



Flora and Fauna Assessment Report

116-132 Chain-o-ponds Road, Mulgoa NSW 2745

Report prepared by First Field Environmental

17 March 2021

Revision history		
Version	Date	Author
Draft	8 March 2021	Jack Hastings, Myrna Calimpong
Final	17 March 2021	Michelle Evans

Cover image: Middle portion of property

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Certification

The results presented in this report are a true and accurate record. Survey work has been carried out in accordance with the *Threatened Species and Regional Biodiversity Survey and Assessment Guidelines* (DECC, 2007). Flora and fauna investigations have been prepared in consideration of the schedules and requirements of the NSW *Biodiversity Conservation Act 2016* and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The results of this survey report are available to the public for future use and have been supplied to The NSW Office of Environment and Heritage for inclusion on the *Atlas of NSW Wildlife Database*.

Survey and assessment of threatened biodiversity have been undertaken by experienced and qualified Environmental Scientists. Michelle Evans has extensive experience with flora and fauna surveys and the interpretation of conservation significance in NSW.

Definitions

Activity	A project, development, undertaking, activity or series of activities, or an alteration of any of these things.
AHD	Australian height datum
<i>BC Act 2016</i>	<i>Biodiversity Conservation Act 2016</i>
BoM	Bureau of Meteorology
Direct Impacts	Those that directly affect the habitat of the species and ecological communities and of individuals using the study area
DPIE	Department of Primary Industries and Environment
<i>EP&A Act 1979</i>	<i>Environmental Planning and Assessment Act 1979</i>
<i>EPBC Act 1999</i>	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
GDA	Geocentric datum of Australia
ha	Hectare
Indirect Impacts	Project-related activities that affect species or ecological communities in a manner other than
LEP	Local Environmental Plan
LGA	Local Government Area
m	Metre
MGA	Map grid of Australia
mm	Millimetre
OEH	Office of Environment and Heritage
SEPP	State Environmental Planning Policy No 44—Koala Habitat Protection [NSW]
Site	The area of the property on which the proposed development would occur
Study Area	The subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly.
Threatened biodiversity	Species, populations, ecological communities or their habitats
Vegetation community	An assemblage of native flora species known to occur in association as a result of topography, soil landscape and rainfall

1. Introduction

First Field Environmental has been commissioned to prepare a Flora and Fauna Report in support of a development application at 116-132 Chain-o-ponds Road, Mulgoa NSW 2745.

The property is located at Lot 22 DP 244610, Mulgoa NSW 2745 within the Penrith City Council Local Government Area and is approximately 25.91 km north of Camden (see Figure 2).



Figure 1 Location of the subject property
Source: SixMaps 2021

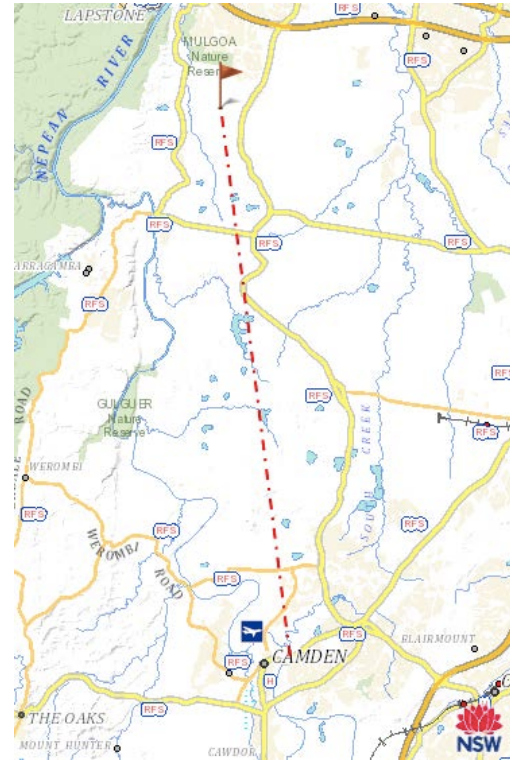


Figure 2 Property location
Source: SixMaps 2021

2. Legislative framework

Table 1 identifies legislative requirements relevant to the proposed development and includes environmental planning instruments, legislative provisions, approvals, consents and licences.

