs and lakes of the regulated portions of the Murray River (also known as the River Murray) downstream of Hume Weir, the Murrumbidgee River downstream of Burrinjuck Dam, the Tumut River downstream of Blowering Dam and all their tributaries anabranches and effluents including Billabong Creek, Yanco Creek, Colombo Creek, and their tributaries, the Edward River and the Wakool River and their tributaries, anabranches and effluents, Frenchmans Creek, the Rufus River and Lake Victoria (NSW Fisheries Scientific Committee 2003b).

All mapped streams and tributaries within the investigation area are upstream of the Lowland Catchment of the Murray River and directly flow into this aquatic ecological community. Provisions outlined in the Wagga LEP Clause 7.5 Riparian lands and waterways, to protect the associated streams and creeks that flow into the Lowland Catchment of the Murray River including riparian buffers will be placed upon the development to ensure the following:

- Maintaining streambank and riparian buffer stability,
- Erosion and sediment control,
- Maintenance of vegetative cover,
- Minimisation of disturbance to in-stream habitats such as gravel beds, snags, aquatic macrophytes etc,
- Water quality protection,
- Rehabilitation and restoration following disturbance



5 THREATENED BIODIVERSITY

5.1 THREATENED ECOLOGICAL COMMUNITIES

Native vegetation recorded within the investigation area is considered to meet the final determination of one threatened ecological community listed under the BC Act being, White Box Yellow Box Blakely's Red Gum Woodland.

A summary of this threatened ecological community, associated PCTs and extent within the investigation area is summarised in Table 5.1.

A comparison of the final determination for the threatened ecological community and candidate PCTs is provided in Table 5.2. Each element of the final determination including locality, species composition, characteristic species and resilience is compared to each condition class for candidate PCTs to determine if vegetation recorded within the investigation area is consistent with the criterion.

The location of each threatened ecological community in relation to the investigation area is provided in Figure 5.1.

Table 5.1 Threatened Ecological Communities listed under the BC Act recorded within the investigation area

THREATENED ECOLOGICAL COMMUNITY	STATUS ¹	ASSOCIATED PCT WITHIN THE INVESTIGATION AREA	CONDITION	EXTENT (ha)
White Box Yellow Box Blakely’s Red Gum Woodland	E	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	Moderate	0.36
			Scattered trees	Does not meet criterion
		PCT 277 Blakely’s Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Moderate	22.45
			Scattered trees	Does not meet criterion
		PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion	Moderate	0.83
Total area of White Box Yellow Box Blakely’s Red Gum Woodland:				23.64

(1) E = Endangered under the BC Act

5.1.1 WHITE BOX YELLOW BOX BLAKELY'S RED GUM WOODLAND

A comparison of PCT 267, PCT 277 and PCT 312 within the investigation area against the final determination for the threatened White Box Yellow Box Blakely's Red Gum Woodland ecological community is provided in Table 5.2.

Table 5.2 Comparison of White Box Yellow Box Blakely's Red Gum Woodland EEC final determination and associated PCT 267, PCT 277 and PCT 312 recorded within the investigation area

BOX GUM WOODLAND EEC FINAL DETERMINATION ¹	PCT 267 – MODERATE	PCT 267 – SCATTERED TREES	PCT 277 – MODERATE	PCT 277 – SCATTERED TREES	PCT 312 – MODERATE
1. White Box Yellow Box Blakely's Red Gum Woodland (Box Gum Woodland) is found on relatively fertile soils on the tablelands and western slopes of NSW...The community occurs within the ...South Eastern Highlands and NSW South Western Slopes Bioregions.	This vegetation was recorded on fertile soils of the NSW South Western Slopes Bioregion.				
2. Box Gum Woodland includes those woodlands where the characteristic tree species include one or more of the following species in varying proportions and combinations – <i>Eucalyptus albens</i> (White Box), <i>Eucalyptus melliodora</i> (Yellow Box) or <i>Eucalyptus blakelyi</i> (Blakely's Red Gum). Grass and herbaceous species generally characterise the ground layer. In some locations, the tree overstorey may be absent as a result of past clearing or thinning and at these locations only an understorey may be present. Shrubs are generally sparse or absent, though they may be locally common.	<i>Eucalyptus albens</i> (White Box) was the dominant tree. Shrubs are generally sparse or absent. Grass and herbaceous species generally characterise the ground layer.	<i>Eucalyptus albens</i> (White Box) was the co-dominant tree. <i>Eucalyptus melliodora</i> (Yellow Box) was recorded as a sub-dominant.	<i>Eucalyptus melliodora</i> (Yellow Box) and <i>Eucalyptus blakelyi</i> (Blakely's Red Gum) were recorded as the co-dominant tree species within this community. Shrubs are generally sparse or absent. Grass and herbaceous species generally characterise the ground layer.	<i>Eucalyptus melliodora</i> (Yellow Box) and <i>Eucalyptus blakelyi</i> (Blakely's Red Gum) are the dominant overstorey species.	<i>Eucalyptus melliodora</i> (Yellow Box) was the dominant tree species.
3. Paragraph 3 outlines characteristic species of Box Gum Woodland EEC.	Characteristic overstorey and understory species were recorded in Q15.	Characteristic overstorey species were recorded in Q19.	Characteristic overstorey and understory species were recorded in Q2, Q7, Q9, Q16.	Characteristic overstorey species were recorded in Q1, Q3, Q4, Q6, Q14.	Characteristic overstorey and understory species were recorded in Q5.

BOX GUM WOODLAND EEC FINAL DETERMINATION ¹	PCT 267 – MODERATE	PCT 267 – SCATTERED TREES	PCT 277 – MODERATE	PCT 277 – SCATTERED TREES	PCT 312 – MODERATE
4. Woodlands with <i>Eucalyptus albens</i> are most common on the undulating country of the slopes region while <i>Eucalyptus blakelyi</i> and <i>Eucalyptus melliodora</i> predominate in grassy woodlands on the tablelands. Drier woodland areas dominated by <i>Eucalyptus albens</i> often form mosaics with areas dominated by <i>Eucalyptus blakelyi</i> and <i>Eucalyptus melliodora</i> occurring in more moist situations, while areas subject to waterlogging may be treeless. <i>E. microcarpa</i> is often found in association with <i>E. melliodora</i> and <i>E. albens</i> on the south western slopes.	This vegetation type was recorded as woodland structure on undulating country and was dominated by <i>Eucalyptus albens</i> (White Box).	This vegetation type was recorded as an open woodland with scattered trees including <i>Eucalyptus albens</i> (White Box) and <i>Eucalyptus melliodora</i> (Yellow Box).	This vegetation types occurs as a grassy woodland dominated by <i>Eucalyptus melliodora</i> (Yellow Box) and <i>Eucalyptus blakelyi</i> (Blakely's Red Gum).	<i>Eucalyptus melliodora</i> (Yellow Box) and <i>Eucalyptus blakelyi</i> (Blakely's Red Gum) occur as scattered woodland patches with exotic understorey.	<i>Eucalyptus melliodora</i> (Yellow Box) occurred in woodland structure on relatively flat low-lying floodplain areas.
8. Further remnants of the community are degraded as a consequence of their disturbance history. Some remnants of these communities survive with the trees partly of wholly removed by post European activities, and conversely, often remnants of these communities survive with these tree species largely intact but with the shrub or ground layers degraded to varying degrees through grazing or pasture modification.	Remnants are considered to have been subject to historic agricultural disturbance although maintain a predominantly native perennial vegetation cover.	PCT 267 (Scattered Trees) occurs as remnant trees within a degraded understorey dominated by exotic pasture grasses and weeds.	Remnants are considered to have been subject to historic agricultural disturbance although maintain a predominantly native perennial vegetation cover.	PCT 277 (Scattered Trees) occurs as remnant trees within a degraded understorey dominated by exotic pasture grasses and weeds due to historic and ongoing agricultural grazing and pasture modification.	Remnants are considered to have been subject to historic agricultural disturbance although maintain a predominantly native perennial vegetation cover.

BOX GUM WOODLAND EEC FINAL DETERMINATION¹	PCT 267 – MODERATE	PCT 267 – SCATTERED TREES	PCT 277 – MODERATE	PCT 277 – SCATTERED TREES	PCT 312 – MODERATE
10. The condition of remnants ranges from relatively good to highly degraded, such as paddock remnants with weedy understoreys and only a few hardy natives left. Some remnants of the community may consist of only an intact overstorey or an intact understorey, but may still have high conservation value due to the flora and fauna they support.	This vegetation condition is partially degraded although exhibits structural integrity that is considered to still have high conservation value.	This condition class is highly degraded with paddock tree remnants occurring with weedy understorey.	This vegetation condition is partially degraded although exhibits structural integrity that is considered to still have high conservation value.	This condition class is highly degraded with paddock tree remnants occurring with weedy understorey.	This vegetation condition is partially degraded although exhibits structural integrity that is considered to still have high conservation value.
11. Disturbed remnants are still considered to form part of the community including remnants where the vegetation, either understorey, overstorey or both, would, under appropriate management, respond to assisted natural regeneration, such as where the natural soil and associated seed bank are still at least partially intact.	The seed bank of this condition form is considered at least partially intact with >50% native understorey perennial cover.	This condition class is considered unlikely to respond to assisted natural regeneration. The seed bank of this condition form is considered mostly to entirely removed. The understorey is dominated by exotic pasture grasses and weed species. Assisted natural regeneration is considered unlikely to be successful or achievable.	The seed bank of this condition form is considered at least partially intact with >50% native understorey perennial cover.	This condition class is considered unlikely to respond to assisted natural regeneration. The seed bank of this condition form is considered mostly to entirely removed. The understorey is dominated by exotic pasture grasses and weed species. Assisted natural regeneration is considered unlikely to be successful or achievable.	The seed bank of this condition form is considered at least partially intact with >50% native understorey perennial cover.
Outcome	Meets criterion	Does not meet criterion	Meets criterion	Does not meet criterion	Meets criterion

(1) NSW Scientific Committee (2002)

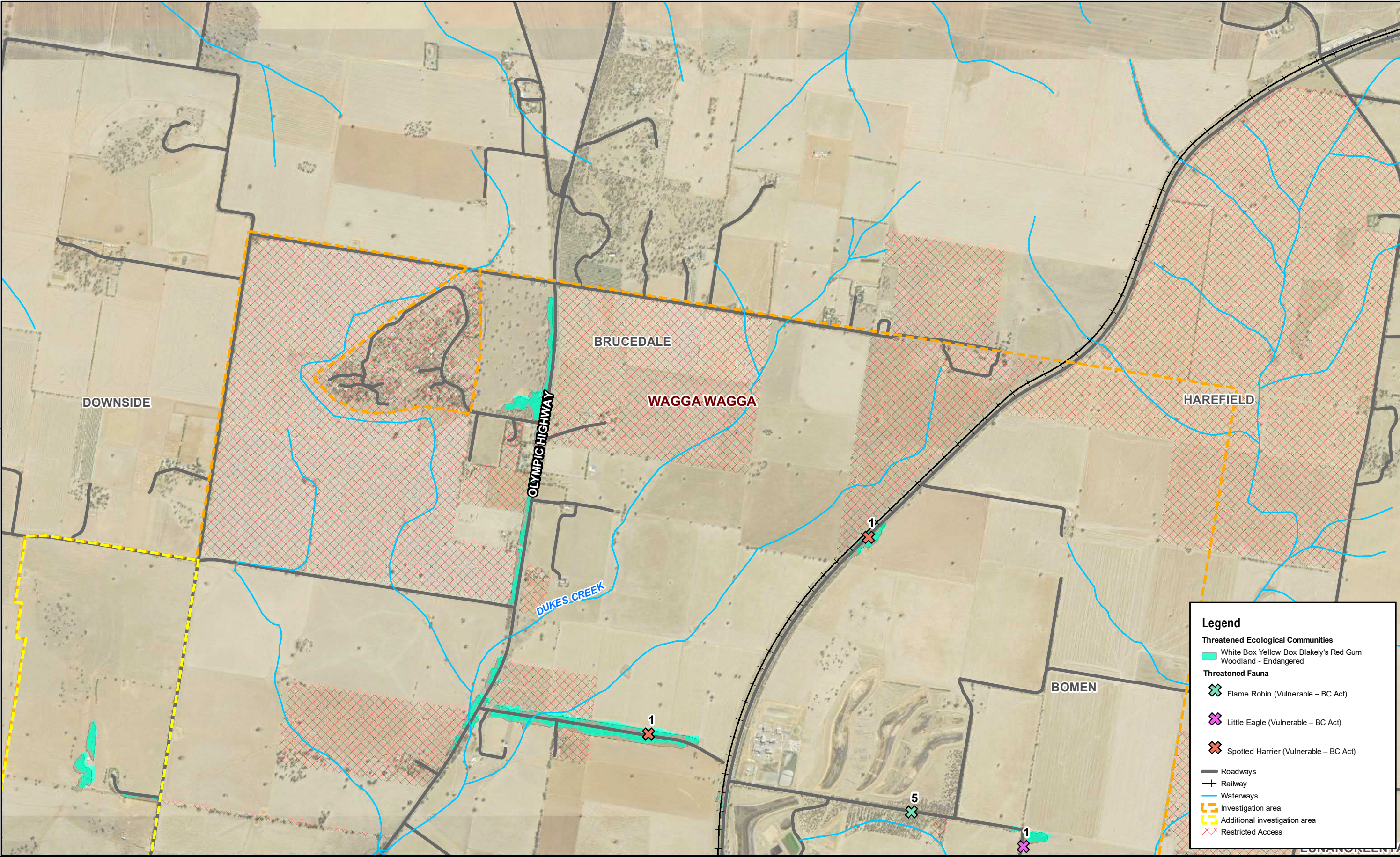
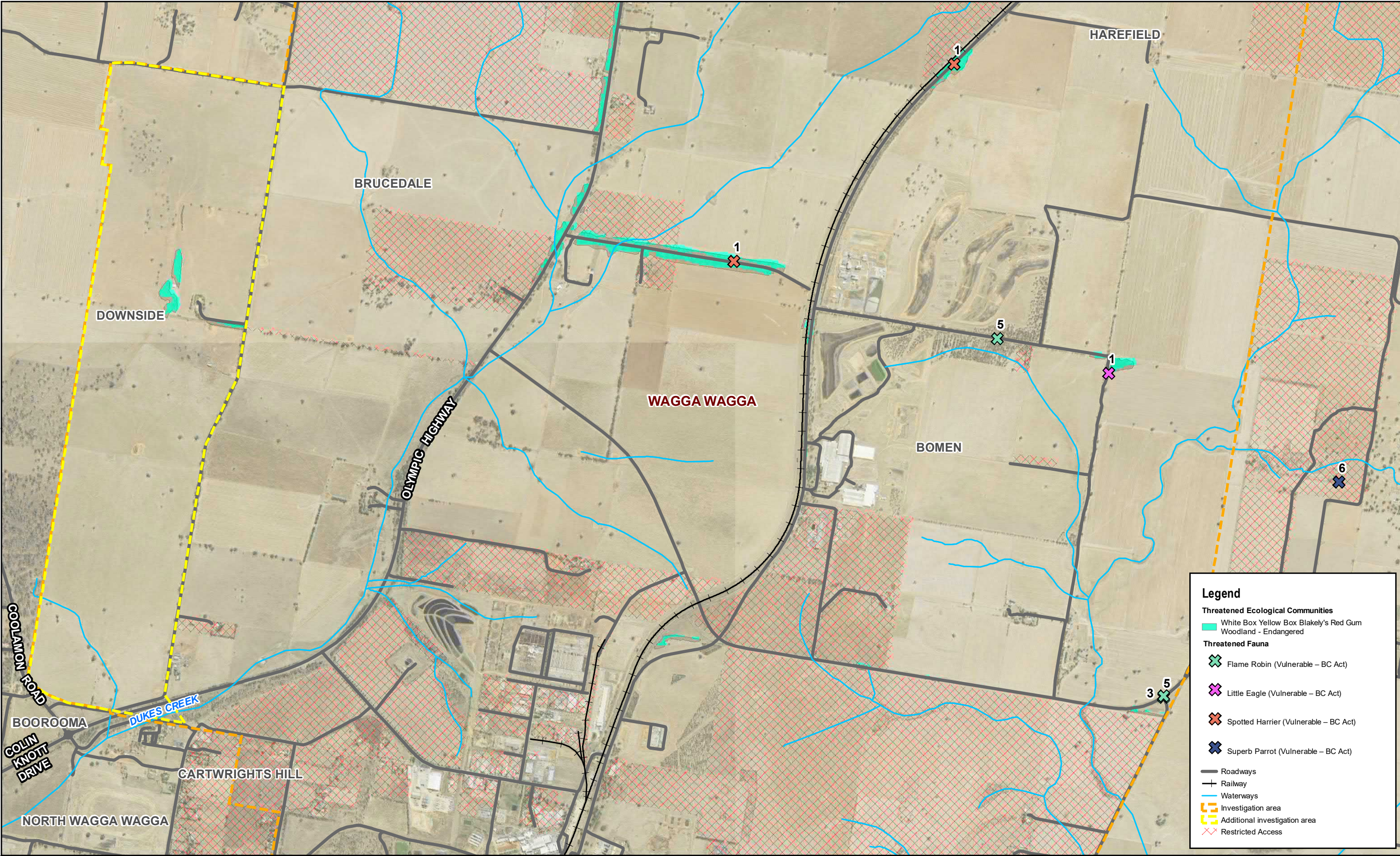
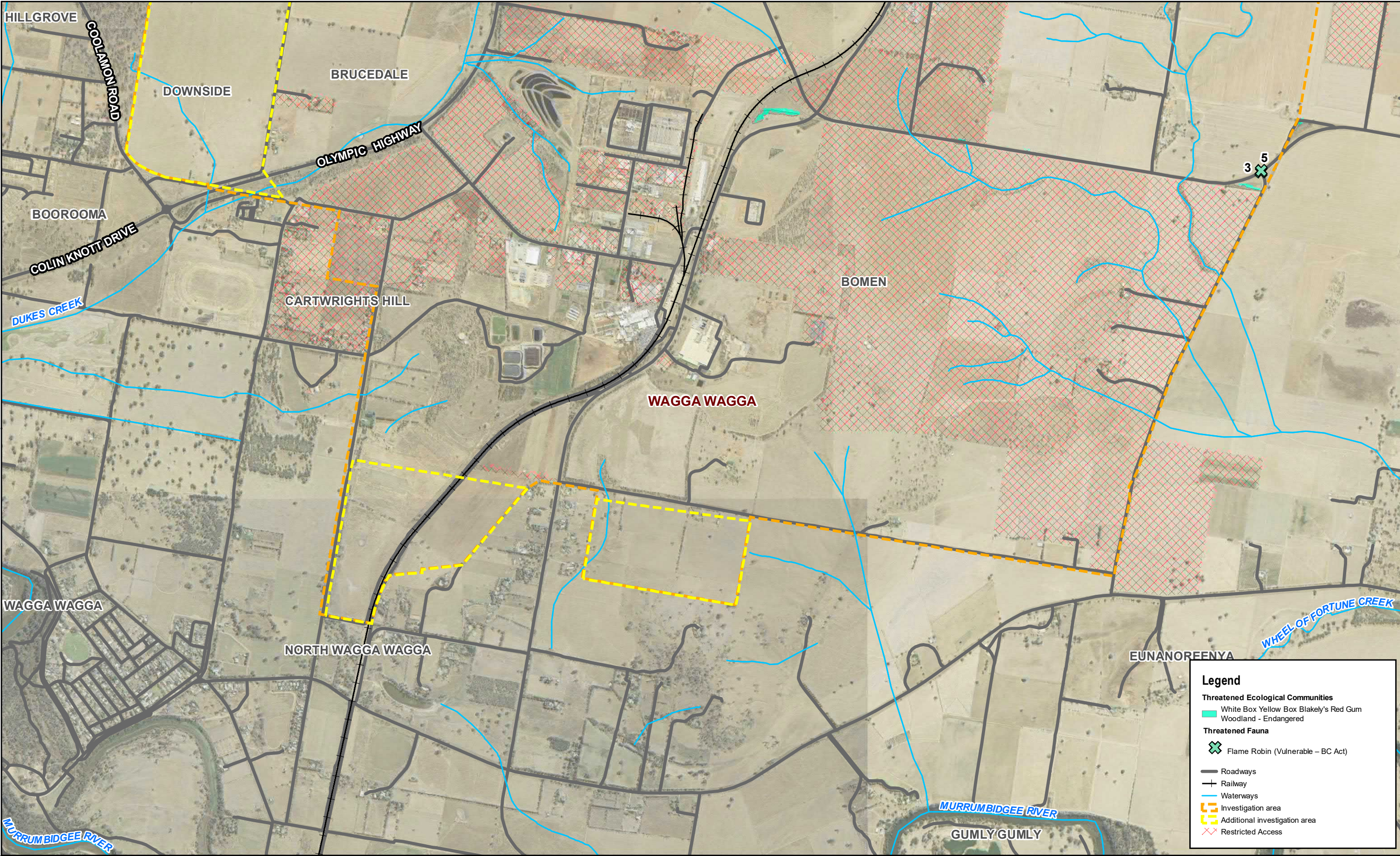


Figure 5.1
BC Act Threatened Biodiversity





5.2 THREATENED FLORA

5.2.1 THREATENED FLORA CANDIDATE SPECIES

A total of seven threatened flora species were identified by the BAM calculator as species credit species. A further four species were identified during desktop assessments (section 2.3) were subject to a likelihood of occurrence assessment (Appendix B). Those candidate species credit species and any other identified species considered to have a moderate or higher likelihood of occurrence (*Austrostipa wakoolica*) became candidate species and were subject to targeted surveys. Each candidate species considered have been assessed further in detail to determine if this species is likely to be affected (Table 5.3).

Table 5.3 BC Act candidate threatened flora survey results

SCIENTIFIC NAME	COMMON NAME	BC ACT STATUS	CANDIDATE SPECIES LIKELIHOOD OF OCCURRENCE	AFFECTED SPECIES?
<i>Acacia ausfeldii</i>	Ausfeld's Wattle	V	Low. Though associated habitat, PCT 267 and 277 was recorded within the investigation area, habitat constraints for this species, footslopes and low rises on sandstone were not recorded within the investigation area.	No. Sandstone geologies were not recorded within the investigation area. Soils recorded included brown-loam clays, alluvial clays and soils derived from metamorphic rock. Given the lack of associated habitat, <i>Acacia ausfeldii</i> is considered unlikely to have potential habitat within the investigation area or be affected.
<i>Austrostipa wakoolica</i>	A spear-grass	E	Moderate. Though associated vegetation types were not recorded, habitat constraints (alluvial plains and plains) was recorded in the form of PCT 9 and PCT 277.	<p>No. Preferred habitat for <i>Austrostipa wakoolica</i> includes alluvial plains which was recorded in PCT 9 and PCT 277 within the investigation area. This species is known to not tolerate grazing disturbance (Department of the Environment, 2014) and as such vegetation occurring as scattered trees is not considered likely to provide suitable habitat given this condition class was recorded in areas where agricultural activity (including cattle grazing and cropping) was observed (refer to Photo 4.3 and Photo 4.12). Sampled vegetation recorded as scattered trees generated low vegetation integrity scores (24.4) due to the disturbed understorey dominated by exotic annual species (Appendix A), these areas (PCT 277 scattered trees) are unlikely to support <i>Austrostipa wakoolica</i>. PCT 9 and PCT 277 which was recorded in moderate condition generated a vegetation integrity score of between 29.4-82.4 and is considered potential habitat for this species.</p> <p>Targeted surveys were conducted within patches of PCT 9 and PCT 277 (moderate) on 2-4 October 2019. Two flowering samples of <i>Austrostipa</i> sp. were collected from Trahairs Road and forwarded to the National Herbarium of NSW for positive verification (BIS Enquiry No. 21191). Both <i>Austrostipa</i> specimens were confirmed to be the non-threatened species <i>Austrostipa aristglumis</i> and not <i>Austrostipa wakoolica</i>. As such, it is considered unlikely that this species will be affected.</p>

SCIENTIFIC NAME	COMMON NAME	BC ACT STATUS	CANDIDATE SPECIES LIKELIHOOD OF OCCURRENCE	AFFECTED SPECIES?
<i>Cullen parvum</i>	Small Scurf-pea	E	Moderate. Though this species has not been recorded in Wagga Wagga since 1886. Associated vegetation, PCT 9 and 277 with watercourses and drainage lines, was recorded within the investigation area.	Yes. Associated vegetation, PCT 9 and 277 with watercourses and drainage lines, was recorded within the investigation area. This species is known to occur on roadside and on grazed land (EES Group, 2019e). As such associated vegetation which occurred as scattered trees and in moderate condition is considered to form potential habitat. This species is considered most reliably detected between December and January. This species is considered affected pending targeted seasonal surveys.
<i>Diuris tricolor</i>	Pine Donkey Orchid	V	Moderate. Associated vegetation, PCT 267, was recorded within the investigation area. This species is known to grow in disturbed areas/grassland.	No. <i>Diuris tricolor</i> is known from several sites to the west of Wagga Wagga however has not been recorded within locality since 1926. This species is associated with PCT 267 and known to grow in disturbed areas/grassland. Prior to survey a reference population between Cootamundra and Stockinbingal was visited on the 2 nd of October and <i>Diuris tricolor</i> was recorded with immature flowers. Targeted seasonal surveys were conducted in between the 2-4 October, 20-21 of November and 3 December 2019 for this species. No specimens of <i>Diuris tricolor</i> were recorded during targeted surveys and as such it is considered unlikely that this species will be affected.
<i>Pilularia novae-hollandiae</i>	Austral Pillwort	E	Low. Although associated vegetation, PCT 9, was recorded within the investigation area this community had a general lack of shallow swamps and sedge presence which is unlikely to support this semi-aquatic species. Further, the ground stratum lacked native perennial grass and sedge composition and was mostly dominated by exotic annual species typical of agricultural land use.	No. Habitat constraints for this species includes semi-permanent/ephemeral wet areas and periodically waterlogged sites. Associated vegetation, PCT 9, was assessed for habitat constraints and microhabitats and determined that the vegetation is unlikely to support this species. Photo 4.4 shows the understorey of PCT 9 and absence of shallow swamps/wet areas. The vegetation integrity score for this community was 29.4 due to the lack of native diversity and cover in the ground layer (refer to Table 4.3). Due to the lack of habitat features and degraded condition of potential habitat, <i>Pilularia novae-hollandiae</i> is considered unlikely to have suitable habitat within the investigation area or be affected.

