North Terrace Ecological and Bushfire Assessment

Interim report

Prepared for
North Terrace Developments Pty Ltd

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Contents

List of figures

List of tables

1 Background

Eco Logical Australia (ELA) undertook a preliminary assessment of the North Terrace study area to identify potential ecological and bushfire constraints to the subdivision of North Terrace for residential development.

ELA understands that Knight Frank on behalf of North Terrace Developments Pty Ltd are seeking support for the proposed rezoning of a portion of the lot comprising North Terrace which is owned by North Terrace Developments Pty Ltd to E4 (Environmental Living) from its current status as E2 (Environmental Conservation). The zoning of E4 would allow for the limited development of residential dwellings on a portion of the lot in accordance with the guidelines for E4 zoning under the Queanbeyan Local Environment Plan. Development is proposed on the lot up to a height of 670 m above sea level, with the remainder of the lot above this height to be retained as E2, and enhanced as part of the broader wildlife corridor that is represented by Mount Jerrabomberra and associated areas of connected vegetation.

1.1 Study area and local context

The study area is located to the south of Southbar Road, Queanbeyan on an undeveloped lot which forms part of the foothills of Mount Jerrabomberra. The study area is located to the west of an existing urban area (zoned E4 – Environmental living). The study area is currently zoned E2 (Environmental Conservation) under the Queanbeyan Local Environment Plan.

The majority of the adjoining land is protected as Mount Jerrabomberra Reserve. Mount Jerrabomberra is a locally significant landscape feature which rises to 779 m above sea level and is characterised by three distinct peaks. A map of the study area and its local context is provided in **Figure 1**.

1.2 Methodology

ELA undertook a desktop review of the following information:

- NSW Bionet records
- EPBC Protected Matters Search
- Atlas of Living Australia
- Search of OEH online database for existing vegetation mapping
- KMA, 2004, Preliminary Flora and Fauna Assessment, North Terrace, South Bar Road, City of Queanbeyan.
- Planning for People, 2004, Mount Jerrabomberra Plan of Management
- ELA, 2011, Curtis Estate Flora and Fauna Assessment.

Information for the lot and adjacent areas was relatively poor with few records of flora and fauna within the immediate region including Mount Jerrabomberra Reserve.

Figure 1: Study area

2 Preliminary ecological assessment

2.1 Vegetation communities

The vegetation within the study area and on adjacent land is characterised by dry sclerophyll forest communities dominated by *Eucalyptus macrorhyncha* (Red Stringybark) and *E. polyanthemos* (Red Box) with a shrubby mid story of *Kunzea ericoides* (KMA 2004). This vegetation does not form part of a threatened ecological community.

According to KMA (2004), the site has been historically disturbed and is traversed by a number of tracks and trails.

Based on the background information review, two threatened ecological communities occur within the local area. These are:

- White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland)
- Natural temperate Grassland of the Southern Tablelands of NSW and the ACT

Natural Temperate Grassland does not occur within the study area based on a review of the aerial imagery. In addition, based on previous studies undertaken for the site (KMA 2004) the site is considered highly unlikely to support Box-Gum Woodland as it lacks the characteristic species of that community.

2.2 Flora and fauna

A likelihood of occurrence assessment for flora and fauna listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was undertaken based on a review of the background information. The likelihood of occurrence assessment is presented in full in Appendix A (**Tables 2** and **3**).

The preliminary assessment has identified 19 fauna species and five flora species which have the potential to occur within the study area. The majority of the fauna species which have the potential to occur within the study area are highly mobile bird species, which are likely to utilise a range of resources across the landscape and would be unlikely to be restricted specifically to the study area. However, it is noted that the study area may provide foraging or breeding habitat for some of these species.

The background information review identified that the adjacent Mount Jerrabomberra Reserve is known to contain a number of rare, uncommon or threatened species including species listed under the TSC and EPBC Acts including:

- *Rutidosis leptorrhynchoides* (Button Wrinkle-Wort) – TSC and EPBC listed
- *Varanus rosenbergi* (Rosenberg's Monitor) – TSC Act listed.
- *Daphoenositta chrysoptera* (Varied Sittella) – TSC Act listed
- *Petroica boodang* (Scarlet Robin) – TSC Act listed
- *Leucochrysum albicans* var. *tricolor* (Hoary Sunray) –EPBC Act listed

The study area provides potential habitat for all of the above listed species.