Table 1 Legislative requirements

Name	Relevance to the proposal	Relevance to proposed development
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Aims to provide protection of the environment, especially to matters of national environmental significance.	It is considered possible that the site may support a number of vulnerable or endangered species, ecological communities and their habitats.
State		
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	The Act provides for the constitution of local, regional and state Aboriginal Land Councils and a mechanism for Councils to claim Crown Land.	There are no known granted claims over Crown Land within the study area.
<i>Biodiversity Conservation Act 2016</i>	The Act sets out specific objects relating to the conservation of biological diversity and the promotion of ecologically sustainable development.	A number of threatened species, populations and ecological communities listed under the Act have been recorded within the study area.
<i>Biosecurity Act 2015</i>	Under the Act, public authorities are required to control priority weeds that are likely to spread to adjoining land.	No Priority Weeds or Weeds of National Significance were observed on the site and/or in adjacent properties.
<i>Environmental Planning and Assessment Act 1979</i>	Encourages the protection and conservation of native animals and plants. Requires the determination of whether the proposed activity is likely to have a significant effect on threatened species, populations or ecological communities or their habitats.	In accordance with the requirements of section 5 of the Act, an Assessment of Significance has been undertaken for all threatened entities listed under the <i>Biodiversity Conservation Act 2016</i> known or likely to occur in the study area.
<i>Heritage Act 1977</i>	The State's historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the Act.	No items or places of historical significance have been recorded or observed on the site.
<i>National Parks and Wildlife Act 1974</i>	The Act relates to the management of all national parks, historic sites, and other reserves in NSW, including providing for the protection of Aboriginal objects and Aboriginal Places.	No items or places of Aboriginal significance occur within 50 m of the proposed site. No direct or indirect impacts to Aboriginal objects and/or Aboriginal places are expected as a result of the proposal.
<i>Rural Fires Act 1997</i>	The Act requires that areas of bushfire prone land be mapped.	The site is within land mapped as bushfire prone.
Local		
<i>Penrith Local Environmental Plan 2010</i>	The principal planning instrument affecting land use in the Penrith LGA.	The proposed development must comply with land uses set out in zoning provisions of the LEP.

3. Site context

The northern boundary of the property is immediately adjacent to Chain-o-ponds Road, Mulgoa. The western, southern and eastern boundaries are adjacent to adjoining residential areas on large lots.

The site is located within the middle of the property and is characterised as a cleared area dominated by exotic grasses. The area immediately adjacent to the site is dominated by open pastures and isolated mature trees characteristic of light grazing activities. A patch of bushland within the southern portion of the property exhibits patchy canopy connectivity to the adjoining southern lots. The property features four dams, with ephemeral drainage lines connecting the waterbodies.



Figure 3 Extent and general vegetation characteristics of the property

Source: SixsMaps 2021



Figure 4 Approximate location of the site

Source: SixsMaps 2021

3.1 Geology and soils

The site is on erosional soils of the Luddenham Soil Landscape. Luddenham is characterised by Hills and low hills on Wianamatta Group Bringelly Shale (shale, sandstone-lithic and siltstone/mudstone) in the Cumberland Plain and Blue Mountains Plateau.

3.2 Hydrology

The study area is located within the Hawkesbury-Nepean River catchment. Drainage from the site exits an unnamed drainage line on the northern boundary. The drainage line supplies Mulgoa Creek which flows to the north-west before entering the Nepean River. The Nepean River in turn supplies the Hawkesbury River ~ 17 km to the north.

3.3 Rainfall

Mean annual rainfall has been determined from observations from Orchard Hills Treatment Works weather station. The weather station has recorded a mean annual rainfall of 819.9 mm across 50 years of observations. The weather station is located ~11 km north-east and within 93 m elevation of the site and data is considered generally consistent with weather conditions experienced in the study area.

