



NGH



Biodiversity Offset Report

Flyers Creek Wind Farm

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Acronyms and abbreviations

BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BBAI	Bird and Bat Impact Assessment
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BOM	Australian Bureau of Meteorology
CEEC	Critically Endangered Ecological Community
DBH	Diameter at Breast Height
DP&E	Department of Planning and Environment (NSW)
EEC	Endangered Ecological Community
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwth)</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
GHG	Greenhouse Gases
ha	hectares
HBT	Hollow-bearing Tree
km	kilometre
kv	kilovolt
LRET	Large-scale renewable energy target
m	M
MNES	Matters of National environmental significance under the EPBC Act (<i>c.f.</i>)
NSW	New South Wales
REAP	Regional Environmental Action Plan (NSW)
OEH	Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water (NSW)
PCT	Plant Community Type
SSD	State Significant Development
SEARS	Secretary's Environmental Assessment Requirements
SAIL	Serious and Irreversible Impact
SEPP	State Environmental Planning Policy (NSW)
sp/spp	Species/multiple species
TEC	Threatened Ecological Community

Executive Summary

Flyers Creek Wind Farm Pty Ltd (Flyers Creek Wind Farm) is planning for the construction and operation of the Flyers Creek Wind Farm (the Development, ~21 km south of Orange in Central West NSW). The proposed Development is classified as a State Significant Development (SSD) under the State and Regional Development State Environmental Planning Policy (SEPP). Approval for the construction and operation of the Flyers Creek Wind Farm was granted by the NSW Planning Assessment Commission on 14th March 2014.

The Project Approval (MP_08_0252) contained a number of conditions regulating biodiversity matters. This Biodiversity Offset Report addresses the Project Approval conditions D5 and D6: Biodiversity Offset Package and calculates the Biodiversity Offset Credit Liability in accordance with the Biodiversity Assessment Methodology 2017 under the NSW Biodiversity Offsets Scheme.

Comprehensive mapping and field surveys of the development site to determine Plant Community Types, Planted Vegetation and Scattered Paddock trees were completed in accordance with the requirements of the BAM 2017. 37 Vegetation Integrity Plots were undertaken throughout the site within the six plant community types detected within the development site. Four targeted survey periods over different seasons were undertaken to search for candidate threatened species.

Two species credit species, the Squirrel Glider (*Petaurus norfolcensis*) and Superb Parrot (*Polytelis Swainsona*) were observed within the development site during site surveys. Known records of Superb Parrot from prior surveys also occur within the development site.

Impacts to native vegetation and threatened species habitat have been avoided where possible through detailed site design and micro-siting, however some native vegetation was unable to be avoided.

31 ha of native vegetation in the form of low to moderate condition woodlands or derived grasslands would be removed by the development. The majority of the native vegetation to be impacted is degraded and fragmented through a long history of agricultural practices including vegetation clearing, pasture improvement and grazing.

For impacts unable to be avoided, the development site involves the removal of the following plant community types;

- Clearing of 0.52 ha of PCT 266 - *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion* in low condition and not requiring offsets.
- Clearing of 4.43 ha of PCT 268 - *White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion* generating 49 Ecosystem credits.
- Clearing of 22.97 ha of PCT 277 - *Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion* generating 339 Ecosystem credits,
- Clearing of 0.51 ha of PCT 278 - *Riparian Blakely's Red Gum – box – shrub -sedge-grass tall open forest of the central NSW South Western Slopes Bioregion* generating 22 Ecosystem credits,
- Clearing 0.17 ha of PCT 766 - *Carex Sedgeland of the slopes and tablelands of the semi-arid (warm) climate zone* generating 3 Ecosystem credits.

- Clearing 2.40 ha of PCT 1330 - *Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion* resulting in the generation of 76 Ecosystem credits.
- Clearing of 53 Paddock Trees likely derived from PCT 266, PCT 268 and PCT 277 resulting in the generation of an additional 53 Ecosystem credits.

11.15 ha of Squirrel Glider Habitat in the form of moderate condition woodland would be impacted by the proposal generating 194 Species Credits for the Squirrel Glider. 23.00 ha of moderate condition woodland representing Superb Parrot habitat would be impacted resulting in the generation of 348 Species Credits.

Prescribed impacts and indirect impacts have been assessed. Impacts could occur to the habitat connectivity for the Squirrel Glider and a Squirrel Glider Management Plan will be implemented. Other prescribed impacts and indirect impacts are considered to be minor in nature and no biodiversity offsets are considered necessary.

As set out in Condition D6 of the Project Approval, the retirement of the credits generated must be carried out within two years of the commencement of construction in accordance with the NSW Biodiversity Offsets Scheme.

1. Introduction

Flyers Creek Wind Farm Pty Ltd (Flyers Creek Wind Farm) is planning for the construction and operation of the Flyers Creek Wind Farm (the Development), ~ 21 km south of Orange in Central West NSW. The Development is classified as a State Significant Development (SSD) under the State and Regional Development State Environmental Planning Policy (SEPP). Approval for the construction and operation of the Flyers Creek Wind Farm was granted by the NSW Planning Assessment Commission on 14th March 2014.

The Project Approval (MP_08_0252) contained a number of conditions regulating biodiversity matters (Appendix A). This Biodiversity Offset Report addresses Project Approval conditions D5 and D6: Biodiversity Offset Package as stated below:

D5 - Prior to the commencement of construction, the proponent must:

- a. Update the baseline mapping of the vegetation and key habitat within the final disturbance area, and*
- b. Calculate the biodiversity offset credit liability in accordance with the Biodiversity Assessment Methodology under the NSW Biodiversity Offsets Scheme, in consultation with OEHL and to the satisfaction of the Secretary.*

D6 - Within two years of the commencement of construction, the proponent must retire the required biodiversity credits to the satisfaction of OEHL. The retirement of the credits must be carried out in accordance with the NSW Biodiversity Offsets Policy for Major Projects.

Reference should also be made to the Secretary's agreement of 13th August 2021 where::

The planning secretary agrees that;

- a. no more than 28.1 hectares of Critically EEC may be cleared for the project*
- b. no more than 189 hollow bearing trees may be removed for the project*

The Biodiversity Conservation Service (BCS) provided feedback on the reporting structure for the Biodiversity Offset Package on the 21st of June 2021 (DOC21/497289) (Appendix A). This Offset Report has been prepared in consideration of this feedback. BCS provided feedback on this Offset Report on October 5, 2021. The updates in this report (Version 1.1) address BCS's feedback.

This Biodiversity Offset Report follows the Biodiversity Assessment Methodology (BAM) 2017 using the 12-month transitional arrangements allowed for SSD in accordance with Clause 6.31 of the Biodiversity Conservation Regulation 2017. The BAM provides the methodology for the credit offset requirements under the NSW Biodiversity Offsets Scheme (BOS).

1.1 The Development

The development includes the construction and operation of a wind farm consisting of 38 wind turbines and associated infrastructure ~21km south of Orange in Central West New South Wales. The development occurs between the townships of Carcoar and Cadia.

Key features of the development include but are not limited to installation and construction of;

- 38 wind turbines;
- access tracks and local road infrastructure upgrades;
- Substation and O&M facility;

- Turbine hard stands;
- Met masts; and,
- electrical connections between the turbines (underground cable and above and below ground powerlines); and.
- an on-site substation (inclusive of switch room, control room and auxiliary services building).

A 132 kilovolt transmission line and switching station to connect the Development from the substation to the grid network also forms part of the Development. Biodiversity Offsets associated with this transmission line and switching station have been assessed in a separate report – (Flyers Creek Wind Farm Transmission Line BDAR – Minor Modification 5, NGH 2021).

The following terms are used in this document in accordance with the BAM:

- **Development footprint** – The area of land that is directly impacted by the development. This includes all infrastructure listed in Table 1. The development footprint is approximately 182 ha.
- **Development site** – The development site is a 100 to 250 m wide corridor, within which, and following detailed design, the development footprint will be sited together with areas of land that are subject to potential direct and indirect impacts from the development. This equates to approximately 817 ha and is the study area for this Report.
- **Subject land** – The combined areas of the development site and development footprint, and an area where the BAM has been applied.
- **Locality** - The buffer area defined as all land within 1500m of the outside edge of the boundary of the development site.

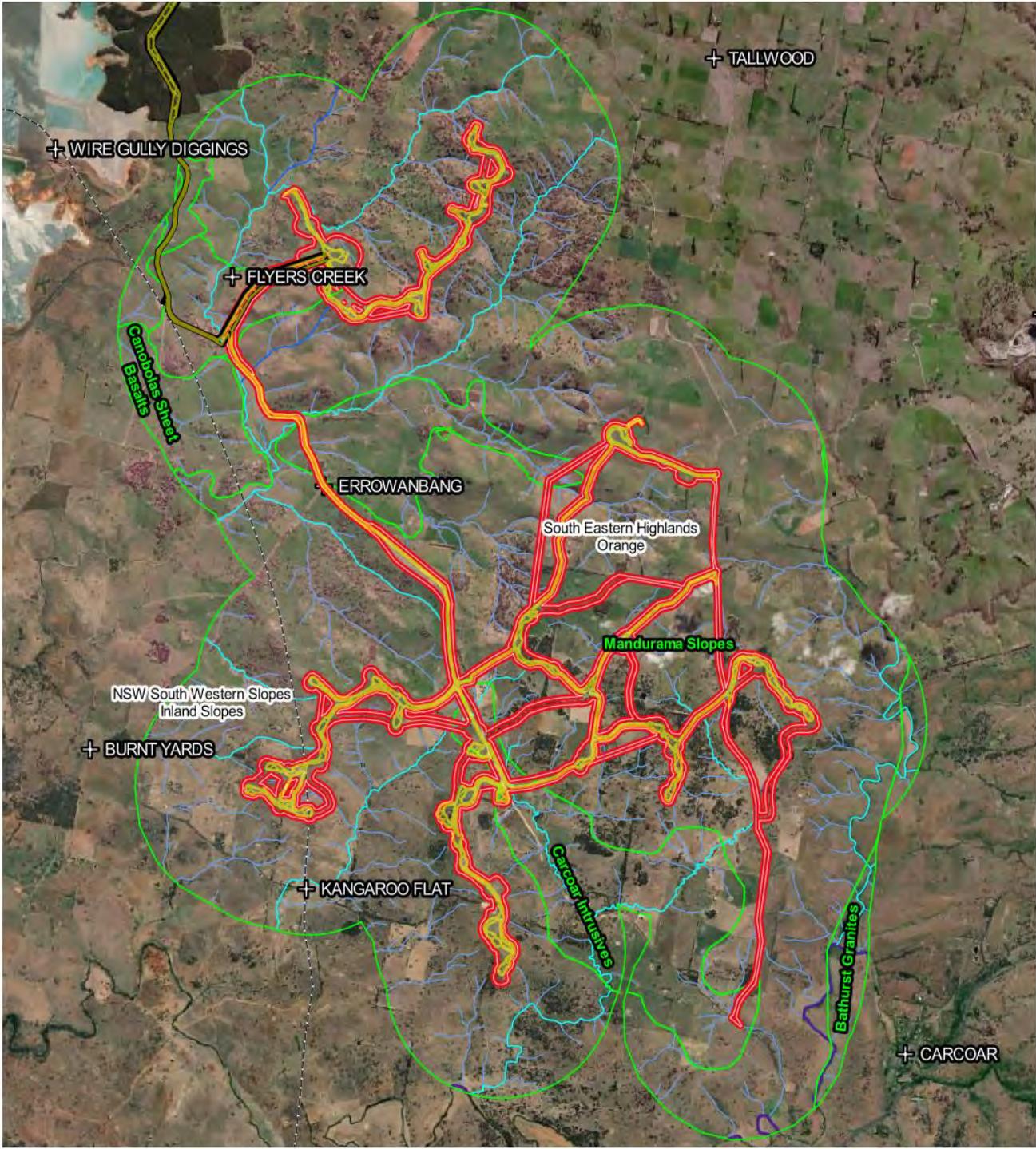
1.2 The Development Site

1.2.1 Site Location

The locality of the development site is described as the area of Flyers Creek, around 25 km south of Orange and around 10 km south west of Millthorpe, within the Blayney Shire Local Government Area. (Figure 1-1). The Development Site occurs within the following lots;

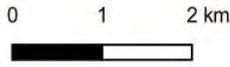
Lot number	Plan label
66, 72, 78, 83, 201, 202, 206, 208	DP750359
8, 52, 53, 62, 63, 67, 75, 94, 95, 96, 161, 162, 163, 180, 181	DP750358
533	DP749105
6	DP550053
1	DP396680
841	DP1130733
1	DP1089162
3	DP1089147
421	DP1084679
1	DP1079963
425, 427	DP1067009
5, 6	DP1031238
7002	DP1019823

The Development Site also includes sections of the Blayney Shire Council Road reserves on Halls Road, Errowanbang Road and Gap Road.



18-558 Flyers Creek Wind Farm Offset Report
 Site Map

- Legend**
- Development Site
 - Transmission Line
 - Development Footprint
 - IBRA:Subregion
 - Mitchell Landscape
 - + Placepoint
 - Watercourses
 - CREEK
 - GULLY
 - RIVER



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 Date created: 16.09.2021
 Datum: GDA94 / MGA zone 55



Figure 1-1 Location of the Development

1.2.2 Site Description

The Development site occurs within the rolling hills of the South Eastern Highlands and the South Western Slopes. The majority of the development occurs in private property (Zoned RU1) which has been historically cleared of native vegetation and cultivated for improved pasture and forage cropping. Agriculture is the dominant land use in the area with livestock grazing occurring on a regular basis.

Scattered trees of Yellow Box (*Eucalyptus melliodora*), Blakely's Red Gum (*Eucalyptus blakeyi*), long leaved box (*Eucalyptus goniocalyx*) and Red Stringy Bark (*Eucalyptus macrorhyncha*) remain within the paddocks as isolated paddock trees or small patches on hilltops. The groundcover is predominantly exotic through pasture improvement practices. Disturbance tolerant native grasses persist in low condition in some areas (Figure 1-2).

Larger patches of remnant vegetation occur to the south-west of the development site with relatively intact connectivity to vegetation along Halls Road and Gap Road. Dominant vegetation includes Blakely's Red gum (*E. Blakeyi*), Yellow Box (*E melliodora*), Candle Bark (*Eucalyptus rubida*) Broad leaved peppermint (*Eucalyptus Dives*). Some scattered patches of White box (*Eucalyptus albens*) woodland occur to the south west.



Figure 1-2 Largely cleared development site with scattered paddock trees a common feature.



Figure 1-3 larger stands of vegetation in the south-west of the development site

1.3 Identification of assessment method

The development conforms to the definition of a site-based development under the BAM 2017 and this has been used for determining offsets for the Development. Scattered paddock trees have been assessed using the streamlined assessment module (Paddock tree assessment) and incorporated within this Offset Report (0).

1.4 Study Aims

This Biodiversity Offset Package Report has been prepared by NGH on behalf of the Proponent (Flyers Creek Wind Farm Pty Ltd) to satisfy the requirements of the Flyers Creek Wind Farm Project Approval Conditions D5 and D6: Biodiversity Offset Package.

This report has been prepared by an accredited BAM assessor to determine the Biodiversity Credit Offset liability for the development, defined by the NSW Biodiversity Offsets Scheme (BOS) and Biodiversity Assessment Method 2017 (BAM), as set out under the *Biodiversity Conservation Act 2016* (BC Act).

2. Landscape Features

2.1 Site context components

A landscape assessment was completed for the development. The landscape assessment was completed in accordance with Section 4.2 of the BAM. The landscape assessment was carried out within the 1500m buffer around the development site. The 1500m buffer area is around 11,134 ha in area.

2.2 IBRA Bioregions and subregions

The landscape occurs within the New South Wales South West Slopes (Inland Slopes) and South East Highlands (Orange) IBRA Bioregions. The majority of the 1500m landscape occurs within the South East Highlands IBRA Bioregion and Orange Subregion and this was entered into the BAM Calculator (BAM-C) for the Biodiversity Offsets.

2.3 Native Vegetation

An assessment of native vegetation in the 1500 m buffer area was undertaken using aerial imagery, Central Tablelands State Vegetation Mapping VIS 4778 (DPIE,2017), NSW Woody Vegetation layer (DPIE, 2015) and field assessments. Approximately 23.11% (2,572.82 ha) of native vegetation occurs in the surrounding 1500 m buffer area. The total buffer area is 11,134.67 ha (Figure 2-3).

The vegetation, in the landscape surrounding the development site is predominantly open woodland comprised of Blakely’s Red Gum (*Eucalyptus blakelyi*), Yellow Box (*Eucalyptus melliodora*) and White Box (*Eucalyptus albens*). Some small areas of Apple Box (*Eucalyptus bridgesiana*), Ribbon Gum (*Eucalyptus viminalis*), Snow Gum (*Eucalyptus pauciflora*) and River Oak (*Casuarina cunninghamiana*) are also present.

Derived grasslands of the NSW South Western Slopes and South East Highlands are also mapped as occurring within the landscape.

2.4 NSW landscapes (Mitchell Landscapes)

An assessment of available data (NSW (Mitchell) Landscapes – V 3.1) (DPIE, 2017) found the 1500m landscape area supports four NSW Landscapes (Mitchell landscapes). These are detailed below in Table 2-1. The *Mandurama Slopes* Mitchell Landscape is the most dominant within the Development site and this was entered into the BAM-C.

Table 2-1: NSW (Mitchell) Landscapes

Mitchell Landscape	Corresponding Ecosystem Meso grouping	Extent (ha)	% in 1500m area
Bathurst Granites	South East Highlands Northern Granites	168.12	1.5%

Canobolas Sheet Basalts	South East Highlands Canobolas	290.26	2.6%
Carcoar Intrusives	South East Highlands Orange	1321.89	11.8%
Mandurama Slopes	South East Highlands Orange	9354.34	84.0%

2.5 Cleared Areas

An assessment of cleared areas in the 1500 m buffer area was undertaken using aerial imagery, State Vegetation Mapping (DPIE, 2017), NSW Landuse Mapping (DPIE, 2020)) and field assessments. Approximately 76.9% (8561.8 ha) of the 1500m buffer area comprises cleared vegetation, predominantly cropping, modified pastures and occasional roads and residences.

The methodology used to determine exotic and non-native areas in the development site included a combination of photographs, floristic plots and interpretation of aerial imagery. A Land Category Assessment was completed and is summarised in Section 3.1.



Figure 2-1 Example of cleared areas in the development site.

2.6 River and Streams

Hydrological features include named and unnamed watercourse and farm dams. Sixteen named watercourses occur within the 1500m landscape. These are detailed below in Table 2-2.

Table 2-2: Named watercourses within 1500m area

Named Watercourse	Strahler Stream Order	Detail
Belubula River	6	Perennial
Burnt Yards Creek	2	Non-Perennial
Coldwater Creek	3	Non-Perennial
Cheesemans Creek	1	Non-Perennial
Cowigra Creek	5	Perennial
Dirt Hole Creek	4	Non-Perennial
Dirty Creek	3	Non-Perennial
Flyers Creek	6	Perennial
Gooleys Creek	3	Non-Perennial
Kangaroo Flat Creek	2	Non-Perennial
Mackenzies Waterholes Creek	4	Non-Perennial
Slatterys Creek	4	Perennial
Tommy Taylors Creek	1	Non-Perennial
Jarvis Gully	2	Non-Perennial
Soda Gully	1	Non-Perennial
Wire Gully	1	Non-Perennial



Figure 2-2 Dirty Creek in the development site

2.7 Wetlands

Two very small area of mapped wetland occur within the 1500m landscape area. These are both detailed as 'reservoirs' and are utilised as farm dams. Around 28 ha of 'hydroarea' is mapped within the 1500m area, these areas are comprised predominantly of farm dams. The nearest mapped wetland areas occur over 2km from the development site. Mapped Reservoir wetland within the 1500m area encompass a combined area of around 2.8ha.

2.8 Connectivity Features

Although over 80% of the 1500m area is mapped as cleared woodland connectivity is present. Scattered, planted and remnant woodland trees within the landscape creates both contiguous and continuous connectivity. Within a broader context, the 1500m area forms part of landscape connectivity between key areas of remnant native vegetation including the Mount Canobolas State Conservation Area, Glenwood State Forest and Canobolas State Forest in the north and Mount Macquarie State Forest, Neville State Forest, Roseberg State Forest, Pennsylvania State Forest and Copperhannia Nature Reserve in the south.

Watercourse and hydro-areas within the 1500m also form part of landscape connectivity to features in the broader landscape such as Carcoar Lake in the south-east.

Habitat features within the 1500m area also include ridgelines and rocky areas. A diverse structure of habitat is present within the 1500m area. This is not unexpected given the size and location of

the development site. The connectivity of features present within the 1500m and development site are likely to facilitate the movement of threatened fauna species. Features within the landscape may also facilitate connectivity of threatened entities such as threatened flora and ecological communities.

An assessment of the East Asian – Australasian Flyway Partnership registered flyway sites found no registered flyway sites within the 1500m area (EAAFP, 2021).

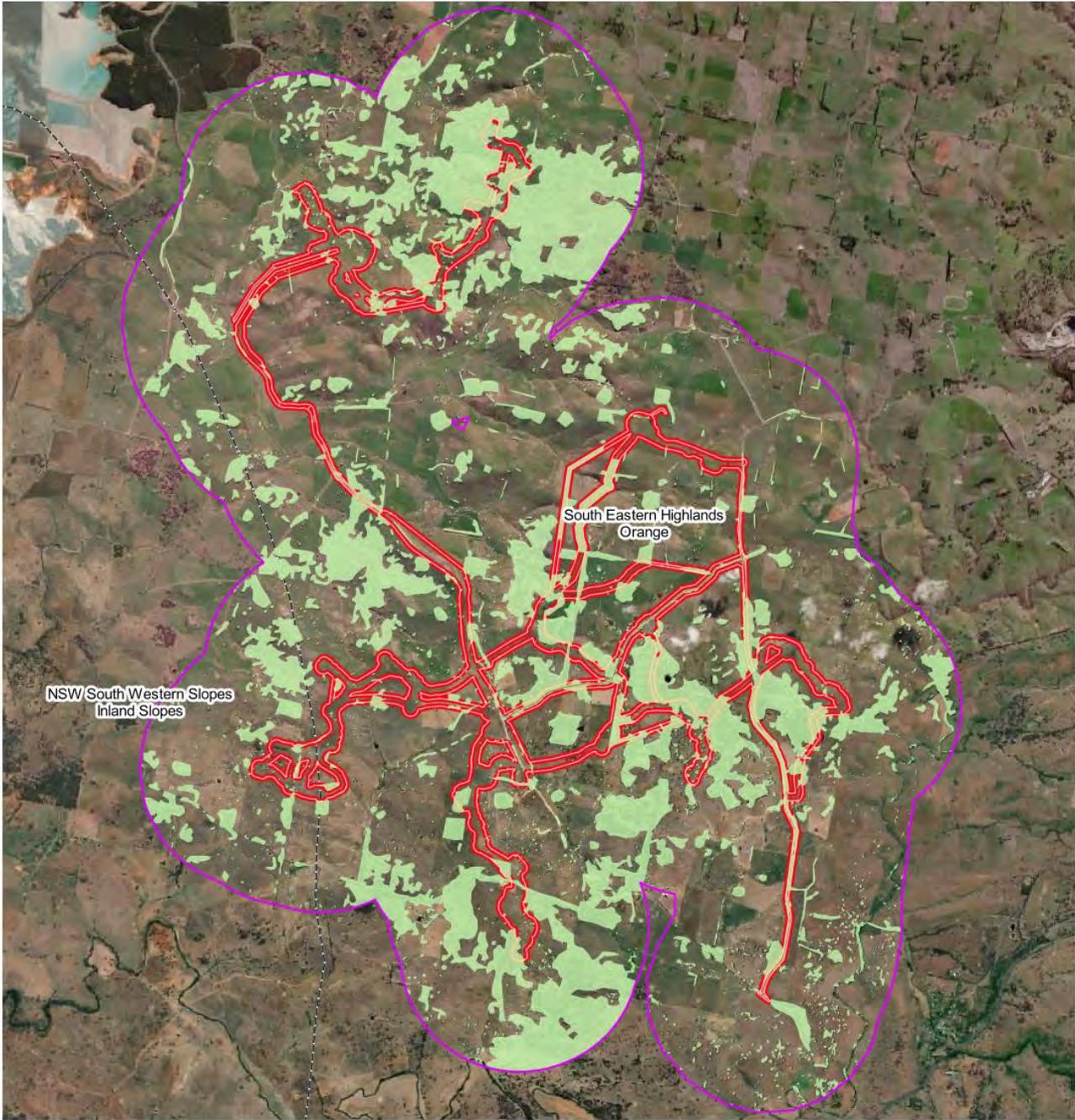
2.9 Areas of Geological Significance

A search of the Geological Sites of NSW (Cartoscope, 2021) found no major geological sites within the landscape. The nearest geological site (Canowindra, NSW) is around 40km from the 1500m area.

The landscape is mapped as Ordovician sedimentary & volcanic rock and Ordovician silicic-intermediate Intrusives (Geological Survey of NSW, 2021).

2.10 Areas of Outstanding Biodiversity Value

No areas of Outstanding Biodiversity Value occur within the locality.



18-558 Flyers Creek Wind Farm Offset Report
Native Vegetation Extent

- Legend**
- Development Site
 - 1500m Buffer Development Site
 - Native Vegetation Extent
 - IBRA: Subregion



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Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps 1 Native Vegetation Extent
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 Datum: GDA94 / MGA zone 55



Figure 2-3 Native vegetation extent with landscape

3. Native Vegetation

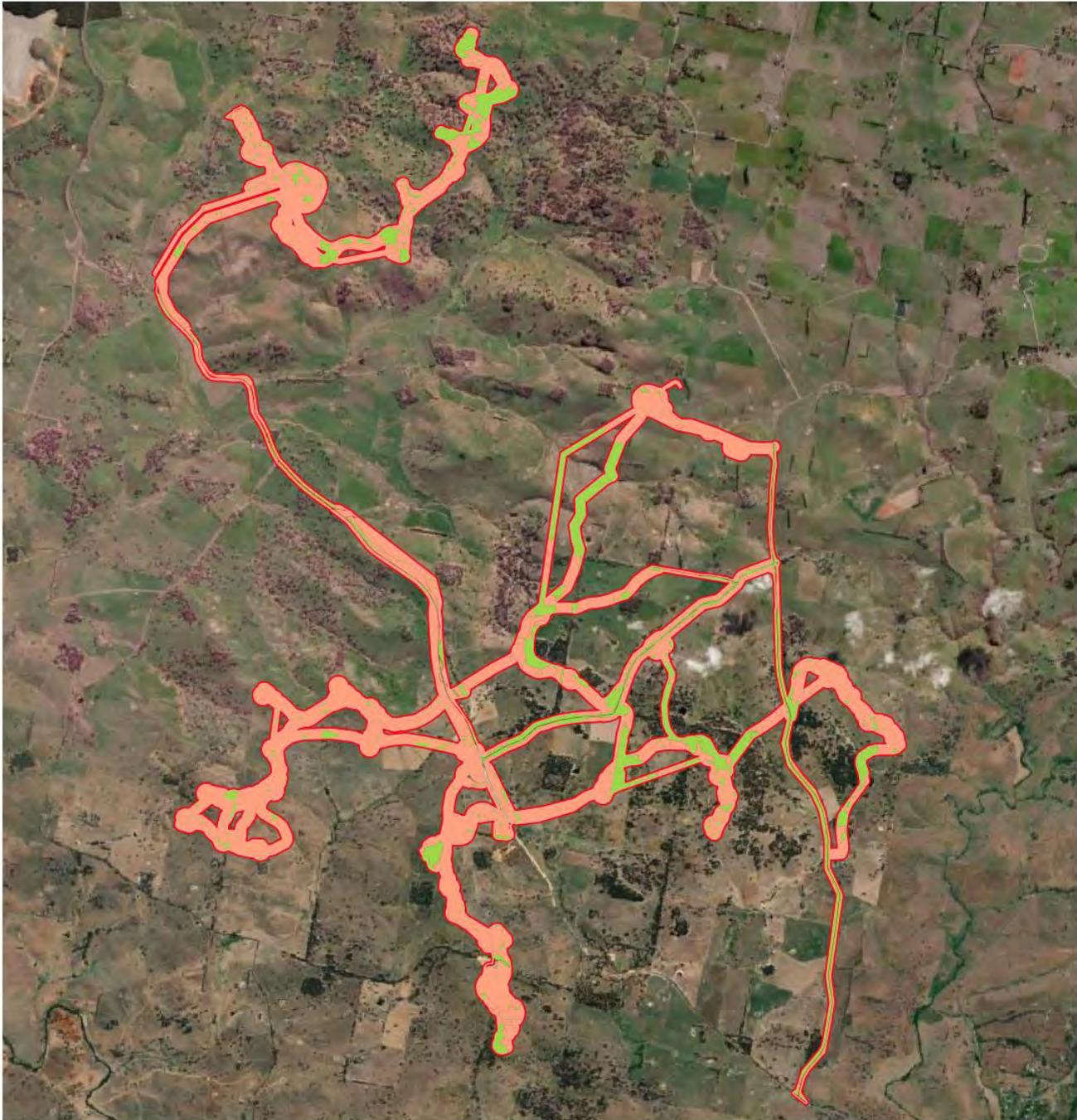
3.1 Land Category Assessment

A land category assessment was undertaken by NGH (Appendix B). Areas of extensive and continued agricultural use were deemed highly modified and determined to be Category 1-Exempt Land. Category 1-Exempt land is defined by the Local Land Service Act 2013 (LLS Act) as land that is

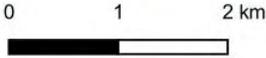
- Land cleared of native vegetation as at 1 January 1990 or lawfully cleared after 1 January 1990,
- Low Conservation Grasslands (following commencement of the new framework on 25th August 2017),
- Land (not being grasslands) containing only low conservation groundcover (following commencement of the new framework on 25th August 2017),
- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003 or
- Land biodiversity certified under the BC Act.

Assessment of Biodiversity Values on Category 1-Exempt Land is not required under the BAM 2017 and assessment of direct impacts, including clearing of vegetation and loss of habitat on these areas has been excluded. Additional prescribed impacts have still been addressed on Category 1-Exempt Land (Section 5.1).

175.62 ha of native vegetation occurs in the development site is provided in Figure 3-1 below



18-558 Flyers Creek Wind Farm Offset Report
Native Vegetation Development Site



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- Legend**
-  Development Site
 - Vegetation
 -  Exotic
 -  Native

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Date created: 16.09.2021
Datum: GDA94 / MGA zone 55



NGH

Figure 3-1 Native vegetation in the development site

3.2 Plant Community Types (PCTs)

3.2.1 Methods to assess PCTs

A site assessment was completed to determine PCTs present in the development site and is detailed below.

3.2.2 PCTs identified on the development site

Based on the field surveys six PCTs occur within the development site as shown in Figure 3-11 to Figure 3-16 including:

- PCT 277 – Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.
- PCT 266 - White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.
- PCT 268 - White Box - Blakely's Red Gum - Long-leaved Box - Norton's Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion.
- PCT 278 – Riparian Blakely's Red Gum – box – shrub – sedge – grass tall open forest of the central NSW South Western Slopes Bioregion.
- PCT 766 – Carex Sedgeland of the slopes and tablelands
- PCT 1330 - Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion.

A description of each of the PCTs identified in the development site follow in Table 3 1 below which includes justification of PCT selection.

Table 3-1 PCT 266

<i>PCT 266 - White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.</i>		
<i>Vegetation formation</i>	Grassy Woodlands	
<i>Vegetation class</i>	Western Slopes Grassy Woodlands	
<i>Vegetation type</i>	PCT ID	266
	Common Community Name	White Box grassy woodland
<i>Condition zones in development site</i>	This community occurs as one zones: 266_Low condition	

Approximate extent within the development site	2.66 ha of PCT 266_low condition occurs in the development site.	
Species relied upon for PCT identification	Species name	Relative abundance
	<i>Eucalyptus albens</i> – White Box	Remnant canopy tree present. Dominated by White Box.
	<i>Rytidosperma sp.</i> - Wallaby Grass	<1%
	<i>Rumex brownii</i> – Swamp Dock	<1%
Justification of evidence used to identify the PCT	<p>PCT 266 was identified as occurring onsite by:</p> <ul style="list-style-type: none"> • using State Vegetation Mapping, • occurring within the correct IBRA subregion, • Dominance of <i>Eucalyptus albens</i> in the canopy • topographical locations, and <p>The understory was highly disturbed from grazing with a low native plant cover across the entirety of this PCT. Dominant weeds included: Paterson’s Curse (<i>*Echium plantagineum</i>), Saffron Thistle (<i>*Carthamus lanatus</i>), Barley Grass (<i>*Hordeum sp.</i>), Ryegrass (<i>Lolium sp.</i>) and Medic (<i>Medicago sp.</i>).</p> <p>Based on these conclusions PCT 266 was selected as the most appropriate PCT.</p>	
TEC Status	<p>This PCT forms part of the BC Act listed <i>White Box - Yellow Box - Blakely’s Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions</i>, referred to from this point onwards as ‘Box-Gum Woodland’. This TEC is listed as Critically Endangered under the BC Act.</p> <p>This PCT, due to the presence of an exotic dominated understory (more than 50%) does not meet the condition thresholds for the EPBC Act equivalent of this TEC (DEH, undated).</p>	
Estimate of percent cleared in NSW	94%	

Examples



Figure 3-2 PCT 266 Woodland

PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

Vegetation formation	Grassy Woodlands	
Vegetation class	Western Slopes Grassy Woodlands	
Vegetation type	PCT ID	277
	Common Community Name	Blakely's Red Gum - Yellow Box grassy tall woodland
Approximate extent within the development site	82.43 ha as moderate condition woodland	
	27.75 ha as a derived native grassland	
	1.20 ha as planted vegetation best representing this community	
Species relied upon for PCT identification	Species name	Relative abundance
	Yellow Box – <i>Eucalyptus melliodora</i>	Dominant canopy species
	Blakely's Red Gum– <i>Eucalyptus blakelyi</i>	
	Long-leaved Box– <i>Eucalyptus goniocalyx</i>	
<i>Oxalis perennans</i>	<1%	

	<i>Rytidosperma spp.</i>	0-10%
	<i>Lomandra multiflora</i>	<1%
	<i>Hydrocotyle laxiflora</i>	<1%
	<i>Desmodium varians</i>	<1%
	<i>Geranium solanderi</i>	<1%
	<i>Rumex brownii</i>	<1%

Justification of evidence used to identify the PCT

PCT 277 was identified as occurring onsite by:

- using existing State Vegetation Mapping,
- occurring within the correct IBRA subregion,
- topographical locations of undulating slopes
- presence of remnant canopy species of *Eucalyptus melliodora* and *Eucalyptus blakelyi*
- Several remnant native groundcover species observed in this PCT were consistent with the species common to this PCT

Based on these conclusions PCT 277 was selected as the most appropriate PCT.

TEC Status

Sections of this PCT in moderate to good condition forms part of the **BC Act** listed *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*. This TEC is listed as Critically Endangered under the BC Act.

Sections of this PCT in moderate condition met the condition thresholds for the **EPBC Act** equivalent of this TEC.

Estimate of percent cleared in NSW

94%

Examples



Figure 3-3 PCT 277 Woodland



Figure 3-4 PCT 277 Derived Grassland

PCT 268 - White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.

Vegetation formation	Grassy Woodlands	
Vegetation class	Western Slopes Grassy Woodlands	
Vegetation type	PCT ID	268
	Common Community Name	White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland.
Condition zones in development site	This community occurs as two zones: <ul style="list-style-type: none"> • Remnant woodland • Derived grassland community 	
Approximate extent within the development site	20.99 ha of PCT 268 woodland	
	6.86 ha of PCT 268 derived grassland community	
Species relied upon for PCT identification	Species name	Relative abundance

	<p><i>Eucalyptus blakelyi</i>– Blakely’s Red Gum <i>Eucalyptus melliodora</i> – Yellow Box <i>Eucalyptus gonicalyx</i> – Long-leaf Box <i>Eucalyptus macrorhyncha</i> – Red Stringybark</p>	<p>Remnant canopy trees present. Dominated by <i>E. Blakelyi/ E. melliodora</i></p>
	<i>Hibbertia obtusifolia</i>	0-10%
	<i>Bothriochloa macra</i>	<1%
	<i>Oxalis perennans</i>	<1%
	<i>Lomandra filiformis</i>	<1%
	<i>Rytidosperma auriculatum</i>	0-10%
	<i>Bulbine bulbosa</i>	<1%
	<i>Lomandra multiflora</i>	<1%
Justification of evidence used to identify the PCT	<p>PCT 268 was identified as occurring onsite by:</p> <ul style="list-style-type: none"> • using State Vegetation Mapping, • occurring within the correct IBRA subregion, • Dominance of <i>Eucalyptus blakelyi</i>, <i>E. gonicalyx</i> and <i>E. macrorhyncha</i> in the canopy. • topographical locations on undulating landscapes. • Native groundcover and shrub species observed in this PCT were consistent with the species common to this PCT. <p>Based on these conclusions PCT 268 was selected as the most appropriate PCT.</p>	
TEC Status	<p>Sections of this PCT in moderate condition forms part of the BC Act listed <i>White Box - Yellow Box - Blakely’s Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions</i>, referred to from this point onwards as ‘Box-Gum Woodland’. This TEC is listed as Critically Endangered under the BC Act.</p> <p>Sections of this PCT in moderate condition met the condition thresholds for the EPBC Act equivalent of this TEC.</p>	
Estimate of percent cleared in NSW	63%	

Examples



Figure 3-5 PCT 268 Woodland



Figure 3-6 PCT 268_Derived Grasslands

PCT 278 – Riparian Blakely’s Red Gum – box – shrub – sedge – grass tall open forest of the central NSW South Western Slopes Bioregion

Vegetation formation	Grassy Woodlands
Vegetation class	Western Slopes Grassy Woodlands
PCT ID	278

Vegetation type	Common Community Name	Riparian Blakely's Red Gum tall open forest
Condition zones in development site	This community occurs as two zones: <ul style="list-style-type: none"> • Remnant woodland in low condition • Remnant woodland in moderate condition 	
Approximate extent within the development site	0.41 ha in low condition 2.00 ha in moderate condition	
Species relied upon for PCT identification	Species name	Relative abundance
	<i>Eucalyptus blakelyi</i> – Blakely's Red Gum	Remnant canopy trees present.
	<i>Microlaena stipoides</i>	0-20%
	<i>Juncus usitatus</i>	0-10%
	<i>Carex appressa</i>	0-10%
	<i>Dichondra repens</i>	<1%
	<i>Eleocharis acuta</i>	<1%
	<i>Rumex brownii</i>	<1%
	<i>Hydrocotyle laxiflora</i>	<1%
	<i>Poa sieberiana</i>	<1%
	<i>Carex inversa</i>	<1%
Justification evidence used to identify the PCT	of PCT 278 was identified as occurring onsite by: <ul style="list-style-type: none"> • using State Vegetation Mapping, • occurring within the correct IBRA subregion, • topographical locations in gullies and creek flats • dominance of <i>Eucalyptus blakelyi</i> in the canopy • Native groundcover and shrub species observed in this PCT were consistent with the species common to this PCT Based on these conclusions PCT 278 was selected as the most appropriate PCT.	
TEC Status	This PCT forms part of the BC Act listed <i>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern</i>	

Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions, referred to from this point onwards as 'Box-Gum Woodland'. This TEC is listed as Critically Endangered under the BC Act.

Sections of this PCT in moderate condition met the condition thresholds for the **EPBC Act** equivalent of this TEC.

Estimate of percent cleared in NSW 94%

Examples



Figure 3-7 PCT 278 Woodland

PCT 766 – Carex sedgeland of the slopes and tablelands

Vegetation formation	Freshwater wetlands	
Vegetation class	Montane Bogs and Ferns	
Vegetation type	PCT ID	766
	Common Community Name	Carex sedgeland of the slopes and tablelands.
Approximate extent within the development site	This PCT occurs as one condition zone. 2.85 ha of PCT 766 occurs within the development site along ephemeral drainage lines.	

Species relied upon for PCT identification	Species name	Relative abundance
	Tall Sedge – <i>Carex appressa</i>	45% in drainage line
	Couch – <i>Cynodon dactylon</i>	40% in drainage line
	<i>Juncus sp.</i>	<1%
	Swamp Dock – <i>Rumex brownii</i>	<1%
	Kidney Weed – <i>Dichondra repens</i>	<1%
	<i>Geranium molle</i>	<1%
Justification of evidence used to identify the PCT	<p>PCT 766 was identified as occurring onsite by:</p> <ul style="list-style-type: none"> • Its location along drainage lines • Dominance of <i>Carex appressa</i> • Lack of overstory vegetation • occurring within the correct IBRA subregion, <p>Based on these conclusions PCT 766 was selected as the most appropriate PCT.</p>	
TEC Status	This vegetation community does not form part of a TEC.	
Estimate of percent cleared in NSW	94%	

Examples



Figure 3-8 PCT 766

PCT 1330 - Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion.

Vegetation formation	Grassy Woodlands	
Vegetation class	Southern Tableland Grassy Woodlands	
Vegetation type	PCT ID	1330
	Common Community Name	Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion.
Condition zones in development site	This community occurs as three zones: <ul style="list-style-type: none"> • Remnant woodland in Low Condition, • Remnant woodland in Moderate Condition • Derived grassland community 	
Approximate extent within the development site	4.18 ha of PCT 1330 in low condition occurs within the development site.	
Species relied upon for PCT identification	Species name	Relative abundance

<i>Eucalyptus rubida</i> – Candle Bark	Remnant canopy trees present.
<i>Eucalyptus melliodora</i> – Yellow Box	
<i>Eucalyptus blakelyi</i> – Blakely’s Red Gum	
<i>Eucalyptus bridgesiana</i> – Apple Box	
<i>Eucalyptus viminalis</i> – Ribbon gum	
<i>Eucalyptus dives</i> – Broad leaved peppermint	
<i>Microlaena stipoides</i> – Weeping Meadow grass	0-10%
<i>Bothriochloa macra</i> – Red Grass	0-10%
<i>Austrostipa scabra</i> - Spear grass	0-10%
<i>Oxalis perennans</i> - Oxalis	< 1%
<i>Rytidosperma sp.</i> - Wallaby Grass	0-10%
<i>Themeda triandra</i> – Kangaroo Grass	0-10%
<i>Rumex brownii</i> – Swamp Dock	< 1%

Justification of evidence used to identify the PCT

PCT 1330 was identified as occurring onsite by:

- using State Vegetation Mapping,
- occurring within the correct IBRA subregion,
- Dominance of *Eucalyptus blakelyi*, *Eucalyptus melliodora* and *Eucalyptus bridgesiana* in the canopy. The presence of
- topographical locations on undulating terrain.
- Remnant understory grasses consistent with understory species for this PCT.

The derived grassland occurs along roadside as a result of previous clearing. The zone contains a disturbed understory and regenerating canopy however *Acacia dealbata* has regenerated as a dominant species.

Based on these conclusions PCT 1330 was selected as the most appropriate PCT.

TEC Status

Parts of this PCT forms part of the **BC Act** listed *White Box - Yellow Box - Blakely’s Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*, referred to from this point onwards as ‘Box-Gum Woodland’. This TEC is listed as Critically Endangered under the BC Act.

Some moderate condition remnants meet the condition thresholds for the **EPBC Act** equivalent of this TEC.

Estimate of percent cleared in NSW

94%

Examples



Figure 3-9 PCT 1330 Derived Grassland -Acacia colonising



Figure 3-10 PCT 1330_Woodland

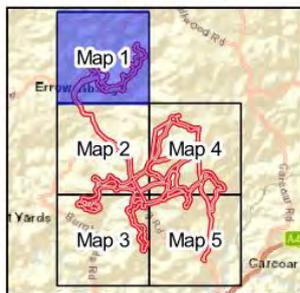


18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 1

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | Plant Community Type (PCT) |
| Development Footprint | 1330 Yellow Box - Blakley's Red Gum |
| Vegetation Integrity Plot | 266 White Box |
| Paddock Tree | 268 white Box - Blakley's Red Gum |
| Box-Gum Woodland CEEC | 277 Blakley's Red Gum - Yellow Box |
| | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 0.4 0.8 km



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Datum: GDA94 / MGA zone 55



Figure 3-11 Plant community types in the development site (map 1)

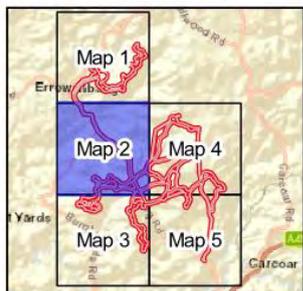


18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 2

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | Plant Community Type (PCT) |
| Development Footprint | 1330 Yellow Box - Blakley's Red Gum |
| Vegetation Integrity Plot | 266 White Box |
| Paddock Tree | 268 white Box - Blakley's Red Gum |
| Box-Gum Woodland CEEC | 277 Blakley's Red Gum - Yellow Box |
| | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 0.4 0.8 km



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Figure 3-12 Plant community types in the development site (map 2)

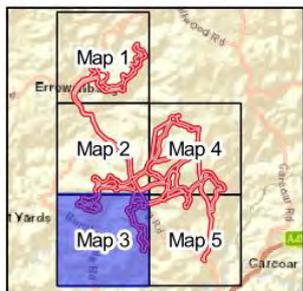


18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 3

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | Plant Community Type (PCT) |
| Development Footprint | 1330 Yellow Box - Blakley's Red Gum |
| Vegetation Integrity Plot | 266 White Box |
| Paddock Tree | 268 white Box - Blakley's Red Gum |
| Box-Gum Woodland CEEC | 277 Blakley's Red Gum - Yellow Box |
| | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 0.4 0.8 km



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Figure 3-13 Plant community types in the development site (map 3)

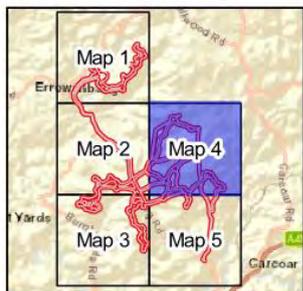


18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 4

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | Plant Community Type (PCT) |
| Development Footprint | 1330 Yellow Box - Blakley's Red Gum |
| Vegetation Integrity Plot | 266 White Box |
| Paddock Tree | 268 white Box - Blakley's Red Gum |
| Box-Gum Woodland CEEC | 277 Blakley's Red Gum - Yellow Box |
| | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 0.4 0.8 km



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Figure 3-14 Plant community types in the development site (map 4)



18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 5

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | 1330 Yellow Box - Blakley's Red Gum |
| Development Footprint | 266 White Box |
| Vegetation Integrity Plot | 268 white Box - Blakley's Red Gum |
| Paddock Tree | 277 Blakley's Red Gum - Yellow Box |
| Box-Gum Woodland CEEC | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 0.4 0.8 km



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Figure 3-15 Plant community types in the development site (map 5)

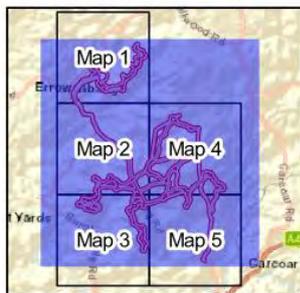


18-558 Flyers Creek Wind Farm Offset Report
PCTs and TECs Development Site Map 6

Legend

- | | |
|---------------------------|-------------------------------------|
| Development Site | Plant Community Type (PCT) |
| Development Footprint | 1330 Yellow Box - Blakley's Red Gum |
| Vegetation Integrity Plot | 266 White Box |
| Paddock Tree | 268 white Box - Blakley's Red Gum |
| Box-Gum Woodland CEEC | 277 Blakley's Red Gum - Yellow Box |
| | 278 Riparian Blakley's Red Gum |
| | 766 Carex Sedgeland |
| | 0 Exotic |

0 1 2 km



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Figure 3-16 Plant community types in the development site (map 6)

3.3 Vegetation Integrity Assessment

3.3.1 Vegetation zones and survey effort

Six PCTs were identified in the development site. Each PCT was stratified into zones representing a similar broad condition state. These zones were based on the overstorey condition, understorey condition, and observed land management practices.

Fifty-two vegetation integrity plots were undertaken throughout the development site over a period of three site visits (Spring 2018, Summer 2019 and Summer 2020 following a change in design). Seventeen of these plots occurred in category 1 – exempt land or occurred outside the development site and were not used. The remaining plots were added to the calculator. Plot data and plot photos entered into the BAM-C can be found in Appendix C.

Table 3-2 Vegetation zones within the development site

Zone ID	PCT ID	Condition	TEC (refer to section 3.3.4)	Development Site Area (Ha)	No. of Plots Required	No. of Plots undertaken	Patch Size (Ha)
1	1330	Derived Grassland	Nil	1.76	1	1	100 Ha+
2	1330	Poor Condition	Box Gum woodland	4.16	2	2	100 Ha+
3	1330	Moderate Condition	Box Gum woodland	22.59	4	4	100 Ha+
4	266	Poor Condition	Box Gum woodland	2.66	2	2	100 Ha+
5	268	Derived Grassland	Nil	6.86	3	3	5 -25 Ha
6	268	Moderate Condition	Box Gum woodland	20.98	4	4	100 Ha+
7	277	Derived Grassland Good Condition	Box Gum woodland	0.37	1	1	100 Ha+
8	277	Derived Grassland Low Condition	nil	27.36	4	5	25 -100 Ha
9	277	Moderate Condition	Box Gum woodland	82.43	5	10	100 Ha+
10	277	Planted	Nil	0.27	1	1	< 5 Ha
11	277	Planted Roadside	Nil	0.93	1	1	100 Ha+
12	278	Low Condition	Box Gum woodland	0.41	1	1	100 Ha+
13	278	Moderate Condition	Box Gum woodland	2.00	2	1	100 Ha+
14	766	Moderate Condition	Nil	2.84	2	2	100 Ha+

3.3.2 Vegetation Integrity Assessment Results

The plot data from the vegetation integrity survey plots was entered into the BAM Calculator (Case number 0001690) by an accredited assessor (L. Hamilton BAAS19039). The results of the vegetation integrity assessment and the vegetation integrity score is shown in Table 3-3.

Table 3-3 Current Vegetation Integrity Score for each Vegetation Zone within the development site

Zone ID	PCT/Zone	Composition score	Structure score	Function score	Vegetation Integrity Score
1	1330_Derived Grassland	12	37	58.8	29.6
2	1330_Poor Condition	18.8	35.1	90.2	39
3	1330_Moderate Condition	57.7	62.5	75.3	64.8
4	266_Poor Condition	3.5	14.2	36.8	12.3
5	268_Derived Grassland	29.9	37.1	0.1	4.9
6	268_Moderate Condition	49.9	51.6	79.2	58.8
7	277_Derived Grassland Good Condition	66.6	67.4	17.3	42.6
8	277_Derived Grassland Low Condition	23.7	63.8	1.4	12.8
9	277_Moderate Condition	20.9	18.4	60.4	28.5
10	277_Planted	36.7	63	45.5	47.2
11	277_Planted Roadside	20.4	0.6	15.2	5.7
12	278_Low Condition	4.9	16.9	47.5	15.8
13	278_Moderate Condition	66.3	83.3	61.3	69.7
14	766_Moderate Condition	23.6	48.4	n/a	33.8

3.3.3 Paddock Trees

221 Paddock trees occur within the development site. These trees are defined as trees located on Category 2 land and surrounded by Category 1 Land (as determined by NGH's Land Category Assessment, Appendix B).

Each paddock tree was assigned the PCT from which it is most likely derived, predicted from tree species, landscape location and proximity to known PCT vegetation zones. Paddock trees were mapped in the field using a handheld GIS Tablet and were visually assessed from the ground to determine whether any hollows were present. The Diameter at Breast Height (DBH) of the tree was assessed and assigned a paddock tree class relevant to the large tree benchmark for the associated PCT as per the BAM-C. Any unsurveyed paddock trees were assumed full credit requirement.

53 paddock trees occur within the construction disturbance footprint (development footprint) and would be impacted by the development. These paddock trees are likely derived from remnants of;

- PCT 277 – *Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion*
- PCT 266 – *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion*
- PCT 268 – *White Box – Blakely's Red Gum – Long-leaved Box – Norton's Box – Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion.*

An inventory of the paddock trees within the development site is shown in 0. Paddock Trees that would be impacted are shown in Table 3-4

Table 3-4 Paddock trees within the development footprint

PCT	Species	DBH Category	Hollows	Class of Paddock Tree	Number of Paddock Trees cleared
266	<i>Eucalyptus albens</i>	>50cm	Yes	Class 3	1
266	<i>Eucalyptus albens</i>	>50cm	No	Class 3	1
266	<i>Eucalyptus albens</i>	20cm - 50cm	No	Class 2	1
266	<i>Eucalyptus melliodora</i>	>50cm	No	Class 3	4
268	<i>Eucalyptus macrorhyncha</i>	>50cm	Yes	Class 3	3
268	<i>Eucalyptus macrorhyncha</i>	>50cm	No	Class 3	1
268	<i>Eucalyptus goniocalyx</i>	>50cm	No	Class 3	1
268	<i>Eucalyptus dives</i>	>50cm	No	Class 3	1
268	<i>Eucalyptus sp.</i>	>50cm	No	Class 3	1
277	<i>Eucalyptus blakelyi</i>	>50cm	Yes	Class 3	2
277	<i>Eucalyptus blakelyi</i>	>50cm	No	Class 3	1
277	<i>Eucalyptus blakelyi</i>	20cm - 50cm	No	Class 2	3

277	<i>Eucalyptus melliodora</i>	>50cm	Yes	Class 3	9
277	<i>Eucalyptus melliodora</i>	>50cm	No	Class 3	15
277	<i>Eucalyptus melliodora</i>	20cm - 50cm	No	Class 2	3
277	<i>Eucalyptus goniocalyx</i>	>50cm	Yes	Class 3	1
277	<i>Eucalyptus sp.</i>	>50cm	Yes	Class 3	2
277	<i>Eucalyptus sp.</i>	>50cm	No	Class 3	3
				TOTAL:	53

3.3.4 Threatened Ecological Communities

The presence of Blakely's Red Gum, Yellow Box and White Box tree species within the development site is associated with the threatened ecological community - *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (Box-gum Woodland).

An assessment of each of the vegetation zones was undertaken to determine if the condition met the condition threshold for the TEC under the BC Act and/or EPBC Act. The assessments can be found in the tables below (Table 3-5 and Table 3-6).

Zones 1, 5, 8, 10 and 11 do not meet the criteria in the NSW scientific determination for Box-gum Woodland due to either the characteristic tree species not dominant in the overstorey or the understorey is degraded from intense grazing or roadworks and unlikely to have maintained a soil seedbank. These zones also had low vegetation integrity scores.

The remaining zones meet the definition of the NSW Scientific determination for Box-gum Woodland. The total area of these zones is 23.8 ha.

Some paddock trees are also likely remnant of the Box-gum Woodland TEC. Characteristic species of Blakely's Red Gum, Yellow Box and White Box are scattered around the development site as scattered trees. It is likely these trees formed part of a Box-gum Woodland prior to clearing. These trees are now surrounded by Category 1 Exempt-Land (Appendix B) comprising of exotic groundcover from continuous grazing. Due to the high disturbance in the understorey and low canopy cover these areas are unlikely to respond to natural regeneration and are not considered to form part of the TEC.

Table 3-5 Condition threshold assessment for the state listed White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and derived native grasslands.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13
Zone	PCT 1330	PCT 1330	PCT 1330	PCT 266	PCT 268	PCT 268	PCT 277	PCT 277	PCT 277	PCT 277	PCT 277	PCT 278	PCT 278
BC Requirement	Derived Grassland	Poor Cond.	Mod Cond.	Poor Cond.	Derived Grassland	Mod. Cond.	DG – Good	DG - Low	Mod Cond.	Planted	Planted Roadside	Low Cond.	Mod Cond
Is, or was previously, at least one of the most common overstorey species White Box, Yellow Box or Blakely's Red Gum?	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Yes, Blakely's Red gum and Yellow Box one of the most common overstorey species.	Yes, Blakely's Red gum and Yellow Box one of the most common overstorey species.	Yes, White Box one of the most common overstorey species	White Box and Blakely's Red gum one of the most common overstorey species.	White Box and Blakely's Red gum one of the most common overstorey species.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Yes, Blakely's Red gum and Yellow Box one of the most common overstorey species.	No – planted vegetation contains a mix of Eucalypt species.	Planted vegetation contains juvenile Yellow Box and Blakely's Red Gum.	Yes, Blakely's Red gum the most common overstorey species.	Yes, Blakely's Red gum the most common overstorey species.
The site is mainly grassy.	Perennial exotic grasses dominate.	Perennial exotic grasses dominate.	Yes, Native Grassy understory	Yes, Grassy understory	Yes, Grassy understory	Yes, Native Grassy understory	Yes, Native Grassy understory	Yes, Grassy understory	Yes, Native Grassy understory	Exotic grasses dominate.	Perennial exotic grasses dominate.	Perennial exotic grasses dominate.	Yes, Native Grassy understory
The site is within the	Yes, the site is located within the NSW South Eastern Highlands Bioregion.												

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13
Zone	PCT 1330	PCT 1330	PCT 1330	PCT 266	PCT 268	PCT 268	PCT 277	PCT 277	PCT 277	PCT 277	PCT 277	PCT 278	PCT 278
BC Requirement	Derived Grassland	Poor Cond.	Mod Cond.	Poor Cond.	Derived Grassland	Mod. Cond.	DG – Good	DG - Low	Mod Cond.	Planted	Planted Roadside	Low Cond.	Mod Cond
distributed area.													
There are no characteristic native species in the understorey, and the site is unlikely to respond to assisted natural regeneration	Understorey heavily modified from road construction works and unlikely to contain a native soil seed bank. (VIS score 29.6) Not the TEC	Some native species in the understorey Forms part of the Box Gum Woodland TEC	Characteristic native species in the understorey Forms part of the Box Gum Woodland TEC	Some native species in the understorey Forms part of the Box Gum Woodland TEC	Understorey heavily disturbed and modified from intense grazing. No overstorey and unlikely to respond to natural regeneration (VIS score 4.9) Not the TEC	Characteristic native species in the understorey Forms part of the Box Gum Woodland TEC	Characteristic native species in the understorey Forms part of the Box Gum Woodland TEC	Understorey heavily disturbed and modified from intense grazing. No overstorey and unlikely to respond to natural regeneration (VIS score 12.8) Not the TEC	Characteristic native species in the understorey Forms part of the Box Gum Woodland TEC	Vegetation heavily modified. Zone forms a planted windbreak Not the TEC	Understorey heavily modified from road construction works and unlikely to contain a native soil seed bank. (VIS score 5.7) Not the TEC	Some native species in the understorey Forms part of the Box Gum Woodland TEC	Characteristic native species in the understorey Forms part of the Box Gum Woodland TEC

Table 3-6 Condition threshold assessment for the federally listed White Box - Yellow Box - Blakely's Red Gum Grassy Woodlands and derived native grasslands.

Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13	
	PCT 1330	PCT 1330	PCT 1330	PCT 266	PCT 268	PCT 268	PCT 277	PCT 277	PCT 277	PCT 277	PCT 277	PCT 278	PCT 278	
EPBC Requirement	Derived Grassland	Poor Cond.	Mod Cond.	Poor Cond.	Derived Grassland	Mod. Cond.	DG – Good	DG - Low	Mod Cond.	Planted	Planted Roadside	Low Cond.	Mod Cond	
Is, or was previously, at least one of the most common overstorey species White Box, Yellow Box or Blakely's Red Gum.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	No, Blakely's Red Gum codominant with long leaved box and Broad leaved peppermint.	Yes, Blakely's Red gum and Yellow Box one of the most common overstorey species.	Yes, White Box one of the most common overstorey species	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	White Box and Blakely's Red gum one of the most common overstorey species.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Overstorey absent but likely to have contained Blakely's Red Gum and Yellow Box based on trees in the locality.	Yes, Blakely's Red gum and Yellow Box one of the most common overstorey species.	No – planted vegetation contains a mix of Eucalypt species. Not the federally listed TEC	Planted vegetation contains juvenile Yellow Box and Blakely's Red Gum.	Yes, Blakely's Red gum the most common overstorey species.	Yes, Blakely's Red gum the most common overstorey species.
Does the patch have a predominantly native understorey?	Perennial exotic grasses dominate. Not the federally listed TEC	Perennial Exotic grasses dominate. Not the federally listed TEC	Yes, Native Grassy understorey of <i>Themeda triandra</i> or <i>Rytidosperma</i> spp.	No, dominated by exotic species in understorey Not the federally listed TEC	Yes, Grassy understorey of <i>Bothriochloa macra</i> and <i>Microlaena stipoides</i>	Yes, Grassy understorey	Yes, Grassy understorey dominated by <i>Rytidosperma</i> spp.	Yes, Grassy understorey with <i>B. macra</i> .	Yes, Grassy understorey	n/a	Perennial exotic grasses dominate. Not the federally listed TEC	Perennial exotic grasses dominate. Not the federally listed TEC	Yes, Grassy understorey of <i>M. stipoides</i> and rushes	

Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13
	PCT 1330	PCT 1330	PCT 1330	PCT 266	PCT 268	PCT 268	PCT 277	PCT 277	PCT 277	PCT 277	PCT 277	PCT 278	PCT 278
EPBC Requirement	Derived Grassland	Poor Cond.	Mod Cond.	Poor Cond.	Derived Grassland	Mod. Cond.	DG – Good	DG - Low	Mod Cond.	Planted	Planted Roadside	Low Cond.	Mod Cond
Is the patch 0.1 ha or greater in size.	n/a	n/a	Yes -	n/a	Yes – Grassland patch over 6ha.	Yes	Yes	Yes	Yes	n/a	n/a	n/a	Yes
There are 12 or more native understorey species present.	n/a	n/a	9 species in 0.04 ha. (Assume yes as a precaution)	n/a	No – low forb diversity. Heavily grazed. Only disturbance tolerant forbs present.	No – low forb diversity. No important species.	Yes – 9 species/0.04 ha. Important species present. (Assumed yes as a precaution)	No – low forb diversity. No important species.	No – low forb diversity. No important species.	n/a	n/a	n/a	9 common forbs. No important species.
Is the patch 2 ha or greater in size.	n/a	n/a	Yes – 2.01 ha for the smallest patch.	n/a	n/a	Yes – patch greater than 6 ha	n/a	Yes, some patches greater than 6 ha	Yes, some patches greater than 6 ha	n/a	n/a	n/a	Yes – patch greater than 6 ha

Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13
	PCT 1330	PCT 1330	PCT 1330	PCT 266	PCT 268	PCT 268	PCT 277	PCT 277	PCT 277	PCT 277	PCT 277	PCT 278	PCT 278
EPBC Requirement	Derived Grassland	Poor Cond.	Mod Cond.	Poor Cond.	Derived Grassland	Mod. Cond.	DG – Good	DG - Low	Mod Cond.	Planted	Planted Roadside	Low Cond.	Mod Cond
Is there natural regeneration of the dominant overstory species?	n/a	n/a	Yes – regeneration of overstory species present. Meets condition for federally listed TEC	n/a	No regeneration of overstory species.	Yes – regeneration of overstory species present. Meets condition for federally listed TEC	n/a	No regeneration of overstory species.	Yes – regeneration of overstory species present. Meets condition for federally listed TEC	n/a	n/a	n/a	Yes – regeneration of overstory species present. Meets condition for federally listed TEC
Does the patch have an average of 20 or more mature trees/ha	n/a	n/a	n/a	n/a	No – patch is a derived grassland.	n/a	n/a	No – patch is a derived grassland.	N/A	n/a	n/a	n/a	n/a
Conclusion	Does not meet criteria for federally listed TEC	Does not meet criteria for federally listed TEC	Forms part of the Box Gum Woodland TEC	Does not meet criteria for federally listed TEC	Does not meet criteria for federally listed TEC	Forms part of the Box Gum Woodland TEC	Forms part of the Box Gum Woodland TEC	Does not meet criteria for federally listed TEC	Forms part of the Box Gum Woodland TEC	Does not meet criteria for federally listed TEC	Does not meet criteria for federally listed TEC	Does not meet criteria for federally listed TEC	Forms part of the Box Gum Woodland TEC

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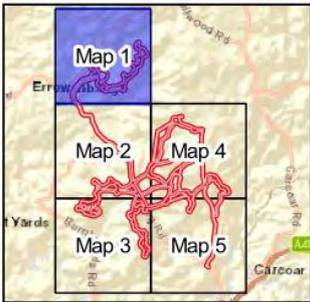


18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 1

Legend

- Development Site
- Development Footprint
- X Vegetation Integrity Plot
- Box-Gum Woodland CEEC
- PCT_Zone
- 277_moderate
- 277_planted
- 766_Moderate
- Exotic
- Non native
- 277_derived_low
- Paddock tree

0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps \ PCT Zones
 Author: D. Barrbrick
 Date create: 20.09.2021
 Datum: GDA84 / MGA zone 55



Figure 3-17 Plant Community Type Zones and paddock trees (map 1)

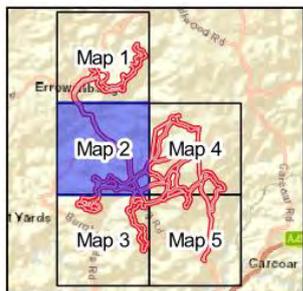


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18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 2

- Legend**
- Development Site
 - Development Footprint
 - X Vegetation Integrity Plot
 - Box-Gum Woodland CEEC
 - 1330_poor
 - 268_moderate
 - 266_poor
 - 277_derived_low
 - 277_moderate
 - 277_planted
 - 277_planted_roadside
 - 278_low
 - 766_Moderate
 - Exotic
 - Non native
 - Paddock tree

0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ PCT Zones
Author: D. Barrick
Date created: 20.09.2021
Datum: GDA94 / MGA zone 55



Figure 3-18 Plant Community Type Zones and paddock trees (map 2)

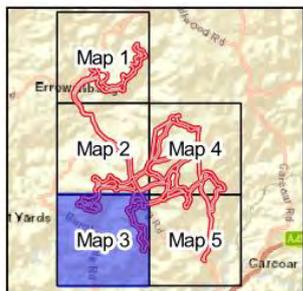


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18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 3

- Legend**
- ▭ Development Site
 - ▭ Development Footprint
 - X Vegetation Integrity Plot
 - ▭ Box-Gum Woodland CEEC
 - ▭ PCT_Zone
 - ▭ 266_poor
 - ▭ 277_derived_low
 - ▭ 277_moderate
 - ▭ 766_Moderate
 - ▭ Exotic
 - ▭ Non native
 - ▭ Paddock tree

0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps \ PCT Zones
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



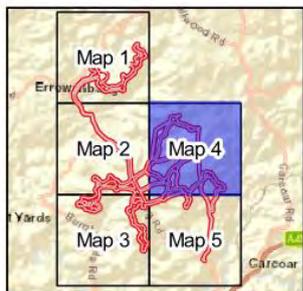
Figure 3-19 Plant Community Type Zones and paddock trees (map 3)



18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 4

- Legend**
- Development Site
 - Development Footprint
 - ✕ Vegetation Integrity Plot
 - Box-Gum Woodland CEEC
- PCT_Zone**
- 1330_derived
 - 1330_moderate
 - 1330_poor
 - 268_derived
 - 268_moderate
 - 277_derived_good
 - 277_derived_low
 - 277_moderate
 - 277_planted
 - 278_moderate
 - 766_Moderate
 - Exotic
 - Non native
 - Paddock tree

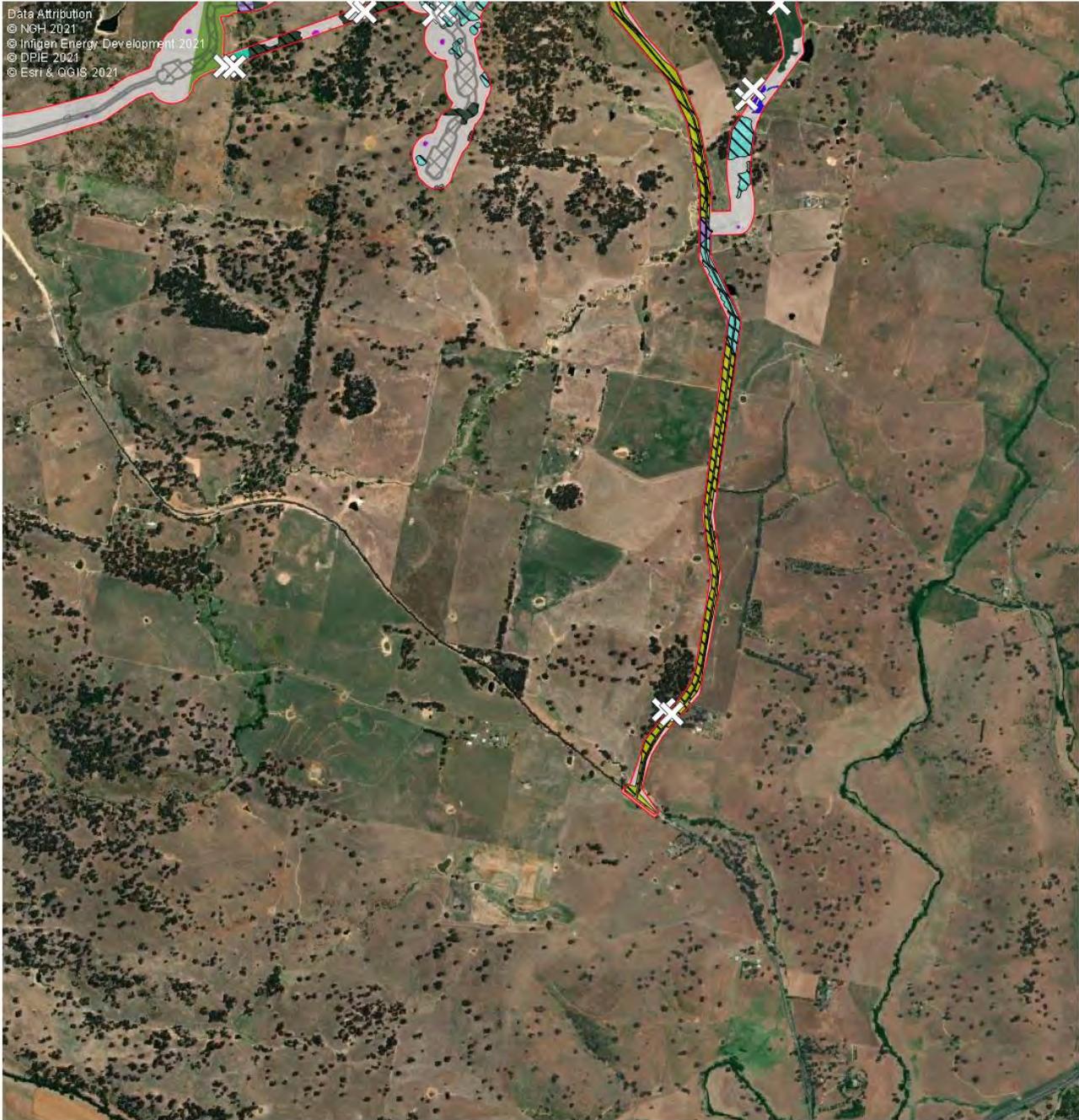
0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ PCT Zones
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



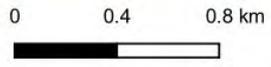
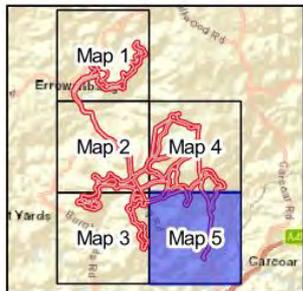
Figure 3-20 Plant Community Type Zones and paddock trees (map 4)



18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 5

Legend

- Development Site
- Development Footprint
- X Vegetation Integrity Plot
- Box-Gum Woodland CEEC
- Exotic
- Non native
- Paddock tree
- 277_derived_low
- 277_moderate
- 278_moderate
- 766_Moderate
- 1330_moderate
- 268_derived
- 268_moderate



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ PCT Zones
Author: D. Bambrick
Date created: 20.09.2021
Datum: GDA94 / MGA zone 55



Figure 3-21 Plant Community Type Zones and paddock trees (map 5)

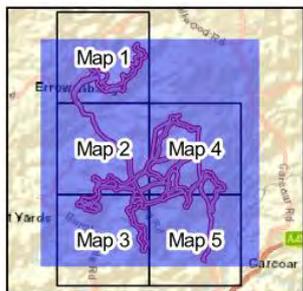


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18-558 Flyers Creek Wind Farm Offset Report - PCT Zones Map 6

Legend

- ▭ Development Site
- ▭ Development Footprint
- X Vegetation Integrity Plot
- ▭ Box-Gum Woodland CEEC
- PCT_Zone**
- ▭ 1330_derived
- ▭ 1330_moderate
- ▭ 1330_poor
- ▭ 268_derived
- ▭ 268_moderate
- ▭ 266_poor
- ▭ 277_derived_good
- ▭ 277_derived_low
- ▭ 277_moderate
- ▭ 277_planted
- ▭ 277_planted_roadside
- ▭ 278_low
- ▭ 278_moderate
- ▭ 766_Moderate
- ▭ Exotic
- ▭ Non native
- ▭ Paddock tree



Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps \ PCT Zones
 Author: D. Barrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



Figure 3-22 Plant Community Type Zones and paddock trees (map 6)

4. Threatened Species

4.1 Ecosystem Credit species

The following ecosystem credit species were returned by the ecosystem and paddock tree calculator as being associated with the PCTs present on the development site:

Table 4-1 Ecosystem credit species predicated by the BAM-C

CE = Critically Endangered, E = Endangered, V = Vulnerable

Common Name	Scientific Name	Vegetation Types(s)
Barking Owl V – BC Act	<i>Ninox connivens</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Black Falcon V – BC Act	<i>Falco subniger</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Black-chinned Honeyeater (eastern subspecies) V – BC Act	<i>Meliphreptus gularis gularis</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion

<p>Brown Treecreeper (eastern subspecies) V – BC Act</p>	<p><i>Climacteris picumnus victoriae</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Diamond Firetail V – BC Act</p>	<p><i>Stagonopleura guttata</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Dusky Woodswallow V – BC Act</p>	<p><i>Artamus cyanopterus cyanopterus</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p> <p>766-Carex sedgeland of the slopes and tablelands</p>
<p>Flame Robin</p>	<p><i>Petroica phoenicea</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p>

<p>V – BC Act</p>		<p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Gang-gang Cockatoo V – BC Act</p>	<p><i>Callocephalon fimbriatum</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Glossy Black-Cockatoo V – BC Act</p>	<p><i>Calyptorhynchus lathami</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p>
<p>Grey-crowned Babbler (eastern subspecies) V – BC Act</p>	<p><i>Pomatostomus temporalis temporalis</i></p>	<p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Grey-headed Flying-fox V – BC Act V – EPBC Act</p>	<p><i>Pteropus poliocephalus</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p>

<p>Hooded Robin (south-eastern form)</p> <p>V – BC Act</p>	<p><i>Melanodryas cucullata cucullata</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Koala</p> <p>V – BC Act</p> <p>V – EPBC Act</p>	<p><i>Phascolarctos cinereus</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Large Bent-winged Bat</p> <p>V – BC Act</p>	<p><i>Miniopterus orianae oceanensis</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Little Eagle</p> <p>V – BC Act</p>	<p><i>Hieraaetus morphnoides</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p>

		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
		766-Carex sedgeland of the slopes and tablelands
Little Lorikeet	<i>Glossopsitta pusilla</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Painted Honeyeater	<i>Grantiella picta</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
V - EPBC Act		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Powerful Owl	<i>Ninox strenua</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		
Regent Honeyeater	<i>Anthochaera phrygia</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
CE- BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
CE – EPBC Act		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

<p>Rosenberg's Goanna</p> <p>V – BC Act</p>	<p><i>Varanus rosenbergi</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Scarlet Robin</p> <p>V – BC Act</p>	<p><i>Petroica boodang</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p> <p>766-Carex sedgeland of the slopes and tablelands</p>
<p>Speckled Warbler</p> <p>V – BC Act</p>	<p><i>Chthonicola sagittata</i></p>	<p>1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion</p> <p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>
<p>Spotted Harrier</p> <p>V – BC Act</p>	<p><i>Circus assimilis</i></p>	<p>266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion</p> <p>277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</p> <p>278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion</p>

		766-Carex sedgeland of the slopes and tablelands
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
E – EPBC Act		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Square-tailed Kite	<i>Lophoictinia isura</i>	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
V – BC Act		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Superb Parrot	<i>Polytelis swainsonii</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
V – EPBC Act		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Swift Parrot	<i>Lathamus discolor</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
E – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
CE – EPBC Act		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion

		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Turquoise Parrot	<i>Lathamus discolor</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
Varied Sittella	<i>Daphoenositta chrysoptera</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
White-fronted Chat	<i>Epthianura albifrons</i>	766-Carex sedgeland of the slopes and tablelands
V – BC Act		
White-throated Needletail	<i>Hirundapus caudacutus</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – EPBC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion
		766-Carex sedgeland of the slopes and tablelands
Yellow-bellied Glider	<i>Petaurus australis</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		
Yellow-bellied Sheath-tail-bat	<i>Saccolaimus flaviventris</i>	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion
V – BC Act		266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
		277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
		766-Carex sedgeland of the slopes and tablelands

4.1.1 Species excluded from the assessment

No Ecosystem Credit Species were excluded from the assessment. All are considered to have suitable habitat within the development site.

4.2 Species Credit Species

The BAM Calculator predicted 25 species credit species to occur at the development site, as presented in Table 4-2. A desktop assessment was undertaken for habitat constraints and geographic restrictions to determine which species would be included or excluded for further targeted surveys in the development site.

4.2.1 Candidate species to be assessed

The candidate species to be assessed can be found in Table 4-2 (below).

Table 4-2 Candidate species credit species requiring assessment.

Species Credit Species	Habitat components and geographic limitations	Sensitivity to gain class	NSW Listing Status	National listing status	Habitat Components and abundance on site	Included /Excluded	Reason for Inclusion or exclusion
Fauna Species							
<i>Anthochaera phrygia</i> Regent Honeyeater	Mapped Important Areas	High	Critically Endangered	Critically Endangered	No mapped important habitat (ref)	Excluded	Development Site not within an area of Mapped Important Habitat
<i>Aprasia parapulchella</i> Pink-tailed Legless Lizard	Rocky areas or within 50m of rocky areas	High	Vulnerable	Vulnerable	Rocky areas within development site	Included	Habitat components within development site.
<i>Burhinus grallarius</i> Bush Stone-curlew	Fallen/standing dead timber including logs	High	Endangered	Not Listed	Fallen Timber within development site	Included	Habitat components within development site.
<i>Callocephalon fimbriatum</i>	Hollow bearing trees	High	Vulnerable	Not Listed	Abundant Hollow Bearing Trees	Included	Habitat components within

Gang-gang Cockatoo (Breeding)	Eucalypt Tree species with hollows greater than 9cm diameter				within development site		development site.
<i>Calyptorhynchus lathami</i> Glossy Black-Cockatoo (Breeding)	Hollow bearing trees Living or dead trees with hollows greater than 15cm diameter and greater than 8cm above ground	High	Vulnerable	Not Listed	Abundant Hollow Bearing Trees within development site	Included	Habitat components within development site.
<i>Cercartetus nanus</i> Eastern Pygmy-possum		High	Vulnerable	Not Listed		Included	Habitat components within development site.
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	Cliffs, or within 2km of rocky areas containing caves, overhangs, escarpments, outcrops or crevices or old mines and tunnels.	High	Vulnerable	Not Listed	No caves, mines or tunnels within 2km locality	Excluded	Habitat components not within development site.
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle (Breeding)	Living or dead mature trees within 1km of a river, lake, large dam, creeks, wetlands and coastlines	High	Vulnerable	Not Listed	Development site not within 1km of large waterbody	Excluded	Habitat components not within development site.

<i>Hieraaetus morphoides</i> Little Eagle (Breeding)	Nest trees – live (occasionally dead large old trees within vegetation)	Moderate	Vulnerable	Not Listed	Large paddock trees within development site	Included	Habitat components within development site.
<i>Lathamus discolor</i> Swift Parrot (Breeding)	Mapped Important Areas	Moderate	Endangered	Critically Endangered	No mapped important habitat (ref)	Excluded	Development Site not within an area of Mapped Important Habitat
<i>Litoria booroolongensis</i> Booralong Frog	Permanent Streams with fringing vegetation cover and cobble banks or other rock structures.	High	Endangered	Endangered	No permanent streams or large wetlands within development site.	Excluded	No Habitat components within development site.
<i>Litoria castanea</i> Spotted Tree Frog	Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation.	Very High	Critically Endangered	Endangered	No permanent streams or large wetlands within development site.	Excluded	No Habitat components within development site.
<i>Lophoictinia isura</i> Square-tailed Kite	Nest Trees	Moderate	Vulnerable	Not Listed	Large Paddock Trees within development site	Included	Habitat components within

(Breeding)							development site.
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat (Breeding)	Caves, Tunnels, Mine, Culverts or other structures known to be used for breeding. Nest roosts with number of individuals greater than 500.	Very High	Vulnerable	Not Listed	No Caves, tunnels or mines known as roosts in development site.	Excluded	No habitat components within development site.
<i>Myotis Macropus</i> Southern Myotis	Hollow bearing trees, bridges, caves or artificial structure within 200m of riparian zones. (Rivers, creeks, billabongs, lagoons, dams)	High	Vulnerable	Not Listed	Abundant hollow bearing trees within development site	Included	Habitat components within development site.
<i>Ninox connivens</i> Barking Owl (Breeding)	Hollow bearing trees Living or dead trees with hollows greater than 20cm diameter and greater than 4m above the ground	High	Vulnerable	Not Listed	Abundant hollow bearing trees within development site	Included	Habitat components within development site.
<i>Ninox strenua</i> Powerful Owl	Hollow bearing trees Living or dead trees with hollows greater than 20cm diameter.	High	Vulnerable	Not Listed	Abundant hollow bearing trees within development site	Included	Habitat components within development site.

<i>Petauroides volans</i> Greater Glider	Tall, montane moist eucalypt forests.	High	Not Listed	Vulnerable	No tall montane moist eucalypt forests.	Excluded	Habitat absent within development site.
<i>Petaurus norfolcensis</i> Squirrel Glider	Hollow bearing trees	High	Vulnerable	Not Listed	Abundant hollow bearing trees within development site	Included	Habitat components within development site.
<i>Phascolarctos cinereus</i> Koala	Areas identified as important habitat	High	Vulnerable	Vulnerable	Feed trees present within development site	Included	Habitat components within development site.
<i>Phascogale tapoatafa</i> Brush-tailed Phascogale	Hollow bearing trees	High	Vulnerable	Not Listed	Abundant hollow bearing trees within development site	Included	Habitat components within development site.
<i>Polytelis swainsonii</i> Superb Parrot (Breeding)	Hollow bearing trees, living or dead E. Blakelyi, E. melliodora, E. albens, E. camaldulensis, E. microcarpa, E. polyanthemos, E. mannifera, E. intertexta with hollows greater than 5cm diameter	High	Vulnerable	Vulnerable	Abundant hollow bearing trees within development site	Included	Habitat components within development site.

	and greater than 4m above ground.						
<i>Pteropus Poliocephalus</i> Grey-headed Flying Fox (Breeding)	Breeding Camps	High	Vulnerable	Vulnerable	No breeding camps detected within development site	Excluded	No Habitat components within development site.
Flora Species							
<i>Leucochrysum albicans</i> var. <i>tricolor</i> Hoary Sunray		Moderate	Not Listed	Endangered		Included	Suitable habitat in development site
<i>Swainsona recta</i> Small Purple Pea		Moderate	Endangered	Endangered		Included	Suitable habitat in development site
<i>Swainsona sericea</i> Silky Swainson Pea		High	Vulnerable	Not Listed		Included	Suitable habitat in development site
<i>Eucalyptus aggregata</i> Black Gum		High	Vulnerable	Vulnerable		Included	Suitable habitat in development site.

4.2.2 Inclusions based on habitat features

An NSW Bionet search (BCD, 2021) was undertaken in August 2021 to determine if any further threatened species are considered likely to occur on the development site.

An EPBC protected matters search was also completed (Section Appendix F). No additional EPBC listed species were added to the calculator. All EPBC listed species likely to occur have already been included as part of the assessment.

No records of threatened species occur within the development site. Twelve records of the Superb Parrot (*Polytelis swainsonii*) occur within 1km of the development site. This species was already listed as a candidate species within the BAM-C. No other threatened species records occurred within 1km of the development site and no additional threatened species were added to the BAM-C.

4.2.3 Candidate species requiring confirmation of presence or absence

The species listed in Table 4-3 are those considered to have habitat present within the development site. Targeted surveys have been used to assess each species as summarised below where the survey window allowed. Details of the survey methodologies and results are provided for each surveyed species in section 4.2.4 following and survey locations shown in Figure 4.1.

Table 4-3 List of species credit species requiring assessment.

Species Credit Species	Biodiversity risk weighting	Assumed to occur/survey/expert report	Present on site?	Species polygon area or count
Fauna				
Reptiles				
<i>Aprasia parapulchella</i> Pink-tailed Legless Lizard	2.0	Surveyed October 2018	No	n/a
Mammals				
<i>Cercartetus nanus</i> Eastern Pygmy-possum	2.0	Surveyed October 2018 and January 2019, September 2019 and July 2020.	No	n/a
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	3.0	Surveyed January 2019	No	n/a
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat	3.0	Surveyed January 2019	No	n/a

(Breeding)				
<i>Myotis Macropus</i> Southern Myotis	2.0	Surveyed January 2019	No	n/a
<i>Petaurus norfolcensis</i> Squirrel Glider	2.0	Surveyed October 2018 and January 2019	Yes	11.15 ha of woodland areas impacted
<i>Phascolarctos cinereus</i> Koala	2.0	Surveyed October 2018	No	n/a
<i>Phascogale tapoatafa</i> Brush-tailed Phascogale	2.0	Surveyed October 2018 and January 2019	No	n/a

Aves

<i>Anthochaera phrygia</i> Regent Honeyeater	3.0	Surveyed October 2018	No	n/a
<i>Burhinus grallarius</i> Bush Stone-curlew	2.0	Surveyed October 2018	No	n/a
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo (Breeding)	2.0	Surveyed October 2018	No	n/a
<i>Calyptorhynchus lathami</i> Glossy Black-Cockatoo (Breeding)	2.0	Surveyed September 2019 and July 2020.	No	n/a
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle (Breeding)	2.0	Surveyed October 2018	No	n/a
<i>Hieraetus morphnoides</i> Little Eagle (Breeding)	1.5	Surveyed September 2018	No	n/a
<i>Lophoictinia isura</i> Square-tailed Kite (Breeding)	1.5	Surveyed October 2018	No	n/a
<i>Ninox connivens</i> Barking Owl	2.0	Surveyed October 2018	No	n/a

(Breeding)				
<i>Ninox strenua</i> Powerful Owl	2.0	Surveyed September 2019 and July 2020.	No	n/a
<i>Polytelis swainsonii</i> Superb Parrot (Breeding)	2.0	Surveyed October 2018	Yes.	23 ha of moderate condition woodland with known sightings
Flora Species				
<i>Swainsona recta</i> Small Purple Pea	2.0	Surveyed October 2018	No	n/a
<i>Swainsona sericea</i> Silky Swainson Pea	2.0	Surveyed October 2018	No	n/a
<i>Eucalyptus aggregata</i> Black Gum	2.0	Surveyed October 2018	No	n/a

4.2.4 Candidate species survey methods and results

Methodology for targeted surveys is detailed below and illustrated in Figure 4-8.

Diurnal avian fauna (Gang-gang Cockatoo, Superb Parrot, Glossy Black-Cockatoo, Little Eagle, White-bellied Sea Eagle, Regent Honeyeater and Square-tailed Kite)

A woodland bird census via vehicle and on-foot was completed between 22nd – 26th October 2018. Seven 20-minute diurnal avifauna surveys were undertaken. These points were determined in the field to represent best coverage of avian habitat features within the development site and generally occurred within woodland areas with a clear view of the surrounding habitat. Additional bird surveys were also undertaken in July 2020 and early September 2019 for detecting the Glossy Black Cockatoo.

Targeted hollow-bearing tree surveys were carried out within the development site to identify tree with suitable breeding habitat for Superb Parrot, Gang-Gang Cockatoo and Glossy Black Cockatoo. The species, number, size and height of hollows were recorded for trees along with any evidence of use. Where suitable hollows were detected, targeted surveys included stag watches and early morning and early evening surveys during optimal survey periods. Surveys for large stick nests suitable for Little Eagle or Square-tailed Kite were undertaken.

Opportunistic sightings of birds were also recorded during all field surveys.

A review of past fauna surveys within the development site (Kevin Mills & Associates, 2011, Brett Lane & Associates, 2018, and Nature Advisory, 2019) was undertaken to determine fauna species recorded during past assessments.

SURVEY RESULTS

Superb Parrot

There were four opportunistic sightings and two nests of the Superb Parrot observed during the site survey in 2019 (Figure 4-3). Past surveys by Kevin Mills and Associates (2011) detected eight sightings of Superb Parrot foraging and Brett Lane and Associates (2018) also detected 12 records of foraging Superb Parrot and two nesting birds. Previous Bionet records also show an additional 9 locations within 1km of the development site.

No known nests occurred within 100m of the development footprint however due to the abundance of sightings within the development site and abundance of hollow-bearing trees it is anticipated that nesting could occur within locations not detected or trees would likely provide future nesting opportunities. Thus, a species polygon was prepared that covered all moderate to good condition woodland that contained hollows within the development site.

No other threatened bird species were detected from the survey. The review of past fauna surveys revealed a sighting of a Little Eagle had been seen, however this occurred foraging outside the development site. No breeding nests were detected.

All avian species recorded during the surveys were recorded and provided in 0.

Nocturnal avifauna (Bush Stone Curlew, Barking Owl, Powerful Owl)

SURVEY EFFORT

Spot lighting and call play back surveys were undertaken between 22nd – 25th October 2018 for the Bush-stone Curlew and Barking Owl. Spot lighting and call play back surveys were also undertaken between 18th - 24th January 2019 for the Bush-stone Curlew. Additional surveys were also undertaken in July 2020 and September 2019 for the Powerful Owl.

Call playback for Bush Stone Curlew and Forest Owl species call was played via a megaphone with a 10 minute waiting period for each call and repeated three times. No lights were used or sound made during the call play back and waiting period. Spotlighting transects were conducted in both vehicle-based and foot surveys within remnant woodland patches and isolated paddock trees following call playback sessions.

SURVEY RESULTS

No threatened nocturnal bird were detected during the surveys. One Boobook Owl (*Ninox boobook*) was heard responding to a call and one Tawny Frogmouth (*Podargus strigoides*) was observed during the nocturnal surveys. There are no known records of threatened species from past fauna surveys. These species were surveyed during the appropriate survey period and breeding species are considered absent from the site.

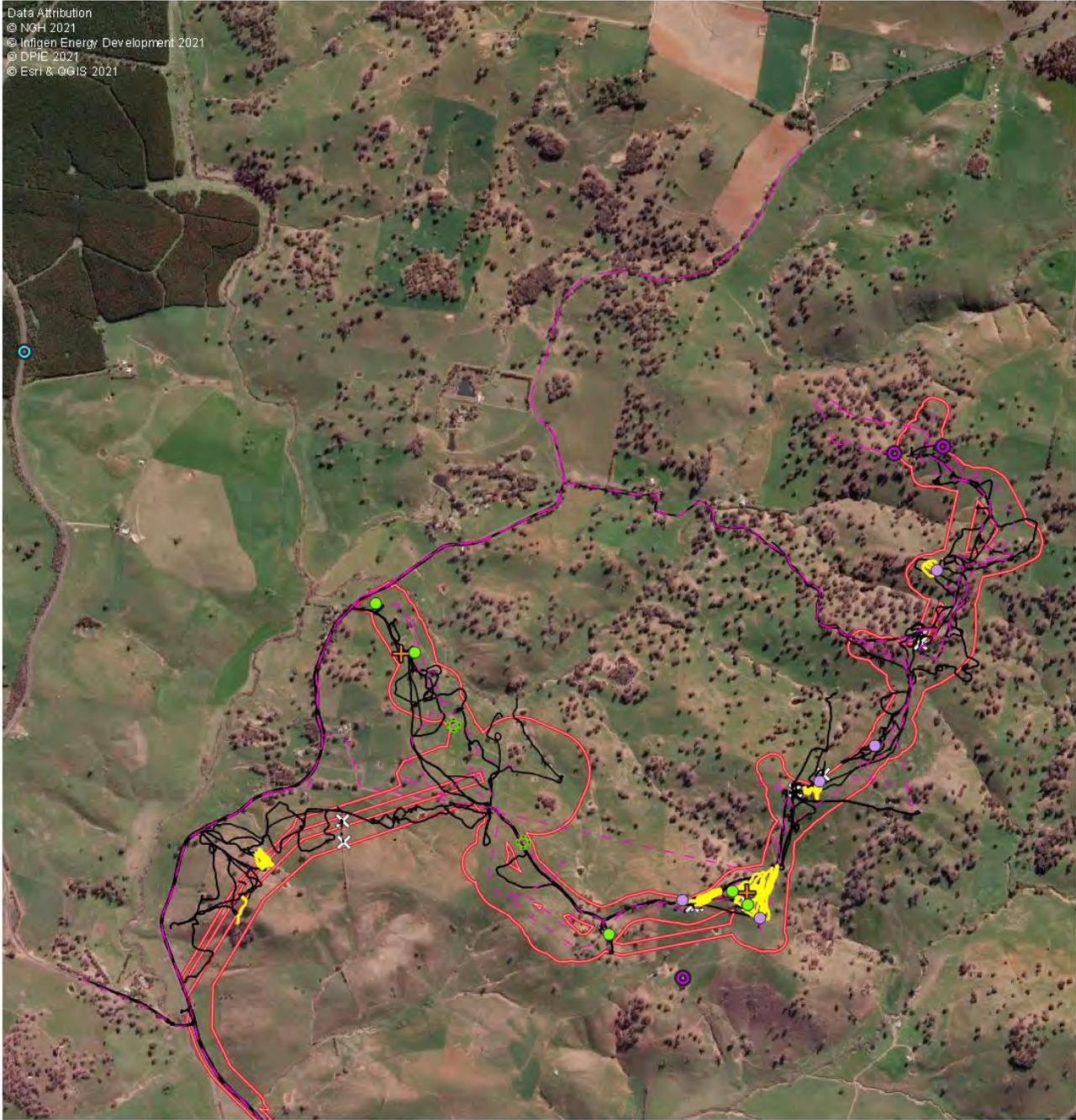
Mammals (Eastern Pygmy Possum, Brush-tailed Phascogale, Squirrel Glider, and Koala)

SURVEY EFFORT

Targeted spotlighting surveys were undertaken on the evenings of the 22nd to 25th October 2018 and the 18th to the 24th of January 2019 for approximately two (2) person hours per night. A 100-watt spotlight was used in both vehicle-based and foot surveys within remnant woodland patches and isolated paddock trees. Call Playback for Squirrel glider was played via a megaphone with a 10 minute waiting period for each call and repeated three times.

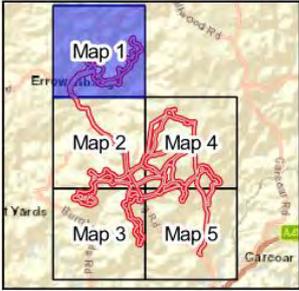
Targeted surveys for the Eastern pygmy possum and Brush-tailed Phascogale were complete using a combination of survey methods in January 2019. 12 motion-activated camera traps

(Recoynx HyperFire HC500) were deployed in woodland areas (



18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 1

- Legend**
- Development Site
 - ⊙ Nocturnal
 - ⊗ Nocturnal Call Playback
 - ⊗ Vegetation Integrity Plot
 - ⊙ Rock Turning
 - Survey Effort**
 - ⊕ Amphibian
 - Diurnal Fauna & Flora
 - ⊕ Avian
 - - - Spotlighting
 - + Koala
 - Threatened Flora



0 0.4 0.8 km

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Figure 4-3) and baited with a mix of Sardines and Honey. Camera traps were left for 11 trap nights. In addition, 26 Elliot traps were set up in woodland areas with relatively high connectivity and

habitat quality over 11 nights. A mixture of peanut butter, honey, and rolled oats were placed in traps as bait. Honey water was also sprayed around traps to attract fauna.

Targeted searches for Koalas during the day were undertaken on the 13th of September 2018 for approximately two (2) person hours. Mature feed trees via Spot Assessment Technique (SAT) were searched for signs of Koalas such as scats and scratches.

SURVEY RESULTS

The Squirrel Glider was detected during two survey periods within woodland areas in the east western areas of the development site (along vegetation which adjoins Gap Road) in October 2018, January 2019, September 2019 and July 2020. Targeted surveys were also complete in the northern areas of the development site in largely connected vegetation. However, no mammals were recorded in the north during all four survey attempts. Based on this and an evaluation of landscape connectivity, the northern habitat is discounted from other locations where Squirrel Gliders are recorded.

No other threatened mammal species were detected throughout the field surveys and no threatened mammal species have been previously recorded.

Brushtail Possum (*Trichosurus vulpecula*) were commonly spotted throughout the spotlighting transects. One Antechinus sp. and a Brushtail Possum was detected within the nocturnal camera traps. No mammals were recorded within the Elliot Traps.

Mammals (Southern Myotis, Large-eared Pied Bat and Grey-headed Flying Fox)

SURVEY EFFORT

A combination of ultrasonic detection (Anabat survey) and Harp Trapping were used to survey for threatened microbats (Figure 4-1). Two Anabat Swifts (Titely Scientific) were deployed for four nights each between 22nd and 25th October 2019 in suitable wooded habitat within a drainage line (Figure 4-1, Figure 4-3). A harp trap was set up for four nights between 18th – 24th January 2019 within suitable habitat near Gap Road.



Figure 4-1 Harp and anabat set up for bat surveys in October 2019.

SURVEY RESULTS

Anabat data was analysed by ‘Fly by Night Bat Surveys’ (Hoye, G 2019). Nine bat species were identified from the ANABAT recordings. One threatened species – Large Bent Wing Bat was determined as a probable identification. In addition, the Yellow-bellied Sheath-tail bat was previously recorded by BL & A within the Wind Farm site in 2018 (BL&A 2018a). Both these species are ecosystem credit species and do not generate species credits. No other threatened species were recorded.

One bat species recorded within the Harp Trap was unable to be identified.

No Grey-headed Flying Foxes or breeding camps were observed within the development site.

Threatened Flora (Small Purple Pea, Silky Swainson Pea, Black Gum)

SURVEY EFFORT

Flora transects were conducted between 22nd - 28th October 2018. Transects were conducted for targeted flora species based on identified areas of suitable habitat within the development site. Flora transects were conducted each day of the survey period. Transects were conducted with two suitably qualified ecologists walking around 10m apart within areas of suitable undisturbed habitat with native understorey for both the small Purple-pea and Silky Swainson-pea. A survey was conducted throughout the development site for the Black Gum over all survey periods.

SURVEY RESULTS

No threatened flora was observed during the targeted surveys. None of the species observed at the development site are listed as threatened. Targeted species were surveyed during the appropriate survey period and are considered absent from the site. No threatened flora species polygons have been mapped for the development site.

Threatened Flora (Hoary Sunray)

SURVEY EFFORT

Hoary Sunray was not a BAM-C species when surveys were conducted in 2018 and no specific surveys for this species was undertaken. However targeted surveys were undertaken for threatened Swainsona species between 22nd – 28th October 2018 in areas containing moderate to good condition native understory. This time frame is peak flowering time for Hoary Sunray. Hoary Sunray is a conspicuous flowering forb with bright characteristic flowers that are long lasting and would have been easily observed if it were present during the transects for threatened flora species.

SURVEY RESULTS

No threatened flora was observed during the targeted surveys. None of the species observed at the development site are listed as threatened. Targeted species were surveyed during the appropriate survey period and are considered absent from the site. No threatened flora species polygons have been mapped for the development site.

Threatened Reptiles (Pink -tailed legless Lizard)

SURVEY EFFORT

Targeted surveys for this species were conducted during the 22nd - 26^h October 2019 in accordance with the Survey guidelines for Australia's threatened reptiles (*Australian Government 2011*). Over the survey period two ecologists utilised the rock turning method. 13 rock turning surveys were conducted. Suitable habitat rocks which included loosely embedded rocks were turned in walking transects in suitable habitat. 150 - 200 rocks were turned.

SURVEY RESULTS

No threatened reptiles were recorded in the survey attempts. The survey transects were completed during optimal weather conditions in Spring. The majority of the rock environment included heavily embedded rocks which were unable to be turned and deemed unsuitable for the species. Targeted species were surveyed during the appropriate survey period and the species is considered absent from the site.

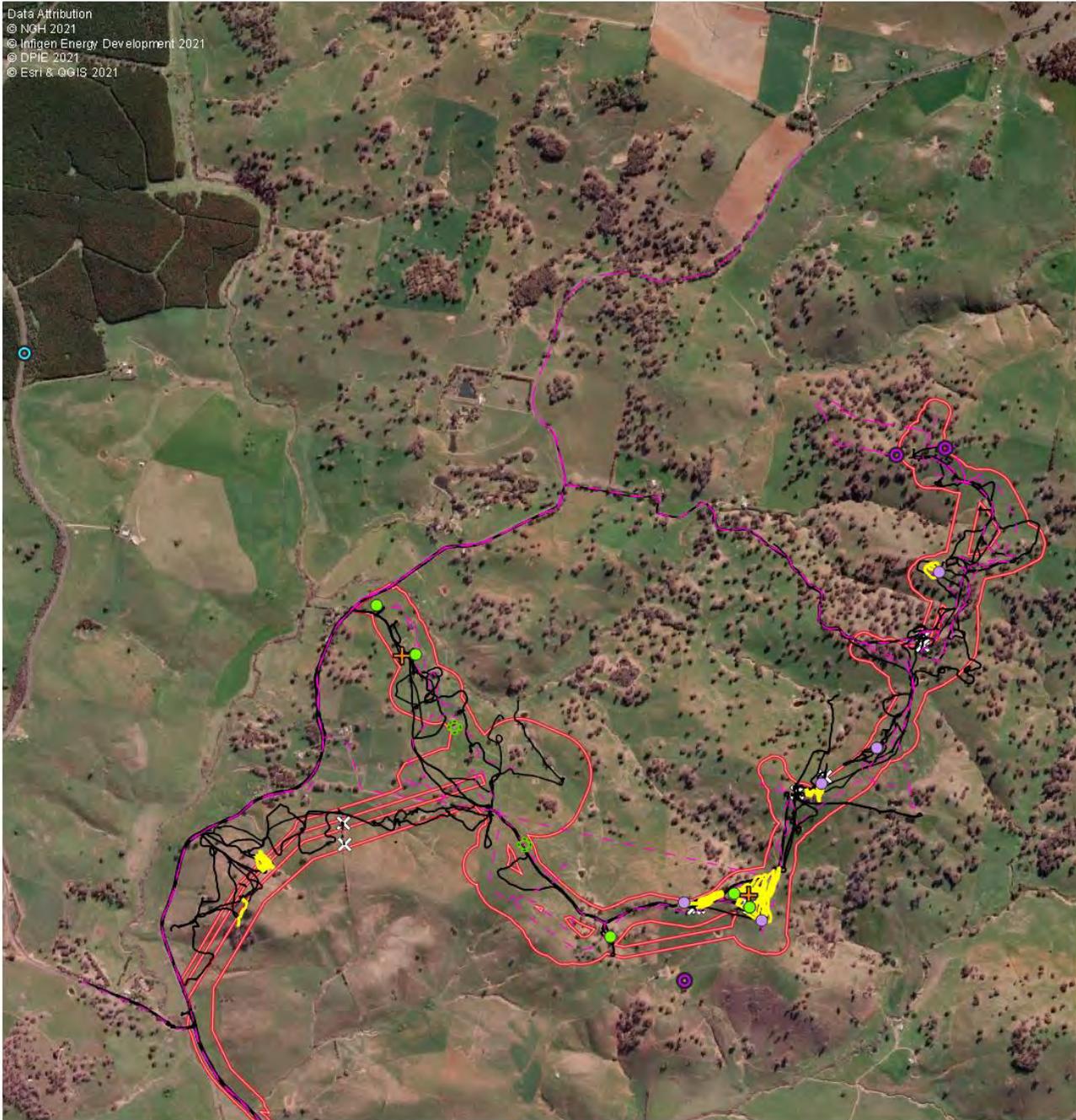


Figure 4-2 Rocky Habitat surveyed for Pink-tailed Legless Lizard

4.2.5 Limitations to data, assumptions and predictions

Where survey has been undertaken for candidate species requiring confirmation of presence or absence, this has been done employing appropriate methods and timing. Nevertheless, it is an unavoidable limitation that not all species that utilise an area will be detected. This is generally due to their cryptic nature or mobility and unpredictable movement throughout their habitat and prevailing drought conditions.

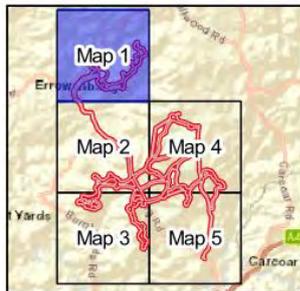
The calculation of HBTs, in particular the size and number of hollows, was made from ground level. It is possible that some hollows are present that were not visible from ground level, which may result in underestimates of the number of hollows.



18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 1

Legend

- ▭ Development Site
- ⊗ Nocturnal
- ⊗ Nocturnal Call Playback
- ⊗ Rock Turning
- ⊗ Amphibian
- Avian
- + Koala
- Transects
- Diurnal Fauna & Flora
- - Spotlighting
- ▭ Threatened Flora
- ⊗ Vegetation Integrity Plot



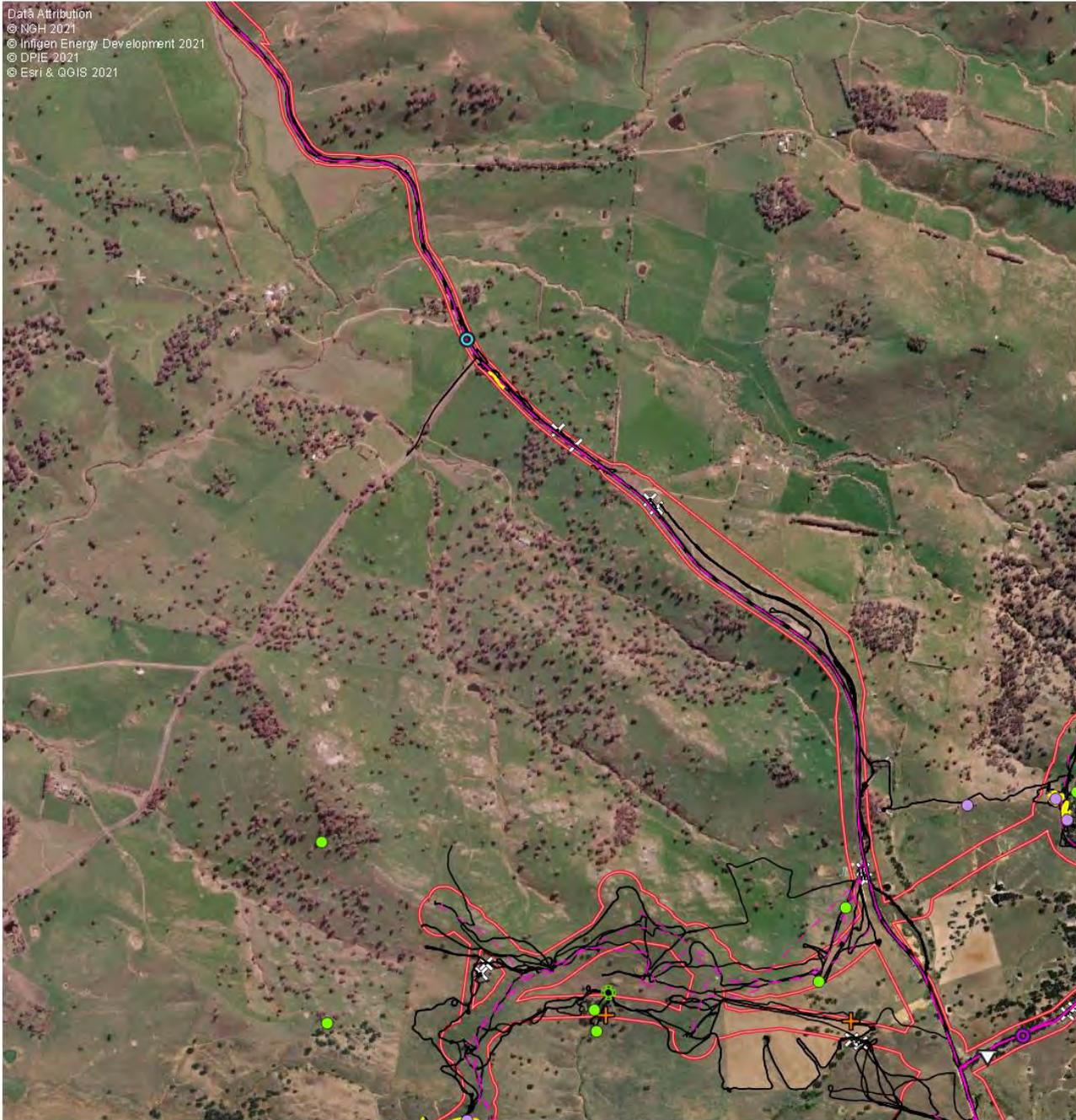
0 0.4 0.8 km



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 Datum: GDA94 / MGA zone 55



Figure 4-3 Threatened Species Surveys (map 1)

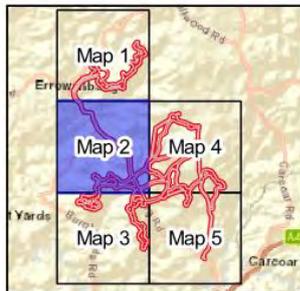


18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 2

0 0.4 0.8 km

Legend

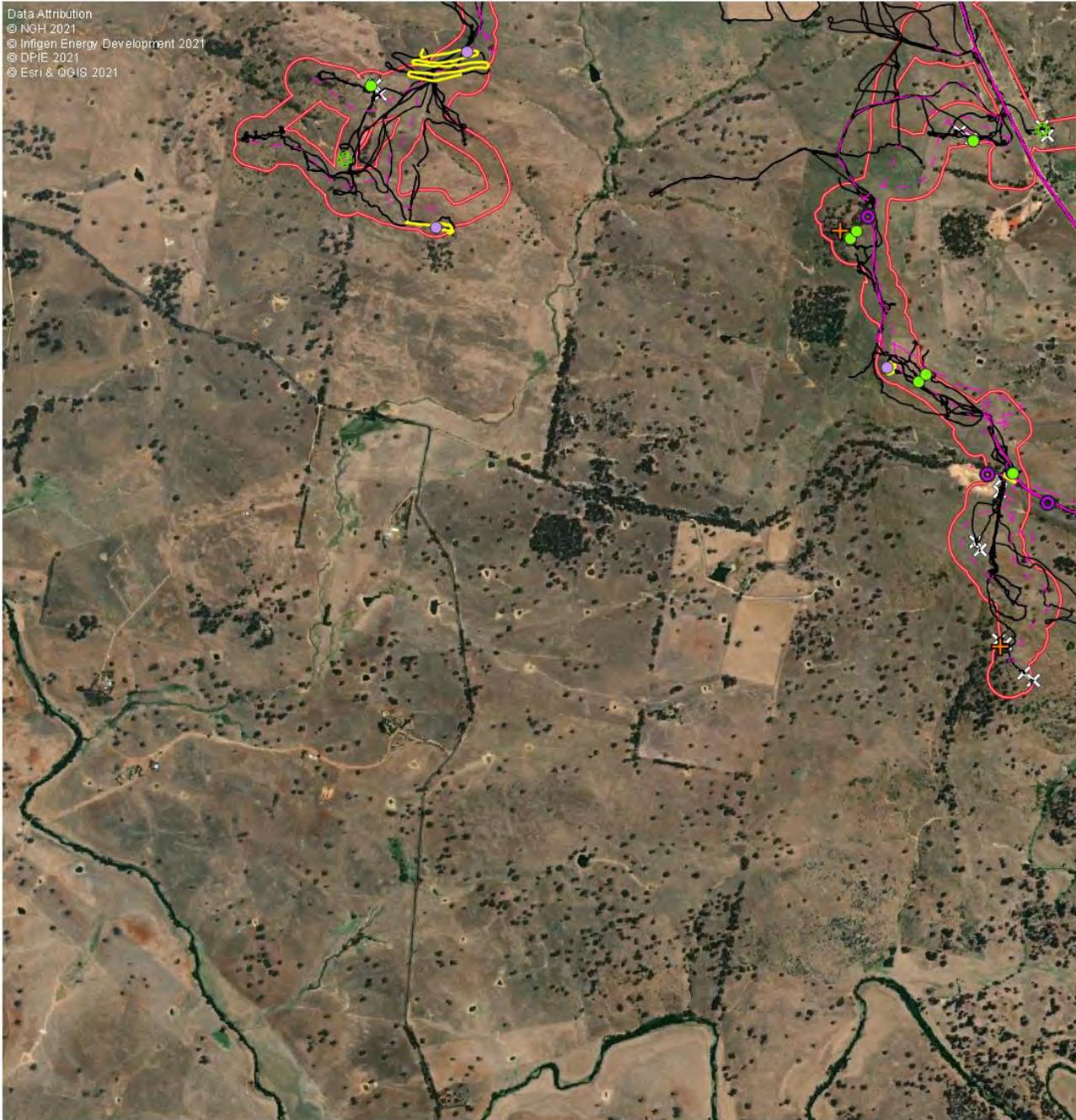
- ▭ Development Site
- ⊙ Nocturnal
- ⊙ Nocturnal Call Playback
- ⊙ Rock Turning
- ⊕ Amphibian
- ⊕ Anabat
- ⊕ Avian
- ⊕ Koala
- ⊗ Vegetation Integrity Plot
- Transects
- Diurnal Fauna & Flora
- Spotlighting
- Threatened Flora



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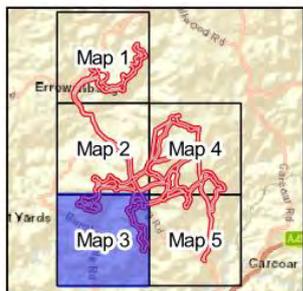
Figure 4-4 Threatened Species Surveys (map 2)



18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 3

- Legend**
- Development Site
 - ⊗ Nocturnal Call Playback
 - ⊗ Rock Turning
 - ⊗ Stag Watch
 - ⊗ Transects
 - Diurnal Fauna & Flora
 - Spotlighting
 - Threatened Flora
 - ⊗ Amphibian
 - ⊗ Avian
 - + Koala
 - ⊗ Vegetation Integrity Plot

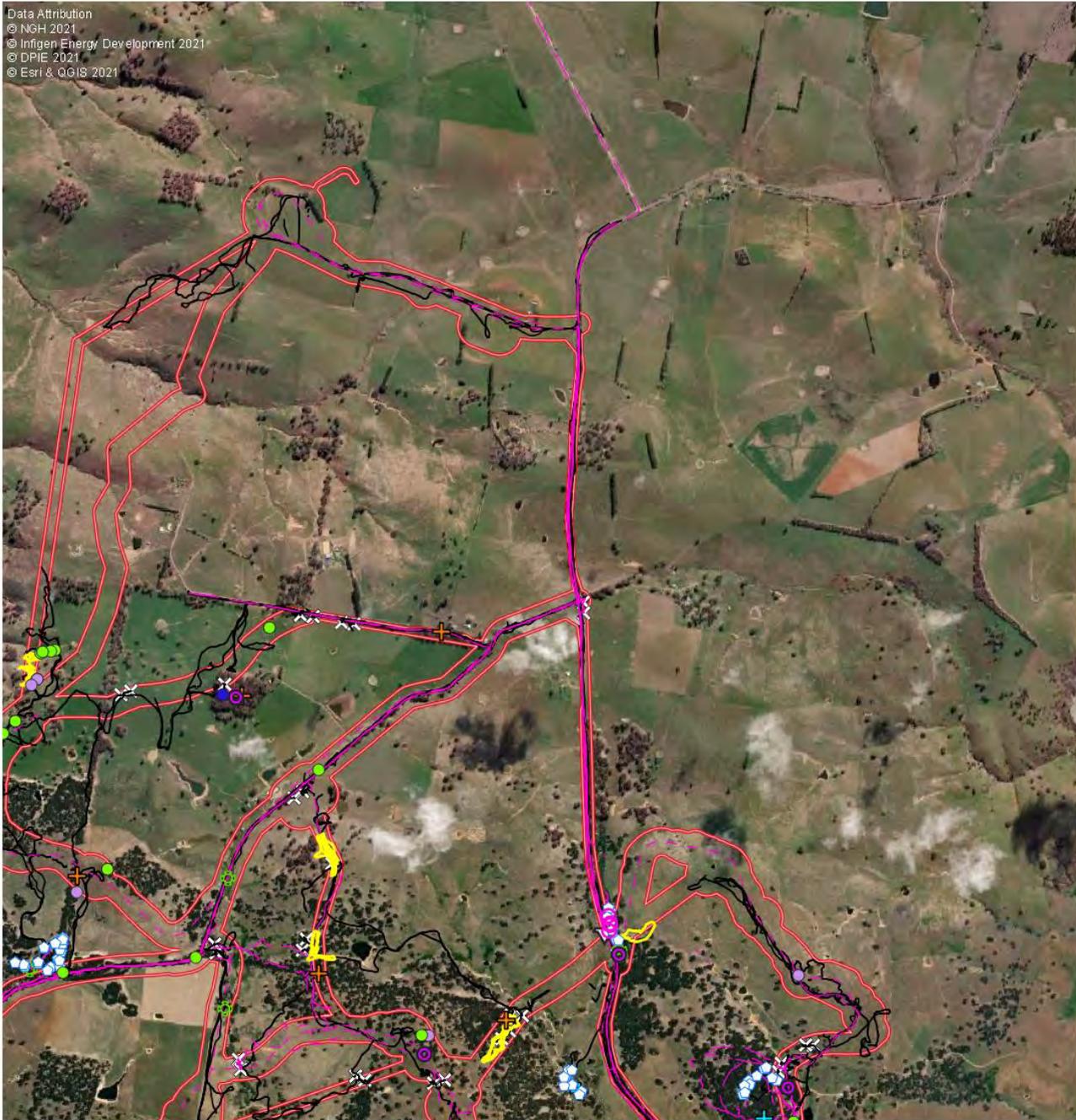
0 0.4 0.8 km



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 Date created: 22.09.2021
 Datum: GDA94 / MGA zone 55



Figure 4-5 Threatened Species Surveys (map 3)

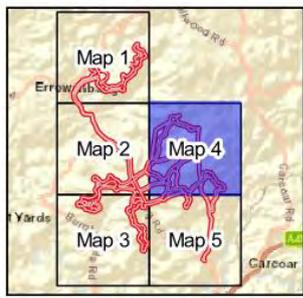


18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 4

0 0.4 0.8 km

Legend

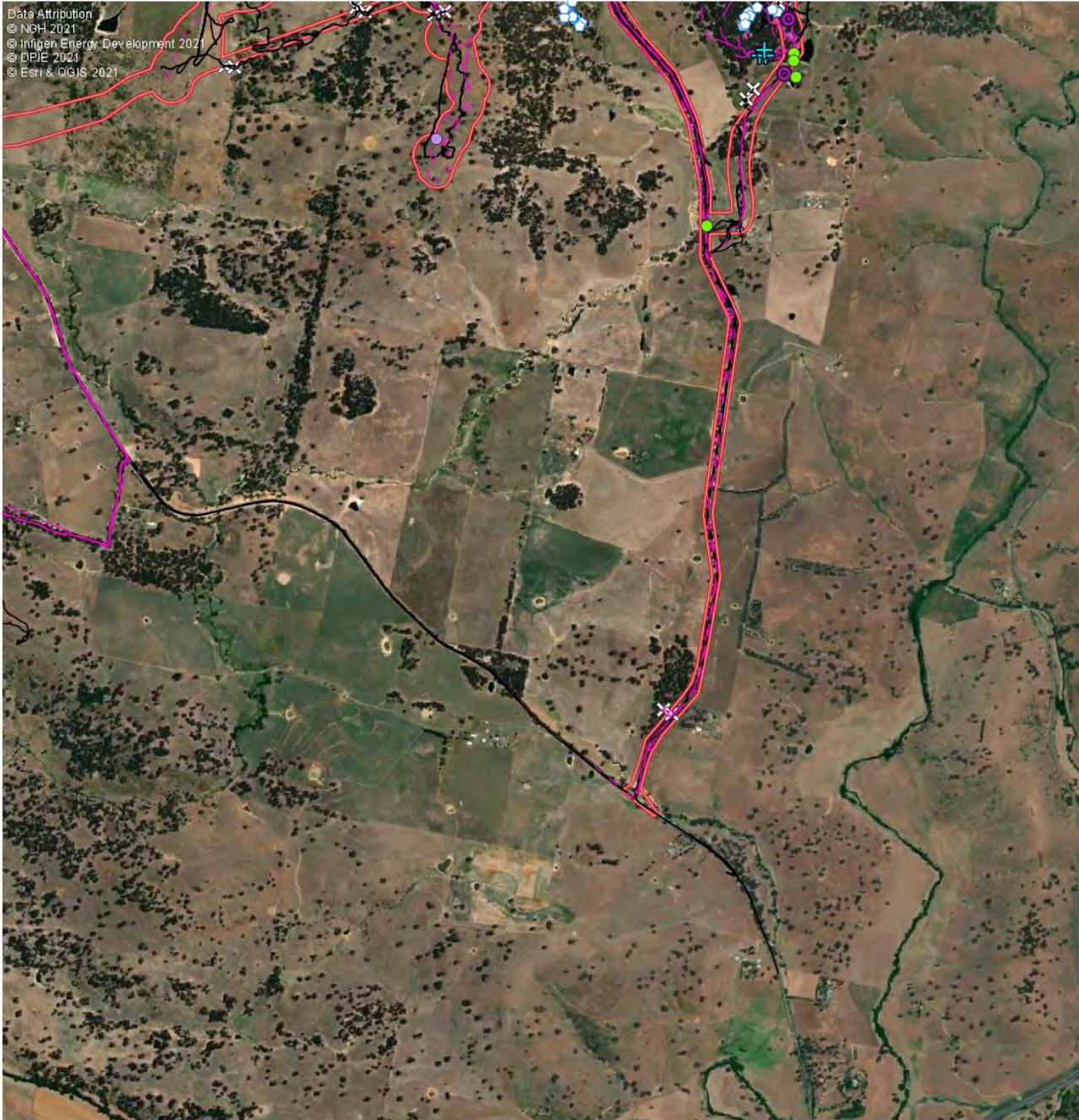
- | | |
|---------------------------|---------------------------------|
| Development Site | Harp Trap |
| Vegetation Integrity Plot | Nocturnal Call Playback |
| Survey Effort Amphibian | Rock Turning |
| Anabat | Stag Watch |
| Avian | Transects Diurnal Fauna & Flora |
| Camera Trap | Spotlighting |
| Elliot Trap | Threatened Flora |
| Koala | |



Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps 1 Survey Effort
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 Datum: GDA94 / MGA zone 55



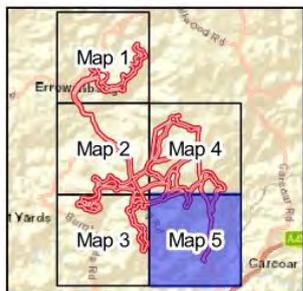
Figure 4-6 Threatened Species Surveys (map 4)



18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 5

- Legend**
- Development Site
 - ⊗ Vegetation Integrity Plot
 - Survey Effort**
 - Avian
 - + Camera Trap
 - Nocturnal Call Playback
 - Rock Turning
 - Transects**
 - Diurnal Fauna & Flora
 - - Spotlighting

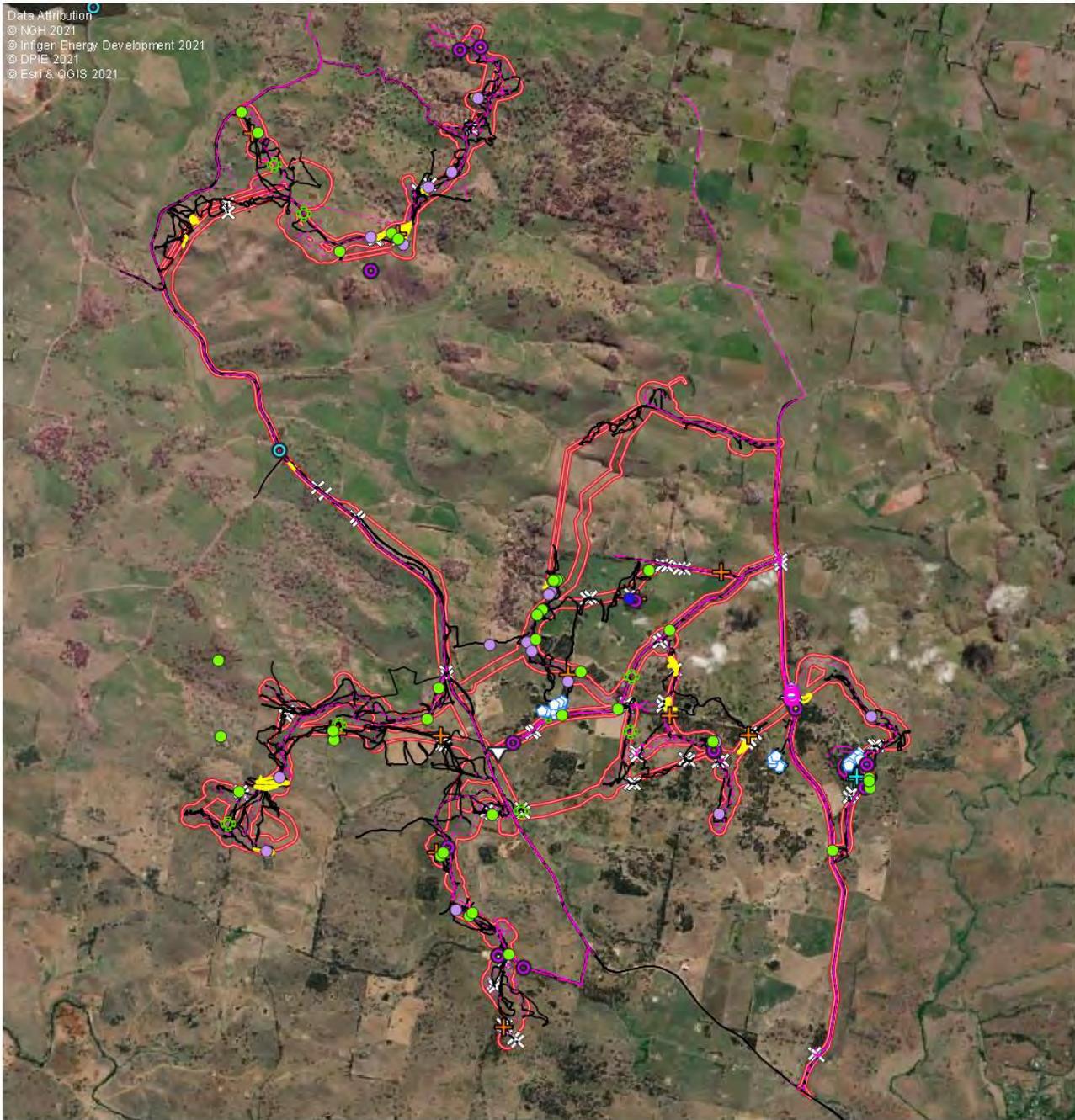
0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Survey Effort
 Author: D. Bambrick
 Date created: 22.09.2021
 Datum: GDA94 / MGA zone 55



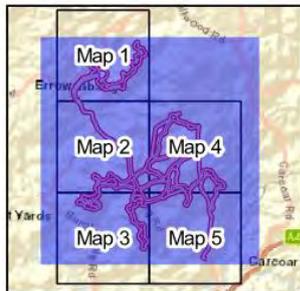
Figure 4-7 Threatened Species Surveys (map 5)



18-558 Flyers Creek Wind Farm Offset Report - Survey Effort Map 6

Legend

- | | |
|---------------------------|-------------------------|
| Development Site | Koala |
| Vegetation Integrity Plot | Nocturnal |
| Survey Effort | Nocturnal Call Playback |
| Amphibian | Rock Turning |
| Anabat | Stag Watch |
| Avian | Transects |
| Camera Trap | Diurnal Fauna & Flora |
| Elliot Trap | Spotlighting |
| Harp Trap | Threatened Flora |



0 1 2 km

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Figure 4-8 Threatened Species Surveys (map 6)

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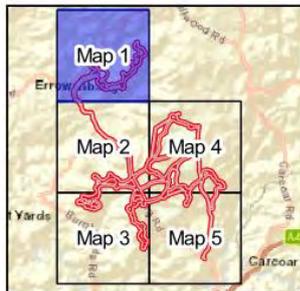


18-558 Flyers Creek Wind Farm Offset Report
Threatened Species Polygons Map 1

Legend

- ▭ Development Site
- ▭ Development Footprint
- ▨ Superb Parrot
- Threatened Species Sightings
- Superb Parrot

0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Threatened Species Polygons
 Author: D. Barrbrick
 Date created: 22.09.2021
 Datum: GDA94 / MGA zone 55



Figure 4-9 Threatened Species Polygons (map 1)



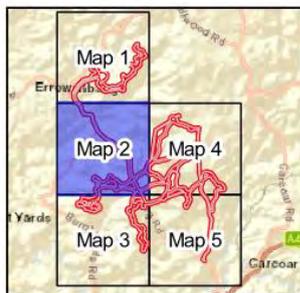
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18-558 Flyers Creek Wind Farm Offset Report
Threatened Species Polygons Map 2

Legend

- Development Site
- Development Footprint
- Superb Parrot
- Squirrel Glider
- Threatened Species Sightings
- Superb Parrot

0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Threatened Species Polygons
 Author: D. Barrick
 Date created: 22.09.2021
 Datum: GDA94 / MGA zone 55



Figure 4-10 Threatened Species Polygons (map 2)



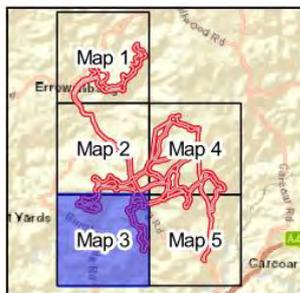
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18-558 Flyers Creek Wind Farm Offset Report
Threatened Species Polygons Map 3

Legend

- Development Site
- Development Footprint
- ▨ Superb Parrot
- ▨ Squirrel Glider
- Threatened Species Sightings
- Superb Parrot

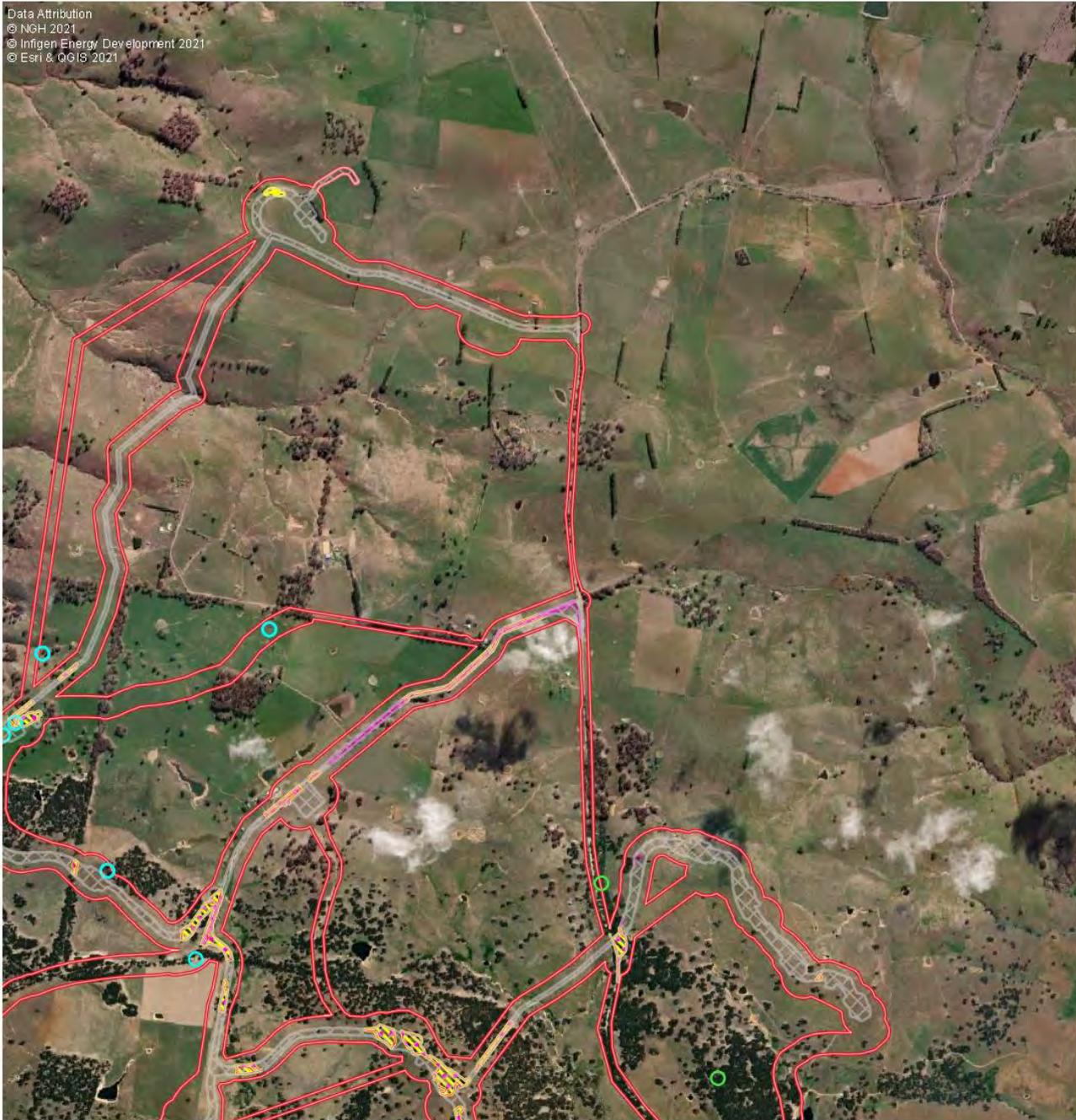
0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps \ Threatened Species Polygons
 Author: D. Bambrick
 Date created: 22.09.2021
 Datum: GDA94 / MGA zone 55

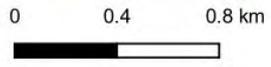
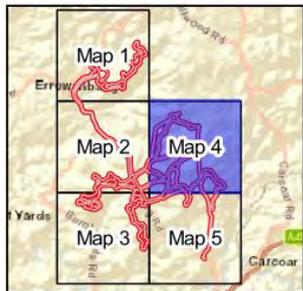


Figure 4-11 Threatened Species Polygons (map 3)



18-558 Flyers Creek Wind Farm Offset Report
 Threatened Species Polygons Map 4

- Legend**
- Development Site
 - Development Footprint
 - Superb Parrot
 - Squirrel Glider
 - Threatened Species Sightings
 - Superb Parrot
 - Squirrel Glider



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Threatened Species Polygons
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 Datum: GDA94 / MGA zone 55



Figure 4-12 Threatened Species Polygons (map 4)

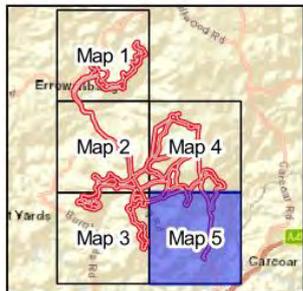


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18-558 Flyers Creek Wind Farm Offset Report
Threatened Species Polygons Map 5

- Legend**
- ▭ Development Site
 - ▭ Development Footprint
 - ▭ Superb Parrot
 - ▭ Squirrel Glider

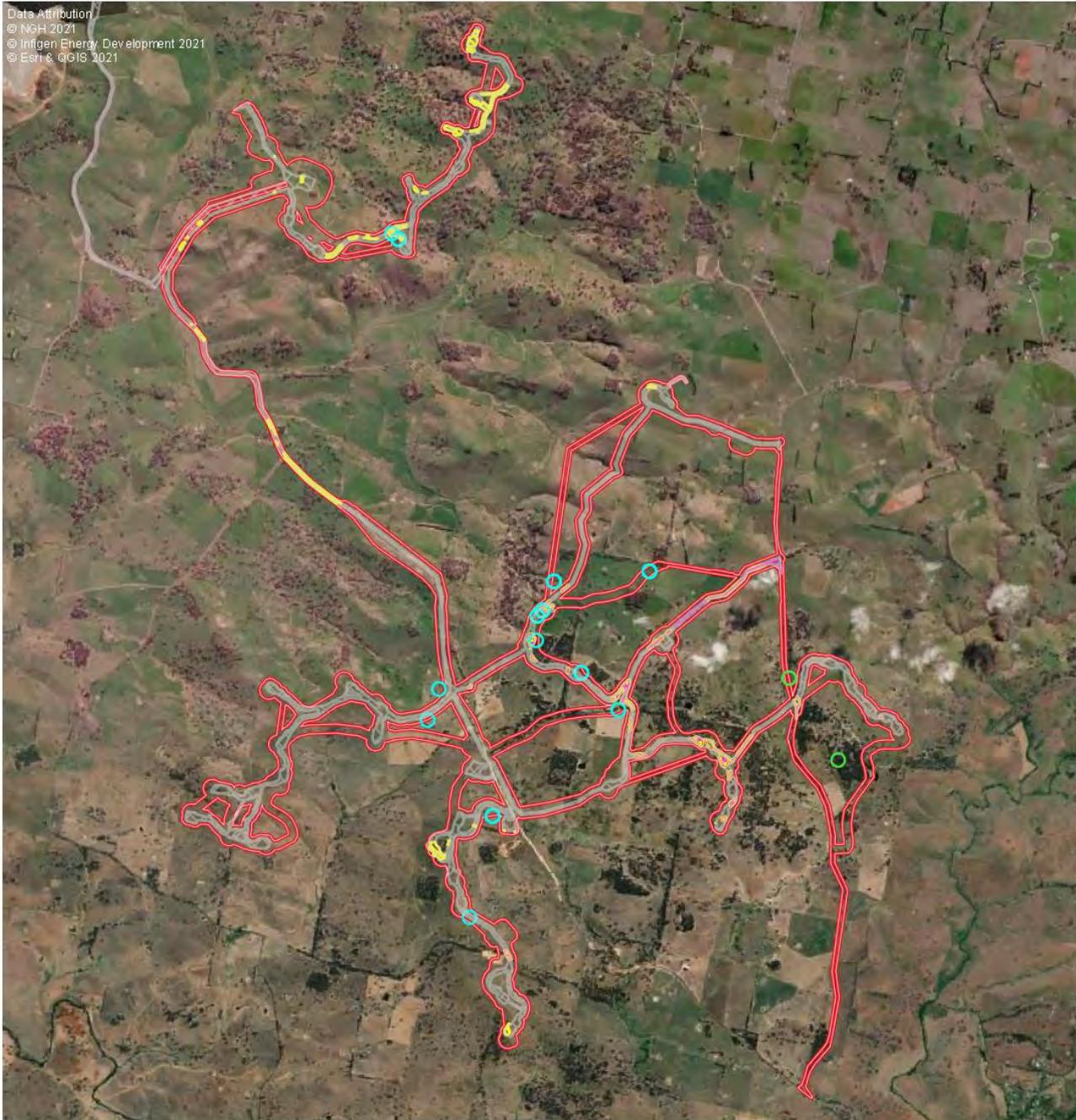
0 0.4 0.8 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Threatened Species Polygons
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 Datum: GDA94 / MGA zone 55



Figure 4-13 Threatened Species Polygons (map 5)



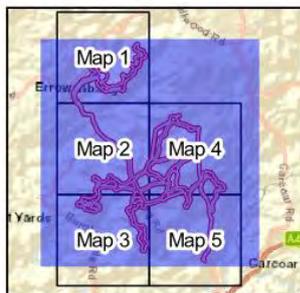
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18-558 Flyers Creek Wind Farm Offset Report
Threatened Species Polygons Map 6

Legend

- ▭ Development Site
- ▭ Development Footprint
- ▭ Superb Parrot
- ▭ Squirrel Glider
- Threatened Species Sightings
- Superb Parrot
- Squirrel Glider

0 1 2 km



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Threatened Species Polygons
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Figure 4-14 Threatened Species Polygons (map 6)

5. Additional Impacts that may affect offset liability

Condition D5 of the Flyers Creek Wind Farm Project requires the credit liability to be calculated in accordance with the BAM. Therefore, an assessment of Prescribed impacts, indirect impacts and Serious and Irreversible impacts as they relate to the potential generation of credits has been completed below.

The resulting assessments suggest no additional credits should be applied to the current offset liability generated for the Development.

5.1 Prescribed Impacts

5.1.1 Impacts of development on the habitat of threatened species or ecological communities associated with karst, caves, crevices, cliffs and other features of geological significance

There are no Karsts, caves, crevices, cliffs or areas of geological significance within the development site.

5.1.2 Impacts of development on the habitat of threatened species or ecological communities associated with rock

Rocky outcrops are common within the development site. One threatened species – Pink-tailed Legless Lizard is associated with rocks and could occur within the development site. Rocky habitat for this species was considered marginal as the majority of rocks were heavily embedded in the soil and surrounded by exotic dominated vegetation. This species was adequately surveyed for and not detected. There are unlikely to be any impacts to threatened species associated with rocks.

5.1.3 Impacts of development on the habitat of threatened species or ecological communities associated with human made structures

No human-made structures would be impacted by the development.

5.1.4 The assessment of the impacts of development on the habitat of threatened species or ecological communities associated with non-native vegetation.

The development footprint was designed to avoid impacts to higher condition native vegetation as much as possible, and, where impacts were unavoidable, to minimise those impacts. As a result, the development will impact on lower condition vegetation consisting of predominantly non-native species, such as exotic pasture grasses. Threatened fauna species are unlikely to rely on this habitat, and although they may utilise it for movement on occasion, it provides little foraging and breeding opportunities for native flora and fauna species within the region.

The Development will impact about 144 ha of cleared improved pasture that is within the development footprint. Birds of prey may utilise open pastures searching for prey however, removal of this non-native vegetation will not impact these species' ability to forage or hunt.

Due to pasture improvement and grazing management, cleared areas containing exotic improved pasture species are considered to be non-optimal for many native threatened fauna and flora species. No additional credits are required in response to the removal of this habitat.

5.1.5 Impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range

The development footprint was selected and designed to avoid impacts to native vegetation as far as practicable and where impacts were unavoidable, offsets have been generated and would be retired. Although the development requires the removal of woodland vegetation, scattered paddock trees, and some areas of low condition grasslands, the area to be removed is a narrow linear footprint which would not isolate adjoining vegetation patches which are already heavily fragmented.

Areas in the south-west of the development site have a relatively intact woodland connectivity. The patch size for woodland vegetation in this area was above 100 ha. These areas provide adequate cover and protection for fauna movement through the landscape. Squirrel gliders (*Petaurus norfolcensis*) were recorded along Gap Road in areas with *Acacia dealbata* present. Additional recordings were in patches of vegetation which adjoin to Gap Road further south.

The Development would involve the removal of 11.15 ha of Squirrel glider habitat and for the majority of the site would not include fragmentation of habitat as the majority of surrounding vegetation would remain. The majority of impact areas are narrow and linear (cabling and access roads are 20m -25m wide) and would only remove the edges of larger patches of vegetation. However, the construction of the access road and cabling across Gap Road has the potential to reduce connectivity of habitat for the Squirrel glider locally. Squirrel Gliders can glide up to 70 metres (van der Ree *et al.* 2003). The construction of an access road along Gap Road could create a gap in canopy cover about 100m wide from the removal of two trees. Trees may be required for removal to allow for the turning circle of trucks carrying wind turbines. If these trees are removed this would reduce connectivity for the species between known locations of the Squirrel Glider. Mitigation measures include the development of a Squirrel Glider Management Plan (SGMP) incorporated as part of the SGMP committed to in the 132kv transmission line BDAR (NGH, 132kv Transmission line BDAR). The SGMP would include the optimal crossing points and location of squirrel glider crossing poles over the access track to reduce connectivity impacts for the species along Gap Road. An indicative location is shown in Figure 5-1.

During operation wind turbines have the potential to impact the movement of species across the landscape through collision with turbines. However, a Bird and Bat Adaptive Management Plan (BBAMP) (Nature Advisory, 2019) has been completed and approved for the Development and provides an adaptive approach to monitoring and responding to bird and bat impacts during operation of the Wind Farm. The management plan includes specific management contingencies for key species and groups identified through a risk assessment. The risk assessment identified that no species were considered at high or severe risk of impact. The majority of species were determined to have a negligible impact and 5 species were considered low likelihood of impact. A robust carcass monitoring program would be completed to detect birds and bats that collide fatally with wind turbines. Mitigation measures will be in place to reduce possible interactions between birds and bats and operating wind turbines including additional surveys if monitoring identifies an impact trigger.

With these measures in place, it is considered that the development would not significantly impact the ability of threatened species to move across the landscape upon completion. No additional species credits have been applied.

5.1.6 Impacts of development on the movement of threatened species that maintains their life cycle

No known migratory routes occur within the development site. The development site occurs within a highly altered landscape consisting predominately of cleared agricultural land. Threatened species that may move within or through the development site would have adapted tolerance to existing disturbance.

The Squirrel Glider was identified in the development site in two survey periods. The Squirrel Glider is an arboreal and agile mammal which relies on hollow-bearing trees for shelter and breeding. The Development involves the removal of 11.15 ha of woodland habitat which contains hollow-bearing trees. If these hollow-bearing trees are removed, the following mitigation measures are required as part of the proposed Flora and Fauna Management Plan:

- Retention of hollow-bearing trees where possible
- Avoid clearing during the breeding season (April to November) to minimise impact on the life cycle of this species.
- If clearing occurs during April to November, ensure a qualified ecologist completes the following:
 - A pre-clearance survey of the trees proposed to be removed. This may include installation of cameras in the weeks leading up to the planned tree removal.
 - Is on site to supervise tree removal to manage any threatened species discovered during operations.
 - Placement of suitable man-made hollow bearing structures within the surrounding area.

Due to the linear nature of the development footprint, vegetation containing suitable roosting and breeding habitat would be retained where possible and specific measures put in place to avoid further connectivity issues including a glider pole on Gap Road then additional credits would not be required.

Superb Parrots were identified in the development site in all survey periods since the assessment phase of the Development commenced. A Superb Parrot targeted survey was completed by Nature Advisory during the breeding period (Superb Parrot Targeted Survey (SPTS) 2019). Targeted surveys in accordance with the BAM were also completed by NGH in 2018 and 2019. During the 2019 surveys two hollow bearing trees were identified as active breeding trees. Given the extensive sightings of the species across the development site, woodland vegetation suitable for future breeding in proximity to recorded sightings has been considered as part of the offsets generated for the Development. The SPTS determined that based on observations of flight paths the Superb Parrot was considered well below the level considered in the BBAMP to represent a risk to the species movement.

5.1.7 Impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities

There are no water bodies present in the development site that sustain threatened species and threatened ecological communities. Therefore, the development will not impact any threatened aquatic species or ecological communities reliant on hydrological processes.

To ensure the development does not impact water quality and hydrological processes within the broader landscape; mitigation measures include sediment barriers and spill management protocols to control the quality of water runoff from the site into the surrounding environment.

5.1.8 Impacts of vehicle strikes on threatened species or on animals that are part of a TEC

An increase in vehicle traffic during construction, and required maintenance periods, may slightly increase the risk of vehicle strike on threatened species occurring in or near the development site. However, this traffic would be predominantly between dusk and dawn, and is not considered likely to greatly increase the existing level of vehicle strike risk to fauna presented by rural traffic. During the operational phase of the Development, the increase in vehicles traversing the site for maintenance and monitoring is unlikely to significantly increase the threat of vehicle strikes to fauna in adjacent Box Gum Woodland communities. Vehicles and machinery are regularly used in the landscape for agricultural practices. It is recommended that site management actions be taken to enforce and reduce site speed limits and limiting traffic during dawn and dusk, which would minimise impacts of vehicle strike.

5.1.9 Impacts of development on the habitat of threatened species or ecological communities associated with non-native vegetation

The development footprint was designed to avoid impacts to higher condition native vegetation as much as possible, and, where impacts were unavoidable, to minimise those impacts. As a result, the development will impact on lower condition vegetation consisting of predominantly non-native species, such as exotic pasture grasses. Threatened fauna species are unlikely to rely on this habitat, and although they may utilise it for movement on occasion, it provides little foraging and breeding opportunities for native flora and fauna species within the region.

5.1.10 Impacts of wind turbine strikes on protected animals

The majority of the wind farm consists of ridges and gentle slopes predominantly void of tree cover, with only a small proportion of the proposed turbines likely to be within Superb Parrot habitat. The majority of the impacts to Superb Parrot habitat would be through the clearing of hollow bearing trees and woodland vegetation for construction of the access tracks and cabling.

Activities of Superb Parrots and other protected animals within the wind farm site will be monitored through the implementation of the BBAMP and a monitoring program will be initiated that will cover the period of occupancy of Superb Parrots on site. Monitoring will take place at a frequency that will provide adequate data on flight patterns in order to identify, and mitigate for, at risk behaviours.

5.2 Indirect Impacts

Indirect impacts can occur when the development or activities relating to the construction or operation of the development affect native vegetation, threatened ecological communities or threatened species habitat beyond that of the development site. Indirect impacts of the development can include soil and water contamination, increased edge effects, or the generation of excessive dust, light or noise. Indirect impacts that must be considered are listed in the BAM.

Retained vegetation within the development site may be impacted indirectly by the Development. An assessment of indirect impacts is shown in Table 5-1.

Indirect Impacts are considered to be minimal and no biodiversity credits are required.

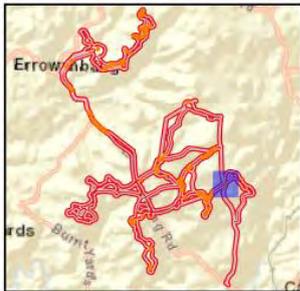


18-558 Flyers Creek Wind Farm Offset Report - Squirrel Glider prescribed impacts

0 0.1 0.2 km

Legend

- Development Site
- Development Footprint
- Impacts to Squirrel Glider Connectivity
- Squirrel Glider Sighting



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps \ Squirrel Glider
 Author: D. Bambrick
 Date created: 19.10.2021
 Datum: GDA94 / MGAzone 55



Figure 5-1 Prescribed impacts on Squirrel Glider Connectivity

Table 5-1 Indirect Impacts

Nature of impact	Extent	Frequency	Duration timing	and TEC, threatened species and habitats likely to be affected	Consequence
Indirect impacts (those listed below are included in the BAM)					
Inadvertent impacts on adjacent habitat or vegetation	150 ha of retained vegetation on site.	Irregular	Construction Phase – Short Term	Box-gum Woodland Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> • Potential loss of native flora and fauna habitat • Potential for injury and mortality of fauna to increased traffic and construction • Disturbance to stags, fallen timber, and small bush rocks Mitigation measures to clearly mark vegetation to be retained would reduce any impacts to the adjacent habitat.
Reduced viability of adjacent habitat due to edge effects	150 ha of retained vegetation on site	Constant	Operational Phase – Long Term	Box-gum Woodland Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> • Degradation of TECs • Loss of native flora and fauna habitat The retained vegetation is already highly fragmented and partially cleared. The development has avoided areas of more intact vegetation and no fragmentation would occur. The impacts are likely to be minor in nature and would result in a negligible consequence for bioregional persistence
Reduced viability of adjacent habitat due to noise, dust or light spill	150 ha of retained vegetation on site	Rare	Construction Phase – Short Term	Box-gum Woodland Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> • May alter fauna activities and/or movements • Minor loss of foraging or breeding habitat Impacts would be short term during construction. The combined impacts are likely to be minor in nature if they occur at all and would result in a negligible consequence for bioregional persistence
Transport of weeds and pathogens from the site to adjacent vegetation	Possible.	Possible	Construction & Operational Phase: Long-term	Box-gum Woodland Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> • Degradation of TECS and threatened species habitat through weed encroachment. Mitigation measures implemented for weed hygiene protocols should limit impacts to TECs.

Increased risk of starvation, exposure and loss of shade or shelter	Possible	Rare	Construction & Operational Phase: Long-term	Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> Loss of foraging habitat <p>Some impacts would occur through loss of habitat however 150 ha of native vegetation would be retained immediately surrounding the development. The impacts are likely to be minor in nature and would result in a negligible consequence for bioregional persistence.</p>
Cumulative loss of breeding habitat and competition for remaining resources	Unknown – no other known proposed developments within locality. 132kv transmission line impacting 7.47 ha of native vegetation.	Possible	Construction Phase – Long Term	Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	<ul style="list-style-type: none"> Cumulative loss of vegetation clearing. <p>The impacts of 132kv transmission line have been assessed within the Flyers Creek Modification 5 BDAR and Biodiversity Offsets have been generated.</p>
Trampling of threatened flora species	None – no threatened flora species	Absent	n/a	n/a	None
Inhibition of nitrogen fixation and increased soil salinity	Unlikely	Absent	n/a	n/a	None
Fertiliser drift	Unlikely – no fertilisers to be used	Absent	n/a	n/a	None
Rubbish dumping	Unlikely	Absent	n/a	n/a	None
Wood collection	Unlikely – no increased community access to site.	Absent	n/a	n/a	None
Bush rock removal and disturbance	Unlikely – no increased community access to site.	Absent	n/a	n/a	None
Increase in predatory species populations	Unlikely – Current pest management practices to continue	Rare	Construction & Operational Phase: Long-term	Superb Parrot Squirrel Glider Ecosystem credit species listed in section 4.1	Increased predation of threatened fauna species

Increase in pest animal populations	Unlikely – Current pest management practices to continue	Rare	Construction & Operational Phase: Long-term	Superb Parrot Squirrel Gider Ecosystem credit species listed in section 4.1	Increased predation of threatened fauna species
Increased risk of fire	None	Absent	n/a	n/a	None
Disturbance to specialist breeding and foraging habitat, e.g., beach nesting for shorebirds	None	Absent	n/a	n/a	None

5.3 Serious and Irreversible impacts

Consideration has been given to how entities with potential for Serious and Irreversible Impacts (SAII) will affect calculation of the biodiversity credit liability for the Development. An assessment of SAII has been completed below in accordance with the document *Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE, 2019)* and the BAM 2017.

The principles used to determine if a development will have serious and irreversible impact, include impacts that:

1. The determination of a serious and irreversible impact on biodiversity values is to be made by the decision-maker in accordance with the principles set out in the BC Regulation.
2. To assist the decision-maker, the document *Guidance to assist a decision-maker to determine a serious and irreversible impact* includes criteria that enable the application of the four principles set out in clause 6.7 of the BC Regulation to identify the species, populations and ecological communities that are likely to be at risk of SAIIs.
3. The assessor must identify every threatened entity at risk of an SAII that would be impacted by the Development.
4. The assessor may identify any other threatened entity impacted by the Development that is likely to be at risk of an SAII, in accordance with the four principles in the BC Regulation.
5. A decision-maker may require an assessor to include an assessment of additional threatened entities that are at risk of an SAII other than those identified in the BAM-C as part of a Development.
6. To assist the decision-maker to evaluate the extent and severity of the impact on an entity at risk of an SAII, the BDAR or BCAR must contain details of the assessment of SAIIs, in accordance with the criteria set out in Subsection 9.1.1 for impacts on each TEC and in Subsection 9.1.2 for each threatened species. All criteria must be addressed for each TEC or threatened species at risk of an SAII and likely to be impacted by the Development.

Threatened ecological communities

One threatened ecological community listed as a potential SAII entity be impacted by the Development;

- White Box-Yellow Box- Blakely's Red Gum Woodland BC Act (Box-gum Woodland)

Threatened species

There are no threatened species listed as a SAII candidates recorded at the development site.

Additional potential entities

No further species were considered to be potential SAII entities.

White Box - Yellow Box - Blakely's Red Gum Woodland (Box-gum Woodland)

An assessment of the impacts to Box-gum woodland was undertaken. Figure 5-2 shows the location of Box-gum Woodland within the development site.

- a) **the action and measures taken to avoid the direct and indirect impact on the potential entity for an SAII**

The development site covers 817 hectares. The Box-gum Woodland covers 135.89 ha in the development site which includes PCT 1330, PCT 266, PCT 268, PCT 277 and PCT 278 of low to moderate vegetation condition. The majority of Box-gum Woodland in the development site is degraded and fragmented through a long history of agricultural practices including vegetation clearing, pasture improvement and grazing.

23.8 ha of Box Gum Woodland would be impacted by the Development. This is a worst-case scenario as the footprint during construction would aim to further reduce impacts where possible. Steps have been undertaken to avoid impacting 112.05 hectares of Box-gum Woodland in the development site and mitigation measures include exclusion fencing to protect native vegetation to be retained.

Offsets have been generated for impacts to native vegetation including Box Gum Woodland.

b) the area (ha) and condition of the TEC to be impacted directly and indirectly by the proposed development. The condition of the TEC is to be represented by the vegetation integrity score for each vegetation zone

23.8 ha of Box Gum Woodland would be impacted by the Development.

The areas and condition of the TECs impacted by the development includes:

1. Vegetation Zone 2 PCT 1330_Low Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) – 0.69 hectares impacted of 4.16 hectares.
2. Vegetation Zone 3 PCT 1330_Moderate Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) - 1.26 hectares impacted of 22.59 hectares.
3. Vegetation Zone 4 PCT 266_Low Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) - 0.52 hectares impacted of 2.66 hectares.
4. Vegetation Zone 6 PCT 268_Moderate Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) - 1.9 hectares impacted of 20.98 hectares.
5. Vegetation Zone 9 PCT 277 Moderate Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) – 18.82 hectares impacted of 82.43 hectares.
6. Vegetation Zone 7 PCT 277_Derived Grassland Good Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) – 0.10 hectares impacted of 0.39 hectares.
7. Vegetation Zone 12 PCT 278_Low Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) – No impact.
8. Vegetation Zone 13 PCT 278_Moderate Condition White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland) – 0.51 hectares impacted of 2.00 hectares.

Vegetation Zone 4 has a vegetation integrity score of <15, therefore no ecosystem credits were generated.

c) a description of the extent to which the impact exceeds the threshold for the potential entity that is specified in the Guidance to assist a decision-maker to determine a serious and irreversible impact

No threshold has been defined by BCS for the extent of Box-gum Woodland to be removed that constitutes a serious and irreversible impact.

d) the extent and overall condition of the potential TEC within an area of 1000 ha, and then 10,000 ha, surrounding the proposed development footprint

Box-gum woodland in the locality (10km) around the development site has been heavily modified and is highly fragmented. The native vegetation was historically cleared for agriculture with small remnant patches and isolated paddock trees remaining. Using GIS and State Vegetation Mapping, it is estimated 405.39 ha of Box-gum Woodland occurs within an area of 1000 ha surrounding the proposed development footprint and 2509.16 ha of Box-gum Woodland occurs within an area of 10000 ha surrounding the proposed development footprint (Figure 5-2).

e) an estimate of the extant area and overall condition of the potential TEC remaining in the IBRA subregion before and after the impact of the proposed development has been taken into consideration

The development site occurs on the New South Wales South West Slopes (Inland Slopes) and South East Highlands (Orange) IBRA Bioregions. The Threatened Species Scientific Committee (2006) estimates 55,798 ha of Box-gum Woodland remains in the New South Wales South West Slopes. The wind farm development proposes to remove 21.85 hectares which is <1% of the Box-gum Woodland remaining in this IBRA Region.

The South East Highlands (Orange) IBRA Bioregions estimates 59,468 hectares of Box-Gum Woodland remains. The wind farm development proposes to remove 1.95 hectares which also equates to <1% of the estimated extent remaining.

f) an estimate of the area of the potential TEC that is in the reserve system within the IBRA region and the IBRA subregion

In NSW Box-gum Grassy Woodland is known to occur within at least 42 reserve systems. 8,000 ha of Box-gum woodland is estimated to occur in national parks and nature reserves within the NSW South Western Slopes and tablelands IBRA Region (Benson 2008).

g) the development, clearing or biodiversity certification proposal's impact on:

i. abiotic factors critical to the long-term survival of the potential TEC; for example, how much the impact will lead to a reduction of groundwater levels or the substantial alteration of surface water patterns

Groundwater supplies and levels are unlikely to be affected by the Development and no groundwater is anticipated to be intercepted or extracted. During construction, the Development would have a short-term gross impact upon soils and possibly surface water flow, within discreet areas. These impacts are manageable with the implementation of erosion and sediment controls and would be unlikely to impact on abiotic factors critical to the long-term survival of Box-gum woodland.

ii. characteristic and functionally important species through impacts such as, but not limited to, inappropriate fire/flooding regimes, removal of understorey species or harvesting of plants

No characteristic or functionally important species would be lost through the removal of the Box-gum woodland. The vast majority of Box-gum woodland within the development site has been modified or degraded due to historical land use and edge effects. No impacts to the remaining Box-gum woodland are anticipated. No introduced fire or flooding regimes would occur and no increase of natural occurrences of these events is anticipated from the development.

iii. the quality and integrity of an occurrence of the potential TEC through threats and indirect impacts

23.8 ha of Box-gum Woodland would be impacted, removed or modified by the Development. It is likely the remaining 112.05 of Box-gum woodland within the development site would be avoided by the development and would remain unchanged from the current existing condition.

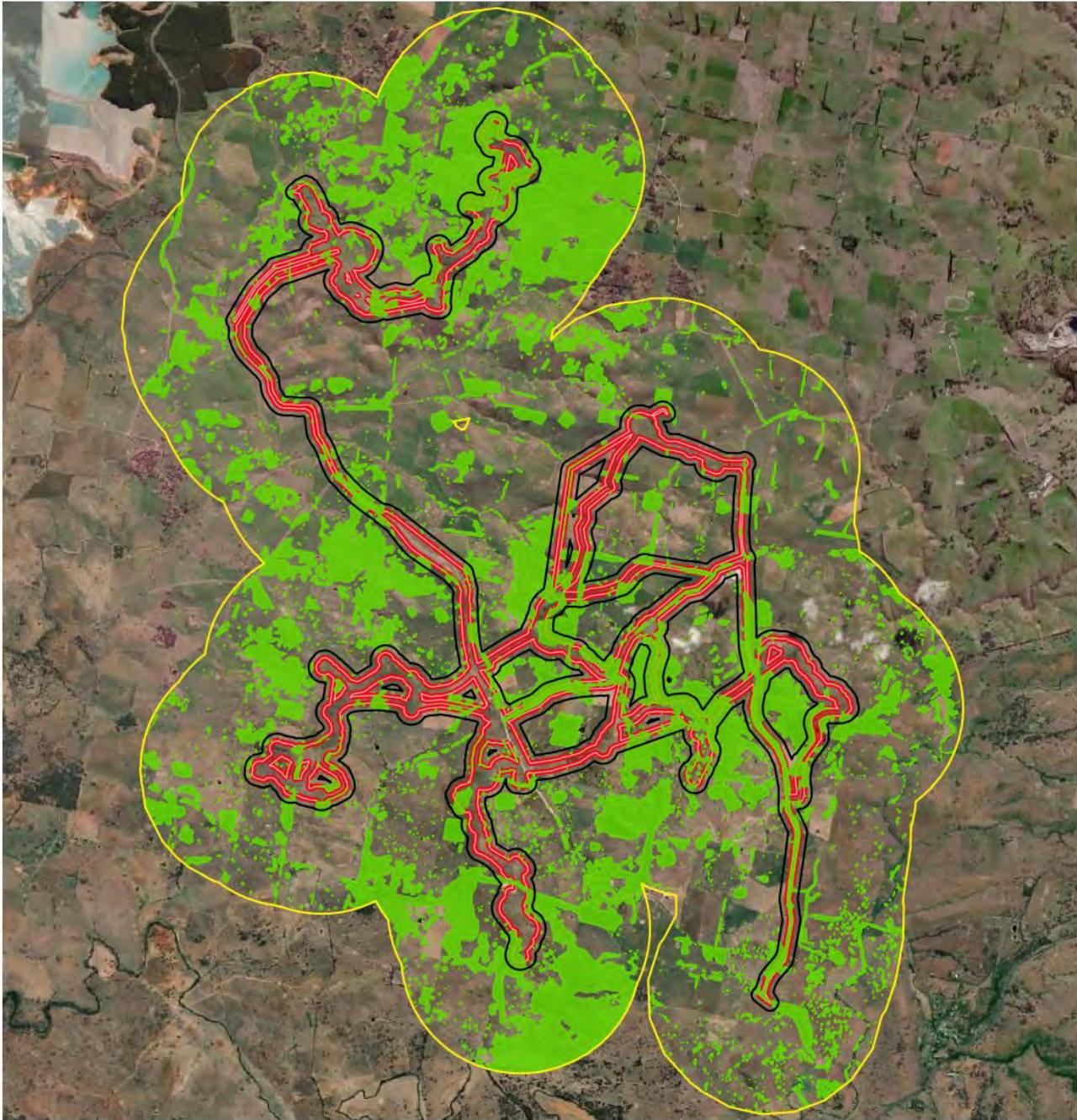
h) direct or indirect fragmentation and isolation of an important area of the potential TEC

The proposed wind farm development is a series of access roads and underground cabling connecting to each of the 38 turbines scattered over 817 hectares. Construction of the wind turbines will not isolate patches of Box-gum Woodland, however the Box-gum Woodland in this locality is fragmented and in modified vegetation condition. Once construction is completed, it is unlikely there will be any ongoing indirect impacts and the existing threats from cropping, grazing and weed infestation are expected to continue. A Bird and Bat Adaptive Management plan would be implemented which involves monitoring fauna collision and mortalities during operation. To prevent any other future indirect impacts such as new weed infestation, which may lead to loss of biodiversity, mitigation measures include weed hygiene and weed treatment methods.

The direct loss of 23.8 hectares of Box-gum Woodland generated 477 ecosystem credits, these credits will be retired in accordance with the NSW Biodiversity Offsets scheme.

i) the measures proposed to contribute to the recovery of the potential TEC in the IBRA subregion.

The 23.8 ha of Box-gum woodland to be removed will be offset by 477 ecosystem credits, which will result in the conservation of Box gum woodland, ensuring no net loss of the Box-gum Woodland in the IBRA region.



18-558 Flyers Creek Wind Farm Offset Report
Box-Gum Woodland SAI

- Legend**
- Development Site
 - 10,000 Ha Buffer
 - 1,000 Ha Buffer
 - Box-Gum Woodland

0 1 2 km

Data Attribution
 © NGH 2021
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Ref: 18-558 Flyers Creek Wind Farm Offset
 Report Maps \ Box-Gum Woodland SAI
 Author: D. Bambrick
 Date created: 16.09.2021
 Datum: GDA94 / MGA zone 55



Figure 5-2 SAI for Box-gum Woodland

6. Offsets Required

6.1 Direct Impacts

6.1.1 Changes in vegetation integrity scores

Approximately 31 ha of Native Vegetation would be impacted by the development within the development footprint. Complete clearing of native vegetation has been assumed where impacts occur. An offset is required for all impacts of development on PCTs that are associated with:

- a) a vegetation zone that has a vegetation integrity score ≥ 15 where the PCT is representative of an endangered or critically endangered ecological community, or
- b) a vegetation zone that has a vegetation integrity score of ≥ 17 where the PCT is associated with threatened species habitat (as represented by ecosystem credits), or is representative of a vulnerable ecological community, or
- c) a vegetation zone that has a vegetation integrity score ≥ 20 where the PCT is not representative of a TEC or associated with threatened species habitat.

No credits are generated for four zones (PCT 266_Low Condition, PCT 268_Derived Grasslands, PCT 277_Derived Grassland Low Condition and 277_Planted Roadside) as the vegetation integrity score was below the threshold. The changes in vegetation integrity scores and ecosystem credits required for each of the zone in the development site is shown in Table 6-1

Table 6-1 Ecosystem Credits required

Zone ID	PCT/Zone	TEC	Total Area (ha)	Area Impacted (ha)	Current vegetation Integrity Score	Future vegetation Integrity Score	Ecosystem Credits Required
1	1330_Derived Grassland	Nil	1.76	0.45	29.6	0	8
2	1330_Poor Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	4.16	0.69	39	0	17
3	1330_Moderate Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	22.59	1.26	64.8	0	51
4	266_Low Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	2.66	0.52	12.3	0	0
5	268_Derived Grassland	Nil	6.86	2.53	4.9	0	0

Zone ID	PCT/Zone	TEC	Total Area (ha)	Area Impacted (ha)	Current vegetation Integrity Score	Future vegetation Integrity Score	Ecosystem Credits Required
6	268_Moderate Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	20.98	1.90	58.8	0	49
7	277_Derived Grassland Good Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	0.39	0.10	42.6	0	3
8	277_Derived Grassland Low Condition	Nil	27.36	3.97	12.8	0	0
9	277_Moderate Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	82.43	18.82	28.5	0	335
10	277_Planted	Nil	0.27	0.04	47.2	0	1
11	277_Planted Roadside	Nil	0.93	0.04	5.7	0	0
12	278_Low Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	0.41	0.0 (No impact to this zone)	15.8	0	0
13	278_Moderate Condition	<i>White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Box-gum Woodland)</i>	2.00	0.51	69.7	0	22
14	766_Moderate Condition	Nil	2.85	0.17	33.8	0	3
			175.65	31.00			489

6.1.2 Loss of species credit species habitat or individuals

An offset is required for the loss of habitat of credit species within the development footprint. Three threatened species would be impacted by the development. The loss of habitat and species credits required as a result of the development is shown in Table 6-2

Table 6-2 Loss of species credit habitat

Species Credit Species	Biodiversity weighting	risk	Area of habitat impacted	Species Required	Credits
Fauna					
Squirrel Glider (<i>Petaurus norfolcensis</i>)	2.0		11.15 ha (Woodland areas connected to sightings)	204	
Superb Parrot (<i>Polytelis swainsonii</i>)	2.0		23.00 ha (Woodland areas connected to sightings)	348	
TOTAL:				552	

6.1.3 Loss of Paddock Trees

53 native paddock trees would be removed by the development and require offsetting. Offsets are required for all Class 2 and Class 3 paddock trees. A summary of ecosystem credits generated by the BAM-C is shown in Appendix G.

Table 6-3 Summary of loss of paddock trees

PCT	Class Paddock Tree	of Hollows present	Number Paddock cleared	of Credits required per Tree	Ecosystem credits required
266	Class 2	No	1	0.5	1
266	Class 3	No	4	0.75	3
266	Class 3	Yes	2	1	2
268	Class 2	No	-	0.5	0
268	Class 3	No	3	0.75	3
268	Class 3	Yes	4	1	4
277	Class 2	No	5	0.5	3
277	Class 3	No	17	0.75	13
277	Class 3	Yes	17	1	17
TOTAL:					46

6.2 Summary of Biodiversity Offset Credits Required

A summary of the biodiversity offset credits generated by the BAM-C is shown in Table 6-4.

Table 6-4 Summary of Biodiversity Offset Credits required by the development

PCT ID	PCT name	Ecosystem credits required
1330	Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	76
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.	0
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion. - Paddock Trees	6
268	White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion.	49
268	White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion – Paddock Trees	7
277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	339
277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion – Paddock Trees	33
278	Riparian Blakely's Red Gum – box – shrub -sedge-grass tall open forest of the central NSW South Western Slopes Bioregion.	22
766	Carex Sedgeland of the slopes and tablelands	3
TOTAL:		535
Species Credit Species		Species Credits Required
Squirrel Glider (<i>Petaurus norfolcensis</i>)		194
Superb Parrot (<i>Polytelis swainsonii</i>)		348
TOTAL:		542

6.3 Summary of Conditions of Consent

This report addresses the project approval conditions as defined in Section 1. The

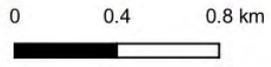
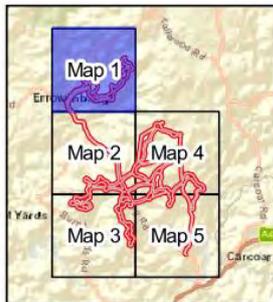
<i>Update the baseline mapping of the vegetation and key habitat within the final disturbance area, and</i>	Vegetation mapping updated with spatial data shown in Figures 3-11 to Figure 3-22 and Figure 6-1 to Figure 6-6 and provided to BCD.
<i>Calculate the biodiversity offset credit liability in accordance with the Biodiversity Assessment Methodology under the NSW Biodiversity Offsets Scheme, in consultation with OEH and to the satisfaction of the Secretary</i>	Biodiversity Credit Liability calculated and summarised in Section 6.2. Credits finalised in the BAM-Calculator and submitted (Case number 0001690)

<p><i>Within two years of the commencement of construction, the proponent must retire the required biodiversity credits to the satisfaction of OEH. The retirement of the credits must be carried out in accordance with the NSW Biodiversity Offsets Policy for Major Projects.</i></p>	<p>Credits submitted as Case number 0001690 to BCD. Proponent to retire within two years of commencement of construction.</p>
<p><i>No more than 28.1 hectares of Critically Endangered Ecological Community may be cleared for the project</i></p>	<p>Based on the current construction disturbance corridor these limits will not be exceeded. This will be audited under the Flyers Creek Wind Farm Construction Flora and Fauna Management Plan.</p>



18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 1

- Legend**
- Development Site
 - Development Footprint
 - Native Vegetation Requiring Offset**
 - Paddock Tree
 - Class 2
 - Class 3
 - Box-Gum Woodland CEEC
 - PCT_Zone (Requiring Offset)
 - 277_moderate
 - 277_planted
 - 788_moderate
 - Superb Parrot Threatened Species Polygon
 - Native Vegetation Not Requiring Offset**
 - PCT_Zone (Not Requiring Offset)
 - 277_derived_low



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps 1 Impacts Requiring Offset
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



Figure 6-1 Impacts requiring Biodiversity Credits (map 1)



18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 2

Legend

Development Site	277_moderate
Development Footprint	277_planted
Native Vegetation Requiring Offset	766_moderate
Paddock Tree	Squirrel Glider Threatened Species Polygon
Class 2	Superb Parrot Threatened Species Polygon
Class 3	Native Vegetation Not Requiring Offset
Box-Gum Woodland CEEC	PCT_Zone (Not Requiring Offset)
PCT_Zone (Requiring Offset)	288_poor
1330_poor	277_derived_low
288_moderate	277_planted_roadside

0 0.4 0.8 km

Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps 1 Impacts Requiring Offset
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55

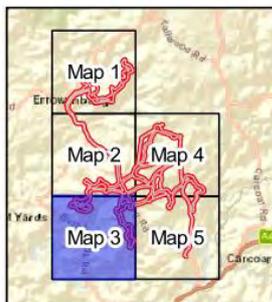
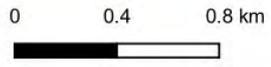
Figure 6-2 Impacts requiring Biodiversity Credits (map 2)



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18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 3

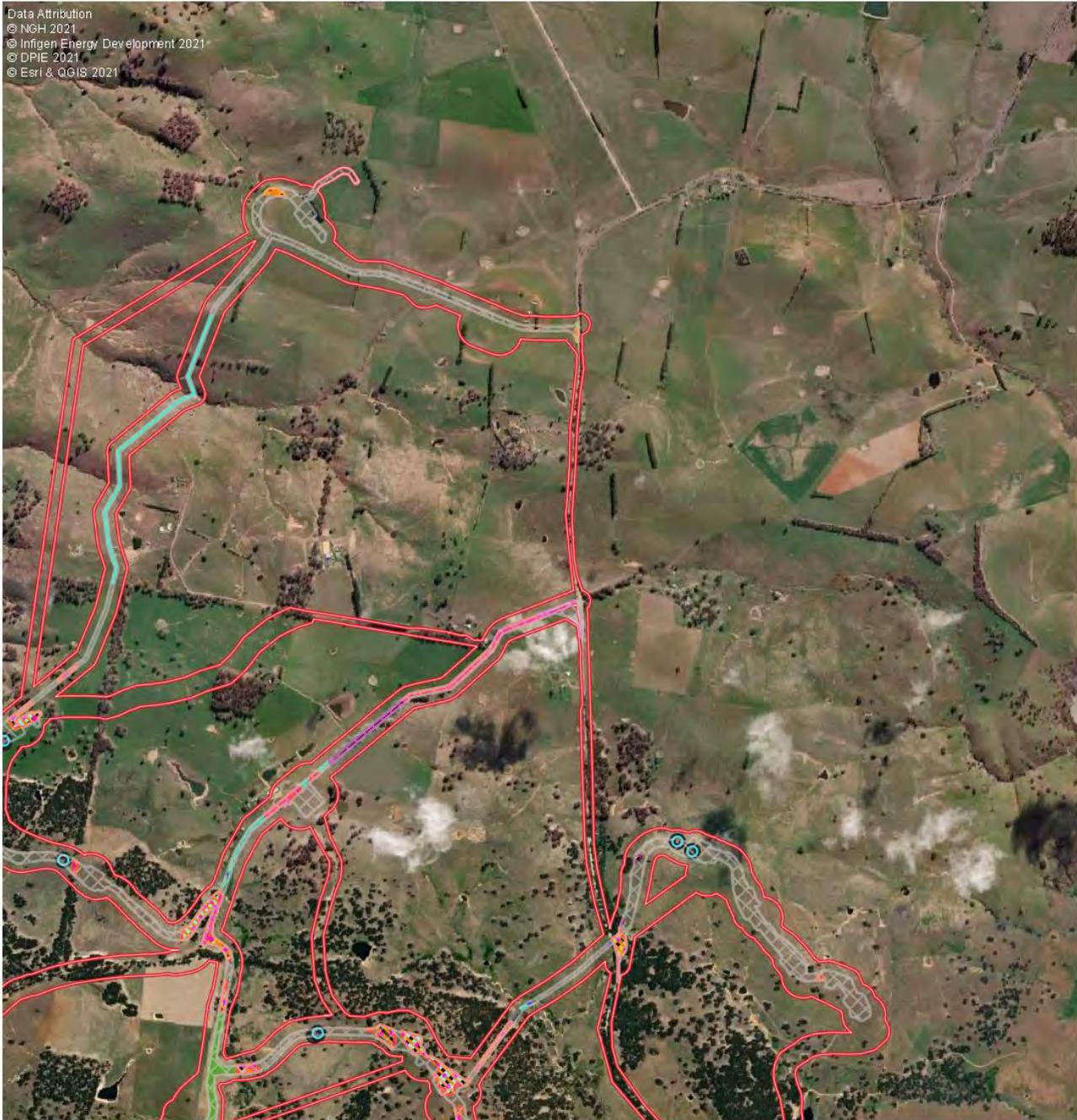
- Legend**
- Development Site
 - Development Footprint
 - Native Vegetation Requiring Offset**
 - Paddock Tree
 - Class 2
 - Class 3
 - Box-Gum Woodland CEEC
 - PCT_Zone (Requiring Offset)
 - 277_moderate
 - 766_moderate
 - Squirrel Glider Threatened Species Polygon
 - Superb Parrot Threatened Species Polygon
 - Native Vegetation Not Requiring Offset**
 - PCT_Zone (Not Requiring Offset)
 - 266_poor
 - 277_derived_low



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps 1 Impacts Requiring Offset
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



Figure 6-3 Impacts requiring Biodiversity Credits (map 3)



18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 4

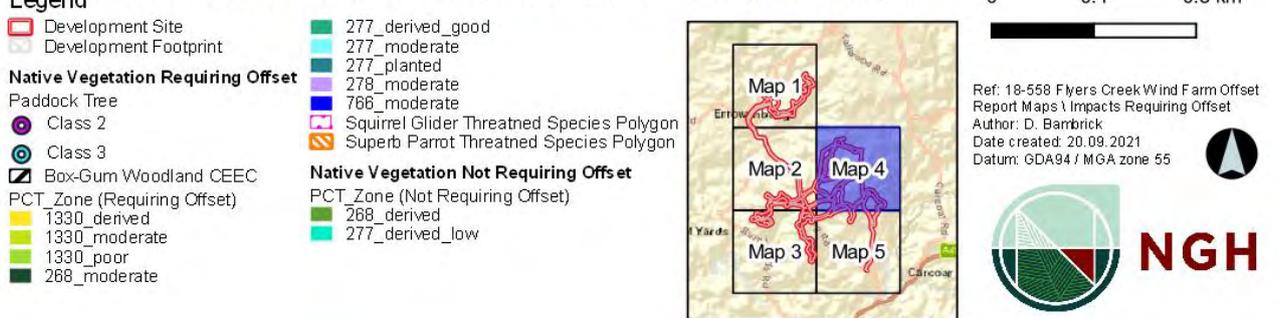


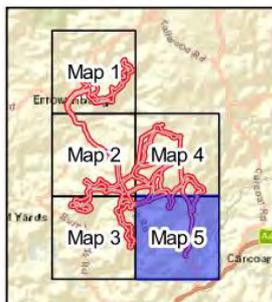
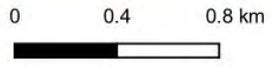
Figure 6-4 Impacts requiring Biodiversity Credits (map 4)



18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 5

- Legend**
- Development Site
 - Development Footprint
 - Native Vegetation Requiring Offset**
 - Paddock Tree**
 - Class 2
 - Class 3
 - Box-Gum Woodland CEEC

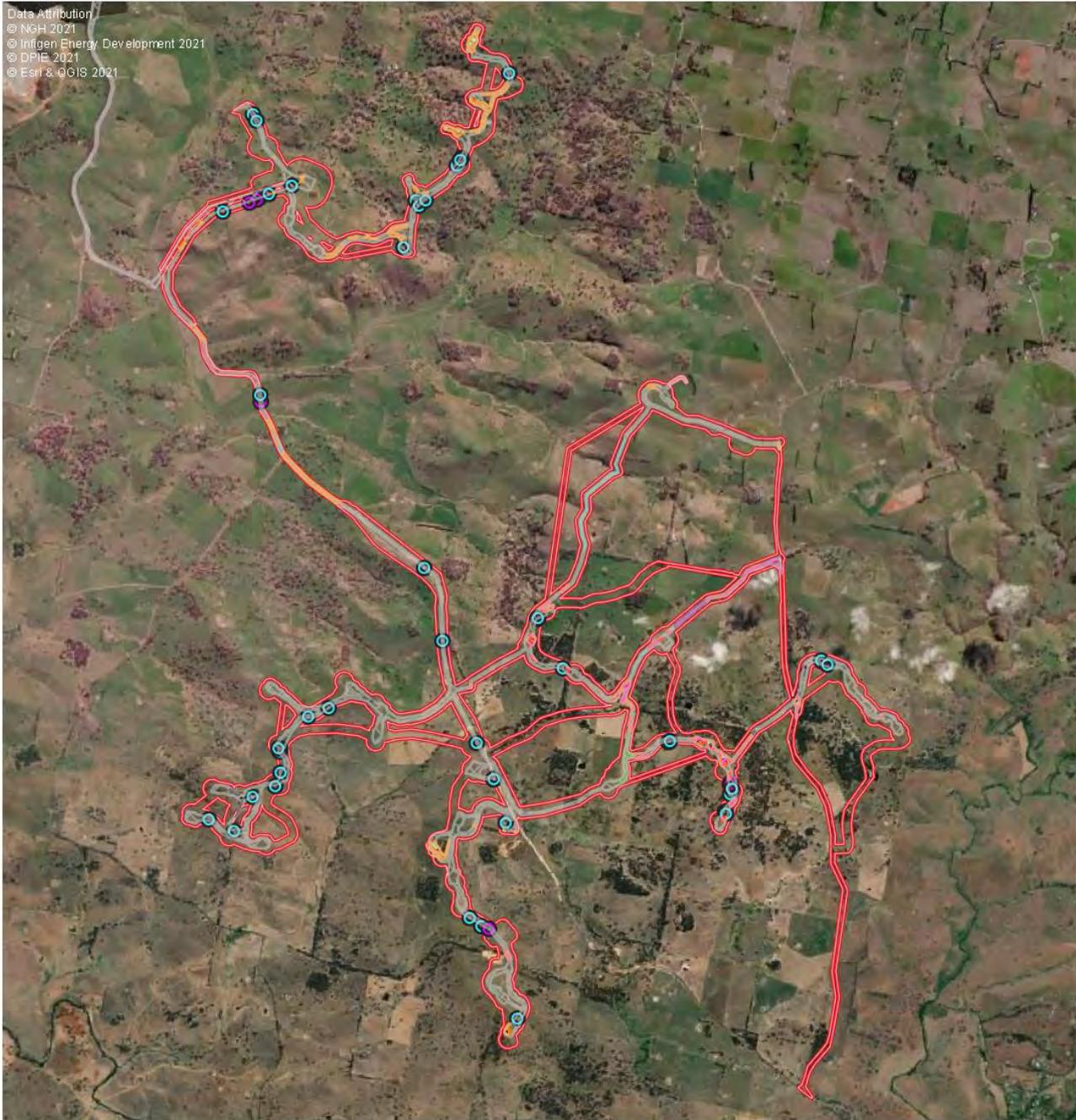
- PCT_Zone (Requiring Offset)**
- 288_moderate
- 277_moderate
- Squirrel Glider Threatened Species Polygon
- Superb Parrot Threatened Species Polygon
- Native Vegetation Not Requiring Offset**
- PCT_Zone (Not Requiring Offset)**
- 288_derived



Ref: 18-558 Flyers Creek Wind Farm Offset Report Maps 1 Impacts Requiring Offset
 Author: D. Bambrick
 Date created: 20.09.2021
 Datum: GDA94 / MGA zone 55



Figure 6-5 Impacts requiring Biodiversity Credits (map 5)



18-558 Flyers Creek Wind Farm Offset Report - Impacts Requiring Offset Map 6

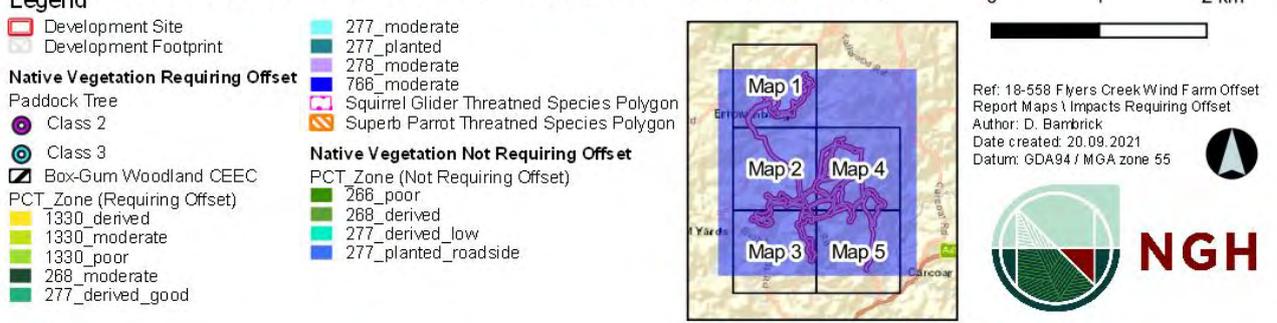


Figure 6-6 Impacts requiring Biodiversity Credits (map 6)

7. Conclusions

NGH has prepared this Biodiversity Offset Report on behalf of Flyers Creek Wind Farm Pty Ltd for the proposed Flyers Creek Wind Farm, NSW. The purpose of this report was to address Project Approval Conditions D5 and D6: Biodiversity Offset Package, which includes a sub condition to calculate the biodiversity offset credit liability in accordance with the Biodiversity Assessment Methodology and the NSW Biodiversity Offsets Scheme.

