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*Submitted via email:*  
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RE: Ecological Constraints Assessment Letter Report, 105-119 Bong Bong Rd  
(Lot 115 // DP 1067955), Mittagong, NSW.

Dear Scott,

This letter has been prepared to outline the methods and results of an Ecological Constraints Assessment (ECA) prepared for 105-119 Bong Bong Road (Lot 115 // DP 1067955), Mittagong (the 'study area'; **Figure 1**). The study area is located approximately 2 km east of the main centre of Mittagong and south of the recently developed Renwick Estate. This ECA has been prepared to identify the ecological values present within the study area and to identify potential constraints for a proposed subdivision of the study area. Specifically, this ECA has been prepared to consider threatened species, populations and ecological communities listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW *Biodiversity Conservation Act 2016* (BC Act).

The proposed sub-division is to be located in the western portion of the study area, west of the central drainage line (**Figure 1**).

## Methods

### *Desktop review*

A literature review and database review were undertaken for the study area which included the following sources:

- BioNet Atlas of NSW Wildlife (OEH 2018)
- Protected matters Search Tool (DotEE 2018a)
- Vegetation mapping (Tozer et al 2010, Local Land Services 2014)
- SIX Maps (Land and Property Information 2018)
- Weeds (Wingecarribee Shire Council 2018, DotEE 2018b)

Threatened species, populations and migratory species recorded during the literature and database review were consolidated and their likelihood of occurrence was considered by:

- review of available habitat within the study area and surrounding area

- review of the scientific literature pertaining to each species and population
- applying expert knowledge of each species

The potential for each threatened species, population and/or migratory species to occur was then considered. Following field surveys and review of available habitat within the subject site and study area, the potential for species to use the subject site and be affected directly or indirectly by the proposed action were considered as either:

- “Recent record” = species has been recorded in the study area within the past 5 years
- “High” = species has previously been recorded in the study area (>5 years) or in proximity (for mobile species), and/or habitat is present that is likely to be used by a local population
- “Moderate” = suitable habitat for a species is present onsite but no evidence of a species detected and relatively high number of recent records (5-20 years) in the locality or species is highly mobile
- “Low” = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively low number of recent records in the locality
- “Not present” – suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the study area.

### *Site inspection*

A site inspection of the study area was undertaken by Elizabeth Norris (Senior Botanist/Ecologist) on 6 November 2018, over approximately 8 hours. The purpose of this site inspection was to validate vegetation community mapping, assess the structure and condition of vegetation in the study area, identify and rank the ecological values and constraints on site and determine if these values and constraints would be impacted by the proposed works. Additionally, fauna habitat features (i.e. tree hollows, stags, decorticated bark, mature / old growth trees, winter-flowering eucalypts) and indirect signs of fauna use (i.e. scats, owl pellets, fur, bones, tracks, bark scratches, foliage chew marks and chewed capsules) were searched for and recorded where observed.

## **Results**

### *Site details*

The study area is located at 105-119 Bong Bong Road, Mittagong (**Figure 2**).

The majority of the study area is zoned RU2 – Rural Landscape with the eastern portion zoned E3 - Environmental Management (NSW Planning Portal 2018). Under the current planning controls, the minimum lot size for the study area is 40 ha. Lands to the north and west are zoned R2 – Low Density Residential and R5 – Large Lot Residential, land to the south is zoned RU2 – Rural landscape, whilst lands to the east are zoned E3 - Environmental Management.

The study area occurs within the Lower Mittagong soil landscape group on the Wianamatta Group Shales with no outcropping rock (OEH 2018). The vegetation has been historically cleared for cattle grazing.

### Vegetation communities – previous mapping

One vegetation type was mapped within the study area by Tozer et al (2010), namely Southern Highlands Shale Woodland (p 268) (**Figure 3**). This community has been mapped in the south east corner of the study area, with additional areas mapped beyond the study area boundary in the north west. This community is described as an open forest or woodland with a sparse shrub stratum and a dense groundcover dominated by grasses and herbs and is restricted to soils derived from Wianamatta group shales. Typical canopy species include *Eucalyptus cypellocarpa*, *E. radiata*, *E. quadrangulata* and *E. globoidea*. Shrubs include *Leucopogon lanceolatus*, *Ozothamnus diosmifolius* and *Persoonia linearis* over a ground cover of *Hardenbergia violacea*, *Microlaena stipoides*, *Austrostipa rudis*, *Pteridium esculentum* and *Dichondra repens*.