The previous ecological assessment (KMA 2004) undertaken for the site identified the presence of *Leucochrysum albicans* within the study area. *Leucochrysum albicans* var. *tricolor* is a species which is listed as endangered under the EPBC Act. This species was listed under the EPBC Act in 2000, however, KMA (2004) did not identify that the species was of conservation significance. While the 2004 study did not identify

this record as of conservation significance, it is considered likely that the species recorded by KMA (2004) is the listed matter (*Leucochrysum albicans* var*. tricolor*) given the geographic location of the record and the presence of known populations of the species within other areas of similar vegetation in the locality(ELA 2011).

A map showing the distribution of threatened flora and fauna records within the area surrounding the study area is provided in **Figure 2**.

2.2.1 Limitations

This report was prepared based on a desktop assessment of the study area only. No site visit has been undertaken to inform the development of this report. As such, all assumptions and exclusions based on this assessment should be confirmed through a site inspection during the appropriate season to undertake surveys for threatened flora, fauna, ecological communities or their habitats.

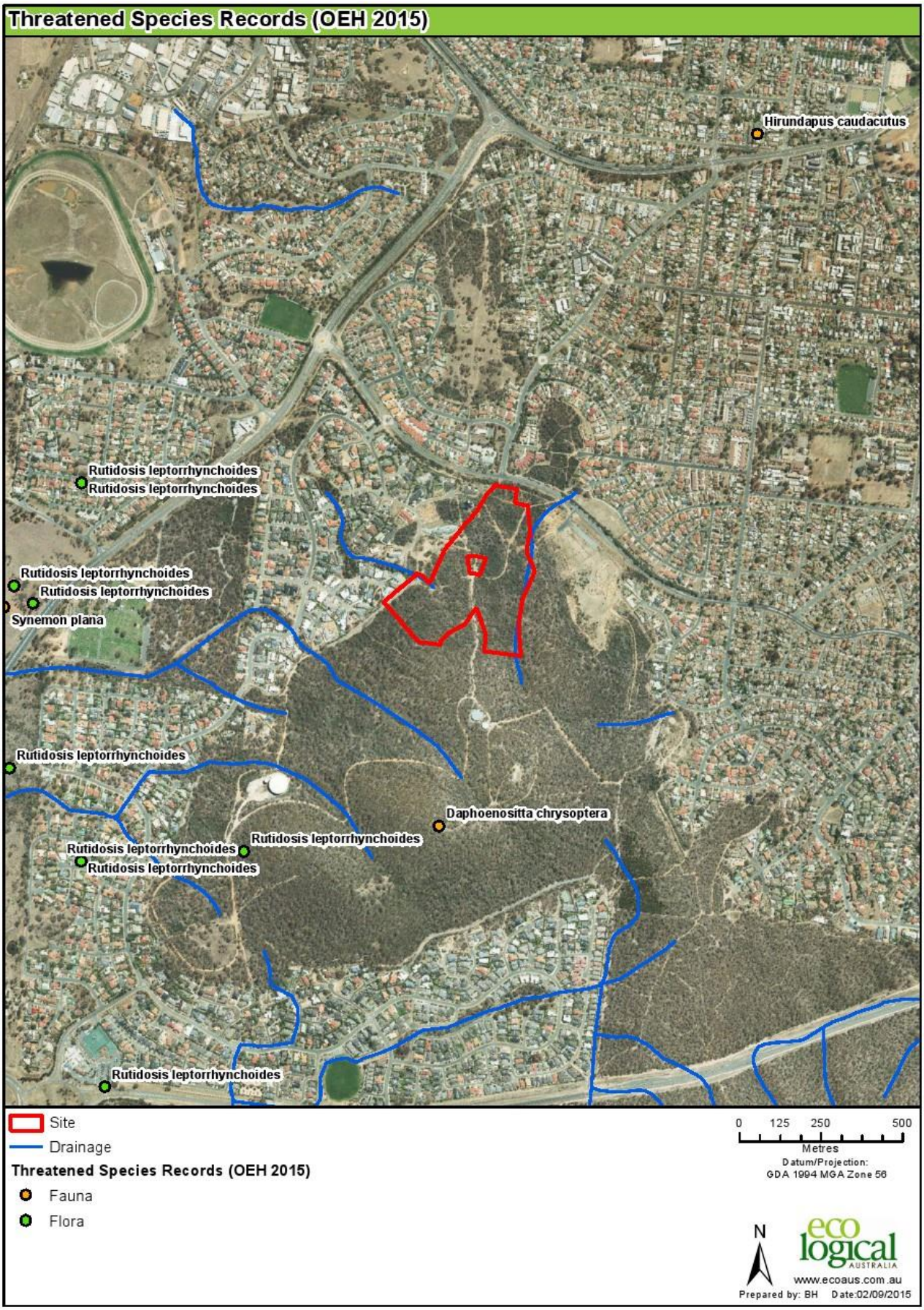

Figure 2: Threatened species records

3 Preliminary bushfire assessment

Any development application for subdivision on the subject land is required to be assessed under 100B of the *Rural Fires Act 1997* and requires compliance with the NSW Rural Fire Service document *Planning for Bush Fire Protection 2006* (PBP). PBP outlines bushfire protection measures that new development on bushfire prone land must address including asset protection zones, access requirements, water supply, and construction.

Bushfire is an important consideration for development of the subject land and compliance with PBP is required for a development application to be supported by Queanbeyan City Council and the NSW Rural Fire Service. This constraints advice is provided in accordance with PBP.

3.1 Bushfire hazard assessment

3.1.1 Vegetation

The predominant vegetation class has been determined within the subject land and for a distance of at least 140 m on adjoining land using desktop analysis and a review of background information.

Vegetation within the site predominantly consists of disturbed vegetation and an assumption has been made that this will be removed as a result of development. The bushfire hazard, therefore, occurs on land adjoining the proposed development area.