In this report, biodiversity offsets have been assessed through comprehensive mapping and assessment for Plant Community types, Planted Vegetation and Scattered paddock trees and threatened fauna habitat in the development site. Vegetation Integrity plots and targeted surveys have been undertaken to determine vegetation condition and threatened species habitat in accordance with the BAM.

Mitigation measures have been recommended for a Squirrel Glider Management Plan to address the prescribed impacts of loss of connectivity of movement for the Squirrel Glider.

The Biodiversity Credit requirement has been defined as:

- 49 Ecosystem credits for impacts to PCT 268 – *White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion.*
- 339 Ecosystem credits for impacts to PCT 277 – *Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion*
- 22 Ecosystem credits for impacts to PCT 278 – *Riparian Blakely's Red Gum – box – shrub - sedge-grass tall open forest of the central NSW South Western Slopes Bioregion*
- 3 Ecosystem credits for impacts to PCT 766 – *Carex Sedgeland of the slopes and tablelands of the semi-arid (warm) climate zone.*
- 76 Ecosystem credits for impacts to PCT 1330 – *Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion*
- 6 Ecosystem credits for impacts to scattered paddock trees associated of PCT 266- *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.*
- 7 Ecosystem credits for impacts to scattered paddock trees associated of PCT 268- *White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion*
- 33 Ecosystem credits for impacts to scattered paddock trees associated of PCT 277- *Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion*
- 194 Species credits for impacts to Squirrel Glider
- 348 Species credits for impacts to Superb Parrot

As set out in Condition D6 of the Project Approval, the retirement of these credits must be carried out within two years of the commencement of construction in accordance with the NSW Biodiversity Offsets scheme and will be achieved by:

- (a) Retiring credits under the Biodiversity Offsets Scheme, or
- (b) Making payments into the Biodiversity Conservation Fund using the offset payments calculator, or
- (c) Funding a biodiversity action that benefits the threatened entity(ies) impacted by the development.

8. References

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Appendix A BSC Correspondence



Our ref: DOC21/497289

Megan Richardson
Development Manager
Iberdrola Australia
megan.richardson@iberdrola.com.au

Dear Ms Richardson

Flyers Creek Wind Farm: Modification 5 and biodiversity offset package draft contents

Thank you for your emails dated 8 and 15 June 2021 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning, Industry and Environment (DPIE) inviting comments on the scoping letter and biodiversity assessment for Flyers Creek wind farm modification 5 and the biodiversity offset package draft contents.

BCS understands that the proposed modification 5 will increase the maximum width of an 8.5-kilometre section of the 132kV power line easement from 45 metres to 70 metres. It is understood this modification is required to conform to best practice as a result of a bushfire risk assessment.

In addition, a biodiversity offset package, to calculate the biodiversity credit liability for the wind farm (excluding the power line) is to be prepared to satisfy condition D5 of the project approval.

Further field survey is not required for modification 5

As stated in your scoping letter (dated 5 May 2021), the BDAR will be updated to reflect the proposed changes to the 132kV transmission line. As flora and fauna surveys have been conducted in the past five years in the proposed alignment for the BDAR prepared for the project in October 2018, no further field work is proposed. The revised BDAR will use the existing data. BCS supports this approach.

All relevant plot data and spatial data (ArcGIS compatible shapefiles) will need to be submitted with the BDAR.

Draft biodiversity offset package report contents

The draft biodiversity offset package report contents provided to BCS on 15 June 2021 must include all information and data that will affect calculation of the biodiversity credit liability for the wind farm site (excluding the 132kV transmission line). As a result, an assessment of serious and irreversible impacts and prescribed impacts must be included in the content of the report.

All relevant plot data and spatial data (ArcGIS compatible shapefiles) will need to be submitted with the offset package report.

Transition arrangements for BAM 2020

The Biodiversity Assessment Method 2020 came into effect on 22 October 2020. There are transitional arrangements in place to minimise the impacts that amendments to the BAM may have on proponents and landholders. **Attachment A** provides details of the transitional arrangements.



If you require any further information regarding this matter, please contact Liz Mazzer, Conservation Planning Officer, via liz.mazzer@environment.nsw.gov.au or (02) 6883 5325.

Yours sincerely

A handwritten signature in blue ink that reads "Renee Shepherd".

Renee Shepherd
Acting Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

21 June 2021

cc: Nicole Brewer, Director Energy Resource Assessments, DPIE

Transitional arrangements for the *Biodiversity Assessment Method 2020*

Clause 6.31 of the *Biodiversity Conservation Regulation 2017* provides that when the BAM is amended, a biodiversity assessment report (BAR) may be prepared based on the prior version of the BAM for the following designated periods;

- 12 months for a BDAR in respect of SSD/SSI or standard biocertification,
- 12 months or longer if approved by the Minister for a BDAR in respect of strategic biocertification,
- 6 months for BARs in respect of all other development or stewardship applications

A BAR prepared under these arrangements must state that it has been prepared based on the prior version.

This means that from 22 October 2020 until the end of the relevant designated transition period a BAR may be prepared using **either** the BAM 2017 **or** the BAM 2020, but not a combination of both.

If an Accredited Assessor has commenced preparing a BAR in accordance with the BAM 2017, it is recommended that they discuss the transition options with the proponent/landholder. If opting to continue using the BAM 2017, the BAR must be prepared within the relevant designated period and must include a statement that it has been prepared based on the BAM 2017. In addition, because BOAMs has been updated to reflect the BAM 2020 settings, an assessor continuing to prepare a BAR under the BAM 2017 should consult the [Release Notes](#) to ensure the correct BAM-C settings are applied.

Where an assessor proposes to apply BAM 2017 to a scattered tree (formerly paddock tree) or small area streamlined assessment, the assessor must contact BAM Support for guidance on how to use the BAM Calculator to apply the transitional arrangements. However, if the applicant or assessor proposes to apply BAM 2017 to a BSSAR, the applicant or assessor must contact the Biodiversity Conservation Trust to discuss use of this option.

Appendix B Land Category Assessment

Introduction

NGH were engaged by Infigen Energy. to prepare a Land Category Assessment (LCA) for the proposed Flyers Creek Wind Farm. Biodiversity Development Assessment Report (BDAR) has been prepared for the proposal.

Section 6.8(3) of the BC Act determines that the Biodiversity Assessment Method (BAM) is to exclude the assessment of the impacts of clearing of native vegetation on Category 1 - Exempt Land (within the meaning of Part 5A of the *Local Land Services Act 2013* (LLS Act)). Boundaries mapping Category 1 - Exempt Land on the Native Vegetation Regulatory Mapping are not yet publicly available. During the transitional period, accredited assessors may establish the categorisation of land for the agency head to consider, following the method utilised to develop the Native Vegetation Regulatory Map.

Category 1 – Exempt Land is defined as:

- Land cleared of native vegetation at 1 January 1990 or lawfully cleared of vegetation between 1 January 1990 and 25 August 2017;
- Low Conservation Grasslands;
- Land containing only low conservation groundcover (not being grasslands);
- Native vegetation identified as regrowth in a Property Vegetation Plan under the repealed Native Vegetation Act 2003; or
- Land biodiversity certified under the BC Act.

Category 2 – Regulated Land is defined as:

- Land not cleared as at 1st January 1990 or unlawfully cleared after 1st January 1990;
- Native vegetation grown with the assistance of public funds;
- Land that is (or was previously) subject to a Private Native Forestry Plan or Private Native Forestry PVP;
- Grasslands that are neither low nor high conservation grasslands;
- Travelling stock reserves.

Additionally, two subcategories of Category 2 – Regulated Land are also relevant and include:

Category 2 Vulnerable Regulated Land, including:

- Steep or highly erodible land
- Protected riparian areas,
- Land susceptible to erosion, or land that is otherwise environmentally sensitive).

Category 2 Sensitive Regulated Land, including:

- Land subject to a private land conservation agreement
- A set aside under the Land Management Code
- Land subject to a biocertification conservation measure
- Land comprising an offset under a Property Vegetation Plan or set aside under a code under the Native Vegetation Act 2003
- Coastal wetlands and littoral rainforests (Coastal Management Act 2016)
- High conservation grassland
- Land Categorisation Assessment Procedure – Final 1.0 September 2020
- Core Koala habitat identified in a plan of management (Koala Habitat Protection SEPP)
- Critically endangered plants and critically endangered ecological communities
- Ramsar wetlands (EPBC Act)
- Land subject to remedial action or conservation measures under the BC Act

- o Land subject to a property, trust or conservation agreement
- o Land recommended for listing as an Area of Outstanding Biodiversity Value
- o Conservation Areas under the Southern Mallee Land Use Agreement
- o Native vegetation that must be retained under the Plantation and Reafforestation Act 1999
- o Land subject to a condition of development consent requiring the land to be set aside for conservation purposes under the Environmental Planning and Assessment Act 1979
- o Rainforest and old growth forest.

Based on the **Native Vegetation Regulatory (NVR) Map Excluded Land** includes:

- o All areas within the boundaries of Canobolas State Forest (i.e., pine plantation).

Land Category Assessment

Methodology

An initial desktop assessment, multiple field inspections and literature review of previous studies was undertaken over the development site to determine the ecological constraints and native vegetation communities on site. Assessment of the development site as Category 1 – exempt and Category 2 – regulated land was undertaken using the following data sources:

- 2017 Land Use Dataset (Australian Land Use and Management (ALUM) Classification version 7 (Office of Environment and Heritage (OEH), 2017).
- NSW Woody Vegetation extent and Foliage Projective Cover (FPC) 2011 (OEH, 2015).
- Sensitive regulated and vulnerable lands on the Native Vegetation Regulatory Map Portal (LLS, 2020).
- Central West Lachlan State Vegetation Mapping (OEH, 2018).
- Field surveys via rapid assessment and vegetation integrity plots.
- Aerial imagery of historical land use (Sourced from Spatial Services).

Results

The analysis of the above sources identified demonstrates evidence of broad native vegetation modification resulting from agricultural land use within the development site, and in some areas, used continuously for cropping and modified pasture grazing prior to and post 1990 (Figure 1 to Figure 24). The following table (Table 1) demonstrates how the above mentioned layers were used in determining land category.

Table 1 Summary of data sources and interpretation

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
Current Aerial Imagery Flyers Creek Locality	<ul style="list-style-type: none"> • Clear evidence of grazing. • Clear evidence of significant groundcover modification. 	<ul style="list-style-type: none"> • Woody vegetation present at 1990 demonstrated within woody vegetation extent layer 	N/A
1990 Historic Aerial Imagery Flyers Creek Locality	<ul style="list-style-type: none"> • Clear evidence of grazing. • Clear evidence of significant groundcover modification. 	<ul style="list-style-type: none"> • Woody vegetation present at 1990 demonstrated within woody vegetation extent layer 	N/A
2017 Land Use Dataset	Land use identified as; <ul style="list-style-type: none"> • Managed resource protection • Grazing native vegetation • Production native forests • Plantation forests • Grazing modified pastures • Cropping • Residential and farm infrastructure • Transport and communication 	Land use identified as: <ul style="list-style-type: none"> • Production native forest • Grazing native vegetation • Managed resource protection • Cropping • Transport and communication • River • Grazing modified pastures • Marsh/Wetland • Residential farm infrastructure 	N/A

Data Sources	Category 1 – Exempt Land	Category 2– Regulated Land	Excluded Land
	<ul style="list-style-type: none"> Mining 		
NSW Woody vegetation extent	<ul style="list-style-type: none"> Areas of woody vegetation regrowth that has occurred post 1990 following previous clearing events 	<ul style="list-style-type: none"> Woody vegetation present as at 1990 in conjunction with historic aerial imagery. 	N/A
Native Regulatory Map <ul style="list-style-type: none"> Sensitive regulated land Vulnerable regulated land Excluded land 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Areas identified as vulnerable or sensitive regulated land occur within the development site. 	N/A

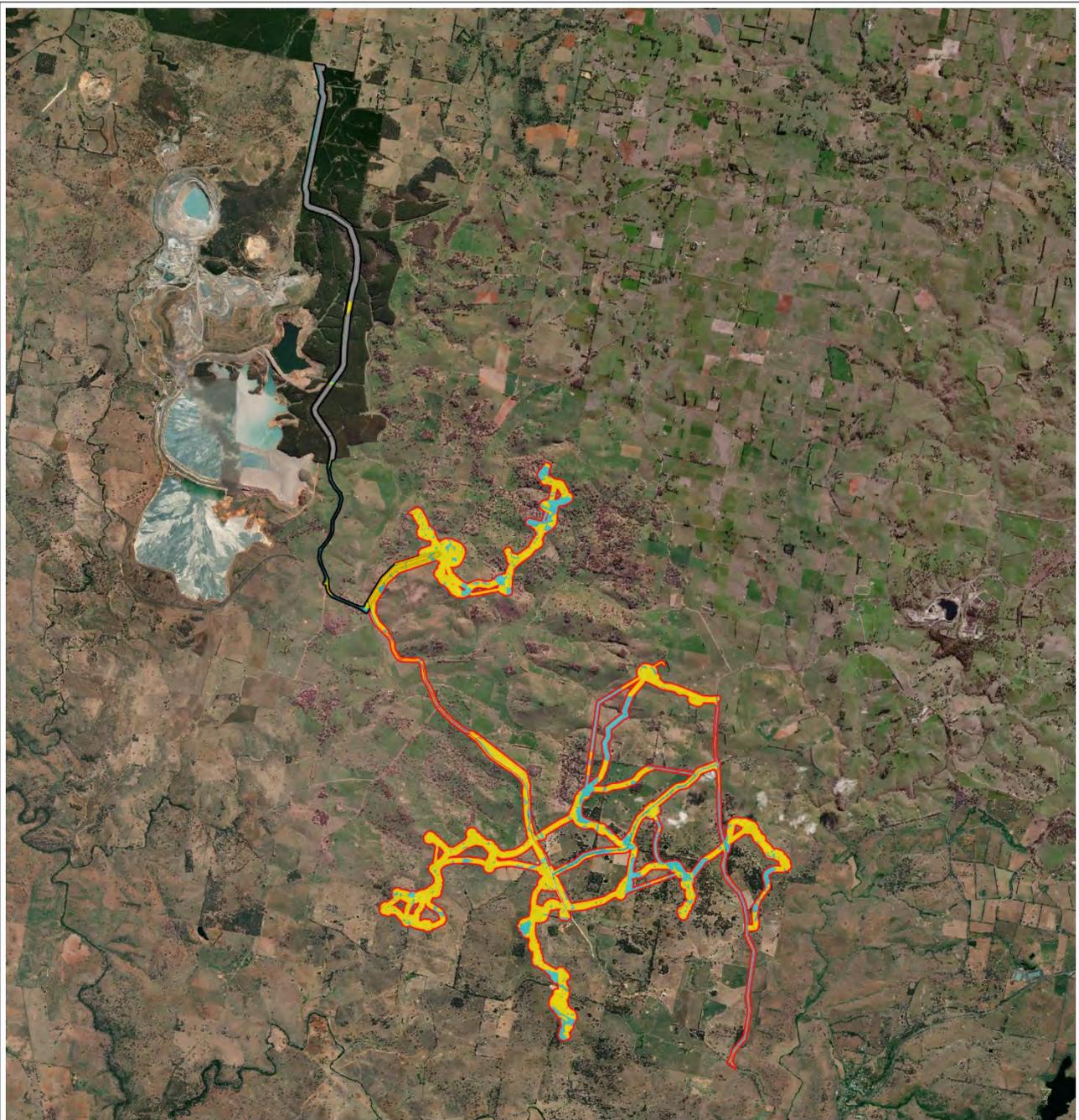
Another determining feature of constant agricultural use is a lack of woody canopy vegetation regrowth in the majority of areas, as represented in the aerial images. The 2011 Woody Vegetation extent does however identify scattered paddock trees and small patches of remnant native vegetation in the development site which has been mapped as Category 2 regulated land. Although subjected to grazing, in areas where it is not 100% conclusive whether areas with a high abundance and cover of modified pasture species have been previously cropped or significantly modified, and more established via a derived nature, a precautionary approach has been applied and mapped as Category 2 – Regulated land.

Conclusion

Based on the above data sources, there is evidence to suggest that large areas of the development site, have been heavily modified from agricultural use including improved pastures and some cropping. This is supported by recent imagery as well as 2017 Land Use Mapping data. Where in doubt, or where data sources are conflicting, a precautionary approach has been implemented for areas deemed inconclusive in terms of determining historical land use. Draft maps of those areas considered to be Category 1 exempt land and Category 2 – regulated land has been produced and shown in Figure 1 to Figure 8. The relevant datasets used in the assessment are included in Figure 9 to Figure 17.

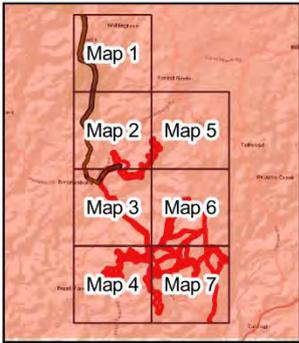
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**18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Total**

- Transmission Line Development Site
- Windfarm Development Site
- Land Category Assessment
- Category 1 Land
- Category 2 Land
- Excluded Land



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 © QGIS & ESRI 2021
 Ref: 18-558 Flyers Creek Wind Farm Offsets Land
 Category Assessment 20210827 \ Land Category
 Assessment
 Author: D. Bambrick
 Date created: 27.08.2021
 Datum: GDA94 / MGA zone 55



Figure 1 Development Site overview and Land categorisation - Overview.

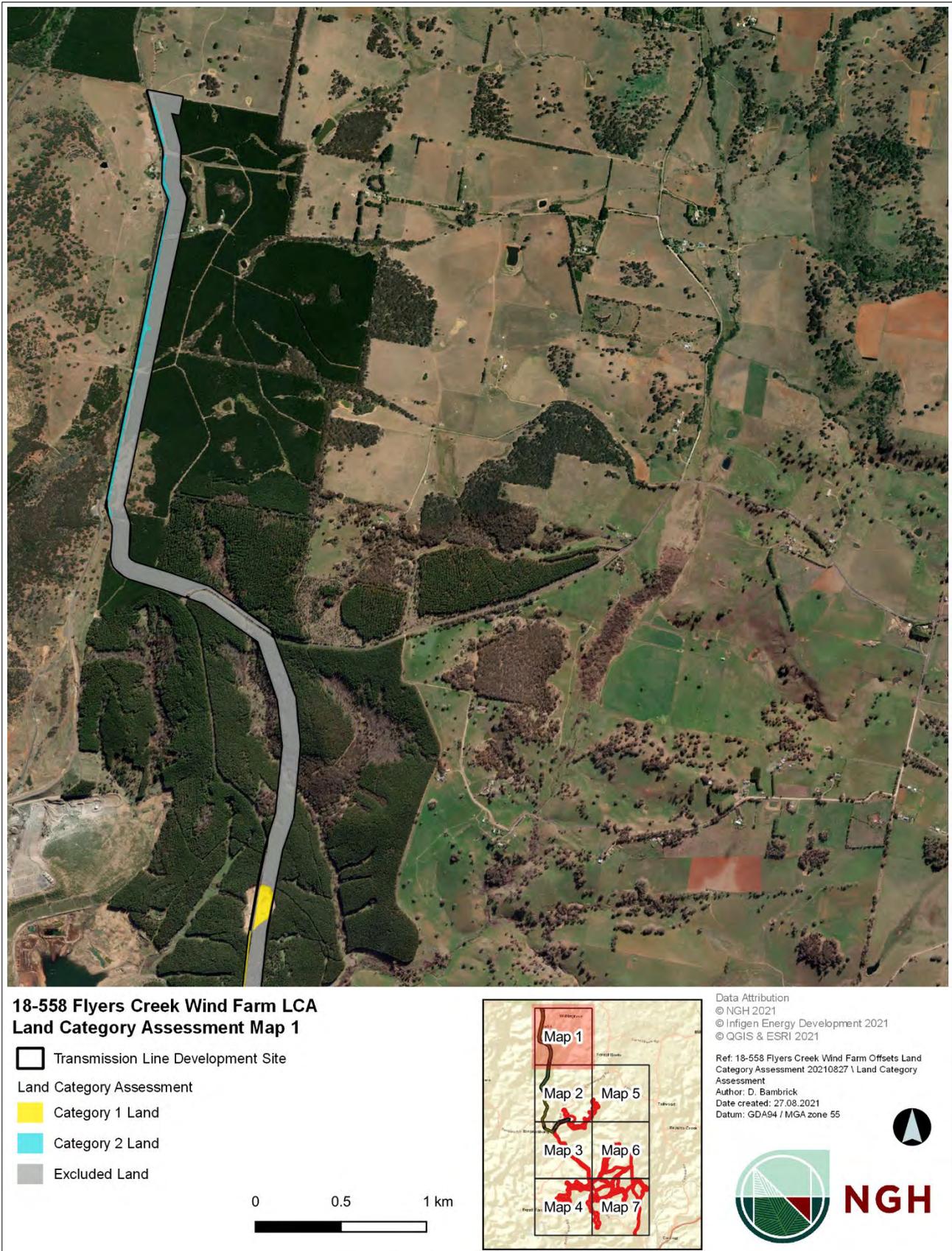


Figure 2 Development Site overview and Land categorisation - Map 1

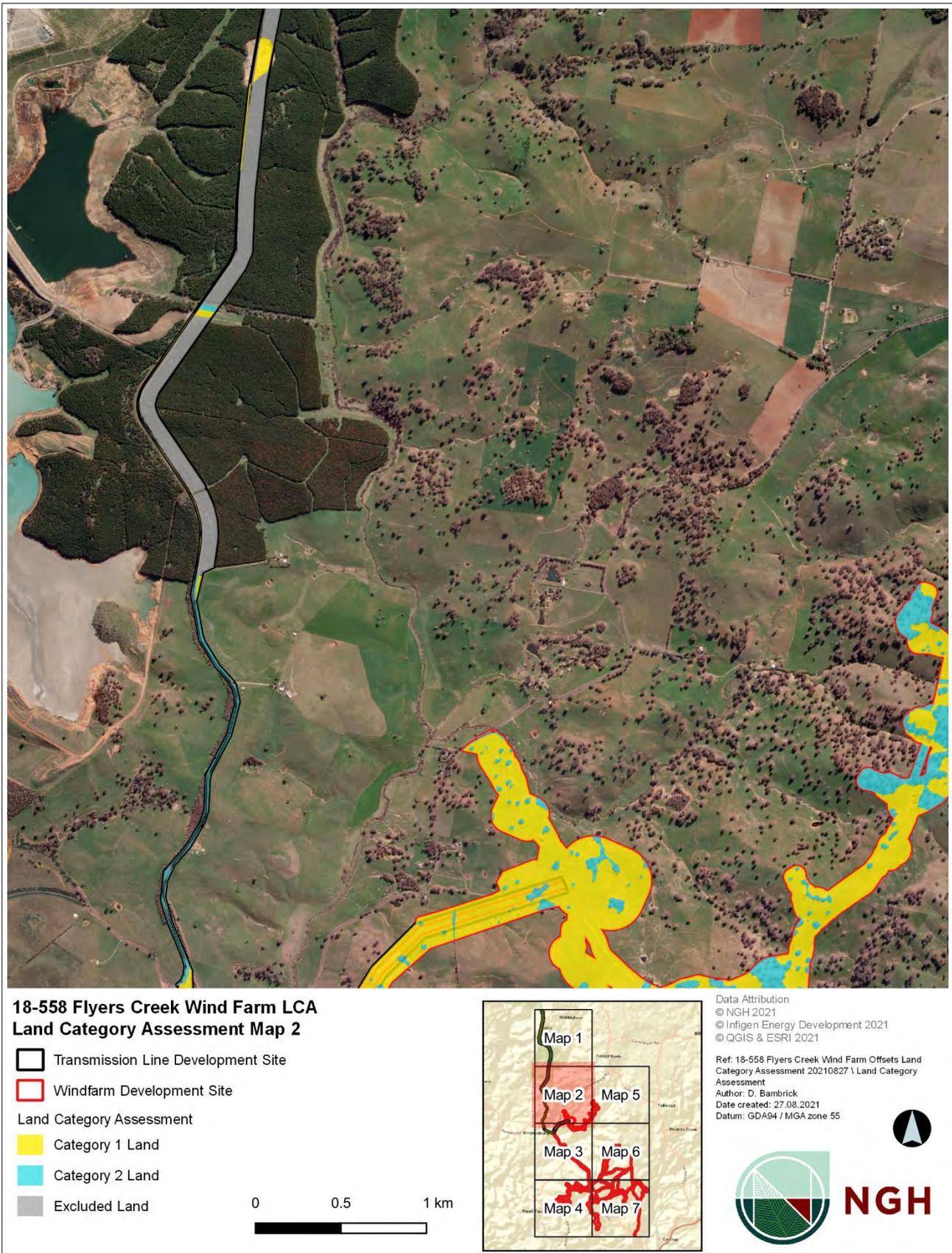
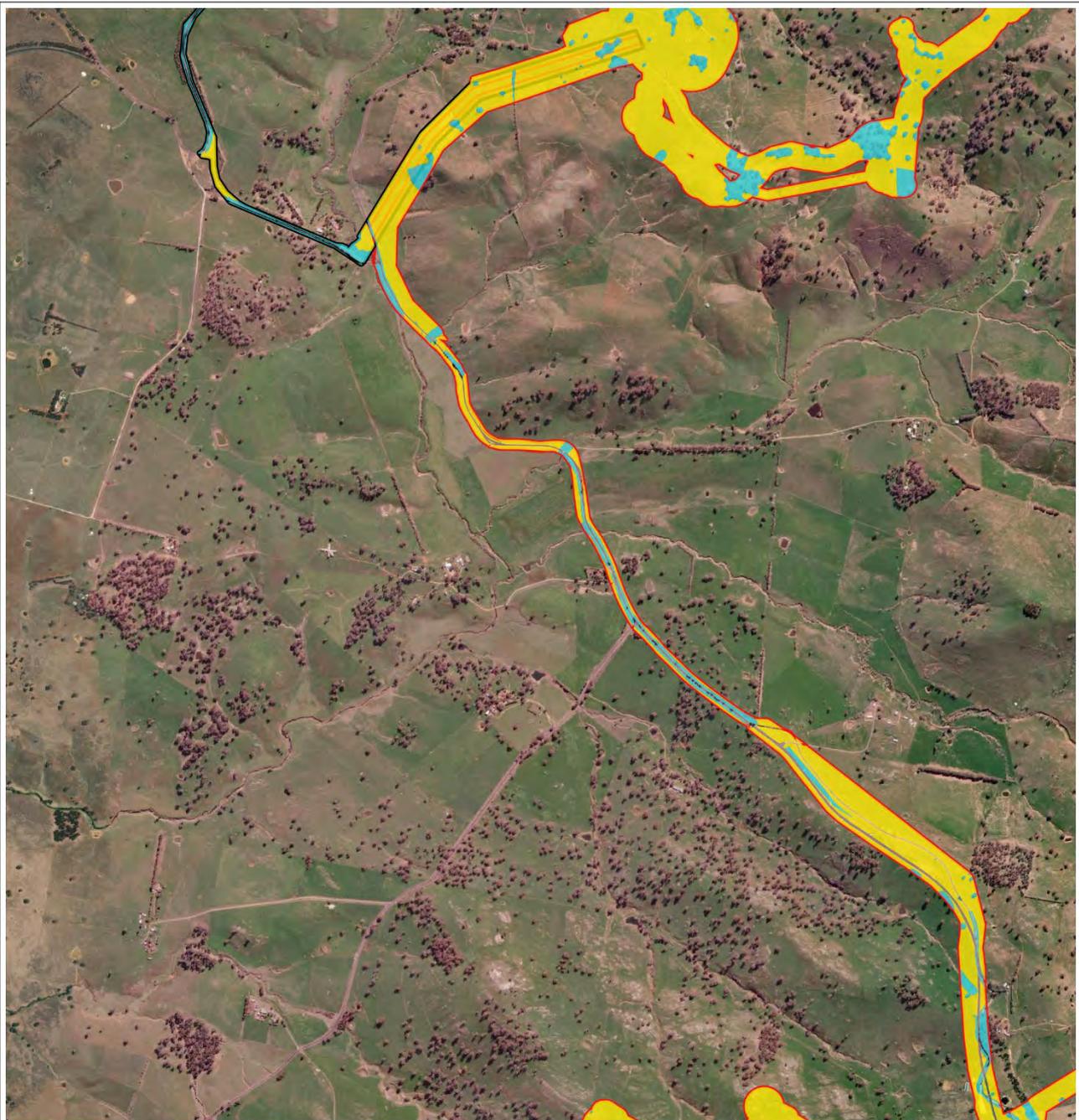
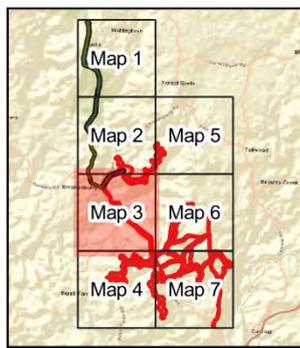
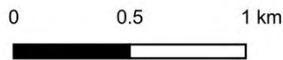


Figure 3 Development Site overview and Land categorisation - Map 2



**18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Map 3**

- Transmission Line Development Site
- Windfarm Development Site
- Land Category Assessment
- Category 1 Land
- Category 2 Land



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 Category Assessment 20210827 \ Land Category
 Assessment
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 Date created: 27.08.2021
 Datum: GDA94 / MGA zone 55



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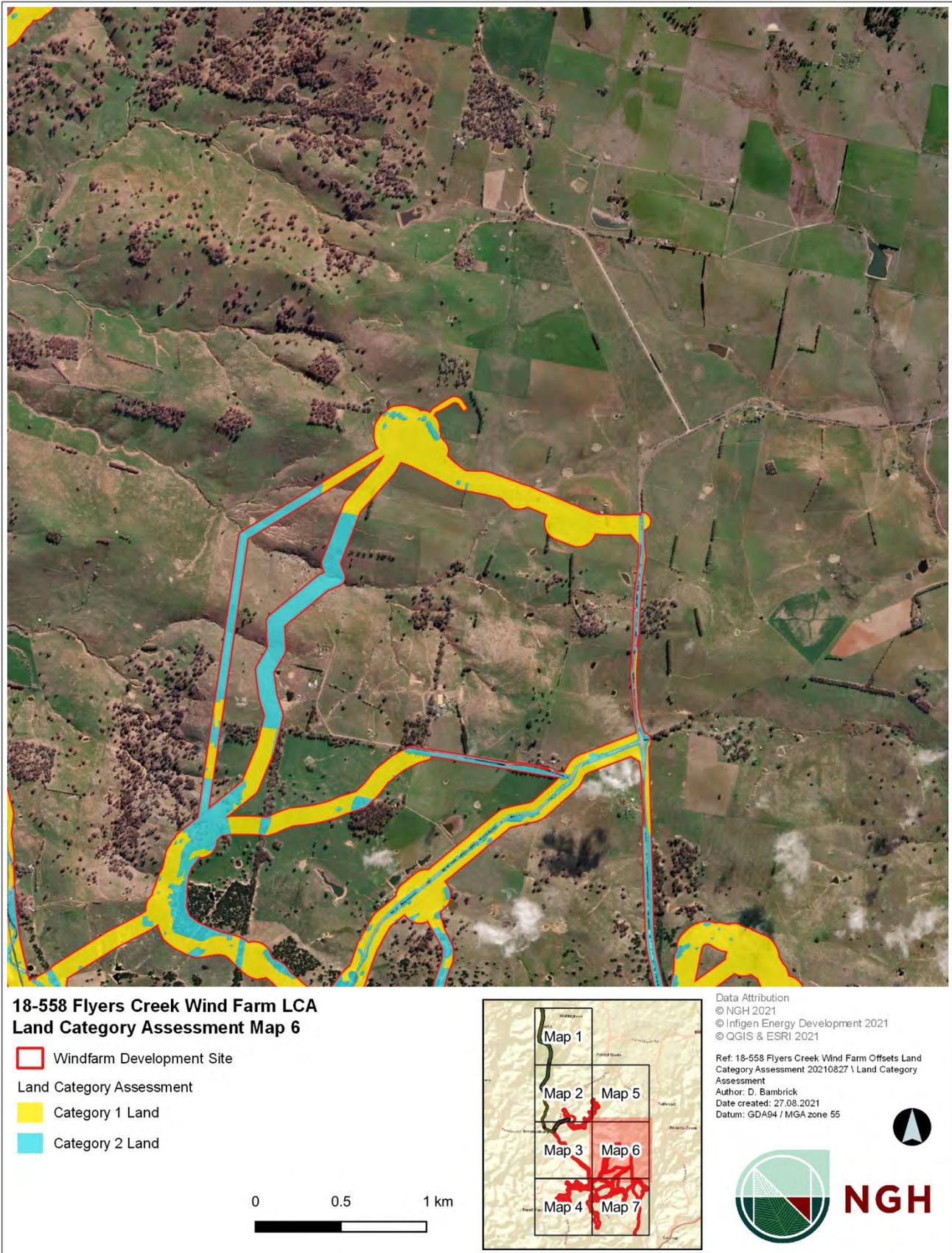


Figure 4 Development Site overview and Land categorisation - Map 3

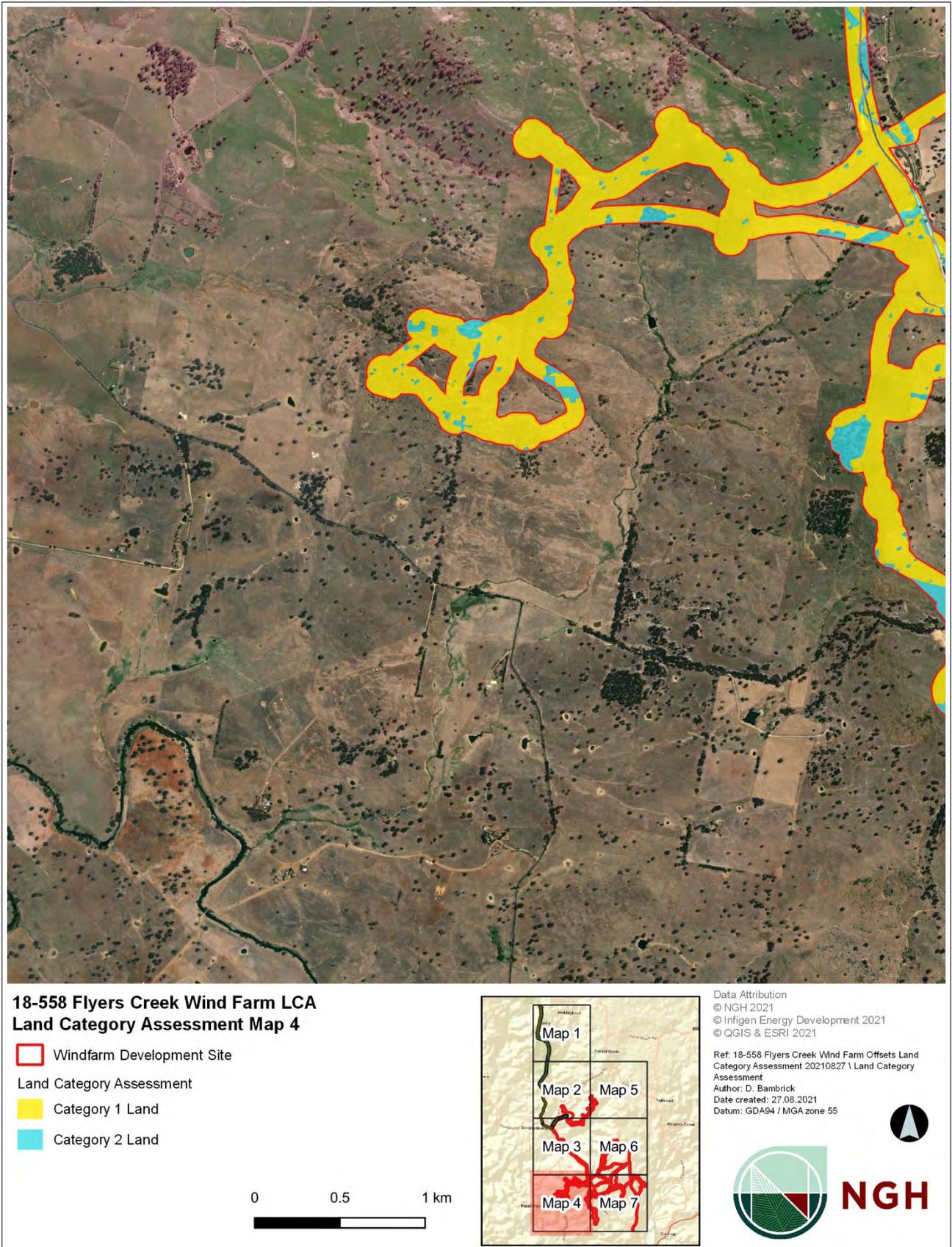


Figure 5 Development Site overview and Land categorisation - Map 4

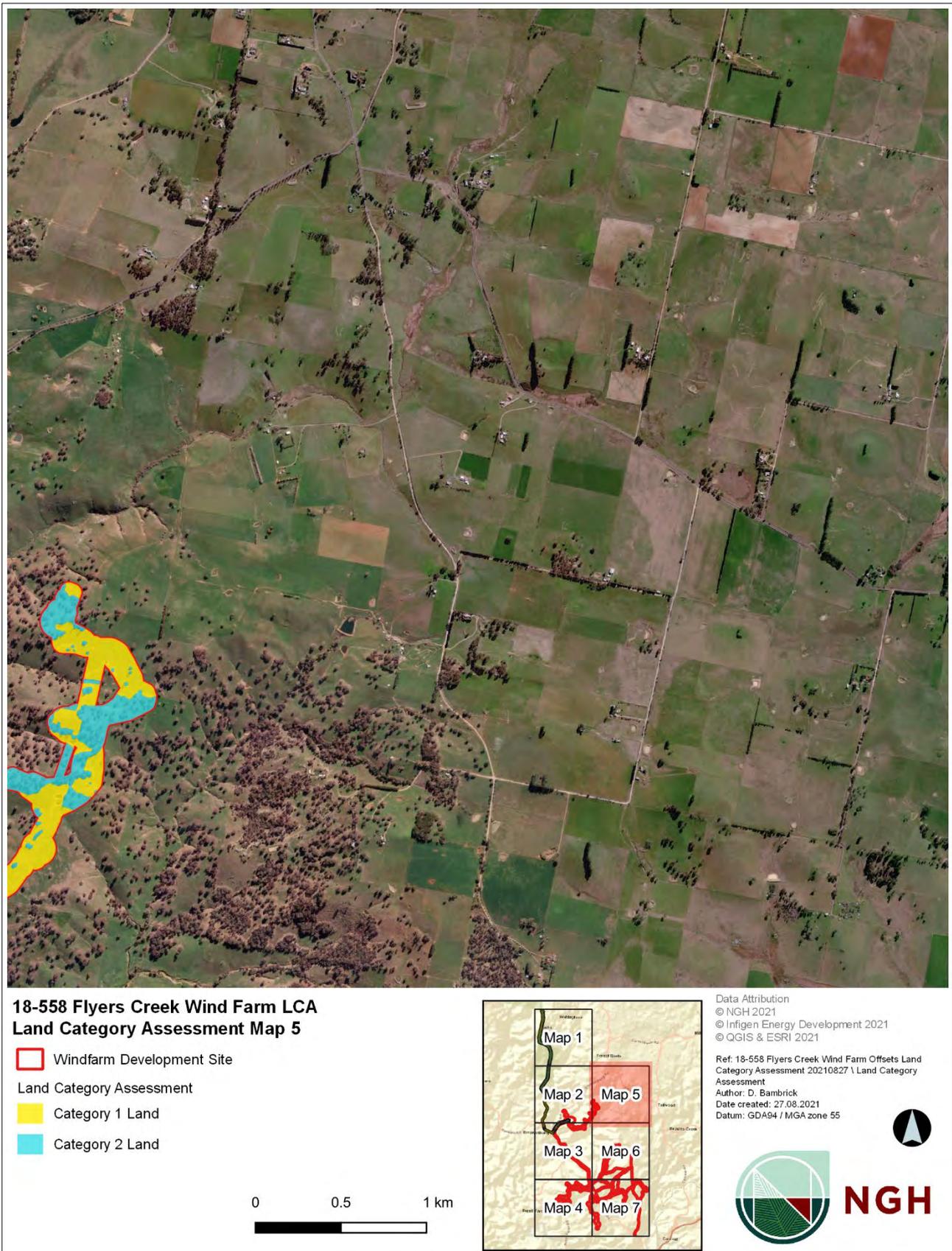


Figure 6 Development Site overview and Land categorisation - Map 5

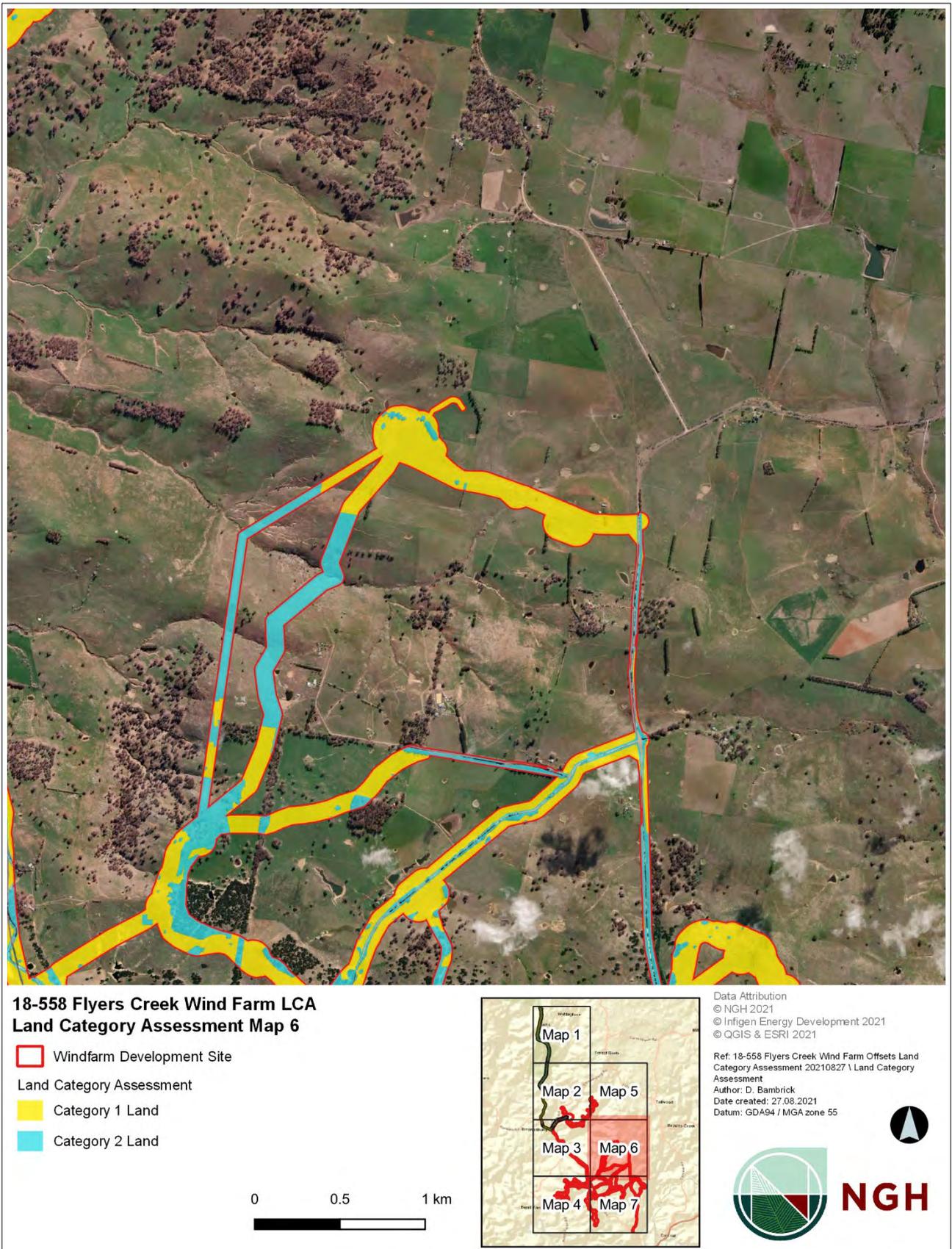
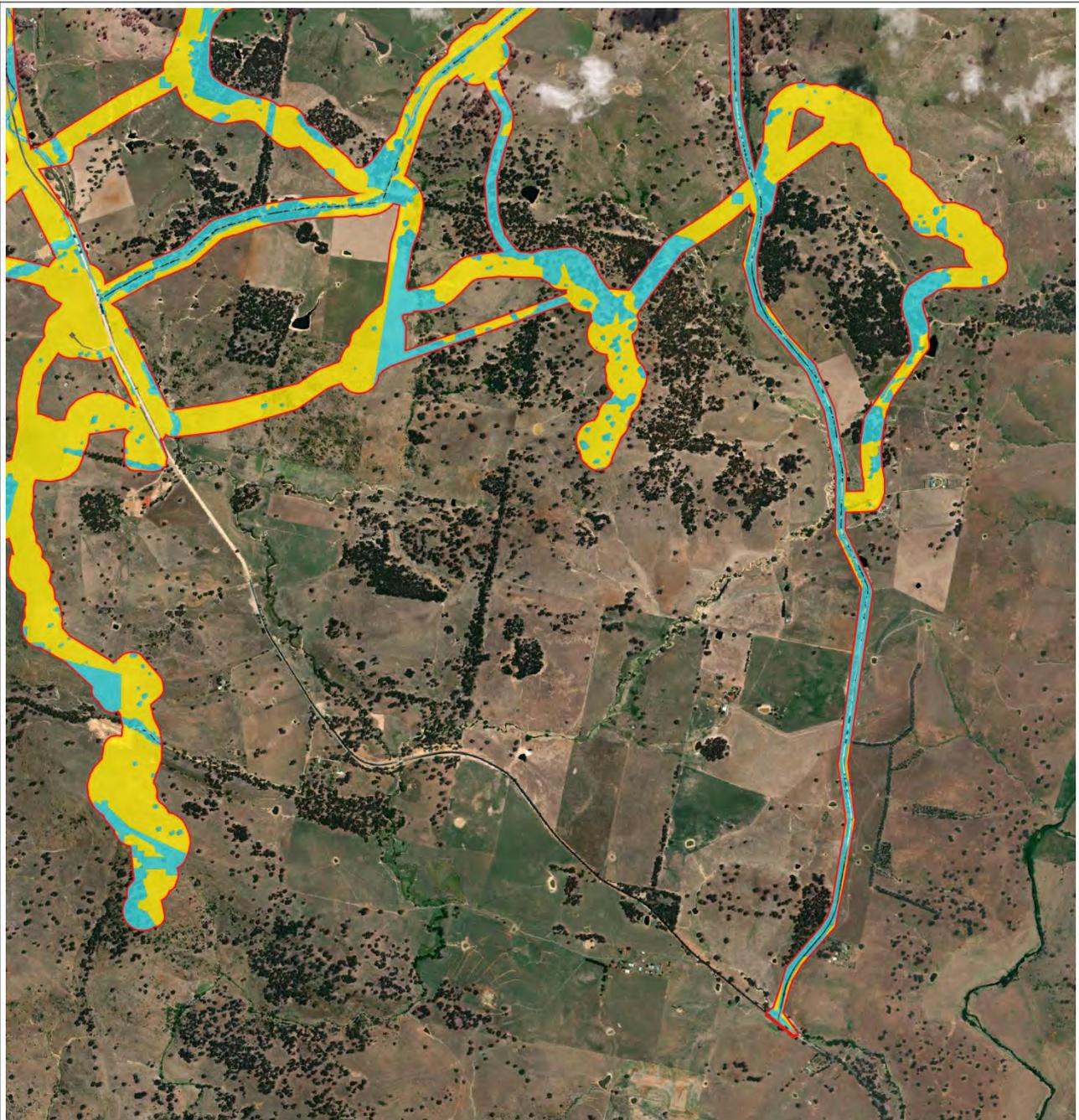
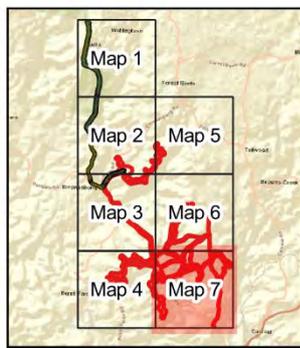
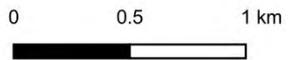


Figure 7 Development Site overview and Land categorisation - Map 6



**18-558 Flyers Creek Wind Farm LCA
Land Category Assessment Map 7**

- Windfarm Development Site
- Land Category Assessment
- Category 1 Land
- Category 2 Land



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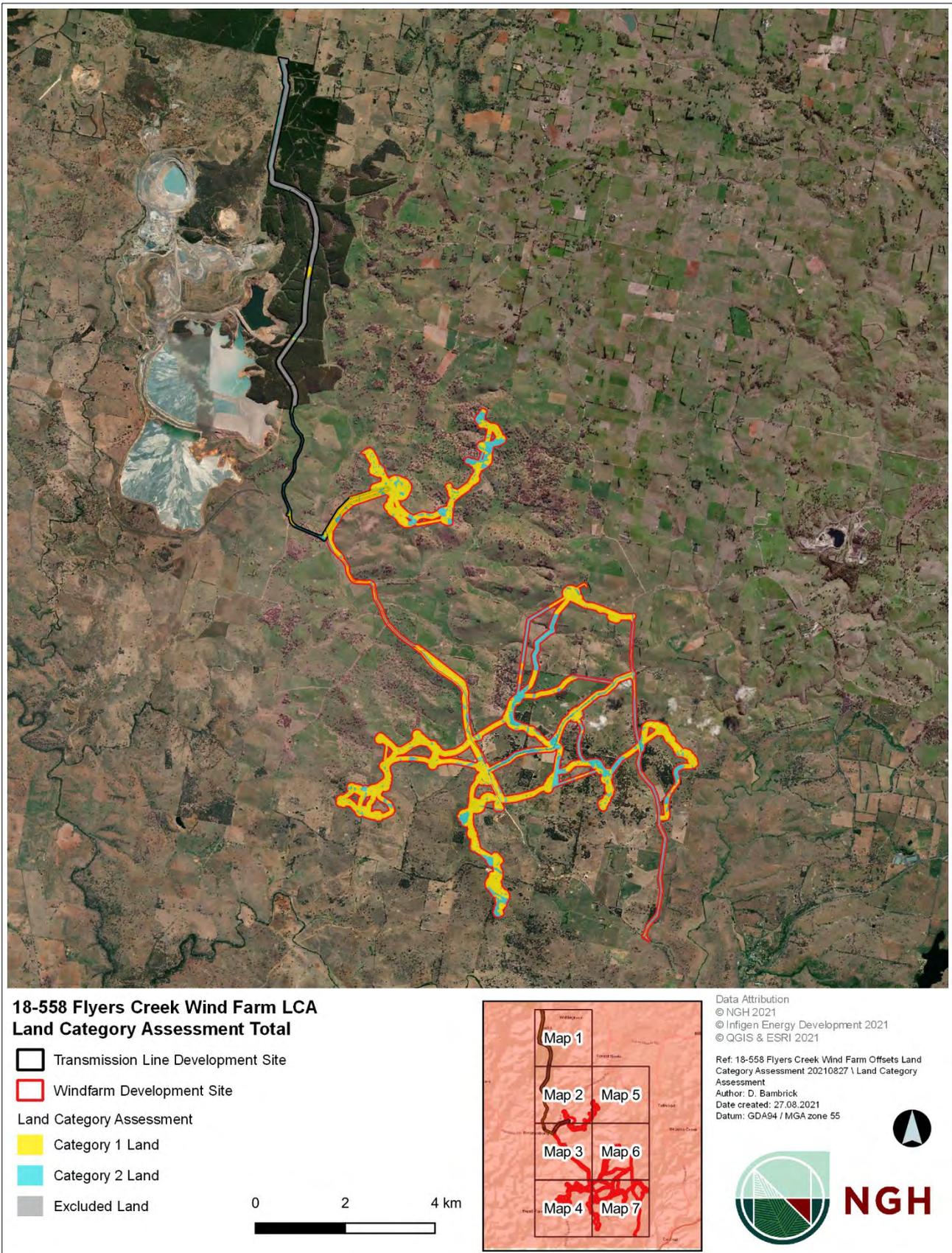
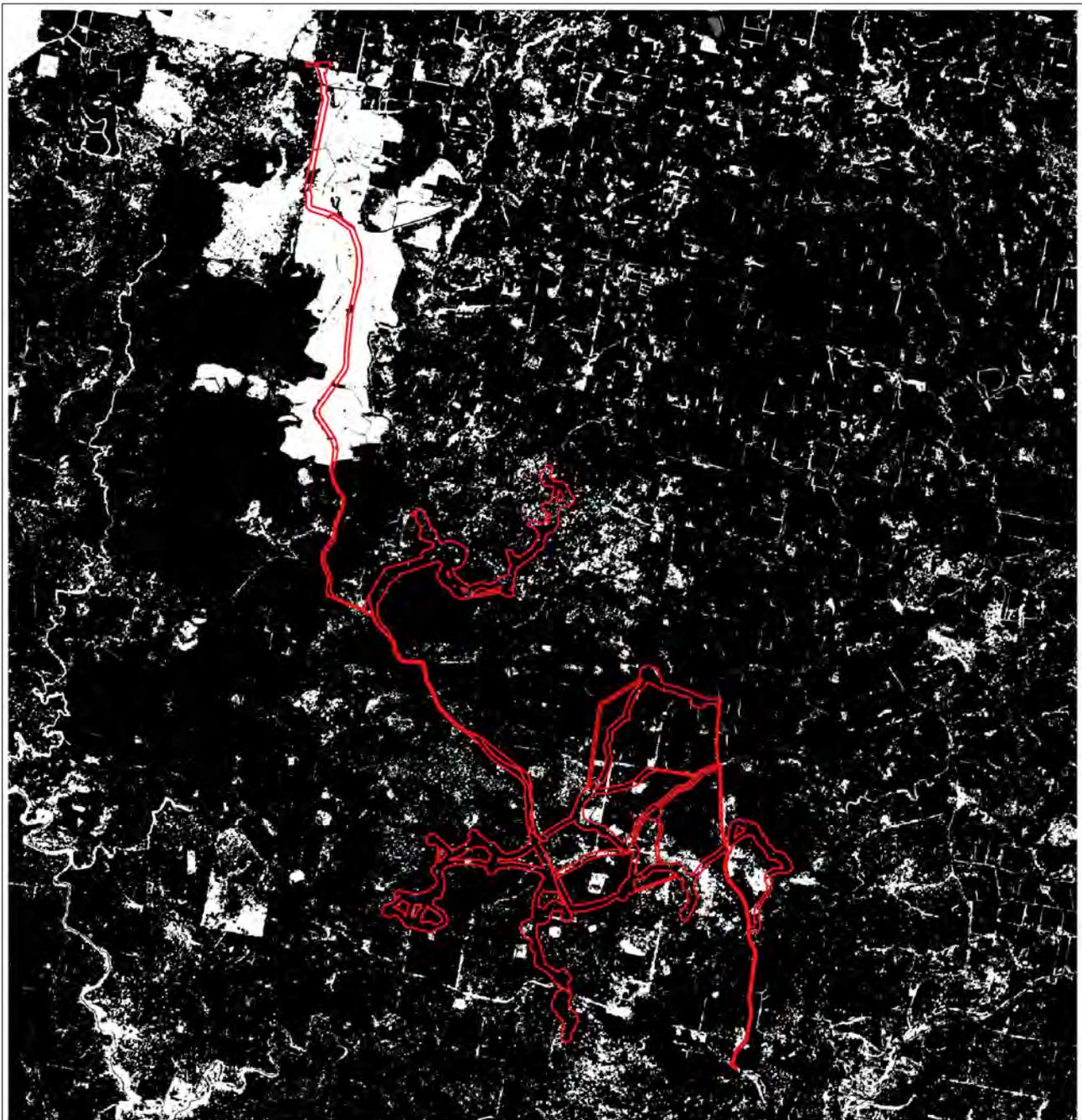


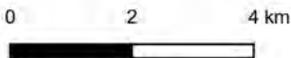
Figure 8 Development Site overview and Land categorisation - Map 7



**18-558 Flyers Creek Wind Farm LCA
Woody Vegetation Extent**

Legend

-  Development Site
-  Woody Vegetation
-  Non Woody Vegetation



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 Vegetation Extent
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 Date created: 15.04.2021
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Figure 9 NSW Woody Vegetation Extent and FPC 2011.