3.4 Land use

The site is zoned for E3 – Environmental Management land use under the *Penrith Local Environmental Plan 2010*.

3.5 Vegetation

Vegetation on the site has been mapped on SEED (2021) as Coastal Valley Grass Woodlands and Sydney Hinterland Dry Sclerophyll Forest. NSW National Parks and Wildlife have mapped the vegetation as Shale Plains Woodland and Alluvial Woodland.



Figure 5 Vegetation communities across the site
Source: SEED 2021

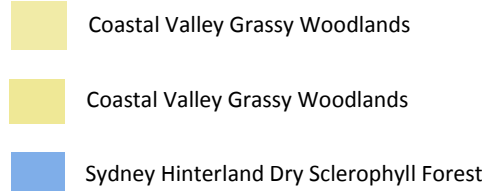


Figure 6 Bushfire prone land mapping
Source: NSW Planning Portal 2021

3.6 Disturbance history

The northern portion of the property has previously been cleared of remnant vegetation. The southern portion of the property is generally consistent with Coastal Valley Grass Woodlands and Sydney Hinterland Dry Sclerophyll Forest, as per mapping.

3.7 Bushfire prone land

The property is located within an area mapped as containing bushfire prone land (see Figure 6). Planning for Bushfire Protection (NSW RFS 2019) applies to the siting and construction of dwellings. The proposed development comprises a shed and therefore does not require assessment of bushfire attack level (BAL). Neither does the proposed development require preparation of a Bushfire Hazard Assessment Report.

3.8 Aboriginal heritage

A search of the Aboriginal Heritage Information Management System (AHIMS) was conducted on 8 March 2021. No items or places of aboriginal heritage have been recorded on the site or within 50 m of the property (see Appendix F).

4. Methods

Preliminary investigations have made use of species, population, community and habitat records held by the Australian Government Department for the Environment and Energy and the NSW Office of Environment and Heritage. Vegetation mapping was accessed through SEED (2020).

The results of surveys undertaken for this report will be made available to the NSW Office of Environment and Heritage for inclusion on the *Atlas of NSW Wildlife Database*.

4.1 Preliminary investigation

A search of the Atlas of NSW Wildlife Database (NSW Office of Environment and Heritage 2020) was undertaken on 19 February 2021. The search produced a list of threatened, vulnerable and endangered species and communities listed under the *Biodiversity Conservation Act 2019* recorded within but not limited to a 10 km radius of the subject site.

Threatened species and ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* have been identified through interrogation of the Protected Matters Search Tool (DoE 2020) for an area of 5 km radius from the subject site.

The likelihood of these species, populations, ecological communities or their habitats occurring in the study area has been determined in accordance with descriptions published by the Australian Government Department of the Environment and the NSW Government Office of Environment and Heritage and is presented in Appendix B.

4.2 Vegetation surveys

Vegetation surveys were conducted during daylight hours of 24 February 2021 and included the identification of native and exotic species in the study area and observation of vegetation on adjoining properties. The surveys were conducted as a random meander across the entirety of the study area. Vegetation surveys targeted the identification of native and threatened biodiversity.

4.3 Fauna surveys

Targeted fauna surveys were not undertaken due to time constraints associated with the project. The likelihood of species being present or utilising the site has been determined through interrogation of published observations, research and assessment of habitat features during field survey.

4.4 Habitat assessment

Habitat assessment was conducted in conjunction with random meanders. Preliminary assessment of threatened biodiversity likely to occur in the study area provided details of required habitat. Habitat identification and assessment targeted:

- Tree hollows;
- Loose bark;
- Roosting trees;
- Nesting sites;
- Fruiting and flowering plants;
- Bare branches;
- Dead trees and logs;
- Termite mounds;
- Rocks;
- Exposed bedrock;
- Scats;
- Tree scratching;
- Scrapes or diggings;
- Hair;
- Burrows;
- Waterbodies;
- Aquatic vegetation; and
- Long grass and leaf litter.