SCIENTIFIC NAME	COMMON NAME	BC ACT STATUS	CANDIDATE SPECIES LIKELIHOOD OF OCCURRENCE	AFFECTED SPECIES?
<i>Senecio garlandii</i>	Woolly Ragwort	V	Low. Associated vegetation, PCT 346, was recorded within the investigation area. This vegetation occurred as scattered trees with a highly disturbed understorey unlikely to support this species.	No. Microhabitat assessment determined that the associated vegetation, PCT 346, was degraded to the point that <i>Senecio garlandii</i> is considered unlikely to occur. PCT 346 was recorded as scattered trees due to the lack of native understorey which is evident in Photo 4.16. The vegetation integrity score generated was 20 due to the lack of native species diversity and cover in the understorey (refer Table 4.11). Given this, the associated habitat recorded is unlikely to provide suitable habitat for <i>Senecio garlandii</i> or be affected.
<i>Swainsona recta</i>	Small Purple-pea	V	Moderate. Associated vegetation, PCT 276, 277 and 312, was recorded within the investigation area.	No. <i>Swainsona recta</i> was historically recorded in the Wagga Wagga area with the most recent record being 1990. This species is currently presumed extinct in the Wagga Wagga region (EES Group, 2019e). As such, it is considered unlikely that this species will be affected. Targeted seasonal surveys were conducted during 2–4 October 2019 for this species within accessible areas. No specimens of <i>Swainsona recta</i> were recorded during targeted surveys and as such it is considered unlikely that this species will be affected.
<i>Swainsona sericea</i>	Silky Swainson-pea	V	Moderate. Associated vegetation types PCT 267, 277, 312 recorded within the investigation area.	No. Associated vegetation, PCT 276, 277 and 312, was recorded within the investigation area as both scattered trees and in moderate condition. This species may be sensitive to grazing pressure (NSW Scientific Committee, 1999) and is unlikely to utilise vegetation which occurred as scattered trees. PCT 277 recorded as scattered trees was assigned to vegetation with a degraded understorey subject to agricultural practices including grazing (refer to Photo 4.12). This vegetation is degraded to the point where suitable habitat is unlikely. PCT 276, 277 and 312 recorded in moderation condition displayed an understorey with native diversity, this is reflected in the vegetation integrity scores generation which range between 36-82.4. Targeted seasonal surveys were conducted during 2-4 October 2019 for this species within accessible areas. No specimens of <i>Swainsona sericea</i> were recorded during targeted surveys and as such it is considered unlikely that this species will be affected.

(1) V = Vulnerable, E = Endangered under the BC Act

5.3 THREATENED FAUNA

This section provides information on habitat suitability for threatened fauna species as outlined under section 6 of the BAM. Impacts on threatened fauna species for this report and credit calculations under the Biodiversity Offset Scheme are considered as predicted (ecosystem credit species) and/or candidate species (species credit species) as assigned by the BAM credit calculator and the Threatened Species Data Collection.

It should be noted that potential habitat attributes associated with paddock trees or prescribed entities under Clause 6.7 of the BC Reg 2017 are not additional biodiversity impacts for the purposes of calculating the number and class of biodiversity credits as stated under Clause 6.1 of the BC Reg 2017. Habitat attributes associated with paddock trees will be offset as part of paddock tree offset calculations referred to under Appendix 1 of the BAM. PCT selection for paddock tree credit calculations will consider the appropriate credit profile associated with all the threatened fauna species assessed as likely to use the paddock tree as habitat.

5.3.1 FAUNA HABITAT AND FEATURES

Fauna habitat assessments were undertaken to assess the likelihood of threatened fauna species (those species known or predicted to occur within the locality from the literature and database review) occurring within the investigation area. Due to timing of the survey period, some targeted species surveys could not be undertaken and subsequently fauna habitat assessments were the primary assessment tool in assessing whether threatened species were likely to occur within the investigation area.

Largely, the investigation area is dominated by agricultural land used for cropping and grazing of stock. This type of habitat is highly modified and provides habitat for common native and exotic fauna species which are adapted to open environments and are tolerant of some disturbance. In addition, relatively small patches of fragmented native vegetation are present throughout the investigation area. This includes areas of remnant native woodland and planted vegetation which occur in low to moderate habitat conditions. Overall, the investigation area lacks important habitat features for supporting a diverse range of fauna species. Its key habitat characteristics and limitations are:

- a lack of complex native understorey strata (ground cover, shrubs and midstorey plants – affecting bird diversity particularly small species)
- a general lack of mistletoe across eucalypt dominated canopies
- a lack of continuous vegetation such that connectivity is poor and small isolated fragments are characteristic across the investigation area
- a low occurrence of old growth woodland habitat and a lack of large woodland patch size. The majority of the investigation area now exists as agricultural land having been previously subject to extensive clearing and modification. The majority of remaining old growth trees exist as isolated paddock trees or are within relatively small patches of remnant woodland.

The combination of the above characteristics reduces the usability of the investigation area for fauna species that are dependent on higher quality habitat, which contains sufficient complexity to provide a diversity of cover and foraging opportunities. In addition, the lack of connectivity across the investigation area and surrounds hinders the ability of less mobile species (particularly arboreal mammals) to move across the landscape.

In terms of fauna observed, the dominant functional groups occurring were common open country medium sized birds (e.g. Cockatoos, Ravens, Miners, Starlings, Magpies, Magpie-larks, Rosellas, Red-rumped Parrots and Galahs). Small bird species diversity was poor and limited to those species that are capable of persisting with a low amount of cover in association with small patches of canopy, e.g. Superb Fairy-wren, Yellow-rumped Thornbill and Flame Robin. In addition, fairly common highly mobile raptor species were observed over the investigation area, including, Wedge-tail Eagle, Black-shouldered Kite, Whistling Kite, Brown Falcon.

Comparative surveys were conducted outside the investigation area in continuous habitat south of the investigation area associated with the Murrumbidgee River (Table 2 in Appendix C). The survey results revealed that common woodland bird species (e.g. Spotted Pardalote, Red-browed Finch, and White-throated Treecreeper) that were not present in the investigation area were present adjacent to the investigation area in better quality habitat.

The investigation area is considered to provide some habitat for larger threatened bird species less vulnerable to predation which utilise larger areas for foraging and those smaller species which persist with little cover in fragmented woodland patches. During the survey period, three threatened bird species were recorded within the investigation area (Little Eagle, Spotted Harrier, and Flame Robin). These are species that are either highly mobile foragers (Little Eagle and Spotted Harrier), or able to persist with minimal cover and utilise open habitats (Flame Robin). In addition, Superb Parrot, a threatened woodland bird which is dependent upon hollows (which are available in the investigation area), was also recorded adjacent to the investigation area within similar woodland habitat. Low numbers of Superb Parrot observed during the survey timing is likely due to northward seasonal movements during winter. It is likely that higher numbers of the species would be recorded within the recommended survey period of September to November when the species returns to breed.

During three nights of spotlighting across the investigation area's woodland habitats, only a single arboreal mammal species was observed across the investigation area, being the Common Brushtail Possum. Low numbers of an otherwise common arboreal mammal suggest that the habitats are unlikely to support threatened species, which are reliant on higher quality and more well-connected habitats. While arboreal mammal diversity appears to be relatively low within the investigation area, some potential habitat remains for the threatened Squirrel Glider, which may utilise the southwestern portion of the investigation area which is connected to known habitat outside of the investigation area.

Four nights of frog surveys were undertaken across the investigation area, which covered a range of available aquatic habitats. Surveys recorded only one species, Common Eastern Sign-bearing Froglet (132 individuals). The lack of frog species diversity from survey results in moderate quality habitat suggest that threatened frog species, such as Sloane's Froglet, are unlikely to be supported within the investigation area.

Generally, microchiroptera bat activity is low in the winter months, nevertheless, the opportunity to record microchiroptera bat activity in the investigation area was undertaken using ultrasonic Anabat bat detection devices over three nights. Only one species was recorded, Gould's Wattled Bat.

5.3.2 PREDICTED THREATENED FAUNA – ECOSYSTEM CREDIT SPECIES

Database searches, including fauna species as considered predicted under the BAM based on habitat associated with recorded vegetation types, identified 55 threatened fauna species as potentially utilising the habitats found within the investigation area. Likelihood of occurrence assessments (Appendix D), identified 16 threatened fauna species as having a moderate or higher likelihood of occurrence within the investigation area. Twelve of these species are considered ecosystem credit offsets based on potential available foraging habitat characteristics within associated vegetation types. As such, these species do not require detailed targeted survey. All BAM predicted species and additional ecosystem credit species identified by database searches considered to have a moderate or higher likelihood of occurrence are outlined in Table 5.4.

Table 5.4 BAM predicted and additional threatened fauna species (ecosystem credit species)

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	LIKELIHOOD OF OCCURRENCE AND ASSOCIATED VEGETATION TYPE(S)
Birds			
Black Falcon	<i>Falco subniger</i>	V	Moderate – An open country species for which habitat is not optimum but may occur within the investigation area on an intermittent basis. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346.
Flame Robin	<i>Petroica phoenicea</i>	V	Recorded – The species was recorded within open understorey vegetation within the investigation area. Foraging habitat for the species is present within the investigation area. Associated vegetation types: PCT 267, PCT 277, PCT 312 and PCT 346.
Freckled Duck	<i>Stictonetta naevosa</i>	V	Moderate – The species may occur in local dams and wetlands on an intermittent basis. Associated vegetation types: PCT 9 and PCT 267.
Grey-crowned Babbler (eastern subspecies)	<i>Pomatostomus temporalis</i>	V	Moderate – There are previous records and suitable habitat available within the investigation area. Additionally, two nests that were likely once utilised by the species were identified within the investigation area, however, they appeared to be unused at the time of survey. Associated vegetation types: PCT 267, PCT 277 and PCT 312.
Little Lorikeet	<i>Glossopsitta pusilla</i>	V	Moderate – The species has been recorded locally at low densities, but due to its mobility and suitable habitat within the investigation area it is likely to occur on at least an intermittent basis. Associated vegetation types: PCT 267, PCT 277, PCT 312 and PCT 346.
Spotted Harrier	<i>Circus assimilis</i>	V	Recorded – A single individual was recorded in the investigation area during onsite diurnal bird surveys. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346.
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	Moderate – The species may occur intermittently in the canopies of larger woodland patches within the investigation area. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	LIKELIHOOD OF OCCURRENCE AND ASSOCIATED VEGETATION TYPE(S)
Mammals			
Eastern Bentwing-bat, Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i> (previously <i>Miniopterus schreibersii oceanensis</i>)	V	Moderate – No preferred roosting habitat (cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding) were identified within the investigation area but due to its mobility, seasonal occurrences may occur on an intermittent basis. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	Moderate – The species has been recorded locally and there is suitable foraging habitat within the investigation area. A Flying-fox camp is located to the south of the investigation area along the Murrumbidgee River (last surveyed in 2015) (Department of the Environment, 2019). No breeding camps were recorded within the investigation area during field surveys. Associated vegetation types: PCT 267 and PCT 277.
Inland Forest Bat	<i>Vespadelus baverstocki</i>	V	Moderate – Suitable roosting and foraging habitat is present within the investigation area and due to the species mobility, it may occur seasonally on an intermittent basis. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346.
Little Pied Bat	<i>Chalinolobus picatus</i>	V	Moderate – No records of the species occur within the locality, with the closest records near Leeton and Bowning in NSW. Some suitable roosting and foraging habitat occurs within the investigation area and due to its mobility, seasonal occurrences may occur on an intermittent basis. Associated vegetation types: PCT 9, PCT 267, PCT 277, PCT 312 and PCT 346.
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	V	Moderate – suitable roosting and foraging habitat is present within the investigation area and due to the species mobility, seasonal occurrences may occur on an intermittent basis. Associated vegetation types: PCT 9, PCT 277, PCT 312 and PCT 346.

(1) V = Vulnerable as listed under the BC Act

5.3.3 THREATENED FAUNA CANDIDATE SPECIES – SPECIES CREDIT SPECIES

Database searches identified 55 threatened fauna species as potentially utilising the habitats found within the investigation area. Of these, 12 species were identified within the BAM credit calculator to be candidate (species credit) species based on the associated recorded vegetation types (Appendix A). Of these candidate species, a total of four have either been recorded or assessed as having a moderate or higher likelihood of occurrence and are considered affected species within the investigation area (Table 5.5). These species are Superb Parrot, Southern Myotis, Squirrel Glider and Little Eagle.

Affected species have been assigned species polygons in accordance with section 6.4 of the BAM where habitat attributes occur within associated vegetation zones. These species are discussed in further detail below in section 5.3.3.1 to 5.3.3.4. Species polygons for each affected species are shown in Figure 5.4 to Figure 5.7.

Table 5.5 Candidate threatened fauna (species credit species) results within the investigation area

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Birds						
Glossy Black-cockatoo	<i>Calyptrorhynchus lathamii</i>	V	Mar-Aug	No (surveyed)	Low – No preferred feed tree species which would form foraging habitat were identified within the investigation area. Given this it can be assumed that breeding habitat within the investigation area (living or dead tree with hollows greater than 15 cm diameter and greater than 5 m above ground) is unlikely to be utilised by this species.	No – Given the limited foraging resources available within the investigation area (i.e. preferred <i>Allocasuarina</i> and <i>Casuarina</i> species) it is considered unlikely this species would utilise the investigation area as breeding habitat. This species is not considered further.
Little Eagle	<i>Hieraaetus morphnoides</i>	V	Aug-Oct	Yes (surveyed)	<p>Recorded – The investigation area occurs within the home range of local individuals. One individual was recorded within the investigation area in during field surveys.</p> <p>No breeding habitat in the form of large old trees within suitable vegetation and the presence of a male and female; or female with nesting material; or an individual on a large stick next in the top half of the tree canopy was observed during field surveys.</p> <p>However, surveys were undertaken outside of the recommended survey period (August to October). Potential breeding habitat (nest trees) exists within the investigation area in the form of live and dead large old trees.</p>	Yes – This species is considered further as a species credit species, targeted surveys during optimal survey months (Aug-Oct) are recommended.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Major Mitchell's Cockatoo	<i>Lophochroa leadbeateri</i>	V	Sept-Dec	No (surveyed)	Low – The NSW OEH species sightings search identified two records of the species within the locality of the investigation area from 1998 and 1999. No recent records of the species occur within the locality. Additionally, primary foraging resources for the species (seeds from native and exotic melons, saltbush, wattle and cypress pine) (Office of Environment and Heritage, 2017f) were limited across the investigation area. Given this it can be assumed that breeding habitat within the investigation area (living or dead tree with hollows greater than 10cm diameter) is unlikely to be utilised by this species. The species is considered unlikely to occur within the investigation area; however rare occurrences cannot be entirely discounted.	No – This species is not considered further.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Regent Honeyeater	<i>Anthochaera phrygia</i>	CE	Sept-Dec	No (surveyed)	Low – The NSW OEH species sightings search identified only one record of species within the locality of the investigation area from the 1970's. Additionally, the Wagga Wagga area is not part of a known key breeding or regular breeding area as specified in the National Recovery Plan for the species (Department of the Environment, 2016). The Regent Honeyeaters inhabit woodlands which contain a significant large number of mature trees, high canopy cover, and abundance of mistletoes. Suitable woodland habitat is generally in high condition and supports a significant abundance of bird species richness. Woodland habitats within the investigation area were of relatively small patch size, generally lacked a significant number of mature trees, and no mistletoes were recorded across the investigation area. In addition, diurnal bird surveys recorded very low honeyeater activity, suggesting available resources are limited and would unlikely be significant for blossom nomads. A combination of these factors suggest that the Regent Honeyeater is unlikely to occur within the investigation area however are occurrences during inland dispersals cannot be entirely discounted.	No – This species is not considered further.
Superb Parrot	<i>Polytelis swainsonii</i>	V	Sept-Nov	Yes (surveyed)	High – The species was recorded adjacent to the investigation area during diurnal bird surveys in July 2019 and suitable foraging and breeding habitat is present within the investigation area. Potential breeding habitat exists in large hollow bearing paddock trees, and remnant stands of vegetation which contain large hollow bearing trees.	Yes – This species is considered further as a species credit species, targeted surveys during optimal survey months (Sep-Nov) are recommended.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Swift Parrot	<i>Lathamus discolor</i>	E	May-Aug	No (surveyed)	Low – Low incidence of records locally, however there is a small amount of winter-flowering resources in the investigation area. Diurnal bird surveys recorded very low honeyeater activity, suggesting available resources are unlikely be significant for blossom nomads. Rare occurrences of the species during inland dispersals cannot be entirely discounted.	No – This species is not considered further.
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	Jul-Dec	No (surveyed)	Low – The NSW OEH species sightings search identified no records of the species within the locality of the investigation area. The species preferred habitat is characterised by the presence of large areas of open water, such as large rivers, swamps, lakes, and the sea. No preferred breeding habitat, living or dead mature trees within suitable vegetation, within 1km of a river, lake, large dam or creek, wetland or coastline, were identified within the investigation area. The species is considered unlikely to occur within the investigation area, however rare occurrences cannot be entirely discounted.	No – This species is not considered further.
Mammals						
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	Oct-Dec	No (surveyed)	Moderate – The species has been recorded in the locality, and Flying-fox camp is located to the south of the investigation area along the Murrumbidgee River (last surveyed in 2015) (Department of the Environment, 2019). No breeding camps were recorded within the investigation area during field surveys, however, potential foraging habitat for the species was recorded.	Yes – This species is considered further as an ecosystem credit species as potential foraging habitat was identified.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Koala	<i>Phascolarctos cinereus</i>	V	All year	No (surveyed)	Low – The species occurs regionally at low densities, but investigation area habitats are scant and highly fragmented, such that it is unlikely to support local individuals on a permanent basis. Additionally, targeted surveys (SATS) were completed during recommended survey months and did not record this species.	No - This species is not considered further.
Southern Myotis	<i>Myotis macropus</i>	V	Nov-Mar	Yes (assumed)	Moderate – Suitable roosting and foraging habitat is present within the investigation area (hollow bearing trees within 200 m of riparian zone) and due to its mobility, seasonal occurrences may occur on and intermittent basis.	Yes – This species is considered further as a species credit species, targeted surveys during optimal survey months (Nov-Mar) are recommended.
Squirrel Glider	<i>Petaurus norfolcensis</i>	V, E2	All year	Yes (assumed)	<p>Moderate – The species is known to occur regionally, but available habitats within investigation area are scant and highly fragmented and the species has not been previously recorded within the investigation area.</p> <p>Previous records for the species occur to the south of the investigation area along the Murrumbidgee River (Atlas of Living Australia, 2019), and habitats within the investigation area are poorly connected. Large old hollow bearing trees are critical for movement for the species and typically need to be closely connected (i.e. no more than 50 m apart).</p> <p>While habitats are fragmented, and no individuals were recorded during the field survey, potential breeding habitat for the species exists within the southwest portion of the investigation area.</p>	Yes – This species is considered further as a species credit species. While surveys were undertaken during the prescribed months as specified by the BAM calculator (all year), further targeted surveys are recommended to take place during summer as winter surveys failed to detect the species. This is recommended as Squirrel Gliders use different parts of the landscape at different times of the year depending on available resources. Dominate eucalypt species within potential habitat (<i>Eucalyptus camaldulensis</i>) was not flowering at the time of survey.

COMMON NAME	SCIENTIFIC NAME	BC ACT STATUS ¹	SURVEY MONTHS ²	SPECIES PRESENCE	JUSTIFICATION	AFFECTED SPECIES?
Reptiles						
Pink-tailed Legless Lizard	<i>Aprasia parapulchella</i>	V	Sept-Nov	No (surveyed)	Low – There are no records of the species within the locality (closest records on the NSW OEH species sighting database are approximately 60 km away in Holbrook). Onsite breeding and foraging elevated stony habitats (rocky areas) are highly degraded and isolated from higher quality habitats. The species is known to inhabit sloping, open woodland areas with predominately native grassy groundlayer, particularly those dominated by Kangaroo Grass (<i>Themeda triandra</i>) with rocky outcrops or scattered, partially buried rocks. While rocky outcrops were present within the investigation area within PCT 346, this PCT lacked a native understorey, and was composed solely of exotic grass and forb species. This species is considered unlikely to occur in the investigation area due to lack of local records and the degraded nature of associated vegetation (PCT346).	No – This species is not considered further.

(1) V = Vulnerable, E = Endangered, E2 = Endangered Population, CE = Critically Endangered as listed under the BC Act

(2) Survey months have been prescribed by the BAM Calculator

5.3.3.1 SUPERB PARROT

Superb Parrot is found throughout inland NSW. On the south-western slopes the species core breeding area is approximately bounded by Grenfell, Cootamundra and Coolac in the west and Cowra and Yass in the east (Office of Environment and Heritage, 2017e). Most the birds breeding in this area migrate north in the winter and come back to breed between September and January. Here, the species is known to nest in open Box-Gum Woodland or isolated paddock trees (Office of Environment and Heritage, 2017e).

During the July 2019 survey period, Superb Parrots were not observed in the investigation area, although a small group of around eight birds were observed in a property adjacent to the investigation area's eastern edge, about 750 m east of the investigation area's eastern boundary. Additionally, during a discussion with a leaseholder at Trahair's Road, he advised onsite ecologists that he had seen Superb Parrots at that location a couple of weeks prior to our survey. Additionally, several records for the species occur within the locality.

Although the investigation area does not abound with high quality habitat for Superb Parrots, it is likely that the species occurs there regularly throughout the breeding season and that hollows in large paddock trees or large trees in remnant stands may represent breeding opportunities for individuals. At the time of survey, no breeding habitat was identified by the presence of 'habitat features and observed nest or two or more birds seen on site' as described on the species Threatened Biodiversity Data Collection page. However, surveys were conducted outside the recommended survey period for the species (September to November), and as such a precautionary approach has been taken to formulate the species polygon (Figure 5.4) to calculate biodiversity offset credits. Key habitat attributes which have informed the species polygon include remnant patches of associated native vegetation which contain hollow-bearing trees (PCT's 9, 201, 267, 277, and 346). In addition, while not utilised for the calculation of species credits, isolated hollow bearing paddock trees also provide potential breeding habitat for the species. These have also been mapped on Figure 5.4. It should be noted that where access limitations prevented the assessment of paddock trees, hollows were assumed to be present and mapped. Should impacts to suitable habitat for the species be anticipated, targeted seasonal surveys of these areas are recommended.

5.3.3.2 SOUTHERN MYOTIS

Southern Myotis is found from the north-west of Australia, across the top-end and southern to western Victoria within the coastal zone. The species is rarely found more than 100 km inland, with the exception along major rivers (Office of Environment and Heritage, 2017c). The investigation area occurs more than 100 km inland, however the Murrumbidgee River runs approximately 1.5 km south of the investigation area where records of the species occur. The species forages over streams and pools and generally roosts close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage (Office of Environment and Heritage, 2017c).

Within the investigation area, foraging resources in the form of waterbodies occur within the investigation area. In addition, PCT 9, a vegetation type associated with the species was also recorded. In accordance with the Threatened Biodiversity Data Collection, species polygon boundaries (Figure 5.5) were developed to align with PCTs within the investigation area to which the species is associated (PCT 9) that occur within 200 m of mapped waterbodies. Mapped waterbodies are those with pools or stretches 3 m or wider, including rivers, creeks, billabongs, lagoons, and dams. In addition, PCTs 267, 277, and 346 contain hollow bearing trees which may be utilised by the species as roost sites. While not associated with the species, these vegetation patches support hollow bearing trees which could be used by Southern Myotis and other hollow-using microchiropteran. Where these PCTs occur within 200 m of a waterbody with pools/stretches 3m or wider, they have also been included within the species polygon.

In addition, other habitat constraints exist for the species within the investigation area which are not used for the calculation of species credit offsets. These include hollow bearing paddock trees, bridges and artificial structures within 200 m of riparian zones. Hollow bearing trees occurring within 200 m of riparian zones have been mapped on Figure 5.5, but not included in the species polygon. It should be noted, that where access limitations prevent assessment of paddock trees, the presence of hollows were assumed. Man-made structures such as bridges, culverts, and buildings, while not mapped, and not utilised for the calculation of biodiversity offset credits, may also provide important roosting habitat for the species.