As outlined in Section 2 vegetation on adjacent land is characterised by dry sclerophyll forest communities dominated by *Eucalyptus macrorhyncha* and *E. polyanthemos* with a shrubby mid story of *Kunzea ericoides* (KMA 2004). Based on this assessment and a review of aerial photography, the vegetation is considered to be 'forest' in accordance with PBP.

3.1.2 Slope

The slope that would most significantly influence fire behaviour was determined over a distance of 100 m within the vegetated areas. This assessment was made by analysing 2 m contour intervals. Slopes vary within the vegetated areas with the steepest slopes within proximity of water courses and Mount Jerrabomberra. Slopes within the subject land range from 0-10°.

3.1.3 Asset protection zones (APZ)

Table A2.4 of PBP has been used to determine the width of required Asset Protection Zone (APZ) for the subject land. The APZ requirements of PBP vary across the site and are outlined in **Table 1** and shown in **Figure 3**.

These APZ are based on an assessment of the vegetation and slope. APZ are shown external to the proposed development (**Figure 3**). If APZ are located outside the boundaries of the proposed development, a mechanism to ensure ongoing maintenance in perpetuity will need to be demonstrated (e.g. easement, etc.).

3.1.4 Construction standards

The building construction standard is based on the determination of the Bushfire Attack Level (BAL) in accordance with Method 1 of *Australian Standard AS 3959-2009 'Construction of buildings in bushfire-prone areas'* (Standards Australia 2009). The BAL is based on the identified vegetation type, effective slope, and APZ managed separation distance between the development and the bushfire hazard.

Using AS3959, separation distances (APZ) have also been identified in BAL-29 construction.

Table 1: Threat assessment and asset protection zones

Direction	Slope[1]	Vegetation[2]	PBP required APZ[3]	APZ for BAL-29[4]
North east	>0-5° downslope	Forest	25 m	32 m
East	>5-10° downslope	Forest	35 m	39 m
South	Upslope	Forest	20 m	25 m
All other directions	Managed land			

[1] Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

[2] Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

[3] Assessment according to PBP for SFPP.

[4] Assessment according to AS3959.

3.1.5 Access and utility requirements

PBP requires an access design that enables safe evacuation away from an area whilst facilitating adequate emergency and operational response to the area requiring protection. The following sections present the bushfire planning requirements for access in bushfire prone land.

Perimeter roads

Depending on the bushfire risk, all bushland interface areas containing an APZ for a significant bushfire hazard should feature a perimeter public road within the APZ. The design details (PBP acceptable solutions) of public perimeter roads listed within Section 4.1.3 of PBP.