Two vegetation communities have been mapped by Local Land Services (2014) within the study area, namely Southern Highlands Shale Woodland in the north west of the study area and Highland Shale Tall Open Forest in the south east of the study area (**Figure 4**). This community is described as a tall open forest with an open shrub layer and moist herbaceous groundcover, occurring on shale and the shale/basalt boundary at altitudes between 450 m and 900 m in the Blue Mountains and Southern Highlands.

### Vegetation communities – Ecoplanning site inspection

Following site inspection, two vegetation communities were identified as occurring within the study area, namely Southern Highlands Shale Woodland and Exotic grassland (**Figure 5**). A description of these communities is provided below.

#### Southern Highlands Shale Woodland (SHSW):

This community was identified on site and found in three condition classes: SHSW - 'modified' (**Plate 1** and **Plate 2**), SHSW – *Eucalyptus ovata* woodland (**Plate 3**), and SHSW - 'derived native grassland' (DNG) (**Plate 4**).

The SHSW - modified form of this community was found in the north west and south east portions of the study area. Canopy species were dominated by *Eucalyptus quadrangulata* (White-top Box) and *Eucalyptus cypellocarpa* (Monkey Gum) with *Eucalyptus globoidea* (White Stringybark) and *Eucalyptus radiata* (Narrow-leaved Peppermint) occurring less frequently. Few native shrubs species were present but include *Exocarpos cupressiformis* (Native Cherry), *Acacia mearnsii* (Black Wattle) and *Bursaria spinosa* (Blackthorn). Common exotic shrubs include *Berberis julianae* (Wintergreen Barberry), *Crataegus monogyna* (Hawthorn) and *Prunus* species.

The SHSW – *Eucalyptus ovata* woodland form was located along the central drainage line that dissects the site. This community was dominated by *E. ovata* having a low woodland structure. This species was known to occur as a component of SHSW in more poorly drained areas of the community. Few shrubs were present but included the exotic *Crataegus monogyna* (Hawthorn) over an understorey dominated by exotic grasses including *Anthoxanthum odoratum* (Sweet Vernal Grass).

The SHSW – DNG form is widespread in areas where the canopy had been historically cleared for grazing. Dominant species include *Microlaena stipoides* (Weeping Grass), *Themeda triandra* (Kangaroo Grass), *Rytidosperma racemosum* var. *racemosum* and *Eragrostis leptostachya* (Paddock Lovegrass). Exotic weed species include *Anthoxanthum odoratum* (Sweet Vernal Grass), *Cenchrus clandestinus* (Kikuyu), *Vulpia bromoides*,

*Paspalum dilatatum* (Paspalum) and the forbs *Hypochaeris radicata* (Catsear), *Plantago lanceolata* (Lambs Tongue) and *Taraxacum officinale* (Dandelion).

#### Exotic grassland

Exotic grassland occurs extensively across the study area, particularly in the central portions of the site (**Figure 5**). Typical species include the grasses *Anthoxanthum odoratum*, *Cenchrus clandestinus*, *Dactylis glomerata* (Cocksfoot), *Vulpia bromoides*, *Paspalum dilatatum* and the forbs *Hypochaeris radicata*, *Plantago lanceolata*, *Taraxacum officinale* and *Paronychia brasiliensis*. Dense patches of *Nassella trichotoma* (Serrated Tussock) and *Rubus fruticosus* spp. agg. (Blackberry) occur in this community. Native grasses are also present, occurring as a minor component and include *Themeda triandra* and *Microlaena stipoides*.

#### Acacia regrowth

Smaller trees and shrubs of *Acacia mearnsii* (Blackwood) regrowth occur within the study area, either as single trees or grouped together in small patches. (**Figure 5**).

A summary of the past and present vegetation mapping for the study area and the corresponding Plant Community Types (PCTs) is provided in **Table 1**.

#### Threatened Ecological Communities

Southern Highlands Shale Woodland is listed as a Critically Endangered Ecological Community under the Commonwealth *EPBC* Act, and as an Endangered Ecological Community under the State *BC* Act (**Table 1**).

The Commonwealth Conservation Advice (including listing advice) for Southern Highlands Shale Woodland (TSSC 2015) provides condition thresholds for when a patch of the community retains sufficient conservation value to be considered as a Matter of National Environmental Significance (MNES). The areas of SHSW – ‘modified condition’ subject to the proposal did not meet the condition thresholds for listing under the *EPBC* Act as:

- Condition Class B1: less than 50% of the perennial understorey vegetation cover is made up of native species, and
- Condition Class B2): the patch lacks connectivity to a native vegetation area and less than 30% of the perennial understorey vegetation cover is made up of native species.