Surveys undertaken in July 2019 included ultrasonic Anabat bat detection, in which an Anabat was placed in native vegetation over three nights. It is recommended that targeted seasonal surveys be undertaken within the recommended survey period (October to March) should impacts to suitable habitat be anticipated.

5.3.3.3 SQUIRREL GLIDER

Squirrel Glider is distributed sparsely throughout eastern Australia, from northern Queensland to western Victoria. A known population of the species occurs in Wagga Wagga LGA, which is currently listed as an Endangered population under the BC Act. West of the Great Diving Range, the species utilises mature or old growth Box, Box-Ironbark woodlands and River Red Gum forests (Office of Environment and Heritage, 2017d).

Surveys undertaken in July 2019 aimed to assess potential habitat for the species and spotlighting transects for the species were undertaken over three nights. While no individuals were recorded, and potential habitat for the species remains fragmented from their known habitat within the Wagga Wagga area, their presence could not reasonably be discounted.

The southwest corner of the investigation area which contains PCT 9 and 346, and planted vegetation has very marginal connectivity to known habitat centred around the Murrumbidgee river to the investigation areas south. Nevertheless, it remains possible that the species utilises these habitats seasonally for foraging purposes. Dominant tree species in PCT 9 and 346 include, *Eucalyptus camaldulensis*, *E. blakelyi*, and *E. albens* and are known food trees for Squirrel Glider (Office of Environment and Heritage, 2017d). The species polygon (Figure 5.6) has been developed to encompass these vegetation communities within the southwest portion of the investigation area. In addition, while not utilised for calculating biodiversity offset credits for the species, isolated hollow bearing trees and connected planted vegetation may provide additional habitat or connectivity for the species.

The species is considered unlikely to occur within the remainder of the investigation area due to small patch size of mature remnant vegetation, and insufficient connectivity (large old trees closely-connected, i.e. no more than 50 m apart) to known areas of species habitat.

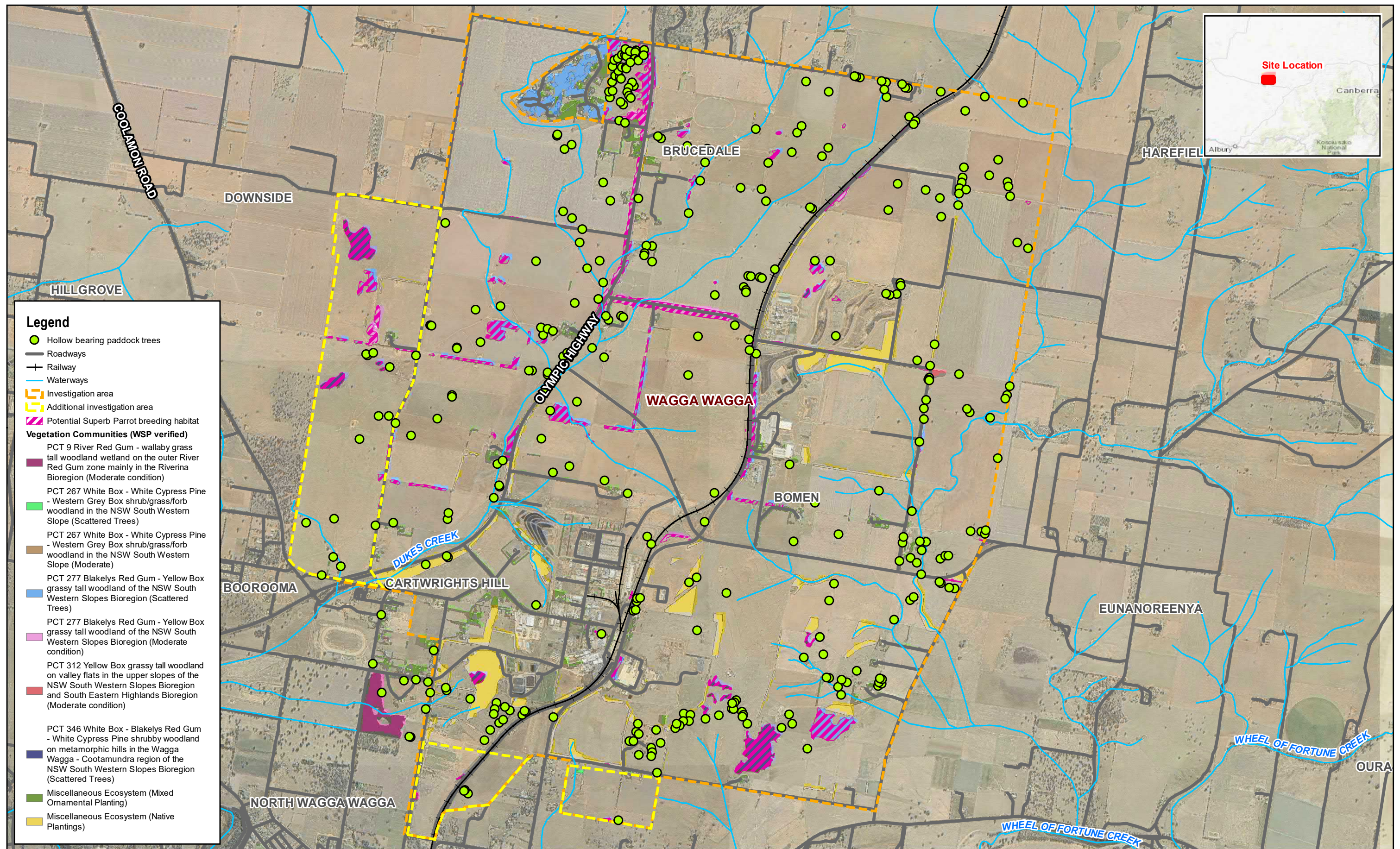
Squirrel Gliders use different parts of the landscape at different times of the year depending on available resources. Dominate eucalypt species within potential habitat (particularly *Eucalyptus camaldulensis*) was not flowering at the time of survey. Additional surveys are recommended for this species to determine presence/absence within the investigation area. As cover of other known food sources such *Acacia* species are absent from the area of potential habitat, surveys should be undertaken at a time when available eucalypt foraging resources are flowering and are therefore providing a food source for the species. Flowering time for *Eucalyptus camaldulensis* can vary in NSW, however generally occurs in summer (NSW Agriculture, 2002). As such, should impacts to suitable habitat for the species be anticipated, targeted surveys are recommended over summer.

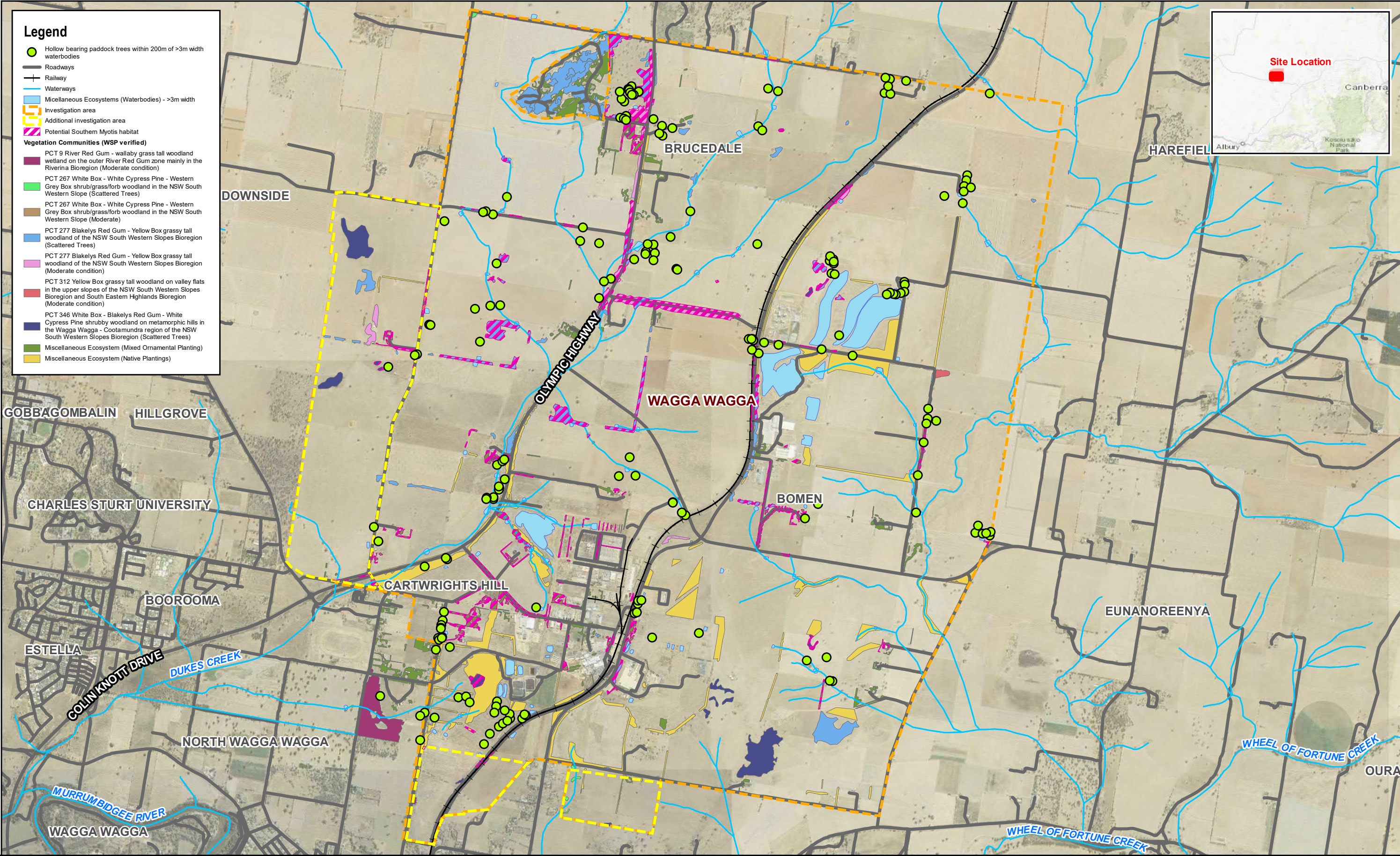
5.3.3.4 LITTLE EAGLE

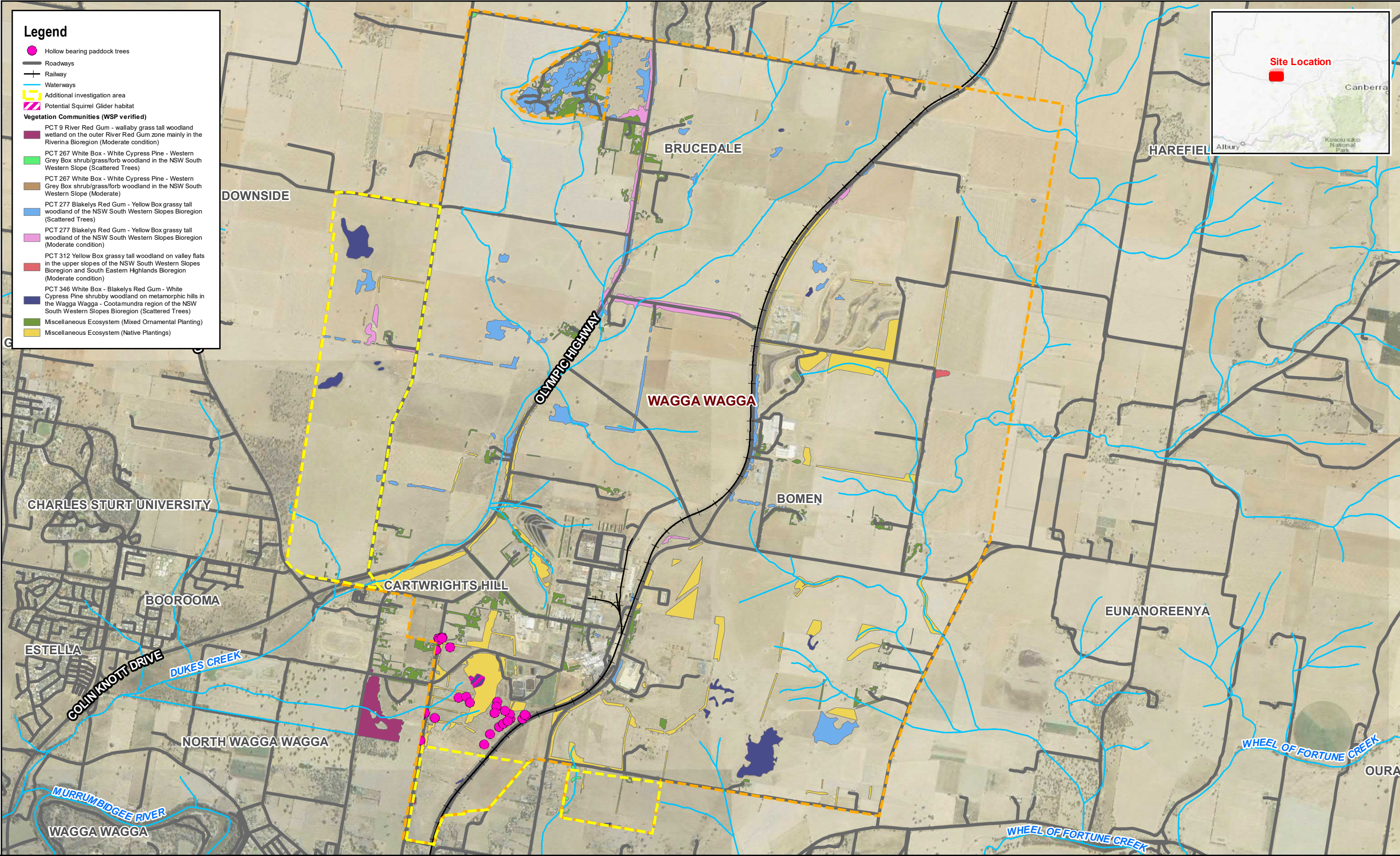
Little Eagle has been recorded historically within the locality, and additionally within the locality during July 2019 surveys for the project, including the recording of one individual within the investigation area. Little Eagle is known to forage over large areas, and during the breeding season may forage several kilometres away from the nest tree. The species occupies open eucalypt forest, woodland or open woodlands and nest in live (occasionally dead) within vegetation (Office of Environment and Heritage, 2017b). However, paddock trees may also provide important breeding habitat, examples of this occur within the ACT. The breeding season begins in August, with eggs laid in late August to early September, an incubation period of about 37 days follows and young birds fledge the nest approximately eight weeks after hatching.

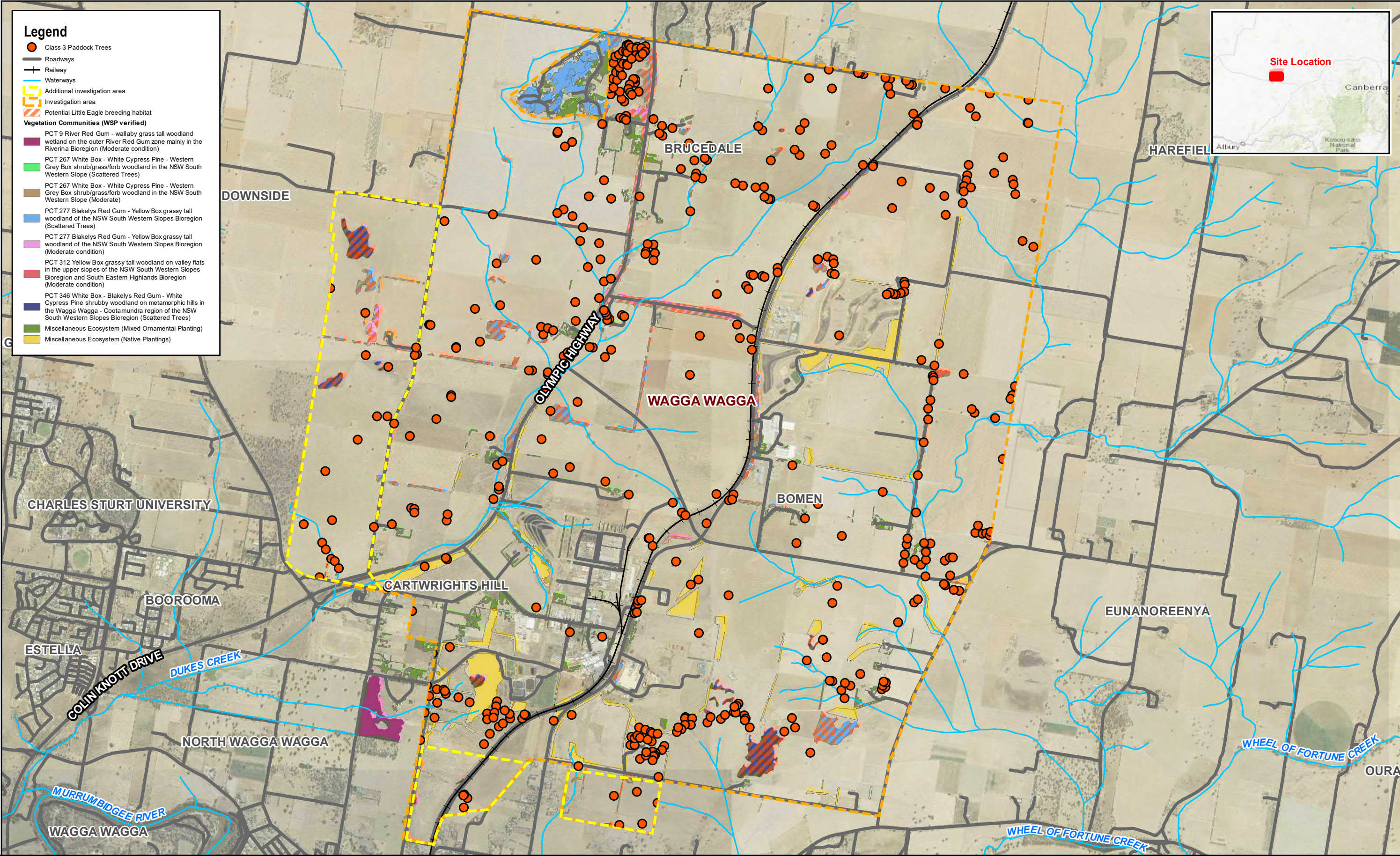
Within the investigation area, associated vegetation types present include PCT 9, 267, 312, and 346. As our surveys were undertaken outside of the recommended survey period for the species, based on their breeding habitats (August to October). The possibility of the investigation area being utilised for breeding could not be discounted. Breeding habitat in the form of live and dead large old trees within suitable vegetation were identified in PCT patches 9, 267, 277, 312, and 346. These patches have been mapped as potential breeding habitat for the species and included in the species polygon (Figure 5.7). Although PCT 277 is not an associated vegetation type listed for the species (Threatened Biodiversity Data Collection), a precautionary approach has been taken to include this PCT in the species polygon as hollow-bearing trees were identified in these patches. Additionally, Class 3 paddock trees with hollows would also provide potential breeding habitat for this species. While these features cannot be utilised for calculating biodiversity credits, they remain important for the species as potential nest trees.

Surveys undertaken in July 2019 identified the species as present within the investigation area. However, the presence of a 'male and female; or female with nesting material; or an individual on a large stick nest in the top half of the tree canopy', as described for the species in the Threatened Biodiversity Data Collection, were not recorded. Little Eagle nests are relatively large and persist beyond several breeding cycles, so the importance of the investigation area for Little Eagle breeding would likely have been established by the existence of previous nests, which were not evident. Nevertheless, it is recommended that further surveys be undertaken within the recommended optimum survey period (August to October) for the species to maximise the likelihood of detecting the species within potential breeding habitat across the site. In the absence of seasonal targeted surveys for the species, a precautionary approach has been taken and the species polygon has been formulated to include all vegetation types within the investigation area which contain potential nest trees for the species. Should impacts to suitable habitat for the species be anticipated, targeted seasonal surveys are recommended for these areas.









6 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

6.1 THREATENED ECOLOGICAL COMMUNITIES

One threatened ecological community, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, listed as Critically Endangered under the EPBC Act has been recorded within the investigation area.

For vegetation to meet to be commensurate with the EPBC Act listing for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, the condition criteria outlined in the Commonwealth Listing Advice must be met (Threatened Species Scientific Committee, 2006). An overview of the community identification criteria is shown in Figure 6.1.

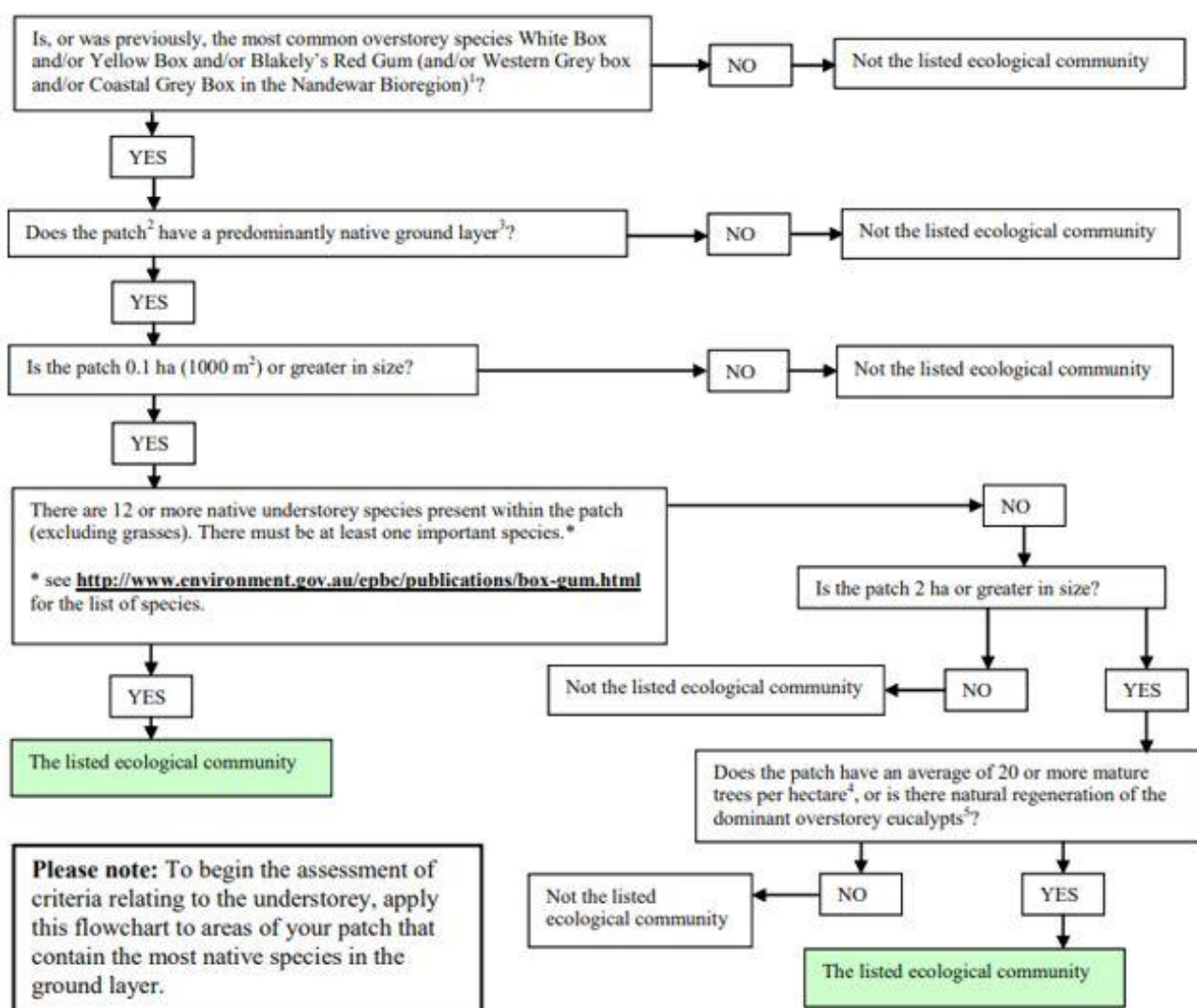


Figure 6.1 White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland identification flowchart

The following PCTs were considered as potential candidates for this threatened ecological community listing:

- PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate condition)
- PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate condition)
- PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate condition).

It should be noted that all patches of PCT 267 and PCT 277 scattered tree condition were excluded from consideration due to the understorey vegetation being of <50% native cover.