3.1.6 Water supply and other utilities

Water supply and hydrants

If future lots are to be serviced by reticulated water infrastructure suitable for fire fighting purposes the furthest point from any future dwellings to a hydrant is to be less than 90 m (with a tanker parked in-line) in accordance with *AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning* (Standards Australia 2005). The reticulated water supply is to comply with the following acceptable solutions within Section 4.1.3 of PBP:

- Reticulated water supply to use a ring main system for areas with perimeter roads
- Fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005
- Hydrants are not located within any road carriageway
- All above ground water and gas service pipes external to the building are metal, including and up to any taps
- The PBP provisions of parking on public roads are met.

Electrical and gas supplies

In accordance with PBP, electricity should be underground wherever practicable. Where overhead electrical transmission lines are installed:

- Lines are to be installed with short pole spacing, unless crossing gullies
- No part of a tree should be closer to a powerline than the distance specified in *Vegetation Safety Clearances* issued by Energy Australia (NS179, April 2002).

Any gas services are to be installed and maintained in accordance with *AS/NZS 1596-2008 The storage and handling of LP gas* (Standards Australia 2008).

3.2 Limitations

This report was prepared based on a desktop assessment of the study area only. No site visit has been undertaken to inform the development of this report. As such, all assumptions and exclusions based on this assessment should be confirmed through a site inspection prior to the finalisation of a lot layout and development application.

It is important to note that the APZ calculations quoted in this assessment are indicative only and have been determined at a landscape scale. This level of detail is suitable for a rezoning assessment where the aim is to demonstrate whether a parcel of land can accommodate the bushfire hazard, the expected APZ and future development. The final APZ dimensions for any future subdivision or development depends on the accuracy of a slope assessment undertaken at a site-specific level. The APZ dimensions quoted in this assessment should not be relied on to approve a future subdivision; they may be used as a guide only.

It has also been assumed that no Special Fire Protection Purpose developments are proposed (e.g. schools, child care centre, tourist accommodation, and retirement village). If any of these development types are proposed, then increased APZ will be required.