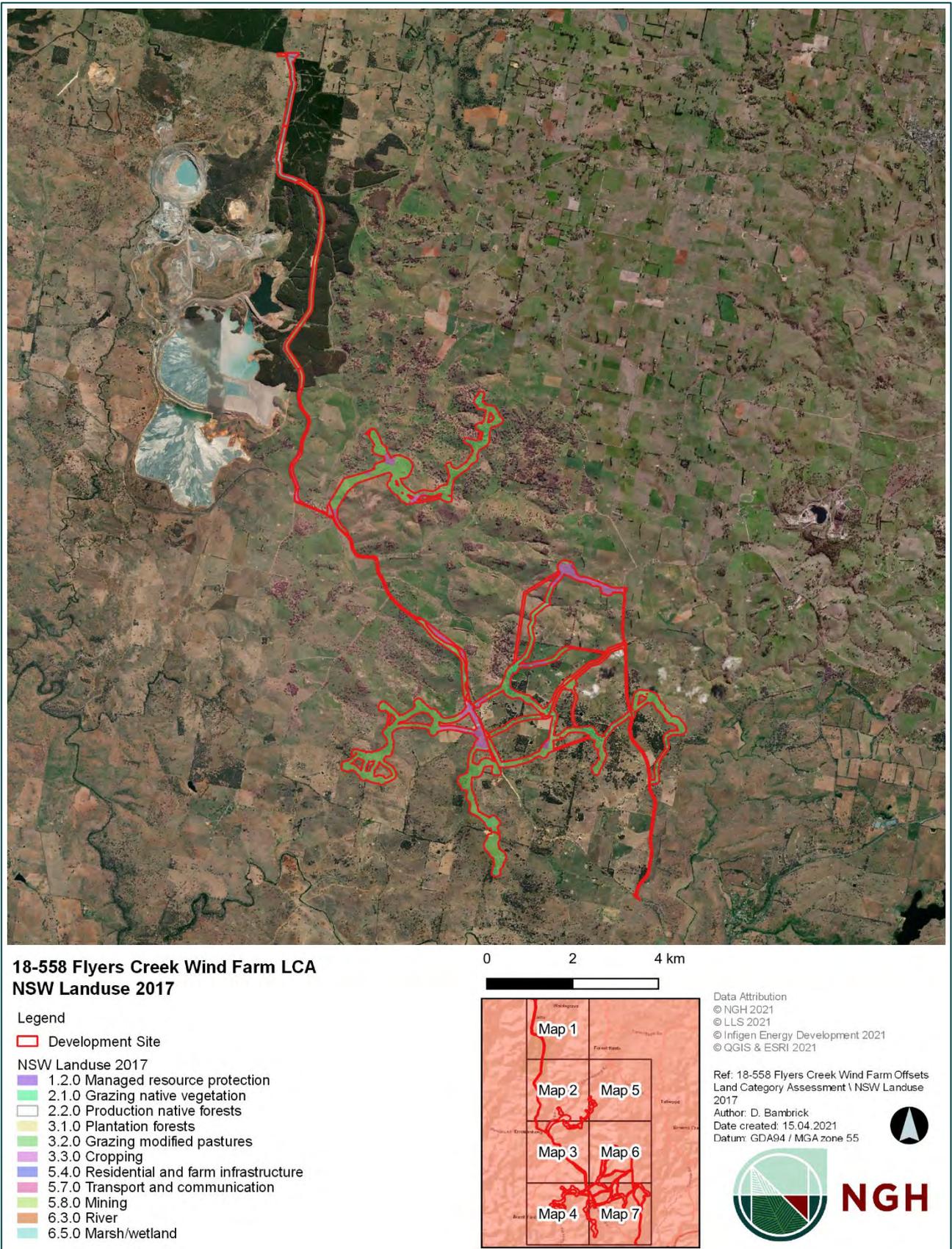
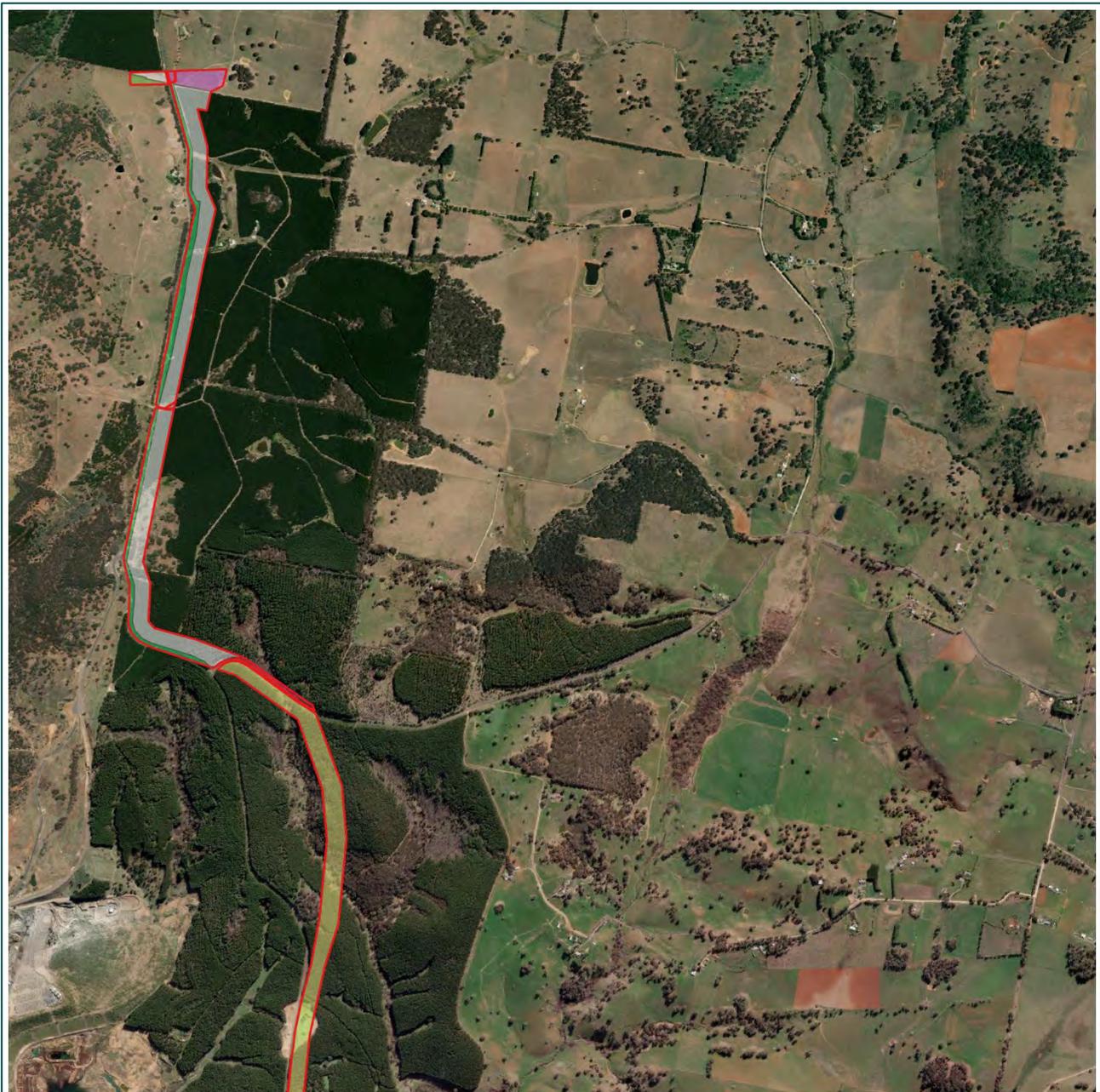


Figure 10 Land Use Dataset – Overview map (OEH 2017).



**18-558 Flyers Creek Wind Farm LCA
NSW Landuse 2017**

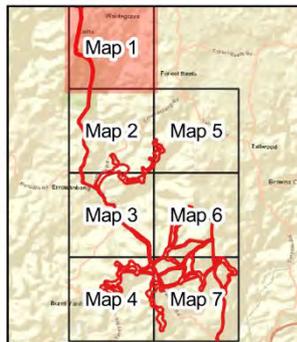
Legend

Development Site

NSW Landuse 2017

- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forests
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.7.0 Transport and communication
- 5.8.0 Mining

0 0.5 1 km



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Figure 11 Land Use Dataset – Map 1 (OEH 2017).



**18-558 Flyers Creek Wind Farm LCA
NSW Landuse 2017**

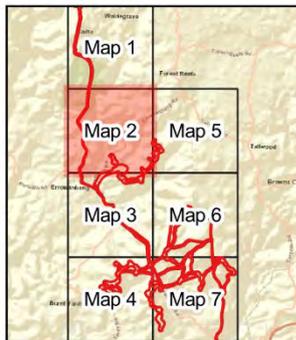
Legend

Development Site

NSW Landuse 2017

- 1.2.0 Managed resource protection
- 2.1.0 Grazing native vegetation
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 6.3.0 River

0 0.5 1 km



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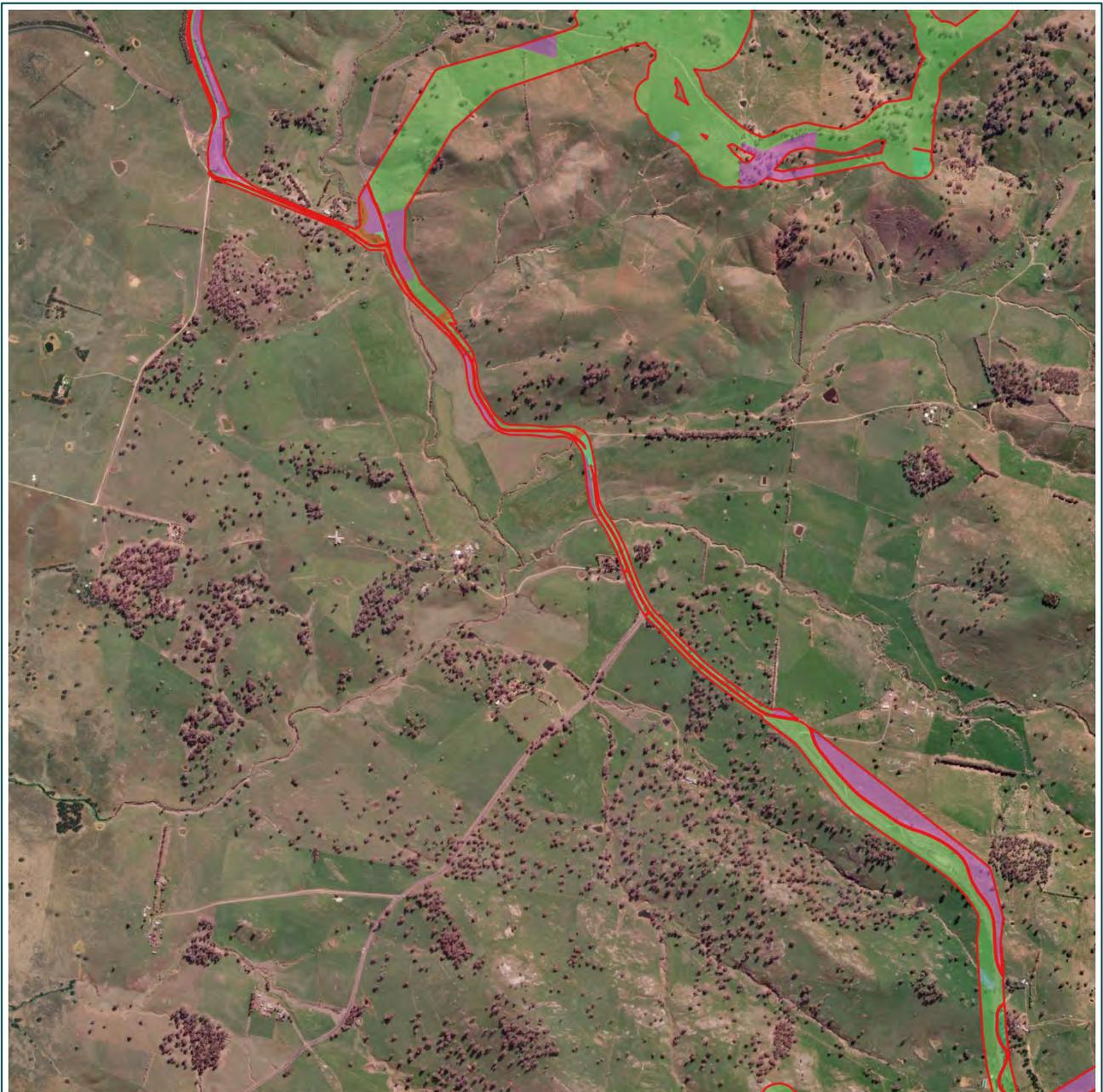
Ref: 18-558 Flyers Creek Wind Farm Offsets
Land Category Assessment \ NSW Landuse
2017

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Date created: 15.04.2021
Datum: GDA94 / MGA zone 55



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Figure 12 Land Use Dataset – Map 2 (OEH 2017).



**18-558 Flyers Creek Wind Farm LCA
NSW Landuse 2017**

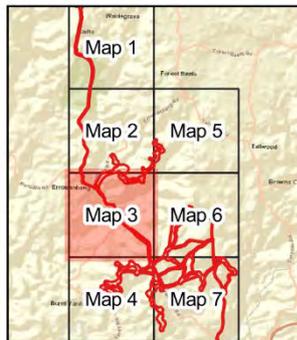
Legend

Development Site

NSW Landuse 2017

- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 5.4.0 Residential and farm infrastructure
- 6.3.0 River
- 6.5.0 Marsh/wetland

0 0.5 1 km



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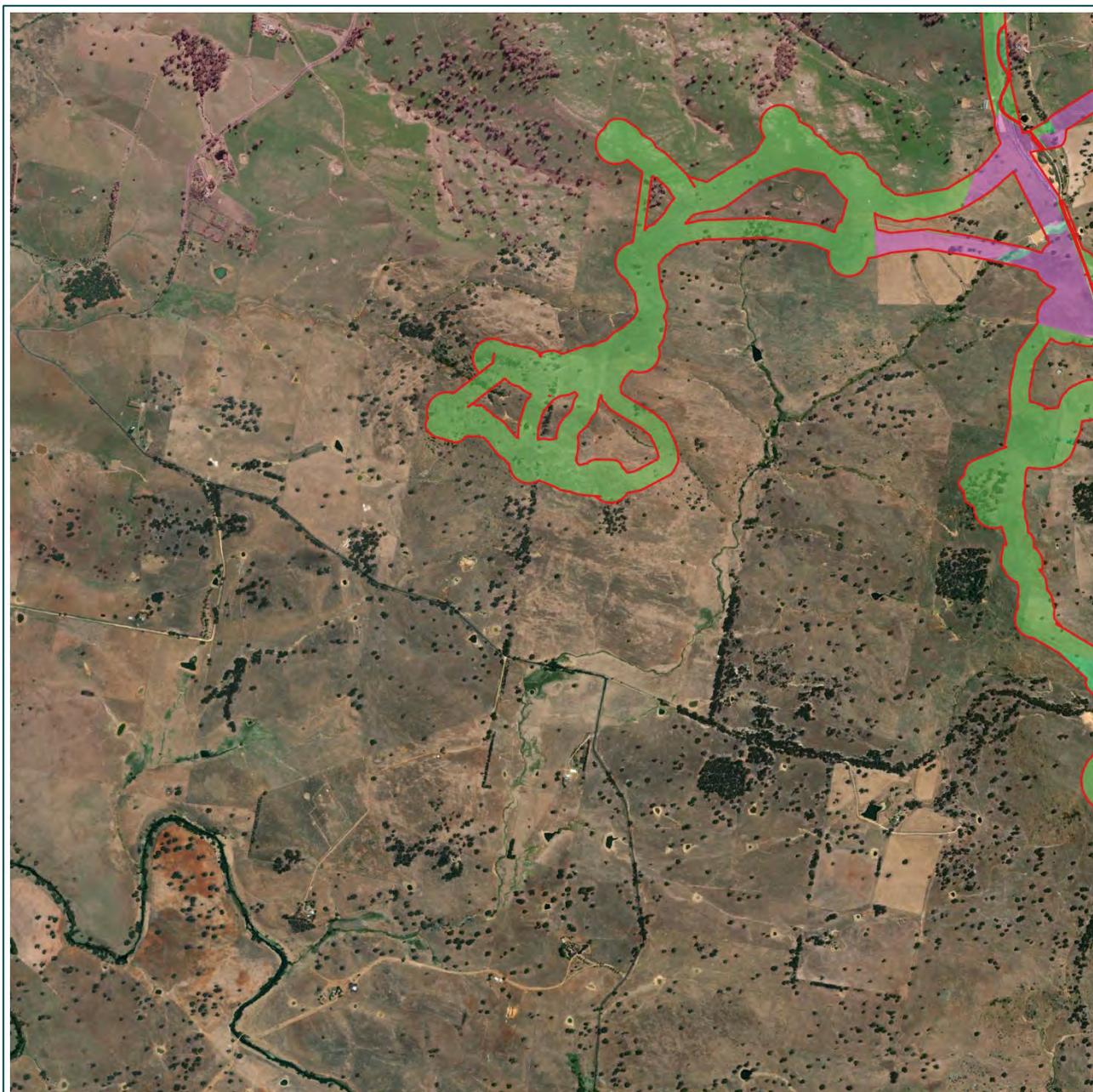
Ref: 18-558 Flyers Creek Wind Farm Offsets
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2017

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Figure 13 Land Use Dataset – Map 3 (OEH 2017).



**18-558 Flyers Creek Wind Farm LCA
NSW Landuse 2017**

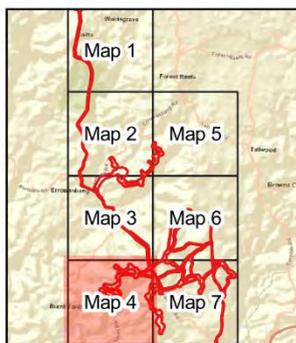
Legend

Development Site

NSW Landuse 2017

- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 6.5.0 Marsh/wetland

0 0.5 1 km



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Figure 14 Land Use Dataset – Map 4 (OEH 2017).



**18-558 Flyers Creek Wind Farm LCA
NSW Landuse 2017**

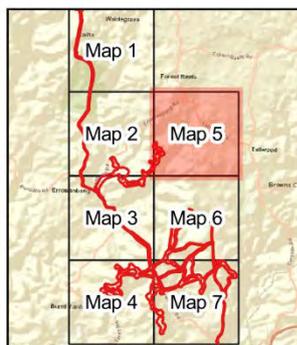
Legend

Development Site

NSW Landuse 2017

- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 6.3.0 River

0 0.5 1 km



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Figure 15 Land Use Dataset – Map 5 (OEH 2017).

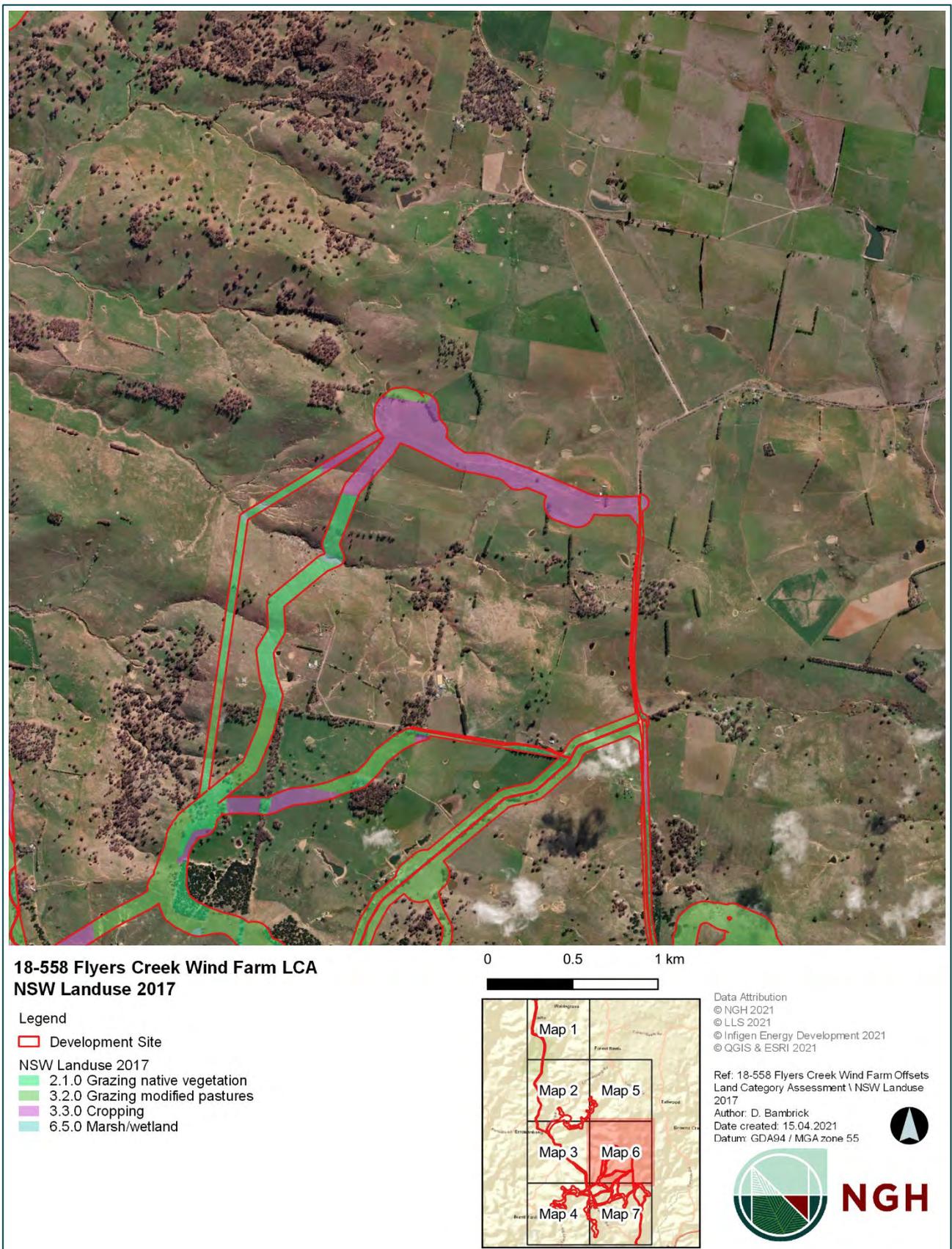


Figure 16 Land Use Dataset – Map 6 (OEH 2017).

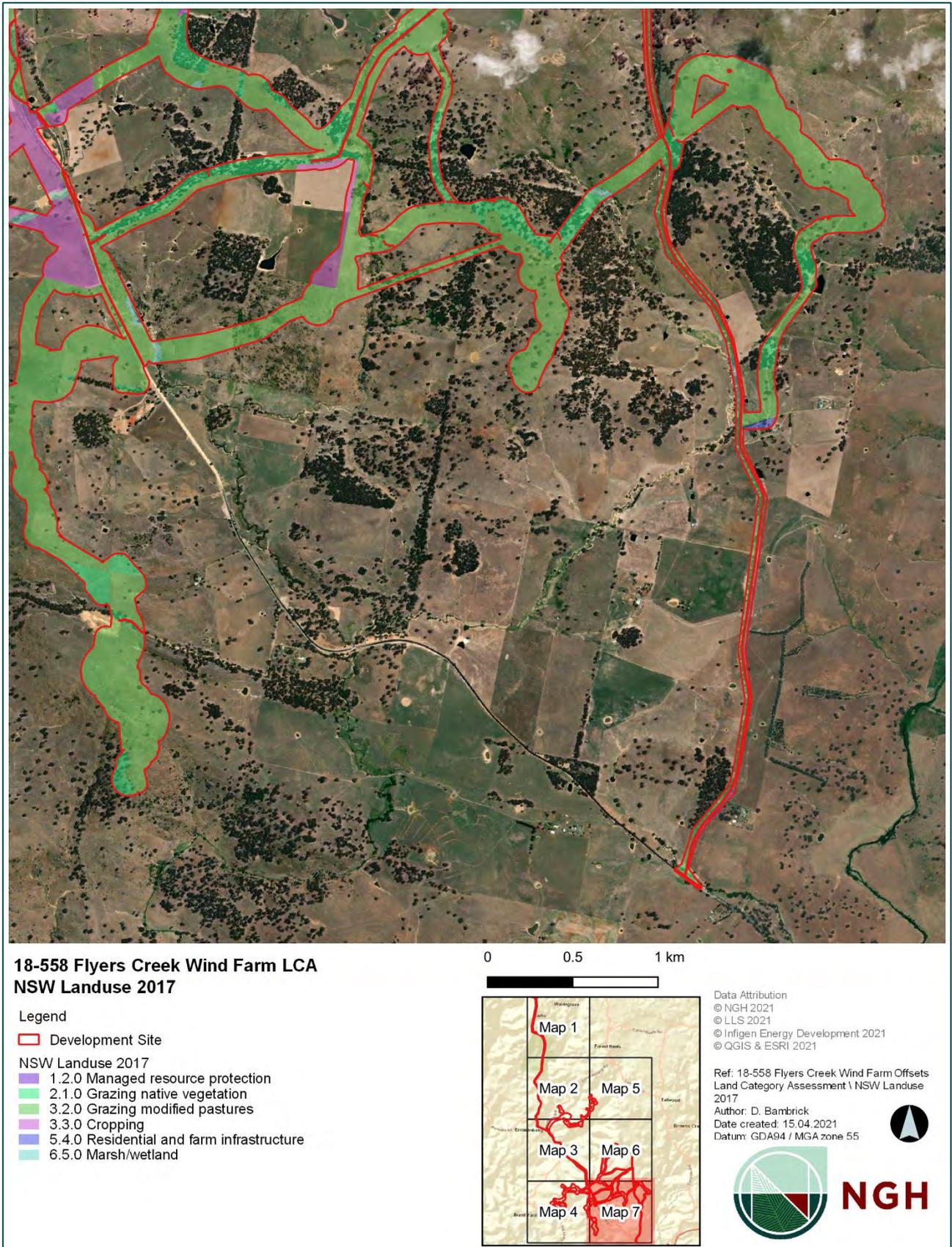


Figure 17 Land Use Dataset – Map 7 (OEH 2017).

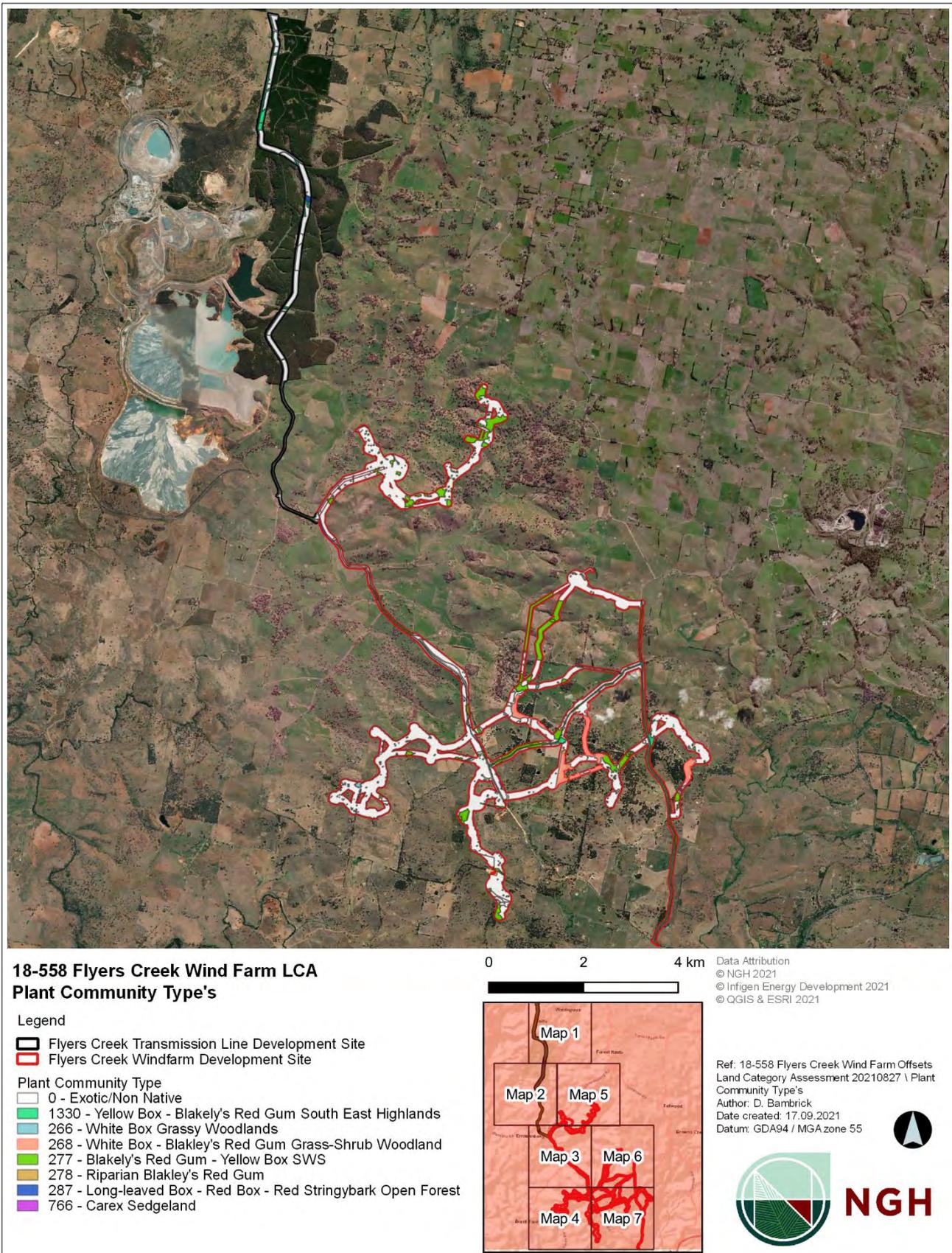


Figure 18 Plant Community Type Map overview



**18-558 Flyers Creek Wind Farm LCA
Plant Community Type's**

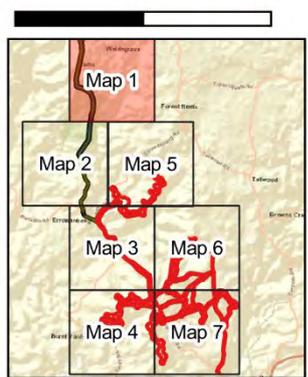
Legend

Flyers Creek Transmission Line Development Site

Plant Community Type

- 0 - Exotic/Non Native
- 1330 - Yellow Box - Blakely's Red Gum South East Highlands
- 287 - Long-leaved Box - Red Box - Red Stringybark Open Forest

0 0.5 1 km



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Figure 19 Plant Community Type Map 1



Figure 20 Plant Community Type Map 2



**18-558 Flyers Creek Wind Farm LCA
Plant Community Type's**

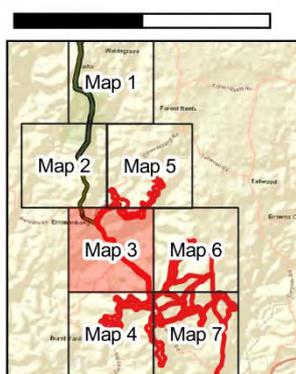
Legend

- Flyers Creek Transmission Line Development Site
- Flyers Creek Windfarm Development Site

Plant Community Type

- 0 - Exotic/Non Native
- 277 - Blakely's Red Gum - Yellow Box SWS
- 766 - Carex Sedgeland

0 0.5 1 km



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Figure 21 Plant Community Type Map 3



**18-558 Flyers Creek Wind Farm LCA
Plant Community Type's**

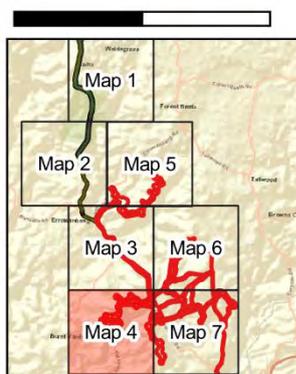
Legend

Flyers Creek Windfarm Development Site

Plant Community Type

- 0 - Exotic/Non Native
- 266 - White Box Grassy Woodlands
- 268 - White Box - Blakley's Red Gum Grass-Shrub Woodland
- 277 - Blakley's Red Gum - Yellow Box SWS
- 278 - Riparian Blakley's Red Gum
- 766 - Carex Sedgeland

0 0.5 1 km



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Datum: GDA94 / MGA zone 55



Figure 22 Plant Community Type Map 4

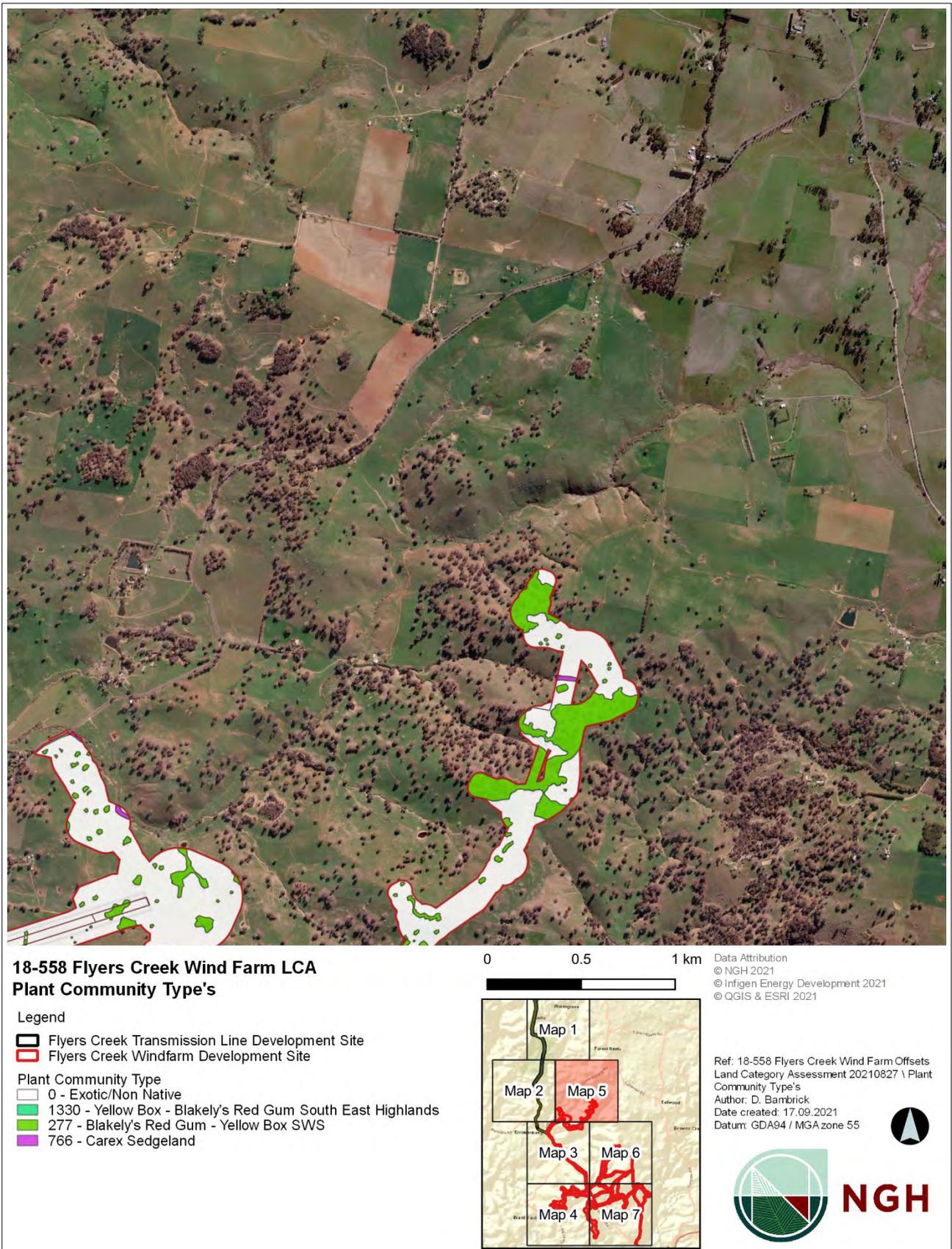


Figure 23 Plant Community Type Map 5

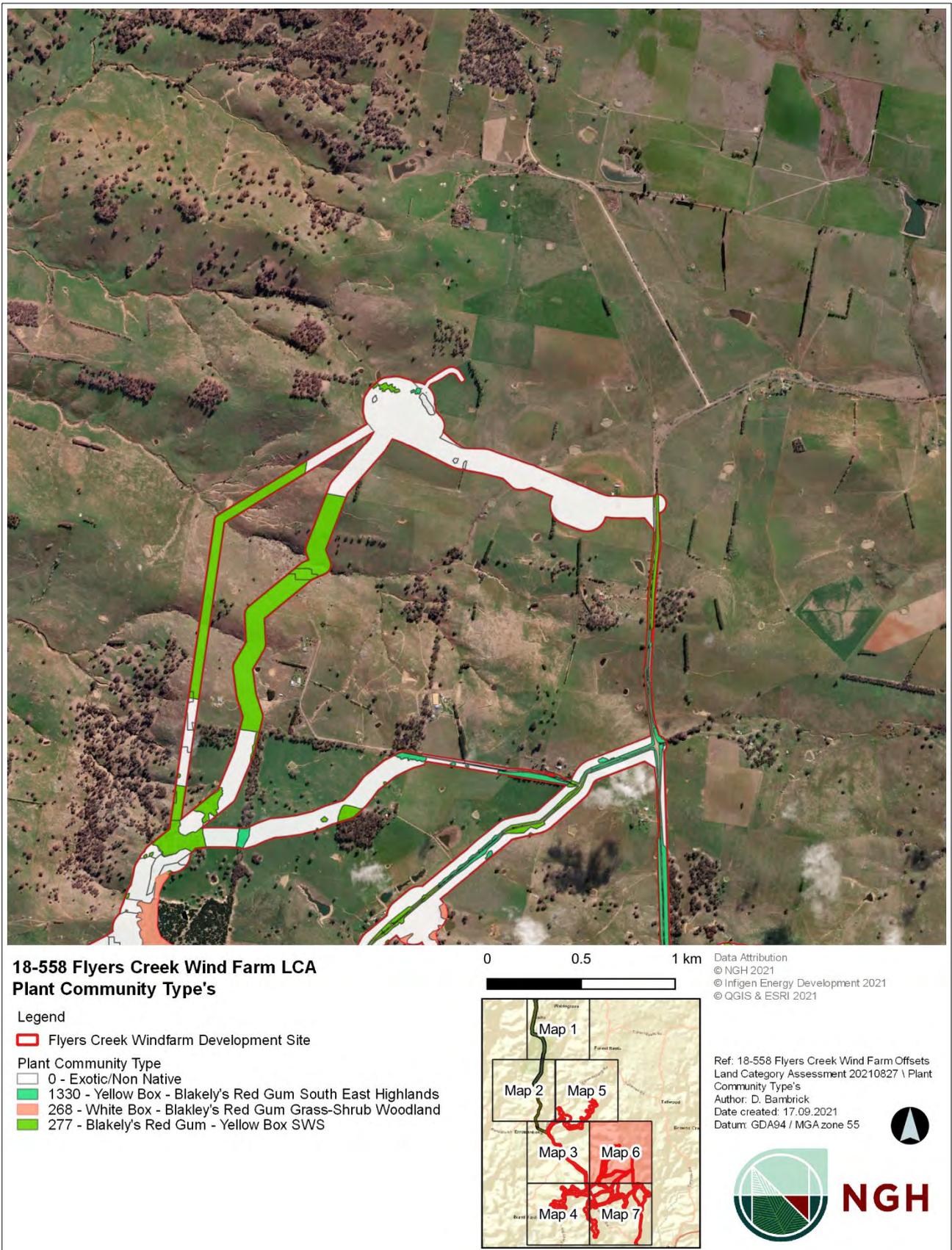
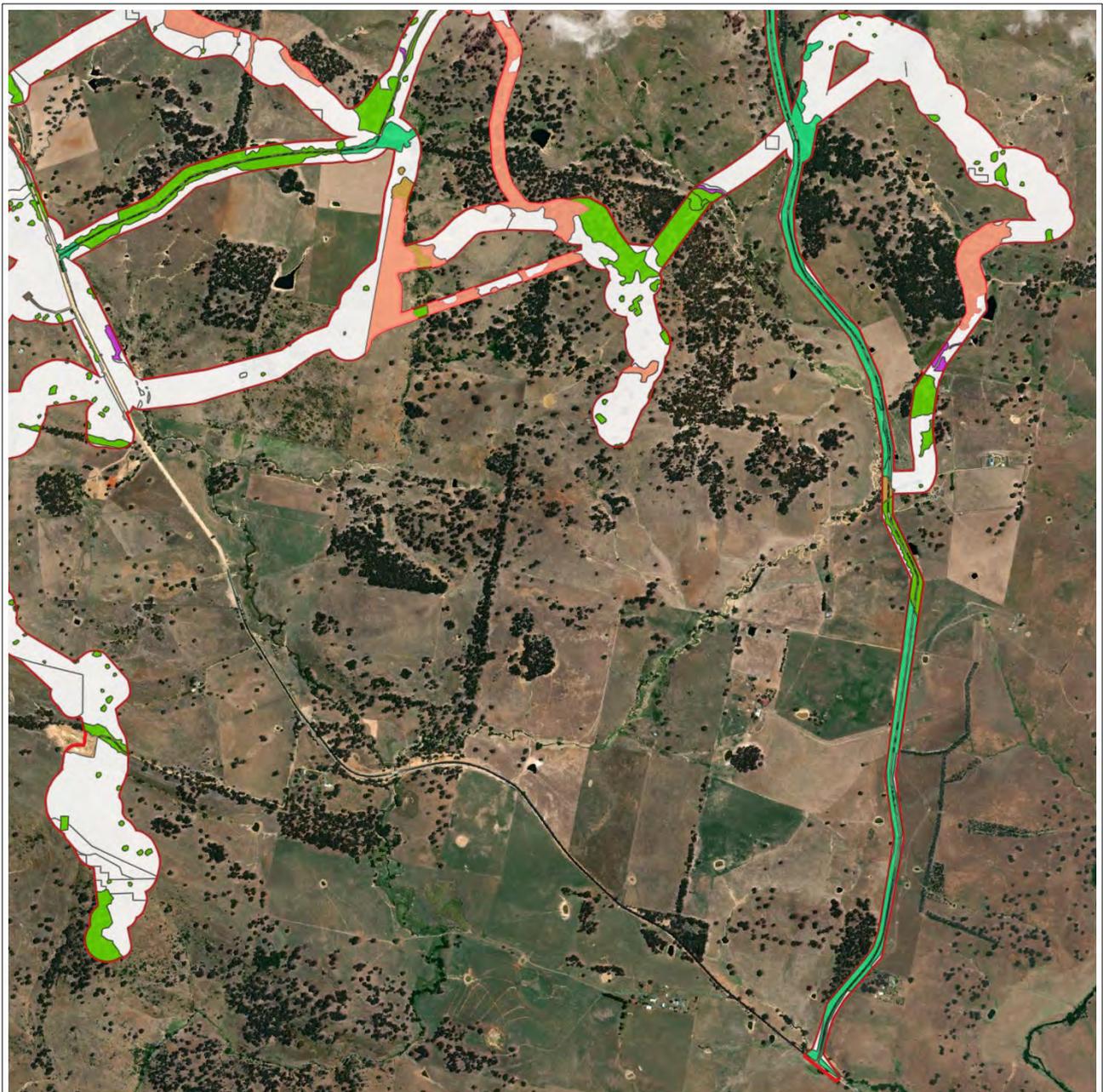


Figure 24 Plant Community Type Map 6



**18-558 Flyers Creek Wind Farm LCA
Plant Community Type's**

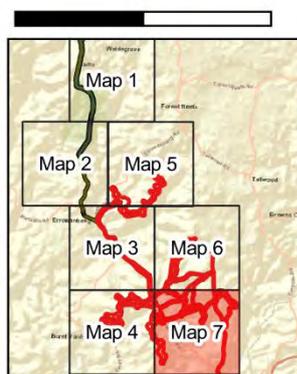
Legend

Flyers Creek Windfarm Development Site

Plant Community Type

- 0 - Exotic/Non Native
- 1330 - Yellow Box - Blakely's Red Gum South East Highlands
- 268 - White Box - Blakely's Red Gum Grass-Shrub Woodland
- 277 - Blakely's Red Gum - Yellow Box SWS
- 278 - Riparian Blakely's Red Gum
- 766 - Carex Sedgeland

0 0.5 1 km



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Figure 25 Plant Community Type Map 7

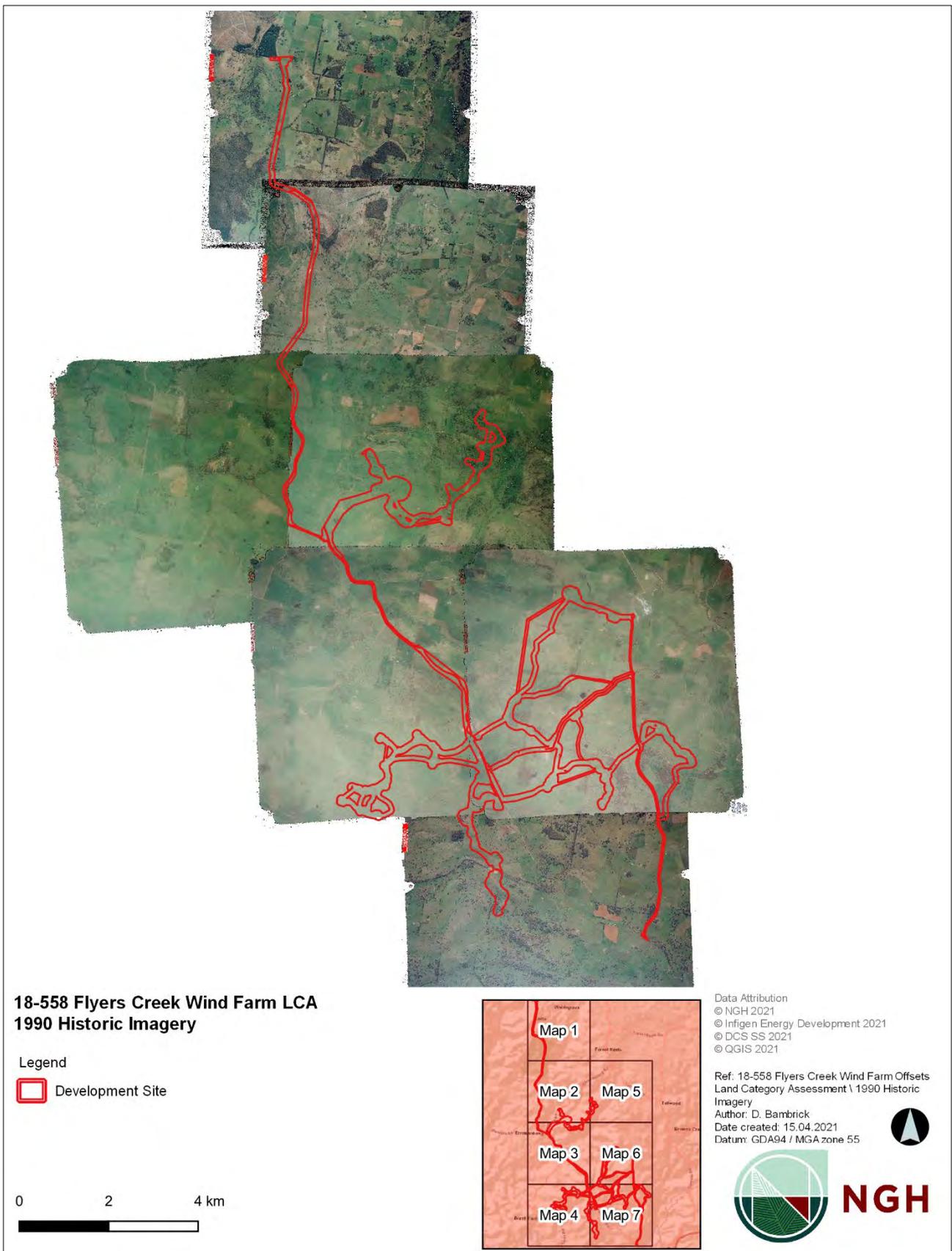


Figure 26: 1990 Historic Imagery overview

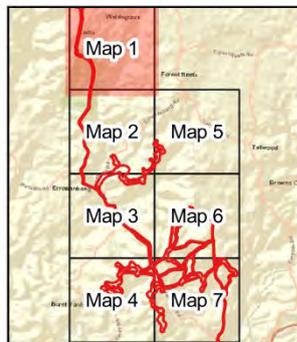


**18-558 Flyers Creek Wind Farm LCA
1990 Historic Imagery**

Legend

 Development Site

0 0.5 1 km

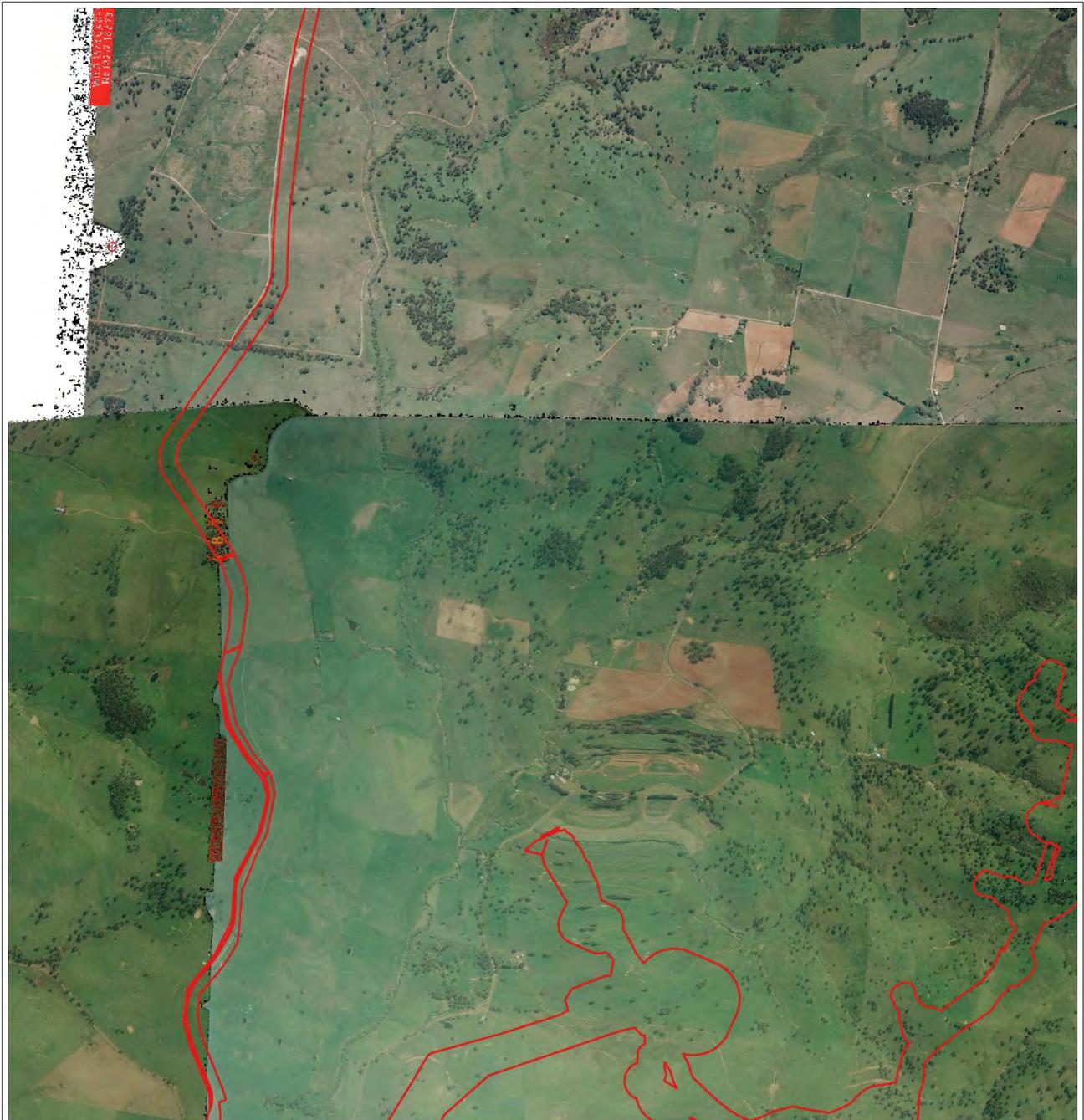



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Imagery
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Figure 27: 1990 Historic Imagery map 1

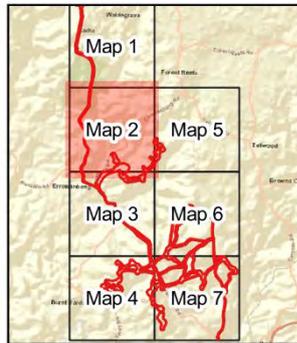


**18-558 Flyers Creek Wind Farm LCA
1990 Historic Imagery**

Legend

 Development Site

0 0.5 1 km

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Figure 28: 1990 Historic Imagery map 2

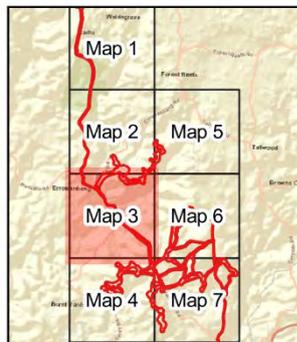


**18-558 Flyers Creek Wind Farm LCA
1990 Historic Imagery**

Legend

 Development Site

0 0.5 1 km

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Figure 29: 1990 Historic Imagery map 3

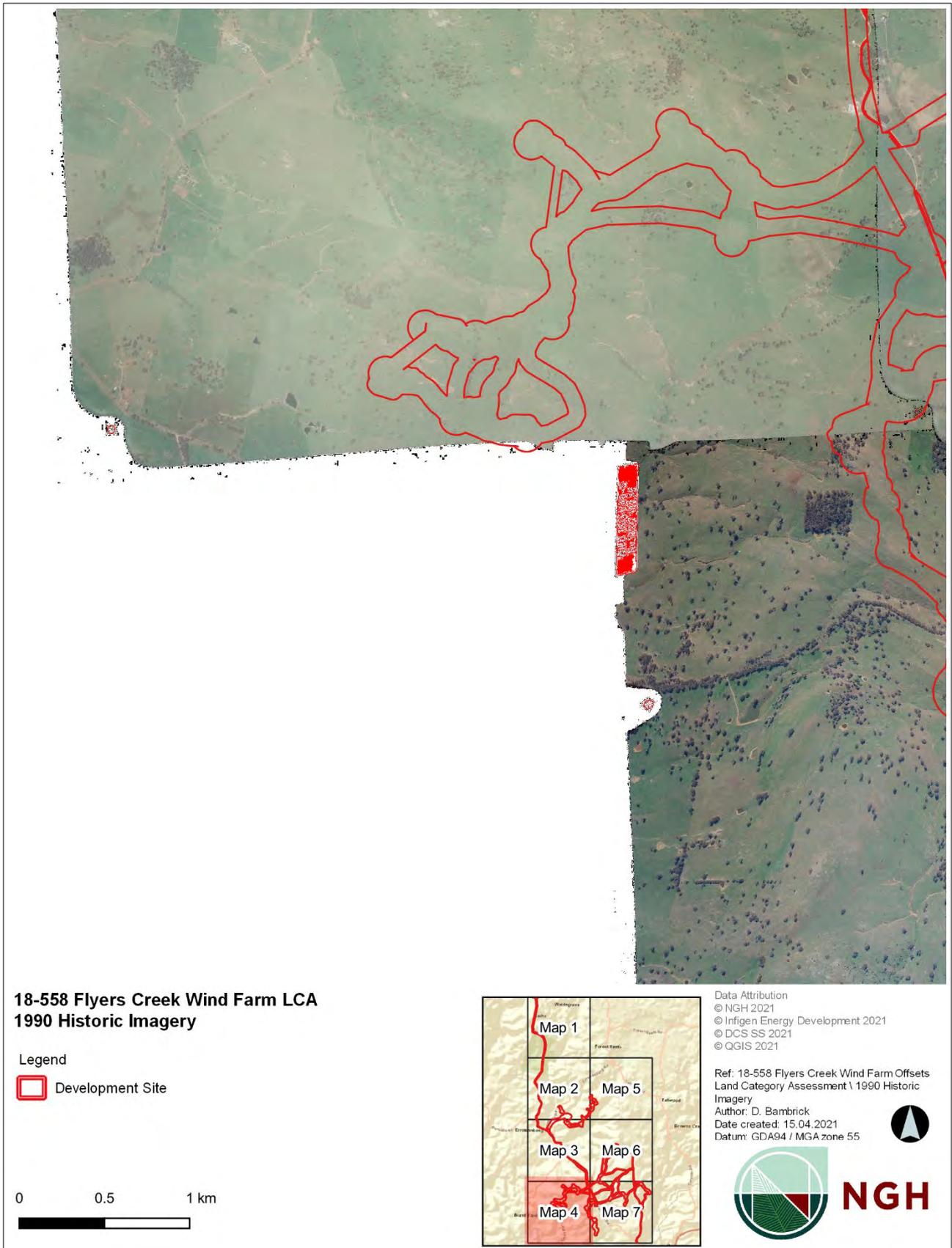


Figure 30: 1990 Historic Imagery map 4

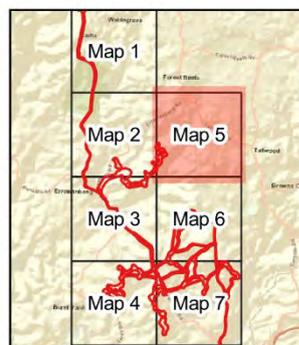


**18-558 Flyers Creek Wind Farm LCA
1990 Historic Imagery**

Legend

 Development Site

0 0.5 1 km

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 Imagery
 Author: D. Bambrick
 Date created: 15.04.2021
 Datum: GDA94 / MGA zone 55



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Figure 31: 1990 Historic Imagery map 5

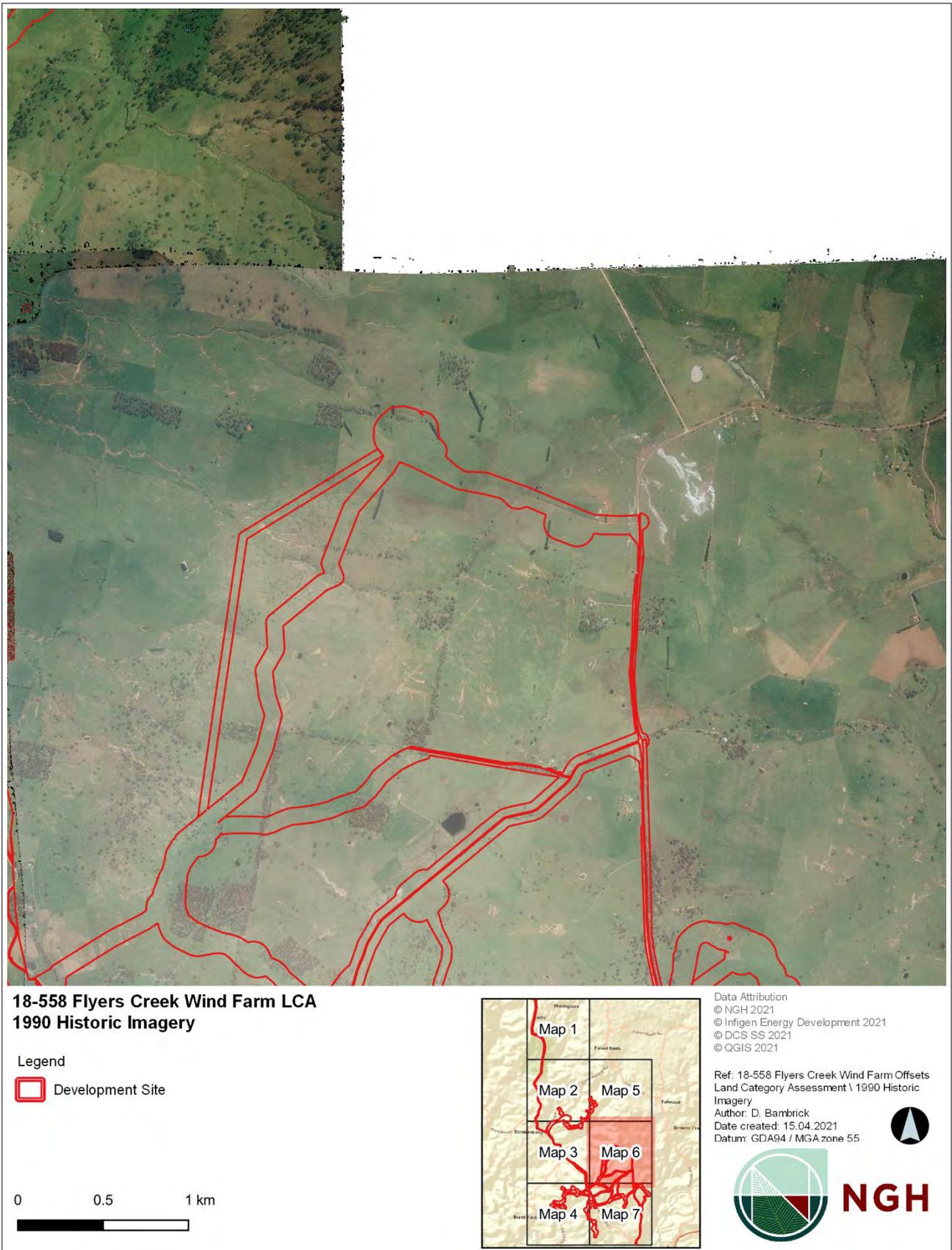


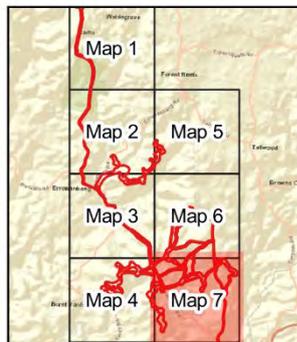
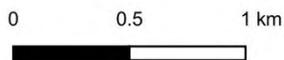
Figure 32: 1990 Historic Imagery map 6