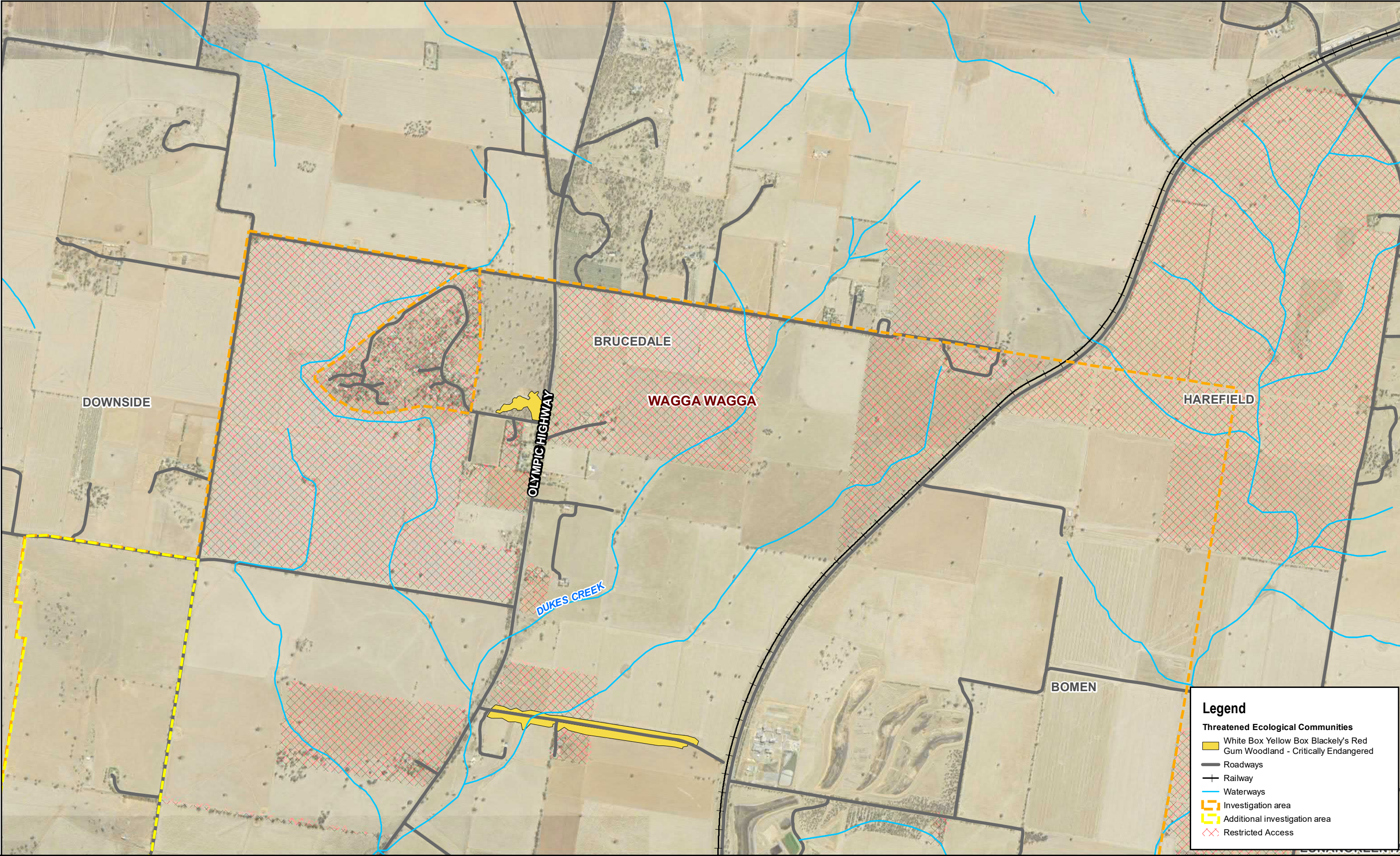
An assessment of each candidate PCT in moderate condition class against the relevant criteria was undertaken for each patch of vegetation within the investigation area. Vegetation integrity plot data collected for each of these PCTs indicated <12 native understorey plants (excluding native grasses) occur within sampled patches (Appendix A). Field surveys of patches using random meander survey technique further confirmed that patches contained on average <12 native understorey plants (excluding native grasses). Given this, only candidate PCTs where patches exceeded 2 hectares in size meet EPBC Act condition criteria.

A summary of each threatened ecological community, associated PCT and extent within the investigation area which is commensurate with EPBC listing is summarised in Table 6.1 and shown in Figure 6.2.

Table 6.1 Threatened Ecological Communities listed under the EPBC Act recorded within the investigation area

THREATENED ECOLOGICAL COMMUNITY	STATUS ¹	ASSOCIATED PCT WITHIN THE INVESTIGATION AREA	CONDITION	EXTENT (ha)
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	Moderate	Not commensurate
		PCT 277 Blakely’s Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Moderate	10.55
		PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion	Moderate	Not commensurate
Total area of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland				10.55

(1) E = Endangered, CE = Critically Endangered as listed under the EPBC Act



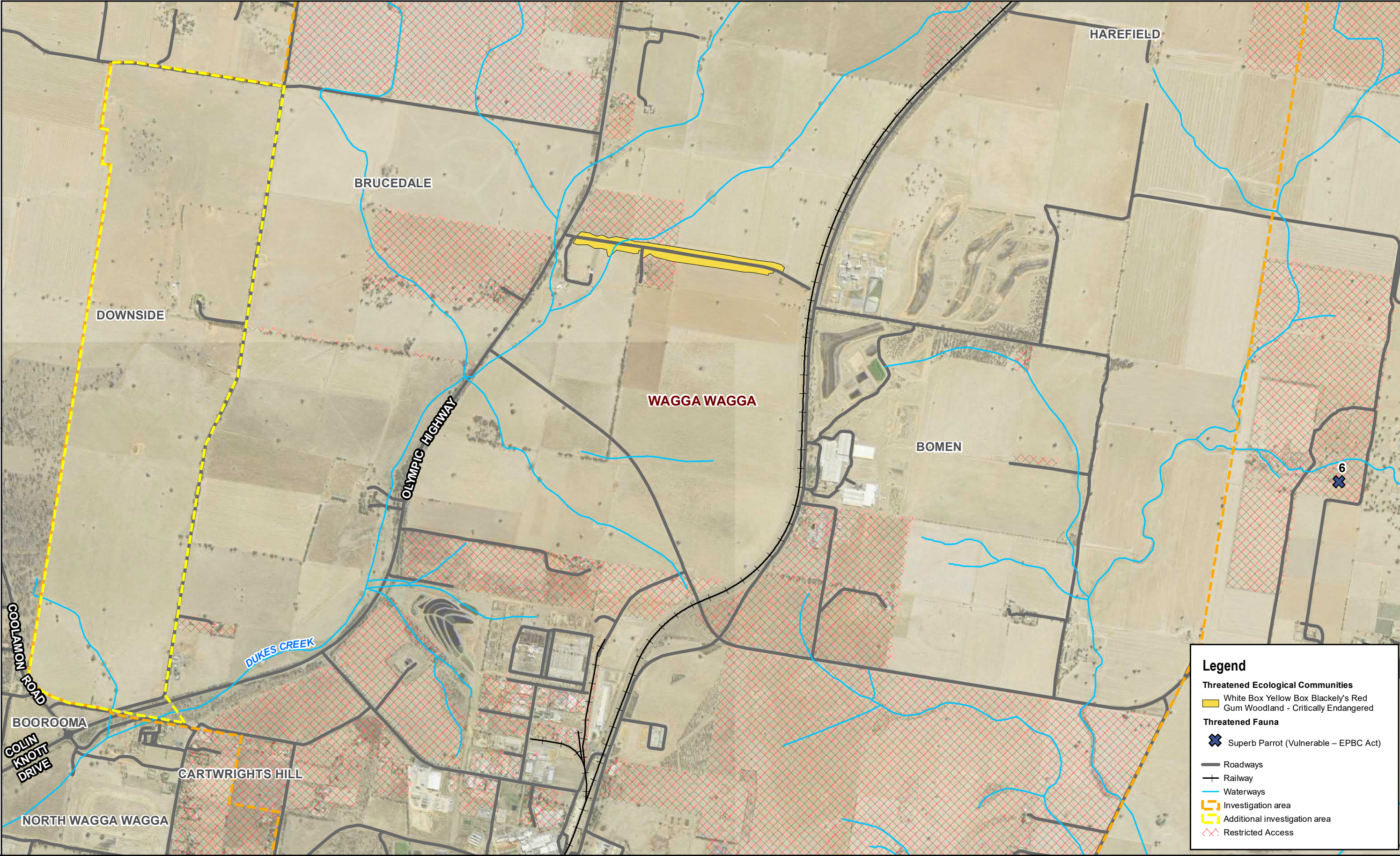




Figure 6.4
EPBC Matters of National Environmental Significance

6.2 THREATENED SPECIES

6.2.1 EPBC LISTED FLORA

Results of the threatened species database searches identified five threatened flora species listed under the EPBC Act as being known to occur or considered likely to occur within the investigation area.

Of these, *Austrostipa wakoolica* (A spear-grass) listed as Endangered under the EPBC Act was considered likely to occur based on the presence of suitable habitat and was subject to targeted seasonal surveys (Table 6.2).

Table 6.2 Nationally threatened flora with a moderate or higher likelihood of occurrence

SCIENTIFIC NAME	COMMON NAME	EPBC ACT ¹	LIKELIHOOD OF OCCURRENCE
<i>Austrostipa wakoolica</i>	A spear-grass	E	Moderate. Though associated vegetation types were not recorded, preferred habitat (alluvial plains) was recorded in the form of PCT 9 and PCT 277. This species is known to not tolerate grazing disturbance (Department of the Environment, 2014) and as such vegetation occurring as scattered trees is not considered likely to provide suitable habitat. PCT 9 and PCT 277 which occurred in moderate condition is considered potential habitat for this species.

(1) Listed under the EPBC Act as E = Endangered

Targeted surveys were conducted within patches of PCT 9 and PCT 277 in moderate condition between the 2-4 October 2019. Two flowering samples of *Austrostipa sp.* were collected from Trahairs Road and forwarded to the National Herbarium of NSW for positive verification (BIS Enquiry No. 21191). Both *Austrostipa* specimens were confirmed to be the non-threatened species *Austrostipa aristglumis* and not *Austrostipa wakoolica*. As such, it is considered unlikely that this species occurs within the investigation area.

6.2.2 EPBC LISTED FAUNA

Results of the threatened species database searches identified 21 threatened fauna species listed under the EPBC Act as being known to occur or considered likely to occur within the investigation area. Of these, two are considered to have a moderate or higher likelihood of occurring within the investigation area based on the availability of habitat (Table 6.3).

Table 6.3 Nationally threatened fauna with moderate or higher likelihood of occurrence

SCIENTIFIC NAME	COMMON NAME	EPBC ACT ¹	LIKELIHOOD OF OCCURRENCE
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	Moderate – The species has been recorded locally, including a Flying-fox camp in the locality. The investigation area contains suitable foraging habitat for the species.
Superb Parrot	<i>Polytelis swainsonii</i>	V	High – The species was recorded adjacent to the investigation area during diurnal bird surveys in July 2019 and suitable foraging and breeding habitat is present within the investigation area.

(1) Listed under the EPBC Act as V = Vulnerable

6.3 MIGRATORY SPECIES

Migratory species are protected under international agreements to which Australia are a signatory, including Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA), Republic of Korea-Australia Migratory Bird Agreement (RoKAMBA) and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. Migratory species are considered Matters of National Environmental Significance and are protected under the EPBC Act.

Based on field investigations, EPBC Protected Matters area search and other desktop database searches, 14 migratory fauna species were identified that could occur within the locality. Based on field investigations and habitat assessments a total of four migratory species have a moderate to high likelihood to occur within the investigation area (Table 6.4).

Table 6.4 Migratory species with a moderate or higher likelihood of occurrence

COMMON NAME	SCIENTIFIC NAME	EPBC ACT ¹	LIKELIHOOD OF OCCURRENCE
Fork-tailed Swift	<i>Apus pacificus</i>	M; Ma	Moderate – Almost exclusively aerial, occurring over inland plains and sometimes over foothills or coastal areas. The species is likely to occur intermittently during seasonal movements, but unlikely to utilise terrestrial habitats.
Latham's Snipe	<i>Gallinago hardwickii</i>	M; Ma	Moderate – The species utilised freshwater or brackish wetlands generally near protective vegetation cover. May occur in local dams and wetlands within the locality on an intermittent basis.
White-throated Needletail	<i>Hirundapus caudacutus</i>	M; Ma	Moderate – Almost exclusively aerial. Occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings. The species is likely to occur intermittently during seasonal movements, but unlikely to use terrestrial habitats.
Yellow Wagtail	<i>Motacilla flava</i>	M; Ma	Moderate – Utilises a range of estuarine habitats, and disturbed habitats which can include open grassy areas, sports grounds, and the edges of wetlands, swamps, lakes and farm dams. The species may occur in local dams and wetlands on an intermittent basis.

(1) Listed under the EPBC Act – M = Migratory, Ma = Marine

These species have the potential to utilise a wide variety of habitats, including native vegetation communities found within the investigation area. The habitats within the investigation area are unlikely to constitute important habitat for any of the mentioned species. The habitat present is unlikely to support significant proportions of the population of any migratory species nor are the habitats critical to any life stage of these species. Due to their mobile nature, the mentioned species are likely to utilise higher quality habitat within the greater locality and where more extensive tracts of native vegetation occur.

6.4 WETLANDS OF INTERNATIONAL IMPORTANCE

Background research identified the following Wetlands of International Importance:

- Banrock station Wetland Complex
- Hattah-kulkyne lakes
- Riverland
- The Coorong, and Lakes Alexandrina and Albert Wetland.

All wetlands identified are more than 400km downstream of the investigation area and are not considered further in this assessment (Department of Environment and Energy, 2019b).

6.5 COMMONWEALTH LAND

Background research identified the following items of Commonwealth Land within locality of the investigation area:

- Australian Broadcasting Corporation
- Australian Telecommunications Commission
- Commonwealth Bank of Australia
- Defence Housing Authority
- Defence Service Homes Corporation
- Director of War Service Homes
- Five areas of Defence land including the Wagga Wagga RAAF Base.

All items of Commonwealth Land or Commonwealth Heritage are located outside of the investigation area and are not considered further in this assessment (Department of Environment and Energy, 2019b).

7 AVOIDANCE HIERARCHY

7.1 BIODIVERSITY CONSTRAINTS

The biodiversity values recorded within the investigation area have been ranked in terms of biodiversity constraint to assist with avoid and minimise impacts during the masterplan development phase. Biodiversity constraints ranking have been based on the following criteria:

TIER 1 – HIGH BIODIVERSITY CONSTRAINT

- Native vegetation patches of PCT that correspond to Threatened Ecological Communities listed under the EPBC Act
- Native vegetation patches of PCT listed under the BC Act as serious and irreversible impact entities
- Potential habitat for EPBC listed flora species
- Potential habitat for EPBC listed fauna species
- All hollow bearing trees
- Existing environmental covenants or Property Vegetation Management Plans
- Offset areas identified in existing biocertification
- Trees protected under the Wagga Tree Preservation Order
- Mapped tributaries associated with key fish habitat

TIER 2 – MEDIUM BIODIVERSITY CONSTRAINT

- Native vegetation patches of PCTs that correspond to Threatened Ecological Communities listed under the BC Act
- Paddock trees recorded as Class 2 or Class 3 that require biodiversity offsets at an ecosystem credit level
- Potential habitat for BC listed flora species
- Potential habitat for BC listed fauna species
- Native vegetation patches of PCT that do not correspond to Threatened Ecological Community listed under either BC Act and/or EPBC Act but qualify to require biodiversity offsets at an ecosystem credit level
- Planted native vegetation which provided habitat connectivity across the landscape.

TIER 3 – OTHER

- Non-native vegetation which does not provide habitat for Threatened fauna
- All other paddock trees and paddock trees recorded as Class 1.

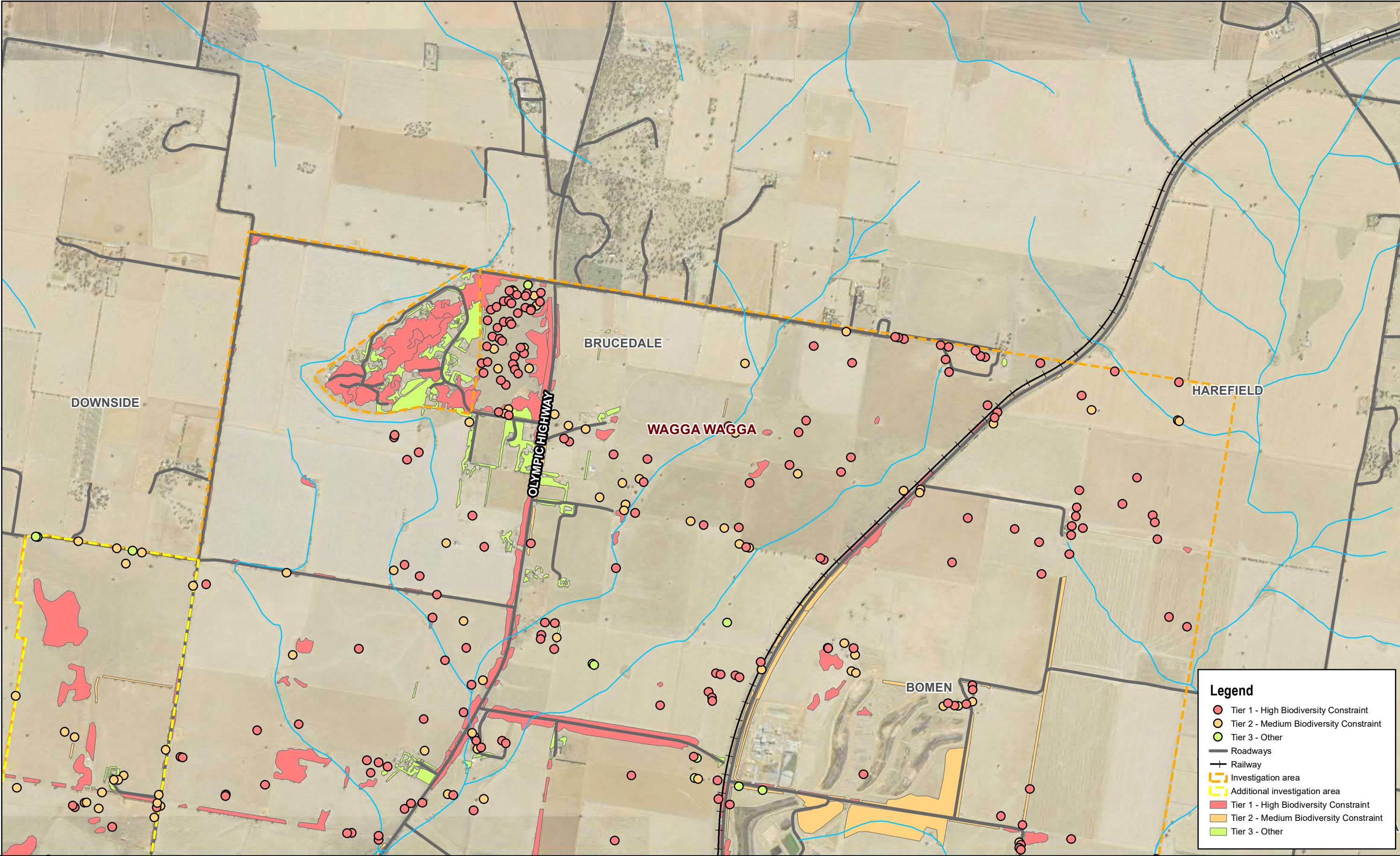
The aim of the Wagga SAP should be to avoid and enhance biodiversity. This includes avoiding or minimising impacts to Tier 1 and 2 biodiversity constraints. Residual impacts to biodiversity values would be assessed under the Biodiversity Certification Assessment Methodology and require biodiversity offsetting in accordance with the NSW Biodiversity Offset Scheme.

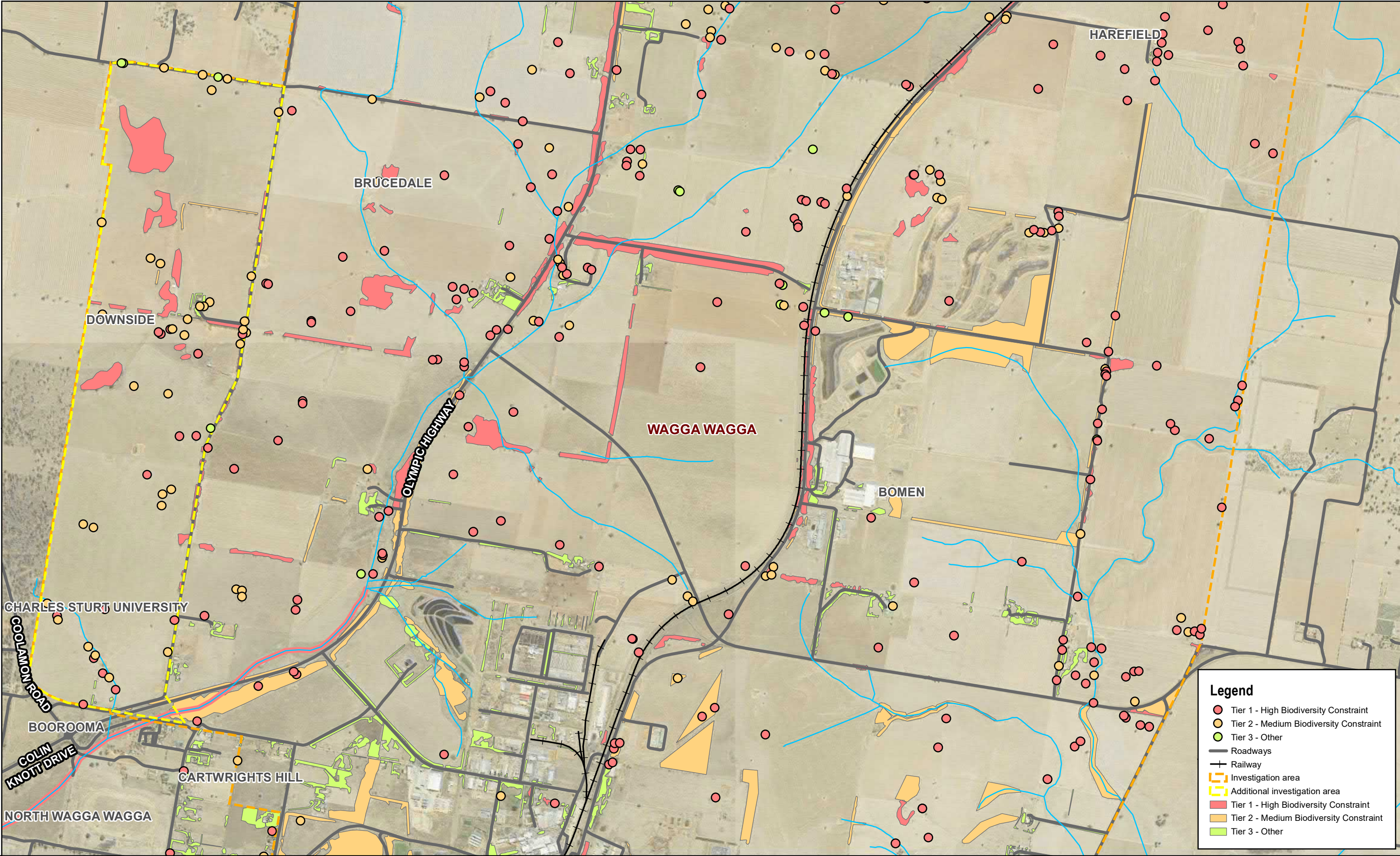
Residual impacts to biodiversity listed under the EPBC Act would require assessment including the need for a referral to the Commonwealth Department of Energy and Environment.