As such, the SHSW is not considered to be a MNES and no referral to the Commonwealth Department of the Environment and Energy is required.

#### Flora and fauna species

A total of 65 flora species were recorded across the site of which 38 were native and 27 exotic (**Table 5**). Three exotic species are listed as Weeds of National Significance (WONS) and are also listed as State Priority Weeds under the South East Weed Management Plan 2017-2022 (Local Land Services (LLS) 2017). (**Table 2**). Four species, *Crataegus monogyna* (Hawthorn), *Ligustrum sinense* (Small-leaved Privet), *Cenchrus clandestinus* and *Phalaris* sp. are listed as an Environmental Weeds in the Wingecarribee Shire (WSC 2018b).

A total of ten native fauna species were recorded comprising nine birds and one mammal (**Table 6**).

### *Threatened species – flora*

Five records of threatened flora species were recorded within 5 km of the study area, namely *Eucalyptus macarthurii* (Camden Woollybutt), *Acacia pubescens* (Downy Wattle), *Persoonia glaucescens* (Mittagong Geebung), *Pomaderris brunnea* (Brown Pomaderris) and *Pterostylis ventricosa* (an orchid) (**Table 4** and **Figure 6**). Based upon the habitat preferences of these threatened flora species and the proximity of recent records and survey, the likelihood that these species would occur in the study area is considered to be low.

### *Threatened species – fauna and habitat*

Sixteen threatened fauna species have been recorded within 5 km of the study area including one amphibian, nine birds and six mammals (**Table 4** and **Figure 6**). Fauna habitat features were sporadically found across the study area and included stag trees, hollow bearing trees, grass swards, fallen timber and dense blackberry patches. Shrubs were few, mostly comprising *Acacia* sp. and *Crataegus monogyna*. For the most part, the site has been under cattle grazing for a number of years resulting in few shrub species across the study area with the areas of SHSW modified due to historical clearing. Based upon the habitat preferences for the threatened fauna and the proximity of recent records, there is the potential that some of these species could utilise the site for foraging and roosting (**Table 4**).

**Table 1: Past and present vegetation mapping for the study area and equivalent Plant Community Types (PCTs)**

<b>Vegetation Community (Tozer et al 2010)</b>	<b>Vegetation Community (LLS 2014)</b>	<b>Vegetation Community (Ecoplanning 2018)</b>	<b>Corresponding Plant Community Type (PCT) (OEH 2018)</b>	<b>TEC EPBC Act</b>	<b>TEC BC Act</b>
Southern Highlands Shale Woodland (WSF p268)	Southern Highlands Shale Woodland (HN601)	SHSW: <i>Eucalyptus quadrangulata</i> – <i>E. cypellocarpa</i> – <i>E. radiata</i> woodland - modified	PCT 944 Mountain Grey Gum - Narrow-leaved Peppermint grassy woodland on shales of the Southern Highlands, southern Sydney Basin Bioregion	Southern Highlands Shale Woodlands in the Sydney Basin Bioregion CEEC	Southern Highlands Shale Woodlands in the Sydney Basin Bioregion EEC
-	Highlands Shale Tall Open Forest (HN601)	SHSW: <i>Eucalyptus quadrangulata</i> – <i>E. cypellocarpa</i> – <i>E. radiata</i> woodland - modified	As above	Yes	Yes
-	-	SHSW: <i>Eucalyptus quadrangulata</i> – <i>E. cypellocarpa</i> – <i>E. radiata</i> woodland - DNG	As above	No	Yes
-	-	SHSW: <i>Eucalyptus quadrangulata</i> – <i>E. cypellocarpa</i> – <i>E. radiata</i> woodland – <i>Eucalyptus ovata</i> woodland	As above	No	Yes
-	-	Acacia regrowth	-	No	No
-	-	Exotic grassland	-	No	No

**Table 2: State priority weeds and Weeds of National Significance**

Common name	Scientific name	WoNS	Duty
Blackberry	<i>Rubus fruticosus</i> *spp. agg.	Y	<b>Mandatory Measure</b> Must not be imported into the State or sold <b>General Biosecurity Duty</b> All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.
Fireweed	<i>Senecio madagascariensis</i>	Y	<b>Mandatory Measure</b> As above <b>General Biosecurity Duty</b> As above <b>Regional Recommended Measure</b> Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.
Serrated Tussock	<i>Nassella trichotoma</i>	Y	<b>Mandatory Measure</b> As above <b>General Biosecurity Duty</b> As above <b>Regional Recommended Measure</b> As above

### *Drainage lines and dams*

A 1<sup>st</sup> order creekline exists within the middle portion of the study area, east of the proposed sub-division (**Plate 6**). At the time of the site inspection the creek bed was dry and colonized by trees of *Eucalyptus ovata* (Swamp Gum) with scattered *Crataegus monogyna* over a ground layer dominated by *Anthoxanthum odoratum* and other exotic ground layer species. Saplings of *Eucalyptus ovata* were common adjacent to the drainage line.