5. Results

5.1 Weather conditions

Weather conditions at the time of survey were generally consistent with yearly average rainfall and temperature records for February. The survey was conducted on an overcast day, with a maximum temperature of 28° and rainfall of 2.0 mm (BoM 2021).

5.2 Threatened species, populations, endangered ecological communities and their habitats

Species listed under the *Biodiversity Conservation Act 2016* and /or identified as Matters of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999* and which have been previously recorded in the area are identified in Appendix A.

5.3 Vegetation

The site and immediate surrounds are dominated by open pastures and isolated mature trees characteristic of light grazing activities. A patch of bushland within the southern portion of the property exhibits patchy canopy connectivity to the adjoining southern lots. This bushland is generally consistent with Coastal Valley Grass Woodlands and Sydney Hinterland Dry Sclerophyll Forest. Species observed during the survey are listed in Appendix B.



Figure 7 Characteristics of the site

5.3.1 Weeds

No Weeds of National Significance were observed on the site.

5.4 Habitat

The following habitat components were observed on the site during surveys:

- Loose bark;
- Fruiting and flowering plants;
- Bare branches; and
- Long grass and leaf litter.

The northern portion of the property, surrounding the existing dwelling is highly disturbed, having undergone historical vegetation clearing. These areas are considered to lack structural complexity, being comprised of scattered canopy trees over a mixed exotic and native grassy ground layer with little to no shrub stratum present.

The southern portion of the property supports mature and regenerating vegetation. Habitat features present include fallen wood and potential nesting and roosting sites.

The presence of habitat components within the southern portion of the property would support native flora and fauna species. The vegetation within the study site would provide a source of pollen, nectar and fruit for local fauna.

Overall it is considered that no habitat critical to the foraging, breeding, roosting or dispersal needs of any species are present within the site. The site is immediately adjacent to an expanse of natural vegetation and the use of the site for the proposed development would not threaten the local or regional presence of any native fauna.

5.5 Connectivity

Natural vegetation in the southern portion of the property is continuous with vegetation extending to the north, south and west. Vegetation in the northern portion of the property is generally disturbed, with sparse existing trees occurring over a cleared understorey.

6. Significance assessments

6.1 Assessment of Significance

Determination of the likelihood of threatened species, populations or ecological communities or their habitats, as listed under State legislation occurring in the study area indicates that the proposed development is unlikely to significantly impact those species and communities listed in Appendix A.

In accordance with the requirements of s5A of the *EP&A Act 1979*, an assessment of significance has been prepared for these species listed under the *Biodiversity Conservation Act 2016*.

Part 7.3 of the *Biodiversity Conservation Act 2016* has been used to determine whether the proposed development is likely to significantly affect threatened species or ecological communities, or their habitats.

The proposed activity is not likely to significantly affect a threatened species or their habitat.

Assessment of significance for each of these species is provided in Appendix C.

6.2 Matters of National Environmental Significance

An *Environment Protection and Biodiversity Conservation Act 1999* Protected Matters Report for the region is provided in Appendix D. The report identifies matters listed within a 5 km radius of the subject site and includes:

- 11 listed threatened ecological communities;
- 48 listed threatened species; and
- 16 listed migratory species.

Under the precautionary principle, an assessment of the likelihood that the proposed development will have a significant impact on this species has been undertaken in accordance with the *Matters of National Environmental Significance: Significant Impact Guidelines 1.1* (Australian Government Department of the Environment, 2013) and is provided in Appendix E.

In summary, the proposed action is not likely to have a significant impact on these species for the following reasons:

- The loss of habitat is unlikely to lead to a long-term decrease in the size of an important population of a species.
- The proposed action will not impact any known or important populations of these species.
- The site does not provide habitat that is critical to the survival of these species.
- It is unlikely that the proposal will disrupt the breeding cycle of an important species.
- The removal of foraging and breeding habitat is unlikely to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species are likely to decline.