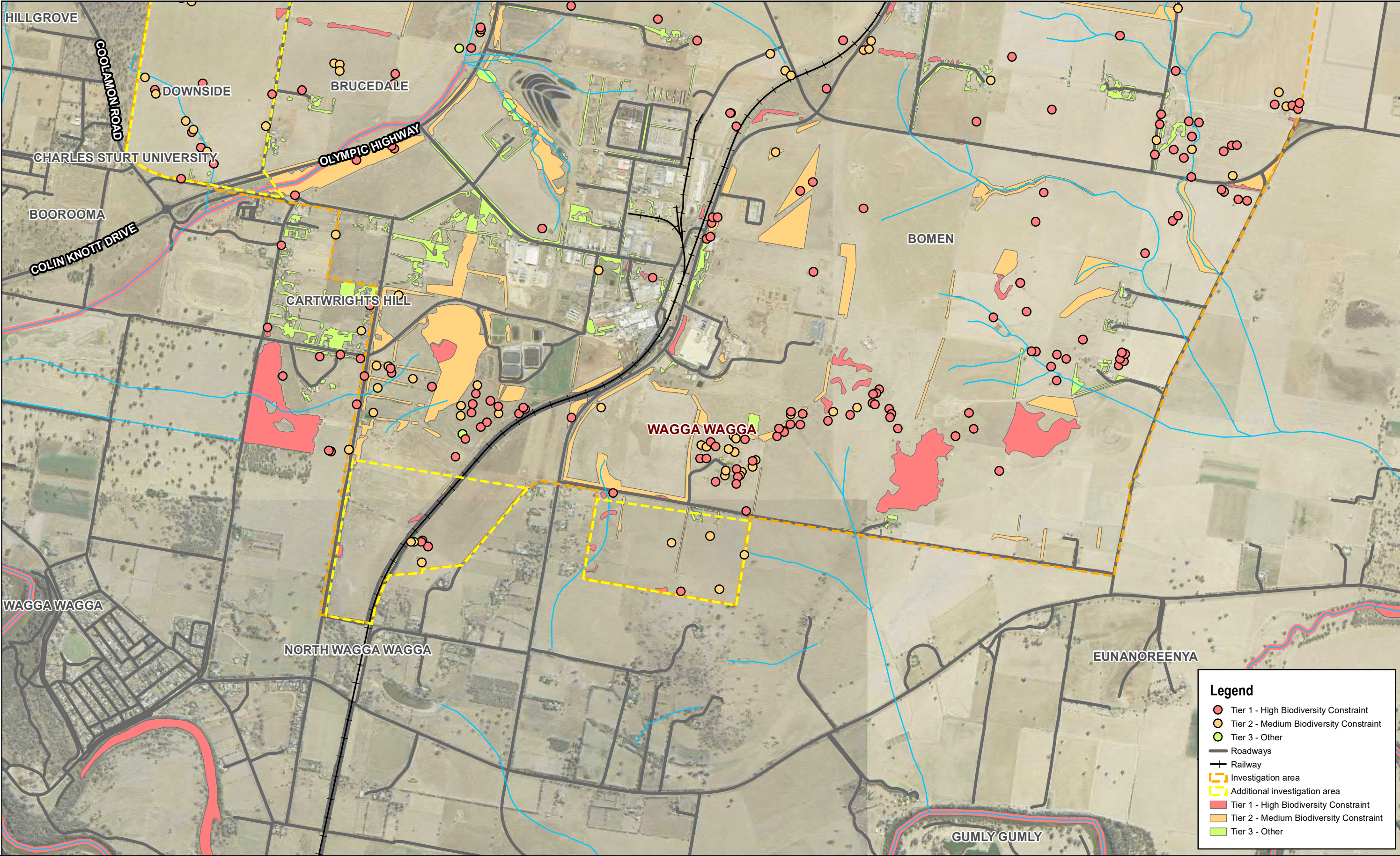
Table 7.1 Biodiversity constraint hierarchy

TIER	BIODIVERSITY CONSTRAINT	ATTRIBUTE WITHIN THE INVESTIGATION AREA	CORRESPONDING ENTITY
Tier 1 – High biodiversity constraint	Native vegetation patches of PCT that correspond to Threatened Ecological Communities listed under the EPBC Act.	PCT 277 (moderate) PCT 276 (moderate)	White Box Yellow Box Blakely's Red Gum Woodland
	Native vegetation patches of PCT listed under the BC Act as serious and irreversible impact entities.	PCT 276 (moderate) PCT 277 (moderate) PCT 312 (moderate)	White Box Yellow Box Blakely's Red Gum Woodland
	Potential breeding habitat for EPBC listed fauna species.	Superb Parrot	PCT 9, PCT 277, PCT 267 and PCT 346, all Class 3 and Class 2 Hollow-bearing Trees
	All hollow bearing trees.	Class 3 and Class 2 Hollow-bearing Trees	Class 3 and Class 2 Hollow-bearing Trees
	Mapped key fish habitat	Dukes Creek – mapped key fish habitat	Dukes Creek and riparian area
Tier 2 – Medium biodiversity constraint	Native vegetation patches of PCT that correspond to Threatened Ecological Communities listed under the BC Act.	PCT 276 (moderate) PCT 277 (moderate) PCT 312 (moderate)	White Box Yellow Box Blakely's Red Gum Woodland
	Paddock trees recorded as Class 2 or Class 3 that require biodiversity offsets at an ecosystem credit level.	Class 3 and Class 2 non -hollow-bearing Trees	Class 3 and Class 2 non -hollow-bearing Trees
	Potential habitat for BC listed flora species.	PCT 9 (moderate) PCT 277 (moderate)	Potential habitat for: <i>Cullen parvum</i>
	Potential breeding habitat for BC listed fauna species.	Little Eagle Southern Myotis Superb Parrot Squirrel Glider	All condition types: PCT 9, PCT 277, PCT 267, PCT 312 and PCT 346, all Class 3 and Class 2 hollow-bearing Trees, Class 3 non-hollow bearing trees.

TIER	BIODIVERSITY CONSTRAINT	ATTRIBUTE WITHIN THE INVESTIGATION AREA	CORRESPONDING ENTITY
	Native vegetation patches of PCT that do not that correspond to Threatened Ecological Community listed under either BC Act and/or EPBC Act but qualify to require biodiversity offsets at an ecosystem credit level	PCT 267 (scattered trees) PCT 277 (scattered trees) PCT 346 (scattered trees)	PCT 346 (scattered trees)
	Planted native vegetation which provided habitat connectivity across the landscape	Miscellaneous Ecosystem (Native Plantings)	Planted native vegetation
Tier 3 – Other	Non-native vegetation which does not provided habitat for Threatened fauna	Miscellaneous Ecosystem (Mixed Ornamental Plantings)	Miscellaneous Ecosystem (Mixed Ornamental Plantings)
	All other paddock trees and paddock trees recorded as Class 1	Class 1 paddock trees	Class 1 paddock trees







8 CONCLUSION

8.1 SUMMARY OF BIODIVERSITY VALUES

Native vegetation was recorded to cover a total of 100.26 hectares within the surveyed areas of the investigation area. Of this, a total of five native vegetation PCTs were recorded. These are:

- PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion
- PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
- PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
- PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion
- PCT 346 White Box – Blakely's Red Gum – White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga – Cootamundra region of the NSW South Western Slopes Bioregion.

One threatened ecological community listed under the BC Act and/ or EPBC Act was recorded:

- White Box Yellow Box Blakely's Red Gum Woodland – listed as Endangered under the BC Act and Critically Endangered under the EPBC Act.

A total of 605 Class 2 and Class 3 paddock trees were recorded within the investigation area. One BC Act-listed threatened flora species, *Cullen parvum* is considered likely to occur within the investigation area.

A total of four threatened fauna species listed under the BC Act were recorded within or adjacent to the investigation area. These are:

- Flame Robin (*Petroica phoenicea*) listed as Vulnerable under the BC Act
- Little Eagle (*Hieraaetus morphnoides*) listed as Vulnerable under the BC Act
- Spotted Harrier (*Circus assimilis*) listed as Vulnerable under the BC Act
- Superb Parrot (*Polytelis swainsonii*) listed as Vulnerable under the BC Act and EPBC Act.

Of these species, the Flame Robin (*Petroica phoenicea*) and Spotted Harrier (*Circus assimilis*) are considered as ecosystem credit species within the investigation area and do not meet species credit requirements under the BC Act.

Overall a total of 12 threatened fauna species listed under the BC Act are predicted to occur within the investigation area.

In addition to predicted species, a total of four candidate threatened fauna species listed under the BC Act are considered affected by the proposal, being:

- Little Eagle (*Hieraaetus morphnoides*) listed as Vulnerable under the BC Act
- Southern Myotis (*Myotis macropus*) listed as Vulnerable under the BC Act
- Superb Parrot (*Polytelis swainsonii*) listed as Vulnerable under the BC Act
- Squirrel Glider (*Petaurus norfolcensis*) listed as Vulnerable under the BC Act.

Two threatened fauna species listed under the EPBC Act were recorded or are considered to have a moderate or higher likelihood of occurrence, being:

- Grey-headed Flying-fox (*Pteropus poliocephalus*) listed as Vulnerable under the EPBC Act
- Superb Parrot (*Polytelis swainsonii*) listed as Vulnerable under the EPBC Act.

8.2 BIODIVERSITY OPPORTUNITIES

Overall the Wagga Wagga SAP provides a unique opportunity to protect biodiversity and environmental values and plan an enhance green infrastructure network.

Whilst in general the biodiversity values of the investigation area are limited due to historic and ongoing disturbances from agricultural, industrial and residential land uses, opportunities exist to develop and enhance biodiversity linkages and corridors with planned open space zoning such as:

- linking significant roadside vegetation and native vegetation plantings
- riparian areas
- larger vegetation patches south-west associated with Dukes Creek and the broader Murrumbidgee floodplain
- retention of smaller remnant patches and paddock trees to provide stepping stones for fauna movement.

8.2.1 *LINKING SIGNIFICANT ROADSIDE VEGETATION AND NATIVE VEGETATION PLANTINGS*

There is an opportunity to strengthen existing native plantings and remnant vegetation along the Olympic Highway and Trahairs Road. Opportunities exist to expand this existing linkage and widen the area to ensure the corridor provides safer fauna passage that would be less impacted by road usage.

Opportunities also exist for enhancing native vegetation plantings east of Byrnes Road to the south that would connect with tree-planting initiative of the Eunony Valley Residents to improve biodiversity in the precinct.

Revegetation and enhancement opportunities include:

- the promotion of planting of local and climate adapted native species as part of the landscaping associated with future developments
- controls to manage introduced flora and pest fauna species.

8.2.2 *RIPARIAN AREAS*

Riparian habitats are mostly limited within the investigation area to low Strahler order creeks many of which only occur as overland flow paths and lack any defined channel of remnant native vegetation. The main significant riparian area is to the south-west of the investigation area being River Red Gum vegetation (PCT 9) associated with Dukes Creek (mapped as key fish habitat) and the broader Murrumbidgee floodplain. The enhancement of biodiversity linkages and corridors opportunities for this area are discussed separately below.

An area of riparian habitat also occurs to the east of the Olympic Highway just to the north of Horseshoe Road. This area is within the broader north/south corridor link associated with native plantings and remnant vegetation along the Olympic Highway. Strengthening vegetation in this area is recommended.

8.2.3 *LARGER VEGETATION PATCHES SOUTH-WEST ASSOCIATED WITH DUKES CREEK AND THE BROADER MURRUMBIDGEE FLOODPLAIN*

A large patch (>10 ha) of PCT 9 River Red Gum – wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion was recorded within close proximity to the investigation area (south-western corner) and provides landscape linkage for highly mobile fauna species to Dukes Creek and the broader Murrumbidgee floodplain.

Opportunity exists to further strengthen habitat connectivity between this area and the investigation area and potentially connect areas of native plantings and remnant vegetation within hilly sections of Teys Australia land holdings.

8.2.4 RETENTION OF SMALLER REMNANT PATCHES AND Paddock TREES TO PROVIDE STEPPING STONES FOR FAUNA MOVEMENT

Opportunity exists to retain smaller remnant patches and paddock trees to provide stepping stones for fauna movement throughout the investigation area. It is recommended that the retention of these features focuses on linking to larger existing corridors or vegetation patches and those paddock trees of higher biodiversity value such as Class 3 trees with hollows.

8.3 ADDITIONAL FIELD SURVEY

The current master plan for the Wagga Wagga SAP indicates that no native vegetation PCTs are to be cleared. Due to seasonal limitations, additional targeted field surveys are recommended should potential habitat for candidate species be impacted for the SAP. Targeted surveys within potential habitats for the following candidate species credit species would be recommended should impacts to potential habitat be considered:

- *Cullen parvum* (Small Scurf-pea): Dec-Jan, within PCT 9 (moderate condition), PCT 277 (moderate condition)
- Little Eagle (*Hieraaetus morphnoides*): Aug-Oct, within species polygon area (Figure 5.7)
- Squirrel Glider (*Petaurus norfolcensis*): All year, within species polygon area (Figure 5.6)
- Southern Myotis (*Myotis macropus*): Nov-Mar, within species polygon area (Figure 5.5)
- Superb Parrot (*Polytelis swainsonii*): Sep-Nov, within species polygon area (Figure 5.4).

Seasonal surveys are the preferred approach to determine presence within the investigation area. It should be noted that as an alternate to additional seasonal field surveys, an expert report could be prepared by an expert appointed under the BC Act to cover off survey deficiencies for these species or the species could be assumed present and biodiversity offsets would be required for these species. Alternatively, the avoidance of impact to potential habitat for these species would eliminate the requirement for additional targeted surveys.

9 LIMITATIONS

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APPENDIX A

BAM VEGETATION INTEGRITY PLOT DATA



Date: 09/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	540754
Q1: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6120761
			13	3	1	0	0	2	0	0	10	1		Orientation	175
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			98.4	15.6	15	0	0	0.6	0	0	82.8	0.1		Attributes 20x50m plot	
<i>Alternanthera pungens</i>	0.1	1	HT									0.1		Stem classes	
<i>Aster spp.</i>	0.5	8	EX								0.5			80+	3
<i>Avena fatua</i>	40	200	EX								40			50-79	1
<i>Chenopodium album</i>	3	70	EX								3			30-49	No
<i>Eucalyptus melliodora</i>	15	3	TG		15									20-29	No
<i>Maireana enchylaenoides</i>	0.2	2	FG					0.2						10-19	No
<i>Malva parviflora</i>	20	100	EX								20			5-9	No
<i>Rumex brownii</i>	0.4	5	FG					0.4						<5	No
<i>Sisymbrium erysimoides</i>	10	150	EX								10			Hollows	2
<i>Sonchus oleraceus</i>	3	40	EX								3			Length logs (m)	5
<i>Urtica urens</i>	5	25	EX								5				
<i>Verbascum virgatum</i>	0.8	15	EX								0.8			Attributes 1x1 plot (%)	
<i>Xanthium occidentale</i>	0.4	10	EX								0.4			Litter (%)	5

Date: 09/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	538746
Q2: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6121916
			26	19	1	0	9	7	0	2	7	2		Orientation	272
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			106.8	78.5	25	0	34.8	18.1	0	0.6	28.3	12		Attributes 20x50m plot	
<i>Austrostipa bigeniculata</i>	20	250	GG				20							Stem classes	
<i>Austrostipa scabra</i>	10	200	GG				10							80+	2
<i>Avena fatua</i>	10	70	EX								10			50-79	0
<i>Bothriochloa macra</i>	0.1	1	GG				0.1							30-49	Yes
<i>Desmodium varians</i>	0.2	4	OG							0.2				20-29	Yes
<i>Dianella revoluta</i> var. <i>revoluta</i>	10	50	FG					10						10-19	Yes
<i>Echium plantagineum</i>	0.2	4	EX								0.2			5-9	Yes
<i>Einadia nutans</i> subsp. <i>nutans</i>	1	25	FG					1						<5	No
<i>Enteropogon acicularis</i>	1	20	GG				1							Hollows	1
<i>Eucalyptus melliodora</i>	25	12	TG		25									Length logs (m)	9
<i>Glycine tabacina</i>	0.4	20	OG							0.4					
<i>Hypochaeris radicata</i>	0.1	2	EX								0.1			Attributes 1x1 plot (%)	
<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	1	25	GG				1							Litter (%)	60
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1	1	GG				1								
<i>Marrubium vulgare</i>	1	6	EX								1				
<i>Oxalis perennans</i>	0.3	18	FG					0.3							
<i>Panicum decompositum</i>	0.5	10	GG				0.5								
<i>Romulea rosea</i>	10	500	HT										10		
<i>Rumex brownii</i>	0.4	6	FG					0.4							
<i>Rytidosperma caespitosum</i>	1	40	GG				1								
<i>Rytidosperma setaceum</i>	0.2	4	GG				0.2								
<i>Salvia verbenaca</i>	5	40	EX								5				
<i>Sida corrugata</i>	5	60	FG					5							
<i>Solanum elaeagnifolium</i>	2	35	HT										2		
<i>Vittadinia gracilis</i>	0.4	4	FG					0.4							
<i>Wahlenbergia communis</i>	1	20	FG					1							

Date: 09/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	537140
Q3: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6120926
			14	3	2	0	0	1	0	0	11	0		Orientation	210
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			67.4	20.5	20	0	0	0.5	0	0	46.9	0		Attributes 20x50m plot	
<i>Avena barbata</i>	35	300	EX								35			Stem classes	
<i>Echium plantagineum</i>	1	18	EX								1			80+	1
<i>Eucalyptus blakelyi</i>	10	3	TG		10									50-79	3
<i>Eucalyptus melliodora</i>	10	4	TG		10									30-49	Yes
<i>Hypochaeris radicata</i>	1	10	EX								1			20-29	Yes
<i>Lolium perenne</i>	1	30	EX								1			10-19	No
<i>Lupinus luteus</i>	0.2	4	EX								0.2			5-9	No
<i>Malva parviflora</i>	5	150	EX								5			<5	No
<i>Raphanus raphanistrum</i>	2	25	EX								2			Hollows	5
<i>Rumex brownii</i>	0.5	6	FG					0.5						Length logs (m)	0
<i>Silybum marianum</i>	0.1	1	EX								0.1				
<i>Sisymbrium erysimoides</i>	0.9	15	EX								0.9			Attributes 1x1 plot (%)	
<i>Trifolium repens</i>	0.5	10	EX								0.5			Litter (%)	0
<i>Urtica urens</i>	0.2	6	EX								0.2				

Date: 10/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	537678
Q4: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)				Count											
			# spp		Count	Count	Count	Count	Count	Count	Count	Count		Northing	6118299
			21	10	2	1	6	1	0	0	11	2		Orientation	30
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			66.3	17.9	15	0.4	2.2	0.3	0	0	48.4	2		Attributes 20x50m plot	
<i>Arctotheca calendula</i>	10	300	EX								10			Stem classes	
<i>Austrostipa scabra</i>	0.1	2	GG				0.1							80+	0
<i>Austrostipa verticillata</i>	0.7	18	GG				0.7							50-79	1
<i>Avena fatua</i>	10	200	EX								10			30-49	Yes
<i>Bothriochloa macra</i>	0.1	1	GG				0.1							20-29	Yes
<i>Cenchrus clandestinus</i>	1	20	HT										1	10-19	No
<i>Chenopodium album</i>	0.1	1	EX								0.1			5-9	No
<i>Digitaria divaricatissima</i>	0.5	6	GG				0.5							<5	No
<i>Echium plantagineum</i>	0.1	1	EX								0.1			Hollows	0
<i>Enteropogon acicularis</i>	0.5	6	GG				0.5							Length logs (m)	0
<i>Eucalyptus blakelyi</i>	5	1	TG		5										
<i>Eucalyptus melliodora</i>	10	2	TG		10									Attributes 1x1 plot (%)	
<i>Hordeum vulgare</i>	15	200	EX								15			Litter (%)	2
<i>Lepidium bonariense</i>	0.2	2	EX								0.2				
<i>Lolium perenne</i>	5	100	EX								5				
<i>Lycium ferocissimum</i>	1	1	HT										1		
<i>Malva parviflora</i>	5	100	EX								5				
<i>Marrubium vulgare</i>	1	8	EX								1				
<i>Panicum decompositum</i>	0.3	4	GG				0.3								
<i>Salsola tragus</i>	0.4	1	SG			0.4									
<i>Vittadinia gracilis</i>	0.3	6	FG					0.3							

Date: 10/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	540913
Q5: PCT 312 Yellow Box grassy tall woodland on valley flats in the upper slopes of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6121321
			10	8	1	0	3	4	0	0	2	0		Orientation	100
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			38.4	30.4	26	0	1.6	2.8	0	0	8	0		Attributes 20x50m plot	
<i>Austrostipa bigeniculata</i>	0.4	10	GG				0.4							Stem classes	
<i>Austrostipa scabra</i>	0.2	8	GG				0.2							80+	0
<i>Avena fatua</i>	4	200	EX								4			50-79	0
<i>Einadia nutans subsp. nutans</i>	2	20	FG					2						30-49	No
<i>Eucalyptus melliodora</i>	26	60	TG		26									20-29	Yes
<i>Lolium perenne</i>	4	200	EX								4			10-19	Yes
<i>Maireana enchylaenoides</i>	0.5	10	FG					0.5						5-9	Yes
<i>Oxalis perennans</i>	0.1	1	FG					0.1						<5	Yes
<i>Rumex brownii</i>	0.2	5	FG					0.2						Hollows	0
<i>Rytidosperma caespitosum</i>	1	30	GG				1							Length logs (m)	0
														Attributes 1x1 plot (%)	
														Litter (%)	76

Date: 10/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	539653
Q6: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6122418
			13	2	2	0	0	0	0	0	11	0		Orientation	160
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			85.5	20	20	0	0	0	0	0	65.5	0		Attributes 20x50m plot	
<i>Arctotheca calendula</i>	0.5	15	EX								0.5			Stem classes	
<i>Avena fatua</i>	2	80	EX								2			80+	1
<i>Capsella bursa-pastoris</i>	0.2	4	EX								0.2			50-79	2
<i>Chenopodium album</i>	6	100	EX								6			30-49	Yes
<i>Eucalyptus melliodora</i>	5	1	TG		5									20-29	Yes
<i>Eucalyptus blakelyi</i>	15	6	TG		15									10-19	Yes
<i>Hypochaeris radicata</i>	0.2	5	EX								0.2			5-9	No
<i>Lepidium bonariense</i>	0.1	1	EX								0.1			<5	No
<i>Lolium perenne</i>	1	40	EX								1			Hollows	0
<i>Malva parviflora</i>	55	800	EX								55			Length logs (m)	12
<i>Silybum marianum</i>	0.1	2	EX								0.1				
<i>Trifolium repens</i>	0.2	4	EX								0.2			Attributes 1x1 plot (%)	
<i>Urtica urens</i>	0.2	10	EX								0.2			Litter (%)	4.2

Date: 10/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	541421
Q7: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6119626
			23	19	2	1	9	7	0	0	4	3		Orientation	80
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			98.4	96.9	25	0.1	59.3	12.5	0	0	1.5	1.2		Attributes 20x50m plot	
<i>Acacia deanei</i>	0.1	1	SG			0.1								Stem classes	
<i>Aristida behriana</i>	0.5	20	GG				0.5							80+	1
<i>Austrostipa bigeniculata</i>	50	150	GG				50							50-79	1
<i>Austrostipa scabra</i>	0.5	10	GG				0.5							30-49	No
<i>Acaena novae-zelandiae</i>	10	70	FG					10						20-29	Yes
<i>Bothriochloa macra</i>	0.3	4	GG				0.3							10-19	Yes
<i>Dichondra repens</i>	0.1	8	FG					0.1						5-9	Yes
<i>Einadia nutans subsp. nutans</i>	0.6	10	FG					0.6						<5	Yes
<i>Elymus scaber</i>	0.6	20	GG				0.6							Hollows	0
<i>Enteropogon acicularis</i>	4	100	GG				4							Length logs (m)	2
<i>Eucalyptus blakelyi</i>	10	2	TG		10										
<i>Eucalyptus melliodora</i>	15	9	TG		15									Attributes 1x1 plot (%)	
<i>Hypericum perforatum</i>	0.4	6	HT									0.4		Litter (%)	56
<i>Lomandra filiformis subsp. coriacea</i>	2	50	GG				2								
<i>Maireana enchylaenoides</i>	0.2	1	FG					0.2							
<i>Medicago polymorpha</i>	0.3	15	EX								0.3				
<i>Olea europaea</i>	0.4	1	HT									0.4			
<i>Panicum decompositum</i>	0.4	20	GG				0.4								
<i>Paspalum dilatatum</i>	0.4	6	HT									0.4			
<i>Rytidosperma caespitosum</i>	1	35	GG				1								
<i>Sida corrugata</i>	1	30	FG					1							
<i>Vittadinia gracilis</i>	0.1	2	FG					0.1							
<i>Wahlenbergia communis</i>	0.5	20	FG					0.5							

Date: 10/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	535546
Q8: PCT 9 River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6117836
			12	6	1	0	3	1	1	0	6	2		Orientation	280
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			69	26.8	25	0	1.3	0.1	0.4	0	42.2	6		Attributes 20x50m plot	
<i>Alternanthera nana</i>	0.1	1	FG					0.1						Stem classes	
<i>Avena fatua</i>	20	150	EX								20			80+	1
<i>Bromus diandrus</i>	5	50	HT									5		50-79	0
<i>Cynodon dactylon</i>	1	10	GG				1							30-49	No
<i>Eucalyptus camaldulensis</i>	25	60	TG		25									20-29	Yes
<i>Juncus flavidus</i>	0.2	3	GG				0.2							10-19	Yes
<i>Lolium perenne</i>	15	100	EX								15			5-9	Yes
<i>Marsilea drummondii</i>	0.4	15	EG						0.4					<5	Yes
<i>Medicago polymorpha</i>	1	80	EX								1			Hollows	1
<i>Romulea rosea</i>	1	40	HT									1		Length logs (m)	3
<i>Rytidosperma caespitosum</i>	0.1	2	GG				0.1								
<i>Silybum marianum</i>	0.2	3	EX								0.2				
														Attributes 1x1 plot (%)	
														Litter (%)	76

Date: 11/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	538023
Q9: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6124163
			23	18	2	1	6	9	0	0	5	2		Orientation	175
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			97	78.8	19	0.1	48.3	11.4	0	0	18.2	10.2		Attributes 20x50m plot	
<i>Aristida behriana</i>	0.3	6	GG				0.3							Stem classes	
<i>Aristida ramosa</i>	3	45	GG				3							80+	1
<i>Atriplex semibaccata</i>	0.1	1	SG			0.1								50-79	3
<i>Austrostipa bigeniculata</i>	15	60	GG				15							30-49	Yes
<i>Austrostipa scabra</i>	2	25	GG				2							20-29	Yes
<i>Avena fatua</i>	5	200	EX								5			10-19	Yes
<i>Dianella revoluta</i>	0.5	1	FG					0.5						5-9	Yes
<i>Dichondra repens</i>	1	50	FG					1						<5	Yes
<i>Einadia nutans subsp. nutans</i>	1	20	FG					1						Hollows	0
<i>Enteropogon acicularis</i>	3	30	GG				3							Length logs (m)	2
<i>Eucalyptus blakelyi</i>	10	3	TG		10										
<i>Eucalyptus melliodora</i>	9	9	TG		9									Attributes 1x1 plot (%)	
<i>Medicago polymorpha</i>	1	200	EX								1			Litter (%)	57
<i>Olea europaea</i>	0.2	1	HT									0.2			
<i>Oxalis perennans</i>	0.3	10	FG					0.3							
<i>Romulea rosea</i>	10	400	HT									10			
<i>Rumex brownii</i>	0.2	2	FG					0.2							
<i>Rytidosperma setaceum</i>	25	200	GG				25								
<i>Salvia verbenaca</i>	2	18	EX								2				
<i>Sida corrugata</i>	5	40	FG					5							
<i>Solenogyne dominii</i>	1	25	FG					1							
<i>Vittadinia cuneata</i>	0.4	18	FG					0.4							
<i>Wahlenbergia communis</i>	2	80	FG					2							