Four dams are present within the assessed study area. At the time of survey the dam located in the northwest corner contained water, whilst the remaining three were dry.



## Ecological values, constraints and recommendations

The field survey identified ecological values that represent a low to high ecological constraint to future development of the site. Ecological constraints were ranked according to their conservation significance, landscape value and the approval process. In the context of the study area (**Figure 5**), these are provided in **Table 3**. Future development of the site should avoid areas of high ecological constraint, minimise impact to areas of moderate constraint, and concentrate future development in low and unconstrained areas.

**Table 3: Ecological constraint**

Ecological Values	Ecological constraint
SHSW in “modified” condition Hollow bearing trees Riparian buffers	High
SHSW in “woodland” condition SHSW in DNG condition Stags	Moderate
Acacia Regrowth Farm Dams	Low
Exotic grassland	Unconstrained

SHSW is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act and is listed an Endangered Ecological Community (EEC) under the Commonwealth EPBC Act.

### *Riparian lands and dams*

Impacts within 40 m of the 1<sup>st</sup> order stream (i.e. waterfront land) in the study area would trigger the need to apply for a Controlled Activity Approval. A 1<sup>st</sup> order stream requires a 10 m vegetated riparian zone under the *Water Management Act 2000* and, as such, the top of bank will need to be mapped and a Vegetation Management Plan (VMP) prepared by a suitably qualified ecologist should impacts to this buffer zone be proposed.

Within the proposed sub-division area there is one farm dam which, if containing water, would require a Dam De-watering Plan prepared by a suitably qualified ecologist.

### *Biodiversity Offset Scheme*

The study area is zoned RU2 within a minimum lot size of 40 ha. As the proposed sub-division will remove >0.5 ha of native vegetation, a Biodiversity Development Assessment Report (BDAR) prepared by a suitably qualified ecologist will be required. A key step in all assessments is demonstrating avoidance of impacts in the first instance. Therefore, opportunities to avoid areas of high ecological constraint (e.g. EECs) and minimise impacts to moderate constraints should be demonstrated. This may include the potential opportunity in part to include the SHSW located in the eastern portion of the study area, on land which is zoned as E3 – Environmental Management.



Additional targeted surveys may be required during the preparation of the BDAR for some species, such as microbats. The timing of such surveys must comply with the survey periods identified in the Biodiversity Assessment Method (BAM) Credit Calculator, which can be limited to particular seasons.

During the preparation of the BDAR, plots will be undertaken to determine a vegetation integrity score (VIS) for each vegetation zone. During this survey, several plots were completed to calculate potential VIS for the validated vegetation mapping and thus provide an estimate to potential offsetting requirements at this point in time. This cost estimate is not static and will change over time depending on the market values at the time of assessment.

Under the BC Act if the VIS exceeds 15/100, offsetting will be required. Offsetting may be required for all vegetation types (including 'Weeds and Exotics' due to the presence of multiple native species). Current credit prices, according to the Biodiversity Offset Payments calculator (OEH 2018) for PCT 944 is \$2,515.29 (excl. GST). However, no trades have been recorded for any of these vegetation types and, therefore, prices may fluctuate (NB. The BCT review their prices quarterly). Our previous experience indicates that impact to similar PCTs require offsets of 25-40 ecosystem credits per hectare. Additional species credits may also be required. An assessment in accordance with the BAM is needed to determine the specific impact and offsetting requirements.

If you have any queries please do not hesitate to contact me.