- The proposed action would not result in an increase in invasive species, including weeds that would be detrimental to any of these species.
- It is unlikely that the proposal will introduce disease that may cause the species to decline.
- The proposed action is unlikely to interfere substantially with the recovery of the species.
- No critical foraging or breeding habitat has been identified within the subject site.

7. Conclusion

The proposed development is not a habitable dwelling and therefore does not require consideration under Planning for Bushfire Protection (NSW RFS 2019).

No items or places of Aboriginal heritage have been recorded within or in close proximity to the site.

Vegetation removal would be limited to six mature native trees within the site. Natural vegetation within the southern portion of the property would not be disturbed.

No vulnerable, threatened, endangered or critically endangered species, communities, habitat, or populations have been observed or recorded on the property.

The proposed development is not likely to have a significant impact on a Matter of National Environmental Significance listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, nor is it likely to have a significant impact on threatened species, populations or endangered communities (and their habitats) listed under the NSW *Biodiversity Conservation Act 2016*.

No Species Impact Statements are required and referral to the Minister is not necessary.

8. References

BoM (2021) Climate Statistics, Bureau of Meteorology, <http://www.bom.gov.au/climate/data/>

Department of the Environment (2013) *Matters of National Environmental Significance: Significant Impact Guidelines*

Department of Environment and Climate Change (2007) *Threatened Species and Regional Biodiversity Survey and Assessment Guidelines*

Department of the Environment and Energy (2021) *Protected Matters Search Tool*, www.environment.gov.au/epbc/protected-matters-search-tool

Department of the Environment and Energy (2021) *Species profile and threats database*, <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

NSW Department of Planning, Industry and Environment (2021) *eSpade – NSW soil and land information*, <https://www.environment.nsw.gov.au/eSpade2WebApp>

NSW Office of Environment and Heritage (2021) *NSW BioNet – the website for the Atlas of NSW Wildlife*, <http://www.bionet.nsw.gov.au/>

NSW Office of Environment and Heritage (2021) *Threatened species profiles* <http://www.environment.nsw.gov.au/threatenedSpeciesApp/>

NSW National Parks and Wildlife Service 2002 *Native Vegetation of the Cumberland Plain*, <https://www.environment.nsw.gov.au/resources/nature/vegmapCumberlandPlain04LiverpoolPenrithWollondilly.pdf>

NSW Rural Fire Service (2019) *Planning for Bushfire Protection*, NSW Rural Fire Service, Granville

NSW Spatial Services (2020) *Six Maps*, <http://maps.six.nsw.gov.au/>

SEED (2021) *The Native Vegetation of the Sydney Metropolitan Area - Version 3.1 (OEH, 2016) VIS_ID 4489*, NSW Government, https://geo.seed.nsw.gov.au/Public_Viewer/index.html?viewer=Public_Viewer&locale=en-AU

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

Biodiversity Conservation Act 2016

Biosecurity Act 2015

Environmental Planning and Assessment Act 1979

Environment Protection and Biodiversity Conservation Act 1999

Heritage Act 1977

National Parks and Wildlife Act 1974 Rural Fires Act 1997

Penrith Local Environmental Plan 2010

Appendix A Threatened biodiversity

Scientific Name Common Name	NSW status	C'wealth status	Habitat ^{1,2}	Likelihood
Amphibia				
<i>Litoria aurea</i> Green and Golden Bell Frog	Endangered	Vulnerable	Inhabits marshes, dams and stream-sides, particularly those containing bullrushes or spikerushes. Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow, have a grassy area nearby and diurnal sheltering sites available. Some sites, particularly in the Greater Sydney region occur in highly disturbed areas. The species is active by day and usually breeds in summer.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pseudophryne australis</i> Red-crowned Toadlet	Vulnerable	-	Found in open forests, usually on Hawkesbury and Narrabeen Sandstones. Uses wet drainage lines under sandstone ridges. Breeding occurs beside ephemeral creeks and gutters in dense vegetation.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Heleioporus australiacus</i> Giant Burrowing Frog	Vulnerable	Vulnerable	Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Spends more than 95% of its time in non-breeding habitat in areas up to 300 m from breeding sites. Whilst in non-breeding habitat it burrows below the soil surface or in the leaf litter. Breeding habitat of this species is generally soaks or pools within first or second order streams. They are also commonly recorded from 'hanging swamp' seepage lines and where small pools form from the collected water.	Unlikely Associated habitat does not occur on or in proximity to the site