Date: 11/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	536437
Q10: PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)				Count											
			# spp		Count	Count	Count	Count	Count	Count	Count	Count		Northing	6118256
			20	7	2	0	3	1	1	0	13	5		Orientation	210
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			84.6	24.8	23	0	1.5	0.2	0.1	0	59.8	6.8		Attributes 20x50m plot	
<i>Arctotheca calendula</i>	0.3	10	EX								0.3			Stem classes	
<i>Austrostipa scabra</i>	0.8	30	GG				0.8							80+	1
<i>Avena fatua</i>	40	250	EX								40			50-79	1
<i>Bidens subalternans</i>	0.2	3	EX								0.2			30-49	No
<i>Callitris glaucophylla</i>	3	3	TG		3									20-29	Yes
<i>Cheilanthes distans</i>	0.1	1	EG						0.1					10-19	Yes
<i>Dianella revoluta</i>	0.2	1	FG					0.2						5-9	Yes
<i>Echium plantagineum</i>	10	100	EX								10			<5	Yes
<i>Enteropogon acicularis</i>	0.6	20	GG				0.6							Hollows	2
<i>Eucalyptus blakelyi</i>	20	9	TG		20									Length logs (m)	16
<i>Fumaria officinalis</i>	0.2	6	EX								0.2				
<i>Hypericum perforatum</i>	0.3	6	HT									0.3		Attributes 1x1 plot (%)	
<i>Hypochaeris radicata</i>	1	35	EX								1			Litter (%)	36
<i>Lycium ferocissimum</i>	2	4	HT									2			
<i>Malva parviflora</i>	0.3	5	EX								0.3				
<i>Olea europaea</i>	0.5	1	HT									0.5			
<i>Panicum decompositum</i>	0.1	4	GG				0.1								
<i>Romulea rosea</i>	1	50	HT									1			
<i>Rubus fruticosus agg.</i>	3	25	HT									3			
<i>Trifolium repens</i>	1	70	EX								1				

Date: 16/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	538960
Q11: PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)				Count											
			# spp		Count	Count	Count	Count	Count	Count	Count	Count		Northing	6117451
			9	3	2	0	0	1	0	0	6	1		Orientation	180
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20, 20x50
			99.2	13	12	0	0	1	0	0	86.2	2		Attributes 20x50m plot	
<i>Bromus diandrus</i>	2	20	HT									2		Stem classes	
<i>Echium plantagineum</i>	20	50	EX								20			80+	0
<i>Eragrostis cilianensis</i>	0.2	4	EX								0.2			50-79	2
<i>Eucalyptus albens</i>	7	1	TG		7									30-49	Yes
<i>Eucalyptus blakelyi</i>	5	1	TG		5									20-29	No
<i>Hordeum vulgare</i>	3	26	EX								3			10-19	No
<i>Poa annua</i>	1	16	EX								1			5-9	No
<i>Raphanus raphanistrum</i>	60	1000	EX								60			<5	Yes
<i>Rumex brownii</i>	1	4	FG					1						Hollows	3
														Length logs (m)	6
														Attributes 1x1 plot (%)	
														Litter (%)	0

Date: 16/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	539261
Q12: PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)				Count											
			# spp		Count	Count	Count	Count	Count	Count	Count	Count		Northing	6117735
			13	3	2	0	0	1	0	0	10	0		Orientation	110
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20, 20x50
			101.9	25.5	25	0	0	0.5	0	0	76.4	0		Attributes 20x50m plot	
<i>Avena fatua</i>	2	45	EX								2			Stem classes	
<i>Chenopodium album</i>	0.5	10	EX								0.5			80+	0
<i>Echium plantagineum</i>	5	70	EX								5			50-79	2
<i>Eucalyptus albens</i>	20	6	TG		20									30-49	Yes
<i>Eucalyptus blakelyi</i>	5	1	TG		5									20-29	Yes
<i>Hordeum vulgare</i>	0.2	4	EX								0.2			10-19	No
<i>Malva parviflora</i>	20	100	EX								20			5-9	No
<i>Raphanus raphanistrum</i>	40	200	EX								40			<5	No
<i>Rumex brownii</i>	0.5	20	FG					0.5						Hollows	2
<i>Silybum marianum</i>	0.1	1	EX								0.1			Length logs (m)	5
<i>Stellaria media</i>	0.6	30	EX								0.6				
<i>Trifolium repens</i>	3	200	EX								3			Attributes 1x1 plot (%)	
<i>Urtica urens</i>	5	50	EX								5			Litter (%)	0

Date: 16/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	539172
Q13: PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6117539
			15	2	1	0	0	1	0	0	13	0		Orientation	145
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20, 20x50
			84.4	19	18	0	0	1	0	0	65.4	0		Attributes 20x50m plot	
<i>Raphanus raphanistrum</i>	20	100	EX								20			Stem classes	
<i>Avena fatua</i>	20	200	EX								20			80+	0
<i>Capsella bursa-pastoris</i>	0.5	24	EX								0.5			50-79	2
<i>Chenopodium album</i>	0.2	1	EX								0.2			30-49	Yes
<i>Echium plantagineum</i>	3	50	EX								3			20-29	Yes
<i>Eucalyptus blakelyi</i>	18	6	TG		18									10-19	No
<i>Geranium molle</i>	1	45	EX								1			5-9	No
<i>Hordeum vulgare</i>	0.1	1	EX								0.1			<5	No
<i>Lolium perenne</i>	0.5	10	EX								0.5			Hollows	6
<i>Malva parviflora</i>	3	45	EX								3			Length logs (m)	17
<i>Medicago polymorpha</i>	2	100	EX								2				
<i>Rumex brownii</i>	1	15	FG					1						Attributes 1x1 plot (%)	
<i>Silybum marianum</i>	0.1	5	EX								0.1			Litter (%)	2
<i>Stellaria media</i>	5	200	EX								5				
<i>Trifolium repens</i>	10	150	EX								10				

Date: 17/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	536031
Q14: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6121457
			16	4	2	0	0	2	0	0	12	1		Orientation	90
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	14 x 40, 10 x 100
			99.2	31	30	0	0	1	0	0	68.2	0.1		Attributes 20x50m plot	
<i>Arctotheca calendula</i>	4	60	EX								4			Stem classes	
<i>Avena fatua</i>	29	150	EX								29			80+	2
<i>Capsella bursa-pastoris</i>	0.1	2	EX								0.1			50-79	5
<i>Carthamus lanatus</i>	0.1	1	HT									0.1		30-49	Yes
<i>Echium plantagineum</i>	0.2	1	EX								0.2			20-29	Yes
<i>Einadia nutans subsp. nutans</i>	0.2	3	FG					0.2						10-19	No
<i>Eragrostis cilianensis</i>	0.2	4	EX								0.2			5-9	No
<i>Eucalyptus blakelyi</i>	5	1	TG		5									<5	No
<i>Eucalyptus melliodora</i>	25	7	TG		25									Hollows	3
<i>Malva parviflora</i>	31	90	EX								31			Length logs (m)	23
<i>Medicago polymorpha</i>	0.9	24	EX								0.9				
<i>Raphanus raphanistrum</i>	0.9	40	EX								0.9			Attributes 1x1 plot (%)	
<i>Rumex brownii</i>	0.8	6	FG					0.8						Litter (%)	1.2
<i>Stellaria media</i>	0.3	10	EX								0.3				
<i>Trifolium repens</i>	0.5	36	EX								0.5				
<i>Urtica urens</i>	1	19	EX								1				

Date: 17/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	541004
Q15: PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6119255
			22	9	1	0	2	5	0	1	13	4		Orientation	240
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20x 50
			93	57.1	24	0	21	11.1	0	1	35.9	2.8		Attributes 20x50m plot	
<i>Acaena novae-zelandiae</i>	8	50	FG					8						Stem classes	
<i>Arctotheca calendula</i>	0.1	2	EX								0.1			80+	2
<i>Austrostipa scabra</i>	20	60	GG				20							50-79	1
<i>Avena fatua</i>	30	300	EX								30			30-49	Yes
<i>Echium plantagineum</i>	0.1	3	EX								0.1			20-29	Yes
<i>Einadia nutans subsp. nutans</i>	1	20	FG					1						10-19	No
<i>Eucalyptus microcarpa</i>	24	7	TG		24									5-9	Yes
<i>Glycine tabacina</i>	1	60	OG							1				<5	No
<i>Hordeum vulgare</i>	0.3	10	EX								0.3			Hollows	2
<i>Hypericum perforatum</i>	0.4	10	HT									0.4		Length logs (m)	2
<i>Lepidium bonariense</i>	0.5	19	EX								0.5				
<i>Maireana enchylaenoides</i>	0.6	8	FG					0.6						Attributes 1x1 plot (%)	
<i>Medicago polymorpha</i>	0.3	35	EX								0.3			Litter (%)	29.6
<i>Olea europaea</i>	2	1	HT									2			
<i>Romulea rosea</i>	0.2	20	HT									0.2			
<i>Rumex brownii</i>	0.5	8	FG					0.5							
<i>Rytidosperma caespitosum</i>	1	46	GG				1								
<i>Salvia verbenaca</i>	0.8	17	EX								0.8				
<i>Senecio madagascarensis</i>	0.2	2	HT									0.2			
<i>Sida corrugata</i>	1	25	FG					1							
<i>Solanum pseudocapsicum</i>	0.5	2	EX								0.5				
<i>Sonchus oleraceus</i>	0.5	15	EX								0.5				

Date: 16/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	537681
Q16: PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6122248
			24	14	3	1	6	3	1	0	10	3		Orientation	10
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			115.2	109.3	35.5	10	62.5	1.2	0.1	0	5.9	3.7		Attributes 20x50m plot	
<i>Acacia paradoxa</i>	10	7	SG			10								Stem classes	
<i>Austrostipa scabra</i>	35	500	GG				35							80+	0
<i>Avena fatua</i>	0.8	27	EX								0.8			50-79	3
<i>Bothriochloa macra</i>	1	30	GG				1							30-49	Yes
<i>Callitris glaucophylla</i>	0.5	1	TG		0.5									20-29	Yes
<i>Cheilanthes sieberi</i>	0.1	2	EG						0.1					10-19	Yes
<i>Dianella revoluta</i>	0.3	2	FG					0.3						5-9	Yes
<i>Digitaria divaricatissima</i>	0.4	10	GG				0.4							<5	Yes
<i>Enteropogon acicularis</i>	0.6	20	GG				0.6							Hollows	3
<i>Eucalyptus blakelyi</i>	10	1	TG		10									Length logs (m)	16
<i>Eucalyptus melliodora</i>	25	28	TG		25										
<i>Fumaria officinalis</i>	0.2	6	EX								0.2			Attributes 1x1 plot (%)	
<i>Hypericum perforatum</i>	0.4	8	HT										0.4	Litter (%)	44
<i>Hypochaeris radicata</i>	0.3	6	EX								0.3				
<i>Maireana enchylaenoides</i>	0.5	18	FG					0.5							
<i>Medicago polymorpha</i>	0.2	8	EX								0.2				
<i>Panicum decompositum</i>	0.5	15	GG				0.5								
<i>Paspalum dilatatum</i>	0.3	6	HT										0.3		
<i>Phalaris minor</i>	0.1	1	EX								0.1				
<i>Raphanus raphanistrum</i>	0.2	7	EX								0.2				
<i>Romulea rosea</i>	3	100	HT										3		
<i>Rytidosperma setaceum</i>	25	200	GG				25								
<i>Salvia verbenaca</i>	0.4	10	EX								0.4				
<i>Sida corrugata</i>	0.4	2	FG					0.4							

Date: 17/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	535267
Q17: PCT 9 River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6117792
			18	6	1	0	1	3	1	0	12	2		Orientation	330
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			78.8	31.2	27	0	0.9	1.3	2	0	47.6	40.8		Attributes 20x50m plot	
<i>Alternanthera nana</i>	0.4	6	FG					0.4						Stem classes	
<i>Avena fatua</i>	0.5	22	EX								0.5			80+	0
<i>Bromus diandrus</i>	40	200	HT										40	50-79	1
<i>Eucalyptus camaldulensis</i>	27	20	TG		27									30-49	Yes
<i>Hypochaeris glabra</i>	0.3	10	EX								0.3			20-29	Yes
<i>Hypochaeris radicata</i>	2	39	EX								2			10-19	No
<i>Lepidium bonariense</i>	2	35	EX								2			5-9	Yes
<i>Marsilea drummondii</i>	2	45	EG						2					<5	Yes
<i>Medicago polymorpha</i>	0.6	65	EX								0.6			Hollows	0
<i>Onopordum acanthium</i>	0.2	3	EX								0.2			Length logs (m)	4
<i>Oxalis corniculata</i>	0.3	6	EX								0.3				
<i>Oxalis pes-caprae</i>	0.1	1	EX								0.1			Attributes 1x1 plot (%)	
<i>Persicaria prostrata</i>	0.8	17	FG					0.8						Litter (%)	63
<i>Plantago lanceolata</i>	0.4	10	EX								0.4				
<i>Romulea rosea</i>	0.8	55	HT										0.8		
<i>Rytidosperma duttonianum</i>	0.9	17	GG				0.9								
<i>Solanum nigrum</i>	0.4	7	EX								0.4				
<i>Vittadinia gracilis</i>	0.1	1	FG					0.1							

Date: 17/07/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	535306
Q18: PCT 9 River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion (Moderate)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	6118237
			12	5	1	0	2	2	0	0	7	3		Orientation	280
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			71.2	31.8	30	0	0.6	1.2	0	0	39.4	37.9		Attributes 20x50m plot	
<i>Bromus diandrus</i>	35	200	HT									35		Stem classes	
<i>Eucalyptus camaldulensis</i>	30	28	TG		30									80+	1
<i>Hypochaeris glabra</i>	0.2	6	EX								0.2			50-79	0
<i>Hypochaeris radicata</i>	1	28	EX								1			30-49	Yes
<i>Olea europaea</i>	0.9	6	HT									0.9		20-29	Yes
<i>Oxalis corniculata</i>	0.2	6	EX								0.2			10-19	Yes
<i>Panicum decompositum</i>	0.4	6	GG				0.4							5-9	Yes
<i>Pratia concolor</i>	1	40	FG					1						<5	No
<i>Romulea rosea</i>	2	44	HT									2		Hollows	1 (>20cm)
<i>Rytidosperma duttonianum</i>	0.2	4	GG				0.2							Length logs (m)	12
<i>Senecio cunninghamii</i> var. <i>cunninghamii</i>	0.2	2	FG					0.2							
<i>Sonchus asper</i>	0.1	1	EX								0.1			Attributes 1x1 plot (%)	
														Litter (%)	80

Date: 3/12/19			Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat		Easting	537265
Q19: PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Scattered Trees)			# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count		Northing	611728
			11	3	2	0	1	0	0	0	8	1		Orientation	55
Species	Cover	Abundance	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20 x 20, 20 x 50
			83.4	21.4	21	0	0.4	0	0	0	62	3		Attributes 20x50m plot	
<i>Eucalyptus microcarpa</i>	13	1	TG		13									Stem classes	
<i>Austrostita scabra</i>	0.4	20	GG				0.4							80+	0
<i>Avena fatua</i>	25	500	EX								25			50-79	3
<i>Bromus diandrus</i>	3	80	HT									3		30-49	No
<i>Echium plantagineum</i>	0.8	20	EX								0.8			20-29	No
<i>Eucalyptus albens</i>	8	1	TG		8									10-19	No
<i>Hordeum vulgare</i>	15	200	EX								15			5-9	No
<i>Lolium perenne</i>	15	500	EX								15			<5	No
<i>Malva parviflora</i>	0.1	1	EX								0.1			Hollows	4
<i>Urtica urens</i>	0.1	1	EX								0.1			Length logs (m)	0
<i>Vulpia myuros</i>	3	100	EX								3				
														Attributes 1x1 plot (%)	
														Litter (%)	19

APPENDIX B

THREATENED FLORA LIKELIHOOD OF OCCURRENCE



Table B.1 Threatened flora likelihood of occurrence assessment

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SAII	BIONET RECORDS	ASSOCIATED HABITAT ³	SOURCE ⁴	LIKELIHOOD OF OCCURRENCE	SURVEY ⁵
<i>Acacia ausfeldii</i>	Ausfeld's Wattle	V	-	No	0	Established plants are likely to be killed by fire, as mature and juvenile plants have a single-stemmed growth form. Associated species include <i>Eucalyptus albens</i> , <i>E. blakelyi</i> and <i>Callitris spp.</i> , with an understorey dominated by <i>Cassinia spp.</i> and grasses. <i>Acacia ausfeldii</i> is likely to have a dormant soil seedbank from which germination is stimulated by fire; a small number of seeds have been observed to germinate in the absence of fire.	BAM-C	Low. Though associated habitat, PCT 267 and 277 was recorded within the investigation area this species has not been historically recorded within locality. Habitat constraints for this species, footslopes and low rises on sandstone were not recorded within the investigation area.	Not required.
<i>Austrostipa wakoolica</i>	A spear-grass	E	E	No	0	Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine forest on low sandy range; and a low, rocky rise.	PMST	Moderate. Though associated vegetation types were not recorded, preferred habitat (alluvial plains) was recorded in the form of PCT 9 and PCT 277.	Targeted surveys required Sept - Dec.

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SAII	BIONET RECORDS	ASSOCIATED HABITAT ³	SOURCE ⁴	LIKELIHOOD OF OCCURRENCE	SURVEY ⁵
<i>Brachyscome muelleroides</i>	Claypan Daisy	V	V	No	1	Grows in damp areas on the margins of claypans in moist grassland with <i>Pycnosorus globosus</i> , <i>Agrostis avenacea</i> and <i>Austrodanthonia duttoniana</i> . Also, recorded from the margins of lagoons in mud or water, and in association with <i>Calotis anthemoides</i> . The Claypan Daisy occurs in the Wagga Wagga, Narranderra, Tocumwal and Walbundrie areas.	PlantNet, Bionet	Low. Associated vegetation types and habitat constraint, Wetland-grassland communities on floodplains on grey-brown or red-brown clays and claypans, were not recorded. This species has not been recorded in Wagga Wagga since 1889.	Not required.
<i>Caladenia arenaria</i>	Sand-hill Spider Orchid	E	E	Yes	0	Occurs in woodland with sandy soil, especially that dominated by White Cypress Pine (<i>Callitris glaucophylla</i>).	PMST	Low. No associated vegetation types were recorded within the investigation area. Not previously recorded within locality.	Not required.
<i>Caladenia tensa</i>	Greencomb Spider-orchid	-	E	No	0	The rigid spider-orchid occurs in <i>Callitris</i> spp. (cypress pine), <i>Eucalyptus leucoxylon</i> (yellow gum) woodland and <i>Melaleuca uncinata</i> (broombush) mallee on Tertiary and Quaternary aeolian sandy loams in the Murray-Darling Depression bioregion. PCT association unknown.	PMST	Low. Associated species not recorded within investigation area, species has not been historically recorded within locality.	Not required.

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SAII	BIONET RECORDS	ASSOCIATED HABITAT ³	SOURCE ⁴	LIKELIHOOD OF OCCURRENCE	SURVEY ⁵
<i>Cullen parvum</i>	Small Scurf-pea	E	-	No	0	The Small Scurf-pea is known in NSW from only two herbarium collections; one from Wagga Wagga in 1884 and the other from Jindera (near Albury) in 1967. A small population was recently reported from near Jerilderie (although it has not been relocated). In recent years, two populations have been recorded in travelling stock reserves south-west of Wagga Wagga, and a population reputedly exists on a roadside near Galong. In known populations in Victoria and NSW, plants are found in grassland, River Red Gum (<i>Eucalyptus camaldulensis</i>) Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall of between 450 and 700 mm.	BAM-C	Moderate. Though this species has not been recorded in Wagga Wagga since 1886. Associated vegetation, PCT 9 and 277 with watercourses and drainage lines, was recorded within the investigation area.	Targeted surveys required Dec-Jan
<i>Diuris tricolor</i>	Pine Donkey Orchid	V	-	No	0	The Pine Donkey Orchid grows in sclerophyll forest among grass, often with native Cypress Pine (<i>Callitris spp.</i>). It is found in sandy soils, either on flats or small rises. Also, recorded from a red earth soil in a Bimble Box community in western NSW. Is known to grow in disturbed areas/grassland.	BAM-C, PlantNet	Moderate. <i>Diuris tricolor</i> is known from several sites to the west of Wagga Wagga however has not been recorded within locality since 1926. This species is associated with PCT 267 and is known to grow in disturbed areas/grassland.	Targeted surveys required Sept – Oct

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SAII	BIONET RECORDS	ASSOCIATED HABITAT ³	SOURCE ⁴	LIKELIHOOD OF OCCURRENCE	SURVEY ⁵
<i>Pilularia novae-hollandiae</i>	Austral Pillwort	E	-	Yes	0	Austral Pillwort grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. Most of the records from the Albury-Urana area are from table drains on the sides of roads. This species is probably ephemeral (especially in the drier parts of its range), appearing when soils are moistened by rain.	BAM-C	Low. Although associated vegetation, PCT 9, was recorded within the study area this community had a general lack of shallow swamps and sedge presence which is unlikely to support this semi-aquatic species. Further, the ground stratum lacked native perennial grass and sedge composition and was mostly dominated by exotic annual species typical of agricultural land use.	Not required.
<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	-	E	No	0	The Tarengo Leek Orchid occurs on relatively fertile soils in grassy woodland or natural grassland. 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.	PMST	Low. Though associated vegetation, PCT 277, was recorded, this species is not known to occur in locality of Wagga Wagga.	Not required.
<i>Senecio garlandii</i>	Woolly Ragwort	V	-	No	2	Woolly Ragwort occurs on sheltered slopes of rocky outcrops.	BAM-C, BioNet, PlantNet	Low. Associated vegetation, PCT 346, was recorded within the investigation area. This vegetation occurred as scattered trees with a highly disturbed understorey unlikely to support this species.	Not required.

SCIENTIFIC NAME	COMMON NAME	BC ACT ¹	EPBC ACT ²	SAII	BIONET RECORDS	ASSOCIATED HABITAT ³	SOURCE ⁴	LIKELIHOOD OF OCCURRENCE	SURVEY ⁵
<i>Swainsona recta</i>	Small Purple-pea	V	-	No	1	Before European settlement Small Purple-pea occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum <i>Eucalyptus blakelyi</i> , Yellow Box <i>E. melliodora</i> , Candlebark Gum <i>E. rubida</i> and Long-leaf Box <i>E. goniocalyx</i> . Grows in association with understorey dominants that include Kangaroo Grass <i>Themeda triandra</i> , poa tussocks <i>Poa spp.</i> and spear-grasses <i>Austrostipa spp.</i>	BAM-C, BioNet, PlantNet, PMST	Moderate. Associated vegetation, PCT 277 and PCT 276 was recorded within the investigation area. This species is historically recorded from Wagga Wagga (1900). This species is currently presumed extinct in the Wagga Wagga region (EES Group, 2019g).	Not required.
<i>Swainsona sericea</i>	Silky Swainson-pea	V	-	No	0	Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Sometimes found in association with cypress-pines <i>Callitris spp.</i>	BAM-C	Moderate. Associated vegetation types PCT 267, PCT 277 and PCT 312, were recorded within the investigation area.	Targeted surveys required Sept – Oct

(1) V – Vulnerable, E – Endangered as listed under the Biodiversity Conservation Act 2016 (BC Act)

(2) V – Vulnerable, E – Endangered as listed under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

(3) Habitat descriptions were obtained from the NSW Environment, Energy and Science Group (EES Group) (BioNet Threatened Biodiversity Profiles) and/or Commonwealth Department of the Environment and Energy (Species Profile and Threats Database)

(4) BAM-C – Biodiversity Assessment Method Calculator, BioNet – NSW EES Group BioNet species sightings search, PlantNet – Royal Botanic Garden spatial search, PMST – Commonwealth Protected Matters Search Tool

Survey requirements as outlined in the EES Group BioNet Threatened Biodiversity Profiles.