Yours sincerely,



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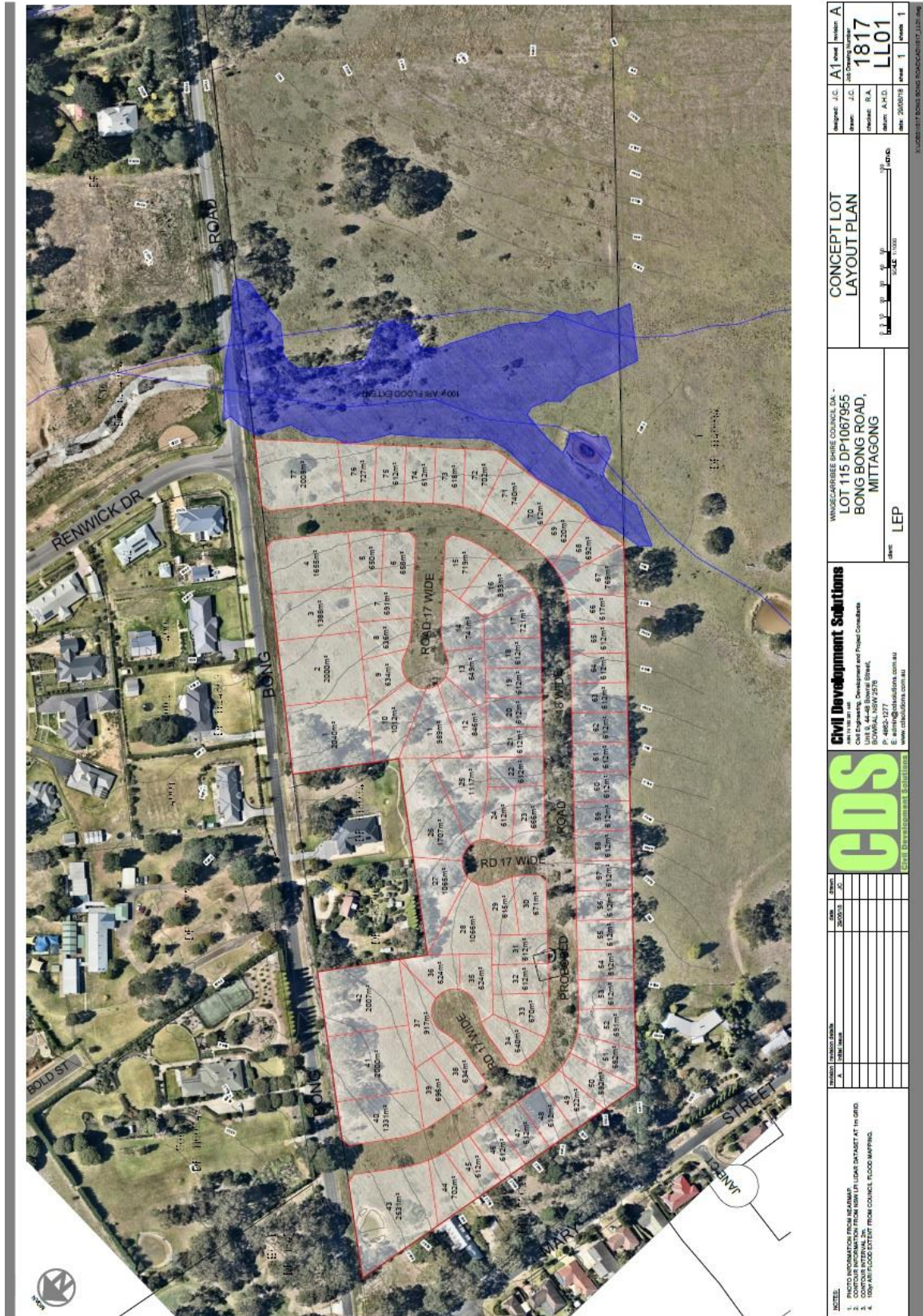


Figure 1: Proposed Concept Lot Layout Plan (Courtesy of Civil Development Solutions)





Figure 2: Location of the study area





Figure 3: Regional vegetation mapping (Tozer 2010)





Figure 4: Regional vegetation mapping (LLS 2014)





Figure 5: Validated vegetation mapping (Ecoplanning 2018)





**Plate 1: Southern Highlands Shale Woodland – modified - western portion of site**



**Plate 2: Southern Highlands Shale Woodland – modified – eastern portion of site**





Plate 3: Southern Highlands Shale Woodland – *Eucalyptus ovata* woodland



Plate 4: Southern Highland Shale Woodland – DNG





**Plate 5: Exotic grassland**



**Plate 6: Serrated Tussock – eastern portion of site adjacent to Southern Highland Shale Woodland.**



Table 4: Threatened flora and fauna records from within 5 km of the study area (OEH 2018)