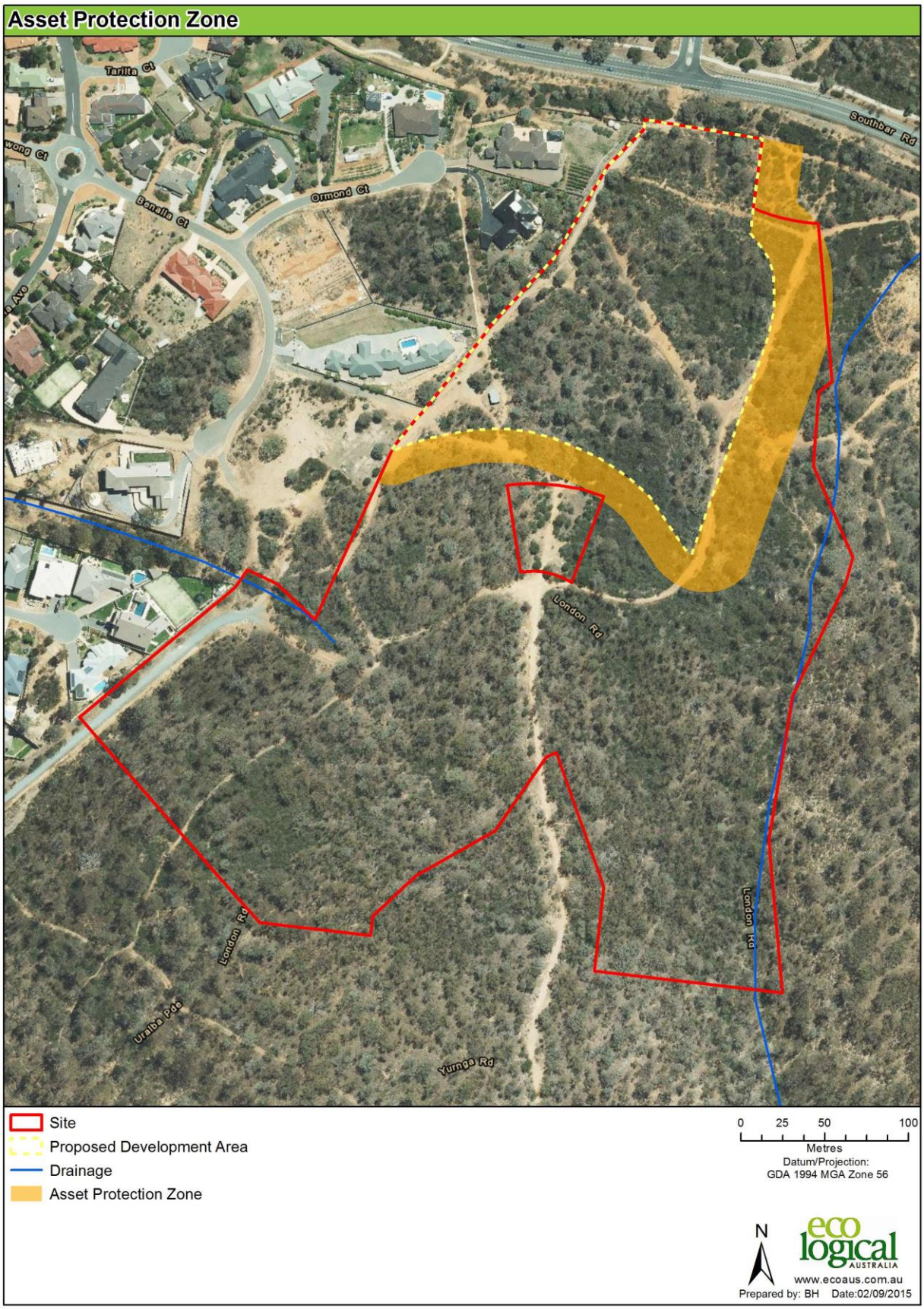

Figure 3: Bushfire asset protection zone - external option

4 Next steps

4.1 Site survey and impact assessment

It is recommended that a site survey be undertaken by a suitably qualified ecologist and a suitably qualified bushfire consultant to validate the information contained within this report and identify the presence of potential development constraints within the study area.

Should the site inspection identify the presence of any species listed under the TSC Act or the EPBC Act an assessment of the potential impact of the development on the protected matter should be undertaken once a detailed design of the proposed subdivision has been drafted. It is recommended that the detailed draft utilise the mitigation and management measures presented in the following section to minimise impacts to any sensitive ecological values that the site contains.

If the proposed development has the potential to result in a significant impact to a Matter of National Environmental Significance listed under the EPBC Act, then a referral is required to be prepared and lodged with the Commonwealth Department of the Environment for assessment.

Similarly, should the site survey identify that species listed under the TSC Act have potential to occur within the development area, an Assessment of Significance (AoS) should be undertaken in accordance with Part 5A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The AoS sets out 7 factors, which when considered, allow proponents to undertake a qualitative analysis of the likely impacts of an action and to determine whether further assessment is required via a Species Impact Statement (SIS).

The site survey should also assess whether any of the land within the study area is likely to be classified as water front land under the Water Management Act, noting the proximity of a drainage line to the study area on the eastern side.

If the site inspection identifies slopes that differ to those determined by the desktop analysis of 2 m contours, then APZ may increase or decrease depending on the results. The results of any ecological impacts identified above may also have an impact on the provision of APZ.

4.2 Impact mitigation and management

ELA understands that Knight Frank are seeking to obtain support for a zoning of E4 (Environmental Living) across the study area, with the balance of the lot to be retained as E2.

As the study area has the potential to contain sensitive ecological values, and in keeping with a zoning of E4, a series of mitigation and management measures have been proposed to assist in the designing of the subdivision to avoid, mitigate and manage potential impacts to threatened flora, threatened fauna and the environment of Mount Jerrabomberra.

The following measures are proposed:

- Avoid impacts to populations of threatened flora species by placing proposed building envelopes, access tracks, APZs and any other infrastructure in a manner which does not impact on any known individuals or vegetation immediately surrounding the known population.
- Avoid impacts to habitat for the *Varanus rosenbergi* (Rosenberg's Goanna) by placing proposed building envelopes, access tracks, APZs and any other infrastructure in a

manner which does not impact on any known termite mounds or their immediate surrounding vegetation.