¹ NSW Office of Environment & Heritage, Threatened Species, <<http://www.environment.nsw.gov.au/threatenedSpeciesApp/>>

² Australian Government Department of the Environment, Species Profile and Threats Database, <<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>>

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Mixophyes balbus</i> Stuttering Frog	Endangered	Vulnerable	Found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. Outside the breeding season adults live in deep leaf litter and thick understorey vegetation on the forest floor. Breeding occurs in streams during summer after heavy rain. Eggs are laid on rock shelves or shallow riffles in small, flowing streams.	Unlikely Associated habitat does not occur on or in proximity to the site
Aves				
<i>Anthochaera phrygia</i> Regent Honeyeater	Critically Endangered	Critically Endangered	The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak with significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. Birds are occasionally seen on the south coast. Usually nests in horizontal branches or forks in tall mature eucalypts and Sheoaks. Also nest in mistletoe haustoria. An open cup-shaped nest is constructed of bark, grass, twigs and wool by the female.	Possible
<i>Artamus cyanopterus cyanopterus</i> Dusky Woodswallow	Vulnerable	-	Found in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. Also recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. Prefers understorey typically open with sparse eucalypt saplings, acacias and other shrubs, including heath. Ground cover may consist of grasses, sedges or open ground, often with coarse woody debris. Also often observed in farm land, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Botaurus poiciloptilus</i> Australasian Bittern	Endangered	Endangered	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes and spikerushes. Hides during the day and feeds, mainly at night. Feeding platforms may be constructed over deeper water from reeds and are often littered with prey remains. Breeding occurs in summer from October to January and the nest is a platform of reeds.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Burhinus grallarius</i> Bush Stone-curlew	Endangered	-	Inhabits open forests and grassy woodlands. Roosts and nests in grassy woodlands of buloke, gum or box with low, sparse grassy or herb understorey. Nests are usually beside a fallen log.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Calidris ferruginea</i> Curlew Sandpiper	Endangered	Critically Endangered	Generally found in intertidal mudflats or sheltered coasts. Can also occur in non-tidal lakes, lagoons and swamps, sometimes at inland locations. Forages in shallow water, and sometimes on exposed algae mats or water weed. Roosts on beaches and wetlands, and sometimes on rocky shores and salt marshes.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	Vulnerable	-	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. Autumn and winter, the species often moves to lower altitudes in drier, more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or dry forest in coastal areas and is often found in urban areas. May also occur in sub-alpine Snow Gum woodland and temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9m above the ground.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Calyptorhynchus lathamii</i> Glossy Black-Cockatoo	Vulnerable	-	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. <i>Allocasuarina littoralis</i> and <i>A. torulosa</i> are important foods. Inland populations feed on a wide range of sheoaks, including <i>Allocasuarina diminuta</i> and <i>A. gymnathera</i> . Belah is also utilised and may be a critical food source for some populations. Dependent on large hollow-bearing eucalypts for nest sites.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Chthonicola sagittata</i> Speckled Warbler	Vulnerable	-	Lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Large, relatively undisturbed remnants are required for the species to persist in an area. Pairs are sedentary and occupy a territory of about ten hectares, slightly larger when not breeding. The rounded, domed, roughly built nest is located in a slight hollow in the ground or the base of a low dense plant, between August and January.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	Vulnerable	-	Found in eucalypt woodlands and dry open forest of the inland slopes and plains inland of the Great Dividing Range; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging. Hollows in standing dead or live trees and tree stumps are essential for nesting.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Daphoenositta chrysoptera</i> Varied Sittella	Vulnerable	-	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Ephippiorhynchus asiaticus</i> Black-necked Stork	Endangered	-	Occurs in floodplain wetlands, billabongs, watercourses and dams of the major coastal rivers. Secondary areas may include minor floodplains, estuaries and sandplain wetlands. Nests high in tall trees near water bodies	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Falco hypoleucos</i> Grey Falcon	Endangered	-	Occasionally found near the coast in open woodland, but usually in grassland, shrubland and wooded water courses in more arid regions. Uses nest of old birds, including ravens and other birds of prey, normally high in a eucalypt, which is close to water.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Grantiella picta</i> Painted Honeyeater	Vulnerable	Vulnerable	Inhabits Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus <i>Amyema</i> . Nest from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark or mistletoe branches.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Vulnerable	-	Occurs at sites near the sea or sea-shore and in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Hirundapus caudacutus</i> White-throated Needletail	-	Vulnerable	Almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. Recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows.	Possible
<i>Lathamus discolor</i> Swift Parrot	Endangered	Critically Endangered	Migrates to the Australian south-east mainland between March and October, where they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Following winter they return to Tasmania where they breed from September to January, nesting in old trees with hollows and feeding in forests dominated by Tasmanian Blue Gum <i>Eucalyptus globulus</i> .	Possible
<i>Limosa limosa</i> Black-tailed Godwit	Vulnerable	-	Usually occurs in coastal areas, within sheltered bays, lagoons and estuaries with large expanses of intertidal sandflats or mudflats. May utilise inland wetlands, mudflats, muddy lakes and swamps with water that is less than 10cm deep.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Lophoictinia isura</i> Square-tailed Kite	Vulnerable	-	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. In arid north-western NSW, has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland. Breeding is from July to February, with nest sites generally located along or near watercourses, in a fork or on large horizontal limbs.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Melanodryas cucullata cucullata</i> Hooded Robin (south-eastern form)	Vulnerable	-	Occurs in lightly wooded country, often in open eucalypt woodland, acacia scrub and mallee. Often in or near open areas and clearings. Occurs in areas with structurally diverse attributes including small shrubs, saplings, mature eucalypts and native grasses of moderately tall height.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Ninox connivens</i> Barking Owl	Vulnerable	-	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats due to the higher density of prey on these fertile soils. Nesting occurs during mid-winter and spring but is variable between pairs and across years.	Possible
<i>Ninox strenua</i> Powerful Owl	Vulnerable	-	Inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. Breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. Roosts by day in dense vegetation comprising species such as <i>Syncarpia glomulifera</i> , <i>Allocasuarina littoralis</i> , <i>Acacia melanoxylon</i> , <i>Angophora floribunda</i> , <i>Exocarpus cupressiformis</i> and a number of Eucalypt species. Nests in large tree hollows (at least 0.5 m deep), in large Eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old.	Possible