Species	BC Act EPBC Act	Count	Most recent record and distance (km)	Nearest record (km) and date	Likelihood of Occurrence	
					Prior to field assessment	Post field assessment
Amphibia						
<i>Pseudophryne australis</i> Red-crowned Toadlet	BC Act: V	1	30/03/2016	4.5 km	Low	Low
Aves						
<i>Artamus cyanopterus cyanopterus</i> Dusky Woodswallow	BC Act: V EPBC Act: C, J, K	2	14/01/2017	4.9 km	Moderate	Moderate
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	BC Act: V	19	18/08/2016	3.1 km	Moderate	Moderate
<i>Calyptrorhynchus lathamii</i> Glossy Black-Cockatoo	BC Act: V	13	11/07/2018	2.5 km	Moderate	Moderate
<i>Daphoenositta chrysoptera</i> Varied Sittella	BC Act: V	10	26/06/2015	1.6 km	Moderate	Moderate
<i>Gallinago hardwickii</i> Latham's Snipe	EPBC Act: C, J, K	2	26/01/2017	3.3 km	Low	Low
<i>Hieraaetus morphnoides</i> Little Eagle	BC Act: V	1	5/08/2018	2.4 km	Moderate	Moderate
<i>Hirundapus caudacutus</i> White-throated Needletail	EPBC Act: C, J, K	2	24/12/2016	3.6 km	Low	Low
<i>Ninox strenua</i> Powerful Owl	BC Act: V	3	5/08/2018	1.8 km	Moderate	Moderate
<i>Petroica boodang</i> Scarlet Robin	BC Act: V	10	20/07/2017	3.1 km	Moderate	Moderate
Flora						
<i>Acacia pubescens</i> Downy Wattle	BC Act: V EPBC Act: V	3	3/02/2016	4.1 km	Low	Low

Species	BC Act EPBC Act	Count	Most recent record and distance (km)	Nearest record (km) and date	Likelihood of Occurrence	
					Prior to field assessment	Post field assessment
<i>Eucalyptus macarthurii</i> Paddys River Box, Camden Woollybutt	BC Act: E EPBC Act: E	50	4/07/2017	2.4 km	Moderate	Low
<i>Persoonia glaucescens</i> Mittagong Geebung	BC Act: E1 EPBC Act: V	47	27/07/2017	3.1 km	Low	Low
<i>Pomaderris brunnea</i> Brown Pomaderris	BC Act: E1 EPBC Act: V	6	6/02/2014	3.0 km	Low	Low
<i>Pterostylis ventricosa</i>	BC Act: E	1	1/04/2017	1.5 km	Low	Low
<b>Mammalia</b>						
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	BC Act: V	5	15/03/2018	0.3 km	Moderate	Moderate
<i>Miniopterus schreibersii oceanensis</i> Eastern Bentwing-bat	BC Act: V	7	15/03/2018	0.3 km	Moderate	Moderate
<i>Petauroides volans</i> Greater Glider	EPBC Act :V	23	10/09/2018	1.2 km	Low	Low
<i>Greater Glider population in the Mount Gibraltar Reserve area</i>	BC Act: E EPBC Act: V	3	23/06/2015	3.4 km	Not present	Not present
<i>Phascolarctos cinereus</i> Koala	BC Act: V EPBC Act: V	118	13/10/2017	0.011 km	Moderate	Moderate
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	BC Act: V	5	22/01/2014	0.84 km	Moderate	Moderate