- Retain any hollow bearing trees and their immediate surrounding vegetation which occur within the study area within the development.
- Retain the connectivity of vegetation within the study area as much as practicable by clustering development.
- Fence areas of remnant vegetation to be retained.
- Place a restriction on title for lots within the subdivision which prohibits the keeping of cats and the use of potentially invasive plant species in front and back yards.
- Retain the balance of the lot within either a community title arrangement or through a Voluntary Conservation Agreement with clear management aims and sufficient funding to achieve the aims.
- Consider implementing a walking track which connects to existing tracks (if appropriate, and in consultation with Queanbeyan City Council and the Office of Environment and Heritage) to minimise the potential for the establishment of desire lines and spread of impacts throughout areas of retained vegetation resulting from increased use of the area for recreation.
- Develop a Construction Environmental Management Plan for the construction phase of the project which highlights the ecological value of the surrounding vegetation and includes provisions to:
    - limit the likelihood of establishing new populations of weed species within the local area,
    - limit waste production and ensure appropriate disposal in a waste facility
    - prohibit storage of soil, equipment, facilities, or vehicles within areas of remnant vegetation
- Cluster development as much as possible to minimise the area required for the establishment of APZs.
- Provide for perimeter roads within any APZ required for bushland interface areas.

Appendix A Likelihood of occurrence assessment

Based on the preliminary background information review, and professional knowledge of the species examined, an assessment of the likelihood of flora and fauna species occurring within the development area has been undertaken.

Table 2 Likelihood of occurrence - flora

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Caladenia tessellata	Thick Lip Spider Orchid	E	V	Currently known from two disjunct areas; one population near Braidwood on the Southern Tablelands and three populations in the Wyong area on the Central Coast.	Grassy sclerophyll woodland on clay loam or sandy soils, or low woodland with stony soil.	Unlikely
Lepidium hyssopifolium	Aromatic Peppercress	E	E	In NSW, occurs near Bathurst, Bungendore, and Crookwell. May also be extant near Armidale.	Woodland with a grassy understorey and grassland.	Unlikely
Leucochrysum albicans var. *tricolor*	Hoary Sunray		E	In NSW it occurs on the Southern Tablelands and adjacent areas in an area roughly bounded by Albury, Bega and Goulburn.	Grassland, woodland and forest, generally on relatively heavy soils.	Likely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Pomaderris pallida	Pale Pomaderris	V	V	In NSW, recorded from near Kydra Trig (north-west of Nimmitabel), Tinderry Nature Reserve, the Queanbeyan River (near Queanbeyan), the Shoalhaven River (between Bungonia and Warri), the Murrumbidgee River west of the ACT and the Byadbo area in Kosciuszko National Park.	Shrub communities surrounded by *Eucalyptus mannifera* (Brittle Gum) and *E. macrorhyncha* (Red Stringybark) or *Callitris* woodland.	Potential
Prasophyllum petilum	Tarengo Leek Orchid	E	E	Four sites in NSW: at Boorowa, Captains Flat, Ilford and Delegate. Also experimentally introduced at Bowning Cemetery NSW.	Natural Temperate Grassland, grassy woodland, and Box-Gum woodland.	No
Rutidosis leptorrhynchoides	Button Wrinklewort	E	E	In NSW, populations occur at Goulburn, the Canberra - Queanbeyan area and at Michelago.	Box-Gum Woodland, secondary derived grassland or in Natural Temperate Grassland, usually on shallow, stony red-brown clay loams.	Potential

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Swainsona recta	Small Purple-pea	E	E	Queanbeyan and Wellington-Mudgee areas. Historically also recorded at Carcoar, Culcairn and Wagga Wagga.	Grassland, open woodland and open forests dominated by *Eucalyptus blakelyi* (Blakely's Red Gum), *E. melliodora* (Yellow Box), *E. rubida* (Candlebark Gum) and *E. goniocalyx* (Long-leaf Box).	Potential
Swainsona sericea	Silky Swainson-pea	V		In NSW, recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. Also an isolated record from the far north-west of NSW.	Natural Temperate Grassland and *Eucalyptus pauciflora* (Snow Gum) Woodland on the Monaro, and Box-Gum Woodland in the Southern Tablelands and South West Slopes.	Potential
Thesium australe	Austral Toadflax	V	V	In eastern NSW it is found in very small populations scattered along the coast, and from the Northern to Southern Tablelands.	Grassland on coastal headlands or grassland and grassy woodland away from the coast.	Unlikely