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Numenius madagascariensis</i> Eastern Curlew	-	Critically Endangered	Generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. Forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. Roosts on sandy spits and islets, especially on dry beach sand near the high-water mark, and among coastal vegetation including low saltmarsh or mangroves. May also roost on wooden oyster leases or other similar structures.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Petroica boodang</i> Scarlet Robin	Vulnerable	-	Found in forests and woodlands. Habitat usually contains abundant logs and fallen timber. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. Nest is an open cup made of plant fibres and cobwebs and is built in the fork of tree usually more than 2 metres above the ground; nests are often found in a dead branch in a live tree, or in a dead tree or shrub.	Possible
<i>Petroica phoenicea</i> Flame Robin	Vulnerable	-	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Occasionally occurs in temperate rainforest, and also in herbfields, heathlands, shrublands and sedgeland at high altitudes. In winter lives in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. Breeds in spring to late summer. Nests are often near the ground and are built in sheltered sites, such as shallow cavities in trees, stumps or banks. Builds an open cup nest made of plant materials and spider webs.	Possible
<i>Rostratula australis</i> Australian Painted Snipe	Endangered	Endangered	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Stagonopleura guttata</i> Diamond Firetail	Vulnerable	-	Found in grassy eucalypt woodland areas, such as Snow Gum Eucalypts and Box-Gum Woodlands. Also found in mallee, open forest, natural temperate grassland, as well as, grassland derived from other communities. May also be found in riparian areas, and lighted wooded farmland. May use hawk or raven nests.	Possible
<i>Tyto novaehollandiae</i> Masked Owl	Vulnerable	-	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.	Possible
<i>Tyto tenebricosa</i> Sooty Owl	Vulnerable	-	Occurs in a variety of rainforest, including dry, subtropical and warm temperate variants, and moist eucalypt forest. Roosts during the day in tall forest tree hollows or in heavy vegetation. Large tree hollows are used for nesting.	Possible
Endangered Ecological Communities				
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	-	Endangered	Occurs mostly on Tertiary sands and gravels of the Hawkesbury-Nepean river systems. May also occur on aeolian (wind-blown) sands on Tertiary alluvium. Grows on elevations up to 80 m, which receive between 700-900 mm annual rainfall.	Not Found
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	-	Endangered	Occurs in coastal catchments at elevations up to 50 m ASL, typically less than 20 m ASL, on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. There are also minor occurrences on coastal dune swales or flats, particularly deflated dunes and dune soaks. Occurs on soils derived from unconsolidated sediments (including alluvium), typically hydrosols and sometimes organosols. It may occur in transitional soils where shallow unconsolidated sediments border lithic substrates. Typically occurs where groundwater is saline or brackish.	Not Found