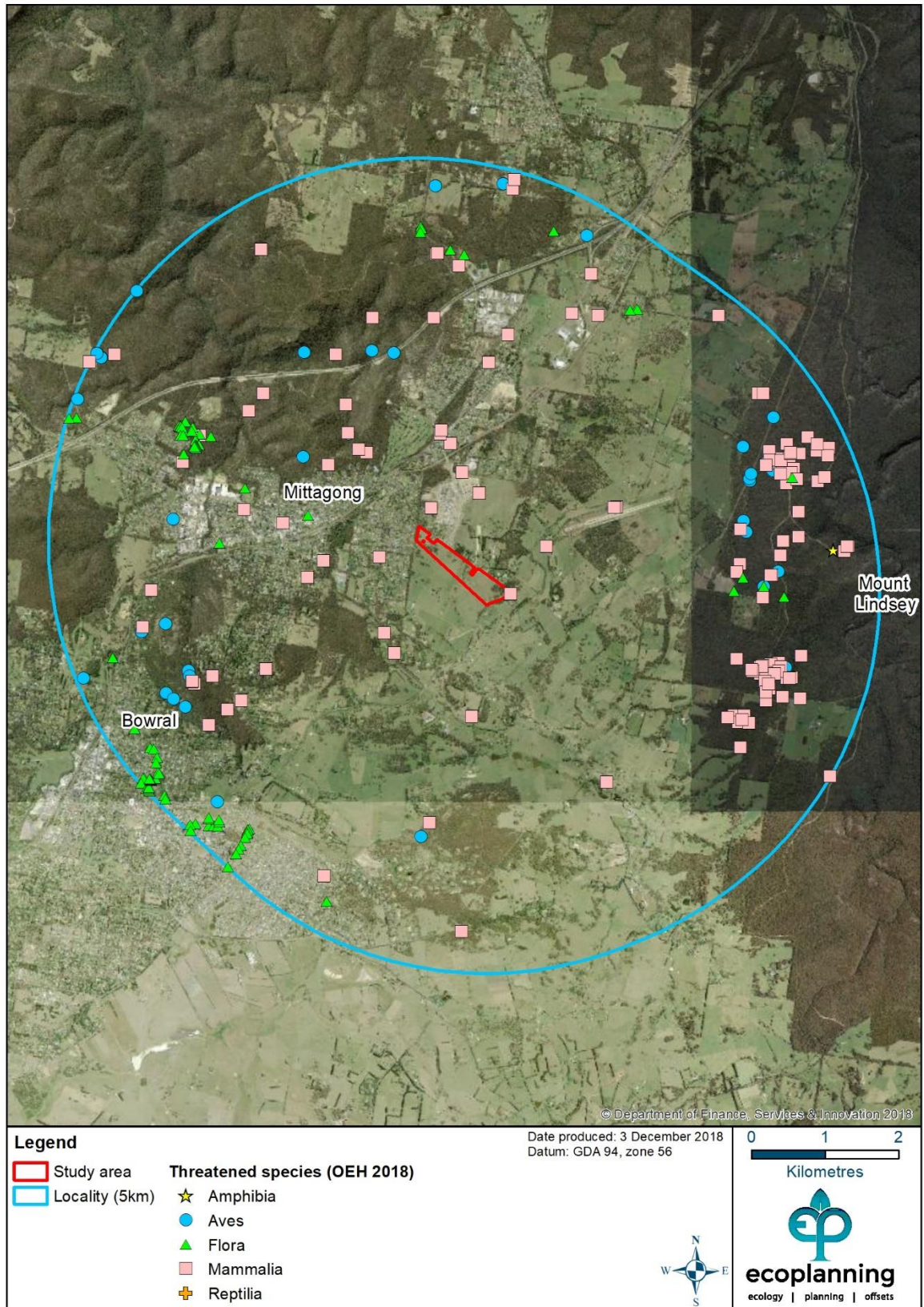


Figure 6: Threatened species records within 5 km of the study area (OEH 2018)