Table 3 Likelihood of occurrence - Fauna

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Anthochaera phrygia	Regent Honeyeater	E	E	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions.	Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of *Casuarina cunninghamiana (*River Oak).	Potential
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V	In NSW, only known from the Central and Southern Tablelands, and the South Western Slopes.	Sloping, open woodland areas with predominantly native grassy groundlayers, rocky outcrops or scattered, partially-buried rocks.	Potential
Apus pacificus	Fork-tailed Swift		C,J,K, Mar	Recorded in all regions of NSW.	Riparian woodland., swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	Likely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Ardea alba	Great Egret		C, J, Mar	Widespread, occurring across all states/territories. Also a vagrant on Lord Howe and Norfolk Island.	Swamps and marshes, grasslands, margins of rivers and lakes, salt pans, estuarine mudflats and other wetland habitats.	Unlikely
Ardea ibis	Cattle Egret		C,J, Mar	Widespread and common across NSW.	Grasslands, wooded lands and terrestrial wetlands.	Unlikely
Botaurus poiciloptilus	Australasian Bittern	E	E	Found over most of NSW except for the far north-west.	Permanent freshwater wetlands with tall, dense vegetation, particularly *Typha* spp. (bullrushes) and *Eleocharis* spp. (spikerushes).	Unlikely
Callocephalon fimbriatum	Gang-gang Cockatoo	V		In NSW, distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. Isolated records known from as far north as Coffs Harbour and as far west as Mudgee.	Tall mountain forests and woodlands in summer; in winter, may occur at lower altitudes in open eucalypt forests and woodlands, and urban areas.	Likely
Chthonicola sagittata	Speckled Warbler	V		From south-eastern Qld, the eastern half of NSW and into Victoria, as far west as the Grampians, mostly on hills and tablelands of the Great Dividing Range and rarely on coast.	*Eucalyptus*-dominated communities with a grassy understorey and sparse shrub layer, often on rocky ridges or in gullies.	Likely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Circus assimilis	Spotted Harrier	V		Found throughout the Australian mainland, except in densely forested or wooded habitats, and rarely in Tasmania.	Grassy open woodland, inland riparian woodland, grassland, shrub steppe, agricultural land and edges of inland wetlands.	Potential
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V		From eastern through central NSW, west to Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell.	Eucalypt woodlands and dry open forest.	Likely
Daphoenositta chrysoptera	Varied Sittella	V		Distribution in NSW is nearly continuous from the coast to the far west.	Inhabits eucalypt forests and woodlands, mallee and *Acacia* woodland.	Likely
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld.	Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	Unlikely
Delma impar	Striped Legless Lizard	V	V	In NSW, occurs in the Southern Tablelands, the South West Slopes and possibly on the Riverina.	Natural Temperate Grassland, secondary and modified grassland, open Box-Gum Woodland.	No
Epthianura albifrons	White-fronted Chat	V		Occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western	Saltmarsh vegetation, open grasslands and sometimes low shrubs bordering wetland areas.	Unlikely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
				part of the state.		
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V		South-east coast and ranges of Australia, from southern Qld to Victoria and Tasmania. In NSW, records extend to the western slopes of the Great Dividing Range.	Tall (greater than 20 m) moist habitats.	Unlikely
Gallinago hardwickii	Latham's Snipe		C,J,R, Mar	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW.	Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	No
Grantiella picta	Painted Honeyeater	V		Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas.	Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	Unlikely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Haliaeetus leucogaster	White-bellied Sea-Eagle		C	Distributed along the coastline of mainland Australia and Tasmania, extending inland along some of the larger waterways, especially in eastern Australia.	Freshwater swamps, rivers, lakes, reservoirs, billabongs, saltmarsh and sewage ponds and coastal waters. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest and urban areas.	Potential
Hieraaetus morphnoides	Little Eagle	V		Throughout the Australian mainland, with the exception of the most densely-forested parts of the Dividing Range escarpment.	Open eucalypt forest, woodland or open woodland, including sheoak or *Acacia* woodlands and riparian woodlands of interior NSW.	Potential
Hirundapus caudacutus	White-throated Needletail		C,J,K	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide.	Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	Likely
Lathamus discolor	Swift Parrot	E	E	Migrates from Tasmania to mainland in Autumn-Winter. In NSW, the species mostly occurs on the coast and south west slopes.	Box-ironbark forests and woodlands.	Unlikely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Limosa lapponica	Bar-tailed Godwit		C,J,K	Summer migrant to Australia. Widespread along the coast of NSW, including the offshore islands. Also numerous scattered inland records.	Intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons, bays, seagrass beds, saltmarsh, sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. Rarely inland wetlands, paddocks and airstrips.	No
Litoria aurea	Green and Golden Bell Frog	E	V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region.	Marshes, dams and stream-sides, particularly those containing Typha spp. (bullrushes) or *Eleocharis* spp. (spikerushes). Some populations occur in highly disturbed areas.	No
Litoria castanea	Yellow-spotted Tree frog	E	E	A single known population occurs on the Southern Tablelands of NSW.	Large permanent ponds or slow-flowing streams with plenty of emergent vegetation such as bulrushes.	No