**18-558 Flyers Creek Wind Farm LCA
1990 Historic Imagery**

Legend

 Development Site



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Imagery
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Date created: 15.04.2021
Datum: GDA94 / MGA zone 55



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Figure 33: 1990 Historic Imagery map 7

Appendix C Plot Field Data

BAM Site – Field Survey Form					Site Sheet no:				
		Survey Name	Zone ID	Recorders					
Date	22 10 18	22 Flyers Ck	277_N	L Hamilton + N Smith					
Zone	55 H	Datum	H	Plot ID	Plot 1	Plot dimensions	20x50	Photo #	
Easting	696924	Northing	6283486	IBRA region	SE Highlands - Orange	Midline bearing from 0 m	105° E		
Vegetation Class				Grassy Woodland			Confidence:		H M L
Plant Community Type				277 - native understorey			EEC:		H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	—
	Shrubs	—
	Grasses etc.	4 3
	Forbs	3
	Ferns	—
	Other	—
Sum of Cover of native vascular plants by growth form group	Trees	—
	Shrubs	—
	Grasses etc.	40.43
	Forbs	7
	Ferns	0
Other	0	
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		4.0

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	2	2	1	5	10	20	15	5	5	0	0	0	0	0	0	15	10	20	20	15
Average of the 5 subplots	4					9					0					16				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern		Microrelief	
Lithology	Soil Surface texture	10am	Soil Colour	Brown	Soil Depth	
Slope	Aspect	East	Site Drainage	West	Distance to nearest water and type	150m

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	stumps, fallen logs
Cultivation (inc. pasture)	0	-	
Soil erosion	2	R	Grazing, animal tracks
Firewood / CWD removal	-	-	
Grazing (identify native/stock)	3	R	Cows & Sheeps in paddock
Fire damage	-	-	
Storm damage	-	-	
Weediness	2	R	rapeweed, Satinon thistle, Bailey grass
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 22 10 18	Flyers Creek	Plot L	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
(G)	Austrostipa scabra Cape weed Erodium - not native clover - white flowers subterranean	N E E E	40	1000		
(G)	Fescue Vulpia Rhytidosperma - small Barley grass - hordeum sp.	N E E E	.1 20	10 1000		
	Spiky rosette - saffron thistle so. flat weed hypochaeris radicata	E E	10 5			
F	carrot lookalike - asteraceae (Cotula australis) Bromus sp. small leaves dead?	N E	.1			
(G)	Rhytidosperma - small fluffy. Lolium sp. Rye grass	N E	.1 1	5		
GG	Lomandra sp. multiflora	N	.1			
F	native Geranium solanderi gallium lookalike, purple flowers sheep sorrel Rumex acetosella	N E E	0.5 .5 .1	30 100		
F	Oxalis pennans. purple skinny flower petrohagia dubia clover yellow flower Trifolium sp	N E E	.1 .1 E	50 4		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	22 10 18	Kyers Ck.	Exotic	L Hamilton + N. Smith					
Zone	55	Datum	H	Plot ID	2	Plot dimensions	20x50	Photo #	
Easting	696484	Northing	6283958	IBRA region	SE Highlands Orange	Midline bearing from 0 m	27°		
Vegetation Class							Confidence:		
Plant Community Type							H M L		
Exotic							EEC:		
							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	—
Shrubs	—
Grasses etc.	3
Forbs	1
Ferns	—
Other	—
Sum of Cover of native vascular plants by growth form group	
Trees	—
Shrubs	—
Grasses etc.	.3
Forbs	.1
Ferns	—
Other	—
High Threat Weed cover	20

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	—	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0 0.1 0 0 0	1 5 0 2 3 0	0 0 0 0 0 0	0 30 0 5 0
Average of the 5 subplots	0.02	1.84	0	7

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Hill top	Landform Pattern		Microrelief	
Lithology	Granite	Soil Surface Texture	loam	Soil Colour	brn/wh	Soil Depth	
Slope		Aspect	North	Site Drainage	W + E	Distance to nearest water and type	Farm dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Remaining paddock trees, stumps.
Cultivation (inc. pasture)	0		
Soil erosion	1	R	stock
Firewood / CWD removal	—	—	
Grazing (identify native/stock)	2	R	sheep + cows + goats
Fire damage	—	—	
Storm damage	—	—	
Weediness	3	R	exotic
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	22 10 18	Klycks Ck	1330_Nature	L Hamilton & N Smith					
Zone	55	Datum	H	Plot ID	3	Plot dimensions	2 x 50	Photo #	
Easting	696842	Northing	6293087	IBRA region	SE Highlands Orange	Midline bearing from 0 m	192°		
Vegetation Class							Confidence: H M L		
Plant Community Type							Confidence: H M L		
1330. native woodland.							EEC:		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values	
Count of Native Richness	Trees	2
	Shrubs	1
	Grasses etc.	7
	Forbs	11 14
	Ferns	0
	Other	1 1
Sum of Cover of native vascular plants by growth form group	Trees	20
	Shrubs	.1
	Grasses etc.	66.4
	Forbs	11.9
	Ferns	0
	Other	1.1
High Threat Weed cover	.5	

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	1 (1)	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	11 1 (6)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0.6, 2.2, 2.0, 5.0, 7.0, 4.0, 4.5, 6.0, 4.0, 3.0, 3.0, 5.0, 4.0, 3.0, 4.0, 5.0, 3.0 = 65.3	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)							
Subplot score (% in each)	5	25	2	15	1	30	25	0	0	10	10	10	2	0	0	0	0	0	0	0
Average of the 5 subplots	9.6				13				4.4				0							

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Gully	Landform Pattern		Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	br brown	Soil Depth	
Slope	Aspect	SW	Site Drainage	South	Distance to nearest water and type	beside creek

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	Fallen trees, cleared area, adjacent woodland
Cultivation (inc. pasture)	0		
Soil erosion	2	R	gullying
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	cow/sheep scats
Fire damage			
Storm damage			
Weediness			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 22 10 18	Flyers creek	Plot # 3	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	Eucalyptus gonocalyx	N	15	1		
T	Eucalyptus melliodora	N	5	1		
	Sheep's sower Acetosella vulgaris	E	1			
G	Exotic perennial grass - unidentified	N	.1	1		
	Flat weed Hypochaeris radicata	E	0.5	200		
	Rhynchospora small					
F	native geranium Geranium sp	N	18.1	30		
G	Lamandra multiflora	N	.1	20		
	Variegated thistle Silphium marianum	E	.1	20		
F	Oxalis perrenans	N	.5	100		
F	Star wort Woodruff Asperula conferta	N	.1	10		
	Skinny purple flower Petrorhagia dubia	E	.1	100		
	Couch grass					
	onion grass - purple flower Romula rosea	HTE	1.5	1000		
	subterranean clover	F	.5	100		
	scarlet pimpernel look alike Centaury pulchellum	E	.1	10		
F	Tanure look alike Desmodium varians	N	.1	1		
G	passiflora Juncus sp.	N	.1	1		
F	yellow flower small ball. Catula australis	N	.1	100		
F	native green rosette - goodenia? Solanogyne	N	.5	50		
F	small st Johns wort Hypericum ^{domestic} granireum	N	.1	2		
F	bulbine lily sp - Bulbine bulbosa	N	.1	40		
G	Rhynchospora - small	N	1	100		
F	Muramba dioeca	N	.1	20		
F	Drosera - auriculata	N	.1	30		
F	Goodenia sp	N	.1	1		
	Yorkshire Fog grass Halcus lanatus	E	1.5	20		
	Soft brome Bromus hordeaceus	E	.1	20		
R G	hairy woodruff sedge Luzula densiflora	N	.1	10		
S	Guinea flower Hibbertia ^{obtusifolia} sp	N	.1	1		
G	Couch Microloaena stipoides	N	60	5000		grazed
	Barley grass Hordeum sp	E	0.5			
G D	native sedge - like lamandra filiformis	N	1.5			
F	doyle exotic Rumex brownii	N	.1	3		
	Rye grass Lolium sp	E	5.2	100		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ..., 100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

1330 - exdho

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at peppermint w 1 Blaney's

BAM Site – Field Survey Form						Site Sheet no:			
		Survey Name	Zone ID	Recorders					
Date	22 10 18	Kyevsck	RS_ exdho	L. Hamilton + N. Smith					
Zone	55	Datum	H	Plot ID	4	Plot dimensions	20x50	Photo #	
Easting	694623	Northing	6283663	IBRA region	SE Highlands Orange	Midline bearing from 0 m	179°		
Vegetation Class							Confidence:		
Plant Community Type							EEC:		
RS/Peppermint							H M L Confidence: H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values	
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	5
	Forbs	10
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	42
	Shrubs	0
	Grasses etc.	3.7
	Forbs	1
	Ferns	0
	Other	0
High Threat Weed cover	0.1	

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1	0
50 – 79 cm	###11	7
30 – 49 cm	###	5
20 – 29 cm		3
10 – 19 cm		2
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	4.0, 1.5, 7.0, 1.2, 4.0, = 17.7	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10 20 30 100 200 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.
For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	80 75 60 70 40	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
Average of the 5 subplots	65	0	0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Hill slope	Landform Pattern	Microrelief
Lithology	Soil Surface Texture	loam	Soil Colour	Black
Slope	Aspect	SWest	Site Drainage	west

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	1	0	fallen stumps
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal			
Grazing (identify native/stock)	1	R	cow scat.
Fire damage			
Storm damage			
Weediness			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe
Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Red string peppermint 1330, exotic

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 22 10 18	Flyers Creek	Plot 4	N Smith L Hamilton

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	Red Stringy bark Eucalyptus macrorhynchos	N	240	11		
T	Broadleaved peppermint Eucalyptus Dives	N	2	3		
GG	Lomandra small sedge? Alliformis	N	2	500		
G	Rhytidosperra 1	N	0.5	100		
F	native geranium Geranium sp	N	0.1	10		
F	green rosette Solenogyne dominii	N	0.1			
	Briza minor	E	0.1	30		
F	small yellow flowers Helipterum australe unidentified	N	0.1	2		
G	Juncus sp	N	0.1	1		
	Scarlet pimpernell - pink flower - Centaury	E	0.1	1		
F	Small St Johns wort - H. gramineum	N	0.1	20		
F	Gnocarpus - elatus	N	0.1	20		
	pink skinny flower Petrorhagia dubia	E	0.1	100		
	Rye grass Lolium sp.	E	2	2000		
F	miniature daisy - Helipterum australe	N	0.1	5		
G	Rhytidosperra 2	N	0.1			
	galium woodruff Theraudia avensis	E	0.1	20		
	Microseris spiroides					
	Oregano look alike Arenaria sp.	E	0.1	15		
F	Oxalis pennanans	N	0.1	20		
	blackberry Rubus	HTE	0.1	1		
F	Kidney weed Dichondra repens	N	0.1	2		
F	small fern like forb unidentified	N	0.1	2		
G	Poa sp. Poa labillardierei	N	1	20		
	barley grass - wide leaf Hordeum sp	E	0.1	20		
	Soft brome Bromus hordeaceus	E	0.1	10		
D	Vulpia sp	E	1			
	Barley grass 2 stalk Hordeum sp	E	10	1000		
F	glaucous rosette - unidentified	N	0.1	2		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

Exotic

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BAM Site – Field Survey Form						Site Sheet no:	
		Survey Name		Zone ID		Recorders	
Date		Flyers Creek		277- Exotic		L Hamilton N Smith	
Zone		Datum		Plot ID		Plot dimensions	
55		M		5		20x50	
Easting		Northing		IBRA region		Midline bearing from 0 m	
695223		6282994		St Highlads Orange		72°	
Vegetation Class						Confidence:	
Plant Community Type						EEC:	
Exotic 277 (exotic) 277-exotic						H M L Confidence: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	—
	Shrubs	—
	Grasses etc.	2 3
	Forbs	2 3
	Ferns	—
	Other	—
Sum of Cover of native vascular plants by growth form group	Trees	—
	Shrubs	—
	Grasses etc.	5.5
	Forbs	0.2
	Other	—
High Threat Weed cover		0.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		
—		

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)					
Subplot score (% in each)	0.1	0.1	0.1	1.5	1	20	10	2	50	0	0	0	0	0	10	0	5	10
Average of the 5 subplots	1.26				16.6				0				25					

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	hill top	Landform Pattern		Microrelief	
Lithology	granite	Soil Surface Texture	loam	Soil Colour	brown	Soil Depth	
Slope		Aspect	east	Site Drainage	east	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Stumps
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	Cow scat
Fire damage			
Storm damage			
Weediness			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), 0=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	23 10 18	Rivers Ck	Exotic	L Hamilton + N Smith					
Zone	SS	Datum	H	Plot ID	6	Plot dimensions	20x50	Photo #	
Easting	694615	Northing	6284354	IBRA region	SE Highlands Orange	Midline bearing from 0 m	210°		
Vegetation Class								Confidence: H M L	
Plant Community Type								EEC: H M L	
Exotic									

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	—
	Shrubs	—
	Grasses etc.	3
	Forbs	3
	Ferns	—
	Other	—
Sum of Cover of native vascular plants by growth form group	Trees	—
	Shrubs	—
	Grasses etc.	3
	Forbs	3
	Ferns	—
Other	—	—
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		
—		

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	0.1	0.2	0.1	0	0.1	2	2	1	0.5	5	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	0.1					2.1					0					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Foot slope	Landform Pattern	Foothills	Microrelief	
Lithology	Granite	Soil Surface Texture	clay loam	Soil Colour	Brown	Soil Depth	
Slope		Aspect	S	Site Drainage	NW	Distance to nearest water and type	100 m farm dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Stumps left in landscape
Cultivation (inc. pasture)	0		
Soil erosion	2	NR	Slow eroded sections
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	Sighting of cows + dung.
Fire damage			
Storm damage			
Weediness	2		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders			
Date	23 10 18	Flyers Creek	Plot 6	N Smith L Hamilton			
GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher	
	Flat weed <i>Hypochaeris radicata</i>	E	50	5 000			
	Cape weed <i>Achrotheca calendula</i>	E	.8.1	50			
GG	<i>Juncus</i> sp.	N	.1	4			
	subterranean clover <i>Trifolium subterraneum</i>	E	10				
	<i>Trifolium dubium</i> - yellow flowers	E	10				
F	Cudweed <i>Japonicus Euchiton japonicus</i>	N	.1	50			
	Barley grass <i>Hordeum</i> sp.	E	5				
	Yorkshire fog grass <i>Holcus lanatus</i>	E	.1	20			
	plantago lanceolata	E	.1	20			
	* Unidentified forb <i>Costula coronopifolia</i>	E	.1	50			
F	small herb - flowers - unidentified	N	.1	50			
	eragrostis minor - <i>Poa bulbosa</i>	E	.1				
	<i>Lolium</i> sp.	E	5	1000			
	small stonecrop? - unidentified <i>Sedum caespitosum</i>	E	.1	3			
	<i>Vulpia</i> sp.	E	10				
	Sweet briar - dead <i>Rosa rubiginosa</i>	E	.1	1			
G	<i>Luzula densiflora</i>	N	.1	10			
	sheeps sorrel <i>Acetosella vulgaris</i>	E	.1	50			
	Soft brome	E	.5				
GG	unidentified sedge - <i>Lomandra</i>	N	.1	2			
	small sedge - <i>Isolepis</i> sp. exote	E	.1	20			
F	<i>Drosera</i> sp.	N	.1	10			
	<i>Aphanes arvensis</i> - parsely pierd.	E	.5	100			

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	23 10 18	Flyers Ck	1330-Exotic	L HAMILTON + N SMITH					
Zone	55	Datum	H	Plot ID	7	Plot dimensions	20x50	Photo #	
Easting	694752	Northing	6284017	IBRA region	SE Highlands	Midline bearing from 0 m	210 317°		
Vegetation Class							Confidence: H M L		
Plant Community Type							EEC: H M L		
1330- exotic									

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	3
	Forbs	2
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	30.2
	Shrubs	0
	Grasses etc.	5.6
	Forbs	2
	Ferns	0
Other	0	
High Threat Weed cover		5

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	(2)	—
30 – 49 cm	(2)	—
20 – 29 cm	(3)	—
10 – 19 cm	(1)	—
5 – 9 cm	—	—
< 5 cm	(5)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.0	10 m

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10 20 30 100 200 300 ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	50 20 20 20 20	10 20 20 20 20	0 0 0 0 0	0 0 0 0 0
Average of the 5 subplots	28.8	13	0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	Granite	Soil Colour	Clay/loam	Brown	
Slope	Aspect	north	Site Drainage			200 m ² farm dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	Stumps
Cultivation (inc. pasture)	0		
Soil erosion	2	R	Scour around grass tussocks
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	Sighting of stick, cow pats
Fire damage			
Storm damage			
Weediness	2	R	
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form				Site Sheet no:					
		Survey Name	Zone ID	Recorders					
Date	23 10 18	Ayers Cle	Exotic	L HAMILTON + N SMITH					
Zone	55	Datum	H	Plot ID	8	Plot dimensions	20x50	Photo #	
Easting	694905	Northing	6283003	IBRA region	SE Highlands Orange	Midline bearing from 0 m	278°		
Vegetation Class							Confidence:		
Plant Community Type							EEC:		
							H M L		
							Confidence:		
							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	0
	Shrubs	0
	Grasses etc.	4
	Forbs	8
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	0
	Shrubs	0
	Grasses etc.	3.2
	Forbs	5.7
	Ferns	0
Other	0	
High Threat Weed cover		1.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0.6, 0.7, 0.9 = 2.2m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	0	0.1	0.5	0.5	0.1	15	50	15	20	10	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	0.24					22					0					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Grassy	Landform Pattern	Foot hills	Microrelief	
Lithology	Granite	Soil Surface Texture	Clay loam	Soil Colour	Brown	Soil Depth	
Slope		Aspect	SW	Site Drainage	wash	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Stumps
Cultivation (inc. pasture)	0		
Soil erosion	2	NR	Slow wind fallen timber etc
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	Sighting of stock + dung.
Fire damage			
Storm damage			
Weediness	3	R	Predominantly clover, tapeweed, Brome.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no:

		Survey Name	Zone ID	Recorders						
Date	23 10 18	Flyers Ck	DA - Good	L Hamilton & N Smith						
Zone	SS	Datum	H	Plot ID	9	Plot dimensions	20 x 50	Photo #		
Easting	695584	Northing	6283306	IBRA region	SE Highlands Orange	Midline bearing from 0 m	66°			
Vegetation Class							Confidence:		H M L	
Plant Community Type							Derwed Grassland - good		EEC:	H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	1
	Shrubs	0
	Grasses etc.	7
	Forbs	9
	Ferns	0
	Other	1
Sum of Cover of native vascular plants by growth form group	Trees	.1
	Shrubs	0
	Grasses etc.	42.4
	Forbs	1.8
	Ferns	0
	Other	.1
High Threat Weed cover		5

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm		
50 – 79 cm		
30 – 49 cm		
20 – 29 cm		
10 – 19 cm		
5 – 9 cm	 IIII (3)	
< 5 cm	 IIII (9)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.0	(1.0) m

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)					
Subplot score (% in each)	0.1	0.1	0.1	0.2	10	85	4	10	25	0	0.1	0	0	0	0	0	0	0
Average of the 5 subplots	2.1				24.8				5.02				0					

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Footslope	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	Clay loam	Soil Colour	grey	Soil Depth	
Slope	Aspect	E	Site Drainage	NE	Distance to nearest water and type	100 m gully

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	1	0	Remaining stumps
Cultivation (inc. pasture)	0		
Soil erosion	M	NR	Scouring on hillside around vegetation & fence
Firewood / CWD removal			
Grazing (identify native/stock)	M	R	Sighting of stock & dung.
Fire damage			
Storm damage			
Weediness	L	K	
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

DC - Good

Good grasses

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400 m ² plot: Sheet <u> </u> of <u> </u>		Survey Name	Plot Identifier	Recorders	
Date	23 10 18	Flyers Creek	Plot 9	L Hamilton	N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	Rhydosperma - small flty	N	40	1000		
G	Austrostipa scarbia	N	.1	2		
G	Lomandra filiformis man	N	1	100		
G	Lomandra grey multiflora	N	.1	10		
F	Wurmbeg drocea	N	.1	30		
O	Desmodium varians	N	.1	10		
F	o yellow fluffy ball small stiff Helipterum ^{alutace}	N	.1	500		
F	bramus diandrus	HTE	5	1000		
F	o lily - unidentified	N	1	200		
G	juncus sp	N	.1	10		
F	Wahlenbergia sp	N	.1	50		
T	Encalyptus blackolym	N	.1	8		
	Eragrostis minor	E	10	5000		
O	Convolvulus sp	N	.1	2		
	Barley grass Hordeum sp	E	.1	10		
F	Green fuzzy rosette - unidentified	N	.1			
F	Greenhood orchid pterostylis sp.	N	.1	5		
G	Redleg grass Bormiochloa macra	N	.1			
F	Velvet forb - unidentified	N	.1	10		
F	smooth rosette Solenogyne dominii	N	.1	500		
	native flat weed? hairy Hypochaeris ^{radicata}	E	.1			
	flat weed					
G	possible - Thymela	N	.1	3		
F	Small St John's wort Hypericum gramineum	N	0.1	2		

juvies

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders		
Date	23 10 18	Kyersck	277_natwe	L Hamilton N Smith		
Zone	55	Plot ID	10	Plot dimensions	20x50	Photo #
Datum	H	IBRA region	SE Highlands Orange	Midline bearing from 0 m	40°	
Easting	695546					
Northing	6283206					
Vegetation Class						Confidence: H M L
Plant Community Type				277_natwe.		EEC: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	3
	Forbs	4
	Ferns	0
	Other	2
Sum of Cover of native vascular plants by growth form group	Trees	20
	Shrubs	0
	Grasses etc.	1.1
	Forbs	0.4
	Ferns	0
	Other	0.6
High Threat Weed cover		1.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	③	—
20 – 29 cm	⑫	—
10 – 19 cm	⑥	—
5 – 9 cm	①	—
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		⑨m

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	85	90	80	10	75	0	0	0	20	10	0	0	0	1	0	0	0	0	10	0
Average of the 5 subplots	68					18					0.2					2				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Landform Pattern	Microrelief
Lithology	Soil Surface Texture	Soil Colour	Soil Depth
Slope	Aspect	Site Drainage	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			
Cultivation (inc. pasture)			
Soil erosion			
Firewood / CWD removal			
Grazing (identify native/stock)			
Fire damage			
Storm damage			
Weediness			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

277- native underb

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 23 10 18	Flyers Creek	Plot 10	N Smith L Hamilton

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
O	Mistletoe sp - unidentified	N	0.5	4		
F	stinking pennywort Hydrocotyle laxiflora	N	0.1	50		
	Tripolium divisa	E	0.1	300		
	Great brome Bromus diandrus	HTE	0.5	1000		
	Soft brome	E	0.1	500		
	rye grass Lolium sp	E	0.2	200		
	Cyatium sp - native? Speradina arvensis	E	0.1	250		
	serotina tussock	HTE	0.5	15		
	Trifolium subterraneum	E	0.1	150		
F	Native geranium solanderi	N	0.1	50		
	brassica type					
O	Dracopis Dracopium varians	N	0.1	1		
	Tall grass?					
	Cloude? Hares-foot?	E	0.1	80		
G	Wallaby small Rhydosperma sp.	N	0.5	80		
	Purple onion grass Romulea sp	HTE	0.1			
	brassica type					
F	Rumex brownii	N	0.1	20		
	leaf miner - speradina arvensis	E	0.1	200		
	New carrot		0.1	250		
T	Blackey's red gum Eucalyptus blackeyii	N	0.5	200		
T	Yellow box Eucalyptus melliodora.	N	15	7		
	Pa sp					
G	Lomandra filiformis	N	0.1	2		
	Hypochaeris flavida ^{Solenogyne dominii} Smith green rosette	N	0.1	18		
	Hairy brassica Hypochaeris radicata	E	0.1	15		
	brassica			50		
	Spiky rosette / thistle Carthamus lanatus	HTE	0.1	5	0.1	5
F	Wahlenbergia sp	N	0.1	42		
	erect brassica type ^{native food}					
	Bryza sp	E	0.1	50		
	unidentified lily	N	0.1	1		
G	Poasp Labillardierei	N	0.5	10		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	23 10 18	Pipers Ck	1330-exotic	L HAMILTON + N SMITH					
Zone	55	Datum	H	Plot ID	11	Plot dimensions	20x50	Photo #	
Easting	694606	Northing	6285179	IBRA region	SE Highlands Orange.	Midline bearing from 0 m	83°		
Vegetation Class								Confidence: H M L	
Plant Community Type								EEC:	
1330-exotic								H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	3
	Shrubs	0
	Grasses etc.	2
	Forbs	3
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	50.1
	Shrubs	0
	Grasses etc.	10.5
	Forbs	0.3
	Ferns	0
Other	0	
High Threat Weed cover		30.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	/// (3)	no // (2)
50 – 79 cm	/// (3)	no // (1)
30 – 49 cm	+++ + 1 (11)	—
20 – 29 cm	+++ + 1 (19)	—
10 – 19 cm	+++ + 1 (11)	—
5 – 9 cm	+++ + 1 (12)	—
< 5 cm	+++++ 1 (11)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	3.0, 4.0, 3.0, 5.0, 2.0, 2.0, 1.0, 4.0, 6.0, 3.0, = 37m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	95 50 25 50	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0
Average of the 5 subplots	61	0	0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Rock slope	Landform Pattern	Root hills	Microrelief
Lithology	Soil Surface Texture	clay loam	Soil Colour	brown	Soil Depth
Slope	Aspect	S	Site Drainage	N	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	1	NR	Roadside lots of stems.
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	1	R	Cow dung.
Fire damage	0		
Storm damage	0		
Weediness	2		
Other	0		

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no:

		Survey Name	Zone ID	Recorders					
Date	23 10 18	Flyers Ck	277- exotic	L Hamilton + N Smit					
Zone	55	Datum	H	Plot ID	13	Plot dimensions	20x50	Photo #	
Easting	699255	Northing	6289851	IBRA region	SE Highlands Orange	Midline bearing from 0 m	230°		
Vegetation Class								Confidence: H M L	
Plant Community Type								EEC: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	1
	Forbs	2
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	32
	Shrubs	0
	Grasses etc.	.1
	Forbs	.2
	Ferns	0
	Other	0
High Threat Weed cover		-1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	111 (3)	11 (2)
50 – 79 cm	777-11 (7)	111 (3)
30 – 49 cm	-	-
20 – 29 cm	1 (1)	1 (1)
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 2.5, 2.0, 5.0, 0.9, 6.0, 3.0 1.2, 2.0, 4.5, 0.6, 2.5, 0.7, 1.5, 2.5, 1.1,	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	25 50 80 30 2	1 15 0 15 5	0 0 0 0 0 5	100 0 0
Average of the 5 subplots	37.4	7.2	0	3

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	foot hills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	brown	Soil Depth	
Slope	Aspect	W	Site Drainage	S	Distance to nearest water and type	500 m farm dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	stumps
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	1	R	Dung
Fire damage	0		
Storm damage	0		
Weediness	3	R	Misty weed
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=no! recent (3-10yrs), O=old (>10yrs)

2.5, 3.1
3.0, 2.1
4.0, 2.5
8.0
3.5,
1.5,
68.5
M

V dimensions
0 x 40

1330 native - R

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 29 10 19	Flyers Creek	Plot 14	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
S	Cassinia aculeata	N	2	50		
F	Small St Johns wort Hypericum gramineum	N	.1	10		
	Isolepsis marginata	E	.1	30		
	onion grass - unidentified Comulca	HTE	.1	1		
G	Themeda triandra	N	25	50		
	hypochaeris radicata	E	.81	50		
G	Rhynchospora - small fluffy	N	2.5	100		
F	Oxalis perennans	N	.1	20		
F	native geranium Geranium solanderi	N	.1	10		
G	Sedge - large tussock Poa	N	4	20		ID
F	bulbine lily. Bulbine bulbosa	N	.1	24		
G	Rhynchospora - tall	N	1	70		
	Evohc hypericum perforatum	HTE	.1	5		
F	Sheeps burr Acaena echinata	N	.1	40		
T	Silver wattle Acacia dealbata	N	2.5	55		
G	Lomandra - small filiformis	N	.1	230		
F	Woodruff gallium - Aspenula conferta	N	.1	500		
G	small shaggy grass - unidentified	N	.1	100		
	barley grass					
	bromis straminea (great)					
	Trifolium dubia	E	.1	50		
G	Microlecanium stipoides	N	.1	20		
	Hawthorn Crataegus monogyna	HTE	.1	1		
	Blackberry Rubus sp	HTE	.1	3		
T	Eucalyptus rubida	N	5	9		
	Cockfoot Dactylis glomerata	E	20			
	Phalaris sp	E	10			
	Plantago lanceolata - native small	E	.5			
F	Asteraceae - bram midvein	N	.1	30		
	Sweet briar Rosa rubiginosa	HTE	.1	3		
T	Eucalyptus melliodora	N	2	6		
	R small					
G	small sedge - not lazula Carex	N	.1	4		
	Curly grass - unidentified	N	1.4	50		
	native plantain					
	Rhynchospora - tall					
F	Creeping cudweed Eudicot japonicus	N	.1	10		
F	ganocarpus - sp.	N	.2	50		
	Rhynchospora - tall serrated tussock Nassella	HTE	.1	1		
	juncus sp Rye grass	F	.5	1000		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ... 100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

(F) ~~R~~ sp
 whalenbergid .1 1
 buza maxima .5 1000
 Numbeg dioeca .1 1
 (F) small fluffy ball forb. .1 20
 (F) ~~Hillside weed~~ Senecio - .1 1
 Senecio quadridentatus

1330 exotc_undisturb

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BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	24 10 18	Flyers Creek	Plot 15	L Hamilton N Smith					
Zone	SS	Datum	H	Plot ID	15	Plot dimensions	20x50	Photo #	
Easting	696951	Northing	6243167	IBRA region	SIH	Midline bearing from 0 m	330°		
Vegetation Class								Confidence: H M L	
Plant Community Type								Confidence: H M L	

1330 - Red Stringy, long leaved yellow

EEC: Y

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	1
	Shrubs	0
	Grasses etc.	5
	Forbs	2
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	12
	Shrubs	0
	Grasses etc.	12.2
	Forbs	0.1
	Ferns	0
Other	0	
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm		
50 – 79 cm	1	0
30 – 49 cm	1	
20 – 29 cm		
10 – 19 cm		
5 – 9 cm		
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	(6) m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	1 5 5 1 0			25
Average of the 5 subplots	0.42	0	0	1.4

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Landform Pattern	Microrelief
Lithology	Soil Surface Texture	Soil Colour	Soil Depth
Slope	Aspect	Site Drainage	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			some clearing pasture improved - nut evidence cWD limited - but remain under trees grazed by cattle + sheep - no regen
Cultivation (inc. pasture)			
Soil erosion			
Firewood / CWD removal			
Grazing (identify native/stock)			
Fire damage			
Storm damage			
Weediness			exotic dominated except under tree canopy
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet <u> </u> of <u> </u>		Survey Name	Plot Identifier	Recorders
Date	29 10 18	Fryers Creek	15	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Flatweed sml - <i>Hypochaeris radicata</i>	E	0.5	1000		
	Sheep's Sorrel	E	0.1	500		
	<i>T. subterraneum</i>	E	10	2000		
	Capeweed	E	0.1	200		
	Barley grass	E				
G	<i>Rhynchospora - lobed</i>	N	10	500		
G	<i>Rhynchospora - shiny.</i>	N	2	250		
F	small unidentified forb.	N	0.1			
	<i>T. dubia</i>	E				
	Hairy catwort <i>Podagraceae Aphanes</i>	E				
G	<i>Juncus sp.</i>	N	0.2	30		
	Fairy grass	E				
	Onion weed.	E				
	<i>Vulpia sp</i>	E				
	Rye grass	E				
	Yorkshire fog	E				
	Soft brome	E				
	Drosera <i>Tiny stonecrop - Solum caespitosum</i>	E				
F	<i>Oxalis perennans</i>	N	0.1	100		
	Salt grass					
G	<i>Lantana liliformis</i>	N	0.1	50		
G	red grass <i>Bothriochloa macra</i>	N	0.1	70		
	Crest bromo	HTE				
	Rumex brownii					
	unidentified forb - purple flower fern	HTE				
T	long-leaved box <i>Euclyptus goniocly</i>	N	12	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	24 10 18	Flyers Cle	1330-nature	L Hamilton A Smith					
Zone	55	Datum	H	Plot ID	18	Plot dimensions	20x50	Photo #	
Easting	694209	Northing	6283599	IBRA region	SE Highlands Orange	Midline bearing from 0 m	293°		
Vegetation Class								Confidence: H M L	
Plant Community Type								EEC: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	3
	Shrubs	0
	Grasses etc.	7
	Forbs	8
	Ferns	0
	Other	1
Sum of Cover of native vascular plants by growth form group	Trees	1.6
	Shrubs	0
	Grasses etc.	51.3
	Forbs	2.1
	Ferns	0
	Other	-1
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	10 19	—
5 – 9 cm	10	—
< 5 cm	10 10 + 42 + 49 = 192	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 1.5, 1.5, 2.5, = 7.5 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	25	10	1	1	95	50	50	5	15	0	0	15	20	10	0	0	0	0	0	0
Average of the 5 subplots	26.4					24					9					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	←	Landform Pattern	lower hill slope	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	Yellow-red	Soil Depth	
Slope	Aspect	NE	Site Drainage	SE	Distance to nearest water and type	200 m gravel channel

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	O	stumps + regen
Cultivation (inc. pasture)	0		
Soil erosion	1		scour
Firewood / CWD removal	0		
Grazing (identify native/stock)	1	R	Dung
Fire damage	0		
Storm damage	0		
Weediness	1		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	24 10 18	Flyers ck	Planted Veg	L Hamilton		N Smith			
Zone	55	Datum	H	Plot ID	17	Plot dimensions	20 x 50	Photo #	
Easting	694883	Northing	6286755	IBRA region	SE Highlands Orange	Midline bearing from 0 m	187°		
Vegetation Class							Confidence:		
Plant Community Type							Planted native - PCT -		
							EEC:	Confidence:	
							H M L		
							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	0
	Forbs	0
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	11
	Shrubs	0
	Grasses etc.	0
	Forbs	0
	Ferns	0
	Other	0
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	(5)	—
20 – 29 cm	(5)	—
10 – 19 cm	(2)	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		—

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	60 0 5 5 2	5 0 10 0 20	0 0 0 0 0	0 0 0 0 0
Average of the 5 subplots	14.4	7	0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill slope	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	S	Site Drainage	E	Distance to nearest water and type	250 m gully channel

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	no woodlot
Cultivation (inc. pasture)	2	R	improved pasture
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	sight of stock, poop
Fire damage	0		
Storm damage	0		
Weediness	3		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no:

		Survey Name	Zone ID	Recorders					
Date	24 10 18	Kyers Ck	1330-nature	L Hamilton N Smith					
Zone	55	Datum	H	Plot ID	18	Plot dimensions	20x50	Photo #	
Easting	699796	Northing	6285146	IBRA region	SE Highlands Orange	Midline bearing from 0 m	162°		
Vegetation Class							Confidence:		
Plant Community Type							H M L		
1330-nature							Confidence:		
EEC:							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	3
Forbs	7
Ferns	0
Other	1
Sum of Cover of native vascular plants by growth form group	
Trees	8
Shrubs	0
Grasses etc.	5.6
Forbs	0.7
Ferns	0
Other	0.1
High Threat Weed cover	0-2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	// (2)	/ (1)
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	/ (1)	—
5 – 9 cm	/// (3)	—
< 5 cm	/// (3)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 2.0, 2.5, 2.5, 3.0 = (12) m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	15	25	55	5	25	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Average of the 5 subplots	25					0					0.2					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	foot hills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	brown	Soil Depth	
Slope	Aspect	S	Site Drainage	W	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	S	0	in late roadside woodland close by
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	1	R	stock dung
Fire damage	0		
Storm damage	0		
Weediness	2		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet <u> </u> of <u> </u>	Survey Name	Plot Identifier	Recorders
Date <u>24 10 16</u>	<u>Flyers Creek</u>	<u>18</u>	<u>L Hamilton N Smith</u>

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
F	sweet vernal grass <i>Anthoxanthum odoratum</i>	F	60	5000		
	bulbine lily <i>Bulbine bulbosa</i>	N	.1	30		
	hypochaeris <i>radiata</i>	E	.1	20		
F	unidentified lily	N	.1	1		
	Cocksfoot	F	1			
GT	Poa labillardiae	N	5			
T	Broadleaved peppermint <i>Eucalyptus diversifolia</i>	N	8	5		
	Trifolium subterraneum	E	.5	100		
	onion grass <i>Ranunculus acris</i>	HTE	.1			
	Fairy grass <i>Silene acaulis</i>	E	.1	20		
	St Johns wort exotic - <i>perforatum</i>	HTE	.1	5		
F	Hill fire weed <i>Senecio grandiflorus</i>	N	.1	1		
F	Sheeps burr <i>Acaena echinata</i>	N	.1	30		
F	native geranium <i>Solanum</i>	N	.1	10		
F	<i>Rumex brownii</i>	N	.1	1		
	Rye grass <i>Lolium sp</i>	E	1			
GT	<i>Juncus sp</i>	N	.1	5		
	<i>Trachypogon</i> - onion weed	E	5	1000		
	sheeps sorrel <i>Achrasella vulgaris</i>	E	.1	30		
	wild Oats <i>Avena fatua</i>	E	5			
	<i>Vulpia sp</i>	E	.5			
F	<i>Oxalis perennans</i>	N	.1			
	Yorkshire fog grass	E	.5			
	Barley grass					
	soft brome <i>Bromus hordeaceus</i>	E	.1			
	Staminate					
GT	<i>Lomandra filiformis</i>	N	.5	500		
	Great brome <i>Bromus diandrus</i>	HTE				
O	Fairywe <i>Desmodium vanans</i>	N	.1	4		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no:

		Survey Name	Zone ID	Recorders					
Date	25 10 18	Flyers Ck	277-native	L Hamilton N Smith					
Zone	55	Datum	H	Plot ID	19	Plot dimensions	20x50	Photo #	
Easting	691690	Northing	6288812	IBRA region	SE Highlands Orange	Midline bearing from 0 m	323°		
Vegetation Class								Confidence:	
								H M L	
Plant Community Type								EEC:	
277-native								H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	71
	Shrubs	0
	Grasses etc.	23
	Forbs	2
	Ferns	0
	Other	0
	Sum of Cover of native vascular plants by growth form group	Trees
Shrubs		0
Grasses etc.		5.3
Forbs		1.2
Ferns		0
Other		0
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	11	2
50 – 79 cm	1	1
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.0, 4.0 = 5.0	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	40 18 60 70	15 99 55 15 0	0 0 0 0 0	0 0 15 10 25
Average of the 5 subplots	35.8	36.8	0	10

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hilltop	Landform Pattern	Foothills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Red-brown	Soil Depth	
Slope	Aspect	W	Site Drainage	W	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	Remainder surrounding wood
Cultivation (inc. pasture)	1		
Soil erosion	2	R	Wind removal of top soil, severe
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	dung.
Fire damage			
Storm damage			
Weediness	1		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Eyres Creek	19	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	<i>Eucalyptus melliodora</i>	N	25	3		
	Barley grass	E	20	1000		
	thistle-like variegated	E	.1	3		
	Exotic stinging nettle <i>Urtica dioica</i>	E	.1	4		
	Centauray species	E	.1	5		
	Cape weed <i>Arctotheca calendula</i>	E	25	2000		
	Rye grass <i>Lolium sp</i>	E	.2	300		
G	<i>Australostipa scabra</i>	N	5	200		
BAG	<i>Eriogonum</i> sp. unidentified	N	.2	100		
F	<i>Rumex brownii</i>	N	.1	15		
	subterranean clover	E	.1	20		
F	forb with butter flowers <i>Calotis austral</i>	N	.1	20		
	sweet vernal grass	E	.1	10		
	<i>Ceranium moller</i>	E	.1	5		
G	<i>Rhynchospora</i> small clumpy	N	.1	30		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: _____

		Survey Name	Zone ID	Recorders					
Date	25 10 18	Flyers Ck	277-Enohic	L Hamilton N Smith					
Zone	55	Datum	H	Plot ID	20	Plot dimensions	20x50	Photo #	
Easting		Northing		IBRA region	SE High Lands Orange	Midline bearing from 0 m	149°		
Vegetation Class								Confidence:	
Plant Community Type								H M L	
277-Enohic								EEC:	
								H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	1
	Shrubs	0
	Grasses etc.	1
	Forbs	1
	Ferns	
	Other	1
Sum of Cover of native vascular plants by growth form group	Trees	25
	Shrubs	0
	Grasses etc.	.1
	Forbs	.1
	Ferns	0
	Other	.1
High Threat Weed cover		0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1	0
50 – 79 cm	1	0
30 – 49 cm		
20 – 29 cm		
10 – 19 cm		
5 – 9 cm		
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 1.5, 3.0, 1.5, 2.5, 6.0, 1.5, 4.5, 4.0, 5.0, 1.5, 2.5, 7.0 = 42.5 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10 20 30 100 200 300 ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	2 0.5 0.1 5 2	9 6 9 4 5 0 8 5 2	0 0 0 0 0 0	2 5 0 0 0 0
Average of the 5 subplots	1.92	65.4	0	1.4

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern	Footthick	Micrelief
Lithology	Soil Surface Texture	loam	Soil Colour	dark brown	Soil Depth
Slope	Aspect	SE	Site Drainage	S	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Remainng paddock trees + stumps
Cultivation (inc. pasture)	2	0	pasture, improved
Soil erosion	1	R	clear areas on hilltop
Firewood / CWD removal			
Grazing (identify native/stock)	3	R	sheep cighting + dung.
Fire damage			
Storm damage			
Weediness	3		Enohic
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Fingert Crk	20	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	sheeps sorrel <i>Acetosella vulgaris</i>	E	.1	1		
	Variegated thistle <i>Silybum marianum</i>	E	.1	25		
	Cane weed <i>Arctotheca calendula</i>	E	.2	100		
	Barley grass <i>Hordeum sp.</i>	F	100	5		
G	<i>Rhynchospora tallerae</i>	N	.1	2		
F	<i>Rumex brunii</i>	N	.1	25		
T	<i>Eucalyptus melliodora</i>	N	25	1		
	Exotic forb - unidentified.					PIC
	Exotic nettle <i>Urtica dioica</i>	E	.1	5		
○	sub Mistletoe - unidentified.		.1	1		
	Melastoma					

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no:

Date		25 10 19	Survey Name	Flyves Creek DG - Low	Recorders					
Zone		59	Datum	H	Plot ID	21	Plot dimensions	20x50	Photo #	
Easting		692022	Northing		6289370	IBRA region	SEH	Midline bearing from 0 m	347°	
Vegetation Class								Confidence:		H M L
Plant Community Type								EEC:		H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Grasses etc.	2
Forbs	1
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	15.1
Forbs	1
Ferns	0
Other	0
High Threat Weed cover	1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	—	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0 0 1 0 3	12 25 8 6 3	0 0 0 0 0	0 5 55 0 1
Average of the 5 subplots	0.8	10.8	0	12.2

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill slope	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	brown	Soil Depth	
Slope	Aspect	NW	Site Drainage	NW	Distance to nearest water and type	500m creek

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Remnants paddock trees & stump S.
Cultivation (inc. pasture)	0		
Soil erosion	1		Topsoil loss where exposed
Firewood / CWD removal			
Grazing (identify native/stock)	2	R	Dung
Fire damage			
Storm damage			
Weediness			
Other	2		

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Flyers Creek	21	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	Austrostipa scabra	N	15	500		
	barley grass	E	20			
	cape weed	E	20			
	Soft brome	E	.1			
	Trifolium dubia	E	10			
	Stone crop - 3 part	E	.1	10		
	subterranean clover	E	10			
	Eragrostis	E	.5			
	Great brome Bromus diandrus	HTE	.1			
	pink velvet - Petrorhagia dubia	E	.1	2		
F	exotic erodium Erodium betrys	E	.1	20		
	Rumex brownii	N	.1	10		
G	Rye grass Lolium sp	E	.2			
	Rhytidosperrma small-fl. th	N	.1	50		
	Phalaris or sweet grass	E	5	50		
	Shoeps sorrel Acetosella	E	.1	10		
	native Plant Hypochaeris radicata	E	.1	1		
	Pattersons curse Echium plantaginum	E	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no:

Date		25 10 18	Survey Name	Flyers Ck	Zone ID	277-nature	Recorders		L Hamilton N Smith
Zone	Datum	SS	H	Plot ID	27	Plot dimensions	20x50	Photo #	
Easting	Northing		IBRA region	SE Highlands	Orange	Midline bearing from 0 m	274°		
Vegetation Class								Confidence: H M L	
Plant Community Type								277-nature	EEC: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	4
	Forbs	3
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	40
	Shrubs	0
	Grasses etc.	6.1
	Forbs	0.3
	Ferns	0
Other	0	
High Threat Weed cover		.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	11 (2)	—
50 – 79 cm	11 (2)	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	4.0/0.8 = (4.8)m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300, ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0.1 5 0.5 50 5	95 5 35 20 10	0 0 0 0 0	0 0 1 0 0
Average of the 5 subplots	12.12	31	0	0.2

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	Granite	Soil Colour	Clay	light red	
Slope	Aspect	W	Site Drainage	SW	Distance to nearest water and type	300m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	5	0	Remainder trees + shrubs
Cultivation (inc. pasture)	0		
Soil erosion	2	NR	topsoil loss around vegetated areas
Firewood / CWD removal			
Grazing (identify native/stock)	1	R	dung
Fire damage			
Storm damage			
Weediness	1		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Flyers Creek	22	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	Austrostipa scabra	N	2	200		
F	Rumex britannica	N	.1	820		
T	Yellow box E. melliodora	N	25%	2		
T	Eucalyptus gonocalyx	N	15	1		
	Spikey forb (rosette) exotic Cirsium	E	.1	10		
G	Rhynchospora - small	N	3%			
	Onion grass	HTE	.1			
F	Oxalis perennans	N	.1	50		
	Cape weed Achetona calandula	E	.1	40		
	native flat weed - Hypochaeris radicata small.	E	.1	2		
	Saffron thistle	HTE	.1	1		
	Rhynchospora tall					
G	Sedge small like umbrella - unidentified	N	.1	15		
	Rye grass Lolium Galium sp.	E	.1	50		
F	gallium forb tiny Sherardia arvensis	N	.1	20		
	barley grass Hordeum sp	F	.5	200		
	soft brome Bromus hordeaceus	F	.1	40		
	field madder Sherardia arvensis	E	.1	15		
G	Rhynchospora sp.	N	1	50		
	Scotch thistle rosette	E	0.1	3		
	Erioglossis minor	E	0.1	5		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form						Site Sheet no:	
		Survey Name		Zone ID		Recorders	
Date	25 10 18	Kyelesck 797-1000		Wood		L Hamilton N Smith	
Zone	55	Datum	H	Plot ID	23	Plot dimensions	20x50
Easting	689342	Northing	6288462	IBRA region	SE Highlands Orange	Midline bearing from 0 m	332°
Vegetation Class							Confidence:
Plant Community Type							EEC:
797- Wood							H M L Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	0
	Shrubs	0
	Grasses etc.	6
	Forbs	10
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	0
	Shrubs	0
	Grasses etc.	3.2
	Forbs	0.91
	Ferns	0
	Other	0
High Threat Weed cover		0.6

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		—

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)				
Subplot score (% in each)	0	0	0	0	5	20	10	15	10	0	0	0	0	0	0	0	12
Average of the 5 subplots	0				12				0				2.4				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top slope	Landform Pattern	Foot hills	Microrelief
Lithology	Soil Surface Texture	Clay	Soil Colour	Red brown	Soil Depth
Slope	Aspect	NW	Site Drainage	W	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Stumps left in landscape
Cultivation (inc. pasture)	0		
Soil erosion	2	R	erosion in uncovered areas
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	sheep in paddock.
Fire damage			
Storm damage			
Weediness	2		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Flyers Creek	23	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
F	Whalenbergia small	N	.1	200		
G	Rhynchospora small	N	1	1		
	▷ Saffron Thistle Compositus lanatus	HTE	.5	300		
G	Austrostipa scabra	N	1	300		
F	Enaidia nutans	N	.1	1		
F	Oxalis perennans	N	.1	1		
	Erodium lookalike exotic	HTE	.1	50		
G	▷ small umbrella sedge Carex inversa	N	14.5	200		
F	Kidney weed lookalike Dichondra repens	N	.1	20		
	sedum caespitosum	HTE	.1	10		
	Trifolium dubia	HTE	10			
	Trifolium subterraneum	HTE	1			
	sedge/grass		—			
F	Rumex brownii	N	.1	1		
F	dark green leafed forb unidentified	N	.1	2		
	native flatweed Hypochaeris radicata	HTE	.1	3		
F	Caustic weed Euphorbia drummondii	N	.1	2		
F	Smooth green rosette Solanogyne dominii	N	.1			
G	native wheat grass Anthosachne scabra	N	.5	20		
	▷ Vulpia sp.	E	5	100		
	Cape weed Arctotheca calendula	E	.1	100		
F	small fluffy yellow forb Helipterum australe	N	.1	20		
	Soft brome Bromus hordeaceus	E	.1	50		
	Onion grass Rumex	HTE	.1	50		
	Medic	E	.1			
	horsesfoot clover	HTE	.1			
G	Lamandra liliiformis	N	.1	10		
F	green succulent forb unidentified	N	.1	1		
	barley grass Hordeaceus sp.	HTE	1			
	Exotic stone crop - 3 part	HTE	.1	15		
G	Rhynchospora - 2 part	N	.5			
	Pink velvet Petrorhagia dubia	E	.1	2		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no:

		Survey Name	Zone ID	Recorders					
Date	26 10 18	Ayers Cle	266-Exotic	L Hamilton N Smith					
Zone	55	Datum	14	Plot ID	24	Plot dimensions	20x50	Photo #	
Easting	689951	Northing	6282697	IBRA region	SE Highlands Orange	Midline bearing from 0 m	141°		
Vegetation Class								Confidence: H M L	
Plant Community Type								Confidence: H M L	
266 exotic understory								EEC:	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	
Grasses etc.	
Forbs	1
Ferns	
Other	
Sum of Cover of native vascular plants by growth form group	
Trees	6
Shrubs	
Grasses etc.	
Forbs	.1
Ferns	
Other	
High Threat Weed cover	5

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1	1
50 – 79 cm	11	1
30 – 49 cm	1	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 3.0, 1.5, 1.5 = 8	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0 1 2 0 1 0	1 5 1 0 0	0 0 0 0 0	0 0 0 0 1
Average of the 5 subplots	0.8	1.4	0	0.2

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern	footmills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	Red	Soil Depth	
Slope	Aspect	SW	Site Drainage	SW	Distance to nearest water and type	800m from Dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Stumps, Remaining paddock trees
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	NR	cow dung
Fire damage			
Storm damage			
Weediness	3	R	exotic plot-understorey
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), 0=old (>10yrs)

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400 m ² plot: Sheet <u> </u> of <u> </u>	Survey Name	Plot Identifier	Recorders
Date <u>26 10 16</u>	<u>Flyers Creek</u>	<u>24</u>	<u>N Smith L Hamilton</u>

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
<u>T</u>	<u>Eucalyptus albens</u>	<u>N</u>	<u>6</u>	<u>2</u>		
	<u>Exotic Evodinium betnys</u>	<u>E</u>	<u>0.1</u>	<u>100</u>		
	<u>Small flowered mallow <i>Modiola</i></u>	<u>E</u>	<u>0.1</u>	<u>100</u>		
	<u>Pattersons cress <i>Echium</i></u>	<u>E</u>	<u>0.5</u>	<u>500</u>		
<u>F</u>	<u>Pinekus - unidentified</u>	<u>N</u>	<u>.1</u>	<u>20</u>		
	<u>Lucern <i>Medicago sativa</i></u>	<u>E</u>	<u>0.5</u>			
	<u>Rye grass <i>Lolium</i> sp.</u>	<u>E</u>	<u>10</u>			
	<u>Hordeum sp.</u>	<u>E</u>	<u>80</u>			
	<u>Great Brome <i>Bromus diandrus</i></u>	<u>HTE</u>	<u>5</u>			
	<u>Wine weed? <i>polygonum</i> ^{arcticum}</u>	<u>E</u>				
	<u>Wild oats <i>Avena fatua</i></u>	<u>E</u>	<u>0.5</u>			

GF Code: see Growth Form definitions in Appendix 1 **N:** native, **E:** exotic, **HTE:** high threat exotic **GF** – circle code if 'top 3'
Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

lots of stage birds nesting

BAM Site – Field Survey Form						Site Sheet no:			
		Survey Name	Zone ID	Recorders					
Date	26/10/18	Flyers Ck	266 exotic	L Hamilton N Smith					
Zone	55	Datum	H	Plot ID	25	Plot dimensions	20x50	Photo #	
Easting	690444	Northing	6283505	IBRA region	SE Highlands Orange	Midline bearing from 0 m	3490		
Vegetation Class								Confidence: H M L	
Plant Community Type								Confidence: H M L	
266 exotic								EEC:	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	1
	Shrubs	0
	Grasses etc.	2
	Forbs	1
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	10
	Shrubs	0
	Grasses etc.	2
	Forbs	1
	Ferns	0
	Other	0
High Threat Weed cover		5.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1/11	(4) 11 (2)
50 – 79 cm	1	(1) 1 (1)
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.5, 2.0, 2.0, 1.2, 3.5, 1.1, 1.2, 3.0, 5.0 = (4.1) m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300, ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	1	2	5	3	5	0	0	0	0	0	0	0	0	0	0	0	10	5	0	1
Average of the 5 subplots	3.2					0					0					3.2				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hills/low	Landform Pattern	Foothill	Microrelief	
Lithology	Soil Surface Texture	Clay	Soil Colour	Red	Soil Depth	
Slope	Aspect	N	Site Drainage	W	Distance to nearest water and type	500m to gully etc

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	Stumps,
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	dump, grazed grasses.
Fire damage	0		
Storm damage	0		
Weediness	3	R	exotic understorey.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), 0=old (>10yrs)

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 25 10 18	Flyers Creek	25	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	Eucalyptus albens	N	100	2		
	Scotch thistle Onopordum acanthium	E	.6	100	50	
	Exotic erodium	E	.5	500		
	Rye grass Lolium sp	E	10			
	Bathurst burr - Xanthoxylum	HTE	.1	2		
	Geranium molle	E	.5			
	Subterranean clover Trifolium sp	E	25			
	Soft blone Bromus hordeaceus	E	30			
	Vargated thistle	E	.1	3		
	Great brone Bromus diachne	HTE	5			
G	umbrella line sedge Carex inversa	N	.1	50		
	Exotic nettle Urtica dioica	E	.1	20		
F	Rumex brunii	N	.1	2		
G	Rhynchospora sp - small not as hairy	N	.1	50		17

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form 797_low Site Sheet no:

Date 27 10 18		Survey Name Flyers Ck	Zone ID 797_low	Recorders L Hamilton N Sm		
Zone 55	Datum H	Plot ID 26	Plot dimensions 20x50	Photo #		
Easting 692722	Northing 6282411	IBRA region SE Highlands Orange	Midline bearing from 0 m 290			
Vegetation Class						Confidence: H M L
Plant Community Type Eucalyptus Red Gum 797_low cord.				EEC:		Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	10
	Shrubs	00
	Grasses etc.	25
	Forbs	11
	Ferns	00
	Other	00
	Sum of Cover of native vascular plants by growth form group	Trees
Shrubs		00
Grasses etc.		30.72
Forbs		0.11
Ferns		0.00
Other	0.00	
High Threat Weed cover		6.5

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		—

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300, ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0.5 0.2 0.1 2.0 1	5 2 1 2 4	0 0 0 0 0	0 0 0 0 4
Average of the 5 subplots	0.58	2.8	0	0.8

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill slope	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	Clay loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	W	Site Drainage	NE	Distance to nearest water and type	200m Farm Dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	S	O	Stumps + remaining paddocks trees
Cultivation (inc. pasture)	O		
Soil erosion	O		
Firewood / CWD removal	O		
Grazing (identify native/stock)	M	R	animal dung.
Fire damage			
Storm damage			
Weediness	2		
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Exotic w
Red grass
↓
low cover
D.G

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 27 10 18	Flyers Creek	26	N Smith L Hamilton

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	* Soft brome <i>Bromus hordeaceus</i>	E	25			
	* subterranean clover <i>Trifolium</i>	E	25			
	* <i>Poa bulbosa</i>	E	10			
G	Red leg grass <i>Bothriochloa macra</i>	N	25 20			
G	<i>Rhynchospora</i> - small	N	10			10
G	native wheat <i>Anthracoceros scabra</i>	N	1.5			
	Parsley plant <i>Aphanes arvensis</i>	E	.1	10		
	Cape weed <i>Arctostaphylos calendula</i>	E	.1	3		
	Centauray fob <i>Centaurium sp</i>	E	.1			
F	green fob - unidentified	N	.1	20		
	<i>Vulpia</i>	E	.1			
G	<i>Rhynchospora</i> 2. larger	N	.1	10		
	Onion grass <i>Ranunculus</i>	HTE	.5			
	exotic <i>erradium betnys</i>	E	.1	20		
	Rye grass <i>Lolium sp</i>	E	.5			
G	little umbrella sedge <i>Carex inversa</i>	N	.1	20		
	<i>Austrostipa</i> - unidentified					
	<i>Phalaris</i>	E	.2	10		
	serrated tussock <i>Nassella sp.</i>	HTE	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); **Note:** 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

lots of
Supurb - superb species
polygon

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BAM Site – Field Survey Form Site Sheet no: 1 of 2

Date		Survey Name	Zone ID	Recorders		
19/01/19		Flowers Creek	277_exotic	NSmith L Hamilton		
Zone 55	Datum H	Plot ID 2727 118	Plot dimensions 20 x 50	Photo #		
Easting 692880	Northing 6280041	IBRA region SEH	Midline bearing from 0 m 274°			
Vegetation Class						Confidence: H M L
Plant Community Type 277_exotic				EEC:		Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	8
Forbs	4
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	20
Shrubs	0
Grasses etc.	2.3
Forbs	0.4
Ferns	0
Other	0
High Threat Weed cover	1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	11 (2)	1 (1)
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	1 (1)	—
10 – 19 cm	—	—
5 – 9 cm	—	1 (1)
< 5 cm	11 (11)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.5, 1.5, 2.0, 1.5, 3.0, 4.0, 3.0, 2.0, 3.0, 2.5, 3.0, 0.8, 4.5, 4.5, 3.0, 2.5, 2.0, 1.0, 4.5, 1.5, 4.0, 2.0, 5.0, 6.5, 1.5, 3.0	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300, ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	70	30	45	10	35	2	15	2	70	10	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	38																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Hill side	Landform Pattern	Rolling foot hills
Lithology	Soil Surface Texture	loam	Soil Colour	Brown
Slope	Aspect	W	Site Drainage	south

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	Remaining trees in patch.
Cultivation (inc. pasture)	0		
Soil erosion	1	R	slumps - no groundcover, use by stock.
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	Livestock sighted, dung, condition of groundcover
Fire damage	0		
Storm damage	0		
Weediness	3	R	Predominantly weedy understorey, blackberry, sweet briar, rose, serrated fuscicula
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

90.8

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27

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 19 01 13	Flyers Creek	277	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	Eucalyptus melliodora	N	20	7		
G	Red leg grass Bothriochloa macro	N	.1	15		
	serrated tussock Nassella trichoboma	HTE	.5	16		
	Lolium sp. dead-grazed	E	.1	100		
	Bromus sp barley grass Hordeum sp	E	30	5000		
	Pattersons curse Felium plantagineum	E	.2	30		
	Bromus hordeaceus (soft)	E	10	500		
G	Carex inversa. bright green sedge.	N	.1	500		
F	Oxalis pennemans.	N	.1	30		
F	Rumex brownii	N	.1	20		
G	*Bright green grass Microleuca stipoides	N	.5	30		tussocks grazed
	Avena fatua	E	.1	2		
	Sweet briar rose Rosa rubiginosa	E	.5	10		
	Sheeps sorrel Rumex acetosella	E	.5	30		
G	Juncus sp	N	.1	1		
G	Rhytidospenna Pilosum (smooth)	N	.2	30		
	Wire weed Polygonum aviculare	E	.1	3		
	Hypochaeris radicata	E	.1	1		
	Blackberry Rubus sp fruticosus?	HTE	.1	15		
G	native wheat Austrosachne scabra	N	.1	3		
	spear thistle Cirsium vulgare	E	.1	2		
F	Bridge-widgee ^{sheeps burr} Acaena vulgaris	N	.1	3		
	St Johns wort Hypericum perforatum	HTE	.2	5		
	narrow leaf claret Trifolium angustif.	E	.1	2		
	Saffron thistle. Carthamus lanatus	HTE	.1	5		
	cobblers peg- exotic	E	.1	15		
F	Black crumb weed - Dysphoma pumil	N	.1	38		
	Xanthemum spinosum	HTE	.1	23		
	Solanum latifolium	E	.1	1		
	Spiky bracken weed Chondrilla	E	.1	1		
G	Austrostipa scabra	N	.1	1		
	Vulpia sp silver grass	E	.1	20		
G	Dactyloctenium cynodon dactyloctenium	N	.2	100		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

Derived grass - low

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BAM Site – Field Survey Form					Site Sheet no: 1 of 2	
Date		Survey Name	Zone ID	Recorders		
19/01/19		Flyers Cr	Exotic & Native	N SMITH L HAMILTON		
Zone	Datum	Plot ID	Plot dimensions	Photo #		
55	#	28	20x50			
Easting	Northing	IBRA region	Midline bearing from 0 m			
692970	6279903	SE74	56°			
Vegetation Class				Confidence:		
				H M L		
Plant Community Type				EEC:		
Exotic & natives.				H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Count of Native Richness	
Grasses etc.	5
Forbs	45
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	27.2
Forbs	20.8
Ferns	0
Other	0
High Threat Weed cover	2.4

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.0, 0.65,	1.65

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	5	2	3	6	7	8	10	2	3	3	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	4.6																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Hill top	Landform Pattern	Footmills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Red-brown	Soil Depth	
Slope	Aspect	NE	Site Drainage	NE	Distance to nearest water and type	300m drainage line

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	surrounding woodland
Cultivation (inc. pasture)	0		
Soil erosion	1	NR	
Firewood/CWD removal	0		
Grazing (identify native/stock)	2	R	Livestock sighting + dung
Fire damage	0		
Storm damage	0		
Weediness	3	R	mostly weeds - pato, St John's wort, datura, myrica, mistle, skeleton weed, dave
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form						Site Sheet no: 101			
		Survey Name	Zone ID	Recorders					
Date	19.01.18	Flyers	Exotic natives	N Smith & L Hamilton					
Zone	55	Datum	M	Plot ID	29	Plot dimensions	20x50	Photo #	
Easting	692739	Northing	6280532	IBRA region	SEH	Midline bearing from 0 m	148°		
Vegetation Class							Confidence:		
							H M L		
Plant Community Type							EEC:		
Exotic - w - natives							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Count of Native Richness	
Grasses etc.	3
Forbs	3
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	3.1
Forbs	5.6
Ferns	0
Other	0
High Threat Weed cover	3.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	—	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)							
Subplot score (% in each)	2	2	1	5	5	7	50	40	35	20	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	3																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Hill top	Landform Pattern	Firewalls	Microrelief	
Lithology		Soil Surface Texture	10a m	Soil Colour	Red	Soil Depth	
Slope		Aspect	SE	Site Drainage	NE	Distance to nearest water and type	1 km drainage line

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Sun-avoiding woodlands
Cultivation (inc. pasture)	0		
Soil erosion	1	R	from stock + no groundcover
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	dung
Fire damage	0		
Storm damage	0		
Weediness	3	R	Predominantly weeds - Bathurst Blueberry, cyanogen toxic etc.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

797-Low?