Table 5: Flora species recorded

Family	Scientific Name	Common name	Native/ Exotic
Apiaceae	<i>Dichondra repens</i>	Kidney Weed	Native
Asteraceae	<i>Brachyscome</i> sp.		Native
	<i>Cassinia longifolia</i>		Native
	<i>Cirsium vulgare</i>	Spear Thistle	Exotic
	<i>Hypochaeris radicata</i>	Flatweed	Exotic
	<i>Senecio madagascariensis</i>	Fireweed	Exotic, WONS
	<i>Taraxacum officinale</i>	Dandelion	Exotic
Berberidaceae	<i>Berberis julianae</i>	Wintergreen Barberry	Exotic
Campanulaceae	<i>Wahlenbergia gracilis</i>	Australian Bluebell	Native
	<i>Lobelia purpurascens</i>	Whiteroot	Native
Chenopodiaceae	<i>Einadia trigonos</i> subsp. <i>trigonos</i>	Fishweed	Native
Caryophyllaceae	<i>Paronychia brasiliensis</i>	Brazilian Whitlow	Exotic
Cyperaceae	<i>Carex longibrachia</i>		Native
Cyperaceae	<i>Carex</i> sp.		Native
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Common Bracken	Native
Fabaceae - Faboideae	<i>Glycine clandestina</i>		Native
	<i>Hardenbergia violacea</i>	Purple Coral pea	Native
Fabaceae - Mimosoideae	<i>Acacia mearnsii</i>	Black Wattle	Native
Gentianaceae	<i>Centaurium erythraea</i>	Common Centaury	Exotic
Geraniaceae	<i>Geranium homeanum</i>		Native
Hypericaceae	<i>Hypericum gramineum</i>	Small St John's Wort	Native
Iridaceae	<i>Romulea rosea</i> var. <i>australis</i>	Onion Grass	Exotic
Juncaceae	<i>Juncus usitatus</i>		Native
Lomandraceae	<i>Lomandra filiformis</i> subsp. <i>coriacea</i>		Native
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	Native
Myrtaceae	<i>Eucalyptus cypellocarpa</i>	Monkey Gum	Native
	<i>Eucalyptus elata</i>	River Peppermint	Native
	<i>Eucalyptus globoidea</i>	White Stringybark	Native
	<i>Eucalyptus ovata</i>	Swamp Gum	Native
	<i>Eucalyptus punctata</i>	Grey Gum	Native
	<i>Eucalyptus quadrangulata</i>	White-topped Box	Native
	<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	Native
	<i>Eucalyptus sieberi</i>	Silvertop Ash	Native
Oleaceae	<i>Ligustrum sinense</i>	Small-leaved Privet	Exotic
Oxalidaceae	<i>Oxalis perennans</i>		Native
Pittosporaceae	<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	Blackthorn	Native
	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Native
Poaceae	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	Exotic
	<i>Austrostipa rudis</i>		Native
	<i>Axonopus fissifolius</i>	Carpet Grass	Exotic
	<i>Bromus catharticus</i>	Prairie Grass	Exotic
	<i>Cenchrus clandestinus</i>	Kikuyu	Exotic
	<i>Cynodon dactylon</i>	Couch	Nat/Exo
	<i>Dactylis glomerata</i>	Cocksfoot	Exotic
	<i>Ehrharta erecta</i>	Panic Veldtgrass	Exotic
	<i>Entolasia stricta</i>	Wiry Panic	Native
	<i>Eragrostis leptostachya</i>	Paddock Lovegrass	Native
	<i>Holcus lanatus</i>	Yorkshire Fog	Exotic
	<i>Lolium perenne</i>	Perennial Rye	Exotic
	<i>Paspalum dilatatum</i>	Paspalum	Exotic
	<i>Phalaris</i> sp.	Phalaris	Exotic



Family	Scientific Name	Common name	Native/ Exotic
	<i>Poa labillardieri</i> var. <i>labillardieri</i>	Tussock	Native
	<i>Microlaena stipoides</i>	Weeping Grass	Native
	<i>Nassella trichotoma</i>	Serrated Tussock	Exotic, WONS
	<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	A Wallaby Grass	Native
	<i>Rytidosperma</i> sp.		Native
	<i>Sporobolus</i> sp.		Exotic
	<i>Themeda australis</i>	Kangaroo Grass	Native
	<i>Vulpia bromoides</i>	Squirrel Tail Fescue	Exotic
Plantaginaceae	<i>Plantago lanceolata</i>	Lamb's Tongue	Exotic
Ranunculaceae	<i>Clematis aristata</i>	Old Man's Beard	Native
Rosaceae	<i>Crataegus monogyna</i>	Hawthorn	Exotic
	<i>Prunus cerasifera</i>	Cherry Plum	Exotic
	<i>Rubus fruticosus</i> spp. agg.	Blackberry	Exotic - WONS
	<i>Rosa rubiginosa</i>	Sweet Briar	Exotic
	<i>Rubus parvifolius</i>	Native Raspberry	Native
Santalaceae	<i>Exocarpos cupressiformis</i>	Native Cherry	Native

WONS – Weed of National Significance

Table 6: Fauna species recorded

Family	Common Name	Scientific name	Sighting Notes
<b>Aves</b>			
Artamidae	Grey Butcherbird	<i>Cracticus torquatus</i>	O, W
	Magpie	<i>Gymnorhina tibicen</i>	O, W
	Pied Currawong	<i>Strepera graculina</i>	W
Columbidae	Crested Pigeon	<i>Ocyphaps lophotes</i>	O, W
Meliphagidae	Noisy Miner	<i>Manorina melanocephala</i>	W
Monarchidae	Magpie-lark	<i>Grallina cyanoleuca</i>	
Psittaculidae	Australian King Parrot	<i>Alisterus scapularis</i>	O
	Crimson Rosella	<i>Platycercus elegans</i>	W
	Eastern Rosella	<i>Platycercus eximius</i>	O, W
<b>Mammalia</b>			
Macropodidae	Grey Kangaroo	<i>Macropus giganteus</i>	O

O – observed; W – heard