APPENDIX C

FAUNA SPECIES RECORDED



Table C.1 Fauna recorded within the investigation area

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Amphibians (1)			
Eastern Sign-bearing Froglet	<i>Crinia parinsignifera</i>	130	
Birds (60)			
Australasian Shoveler	<i>Anas rhynchotis</i>	13	
Australian Magpie	<i>Cracticus tibicen</i>	192	
Australian Pelican	<i>Pelecanus conspicillatus</i>	2	
Australian Raven	<i>Corvus coronoides</i>	40	
Australian Shelduck	<i>Tadorna tadornoides</i>	2	
Australian White Ibis	<i>Threskiornis molucca</i>	11	
Australian Wood Duck	<i>Chenonetta jubata</i>	39	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	2	
Black-shouldered Kite	<i>Elanus caeruleus</i>	1	
Black-winged Stilt	<i>Himantopus himantopus</i>	4	
Blue-faced Honeyeater	<i>Entomyzon cyanotis</i>	4	
Brown Falcon	<i>Falco berigora</i>	3	
Common Blackbird	<i>Turdus merula</i>	4	
Common Bronzewing	<i>Phaps chalcoptera</i>	1	
Common Starling	<i>Sturnus vulgaris</i> *	871	Exotic
Crested Pigeon	<i>Ocyphaps lophotes</i>	78	
Crimson Rosella	<i>Platycercus elegans</i>	7	
Eastern Rosella	<i>Platycercus eximius</i>	132	
Fairy Martin	<i>Petrochelidon ariel</i>	1	
Flame Robin	<i>Petroica phoenicea</i>	14	Vulnerable under the BC Act
Galah	<i>Eolophus roseicapilla</i>	97	
Golden Whistler	<i>Pachycephala pectoralis</i>	1	
Grey Butcherbird	<i>Cracticus torquatus</i>	1	
Grey Fantail	<i>Rhipidura albiscapa</i>	2	
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	2	
Grey Teal	<i>Anas gracilis</i>	43	
Hoary-headed Grebe	<i>Poliocephalus poliocephalus</i>	2	
House Sparrow	<i>Passer domesticus</i>	9	

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	5	
Little Corella	<i>Cacatua sanguinea</i>	1701	
Little Eagle	<i>Hieraaetus morphnoides</i>	1	Vulnerable under the BC Act
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>	1	
Little Raven	<i>Corvus mellori</i>	200	
Long-billed Corella	<i>Cacatua tenuirostris</i>	20	
Magpie-lark	<i>Grallina cyanoleuca</i>	30	
Masked Lapwing	<i>Vanellus miles</i>	11	
Noisy Miner	<i>Manorina melanocephala</i>	35	
Pacific Black Duck	<i>Anas superciliosa</i>	11	
Pied Butcherbird	<i>Cracticus nigrogularis</i>	3	
Pied Currawong	<i>Strepera graculina</i>	65	
Pink-eared Duck	<i>Malacorhynchus membranaceus</i>	2	
Red Wattlebird	<i>Anthochaera carunculata</i>	11	
Red-rumped Parrot	<i>Psephotus haematonotus</i>	123	
Rufous Whistler	<i>Pachycephala rufiventris</i>	1	
Silvereye	<i>Zosterops lateralis</i>	1	
Spotted Harrier	<i>Circus assimilis</i>	2	Vulnerable under the BC Act
Straw-necked Ibis	<i>Threskiornis spinicollis</i>	15	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	548	
Superb Fairy-wren	<i>Malurus cyaneus</i>	25	
Wedge-tailed Eagle	<i>Aquila audax</i>	2	
Weebill	<i>Smicrornis brevirostris</i>	6	
Welcome Swallow	<i>Hirundo neoxena</i>	81	
Whistling Kite	<i>Haliastur sphenurus</i>	2	
White-faced Heron	<i>Egretta novaehollandiae</i>	2	
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>	14	
White-winged Chough	<i>Corcorax melanorhamphos</i>	19	
Willie Wagtail	<i>Rhipidura leucophrys</i>	11	
Yellow Thornbill	<i>Acanthiza nana</i>	16	
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	21	

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Mammals (4)			
Brown Hare	<i>Lepus europaeus*</i>	2	Exotic
Common Brushtail Possum	<i>Trichosurus vulpecula</i>	6	
Eastern Grey Kangaroo	<i>Macropus giganteus</i>	23	
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	11	

(*) denotes exotic species

Table C.2 Fauna recorded at reference site (Wilks Park along the Murrumbidgee River)

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Birds (32)			
Australian Hobby	<i>Falco longipennis</i>	1	
Australian Magpie	<i>Cracticus tibicen</i>	5	
Australian Pelican	<i>Pelecanus conspicillatus</i>	1	
Australian Raven	<i>Corvus coronoides</i>	2	
Australian Wood Duck	<i>Chenonetta jubata</i>	3	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	1	
Crimson Rosella	<i>Platycercus elegans</i>	4	
Galah	<i>Eolophus roseicapilla</i>	2	
Golden Whistler	<i>Pachycephala pectoralis</i>	1	
Grey Fantail	<i>Rhipidura albiscapa</i>	1	
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	1	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	2	
Little Corella	<i>Cacatua sanguinea</i>	3	
Little Raven	<i>Corvus mellori</i>	2	
Long-billed Corella	<i>Cacatua tenuirostris</i>	2	
Magpie-lark	<i>Grallina cyanoleuca</i>	3	
Pacific Black Duck	<i>Anas superciliosa</i>	5	
Pied Butcherbird	<i>Cracticus nigrogularis</i>	1	
Pied Currawong	<i>Strepera graculina</i>	2	
Red Wattlebird	<i>Anthochaera carunculata</i>	2	
Red-browed Finch	<i>Neochmia temporalis</i>	22	
Rufous Whistler	<i>Pachycephala rufiventris</i>	1	
Silvereeye	<i>Zosterops lateralis</i>	23	
Spotted Pardalote	<i>Pardalotus punctatus</i>	2	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	13	
Superb Fairy-wren	<i>Malurus cyaneus</i>	17	
Weebill	<i>Smicrornis brevirostris</i>	2	
Welcome Swallow	<i>Hirundo neoxena</i>	4	
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>	7	
White-throated Treecreeper	<i>Cormobates leucophaea</i>	4	
White-winged Chough	<i>Corcorax melanorhamphos</i>	1	
Yellow Thornbill	<i>Acanthiza nana</i>	1	

(*) denotes exotic species

Table C.3 Fauna recorded opportunistically in Wagga Wagga (outside of the investigation area)

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Amphibians (1)			
Eastern Sign-bearing Froglet	<i>Crinia parinsignifera</i>	2	
Birds (44)			
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>	1	
Australian Hobby	<i>Falco longipennis</i>	1	
Australian Magpie	<i>Cracticus tibicen</i>	10	
Australian Pelican	<i>Pelecanus conspicillatus</i>	1	
Australian Raven	<i>Corvus coronoides</i>	5	
Australian Wood Duck	<i>Chenonetta jubata</i>	11	
Black Kite	<i>Milvus migrans</i>	30	
Black-shouldered Kite	<i>Elanus caeruleus</i>	2	
Blue-faced Honeyeater	<i>Entomyzon cyanotis</i>	1	
Brown Goshawk	<i>Accipiter fasciatus</i>	1	
Collared Sparrowhawk	<i>Accipiter cirrocephalus</i>	2	
Common Starling	<i>Sturnus vulgaris</i> *	92	Exotic
Crested Pigeon	<i>Ocyphaps lophotes</i>	36	
Crimson Rosella	<i>Platycercus elegans</i>	7	
Eastern Rosella	<i>Platycercus eximius</i>	14	
Galah	<i>Eolophus roseicapilla</i>	72	
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	2	
Grey Teal	<i>Anas gracilis</i>	71	
Hardhead	<i>Aythya australis</i>	1	
House Sparrow	<i>Passer domesticus</i> *	31	Exotic
Little Corella	<i>Cacatua sanguinea</i>	30	
Little Raven	<i>Corvus mellori</i>	14	
Magpie-lark	<i>Grallina cyanoleuca</i>	42	
Masked Lapwing	<i>Vanellus miles</i>	5	
Nankeen Kestrel	<i>Falco cenchroides</i>	2	
Noisy Miner	<i>Manorina melanocephala</i>	4	
Pacific Black Duck	<i>Anas superciliosa</i>	2	
Peregrine Falcon	<i>Falco peregrinus</i>	1	

COMMON NAME	SCIENTIFIC NAME	NUMBER OF INDIVIDUALS	STATUS
Pied Currawong	<i>Strepera graculina</i>	26	
Red-rumped Parrot	<i>Psephotus haematonotus</i>	4	
Rock Dove	<i>Columba livia</i> *	41	Exotic
Rufous Whistler	<i>Pachycephala rufiventris</i>	1	
Straw-necked Ibis	<i>Threskiornis spinicollis</i>	122	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	216	
Superb Fairy-wren	<i>Malurus cyaneus</i>	5	
Superb Parrot	<i>Polytelis swainsonii</i>	6	Vulnerable under the BC Act and EPBC Act
Tree Martin	<i>Petrochelidon nigricans</i>	3	
Welcome Swallow	<i>Hirundo neoxena</i>	67	
Whistling Kite	<i>Haliastur sphenurus</i>	1	
White-faced Heron	<i>Egretta novaehollandiae</i>	1	
White-plumed Honeyeater	<i>Lichenostomus penicillatus</i>	1	
White-winged Chough	<i>Corcorax melanorhamphos</i>	12	
Willie Wagtail	<i>Rhipidura leucophrys</i>	2	
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	2	

(*) denotes exotic species

BAT CALL ANALYSIS

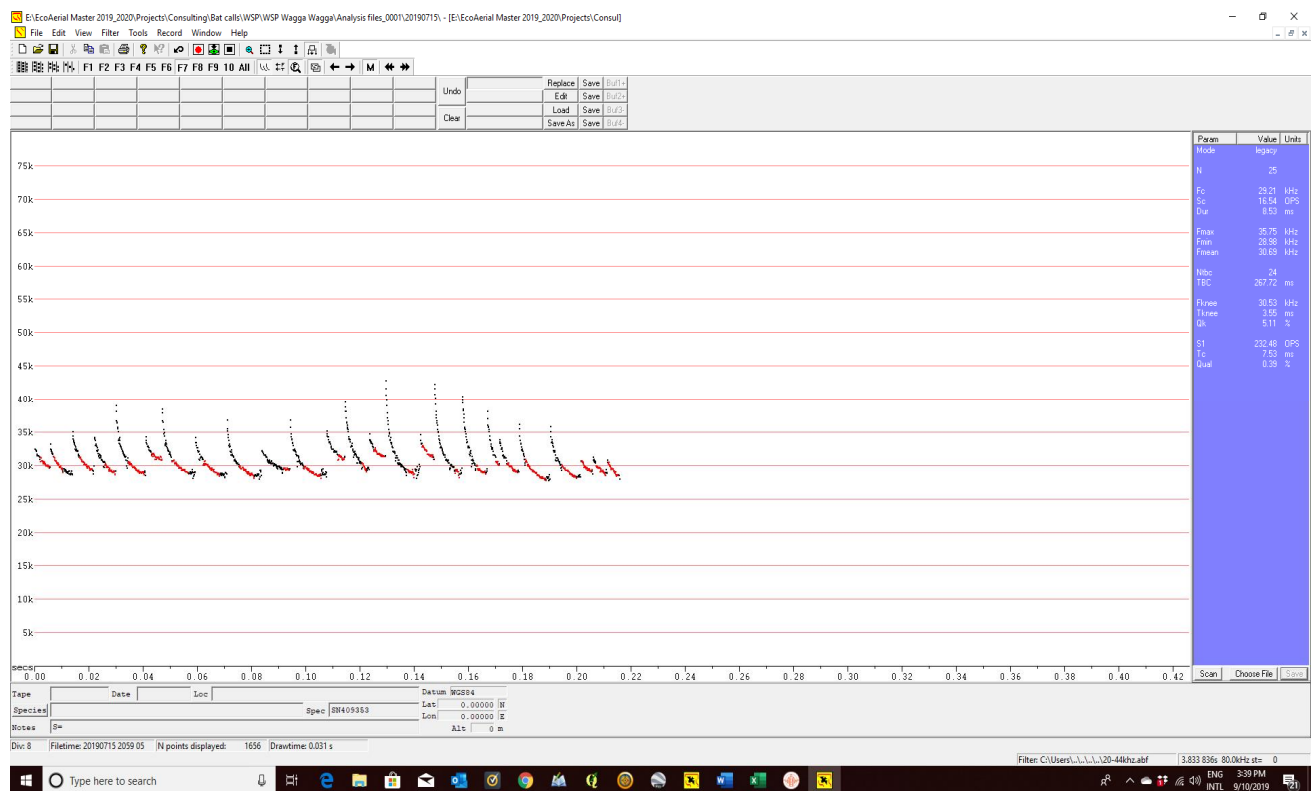


Figure C.1 Gould's Wattled Bat call example

APPENDIX D

THREATENED FAUNA LIKELIHOOD OF OCCURRENCE



Table D.1 Threatened fauna likelihood of occurrence assessment

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Amphibians									
Booroolong Frog	<i>Litoria booroolongensis</i>	E	E	0	-	Confined to mountain streams of the Great Dividing Range (Cogger, 2000). Usually found on or under boulders and debris in and beside the rocky beds of mountain streams; breeds in summer (Anstis, 2002).	BioCert for Wagga Wagga LEP	Species	Low – No preferred habitat was identified within the investigation area.
Southern Bell Frog	<i>Litoria raniformis</i>	E	V	0	-	Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat.	PMST	Species	Low – No preferred habitat was identified within the investigation area.
Birds									
Australasian Bittern	<i>Botaurus poiciloptilus</i>	E	E	0	-	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails.	PMST	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Australian Painted Snipe	<i>Rostratula australis</i>	E	E	0	-	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Associated vegetation types within the investigation area: PCT 9.	BAM-C (Predicted), PMST	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Barking Owl	<i>Ninox connivens</i>	V	-	5	-	The Barking Owl is found throughout continental Australia except for the central arid regions. 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. Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile riparian soils. Preferentially hunts small arboreal mammals such as Squirrel Gliders and Common Ringtail Possums, but when loss of tree hollows decreases these prey populations the owl becomes more reliant on birds, invertebrates and terrestrial mammals such as rodents and rabbits. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats.	BioNet	Species/ Ecosystem	Low – Preferred habitat does not occur in the investigation area, although rare occurrences cannot be entirely discounted. Call playback survey for the species was undertaken during the recommended survey period (July 2019) and no individuals were recorded.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Black Falcon	<i>Falco subniger</i>	V	-	11	-	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. 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.	BioNet	Ecosystem	Moderate – An open country species for which habitat is not optimum but may occur within the investigation area on an intermittent basis.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Black-chinned Honeyeater (eastern subspecies)	<i>Melithreptus gularis gularis</i>	V	-	4	-	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. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (<i>Eucalyptus sideroxylon</i>), White Box (<i>E. albens</i>), Inland Grey Box (<i>E. microcarpa</i>), Yellow Box (<i>E. melliodora</i>), Blakely's Red Gum (<i>E. blakelyi</i>) and Forest Red Gum (<i>E. tereticornis</i>). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees.	BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Brown Treecreeper (eastern subspecies)	<i>Climacteris picumnus victoriae</i>	V	-	24	-	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (<i>Eucalyptus camaldulensis</i>) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains. Associated vegetation types within the investigation area: PCT 267, 277, 312, 346.	BAM-C (Predicted), BioNet, BioCert for Wagga Wagga LEP	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Bush Stone-Curlew	<i>Burhinus grallarius</i>	E	-	4	-	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. Largely nocturnal, being especially active on moonlit nights.	BioNet, BioCert for Wagga Wagga LEP	Species	Low – No preferred habitat was identified within the investigation area. In addition, call playback survey for the species was undertaken during the recommended survey season (July 2019) and no individuals were recorded.
Common Greenshank	<i>Tringa nebularia</i>	-	M	4	-	Occurs in a range of inland and coastal environments. Inland, it occurs in both permanent and temporary wetlands, billabongs, swamps, lakes floodplains, sewage farms, saltworks ponds, flooded irrigated crops. On the coast, it occurs in sheltered estuaries and bays with extensive mudflats, mangrove swamps, muddy shallows of harbours and lagoons, occasionally rocky tidal ledges. It generally prefers wet and flooded mud and clay rather than sand.	BioNet	N/A	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Common Sandpiper	<i>Actitis hypoleucos</i>	-	M	0	-	The Common Sandpiper frequents a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity. It is mostly encountered along muddy margins or rocky shores and rarely on mudflats. It has been recorded in estuaries and deltas of streams, 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. Roost sites are typically on rocks or in roots or branches of vegetation, especially mangroves. 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.	PMST	N/A	Low – Preferred habitat does not occur in the investigation area, although rare occurrences cannot be entirely discounted.
Curlew Sandpiper	<i>Calidris ferruginea</i>	E	CE; M	3	Yes	This species 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.	PMST, BioNet	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area, although rare occurrences cannot be entirely discounted.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Diamond Firetail	<i>Stagonopleura guttata</i>	V	-	6	-	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Associated vegetation types within the investigation area: PCT 9, 267, 312, 277 and 346.	BAM-C (Predicted), BioNet, BioCert for Wagga Wagga LEP	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Dusky Woodswallow	<i>Artamus cyanopterus</i>	V	-	6	-	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. Associated vegetation types within the investigation area: PCT 9, 267, 312, 277, and 346.	BAM-C (Predicted), BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area, although rare occurrences cannot be entirely discounted.
Eastern Curlew	<i>Numenius madagascarensis</i>	-	CE; M	0	-	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.	PMST	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Flame Robin	<i>Petroica phoenicea</i>	V	-	7	-	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Associated vegetation types within the investigation area: PCT 267, 312, 277, and 346.	BAM-C (Predicted), BioNet	Ecosystem	Recorded – The species was recorded within open understorey vegetation within the investigation area. Foraging habitat for the species is present within the investigation area.
Fork-tailed Swift	<i>Apus pacificus</i>	-	M	0	-	Breeds in the northern hemisphere, wintering south to Australia. It is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground. It mostly occurs over inland plains but sometimes above foothills or in coastal areas over cliffs, beaches, islands and well out to sea. It also occurs over towns and cities. It mostly occurs over dry and/or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh, grassland, spinifex sandplains, farmland and sand-dunes. It sometimes occurs above forests. It probably roosts aerially but has occasionally been observed to land.	PMST	N/A	Moderate – An aerial species likely to occur intermittently during seasonal movements, but unlikely to use terrestrial habitats.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Freckled Duck	<i>Stictonetta naevosa</i>	V	-	1	-	Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Associated vegetation types within the investigation area: PCT 9, 267, 277, 312 and 346.	BAM-C (Predicted), BioNet	Ecosystem	Moderate – The species may occur in local dams and wetlands on an intermittent basis.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Gang-gang cockatoo	Callocephalon fimbriatum	V	-	3	-	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. 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. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.	BioNet	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Gilbert's Whistler	<i>Paachycephala inornata</i>	V	-	5	-	The Gilbert's Whistler occurs in ranges, plains and foothills in arid and semi-arid timbered habitats. In NSW it occurs mostly in mallee shrubland, but also in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests. Within the mallee the species is often found in association with an understorey of spinifex and low shrubs including acacias, hakeas, sennas and grevilleas. In woodland habitats, the understorey comprises dense patches of shrubs.	BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Glossy Black-cockatoo	<i>Calyptorhynchus lathami</i>	V	-	4	-	Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, <i>Allocasuarina diminuta</i> , and <i>A. gymnathera</i> . Belah is also utilised and may be a critical food source for some populations. In the Riverina, birds are associated with hills and rocky rises supporting Drooping Sheoak, but also recorded in open woodlands dominated by Belah (<i>Casuarina cristata</i>). Associated vegetation types within the investigation area: PCT 346.	BAM-C (Candidate/Predicted), BioNet, BioCert for Wagga Wagga LEP	Species/Ecosystem	Low – Only two small patches of PCT 267 containing preferred feed tree species were identified within the investigation area. Due to the limited availability of foraging habitat it is considered unlikely that the species would occur.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Glossy Ibis	<i>Plegadis falcinellus</i>	-	M	7	-	It feeds in very shallow water and nests in freshwater or brackish wetlands with tall dense stands of emergent vegetation (e.g. reeds or rushes) and low trees or bushes. It shows a preference for marshes at the edges of lakes and rivers, as well as lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and irrigated cultivation.	BioNet	N/A	Low – No preferred habitat was identified within the investigation area, although rare occurrences cannot be entirely discounted.
Grey-crowned Babbler (eastern subspecies)	<i>Pomatostomus temporalis</i>	V	-	2	-	Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Associated vegetation types within the investigation area: PCT 267, 312, and 277.	BAM-C (predicted), BioNet, BioCert for Wagga Wagga LEP	Ecosystem	Moderate – There are previous records and suitable habitat available within the investigation area. Additionally, two nests that were likely once utilised by the species were identified within the investigation area, however, they appeared to be unused at the time of survey.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Hooded Robin	<i>Melanodryas cucullata</i>	V	-	5	-	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Associated vegetation types within the investigation area: PCT 9, 267, 277, 312, and 346.	BAM-C (predicted), BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Latham's Snipe	<i>Gallinago hardwickii</i>	-	M	17	-	Occurs in freshwater or brackish wetlands generally near protective vegetation cover. This species feeds on small invertebrates, seeds and vegetation. It migrates to the northern hemisphere to breed.	BioNet, PMST	N/A	Moderate – The species may occur in local dams and wetlands on an intermittent basis.
Little Eagle	<i>Hieraaetus morphnoides</i>	V	-	22	-	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Associated vegetation types within the investigation area: PCT 9, 267, 277, 277, and 346.	BAM-C (Candidate), BioNet	Species/ Ecosystem	Recorded – The investigation area occurs within the home range of local individuals. One individual was recorded within the investigation area in July 2019 surveys.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
									<p>No breeding habitat in the form of large old trees within suitable vegetation and the presence of a male and female; or female with nesting material; or an individual on a large stick next in the top half of the tree canopy was observed during July 2019. However, surveys were undertaken outside of the recommended survey period (August to October). Potential breeding habitat exists within the investigation area in the form of live and dead large old trees.</p> <p>Targeted seasonal surveys are recommended between August and October.</p>

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Little Lorikeet	<i>Glossopsitta pusilla</i>	V	-	4	-	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. Associated vegetation types within the investigation area: PCT 9, 267, 312, 27, and 346.	BAM-C (predicted), BioNet	Ecosystem	Moderate – The species has been recorded locally at low densities, but due to its mobility and suitable habitat within the investigation area it is likely to occur on at least an intermittent basis.
Magpie Goose	<i>Anseranas semipalmata</i>	V	-	1	-	Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes.	BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Major Mitchell's Cockatoo	<i>Lophochroa leadbeateri</i>	V	-	2	-	Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. Feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines. Associated vegetation types within the investigation area: PCT 9 and 346.	BAM-C (Candidate/ Predicted), BioNet	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Malleefowl	<i>Leipoa ocellata</i>	E	V	0	-	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.	PMST	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Marsh Sandpiper	<i>Tringa stagnatilis</i>	-	M	1	-	Occurs in coastal and inland wetlands (salt or fresh water), estuarine and mangrove mudflats, beaches, shallow or swamps, lakes, billabongs, temporary floodwaters, sewage farms and saltworks ponds.	BioNet	N/A	Low – Preferred habitat does not occur in the investigation area, although rare occurrences cannot be entirely discounted.
Painted Honeyeater	<i>Grantiella picta</i>	V	V	0	-	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> .	PMST, BioCert for Wagga Wagga LEP	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Pectoral Sandpiper	<i>Calidris melanotos</i>	-	M	0	-	In Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species frequents coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. It is usually found in coastal or near coastal habitat but occasionally further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. It has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands.	PMST	N/A	Low – Preferred habitat does not occur in the investigation area, although rare occurrences cannot be entirely discounted.
Purple-crowned Lorikeet	<i>Glossopsitta porphyrocephala</i>	V	-	0	-	Distribution is centred around Victoria, South Australia and the South-East corner of Western Australia. 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. Associated vegetation types within the investigation area: PCT 9.	BAM-C (Predicted)	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Red-necked Stint	<i>Calidris ruficollis</i>	-	M	3	-	Mostly found in coastal areas, including sheltered inlets, bays lagoons and estuaries. They also occur in shallow wetlands near the coast or inland, including lakes, waterholes and dams. They forage in mudflats, shallow water, sandy open beaches, flooded paddocks and in samphire feeding along the edges. The species roosts on sheltered beaches, spits, banks or islets, of sand, mud, coral or shingle. Occasionally they roost on exposed reefs or shoals and amongst seaweed, mud and cow-pats. During high tides they may also use sand dunes and claypans.	BioNet	N/A	Low – No preferred habitat was identified within the investigation area.
Regent Honeyeater	<i>Anthochaera phrygia</i>	CE	CE	1	Yes	The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. Associated vegetation types within the investigation area: PCT 9, 267, 312, 277, and 346.	BAM-C (Candidate/ Predicted), BioNet, PMST, BioCert for Wagga Wagga LEP	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Satin Flycatcher	<i>Myiagra cyanoleuca</i>	-	M	0	-	Widespread in eastern Australia. In Queensland, it is widespread but scattered in the east. In NSW, they are widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains. In Victoria, the species is widespread in the south and east, in the area south of a line joining Numurkah, Maldon, the northern Grampians, Balmoral and Nelson. Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, and on migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests. Satin Flycatchers mainly inhabit eucalypt forests, often near wetlands or watercourses. They generally occur in moister, taller forests, often occurring in gullies. They also occur in eucalypt woodlands with open understorey and grass ground cover and are generally absent from rainforest. In south-eastern Australia, they occur at elevations of up to 1400 m above sea level, and in the ACT, they occur mainly between 800 m above sea level and the treeline.	PMST	N/A	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Scarlet Robin	<i>Petroica boodang</i>	V	-	8	-	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. Associated vegetation types within the investigation area: PCT 267, 312, 277, and 346.	BAM-C (Predicted), BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	-	M	21	-	Occurs in a variety of habitats: tidal mudflat, mangrove swamps, saltmarshes, shallow fresh, brackish, salt inland swamps and lakes; flooded and irrigated paddocks, sewage farms and commercial saltfields.	BioNet, PMST	N/A	Moderate – under suitable climatic conditions, the floodplain habitats in the south of the investigation area may provide suitable foraging habitat for the species.
Speckled Warbler	<i>Chthonicola sagittata</i>	V	-	1	-	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. Associated vegetation types within the investigation area: PCT 267, 312, 277, 346.	BAM-C (Predicted), BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Spotted Harrier	<i>Circus assimilis</i>	V	-	2	-	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. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. Preys on terrestrial mammals (e.g. bandicoots, bettongs, and rodents), birds and reptile, occasionally insects and rarely carrion.	BioNet	Ecosystem	Recorded – A single individual was recorded in the investigation area during onsite avifauna surveys. Habitat for the species is present within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Superb Parrot	<i>Polytelis swainsonii</i>	V	V	68	-	Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. In the Riverina the bird's nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Associated vegetation types within the investigation area: PCT 9, 267, 277, and 346.	BAM-C (Candidate/Predicted), BioNet, PMST, BioCert for Wagga Wagga LEP	Species/Ecosystem	<p>High – The species was recorded adjacent to the investigation area during avifauna surveys in July 2019 and suitable foraging and breeding habitat is present within the investigation area.</p> <p>Potential breeding habitat exists in large hollow bearing paddock trees, and remnant stands of vegetation which contain large hollow bearing trees.</p> <p>Targeted seasonal surveys are recommended between September and November.</p>