Exotic w. native

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 19 01 18	Flyers	29	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Witch grass <i>Panicum capillare</i>	E	1	100		
F	Black cutworm weed <i>Dysphania pulchra</i>	N	5	1000		
G	Red leg grass <i>Botriochloa macra</i>	N	25	50		
	<i>Xanthoxylum spinosum</i>	HTE	.1	20		
	Saffron Thistle <i>rossettes</i>	HTE	3	1000		
	Goose grass <i>Eleusine tristachya</i>	E	.1	25		
	<i>Valpura</i> <i>silver grass</i>					
	<i>Trifolium</i> sp	E	.1	1		
F	<i>Oxalis perennans</i>	N	.1	10		
F	<i>Rumex brownii</i>	N	.1	8		
G	<i>Rhytidospenna</i> small-lobed <i>auriculatum</i>	N	.1	10		
G	<i>Microlena stipoides</i>	N	1	50		
	Variegated thistle <i>rossettes</i>	E	.1	20		
	Camel melon <i>Lanatus citullus</i>	E	.1	8		
	Stinging nettle <i>exotic</i>	E	.5	20		
	<i>Avena fatua</i>	E	.1	2		
	serrated tussock <i>Nassella</i>	HTE	.1	2		
	Wire weed <i>Polygonum aviculare</i>	E	.1	1		
	<i>Bromus hordeaceus</i>	E	.1	50		
	Barley grass - dead	E	50	5000		
	<i>Lolium perennans</i>	E	.1	1		

rossettes

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 1 of 2

Date		Survey Name		Zone ID		Recorders	
19/01/19		Flup's Cle		Devived-mod		N SMITH L HAMILTON	
Zone	Datum	Plot ID	30	Plot dimensions	20x50	Photo #	
55	H						
Easting	Northing	IBRA region	SEH	Midline bearing from 0 m	163°	Confidence: H M L	
692858	6280813						
Vegetation Class						Confidence: H M L	
Plant Community Type						Confidence: H M L	
DG-mod						EEC:	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	9
Forbs	4
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	.1
Shrubs	0
Grasses etc.	76.1
Forbs	0.4
Ferns	0
Other	0
High Threat Weed cover	0.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	①	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	-	-

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	5	2	1	1	2	0	0	3	0	4	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	2.2																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	hillsides	Landform Pattern	Foot hills	Microrelief	
Lithology		Soil Surface Texture	Loam	Soil Colour	Red-brown	Soil Depth	
Slope		Aspect	S	Site Drainage	E	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	surrounding remaining woodland.
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood /CWD removal	0		
Grazing (identify native/stock)	1	R	some clearing.
Fire damage	0		
Storm damage	0		
Weediness	1	R	some weeds
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date	Flyers	30	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	Red grass <i>Bothriochloa maculata</i>	N	5.0	5000		
G	native wheat <i>Arrhenatherum scabra</i>	N	1.0	200		
	<i>hypochaeris radicata</i>	F	5			
	narrow leaf clover	F	.5			
	<i>Taraxacum</i> - dead	F	.1	20		
G	<i>Rhynchospora</i> sp. - tall	N	.2	200		
	serotined insect <i>Nassella trichotoma</i>	HTE	.1	15		
G	<i>Carex inversa</i>	N	.1	2		
	<i>Isolobos marginata</i>	E	.1	30		
	fox tail grass - rough dog tail <i>Cynosuavida echynops</i>	E	.1	30		
	Oman grass - unidentified - clover	HTE	.1	30		
	Spear thistle	F	.1	2		
F	Star cadweed <i>Euchiton involucratus</i>	N	.1	15		
F	Caustic weed <i>Euphorbia dummaria</i>	N	.1	5		
	<i>Bromus hordeaceus</i>	E	.2			
G	<i>Austrostipa scabra</i>	N	.5	100		
F	<i>Oxalis pennanans</i>	N	.1	2		
G	<i>Microleana stipoides</i>	N	.1	5		
	Witch grass - rosette <i>Panicum capillare</i>	E	.1	20		
G	<i>Rhynchospora</i> - 2	N	.5	500		
	Silvery hair grass <i>Aira caryophylla</i>	E	.2			
G	<i>Chloris truncata</i>	N	10			
J	<i>Eucalyptus melliodora</i>	N	.1	1		
G	<i>Juncus</i> sp.	N	.1	2		
G	<i>Sporobolus creber</i> slender raton grass	N	.1	75		ID
	Yorkshire fog grass <i>Holcus lanatus</i>	E	.1	1		
F	<i>Rumex brownii</i>	N	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form						Site Sheet no: 1 of 2			
		Survey Name	Zone ID	Recorders					
Date	19/01/19	Plyers Crk	Exotic	N SMITH / HAMILTON					
Zone	55	Datum	H	Plot ID	31	Plot dimensions	20 x 50	Photo #	
Easting	692314	Northing	6281637	IBRA region	SEH	Midline bearing from 0 m	161°		
Vegetation Class							Confidence:		
							H M L		
Plant Community Type							EEC:		
Kyo tic							H M L		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Count of Native Richness	
Grasses etc.	3
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	0.9
Forbs	0.2
Ferns	0
Other	0
High Threat Weed cover	10.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	3 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	1 5 2 3 1	60 40 40 20 40	0 0 0 0 0	0 0 0 0 0
Average of the 5 subplots	2.4			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Mill top	Landform Pattern	Foot hills	Microrelief
Lithology	Soil Surface Texture	Clay loam	Soil Colour	Red	Soil Depth
Slope	Aspect	S	Site Drainage	SW	Distance to nearest water and type

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Surrounding remnant woodland.
Cultivation (inc. pasture)	0		
Soil erosion	1	R	around rocks & area w/ low ground cover.
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	dung
Fire damage	0		
Storm damage	0		
Weediness	3	R	Predominantly weeds - see pg 2
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 19 01 18	Flyers	31	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Saltan thistle <i>Carthamus lanatus</i>	HTE	10	1000		
	<i>Avena fatua</i>	E	5	100		
	<i>Bromus hordeaceus</i>	E	60	5000		
	Barley grass - dead	E	810	1000		
	Witch grass <i>Panicum capillare</i>	E	.1	30		
	Aarons Rod <i>Verbascum thapsus</i>	E	.1	1		
G	Red grass <i>Bothriochloa macra</i>	N	0.5	10		
	red flowered mallow <i>Modiola</i>	F	0.1	5		
G	<i>Microleana stipoides</i>	N	0.3	20		
	<i>Eriogrostis</i> sp-	E	4.5	30		ID
	<i>Xanthoxylum spinosum</i>	HTE	.31	10		
F	<i>Rumex brunii</i> - dead	N	0.1	5		
	Horehound <i>Marrubium vulgare</i>	E	0.1	30		
F	Black crumb weed <i>Disporia pumilio</i>	N	.1	30		
	spear thistle <i>Cirsium vulgare</i>	E	.1	3		
	<i>Hypochaeris radicata</i>	E	.1	1		
G	<i>Australostipa scabra</i>	N	.1	2		
	sheeps sorrel <i>Acelosella vulgaris</i>	E	.1	1		
	Camel thorn					
	Skeleton weed <i>Chandulla</i>	E	.1	2		
	<i>Vulpia</i>	E	1	100		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form					Site Sheet no: 101 2					
		Survey Name	Zone ID	Recorders						
Date	20 01 19	Fluors Crk	277- MONUM ^{EXOTIC}	N. SMITH L HAMILTON						
Zone	55	Datum	H	Plot ID	32	Plot dimensions	20x50	Photo #		
Easting	693168	Northing	6283312	IBRA region	SEH	Midline bearing from 0 m	45°			
Vegetation Class		Halls Road					Confidence: H M L			
Plant Community Type		277- MONUM Exotic					EEC:		Confidence: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values	
Count of Native Richness	Trees	2
	Shrubs	0
	Grasses etc.	4
	Forbs	1
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	13
	Shrubs	0
	Grasses etc.	1.4
	Forbs	1
	Ferns	0
Other	0	
High Threat Weed cover	0	

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	1	1
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 1.0, 1.5, 2.0, 3.0, 3.0, 2.0, 6.0, 9.0, 19.0, 30.0, 14.0. 92.0	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30 ... 100, 200, 300 ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	45	10	2	50	45	50	30	40	5	30	0	0	0	0	0	0	20	15	0	5
Average of the 5 subplots	30.4																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	NE	Site Drainage	N	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	O	Remaining native trees in plot + stumps
Cultivation (inc. pasture)	0		
Soil erosion	3	R	litter dams from runoff, gullies,
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	hiveshede signified + dump
Fire damage	0		
Storm damage	0		
Weediness	3	R	Predominantly weeds
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Halls
Road

277
native
] exotic

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 20 01 18	Flyers	32	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Bromus hordeaceus - dead	E	5	200		
G	Bathrichloa macra (red grass)	N	1	60		
T	Eucalyptus blackelyii	N	3	1		
T	Eucalyptus melliodora	N	10	1		
G	Anthosachne scabra (wheat)	N	.1	2		
G	Juncus sp	N	.1	2		
F	Caustic weed Euphorbia drummondii	N	.1	1		
G	Austrostipa scabra	N	.2	50		
	Barley grass Hordeum sp - dead	E	.1	30		
	Bromus sp - red-brown? dead	E	.1	50		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 1 of 2

		Survey Name	Zone ID	Recorders					
Date	20/01/19	Flyers Crk	DG-mod	N SMITH L HAMILTON					
Zone	55	Datum	H	Plot ID	33	Plot dimensions	20x50	Photo #	
Easting	692982	Northing	6282449	IBRA region	SEH	Midline bearing from 0 m	90°		
Vegetation Class									Confidence: H M L
Plant Community Type							Devined Grassland - Moderate		EEC: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	6
Forbs	3
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	51.6
Forbs	0.3
Ferns	0
Other	0
High Threat Weed cover	3.3

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	—	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	2	1	5	3	1	25	50	30	35	30	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	2.4																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Footslope	Landform Pattern	Footridg	Microrelief	
Lithology		Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope		Aspect	E	Site Drainage	E	Distance to nearest water and type	E, 10m, gully/creek

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Trees left in surrounding environment.
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	Livestock sightings, dung
Fire damage	0		
Storm damage	0		
Weediness	1	R	few weed species see plot 33 data.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 1 of 1

Date: 20 01 19		Survey Name: Flupus Ck	Zone ID: 34	Recorders: N Smith L Hamilton	
Zone: 55	Datum: H	Plot ID: 34	Plot dimensions: 20x50	Photo #:	
Easting: 693050	Northing: 6282499	IBRA region: SEH	Midline bearing from 0 m: 146°		
Vegetation Class: Exotic moderate grassland?			Confidence: H M L		
Plant Community Type: Native Riparian			EEC:	Confidence: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Grasses etc.	6
Forbs	2
Ferns	0
Other	0
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	45.3
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	45.3
Forbs	2
Ferns	0
Other	0
High Threat Weed cover	2.7

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm		
50 – 79 cm		
30 – 49 cm		
20 – 29 cm		
10 – 19 cm		
5 – 9 cm		
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	4m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	1 2 1 1 0	2 4 0 5 3 5 3 0	0 0 0 0 0 0	0 0 0 0 0 0
Average of the 5 subplots	1		0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	incananda	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	SE	Site Drainage	in situ	Distance to nearest water and type	with in channel

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	5	0	Remaining trees
Cultivation (inc. pasture)	0		
Soil erosion	3	R	in a gully
Firewood / CWD removal	0		
Grazing (identify native/stock)	2		livestock sighting + dung
Fire damage	0		
Storm damage	0		
Weediness	2		Refer to plot 34 data.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders
Date	20 01 18	Flyers	34	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	Cynodon dactylon	N	40	5000		
	Paspalum dilatatum	HTE	2	100		
	Trifolium sp	E	1	200		
	^p Phalaris aquatica	E	5	1500		
G	Bothriochloa macra - nod grass	N	1	50		
	Narrow leaved clover	E	1.5	30		
	Pattersons curse	E	.1	20		
G	Anthosachne scabra - wheat	N	.1	15		
G	Rhytidospenna - tall dead smooth	N	.2	100		
G	Carex appressa	N	3	20		
G	Juncus sp	N	1	15		
	* Yorkshire fog grass Holcus	E	.1	5		
	Plantago lanceolata	E	.1	3		
	Spicif thistle Cirsium vulgare	F	.1	1		
	Wire weed Polygonum aviculare	E	.1	15		
	Skeleton weed Chondalla	F	.1	5		
F	Purple flower forb - unidentified	N	.1	1		
	Saffron thistle	HTE	.1	18		
	severed tussock Nassella	HTE	.1	1		
	Saw thistle	E	.1	1		
	hypochaeris radicata	F	.1	1		
	Lolium sp - dead	F	.1	10		
	Fairy grass	E	.1	10		
	Bromus hordeaceus	E	1	100		
	Blackberry Rubus Anthrosus	HTE	.5	2		
	Vulpia - dead	E	.1	20		
F	Star cudweed Erechtia inulcrata	N	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 1 of 2

		Survey Name	Zone ID	Recorders					
Date	20-01-19	Flupks Creek	277 Riparian	N SMITH L HAMILTON					
Zone	55	Datum	H	Plot ID	35	Plot dimensions	20x80	Photo #	
Easting	692206	Northing	6283180	IBRA region	SEH	Midline bearing from 0 m	240°		
Vegetation Class		Creeklino						Confidence: H M L	
Plant Community Type		277- Riparian (277- exotic) EEC:						Confidence: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	0
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	15
Shrubs	0
Grasses etc.	0
Forbs	.2
Ferns	0
Other	0
High Threat Weed cover	-1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1	0
50 – 79 cm	11	2
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	2.0, 2.5, 1.2, 1.5, 2.0, 2.5, 4.0, 2.0, 13.0, 8.0 = 38.7	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	10	15	10	20	20	70	30	0	0	0	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	43										0					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	in-channel	Landform Pattern	Footpaths	Microrelief	
Lithology	Soil Surface Texture	100m	Soil Colour	Brown	Soil Depth	
Slope	Aspect	SW	Site Drainage	in-situ	Distance to nearest water and type	0m within channel

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	O	Remnants Riparian shrub
Cultivation (inc. pasture)	0		
Soil erosion	2	NR	Gullying
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	dung
Fire damage	0		
Storm damage	0		
Weediness	3	R	Refer to plot 35 data
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders
Date	20 01 18	Hyers	35	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	<i>Eucalyptus blackeelyi</i>	N	15	3		
	stinging nettle - exotic	E	.1	30		
	^P <i>Hordeum</i> sp - dead	E	30	1000		
	<i>Lolium</i> sp. alive patches	E	.1	10		
F	<i>Rumex brownii</i>	N	.1	22		
F	Black crumb weed <i>Dysphania pumilla</i>	N	.1	10		
	<i>Xanthium spinosum</i>	HTE	.1	10		
	sheep sorrel <i>Rumex acetosella</i>	E	.1	50		
	^P <i>Phalaris aquatica</i>	E	20	100		
	Curly leaved dock <i>Rumex</i> sp	E	.1	7		
	Mallow sp	E	.1	20		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 1 of 2

		Survey Name	Zone ID	Recorders					
Date	20.01.19	Fluorick	Exotic	N SMITH L HAMILTON					
Zone	SS	Datum	H	Plot ID	36	Plot dimensions	20x50	Photo #	
Easting	691417	Northing	6283218	IBRA region	SEH	Midline bearing from 0 m	27°		
Vegetation Class							Confidence:		H M L
Plant Community Type							EEC:		H M L
									Confidence:
									H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	3
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	40.2
Forbs	10.1
Ferns	0
Other	0
High Threat Weed cover	0.6

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		
—		

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.
For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	2	10	1	5	2	100	0	15	0	15	0	0	0	0	0	20	10	0	0	0
Average of the 5 subplots	20 4										0									

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	hilltop	Landform Pattern	Footmills	Microrelief	
Lithology		Soil Surface Texture	10am	Soil Colour	Red	Soil Depth	
Slope		Aspect	NE	Site Drainage	KIE	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Remains paddock trees
Cultivation (inc. pasture)	2	NR	Disturbance improvement
Soil erosion	1	R	areas w/ no groundcover
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	lots of poop
Fire damage	0		
Storm damage	0		
Weediness	2	R	to diversity of weeds
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders
Date	20 th 01 18	Tyers	36	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
F	Black crumb weed <i>Dysphania paniculata</i>	N	10	500		
G	<i>Cynodon dactylon</i>	N	40	5000		
G	<i>Microlaena stipoides</i>	N	.1	1		
	<i>Bromus hordeaceus</i> - soft dead	E	1	100		
	<i>Hordeum sp.</i> - dead	E	20	100		
	Saffron thistle	HTE	.5	50		
	<i>Xanthium spinosum</i>	HTE	.1	20		
	<i>Panicum capillare</i>	E	.1	10		
	Camel melon <i>vulgaris</i>	E	.1	850		
	sheep sorrel <i>Rumex acetosella</i>	E	.1	2		
	stinging nettle - exotic <i>Urtica dioica</i>	E	1	60		
	<i>solanum sp.</i>	E	.1	5		
F	<i>Rumex brownii</i>	N	.1	1		
	Vaingated thistle - rosette	E	.1	15		
G	<i>Bothriochloa macra</i> - red grass	N	.1	1		1
	Devils claw <i>Probooscidea louisiana</i>	E	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ... 100% (foliage cover); *Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m*
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 101

		Survey Name	Zone ID	Recorders					
Date	20 01 19	Flyers Ck	DG-Low	N SMITH L HAMILTON					
Zone	55	Datum	H	Plot ID	37	Plot dimensions	20x50	Photo #	
Easting	690321	Northing	6282748	IBRA region	SEM.	Midline bearing from 0 m	19°		
Vegetation Class									Confidence: H M L
Plant Community Type							Derived Grassland - Low.	EEC:	Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	7
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	1
Shrubs	0
Grasses etc.	16.4
Forbs	2
Ferns	0
Other	0
High Threat Weed cover	1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0	—

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300, ...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	15	2	5	2	3	25	10	10	10	8	0	0	0	0	0	15	1	0	0	0
Average of the 5 subplots	5.4																			

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Hill top	Landform Pattern	Foothills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Red-Brown	Soil Depth	
Slope	Aspect	N	Site Drainage	NW	Distance to nearest water and type	250m, Gully

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Remnants paddock trees
Cultivation (inc. pasture)	0		
Soil erosion	2	NR	Areas devoid of groundcover
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	Stock, dung, etc
Fire damage	0		
Storm damage	0		
Weediness	2	R	Refer to plot 37 data
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

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400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders			
Date	20 01 18	Flyers	37	L Hamilton N Smith			
GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher	
G.	1 <i>Austrostipa scabra</i>	N	5	300			
F	2 Black crumb weed <i>Dysphania pumila</i>	N	0.1	180			
	3 Stink grass? <i>Eragrostis minor</i>	E	.1	2			
F	4 <i>Rumex brownii</i>	N	.1	1			
G.	5 <i>Cynodon dactylon</i>	N	.1	5			
	6 <i>Hordeum</i> sp - dead	E	.1	50			
T	7 <i>Eucalyptus melliodora</i>	N	1	-			
G.	8 <i>Microstegena stipoides</i>	N	0.6	2000			
	9 <i>Xanthium spinosum</i>	HTE	.1	5			
	10 Camel melon <i>Citrullus lanatus</i>	E	.1	1			
G.	11 <i>Panicum effusum</i>	N	.1	5			
G.	12 <i>Bothriochloa macra</i> - red grass	N	.1	15			
G.	13 <i>Rhynchospora microstachya</i>	N	5	3400			
	14 <i>Bromus hordeaceus</i> - dead	E	1	200			
	15 <i>Hypochaeris radicata</i>	E	.1	5			
	16 <i>Panicum capillare</i>	E	.2	50			
G.	17 <i>Anthosachne setosa</i> - wheat	N	.1	3			
	18 <i>Vulpia</i> - dead	E	0.4	1000			
	19 Satron tuft	E	.1	45			
	20 sheeps sorrel <i>Rumex acetosella</i>	E	.1	1			
	21 <i>Avena fatua</i>	E	.1	1			
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.

Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m

Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 2

		Survey Name	Zone ID	Recorders		
Date	<u>20/01/19</u>	<u>Flyers Crk</u>	<u>Exotic</u>	<u>N. SMITH L. HAMINGTON</u>		
Zone	<u>55</u>	Datum	<u>H</u>	Plot ID	<u>38</u>	Plot dimensions
Easting	<u>689395</u>	Northing	<u>6282413</u>	IBRA region	<u>SEH</u>	Midline bearing from 0 m
						<u>20x50</u>
						Photo #
						<u>91°</u>
Vegetation Class						Confidence:
						H M L
Plant Community Type						EEC:
<u>Exotic</u>						H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	<u>0</u>
Shrubs	<u>1</u>
Grasses etc.	<u>5</u>
Forbs	<u>4</u>
Ferns	<u>0</u>
Other	<u>0</u>
Sum of Cover of native vascular plants by growth form group	
Trees	<u>0</u>
Shrubs	<u>1</u>
Grasses etc.	<u>4.4</u>
Forbs	<u>0.4</u>
Ferns	<u>0</u>
Other	<u>0</u>
High Threat Weed cover	<u>8.3</u>

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	<u>0.7, 2.0, 1.0, 5.0, 1.0, (9.7)</u>	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	<u>1 2 5 2 1</u>	<u>15 40 7 5 8</u>	<u>0 0 0 0 0</u>	<u>0 0 0 0 0</u>
Average of the 5 subplots	<u>2.2</u>		<u>0</u>	<u>0</u>

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	<u>hill top</u>	Landform Pattern	<u>Foot hills</u>	Microrelief	
Lithology	Soil Surface Texture	<u>clay / oam</u>	Soil Colour	<u>Red</u>	Soil Depth	
Slope	Aspect	<u>E</u>	Site Drainage	<u>S</u>	Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	<u>3</u>	<u>0</u>	<u>Remaining rootstocks + remnant patches</u>
Cultivation (inc. pasture)	<u>0</u>		
Soil erosion	<u>0</u>		
Firewood / CWD removal	<u>0</u>		
Grazing (identify native/stock)	<u>2</u>	<u>R</u>	<u>dung</u>
Fire damage	<u>0</u>		
Storm damage	<u>0</u>		
Weediness	<u>3</u>	<u>R</u>	<u>Refer to plot 38 data.</u>
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders
Date	20 01 18	Flyers	38	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Wire weed <i>Polygonum aviculare</i>	E	30	2000		
	Pattersons curse	E	0.2	50		
G	<i>Bothriochloa macra</i> red grass	N	4	100		
	Sweet briar <i>Rosa virginiana</i>	HTE	5	20		
F	<i>Rumex crispus</i>	N	0.1	10		
G	<i>Rhytidasperma</i> smooth	N	0.1	20		
	<i>Avena fatua</i>	E	30	200		
	<i>Solanum</i> hot hand	E	0.1	15		
	Saffron thistle	HTE	3	100		
	<i>Panicum capillare</i>	E	0.1	20		
	<i>Hypochaeris radicata</i>	F	0.1	2		
G	<i>Carex inversa</i>	N	0.1	50		
	Spear thistle	E	0.1	2		
F	<i>Epilobium</i> ea <i>billardiereanum</i>	N	0.1	10		
	Skeleton weed <i>Chondrilla</i>	E	0.3	20		
F	Black crumb weed <i>Dyphania plum</i>	N	0.1	30		
	<i>Trifolium subterraneum</i>	E	0.1	2		
	Narrow leaf clover	F	0.1	10		
	<i>Hordeum</i> sp. dead	E	0.1	5		
	<i>Modiola</i>	E	0.1	5		
	Blackberry <i>Rubus</i> sp	HTE	0.2	1		
	steeps sorrel <i>Aralia vulgaris</i>	E	0.2	50		
	Unidentified forb					
	Purple onion flower <i>Petrophagia dubia</i>	E	0.1	5		
F	Bridge widgee <i>Acaena echinata</i>	N	0.1	5		
G	<i>Anastropha scabra</i>	N	0.1	10		
S	ruby saltbush <i>Eriochloa tomentosa</i>	N	0.1	2		
	<i>Plantago lanceolata</i>	F	0.1	15		
	<i>Bromus diandrus</i> dead	HTE	0.1	5		
G	<i>Cynodon dactylon</i>	N	0.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF – circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 2

Date		21.01.19	Survey Name	Fluverside	Zone ID	DA-10w	Recorders		N SMITH L HAMILTON
Zone	Datum	55	H	Plot ID	39	Plot dimensions	20x50	Photo #	
Easting	Northing	696707	6283760	IBRA region	SEH	Midline bearing from 0 m	133°		
Vegetation Class								Confidence: H M L	
Plant Community Type								EEC:	Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Trees	0
Shrubs	0
Grasses etc.	7
Forbs	2
Ferns	0
Other	1
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	73.4
Forbs	0.3
Ferns	0
Other	1
Sum of Cover of native vascular plants by growth form group	
High Threat Weed cover	20

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.1, 0.8, 0.7 = 2.6 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)							
Subplot score (% in each)	1	1	5	1	1	10	25	30	10	30	0	0	0	0	0	2	0	0	0	0
Average of the 5 subplots	1.8								0				0.4							

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	Hillslope	Landform Pattern	Foothills	Microrelief	
Lithology	Soil Surface Texture	clay/sand	Soil Colour	Red.	Soil Depth	
Slope	Aspect	SE	Site Drainage	SE	Distance to nearest water and type	300m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Remaining paddock trees + surrounding woodland
Cultivation (inc. pasture)	0		
Soil erosion	1	R	hill side erosion where no groundcover present + stock impact
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	dung
Fire damage	0		
Storm damage	0		
Weediness	2	R	Refer to plot 39 data -
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

-This document has not been endorsed or approved by Office of Environment and Heritage or Muddy Boots Environmental Training-

BAM Site – Field Survey Form Site Sheet no: 1 of 2

		Survey Name	Zone ID	Recorders					
Date	@ 01/01/19	Klyers Ck	DG-10W	N SMITH L HAMILTON					
Zone	55	Datum	H	Plot ID	40	Plot dimensions	20x50	Photo #	
69 Easting	7075	Northing	6223196	IBRA region	SEH	Midline bearing from 0 m	283°		
Vegetation Class							Confidence:		H M L
Plant Community Type							EEC:		H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	0
	Shrubs	0
	Grasses etc.	6
	Forbs	3
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	0
	Shrubs	0
	Grasses etc.	59.7
	Forbs	0.4
	Ferns	0
	Other	0
High Threat Weed cover		1.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	3.0 + 1.0 = 4.0 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	2	3	5	10	10	8	10	15	8	2	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	6					8.6					0					0.2				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hillside	Landform Pattern	Footmills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	W	Site Drainage	S	Distance to nearest water and type	500m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	Remainly remnant veg
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	2	R	dung
Fire damage	0		
Storm damage	0		
Weediness	1-2	R	see details for Plot 40.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 112

		Survey Name	Zone ID	Recorders					
Date	21 01 19	Figuys Ck	Sedge land	N SMITH	L HAMILTON				
Zone	55	Datum	H	Plot ID	41	Plot dimensions	20 x 50	Photo #	
Easting	696672	Northing	6282590	IBRA region	SEH	Midline bearing from 0 m	14°		
Vegetation Class							Confidence: H M L		
Plant Community Type							EEC:		Confidence: H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	3
Forbs	3
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	56
Forbs	0.4
Ferns	0
Other	0
High Threat Weed cover	40

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	—	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	0.5	0.1	1	1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	0.54					0					0					0				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element	Bank / slope	Landform Pattern	Foot hills	Microrelief	
Lithology		Soil Surface Texture	clay loam	Soil Colour	BrOwne	Soil Depth	
Slope		Aspect	N	Site Drainage	in situ	Distance to nearest water and type	25m Creek / gully

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	3u' rounding remnant woodlot.
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	1	R	deery
Fire damage	0		
Storm damage	0		
Weediness	1	R	refer to plot #41 data.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 1 of 2

Date		21.01.19	Survey Name	Flyers Ck	Zone ID	Exotic	Recorders				
Zone		SS	Datum	H	Plot ID	42	Plot dimensions	20x50	Photo #		
Easting		694633	Northing		6287092	IBRA region	SEH	Midline bearing from 0 m	149°		
Vegetation Class								Confidence:		H M L	
Plant Community Type								Exotic		EEC:	H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	6
Forbs	2
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	2.5
Forbs	0.2
Ferns	0
Other	0
High Threat Weed cover	5.6

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	Present	0

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	0, 10, 15, 1, 0, 2	25, 30, 30, 20, 20	0, 0, 0, 0, 0	0, 0, 0, 10, 0
Average of the 5 subplots	1.6	25	0	0

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern	Footpaths	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Red	Soil Depth	
Slope	Aspect	SE	Site Drainage	SW	Distance to nearest water and type	500m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Remaining paddock trees in the landscape
Cultivation (inc. pasture)	0		
Soil erosion	1	NR	in areas without guardrails
Firewood / CWD removal	0		
Grazing (identifi native/stock)	3	R	Livestock sign, dung, condition of a/c
Fire damage	0		
Storm damage	0		
Weediness	3	R	Refer to plot 42 data.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 101

		Survey Name	Zone ID	Recorders		
Date	21/01/19	Eliza Cr.	DG-Low	N SMITH L HAMILTON		
Zone	55	Datum	43	Plot ID	Plot dimensions	Photo #
					20x50	
Easting	694255	Northing	6282748	IBRA region	Midline bearing from 0 m	62°
				SEH		
Vegetation Class					Confidence:	
					H M L	
Plant Community Type					EEC:	Confidence:
DG-Low						H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	0
	Shrubs	0
	Grasses etc.	5
	Forbs	1
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	0
	Shrubs	0
	Grasses etc.	40.2
	Forbs	0.1
	Ferns	0
Other	0	
High Threat Weed cover		.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	—	—
50 – 79 cm	—	—
30 – 49 cm	—	—
20 – 29 cm	—	—
10 – 19 cm	—	—
5 – 9 cm	—	—
< 5 cm	—	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0.7, 1.0, 0.75 (2.45 m)	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)						
Subplot score (% in each)	0	1	0	1	0	0	0	40	40	20	60	10	0	0	0	0	0	0	0	0	5	0
Average of the 5 subplots	0.06					34					0					1						

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	Footpaths	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	NE	Site Drainage	NE	Distance to nearest water and type	20m Creek

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	remnant woodland.
Cultivation (inc. pasture)	0		
Soil erosion	1	NR	where ground cover doesn't exist
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	dung, condition of grass
Fire damage	0		
Storm damage	0		
Weediness	1	R	not many - refer to plot date.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 1 of 2

Date		22.01.19	Survey Name	Pygmy's Cr.	Zone ID	277 planted	Recorders		N SMITH L HAMILTON
Zone	Datum	55	Plot ID	44	Plot dimensions	100x10	Photo #		
Easting	Northing	689798	IBRA region	SEH	Midline bearing from 0 m	162°			
Vegetation Class							Confidence:		H M L
Plant Community Type							277 - planted	EEC:	H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	6
Shrubs	0
Grasses etc.	6
Forbs	0
Ferns	0
Other	1
Sum of Cover of native vascular plants by growth form group	
Trees	26
Shrubs	0
Grasses etc.	26.5
Forbs	0
Ferns	0
Other	1
High Threat Weed cover	0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm		
50 – 79 cm		
30 – 49 cm	(2)	
20 – 29 cm	(8)	
10 – 19 cm	(8)	
5 – 9 cm	(13)	
< 5 cm	(3)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	1.5, 0.7, 1.0, 1.5 = 4.7m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)					Bare ground cover (%)					Cryptogam cover (%)					Rock cover (%)				
Subplot score (% in each)	5	70	5	70	10	40	20	50	5	40	0	0	0	0	0	0	0	15	0	0
Average of the 5 subplots	32					31					0					3				

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	clay	Soil Colour	Red	Soil Depth	
Slope	Aspect	S	Site Drainage	N	Distance to nearest water and type	500 m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	Reared and dead trees
Cultivation (inc. pasture)	0		
Soil erosion	3	R	No groundcover, topsoil erosion
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	Condition of groundcover, livestock sighted, dung
Fire damage	0		
Storm damage	0		
Weediness	1	R	Most weeds grazed.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

BAM Site – Field Survey Form Site Sheet no: 2

		Survey Name	Zone ID	Recorders		
Date	<u>23 01 19</u>	<u>Playford</u>	<u>DG-10w</u>	<u>N SMITH L HAMILTON</u>		
Zone	<u>55</u>	Datum	Plot ID	Plot dimensions	Photo #	
	<u>H</u>		<u>45</u>	<u>20x50</u>		
Easting	Northing	IBRA region	Midline bearing from 0 m			
<u>692403</u>	<u>6289630</u>	<u>SEH</u>	<u>311°</u>			
Vegetation Class						Confidence: H M L
Plant Community Type				<u>Derived Grassland - low cover</u>		Confidence: H M L
				EEC:		

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	0
Shrubs	0
Grasses etc.	9
Forbs	0
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	0
Shrubs	0
Grasses etc.	3.6
Forbs	0
Ferns	0
Other	0
High Threat Weed cover	0.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm		
50 – 79 cm		
30 – 49 cm		
20 – 29 cm		
10 – 19 cm		
5 – 9 cm		
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)								
Subplot score (% in each)	0	10	1	20	1	20	60	40	40	60	20	0	0	0	0	0	0	5	10	5	20
Average of the 5 subplots	<u>4.4</u>				<u>44</u>				<u>0</u>				<u>8</u>								

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	<u>hill top</u>	Landform Pattern	<u>Foot hills</u>	Microrelief	
Lithology	Soil Surface Texture	<u>loam</u>	Soil Colour	<u>Red-brown</u>	Soil Depth	
Slope	Aspect	<u>NW</u>	Site Drainage	<u>NW</u>	Distance to nearest water and type	<u>350 m dam</u>

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	<u>surrounding paddock trees + patches</u>
Cultivation (inc. pasture)	0		
Soil erosion	2	R	<u>soil erosion due to lack of groundcover</u>
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	<u>livestock signs, dung, collection of ground</u>
Fire damage	0		
Storm damage	0		
Weediness	1	R	<u>dead warty grass</u>
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

drought +
grazed to
bone

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 23 01 19	Flyers	45	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
G	native grass-?? unidentified	N	0.1	20		
G	Microchaeta stipoides	N	2	100		
	Vulpia sp. dead	E	5	2000		
	Hypochaeris radicata	E	1	500		
G	Panicum effusum	N	1	1		
G	Juncus sp	N	1	7		
G	Bothriochloa macra	N	0.5	20		
G	Rhynchospora sp unidentified	N	0.1	10		
G	Austrostipa scabra	N	0.5	50		
	Saffron thistle Cernuus lanatus	HTE	0.1	25		
	Bromus hordeaceus dead	F	5	2000		
G	Anthosachne scabra. dead	N	0.1	3		
G	Tough grass unidentified	N	1	1		
	Avena fatua dead	E	0.1	2		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF – circle code if 'top 3'.
Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ... 100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 2

Date		23 01 19	Survey Name	Fluors Ck	Zone ID	277 Exotic	Recorders		N SMITH L HAMILTON
Zone	Datum	SS	H	Plot ID	46	Plot dimensions	20x50	Photo #	
Easting	Northing	692497	6290069	IBRA region	SEH	Midline bearing from 0 m	270°		
Vegetation Class								Confidence: H M L	
Plant Community Type								Confidence: H M L	
277- Exotic understorey								EEC:	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Trees	1
Shrubs	0
Grasses etc.	1
Forbs	0
Ferns	0
Other	0
Count of Native Richness	
Trees	30
Shrubs	0
Grasses etc.	1
Forbs	0
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	30
Shrubs	0
Grasses etc.	1
Forbs	0
Ferns	0
Other	0
High Threat Weed cover	0

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	11	② ①
50 – 79 cm	11 11	⑦
30 – 49 cm	111	④ ①
20 – 29 cm		
10 – 19 cm		
5 – 9 cm		
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	49 m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, ... 100, 200, 300...). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	60 90 65 100 70	0 10 5 0 25	0 0 0 0 0	0 0 0 0 0
Average of the 5 subplots	77	8		

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill top	Landform Pattern	Foothills	Microrelief	
Lithology	Soil Surface Texture	loam	Soil Colour	Brown	Soil Depth	
Slope	Aspect	W	Site Drainage	SW	Distance to nearest water and type	200m dam

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	O	On the edge of a remnant patch.
Cultivation (inc. pasture)	3		
Soil erosion	2	R	fast water erosion, litter down, areas of no life
Firewood / CWD removal	0		
Grazing (identify native/stock)	3	R	livestock sign, dung, droppings
Fire damage	0		
Storm damage	0		
Weediness	3	R	old annual weeds dead.
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

277-
exotic

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400 m ² plot: Sheet _ of _		Survey Name	Plot Identifier	Recorders	
Date		Tugers	46	L Hamilton N Smith	

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
T	Eucalyptus melliodora	N	30	5		
	Bromus hordeaceus	E	.1			
	Hordelymus sp - dead	E				
	Lolium sp - dead	E				
G	Microseris stipoides	N	.1	10		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ... 100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 2

Date		24 01 19	Survey Name	Plyers Cr	Zone ID	277-nature	Recorders				
Zone		55	Datum		H	Plot ID	47	Plot dimensions	100x90	Photo #	
Easting		690803	Northing		6286093	IBRA region	SEH	Midline bearing from 0 m	117°		
Vegetation Class										Confidence: H M L	
Plant Community Type							277-nature transmission			EEC: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	3
Forbs	4
Ferns	0
Other	0
Sum of Cover of native vascular plants by growth form group	
Trees	1
Shrubs	0
Grasses etc.	1.3
Forbs	4.5
Ferns	0
Other	0
High Threat Weed cover	40.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	1	0
50 – 79 cm	111	5
30 – 49 cm	1	1
20 – 29 cm		—
10 – 19 cm		—
5 – 9 cm	11	2
< 5 cm		n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0.8, 1.5, 2.0, 0.8, 1.0, 1.0 = 5.3m	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)							
Subplot score (% in each)	80	50	45	10	20	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Average of the 5 subplots	41				1				0				0							

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	hill side	Landform Pattern	Foot hills	Microrelief	
Lithology	Soil Surface Texture	clay loam	Soil Colour	Red	Soil Depth	
Slope	Aspect	SE	Site Drainage	E	Distance to nearest water and type	20 m drainage channel

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	2	0	cleared for road
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	0		
Fire damage	0		
Storm damage	0		
Weediness	2	R	Refer to plot 47 data
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

1330
~~native/exotic~~

277 - native - Transmissville

~~Exotic~~

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 73 01 19	Florus Ck	AF	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	<i>Paspalum dilatatum</i>	HTE	40	200		
	Cocksfoot <i>Doctylis glomerata</i>	E	1	20		
	Narrow leaf clover - dead	E	.1	30		
F	<i>Oxalis perennans</i>	N	.2	30		
	<i>Lolium</i> sp - dead lodging	F	20	2000		
	<i>Avena fatua</i>	E	.51	70		
	<i>Phalaris</i> sp.	E	25	200		
	<i>Plantago lanceolata</i>	E	.1	5		
	<i>Polygonum aviculare</i> ^{wire weed}	E	.1	8		
	<i>Trichopogon</i> - onion weed	F	.3	30		
G	<i>Austrostipa</i> sp	N	1	40		ID
T	<i>Eucalyptus melliodora</i>	N	8	5		
G	<i>Lomandra</i>	N	.2	6		ID
	spear mistle <i>Cucium vulgare</i>	E	.1	3		
	Red flowered mallow <i>Medion</i>	E	.1	1		
F	<i>Rumex brownii</i>	N	.1	2		
F	<i>Fimrodia nutans</i>	N	4	6		
F	Bridge widgee <i>Acaena echinata</i>	N	.1	20		
	St Johns wort <i>Hypericum perforatum</i>	HTE	.1	20		
	<i>Bromus hordeaceus</i>	F	.1	2		
	<i>Vulpia</i> sp	E	.1	10		
	sweet briar <i>Rosa rubiginosa</i>	HTE	.1	1		
	<i>Lactuca scariola</i>	E	.1	10		
G	<i>Microberna stipoides</i>	N	.1	6		
	<i>Pathericus villosus</i>	F	.1	10		
	saw mistle <i>Sonchus</i>	E	.1	1		

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form				Site Sheet no: <u>2</u>	
Date: <u>24 01 19</u>		Survey Name: <u>Pipers Cle</u>	Zone ID: <u>2772 native</u>	Recorders: <u>N SMITH L HAMILTON</u>	
Zone: <u>55</u>	Datum: <u>H</u>	Plot ID: <u>48</u>	Plot dimensions: <u>50x20</u>	Photo #:	
Easting: <u>691229</u>	Northing: <u>6285718</u>	IBRA region: <u>SEH</u>	Midline bearing from 0 m: <u>147°</u>		
Vegetation Class:				Confidence: H M L	
Plant Community Type: <u>2772 native planted</u>				EEC: Confidence: H M L	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

BAM Attribute (400 m ² plot)	Sum values
Count of Native Richness	
Trees	1
Shrubs	0
Grasses etc.	2
Forbs	4
Ferns	0
Other	1
Sum of Cover of native vascular plants by growth form group	
Trees	1
Shrubs	0
Grasses etc.	1.1
Forbs	1.2
Ferns	0
Other	0.1
High Threat Weed cover	0.2

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	(11)	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)	0	

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)	Bare ground cover (%)	Cryptogam cover (%)	Rock cover (%)
Subplot score (% in each)	10 2 2 1 2	30 0 10 5 0	0 0 0 0 0	10 5 6 1 1
Average of the 5 subplots	3.4	9	0	

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type	Landform Element	<u>hill top</u>	Landform Pattern	<u>Foothills</u>	Microrelief	
Lithology	Soil Surface Texture	<u>clay loam</u>	Soil Colour	<u>Red.</u>	Soil Depth	
Slope	Aspect	<u>SE</u>	Site Drainage	<u>E</u>	Distance to nearest water and type	<u>750m creek</u>

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	0	<u>Cleared for road upgrade</u>
Cultivation (inc. pasture)	0		
Soil erosion	0		
Firewood / CWD removal	0		
Grazing (identify native/stock)	0		
Fire damage	0		
Storm damage	0		
Weediness	2	R	<u>Refer to plot 48 data.</u>
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

277. planted road reveg

Exotic - Planting
Euc regrowth
from clearing

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400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 24 01 19	Flyers	48	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Phalaris sp	E	30			
	Lactuca serriola	E	3			
	Plantago lanceolata	E	.5			
	Red fruited mallon. Medicago	E	.2			
	Skeleton weed Chondalla juncea	E	.1	5		
	Saffron thistle Calthamus linatus	HTE	.1			
	Lolium sp dead	E	50			
E	Caustic wood Euphorbia drummondii	N	.5			
F	Bidgee widgee? Acaena echinata	N	.5	15		
	Hypochaeris radicata	F	1			
	Sea mistle Sarcobus	E	1			
G	windmill grass Chloris lunata?	N	1			
	Geranium molle	T	.1	3		
	Hordeum sp dead	E	.1	2		
	Polygonum aviculare	E	5			
F	Oxalis pennans	N	.1	20		
G	Rhynchospora sp	N	.1	2		
	Goose grass Eleusine trislachy	E	.1	10		
	wild sage Salvia verbenata	E	.1	2		
	Vulpia sp	E	.1	3		
T	Eucalyptus meliocolora sapling	N	1	3		
	Bromus hordeaceus - dead	E	5%	100		
	St Johns wort Hypericum perforat	HTE	.1	10		
O	Convolvus sp	N	.1	.1		
	Spear thistle	F	.1	8		
	Pattersons curse Echium	F	.1	5		
	Rumex crispus	E	.1			
	Vulpia sp - dead	E	5			
F	Epilobium sp willow herb	N	.1	1		
	billardiereanum					

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site – Field Survey Form Site Sheet no: 101

		Survey Name	Zone ID	Recorders						
Date	24/1/19	Flyers	Exotic	N. Smith L. Hamilton						
Zone	55	Datum	#	Plot ID	49	Plot dimensions	20x50	Photo #		
Easting	692216	Northing	6283988	IBRA region	SWS	Midline bearing from 0 m	170			
Vegetation Class							Confidence: H M L			
Plant Community Type							Exotic		EEC:	H M L

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot

BAM Attribute (400 m ² plot)		Sum values
Count of Native Richness	Trees	0
	Shrubs	0
	Grasses etc.	2
	Forbs	1
	Ferns	0
	Other	0
Sum of Cover of native vascular plants by growth form group	Trees	0
	Shrubs	0
	Grasses etc.	0.4
	Forbs	1
	Ferns	0
Other	0	
High Threat Weed cover		6.1

BAM Attribute (1000 m ² plot)		
DBH	# Tree Stems Count	# Stems with Hollows
80 + cm	-	-
50 – 79 cm	-	-
30 – 49 cm	-	-
20 – 29 cm	-	-
10 – 19 cm	-	-
5 – 9 cm	-	-
< 5 cm	-	n/a
Length of logs (m) (≥10 cm diameter, >50 cm in length)		

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when > 10 (eg. 10, 20, 30, 100, 200, 300). For a multi-stemmed tree, only the largest living stem is included in the count/estimate. Tree stems must be living.

For hollows, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the largest stem is included in the count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1 x 1 m plots)	Litter cover (%)				Bare ground cover (%)				Cryptogam cover (%)				Rock cover (%)								
Subplot score (% in each)	0	5	7	5	2	0	2	0	0	3	5	0	0	0	0	0	0	0	0	0	6
Average of the 5 subplots	2.8				7.4																

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

Physiography + site features that may help in determining PCT and Management Zone (optional)

Morphological Type		Landform Element		Landform Pattern		Microrelief	
Lithology		Soil Surface Texture		Soil Colour		Soil Depth	
Slope		Aspect		Site Drainage		Distance to nearest water and type	

Plot Disturbance	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			
Cultivation (inc. pasture)			
Soil erosion			
Firewood / CWD removal			
Grazing (identify native/stock)			
Fire damage			
Storm damage			
Weediness			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe

Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

400 m ² plot: Sheet _ of _	Survey Name	Plot Identifier	Recorders
Date 24 1 19	Flyers	49	L Hamilton N Smith

GF Code	Top 3 native species in each growth form group: Full species name mandatory All other native and exotic species: Full species name where practicable	N, E or HTE	Cover	Abund	stratum	voucher
	Cocksfoot <i>Dactylis glomerata</i>	E	50			
	<i>Plantago lanceolata</i>	E	20			
	<i>Hypochaeris radicata</i>	E	.5			
	Rumex crispus	F	.1			
	<i>Bromus hordeaceus</i>	E	10			
	Narrow leaved clover	E	.5			
	Spear thistle <i>Cirsium vulgare</i>	F	.1			
	<i>Geranium molle</i>	E	.1	3		
	<i>Medicago caroliniana</i>	E	.2			
	<i>Acetosella vulgaris</i>	E	1			
	<i>Paspalum dilatatum</i>	HTE	5			
G	<i>Chloris truncata</i>	N	.3			
	St barnabys thistle <i>Centaurea</i>	E	.1	10		
	<i>Vulpia</i> sp - dead	E	1			
G	<i>Rhynchospora</i> sp	N	.1	10		
F	<i>Oxalis perrenans</i>	N	.1	1		
	<i>Hypericum perforatum</i>	HTE	.1	10		
	<i>Sonchus oleraceus</i>	E	.5			
	<i>Bromus diandrus</i>	HTE	1			
	<i>Phalaris</i> sp	E	20			
	<i>Hordeum</i> sp	F	1			
	<i>Lolium</i> sp	F	10			

GF Code: see Growth Form definitions in Appendix 1 N: native, E: exotic, HTE: high threat exotic GF - circle code if 'top 3'.
 Cover: 0.1, 0.2, 0.3, ..., 1, 2, 3, ..., 10, 15, 20, 25, ..., 100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m
 Abundance: 1, 2, 3, ..., 10, 20, 30, ... 100, 200, ..., 1000, ...