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Litoria raniformis	Southern Bell Frog	E	V	In NSW, only known to exist in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few recent unconfirmed records have also been made in the Murray Irrigation Area.	Permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. Also found in irrigated rice crops.	No
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V		Found throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies *picata.*	Open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas.	Potential
Merops ornatus	Rainbow Bee-eater		J	Distributed across much of mainland Australia, including NSW.	Open forests and woodlands, shrublands, farmland, areas of human habitation, inland and coastal sand dune systems, heathland, sedgeland, vine forest and vine thicket.	Likely
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	V		In NSW it occurs on both sides of the Great Dividing Range, from the coast inland to Moree, Dubbo and Wagga Wagga.	Rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland.	Unlikely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Monarcha melanopsis	Black-faced Monarch		Bonn, Mar	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland.	Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.	No
Myiagra cyanoleuca	Satin Flycatcher		Bonn, Mar	In NSW, widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains.	Eucalypt-dominated forests, especially near wetlands, watercourses, and heavily-vegetated gullies.	Likely
Myotis macropus	Southern Myotis	V		In NSW, found in the coastal band. It is rarely found more than 100 km inland, except along major rivers.	Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20m.	Unlikely
Petroica boodang	Scarlet Robin	V		In NSW, it occurs from the coast to the inland slopes.	Dry eucalypt forests and woodlands, and occasionally in mallee, wet forest, wetlands and tea-tree swamps.	Likely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Petroica phoenicea	Flame Robin	V		In NSW, breeds in upland areas, and in winter many birds move to the inland slopes and plains, or occasionally to coastal areas. Likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands.	Breeds in upland tall moist eucalypt forests and woodlands. In winter uses dry forests, open woodlands, heathlands, pastures and native grasslands. Occasionally occurs in temperate rainforest, herbfields, heathlands, shrublands and sedgelands at high altitudes.	Potential
Phascolarctos cinereus	Koala	V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands.	Eucalypt woodlands and forests.	Unlikely
Polytelis swainsonii	Superb Parrot	V	V	In NSW, occurs on inland slopes of the Great Divide and on adjacent plains, especially along the major river-systems.	Box-gum woodland, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	Potential
Rhipidura rufifrons	Rufous Fantail		Bonn, Mar	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great	Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and	Unlikely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
				Divide in NSW.	woodlands.	
Rostratula australis	Australian Painted Snipe	E	E, Mar	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys.	Swamps, dams and nearby marshy areas.	No
Stagonopleura guttata	Diamond Firetail	V		Widely distributed in NSW, mainly recorded in the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina, and less commonly found in coastal areas and further inland.	Grassy eucalypt woodlands, open forest, mallee, Natural Temperate Grassland, secondary derived grassland, riparian areas and lightly wooded farmland.	Likely

Scientific Name	Common Name	TSC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
Tympanocryptis pinguicolla	Grassland Earless Dragon	E	E	The only populations now known are in the ACT and adjacent NSW at Queanbeyan, and on the Monaro Basalt Plains between Cooma and south-west of Nimmitabel.	Restricted to a small number of Natural Temperate Grassland sites dominated by *Notodanthonia* spp. (wallaby grasses), *Austrostipa* spp. (spear grasses), Poa Tussock *(Poa sieberiana), Bothriochloa macra* (Red Grass), and occasionally *Themeda australis* (Kangaroo Grass).	No
Varanus rosenbergi	Rosenberg's Goanna	V		In NSW, found on the Sydney Sandstone in Wollemi National Park, in the Goulburn and ACT regions and near Cooma in the south. Also recorded from the South West Slopes near Khancoban and Tooma River.	Heath, open forest and woodland.	Likely

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