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Swift Parrot	<i>Lathamus discolor</i>	E	CE	18	Yes	Migrates to the Australian south-east mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp <i>Mahogany Eucalyptus robusta</i> , Spotted Gum <i>Corymbia maculata</i> , Red Bloodwood <i>C. gummifera</i> , Forest Red Gum <i>E. tereticornis</i> , Mugga Ironbark <i>E. sideroxylon</i> , and White Box <i>E. albens</i> . Associated vegetation types within the investigation area: PCT 9, 267, 277, 312, 346.	BAM-C (Candidate/ Predicted), BioNet, PMST, BioCert for Wagga Wagga LEP	Species/ Ecosystem	Low – Low incidence of records locally, but there is a small amount of winter-flowering resources in the investigation area and rare occurrences during inland dispersals cannot be entirely discounted.
Turquoise Parrot	<i>Neophema pulchella</i>	V	-	4	-	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.	BioNet, BioCert for Wagga Wagga LEP	Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	-	1	-	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decorticated bark, dead branches, standing dead trees and small branches and twigs in the tree canopy.	BioNet	Ecosystem	Moderate – The species may occur intermittently in the canopies of larger woodland patches within the investigation area.
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	-	0	-	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. 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. Associated vegetation types within the investigation area: PCT 9, 267, 277, 312, and 346.	BAM-C (Candidate/ Predicted)	Species/ Ecosystem	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
White-fronted Chat	<i>Epthianura albifrons</i>	V	-	1	-	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.	BioNet	Ecosystem	Low – No preferred habitat was identified within the investigation area.
White-throated Needletail	<i>Hirundapus caudacutus</i>	-	M	3	-	In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. It is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps.	BioNet, PMST	N/A	Moderate – An aerial species likely to occur intermittently during seasonal movements, but unlikely to utilise terrestrial habitats.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Yellow Wagtail	<i>Motacilla flava</i>	-	M	0	-	This species occurs in a range of habitats including estuarine habitats such as sand dunes, mangrove forests and coastal saltmarshes. This species also occurs in open grassy areas including disturbed sites such as sports grounds and has been recorded on the edges of wetlands, swamps, lakes and farm dams. This species migrates from Asia to Australia in spring-summer. It has been recorded in the estuarine areas of the Hunter River in Newcastle NSW and in QLD and the north of NT and WA (Birds Australia, 2007).	PMST	N/A	Low – Potential marginal habitats within the investigation area include dams and open grassy areas in the form of agricultural lands, however the species is not known to occur in the locality.
Fish									
Flathead Galaxias	<i>Galaxius rostratus</i>	CE	CE	0	-	Flathead Galaxias, also known as Murray jollytail are a small native fish that are known from the southern part of the Murray Darling Basin. They have been recorded in the Macquarie, Lachlan, Murrumbidgee and Murray Rivers in NSW. Despite extensive scientific sampling over the past 15 years there have been very few recorded sightings of Flathead Galaxias. They have not been recorded and are considered locally extinct in the lower Murray, Murrumbidgee, Macquarie and Lachlan Rivers. The species is now only known from the upper Murray River near Tintaldra and wetland areas near Howlong.	PMST	N/A	Low – No preferred habitat within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Macquarie Perch	<i>Macquaria australasica</i>	E*	E	0	-	Macquarie Perch are found in the Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury/Nepean and Shoalhaven catchments. Macquarie Perch are found in both river and lake habitats; especially the upper reaches of rivers and their tributaries. 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).	PMST	N/A	Low – No preferred habitat within the investigation area.
Silver Perch	<i>Bidyanus bidyanus</i>	V*	-	-	-	The most abundant remaining natural population occurs in the central Murray River downstream of Yarrawonga Weir as well as several of its anabranches and tributaries. The central Murray population is considered secure and self-sustaining. There have also been reports of self-sustaining populations in other rivers, including the MacIntyre and Macquarie Rivers in northern NSW and the Warrego River in Queensland, mostly from recreational anglers. It prefers fast-flowing waters but is also known from rivers, lakes and reservoirs.	DPI	N/A	Low – No preferred habitat within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Trout cod	<i>Maccullochella macquariensis</i>	E*	E	-	-	The Trout Cod is endemic to the southern Murray-Darling river system, including the Murrumbidgee and Murray Rivers, and the Macquarie River in central NSW. The species was once widespread and abundant in these areas but has undergone dramatic declines in its distribution and abundance over the past century. The last known reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal.	DPI	N/A	Low – No preferred habitat within the investigation area.
Eel-tailed Catfish	<i>Tandanus tandanus</i>	E2*	-	-	-	Eel Tailed Catfish are naturally distributed throughout the Murray-Darling Basin and in the Eastern drainages NSW north of Newcastle. Eel Tailed Catfish numbers in the Murray-Darling Basin have declined due to a range of impacts including invasive species, habitat degradation, cold water pollution and fishing pressures and are now virtually absent from the Murray, Murrumbidgee and Lachlan catchments. It was relatively uncommon upstream of Wagga Wagga on the Murrumbidgee River and Lake Mulwala on the Murray River. Occupies a wide range of habitats including rivers, creeks, lakes, billabongs and lagoons. It inhabits flowing streams but prefers slow and still waters and can be found in clear or turbid water over substrates including mud, gravel and rock.	DPI	N/A	Low – Marginal habitat within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Murray Cod	<i>Maccullochella peelii</i>	-	V	-	-	The Murray Cod was historically distributed throughout the Murray-Darling Basin (the Basin), which extends from southern Queensland, through New South Wales (NSW), the Australian Capital Territory (ACT) and Victoria to South Australia, except for the upper reaches of some tributaries. The species still occurs in most parts of this natural distribution, up to approximately 1000 m above sea level. It 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. 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.	PMST	N/A	Low – No preferred habitat within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Mammals									
Bilby	<i>Macrotis lagotis</i>	EX	V	1	-	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. The Bilby is now restricted to arid regions and remains a threatened species. The Bilby prefers arid habitats because of the spinifex grass and acacia shrub.	BioNet	N/A	Low – Not extant locally.
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	V	-	0	-	Largely arboreal it occurs in a range of habitats which have reliable rainfall (500-2000mm) but has preference for open dry sclerophyll forest on ridges (up to 600 m alt) with little/sparse ground cover. It nests in tree hollows and feeds at dusk on arthropods and small vertebrates.	BioCert for Wagga Wagga LEP	Species	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Brush-tailed Rock-wallaby	<i>Petrogale penicillate</i>	E	V	1	Yes	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. 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, often facing north. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night. Highly territorial and have strong site fidelity with an average home range size of about 15 ha.	BioNet	Species	Low – No preferred habitat was identified within the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	23	-	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. 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. Associated vegetation types within the investigation area: 267 and 277.	BAM-C (Candidate/Predicted), BioNet, PMST	Species/ Ecosystem	Moderate – The species has been recorded locally and there is suitable foraging habitat within the investigation area. No breeding camps were recorded within the investigation area during July 2019 surveys. A Flying-fox camp is located to the south of the investigation area along the Murrumbidgee River (last surveyed in 2015) (Department of the Environment, 2019).
Inland Forest Bat	<i>Vespadelus baverstocki</i>	V	-	1	-	This species roosts in tree hollows and abandoned buildings. The single young is carried by its mother until its weight affects her flight, and is then left in the roost at night. It has been recorded from a variety of woodland formations, including mallee, mulga and River Red Gum. Colony size ranges from a few individuals to more than fifty. Females congregate to raise young. These bats fly rapidly and cover an extensive foraging area.	BioNet	Ecosystem	Moderate – Suitable roosting and foraging habitat is present within the investigation area and due to the species mobility, it may occur seasonally on an intermittent basis.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Koala	<i>Phascolarctos cinereus</i>	V	V	3	-	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. It was briefly historically abundant in the 1890s in the Bega District on the south coast of NSW, although not elsewhere, but it now occurs in sparse and possibly disjunct populations. Koalas are also known from several sites on the southern tablelands. Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Some preferred species include Forest Red Gum, Grey Gum. In coastal areas, Tallowwood and Swamp Mahogany are important food species, while in inland areas White Box, Bimble Box and River Red Gum are favoured. Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares in size. Associated vegetation types within the investigation area: PCT 9, 267, 277, 312, 346.	BAM-C (Candidate/Predicted), BioNet	Species/Ecosystem	Low – occurs regionally at low densities, but investigation area habitats are scant and highly fragmented, such that it is unlikely to support local individuals on a permanent basis. Targeted surveys (SATS) were completed in July 2019 and did not record the species.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Eastern Bentwing-bat	<i>Miniopterus schreibersii oceanensis</i>	V	-	2	Yes	Eastern Bentwing-bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves.	BioNet	Species/ Ecosystem	Moderate – No preferred roosting habitat was identified within the investigation area but due to its mobility, seasonal occurrences may occur on an intermittent basis.
Little Pied Bat	<i>Chalinolobus picatus</i>	V	-	0	-	The Little-Pied Bat is found in inland Queensland and NSW (including Western Plains and slopes) extending slightly into South Australia and Victoria and has been recorded in dry open forest, open woodland, Mulga woodlands, chenopod shrublands, Callitris forest and mallee (Churchill, 1998). The species roosts and breeds in tree hollows, fissures or cracks, buildings, powerpoles, fenceposts, caves, cliff crevices, mine shafts and tunnels. Roost sites in caves are usually warm and dry but the species can tolerate roost temperatures of more than 40 degrees Celsius.	BioCert for Wagga Wagga LEP	Ecosystem	Moderate – No records of the species occur within the locality, with the closest records near Leeton and Bowning in NSW. Some suitable roosting and foraging habitat occurs within the investigation area and due to its mobility, seasonal occurrences may occur on an intermittent basis.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Southern Myotis	<i>Myotis macropus</i>	V	-	2	No	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. They generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, road culverts, buildings, under bridges and in dense foliage.	BAM-C (Candidate), BioNet	Species	Moderate – Suitable roosting and foraging habitat is present within the investigation area and due to its mobility, seasonal occurrences may occur on and intermittent basis. Targeted seasonal surveys are recommended between November and March.
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	V	E	2	-	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. Associated vegetation types within the investigation area: PCT 9, 267, 312, 277, and 346.	BAM-C (Predicted), BioNet	Ecosystem	Low – Due to its mobility very rare occurrences cannot be entirely discounted, however the investigation area is not suitable for supporting local populations.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	110	-	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. Utilises remnants of various sizes, including small remnants and even small stands of trees within Travelling Stock Reserves, roadside reserves or private land. Often utilise linear remnant vegetation along roadsides or rivers and streams. Prefers mixed species stands with a shrub or Acacia midstorey. Diet varies seasonally and consists of Acacia gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein.	BAM-C (Candidate), BioNet, BioCert for Wagga Wagga LEP	Species	<p>Moderate – The species is known to occur regionally, but the majority of available habitats within investigation area are scant and highly fragmented and the species has not been previously recorded within the investigation area.</p> <p>Previous records for the species occur to the south of the investigation area along the Murrumbidgee River (Atlas of Living Australia, 2019), and habitats within the investigation area are poorly connected. Large old hollow bearing trees are critical for movement for the species and typically need to be closely connected (i.e. no more than 50 m apart).</p>

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
									While habitats are fragmented, and no individuals were recorded during the July 2019 survey, potential habitat for the species exists within the southwest portion of the investigation area. Additional targeted seasonal surveys are recommended for summer.
Squirrel Glider in the Wagga Wagga Local Government Area	<i>Petaurus norfolcensis</i>	E2	-	110	-	The extent of the endangered population is legally defined by the boundaries of the Wagga Wagga LGA. The distribution of the Squirrel Glider and its known or potential habitats within, or linked across, this boundary is not well defined. However, potential habitat occurs at low densities and is patchily distributed on public lands (TSRs, NPWS reserves, Bush Heritage Trust reserves), private lands and roadside corridors with remnant vegetation.	BioNet	Species	As above

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAII	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	V	-	1	-	The Yellow-bellied Sheath-tail-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. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	BioNet, BioCert for Wagga Wagga LEP	Ecosystem	Moderate - suitable roosting and foraging habitat is present within the investigation area and due to the species mobility, seasonal occurrences may occur on an intermittent basis.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Reptiles									
Pink-tailed Legless Lizard	<i>Aprasia parapulchella</i>	V	V	0	-	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. This species is also found in the Australian Capital Territory. Inhabits sloping, open woodland areas with predominantly native grassy groundlayer, particularly those dominated by Kangaroo Grass (<i>Themeda triandra</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.	BAM-C (Candidate), PMST	Species	Low - there are no records for the species within the locality and onsite elevated stony habitats are highly degraded and isolated from higher quality habitats. This species is considered unlikely to occur in the investigation area.

COMMON NAME	SCIENTIFIC NAME	BC ACT ¹	EPBC ACT ²	BIONET RECORDS ³	SAIL	HABITAT ⁴	SOURCE ⁵	CREDIT TYPE	LIKELIHOOD OF OCCURRENCE
Striped Legless Lizard	<i>Delma impar</i>	V	V	0	-	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. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass <i>Themeda triandra</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. Sometimes found in grasslands with significant amounts of surface rocks, which are used for shelter.	PMST	Species	Low - there are no local records and onsite native grassland habitats are highly degraded and isolated from higher quality habitats. This species is considered unlikely to occur in the investigation area.

* listed under the Fisheries Management Act 1994 (FM Act) – Vulnerable (V), Endangered (E), Endangered Population (E2)

**Listed Marine Species have been excluded from this assessment

- (1) V – Vulnerable, E – Endangered, CE – Critically Endangered, EX – Presumed Extinct as listed under the *Biodiversity Conservation Act 2016* (BC Act)
- (2) V – Vulnerable, E – Endangered, CE – Critically Endangered, M – Migratory as listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- (3) Number of records returned on the NSW Environment, Energy and Science (EES) Group species sightings search within an approximate 10 km radius of the investigation area
- (4) Habitat descriptions were obtained from the EES Group (ASMS database) and/or Commonwealth Department of the Environment and Energy (Species Profile and Threats Database)

- (5) BAM-C – Biodiversity Assessment Method Calculator, BioNet – NSW EES Group species sightings search, PlantNet – Royal Botanic Garden spatial search, PMST – Commonwealth Protected Matters Search Tool, BioCert for Wagga Wagga LEP – species identified as potentially occurring in the bio-certified area within the Proposed Biodiversity Certification for the Wagga Wagga Local Environmental Plan 2008 Report.

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APPENDIX E

PADDOCK TREE DATA



Table E.1 Paddock tree assessment data

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT1	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT2	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT3	<i>Eucalyptus melliodora</i>	2	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT4	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT5	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT6	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT7	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT8	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT9	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT10	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT11	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT12	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT13	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT14	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT15	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT16	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT17	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT18	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT19	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT20	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT21	<i>Eucalyptus albens</i>	1	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT22	<i>Eucalyptus albens</i>	1	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT23	<i>Eucalyptus melliodora</i>	2	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT24	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT25	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT26	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT27	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT28	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT29	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT30	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT31	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT32	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT33	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT34	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT35	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT36	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT37	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT38	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT39	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT40	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT41	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT42	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT43	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT44	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT45	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT46	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT47	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT48	<i>Eucalyptus melliodora</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT49	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT50	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT51	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT52	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT53	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT54	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT55	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT56	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT57	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT58	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT59	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT60	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT61	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT62	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT63	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT64	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT65	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT66	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT67	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT68	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT69	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT70	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT71	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT72	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT73	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT74	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT75	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT76	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT77	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT78	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT79	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT80	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT81	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT82	<i>Eucalyptus melliodora</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT83	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT84	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT85	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT86	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT87	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT88	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT89	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT90	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT91	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT92	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT93	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT94	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT95	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT96	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT97	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT98	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT99	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT100	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT101	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT102	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT103	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT104	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT105	<i>Eucalyptus blakelyi</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT106	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT107	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT108	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT109	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT110	<i>Eucalyptus melliodora</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT111	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT112	<i>Eucalyptus melliodora</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT113	<i>Eucalyptus melliodora</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT114	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT115	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT116	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT117	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT118	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT119	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT120	<i>Eucalyptus albens</i>	2	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT121	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT122	<i>Eucalyptus albens</i>	1	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT123	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT124	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT125	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT126	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT127	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT128	<i>Eucalyptus melliodora</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT129	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT130	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT131	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT132	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT133	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT134	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT135	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT136	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT137	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT138	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT139	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT140	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT141	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT142	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT143	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT144	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT145	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT146	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT147	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT148	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT149	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT150	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT151	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT152	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT153	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT154	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT155	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT156	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT157	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT158	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT159	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT160	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT161	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT162	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT163	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT164	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT165	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT166	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT167	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT168	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT169	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT170	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT171	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT172	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT173	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT174	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT175	<i>Eucalyptus melliodora</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT176	<i>Eucalyptus melliodora</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT177	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT178	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT179	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT180	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT181	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT182	<i>Eucalyptus melliodora</i>	2	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT183	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT184	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT185	<i>Eucalyptus melliodora</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT186	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT187	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT188	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT189	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT190	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT191	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT192	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT193	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT194	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT195	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT196	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT197	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT198	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT199	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT200	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT201	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT202	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT203	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT204	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT205	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT206	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT207	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT208	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT209	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT210	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT211	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT212	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT213	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT214	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT215	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT216	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT217	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT218	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT219	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT220	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT221	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT222	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT223	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT224	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT225	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT226	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT227	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT228	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT229	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT230	<i>Eucalyptus microcarpa</i>	3	Y	PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
PT231	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT232	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT234	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT235	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT236	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT237	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT238	<i>Eucalyptus microcarpa</i>	3	Y	PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
PT239	<i>Eucalyptus albens</i>	3	Y	PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
PT240	<i>Eucalyptus albens</i>	3	Y	PCT 267 White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
PT241	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT242	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT243	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT244	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT245	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT246	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT247	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT248	<i>Eucalyptus melliodora</i>	2	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT249	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT250	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT251	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT252	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT253	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT254	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT255	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT256	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT257	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT258	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT259	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT260	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT261	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT262	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT263	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT264	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT265	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT266	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT267	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT268	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT269	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT270	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT271	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT272	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT273	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT274	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT275	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT276	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT277	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT278	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT279	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT280	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT281	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT282	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT283	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT284	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT285	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT286	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT287	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT288	<i>Eucalyptus microcarpa</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT289	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT290	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT291	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT292	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT293	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT294	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT295	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT296	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT297	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT298	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT299	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT300	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT301	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT302	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT303	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT304	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT305	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT306	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT307	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT308	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT309	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT310	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT311	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT312	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT313	<i>Eucalyptus albens</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT314	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT315	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT316	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT317	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT318	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT319	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT320	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT321	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT322	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT323	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT324	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT325	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT326	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT327	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT328	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT329	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT340	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT341	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT342	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT343	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT344	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT345	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT346	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT347	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT348	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT349	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT350	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT351	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT352	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT353	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT354	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT355	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT356	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT357	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT358	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT359	<i>Eucalyptus melliodora</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT360	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT361	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT362	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT363	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT364	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT365	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT366	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT367	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT368	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT369	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT370	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT371	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT372	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT373	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT374	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT375	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT376	<i>Eucalyptus camaldulensis</i>	3	Y	PCT 9 River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion
PT377	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT378	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT379	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT380	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT381	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT382	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT383	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT384	<i>Eucalyptus blakelyi</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT385	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT386	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT387	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT388	<i>Eucalyptus blakelyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT389	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT390	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT391	<i>Eucalyptus blakelyi</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT392	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT393	<i>Eucalyptus albens</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT394	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT395	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT396	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT397	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT398	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT399	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT400	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT401	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT402	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT403	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT404	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT405	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT406	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT407	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT408	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT409	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT410	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT411	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT412	<i>Eucalyptus albens</i>	3	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT413	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT414	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT415	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT416	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT417	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT418	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT419	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT420	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT421	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT422	<i>Eucalyptus albens</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT423	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT424	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT425	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT426	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT427	<i>Callitris glaucophylla</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT428	<i>Callitris glaucophylla</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT429	<i>Callitris glaucophylla</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT430	<i>Callitris glaucophylla</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT431	<i>Callitris glaucophylla</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT432	<i>Callitris glaucophylla</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT433	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT434	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT435	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT436	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT437	<i>Eucalyptus albens</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT438	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT439	<i>Eucalyptus blakelyi</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT440	<i>Eucalyptus blakelyi</i>	3	Y	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT441	<i>Eucalyptus albens</i>	3	N	PCT 282 Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion
PT442	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT443	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT444	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT445	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT446	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT447	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT448	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT449	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT450	<i>Callitris glaucophylla</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT451	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT452	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT453	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT454	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT455	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT456	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT457	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT458	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT459	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT460	<i>Eucalyptus blakelyi</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT461	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT462	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT463	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT464	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT465	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT466	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT467	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT468	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT469	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT470	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT471	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT472	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT473	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT474	<i>Callitris glaucophylla</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT475	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT476	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT477	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT478	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT479	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT480	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT481	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT482	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT483	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT484	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT485	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT486	<i>Eucalyptus melliodora</i>	2	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT487	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT488	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT489	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT490	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT491	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT492	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT493	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT494	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT495	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT496	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT497	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT498	<i>euc camaldulensis</i>	3	Y	PCT 9 River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion
PT499	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT500	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT501	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT502	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT503	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT504	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT505	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT506	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT507	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT508	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT509	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT510	<i>Eucalyptus blakelyi</i>	3	N	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT511	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT512	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT513	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT514	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT515	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT516	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT517	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT518	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT519	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT520	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT521	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT522	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT523	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT524	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT525	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT526	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT527	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT528	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT529	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT530	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT531	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT532	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT533	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT534	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT535	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT536	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT537	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT538	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT539	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT540	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT541	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT542	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT543	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT544	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT545	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT546	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT547	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT548	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT549	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT550	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT551	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT552	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT553	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT554	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT555	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT556	<i>Eucalyptus blakeyi</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT557	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT558	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT559	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT560	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT561	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT562	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT563	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT564	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT565	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT566	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT567	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT568	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakely's Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT569	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT570	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT571	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT572	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT573	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT574	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT575	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT576	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT577	<i>Eucalyptus blakelyi</i>	1	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT578	<i>Callitris glaucophylla</i>	2	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT579	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT580	<i>Callitris glaucophylla</i>	1	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT581	<i>Callitris glaucophylla</i>	1	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT582	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT583	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT584	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT585	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT586	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT587	<i>Eucalyptus albens</i>	2	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT588	<i>Eucalyptus melliodora</i>	2	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT589	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT590	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT591	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT592	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT593	<i>Eucalyptus albens</i>	2	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT594	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT595	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT596	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT597	<i>Eucalyptus blakelyi</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT598	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT599	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT600	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT601	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT602	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT603	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT604	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT605	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT606	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT607	<i>Eucalyptus melliodora</i>	3	H	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT608	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT609	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT610	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT611	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT612	<i>Eucalyptus melliodora</i>	3	Y	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT613	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT614	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT615	<i>Eucalyptus melliodora</i>	1	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT616	<i>Eucalyptus albens</i>	2	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT617	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT618	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT619	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT620	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT621	<i>Eucalyptus melliodora</i>	2	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT622	<i>Eucalyptus albens</i>	3	H	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT623	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT624	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT625	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PR626	<i>Eucalyptus melliodora</i>	3	N	PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PT627	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT628	<i>Eucalyptus albens</i>	3	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT629	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT630	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT631	<i>Eucalyptus albens</i>	3	Y	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion
PT632	<i>Eucalyptus albens</i>	1	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

REFERENCE ¹	SPECIES	CLASS	HOLLOWS ²	SURROUNDING PCT
PT633	<i>Eucalyptus albens</i>	2	N	PCT 346 White Box - Blakelys Red Gum - White Cypress Pine shrubby woodland on metamorphic hills in the Wagga Wagga - Cootamundra region of the NSW South Western Slopes Bioregion

(1) PT = Paddock Tree

(2) Y = Yes, N = No

ABOUT US

WSP is one of the world's leading engineering professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, planners, surveyors, environmental specialists, as well as other design, program and construction management professionals. We design lasting Property & Buildings, Transportation & Infrastructure, Resources (including Mining and Industry), Water, Power and Environmental solutions, as well as provide project delivery and strategic consulting services. With approximately 48,000 talented people globally, we engineer projects that will help societies grow for lifetimes to come.