BAM Site Field Survey							
Project:	Flyers Creek	Plot Identifier	3a	Pic 20x20		Pic 20x50	
Survey date:	20.07.2020	Compass Orientation (head of 20x20 plot)					
Recorders	L Hamilton; M Palmer	PCT:		1330_poor			
GPS Easting		GPS Northing		Datum	H	Zone	55
Landform			Soils		Drainage & Slope		
Morphology		Soil Texture		Slope			
LandF Element		Soil Colour		Aspect			
LandF Pattern		Soil Depth		Drainage			
Microrelief		Geology		Watercourses			
Plot Disturbance							
	Severity	Age	Observational Evidence				
Clearing							
Cultivation							
Soil erosion							
Firewood							
Grazing							
Fire Damage							
Storm Damage							
Weediness							
Other							
Severity: 0 = no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)							
Additional information							
Current land use							
Age class of trees (DBH range) , Condition of Vegetation, Hollows							
Disturbances (i.e. fire, grazing,ferals, clearing, logging, soil degradation, pollution, weeds, dieback)							
Significant and threatened species and communities (Note pop. size/area, structure, repro status, habit, habitat, threats, photos)							
Dominant Species outside Plot							

FUNCTION

Function attributes for 3a			BAM Attributes (1 x 1m Plots)				
BAM Attribute (20x20m plot)			Litter Cover	Tape length	% cover	Average %	Photos
Count of Native Richness	Stratum	Sum		5m	15%	3.8%	
	Tree (TG)	1		15m	1%		
	Shrub (SG)	0		25m	1%		
	Forb (FG)	6		35m	2%		
	Grass & grasslike (GG)	10		45m	1%		
	Fern (EG)	0		5m	0%		
	Other (OG)	0		15m	0%		
TOTAL	17	25m		0%			
BAM Attribute (20x20m plot)				Bare ground cover	5m	0%	0.0%
Count of cover abundance (native vascular plants)	Stratum	Sum	15m		0%		
	Tree (TG)	20	25m		0%		
	Shrub (SG)	0	35m		0%		
	Forb (FG)	0.6	45m	0%			
	Grass & grasslike (GG)	6.3	5m	0%			
	Fern (EG)	0	15m	0%			
	Other (OG)	0	25m	0%			
TOTAL Native	26.9	35m	0%				
TOTAL 'HTE'	10	45m	0%				
BAM Attribute (20 x 50m plot) Tree Stem Counts			Cryptogam cover	5m	0%	0.0%	
DBH (cm)	Euc	Non Euc		Hollows			
>80	4	0		0			
50-79	1	0		0			
30-49	1	0		0			
20-29	1	0		0			
10-19	0	0		0			
5-9	0	0	0				
<5	1	0	N/A				
Length of logs (m)	18						
			Rock Cover	5m	0%	0.0%	
				15m	0%		
				25m	0%		
				35m	0%		
			45m	0%			

COMPOSITION & STRUCTURE

Species recorded for 3a									
Abbreviation	Scientific Name	Common Name	Family	% Cover	Abundance	Exotic	Growth Form	High Threat?	EPBC Status
euca goni	<i>Eucalyptus goniocalyx</i>	Bundy	Myrtaceae	20			Tree (TG)	No	
aven barb	<i>Avena barbata</i>	Bearded Oats	Poaceae	40		*		No	
loli pere	<i>Lolium perenne</i>	Perennial Ryegrass	Poaceae	5		*		No	
rume brow	<i>Rumex brownii</i>	Swamp Dock	Polygonaceae	0.1	11		Forb (FG)	No	
pasp dila	<i>Paspalum dilatatum</i>	Paspalum	Poaceae	10		*		HTE	
trif	<i>Trifolium spp.</i>	A Clover	Fabaceae (Faboidae)	10		*		No	
dact glom	<i>Dactylis glomerata</i>	Cocksfoot	Poaceae	10		*		No	
phal aqua	<i>Phalaris aquatica</i>	Phalaris	Poaceae	3		*		No	
echi plan	<i>Echium plantagineum</i>	Patterson's Curse	Boraginaceae	0.1	3	*		No	
vici sati	<i>Vicia sativa</i>	Common vetch	Fabaceae (Faboidae)	0.2	20	*		No	
oxal pere	<i>Oxalis perennans</i>		Oxalidaceae	0.1	100		Forb (FG)	No	
gera moll moll	<i>Geranium molle subsp. n</i>	Cranesbill Geranium	Geraniaceae	0.1	12	*		No	
hypo glab	<i>Hypochaeris glabra</i>	Smooth Catsear	Asteraceae	0.1	7	*		No	
micr stip	<i>Microlaena stipoides</i>	Weeping Grass	Poaceae	5			Grass & grasslike (GG)	No	
trif dubi	<i>Trifolium dubium</i>	Yellow Suckling Clover	Fabaceae (Faboidae)	2		*		No	
trif angu	<i>Trifolium angustifolium</i>	Narrow-leaved Clover	Fabaceae (Faboidae)	2		*		No	
spor creb	<i>Sporobolus creber</i>	Slender Rat's Tail Grass	Poaceae	0.1	5		Grass & grasslike (GG)	No	
both macr	<i>Bothriochloa macra</i>	Red Grass	Poaceae	0.1	10		Grass & grasslike (GG)	No	

echi vulg	<i>Echium vulgare</i>	Viper's Bugloss	Boraginaceae	0.1	2	*		No	
eina nuta	<i>Einadia nutans</i>	Climbing Saltbush	Chenopodiaceae	0.1	12		Forb (FG)	No	
sily mari	<i>Silybum marianum</i>	Variiegated Thistle	Asteraceae	0.1	2	*		No	
poa sieb	<i>Poa sieberiana</i>	Snowgrass	Poaceae	0.5	20		Grass & grasslike (GG)	No	
care inve	<i>Carex inversa</i>	Knob Sedge	Cyperaceae	0.1	20		Grass & grasslike (GG)	No	
aust scab	<i>Austrostipa scabra</i>	Speargrass	Poaceae	0.1	7		Grass & grasslike (GG)	No	
alte nana	<i>Alternanthera nana</i>	Hairy Joyweed	Amaranthaceae	0.1	1		Forb (FG)	No	
acae echi	<i>Acaena echinata</i>	Sheep's Burr	Rosaceae	0.1	3		Forb (FG)	No	
ryti pilo	<i>Rytidosperma pilosum</i>	Smooth-flowered Wallaby Grass	Poaceae	0.1	2		Grass & grasslike (GG)	No	
aris ramo	<i>Aristida ramosa</i>	Purple Wiregrass	Poaceae	0.1	7		Grass & grasslike (GG)	No	
brom	<i>Bromus spp.</i>	A Brome	Poaceae	0.1	15	*		No	
plan lanc	<i>Plantago lanceolata</i>	Lamb's Tongues	Plantaginaceae	0.1		*		No	
gera retr	<i>Geranium retrorsum</i>	Cranesbill Geranium	Geraniaceae	0.1	10		Forb (FG)	No	
them tria	<i>Themeda triandra</i>		Poaceae	0.1	1		Grass & grasslike (GG)	No	
junc	<i>Juncus spp.</i>	A Rush	Juncaceae	0.1	1		Grass & grasslike (GG)	No	
fuma	<i>Fumaria spp.</i>	Fumitory	Fumariaceae	0.1	1	*		No	

BAM Site Field Survey									
Project:	Flyers Creek	Plot Identifier	3b	Pic 20x20		Pic 20x50		plot dim	
Survey date:	20.07.2020	Compass Orientation (head of 20x20 plot)							
Recorders	L Hamilton; M Palmer	PCT:			Derived grassland				
GPS Easting		GPS Northing		Datum	H	Zone	55		
Landform			Soils			Drainage & Slope			
Morphology		Soil Texture		Slope					
LandF Element		Soil Colour		Aspect					
LandF Pattern		Soil Depth		Drainage					
Microrelief		Geology		Watercourses					
Plot Disturbance									
	Severity	Age	Observational Evidence						
Clearing									
Cultivation									
Soil erosion									
Firewood									
Grazing									
Fire Damage									
Storm Damage									
Weediness									
Other									
Severity: 0 = no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)									
Additional information									
Current land use									
Age class of trees (DBH range), Condition of Vegetation, Hollows									
possible hollows mod condition									
Disturbances (i.e. fire, grazing, ferals, clearing, logging, soil degradation, pollution, weeds, dieback)									
Significant and threatened species and communities (Note pop. size/area, structure, repro status, habit, habitat, threats, photos)									
Dominant Species outside Plot									

FUNCTION

Function attributes for		3b	BAM Attributes (1 x 1m Plots)					
BAM Attribute (20x20m plot)								
Count of Native Richness	Stratum	Sum	Litter Cover	Tape length	% cover	Average %	Photos	
	Tree (TG)	2		5m	0%			
	Shrub (SG)	1		15m	20%			
	Forb (FG)	1		25m	0%			
	Grass & grasslike (GG)	3		35m	1%			
	Fern (EG)	0	45m	5%				
	Other (OG)	0	5m	0%				
	TOTAL	7	15m	0%				
BAM Attribute (20x20m plot)			Bare ground cover	25m	0%	0.0%		
Count of cover abundance (native vascular plants)	Stratum	Sum		35m	0%			
	Tree (TG)	51		45m	0%			
	Shrub (SG)	10		5m	0%			
	Forb (FG)	0.1		15m	0%			
	Grass & grasslike (GG)	0.7	25m	0%				
	Fern (EG)	0	35m	0%				
	Other (OG)	0	45m	0%				
	TOTAL Native	61.8	5m	0%				
TOTAL 'HTE'	3	15m	0%					
BAM Attribute (20 x 50m plot) Tree Stem Counts			Rock Cover	25m	0%	0.0%		
DBH (cm)	Euc	Non Euc		Hollows	35m			0%
>80	0	0		0	45m			0%
50-79	1	0		0				
30-49	0	0		0				
20-29	0	9	0					
10-19	0	3	0					
5-9	0	25	0					
<5	1	0	N/A					
Length of logs (m)		53						

0.1%=63x63cm
0.5%=1.4x1.4m
1%=2x2m
5%=4x5m
25%=10x10m

COMPOSITION & STRUCTURE

Species recorded for		3b							
Abbreviation	Scientific Name	Common Name	Family	% Cover	Abundance	Exotic	Growth Form	High Threat?	EPBC Status
acac deal	<i>Acacia dealbata</i>	Silver Wattle	Fabaceae (Mi)	50			Tree (TG)	FALSE	
cass arcu	<i>Cassinia arcuata</i>	Sifton Bush	Asteraceae	10			Shrub (SG)	No	
dact glom	<i>Dactylis glomerata</i>	Cocksfoot	Poaceae	15		*		No	
phal aqua	<i>Phalaris aquatica</i>	Phalaris	Poaceae	20		*		No	
hypo glab	<i>Hypochaeris glabra</i>	Smooth Catsear	Asteraceae	0.1	14	*		No	
echi plan	<i>Echium plantagineum</i>	Patterson's Curse	Boraginaceae	0.5	7	*		No	
ryti pilo	<i>Rytidosperma pilosum</i>	Smooth-flowered Wallaby Grass	Poaceae	0.1	9		Grass & grasslike (GG)	No	
pasp dila	<i>Paspalum dilatatum</i>	Paspalum	Poaceae	3		*		HTE	
pani simi	<i>Panicum simile</i>	Two-colour Panic	Poaceae	0.1	1		Grass & grasslike (GG)	No	
romu	<i>Romulea spp.</i>		Iridaceae	5	7	*		No	
oxal pere	<i>Oxalis perennans</i>		Oxalidaceae	0.1	2		Forb (FG)	No	

poa sieb	<i>Poa sieberiana</i>	Snowgrass	Poaceae	0.5	20		Grass & grasslike (GG)	No	
euca brid	<i>Eucalyptus bridgesiana</i>	Apple Box	Myrtaceae	1			Tree (TG)	No	
anth cotu	<i>Anthemis cotula</i>	Stinking Mayweed	Asteraceae	0.1	1	*		No	
madi sati	<i>Madia sativa</i>	Tarweed	Asteraceae	0.1	1	*		No	
cyno echi	<i>Cynosurus echinatus</i>	Rough Dog's Tail	Poaceae	0.1	17	*		No	
holc lana	<i>Holcus lanatus</i>	Yorkshire Fog	Poaceae	0.1	4	*		No	
sang mino muri	<i>Sanguisorba minor subsp</i>	Sheep's Burnet	Rosaceae	0.1	2	*		No	
Agrostis sp	<i>Agrostis sp</i>	Bent Grass	Poaceae	5		*		No	#N/A
arct cale	<i>Arctotheca calendula</i>	Capeweed	Asteraceae	0.1	12	*		No	

BAM Site Field Survey							
Project:	Flyers Creek	Plot Identifier	3c	Pic 20x20	Pic 20x50	plot dim	
Survey date:	20.07.2020	Compass Orientation (head of 20x20 plot)					
Recorders	L Hamilton; M Palmer	PCT:					
GPS Easting		GPS Northing		Datum	H	Zone	55
Landform			Soils		Drainage & Slope		
Morphology			Soil Texture		Slope		
LandF Element			Soil Colour		Aspect		
LandF Pattern			Soil Depth		Drainage		
Microrelief			Geology		Watercourses		
Plot Disturbance							
	Severity	Age	Observational Evidence				
Clearing							
Cultivation							
Soil erosion							
Firewood							
Grazing							
Fire Damage							
Storm Damage							
Weediness							
Other							
Severity: 0 = no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)							
Additional information							
Current land use							
Age class of trees (DBH range), Condition of Vegetation, Hollows							
Disturbances (i.e. fire, grazing, ferals, clearing, logging, soil degradation, pollution, weeds, dieback)							
Significant and threatened species and communities (Note pop. size/area, structure, repro status, habit, habitat, threats, photos)							
Dominant Species outside Plot							

FUNCTION

Function attributes for		3c	BAM Attributes (1 x 1m Plots)						
BAM Attribute (20x20m plot)			Litter Cover	Tape length	% cover	Average %	Photos		
Count of Native Richness	Stratum	Sum		5m	1%				
	Tree (TG)	1		15m	5%				
	Shrub (SG)	0		25m	8%				
	Forb (FG)	9		35m	10%				
	Grass & grasslike (GG)	9		45m	20%				
	Fern (EG)	0		5m	0%				
	Other (OG)	0		15m	0%				
TOTAL	19	25m		0%					
BAM Attribute (20x20m plot)				Bare ground cover	35m			0%	0.0%
Count of cover abundance (native vascular plants)	Stratum	Sum	45m		0%				
	Tree (TG)	30	5m		0%				
	Shrub (SG)	0	15m		0%				
	Forb (FG)	0.9	25m	0%					
	Grass & grasslike (GG)	42	35m	0%					
	Fern (EG)	0	45m	0%					
	Other (OG)	0	5m	0%					
TOTAL Native	72.9	15m	0%						
TOTAL 'HTE'	26.2	25m	0%						
BAM Attribute (20 x 50m plot) Tree Stem Counts			Cryptogam cover	35m	0%	0.0%			
DBH (cm)	Euc	Non Euc		Hollows	5m			0%	
	>80	1		0	0			15m	0%
	50-79	2		0	0			25m	0%
	30-49	0		0	0			35m	0%
	20-29	0	0	0	45m	0%			
	10-19	8	0	0	5m	0%			
5-9	12	0	0	15m	0%				
<5	6	0	N/A	25m	0%				
Length of logs (m)		3		35m	0%				
0.1%=63x63cm				45m	0%	0.0%			
0.5%=1.4x1.4m									
1%=2x2m									
5%=4x5m									
25%=10x10m									

COMPOSITION & STRUCTURE

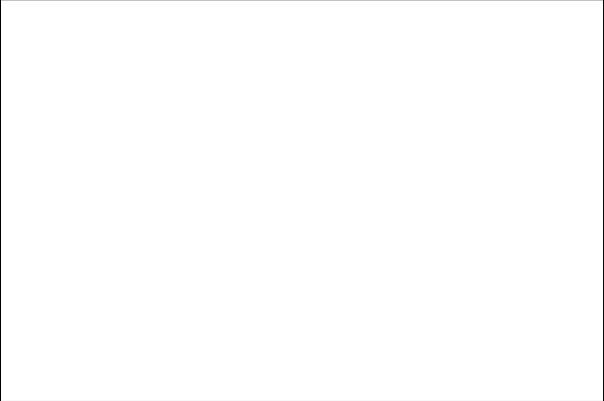
Species recorded for		3c							
Abbreviation	Scientific Name	Common Name	Family	% Cover	Abundance	Exotic	Growth Form	High Threat?	EPBC Status
euca blak	<i>Eucalyptus blakelyi</i>	Blakely's Red Gum	Myrtaceae	30			Tree (TG)	No	
junc usit	<i>Juncus usitatus</i>		Juncaceae	10			Grass & grasslike (GG)	No	
micr stip	<i>Microlaena stipoides</i>	Weeping Grass	Poaceae	20			Grass & grasslike (GG)	No	
rubu frut	<i>Rubus fruticosus sp. agg.</i>	Blackberry complex	Rosaceae	25		*		HTE	
trif	<i>Trifolium spp.</i>	A Clover	Fabaceae (Fat)	10		*		No	
trif	<i>Trifolium spp.</i>	A Clover	Fabaceae (Fat)	5		*		No	
arct cale	<i>Arctotheca calendula</i>	Capeweed	Asteraceae	0.5	100	*		No	
hypo radi	<i>Hypochaeris radicata</i>	Catsear	Asteraceae	0.5	100	*		No	
dich repe	<i>Dichondra repens</i>	Kidney Weed	Convolvulaceae	0.1	50		Forb (FG)	No	
gera sola	<i>Geranium solanderi</i>	Native Geranium	Geraniaceae	0.1	500		Forb (FG)	No	
poa sieb	<i>Poa sieberiana</i>	Snowgrass	Poaceae	1			Grass & grasslike (GG)	No	

care appr	<i>Carex appressa</i>	Tall Sedge	Cyperaceae	10			Grass & grasslike (GG)	No	
tara offi	<i>Taraxacum officinale</i>	Dandelion	Asteraceae	0.1	20	*		No	
acet vulg	<i>Acetosella vulgaris</i>	Sheep Sorrel	Polygonaceae	0.1	12	*		HTE	
oxal pere	<i>Oxalis perennans</i>		Oxalidaceae	0.1	50		Forb (FG)	No	
ryti pilo	<i>Rytidosperma pilosum</i>	Smooth-flowered Wallaby Grass	Poaceae	0.5	100		Grass & grasslike (GG)	No	
eleo acut	<i>Eleocharis acuta</i>		Cyperaceae	0.2	50		Grass & grasslike (GG)	No	
care inve	<i>Carex inversa</i>	Knob Sedge	Cyperaceae	0.1	10		Grass & grasslike (GG)	No	
rume brow	<i>Rumex brownii</i>	Swamp Dock	Polygonaceae	0.1	7		Forb (FG)	No	
pasp dila	<i>Paspalum dilatatum</i>	Paspalum	Poaceae	1		*		HTE	
brom	<i>Bromus spp.</i>	A Brome	Poaceae	0.1	10	*		No	
loma filii	<i>Lomandra filiformis</i>	Wattle Matt-rush	Lomandraceae	0.1	2		Grass & grasslike (GG)	No	
pers deci	<i>Persicaria decipiens</i>	Slender Knotweed	Polygonaceae	0.1	3		Forb (FG)	No	
port oler	<i>Portulaca oleracea</i>	Pigweed	Portulacaceae	0.1	2		Forb (FG)	No	
poa bulb	<i>Poa bulbosa</i>	Bulbous Poa	Poaceae	0.1	1	*		No	
forb	Unidentified forb			0.1	10			No	#N/A
hydr laxi	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Apiaceae	0.1	10		Forb (FG)	No	
sene quad	<i>Senecio quadridentatus</i>	Cotton Fireweed	Asteraceae	0.1	3		Forb (FG)	No	
both macr	<i>Bothriochloa macra</i>	Red Grass	Poaceae	0.1	2		Grass & grasslike (GG)	No	
cart lana	<i>Carthamus lanatus</i>	Saffron Thistle	Asteraceae	0.1	1	*		HTE	
hydr trip	<i>Hydrocotyle tripartita</i>	Pennywort	Apiaceae	0.1	50		Forb (FG)	No	

Plot 3
Head of plot



Plot 3
Tail of plot



Litter cover 5 m



Litter cover 15 m



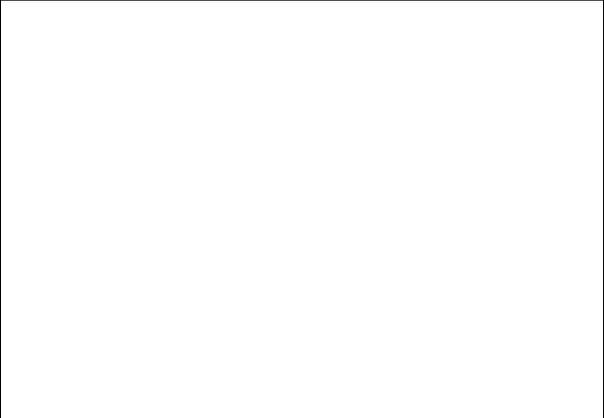
Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 3a Head of plot	Plot 3a Tail of plot
No data	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 3b Head of plot	Plot 3b Tail of plot
No data	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 3c Head of plot	Plot 3c Tail of plot
No data	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 4
Head of plot



Plot 4
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 5 Head of plot	Plot 5 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 6 Head of plot	Plot 6 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 7 Head of plot	Plot 7 Tail of plot
	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 8 Head of plot	Plot 8 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 9 Head of plot	Plot 9 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 10
Head of plot



Plot 10
Tail of plot



Litter cover 5 m



Litter cover 15 m



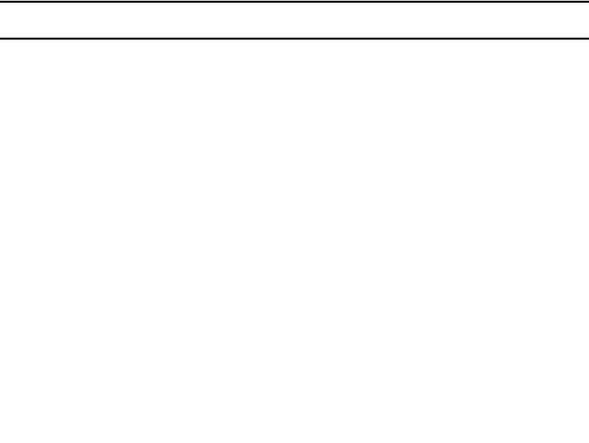
Litter cover 25 m



Litter cover 35 m

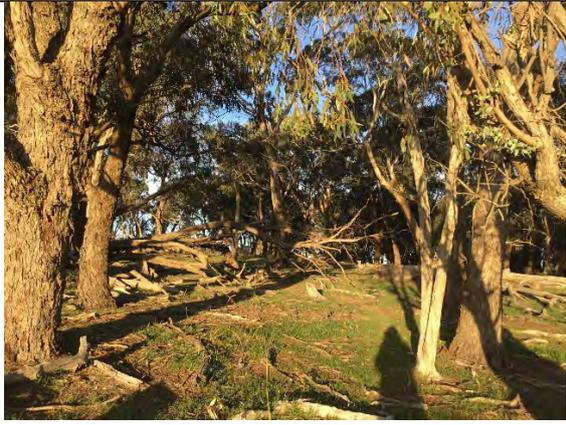


Litter cover 45 m



Plot 11 Head of plot	Plot 11 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 12 Head of plot	Plot 12 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 13 Head of plot	Plot 13 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 14 Head of plot	Plot 14 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 15
Head of plot



Plot 15
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m

Litter cover 45 m



Plot 16 Head of plot	Plot 16 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 18 Head of plot	Plot 18 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 19 Head of plot	Plot 19 Tail of plot
	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 20 Head of plot	Plot 20 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 21 Head of plot	Plot 21 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 22 Head of plot	Plot 22 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 24 Head of plot	Plot 24 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 25 Head of plot	Plot 25 Tail of plot
	No data
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 26 Head of plot	Plot 26 Tail of plot
	
Litter cover 5 m	Litter cover 15 m
No data	No data
Litter cover 25 m	Litter cover 35 m
No data	No data
Litter cover 45 m	
No data	

Plot 27
Head of plot



Plot 27
Tail of plot



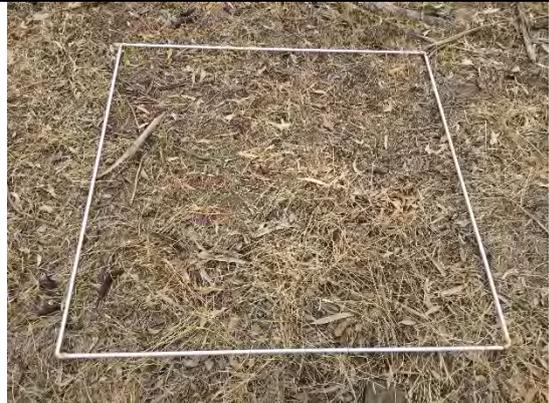
Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 28
Head of plot



Plot 28
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 29
Head of plot



Plot 29
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 30
Head of plot



Plot 30
Tail of plot



Litter cover 5 m



Litter cover 15 m



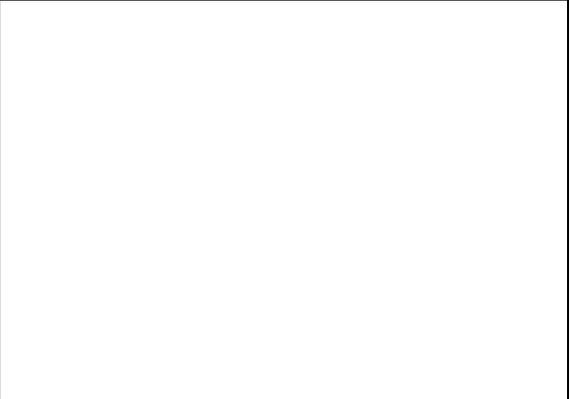
Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 32
Head of plot



Plot 32
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 34
Head of plot



Plot 34
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 35
Head of plot



Plot 35
Tail of plot



Litter cover 5 m



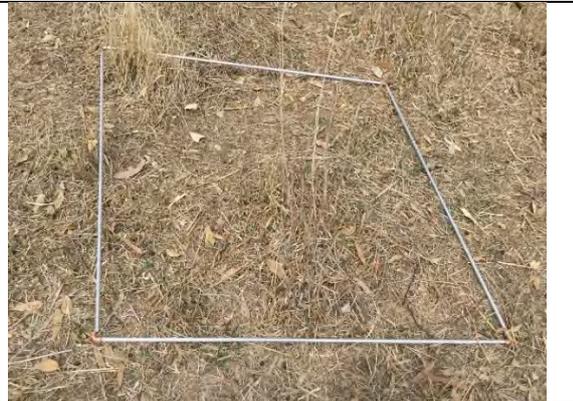
Litter cover 15 m



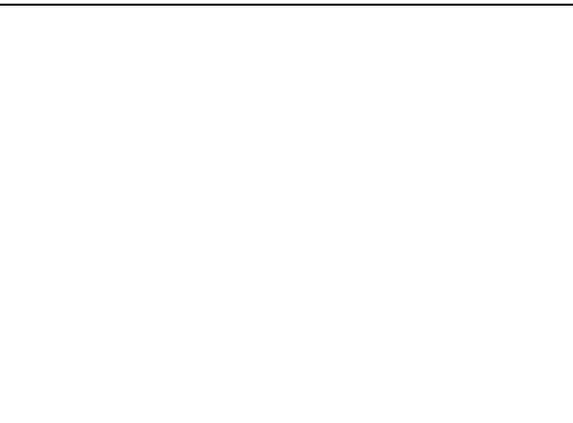
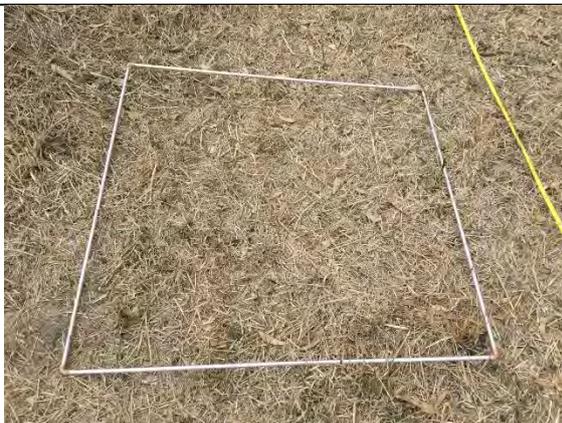
Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 41
Head of plot



Plot 41
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 43
Head of plot



Plot 43
Tail of plot



Litter cover 5 m



Litter cover 15 m



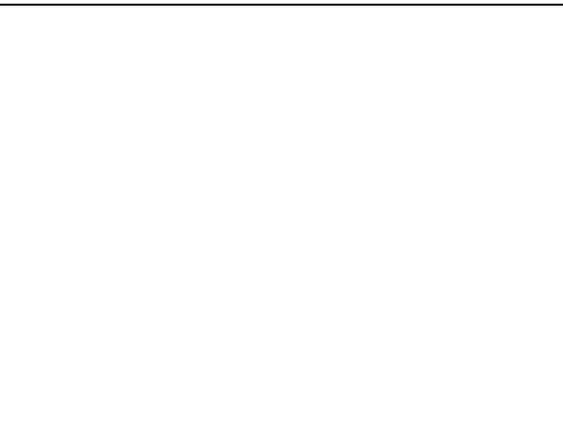
Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 44
Head of plot



Plot 44
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 46
Head of plot



Plot 46
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 47
Head of plot



Plot 47
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 48
Head of plot



Plot 48
Tail of plot



Litter cover 5 m



Litter cover 15 m



Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Plot 49
Head of plot



Plot 49
Tail of plot



Litter cover 5 m



Litter cover 15 m



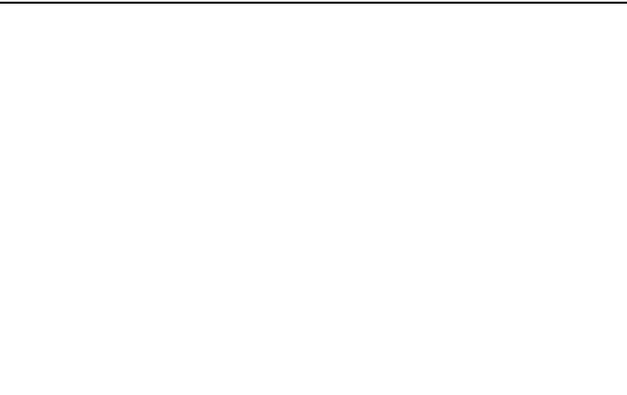
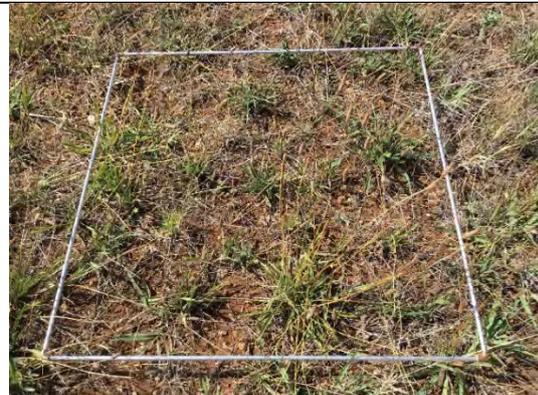
Litter cover 25 m



Litter cover 35 m



Litter cover 45 m



Appendix D Paddock Trees

Species	Above Benchmark	Hollows Present	Class	Credit Value	DBH	Scat Tree	PCT	Easting	Northing
Yellow Box	Yes	No	3	0.75	75	Scattered Tree 1	277	689964	6290186
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 2	277	689992	6290215
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 3	277	690055	6290049
Yellow Box	Yes	No	3	0.75	130	Scattered Tree 4	277	690052	6290146
Yellow Box	Yes	No	3	0.75	130	Scattered Tree 5	277	690064	6289976
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 6	277	690077	6289974
Yellow Box	Yes	No	3	0.75	200	Scattered Tree 7	277	690127	6290021
Yellow Box	Yes	No	3	0.75	130	Scattered Tree 8	277	690141	6289996
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 9	277	690202	6289787
Yellow Box	Yes	Yes	3	1	100	Scattered Tree 10	277	690512	6289410
White Box	Yes	No	3	0.75	72	Scattered Tree 11	277	690479	6289284
Long leaved box	Yes	Yes	3	1	120	Scattered Tree 12	277	691881	6289246
Broadleaved Peppermint	Yes	No	3	0.75	51	Scattered Tree 13	277	690151	6289272
White Box	No	No	2	0.5	25	Scattered Tree 14	277	690127	6289256
Blakelys Red Gum	No	No	2	0.5	47	Scattered Tree 15	277	690045	6289222
Yellow Box	Yes	Yes	3	1	120	Scattered Tree 16	277	692612	6281109

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Yellow Box	Yes	Yes	3	1	130	Scattered Tree 17	277	692605	6281174
Yellow Box	Yes	Yes	3	1	97	Scattered Tree 18	277	692477	6281265
Yellow Box	Yes	Yes	3	1	90	Scattered Tree 19	277	692422	6281365
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 20	277	692523	6281306
Blakelys Red Gum	No	No	2	0.5	30	Scattered Tree 21	277	692687	6281144
Blakelys Red Gum	Yes	Yes	3	1	75	Scattered Tree 22	277	692850	6280648
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 23	277	693003	6280146
Apple Box	No	No	2	0.5	40	Scattered Tree 24	277	692907	6280164
Yellow Box	Yes	Yes	3	1	73	Scattered Tree 25	277	691515	6283301
Yellow Box	Yes	Yes	3	1	93	Scattered Tree 26	277	691535	6283315
Yellow Box	Yes	No	3	0.75	110	Scattered Tree 27	266	690379	6283116
Yellow Box	Yes	No	3	0.75	125	Scattered Tree 28	266	690385	6283153
Yellow Box	Yes	No	3	0.75	200	Scattered Tree 29	266	690366	6283152
Red Stringybark	Yes	Yes	3	1	130	Scattered Tree 30	266	690389	6282881
Yellow Box	Yes	Yes	3	1	100	Scattered Tree 31	277	690081	6282612
Yellow Box	Yes	No	3	0.75	65	Scattered Tree 32	266	689819	6282360
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 33	266	689778	6282348
White Box	Yes	Yes	3	1	65	Scattered Tree 34	266	689669	6282258
White Box	Yes	Yes	3	1	85	Scattered Tree 35	266	689596	6282360
White Box	No	Yes	2	0.75	35	Scattered Tree 36	266	689570	6282367

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White Box	Yes	Yes	3	1	65	Scattered Tree 37	266	689508	6282401
White Box	Yes	Yes	3	1	78	Scattered Tree 38	266	689518	6282462
White Box	Yes	Yes	3	1	75	Scattered Tree 39	266	689478	6282437
White Box	Yes	No	3	0.75	65	Scattered Tree 40	266	689349	6282427
White Box	Yes	Yes	3	1	100	Scattered Tree 41	266	689332	6282406
White Box	Yes	Yes	3	1	70	Scattered Tree 42	266	690381	6283366
White Box	Yes	Yes	3	1	62	Scattered Tree 43	266	690384	6283321
Long leaved box	Yes	Yes	3	1	80	Scattered Tree 44	277	690676	6283531
Long leaved box	Yes	No	3	0.75	100	Scattered Tree 45	266	690693	6283505
White Box	Yes	Yes	3	1	60	Scattered Tree 46	266	690768	6283561
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 47	277	690941	6283679
Yellow Box	Yes	No	3	0.75	71	Scattered Tree 48	277	691390	6283554
Blakelys Red Gum	Yes	Yes	3	1	80	Scattered Tree 49	277	692017	6283464
Yellow Box	Yes	Yes	3	1	160	Scattered Tree 50	277	693230	6284590
Yellow Box	No	No	2	0.5	50	Scattered Tree 51	277	693225	6284600
Yellow Box	Yes	No	3	0.75	65	Scattered Tree 52	277	693229	6284600
Eucalyptus sp.	Yes	No	3	0.75	350	Scattered Tree 53	277	696723	6283703
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 54	277	695353	6282642
Yellow Box	Yes	No	3	0.75	200	Scattered Tree 55	277	695295	6282446
Yellow Box	Yes	No	3	0.75	85	Scattered Tree 56	277	695305	6282424

Biodiversity Offset Report
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Yellow Box	Yes	No	3	0.75	200	Scattered Tree 57	277	695185	6282386
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 58	277	694131	6284846
Yellow Box	Yes	Yes	3	1	60	Scattered Tree 59	277	694094	6284796
Candle Bark	Yes	Yes	3	1	150	Scattered Tree 60	277	694605	6287139
Long leaved box	Yes	No	3	0.75	120	Scattered Tree 61	277	694623	6287146
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 62	277	691745	6288725
Yellow Box	Yes	Yes	3	1	120	Scattered Tree 63	277	691916	6289187
Yellow Box	Yes	No	3	0.75	140	Scattered Tree 64	277	691927	6289175
Yellow Box	Yes	No	3	0.75	80	Scattered Tree 65	277	691989	6289246
Long leaved box	Yes	No	3	0.75	60	Scattered Tree 66	277	690074	6289182
Yellow Box	Yes	Yes	3	1	130	Scattered Tree 67	277	689751	6289122
Yellow Box	Yes	Yes	3	1	250	Scattered Tree 68	277	689631	6289043
Blakelys Red Gum	Yes	Yes	3	1	130	Scattered Tree 69	277	689619	6289174
Yellow Box	Yes	Yes	3	1	100	Scattered Tree 70	277	689340	6288851
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 71	277	692889	6290593
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 72	277	692802	6290667
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 73	277	692767	6290673
Apple Box	Yes	Yes	3	1	120	Scattered Tree 74	277	692783	6290735
Yellow Box	Yes	No	3	0.75	82	Scattered Tree 75	277	692546	6290793
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 76	277	692582	6290789

Biodiversity Offset Report
Flyers Creek Wind Farm

Yellow Box	Yes	No	3	0.75	68	Scattered Tree 77	277	692576	6290814
Yellow Box	Yes	No	3	0.75	79	Scattered Tree 78	277	692333	6289634
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 79	277	692317	6289641
Yellow Box	Yes	Yes	3	1	85	Scattered Tree 80	277	693357	6285082
Blakelys Red Gum	No	No	2	0.5	40	Scattered Tree 81	268	693337	6284010
Long leaved box	Yes	No	3	0.75	100	Scattered Tree 82	277	692974	6280316
Blakelys Red Gum	Yes	Yes	3	1	200	Scattered Tree 83	277	692881	6280961
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 84	277	692951	6280932
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 85	266	690432	6283060
White Box	Yes	Yes	3	1	75	Scattered Tree 86	277	690178	6283715
Kurrajong	Yes	No	3	0.75	70	Scattered Tree 87	277	690209	6283852
Yellow Box	Yes	Yes	3	1	90	Scattered Tree 88	277	692111	6283633
Yellow Box	Yes	No	3	0.75	80	Scattered Tree 89	277	692191	6283715
Yellow Box	Yes	Yes	3	1	130	Scattered Tree 90	277	692286	6283645
Blakelys Red Gum	Yes	Yes	3	1	75	Scattered Tree 91	277	692739	6282807
Blakelys Red Gum	Yes	No	3	0.75	70	Scattered Tree 92	277	692742	6282808
Blakelys Red Gum	Yes	No	3	0.75	80	Scattered Tree 93	277	692529	6283523
Blakelys Red Gum	Yes	Yes	3	1	65	Scattered Tree 94	277	692538	6283528
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 95	277	692099	6284965
Yellow Box	No	No	2	0.5	3	Scattered Tree 96	277	692108	6284954

Biodiversity Offset Report
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Blakelys Red Gum	Yes	Yes	3	1	assumed	Scattered Tree 97	277	692119	6284824
Blakelys Red Gum	No	No	2	0.5	25	Scattered Tree 98	277	690170	6287005
Yellow Box	Yes	Yes	3	1	150	Scattered Tree 99	277	694452	6285043
Eucalyptus sp.	Yes	Yes	3	1	assumed	Scattered Tree 100	277	692912	6290659
Yellow Box	Yes	Yes	3	1	70	Scattered Tree 101	277	692236	6289527
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 102	277	690825	6289409
Yellow Box	Yes	No	3	0.75	85	Scattered Tree 103	277	690494	6289603
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 104	277	690525	6289592
Blakelys Red Gum	Yes	No	3	0.75	200	Scattered Tree 105	277	690141	6289747
Yellow Box	Yes	Yes	3	1	90	Scattered Tree 106	277	692176	6284346
Yellow Box	Yes	No	3	0.75	130	Scattered Tree 107	266	690329	6282730
Yellow Box	Yes	No	3	0.75	65	Scattered Tree 108	277	692371	6282747
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 109	277	692368	6282626
Long leaved Box	Yes	No	3	0.75	95	Scattered Tree 110	277	697104	6283394
Eucalyptus sp.	Yes	No	3	0.75	60	Scattered Tree 111	277	692914	6290682
Yellow Box	Yes	Yes	3	1	55	Scattered Tree 112	277	692386	6289718
Yellow Box	Yes	No	3	0.75	50	Scattered Tree 113	277	692373	6289695
Eucalyptus sp.	Yes	Yes	3	1	55	Scattered Tree 114	277	691819	6289513
Red Stringybark	Yes	Yes	3	1	70	Scattered Tree 115	277	691764	6289450
Yellow Box	No	No	2	0.5	45	Scattered Tree 116	277	691869	6289196

Yellow Box	Yes	No	3	0.75	50	Scattered Tree 117	277	691822	6289014
Eucalyptus sp.	Yes	Yes	3	1	50	Scattered Tree 118	277	691817	6289013
Yellow Box	Yes	Yes	3	1	60	Scattered Tree 119	277	691808	6289015
Yellow Box	Yes	No	3	0.75	55	Scattered Tree 120	277	691874	6288971
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 121	277	691817	6288926
Yellow box	Yes	Yes	3	1	65	Scattered Tree 122	277	691831	6288799
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 123	277	689909	6290219
Yellow Box	Yes	No	3	0.75	75	Scattered Tree 124	277	690083	6290205
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 125	277	690122	6290132
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 126	277	690180	6289901
Yellow Box	Yes	Yes	3	1	55	Scattered Tree 127	277	690235	6289914
Yellow box	Yes	No	3	0.75	55	Scattered Tree 128	277	690239	6289904
Blakelys Red Gum	Yes	No	3	0.75	85	Scattered Tree 129	277	690174	6289427
Yellow Box	Yes	No	3	0.75	75	Scattered Tree 130	277	690099	6289387
Yellow Box	Yes	No	3	0.75	75	Scattered Tree 131	277	690259	6289319
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 132	277	692111	6285067
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 133	277	692145	6284448
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 134	277	692636	6283919
Eucalyptus sp.		Yes	3	1	assumed	Scattered Tree 135	277	693085	6284354
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 136	277	693089	6284428

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Eucalyptus sp.		No	3	1	assumed	Scattered Tree 137	277	693187	6284656
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 138	277	693213	6284670
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 139	268	693505	6284041
Yellow Box	Yes	Yes	3	1	80	Scattered Tree 140	277	690992	6283610
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 141	277	690959	6283603
Blakelys Red Gum	Yes	Yes	3	1	100	Scattered Tree 142	277	690947	6283598
Yellow Box	Yes	No	3	0.75	55	Scattered Tree 143	277	690920	6283599
Yellow Box	Yes	Yes	3	1	80	Scattered Tree 144	266	690492	6282826
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 145	266	690074	6282428
White Box		No	3	1	assumed	Scattered Tree 146	266	689874	6282231
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 147	266	689529	6282554
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 148	278	692447	6283307
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 149	278	692493	6283295
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 150	278	692469	6283282
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 151	277	692477	6283226
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 152	277	692554	6283211
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 153	277	692821	6282898
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 154	277	692849	6282877
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 155	277	692608	6282770
Yellow Box	Yes	Yes	3	1	70	Scattered Tree 156	277	692816	6282510

Blakelys Red Gum	Yes	Yes	3	1	120	Scattered Tree 157	277	692650	6282436
Yellow Box	Yes	No	3	0.75	90	Scattered Tree 158	277	692645	6282423
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 159	277	692837	6282382
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 160	277	692805	6282280
Yellow box	Yes	Yes	3	1	100	Scattered Tree 161	277	692891	6282346
Yellow Box	Yes	No	3	0.75	70	Scattered Tree 162	277	692874	6282322
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 163	268	694090	6282924
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 164	268	693611	6282504
Red Stringybark	Yes	Yes	3	1	110	Scattered Tree 165	268	694670	6283220
Red Stringybark	Yes	No	3	0.75	70	Scattered Tree 166	268	694681	6283227
Red Stringybark	Yes	Yes	3	1	65	Scattered Tree 167	268	694686	6283231
Red Stringybark	Yes	No	3	0.75	110	Scattered Tree 168	268	694762	6283250
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 169	277	695384	6282849
Yellow Box	No	No	2	0.5	35	Scattered Tree 170	277	695349	6282757
Yellow Box	Yes	No	2	0.75	45	Scattered Tree 171	277	695358	6282758
Yellow Box	Yes	No	3	0.75	110	Scattered Tree 172	277	695370	6282702
Long-leaved Box	Yes	Yes	3	1	70	Scattered Tree 173	277	695290	6282266
Long-leaved Box	Yes	Yes	3	1	200	Scattered Tree 174	277	695229	6282220
Long-leaved Box	Yes	Yes	3	1	assumed	Scattered Tree 175	277	695233	6282222
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 176	277	696224	6284026

Eucalyptus sp.		No	3	1	assumed	Scattered Tree 177	277	696321	6284088
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 178	277	696356	6284128
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 179	277	696426	6284082
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 180	277	696509	6284131
Eucalyptus sp.	Yes	Yes	3	1	80	Scattered Tree 181	277	697006	6283535
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 182	277	696974	6283522
Long-leaved Box	Yes	No	3	0.75	80	Scattered Tree 183	277	696896	6283491
Long-leaved Box	Yes	Yes	3	1	150	Scattered Tree 184	277	696913	6283460
Blakelys Red Gum	Yes	Yes	3	1	90	Scattered Tree 185	277	692752	6281180
Blakelys Red Gum	Yes	No	3	0.75	90	Scattered Tree 186	277	692843	6281214
Blakelys Red Gum	Yes	No	3	0.75	90	Scattered Tree 187	277	692869	6281208
Blakelys Red Gum	Yes	Yes	3	1	120	Scattered Tree 188	277	692901	6281158
Blakelys Red Gum	Yes	Yes	3	1	120	Scattered Tree 189	277	692879	6281048
Eucalyptus sp.	Yes	Yes	3	1	80	Scattered Tree 190	277	692903	6280998
Eucalyptus sp.	Yes	No	3	0.75	50	Scattered Tree 191	277	692959	6280593
Yellow Box	Yes	No	3	0.75	130	Scattered Tree 192	277	692963	6280435
Yellow Box	Yes	No	3	0.75	100	Scattered Tree 193	277	693085	6280295
Yellow Box	Yes	Yes	3	1	110	Scattered Tree 194	277	693047	6280293
Yellow Box	Yes	No	3	0.5	65	Scattered Tree 195	277	692644	6290834
Eucalyptus sp.	Yes	Yes	3	1	assumed	Scattered Tree 196	277	691973	6285157

Biodiversity Offset Report
Flyers Creek Wind Farm

Eucalyptus sp.		No	3	1	assumed	Scattered Tree 197	268	693116	6284114
Yellow box	Yes	No	3	0.75	70	Scattered Tree 198	277	692653	6290773
Eucalyptus sp.		No	3	3	assumed	Scattered Tree 199	277	692677	6290006
Yellow Box	Yes	No	3	0.75	98	Scattered Tree 200	277	690129	6289899
Blakelys Red Gum	Yes	No	3	0.75	100	Scattered Tree 201	277	690898	6289456
Yellow Box	Yes	Yes	3	1	60	Scattered Tree 202	277	690119	6287105
Blakelys Red Gum	Yes	Yes	3	1	75	Scattered Tree 203	277	690164	6287081
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 204	266	689851	6282299
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 205	277	692579	6282778
Yellow Box	Yes	Yes	3	1	100	Scattered Tree 206	277	692738	6282401
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 207	277	692661	6282378
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 208	277	695230	6282813
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 209	277	695262	6282864
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 210	268	694674	6282905
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 211	278	696637	6281996
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 212	277	692932	6281121
Eucalyptus sp.		No	3	1	assumed	Scattered Tree 213	277	693372	6284610
Eucalyptus sp.		No	3	0	assumed	Scattered Tree 214	277	694269	6283882

Appendix E Fauna Species

Fauna species detected during the field surveys

Common Name	Scientific Name	Threatened Species
BIRDS		
Australian Magpie	<i>Gymnorhina tibicen</i>	
Australian Raven	<i>Corvus coronoides</i>	
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>	
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	
Common Starling	<i>Sturnus vulgaris</i>	
Crimson Rosella	<i>Platycercus elegans</i>	
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>	
Eastern Yellow Robin	<i>Eopsaltria australis</i>	
Galah	<i>Cacatua roseicapilla</i>	
Grey Fantail	<i>Rhipidura albiscapa</i>	
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	
Grey Teal	<i>Anas gracilis</i>	
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	
Little Raven	<i>Corvus mellori</i>	
Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	
Noisy Friarbird	<i>Philemon corniculatus</i>	
Magpie-Lark	<i>Grallina cyanoleuca</i>	
Possible Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	

Common Name	Scientific Name	Threatened Species
Red Wattlebird	<i>Anthochaera carunculata</i>	
Red-browed Firetail	<i>Neochmia temporalis</i>	
Red-rumped Parrot	<i>Psephotus haematonotus</i>	
Restless Flycatcher	<i>Myiagra inquieta</i>	
Rufous Whistler	<i>Pachycephala rufiventris</i>	
Sacred Kingfisher	<i>Todiramphus sanctus</i>	
Southern Boobook	<i>Ninox boobook</i>	
Spotted Pardalote	<i>Pardalotus punctatus</i>	
Striated Pardalote	<i>Pardalotus striatus</i>	
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	
Superb Fairy Wren	<i>Malurus cyaneus</i>	
Superb Parrot	<i>Polytelis swainsonii</i>	Vulnerable - EPBC Vulnerable - BC
European Starling (Exotic)	<i>Sturnus vulgaris</i>	
Tawny Frogmouth	<i>Podargus strigoides</i>	
Varied Sittella	<i>Daphoenositta chrysoptera</i>	
Wallaroo	<i>Osphranter robustus</i>	
White-browed Scrubwren	<i>Sericornis frontalis</i>	
White-naped Honeyeater	<i>Melithreptus lunatus</i>	
White-throated Gerygone	<i>Gerygone olivacea</i>	
White-throated Treecreeper	<i>Cormobates leucophaea</i>	
White-winged Chough	<i>Corcorax melanorhamphos</i>	

Common Name	Scientific Name	Threatened Species
Hardhead	<i>Aythya australis</i>	
Australian Wood Duck	<i>Chenonetta jubata</i>	
Willy Wagtail	<i>Rhipidura leucophrys</i>	
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	
FROGS		
Common Eastern Froglet	<i>Crinia signifera</i>	
Banjo Frog	<i>Limnodynastes dumerlii</i>	
Peron's Tree Frog	<i>Litoria peronii</i>	
Spotted Marsh Frog	<i>Limnodynastes tasmaniensis</i>	
MAMMALS		
Antechinus	<i>Antechinus sp.</i>	
Brush Tailed Possum	<i>Trichosurus vulpecula</i>	
White-striped Free-tailed Bat	<i>Tadarida australis</i>	
Southern Freetail Bat	<i>Mormopterus planiceps</i>	
Eastern Freetail Bat	<i>Mormopterus ridei</i>	
Goulds Wattled Bat	<i>Chalinolobus gouldii</i>	
Chocolate Wattled Bat	<i>Chalinolobus morio</i>	
Large Bent-wing Bat	<i>Miniopterus oceanensis</i>	Vulnerable - BC
Unidentified Long-eared Bat	<i>Nyctophilus sp.</i>	
Large Forest Bat	<i>Vespadelus darlingtoni</i>	
Little Forest Bat	<i>Vespadelus vulturnus</i>	

Appendix F Protected Matters Search Results



EPBC Act Protected Matters Report

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

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

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

Report created: 20/11/20 12:25:07

[Summary](#)

[Details](#)

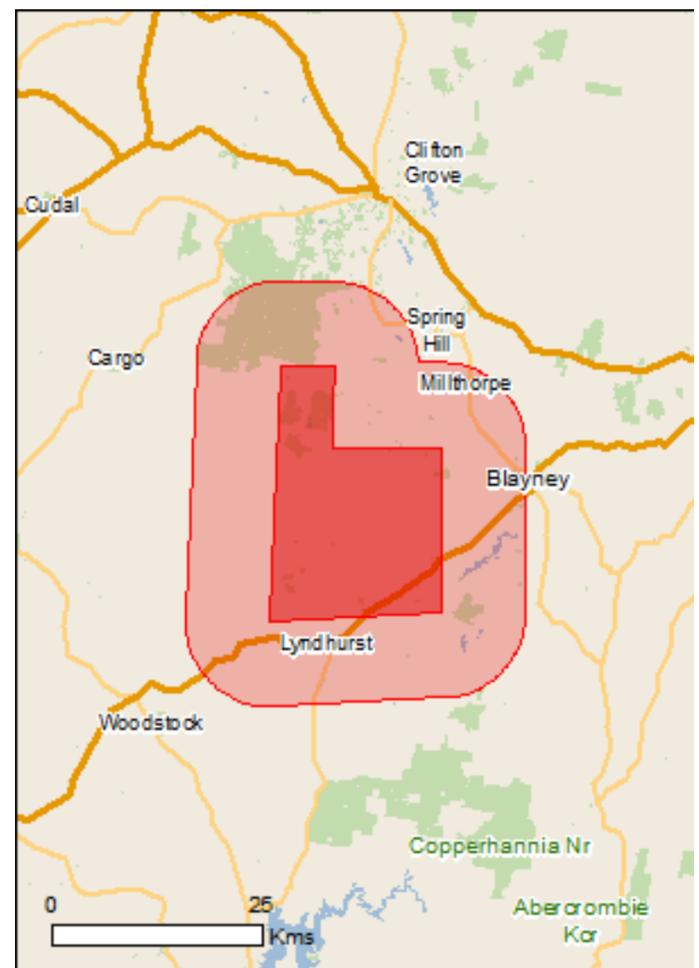
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

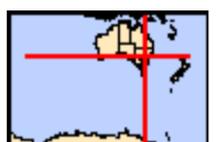
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

[Buffer: 10.0Km](#)



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	5
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	36
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	31
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	700 - 800km upstream
Hattah-kulkyne lakes	600 - 700km upstream
Riverland	700 - 800km upstream
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream
The macquarie marshes	200 - 300km upstream

Listed Threatened Ecological Communities

[Resource Information]

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

Name	Status	Type of Presence
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Fish		
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat likely to occur within area
Litoria castanea Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
Insects		
Synemon plana Golden Sun Moth [25234]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		

Name	Status	Type of Presence
Ammobium craspedioides Yass Daisy [20758]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus canobolensis Silver-leaf Candlebark, Mt Canobolas Candlebark [64896]	Endangered	Species or species habitat known to occur within area
Eucalyptus pulverulenta Silver-leaved Mountain Gum, Silver-leaved Gum [21537]	Vulnerable	Species or species habitat known to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Airservices Australia
Commonwealth Land - Australian Telecommunications Commission

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Forestry Management Areas in Bathurst (FMZ2)	NSW
Mount Canobolas	NSW

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-33.656487 148.973048,-33.429857 148.984034,-33.431003 149.041712,-33.503176 149.040339,-33.502031 149.155695,-33.631335 149.155695,-33.648485 149.155695,-33.656487 148.973048

Acknowledgements

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

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

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

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

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Department of Agriculture Water and the Environment

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Appendix G BAM Calculator Credit Report

G.1 Vegetation Credits

G.2 Paddock Tree Credits

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00016900/BAAS18074/19/00016901	Flyers Creek Wind Farm	10/06/2021
Assessor Name	Assessor Number	BAM Data version *
		45
Proponent Names	Report Created	BAM Case Status
	15/10/2021	Finalised
Assessment Revision	Assessment Type	Date Finalised
1	Part 5 Activities	15/10/2021

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion

BAM Biodiversity Credit Report (Like for like)

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion

Species

Nil

Additional Information for Approval

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

BAM Biodiversity Credit Report (Like for like)

Name

No Changes

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	Not a TEC	0.5	0	8	8
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	2.0	68	0	68
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.5	0	0	0
268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion	Not a TEC	4.4	0	49	49



BAM Biodiversity Credit Report (Like for like)

277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	23.0	0	339	339
278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.5	0	22	22
766-Carex sedgeland of the slopes and tablelands	Not a TEC	0.2	0	3	3

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

Like-for-like credit retirement options						
Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region	
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's:	-	266_Poor_Condition	Yes	0	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	



BAM Biodiversity Credit Report (Like for like)

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

268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Western Slopes Grassy Woodlands This includes PCT's: 201, 202, 266, 267, 268, 272, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 301, 316, 326, 337, 347, 383, 421, 426, 433, 434, 437, 441, 444, 461, 483, 509, 516, 544, 589, 590, 593, 599, 847, 955, 1303, 1304, 1315, 1329, 1383, 1401, 1609, 1693, 1695	Western Slopes Grassy Woodlands >=50% and <70%	268_Derived_Grassland	No	0	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Western Slopes Grassy Woodlands This includes PCT's: 201, 202, 266, 267, 268, 272, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 301, 316, 326, 337, 347, 383, 421, 426, 433, 434, 437, 441, 444, 461, 483, 509, 516, 544, 589, 590, 593, 599, 847, 955, 1303, 1304, 1315, 1329, 1383, 1401, 1609, 1693, 1695	Western Slopes Grassy Woodlands >=50% and <70%	268_Moderate_Condition	No		49 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New	-	277_DerivedGrassland_mod	No	3	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

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

	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099,</p>		277_DerivedGrassland_low	No		<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon.</p> <p>or</p> <p>Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Like for like)

	<p>1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511,</p>		<p>277_moderate</p>	<p>No</p>	<p>335 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>

BAM Biodiversity Credit Report (Like for like)

	<p>528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298,</p>	-	277_Planted	No	1	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>

BAM Biodiversity Credit Report (Like for like)

	<p>302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>				
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin,</p>		<p>277_Planted_Roadsid</p>	<p>No</p>	<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

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

278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654,	-	278_Moderate_Condition	No	22	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698					
766-Carex sedgeland of the slopes and tablelands	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Montane Bogs and Fens This includes PCT's: 765, 766, 1229, 1256	Montane Bogs and Fens >=70% and <90%	766_Moderate_Condition	No	3	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Grassy Woodlands This includes PCT's: 303, 312, 654, 680, 705, 1330, 1334, 1501	Southern Tableland Grassy Woodlands > =90%	1330_Derived_Grassland	No		8 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.						
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion												
Like-for-like credit retirement options												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Name of offset trading group</th> <th style="width: 20%;">Trading group</th> <th style="width: 15%;">Zone</th> <th style="width: 10%;">HBT</th> <th style="width: 10%;">Credits</th> <th style="width: 15%;">IBRA region</th> </tr> </thead> </table>							Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 30%;"> White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, </td> <td style="width: 20%;">-</td> <td style="width: 15%;">1330_Poor_Con diiton</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">17</td> <td style="width: 15%;"> Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site. </td> </tr> </tbody> </table>							White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	1330_Poor_Con diiton	Yes	17	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	1330_Poor_Con diiton	Yes	17	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.							

BAM Biodiversity Credit Report (Like for like)

	<p>282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt</p>		<p>1330_Moderate _Condition</p>	<p>Yes</p>	<p>51</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

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

Assessment Id

00016900/BAAS18074/19/00016901

Proposal Name

Flyers Creek Wind Farm

BAM Biodiversity Credit Report (Like for like)

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	1330_Derived_Grassland, 1330_Poor_Condiiton, 1330_Moderate_Condition, 268_Moderate_Condition, 278_Moderate_Condition, 277_moderate	11.1	204.00
Polytelis swainsonii / Superb Parrot	1330_Moderate_Condition, 268_Moderate_Condition, 278_Moderate_Condition, 277_moderate	22.5	348.00

Credit Retirement Options

Like-for-like credit retirement options

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

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00016900/BAAS18074/19/00016901	Flyers Creek Wind Farm	10/06/2021
Assessor Name	Report Created	BAM Data version *
	19/10/2021	45
Assessor Number	BAM Case Status	Date Finalised
	Finalised	19/10/2021
Assessment Revision	Assessment Type	
1	Part 5 Activities	

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

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

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

7	277_DerivedGrassland Good	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	42.6	42.6	0.1	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	3
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BAM Credit Summary Report

8	277_DerivedGrassland_low	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	12.8	12.8	4	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	0
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9	277_moderate	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	28.5	28.5	18.8	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	335
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BAM Credit Summary Report

10	277_Planted	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	47.2	47.2	0.04	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	1
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11	277_Planted_Roadside	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	5.7	5.7	0.04	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	0
										Subtotal	339
Carex sedgeland of the slopes and tablelands											
13	766_Moderate_Condition	Not a TEC	33.8	33.8	0.17			High Sensitivity to Potential Gain	2.00		3
										Subtotal	3

Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion											
12	278_Moderate_Condition	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	69.7	69.7	0.51	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	22
										Subtotal	22
White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion											
5	268_Derived_Grassland	Not a TEC	4.9	4.9	2.5			High Sensitivity to Potential Gain	1.75		0
6	268_Moderate_Condition	Not a TEC	58.8	58.8	1.9			High Sensitivity to Potential Gain	1.75		49
										Subtotal	49

White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion											
4	266_Poor_Condition	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	12.3	12.3	0.52	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	0
										Subtotal	0
Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion											
1	1330_Derived_Grassland	Not a TEC	29.6	29.6	0.45			High Sensitivity to Potential Gain	2.50		8
										Subtotal	8

Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion

2	1330_Poor_ Condiiton	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	39	39.0	0.69	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	17
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3	1330_Moderate_Condition	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	64.8	64.8	1.3	Critically Endangered Ecological Community	Critically Endangered	High Sensitivity to Potential Gain	2.50	TRUE	51
										Subtotal	68
										Total	489

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAI	Species credits
<i>Petaurus norfolcensis</i> / Squirrel Glider (Fauna)								
1330_Derived_Grassland	29.6	29.6	0.45	Vulnerable	Not Listed	2	False	7
1330_Poor_Condition	39.0	39.0	0.69	Vulnerable	Not Listed	2	False	13

BAM Credit Summary Report

1330_Moderate_Condition	64.8	64.8	1.3	Vulnerable	Not Listed	2	False	41
268_Moderate_Condition	58.8	58.8	1.9	Vulnerable	Not Listed	2	False	56
278_Moderate_Condition	69.7	69.7	0.51	Vulnerable	Not Listed	2	False	18
277_moderate	28.5	28.5	6.3	Vulnerable	Not Listed	2	False	90
							Subtotal	225
<i>Polytelis swainsonii / Superb Parrot (Fauna)</i>								
1330_Moderate_Condition	64.8	64.8	1.3	Vulnerable	Vulnerable	2	False	41
268_Moderate_Condition	58.8	58.8	1.9	Vulnerable	Vulnerable	2	False	56
278_Moderate_Condition	69.7	69.7	0.51	Vulnerable	Vulnerable	2	False	18
277_moderate	28.5	28.5	18.8	Vulnerable	Vulnerable	2	False	268
							Subtotal	383

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00016900/BAAS18074/21/00027888	Flyers Creek Offsets	10/06/2021
Assessor Name	Report Created	BAM Data version *
	15/10/2021	45
Assessor Number	BAM Case Status	Date Finalised
	Finalised	27/09/2021
Assessment Revision	Assessment Type	BOS entry trigger
0	Scattered Trees	Major Project

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

Scattered Trees Credit Requirement

Class	Contains hollows	Number of trees	Ecosystem credits
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion			
2	False	3.0	2
2	False	3.0	2
3	False	1.0	1
3	False	14.0	11
3	False	1.0	1
3	True	9.0	9
3	True	2.0	2
3	True	1.0	1
3	True	2.0	2
3	False	3.0	2
			33
268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion			
3	False	1.0	1
3	False	1.0	1
3	False	1.0	1
3	True	3.0	3

BAM Credit Summary Report

3	False	1.0	1
			7
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion			
3	False	1.0	1
3	True	1.0	1
2	False	1.0	1
3	False	4.0	3
			6
			46

Species credits for threatened species

The scattered tree module is not applicable. This species must be assessed using chapter 5 of the BAM and BAM-C development module

<p><i>Lathamus discolor</i> Swift Parrot</p>

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00016900/BAAS18074/19/00016901	Flyers Creek Wind Farm	10/06/2021
Assessor Name	Assessor Number	BAM Data version *
		45
Proponent Names	Report Created	BAM Case Status
	15/10/2021	Finalised
Assessment Revision	Assessment Type	Date Finalised
1	Part 5 Activities	15/10/2021

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

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion

BAM Biodiversity Credit Report (Like for like)

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	Critically Endangered Ecological Community	278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion

Species

Nil

Additional Information for Approval

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

BAM Biodiversity Credit Report (Like for like)

Name

No Changes

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	Not a TEC	0.5	0	8	8
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	2.0	68	0	68
266-White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.5	0	0	0
268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion	Not a TEC	4.4	0	49	49

BAM Biodiversity Credit Report (Like for like)

277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	23.0	0	339	339
278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	0.5	0	22	22
766-Carex sedgeland of the slopes and tablelands	Not a TEC	0.2	0	3	3

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

Like-for-like credit retirement options						
Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region	
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's:	-	266_Poor_Condition	Yes	0	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.	



BAM Biodiversity Credit Report (Like for like)

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

268-White Box - Blakely's Red Gum - Long-leaved Box - Nortons Box - Red Stringybark grass-shrub woodland on shallow soils on hills in the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Western Slopes Grassy Woodlands This includes PCT's: 201, 202, 266, 267, 268, 272, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 301, 316, 326, 337, 347, 383, 421, 426, 433, 434, 437, 441, 444, 461, 483, 509, 516, 544, 589, 590, 593, 599, 847, 955, 1303, 1304, 1315, 1329, 1383, 1401, 1609, 1693, 1695	Western Slopes Grassy Woodlands >=50% and <70%	268_Derived_Grassland	No	0	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	Western Slopes Grassy Woodlands This includes PCT's: 201, 202, 266, 267, 268, 272, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 301, 316, 326, 337, 347, 383, 421, 426, 433, 434, 437, 441, 444, 461, 483, 509, 516, 544, 589, 590, 593, 599, 847, 955, 1303, 1304, 1315, 1329, 1383, 1401, 1609, 1693, 1695	Western Slopes Grassy Woodlands >=50% and <70%	268_Moderate_Condition	No		49 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
277-Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New	-	277_DerivedGrassland_mod	No	3	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

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

	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla</p> <p>This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099,</p>		277_DerivedGrassland_low	No		<p>0 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon.</p> <p>or</p> <p>Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>
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BAM Biodiversity Credit Report (Like for like)

	<p>1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511,</p>		277_moderate	No	335	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>

BAM Biodiversity Credit Report (Like for like)

	<p>528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298,</p>	-	277_Planted	No	1	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

<p>302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin,</p>	<p>-</p>	<p>277_Planted_Roadsid</p>	<p>No</p>	<p>0</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

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

278-Riparian Blakely's Red Gum - box - shrub - sedge - grass tall open forest of the central NSW South Western Slopes Bioregion	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654,	-	278_Moderate_Condition	No	22	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM Biodiversity Credit Report (Like for like)

	702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698					
766-Carex sedgeland of the slopes and tablelands	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Montane Bogs and Fens This includes PCT's: 765, 766, 1229, 1256	Montane Bogs and Fens >=70% and <90%	766_Moderate_Condition	No	3	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region

BAM Biodiversity Credit Report (Like for like)

	Southern Tableland Grassy Woodlands This includes PCT's: 303, 312, 654, 680, 705, 1330, 1334, 1501	Southern Tableland Grassy Woodlands > =90%	1330_Derived_ Grassland	No		8 Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
1330-Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion						
Like-for-like credit retirement options						
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281,	-	1330_Poor_Con diiton	Yes	17	Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

	<p>282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 840, 847, 851, 921, 1099, 1103, 1303, 1304, 1307, 1324, 1329, 1330, 1331, 1332, 1333, 1334, 1383, 1401, 1512, 1606, 1608, 1611, 1691, 1693, 1695, 1698</p>					
	<p>White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt</p>		<p>1330_Moderate _Condition</p>	<p>Yes</p>	<p>51</p>	<p>Orange, Bathurst, Crookwell, Hill End, Inland Slopes and Oberon. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.</p>



BAM Biodiversity Credit Report (Like for like)

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

Assessment Id

00016900/BAAS18074/19/00016901

Proposal Name

Flyers Creek Wind Farm

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BAM Biodiversity Credit Report (Like for like)

Species	Vegetation Zone/s	Area / Count	Credits
Petaurus norfolcensis / Squirrel Glider	1330_Derived_Grassland, 1330_Poor_Condiiton, 1330_Moderate_Condition, 268_Moderate_Condition, 278_Moderate_Condition, 277_moderate	11.1	204.00
Polytelis swainsonii / Superb Parrot	1330_Moderate_Condition, 268_Moderate_Condition, 278_Moderate_Condition, 277_moderate	22.5	348.00

Credit Retirement Options

Like-for-like credit retirement options

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