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	-	Critically Endangered	Has a very restricted natural distribution and mainly occurs on clay soils derived from the deposits of ancient river systems or on shale soils of the Wianamatta Shales. Can intergrade into Shale-Gravel Transition Forest, where the alluvium is shallow, Castlereagh Swamp Woodland, in moist depressions and Castlereagh Scribbly Gum Woodland, on sandier soils.	Not Found
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	-	Critically Endangered	The tree canopy is typically dominated by <i>Eucalyptus moluccana</i> , <i>E. tereticornis</i> and/or <i>E. fibrosa</i> . Other canopy species may occur in association with the typical dominants and may be locally dominant at some sites. The understorey typically is dominated by the ground layer and comprises a variety of perennial native graminoids and forbs including <i>Aristida ramosa</i> , <i>A. vagans</i> , <i>Cymbopogon refractus</i> , <i>Dichelachne micrantha</i> , <i>Echinopogon caespitosus</i> var. <i>caespitosus</i> , <i>Eragrostis leptostachya</i> and <i>Themeda triandra</i> , and other graminoids, forb and herb species. A shrub layer may be present, to variable extent, and is often dominated by <i>Bursaria spinosa</i> while other species include <i>Daviesia ulicifolia</i> , <i>Dillwynia sieberi</i> , <i>Dodonaea viscosa</i> subsp. <i>cuneata</i> , <i>Indigofera australis</i> and <i>Lissanthe strigosa</i> .	Not Found
Elderslie Banksia Scrub Forest in the Sydney Basin Bioregion	-	Critically Endangered	Elderslie Banksia Scrub Forest of the Sydney Basin Bioregion (hereafter Elderslie Banksia Scrub Forest or the ecological community) is a scrub-forest or woodland occurring on sand deposits in the Camden area of south-western Sydney. The canopy is dominated by <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> (coast banksia). The understorey is typically shrubby with scattered herbs, sedges and ferns.	Not Found

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	-	Critically Endangered	Dominant trees include <i>Eucalyptus tereticornis</i> , <i>E. amplifolia</i> , <i>Angophora floribunda</i> and <i>A. subvelutina</i> . <i>Eucalyptus baueriana</i> , <i>E. botryoides</i> and <i>E. elata</i> may be common south from Sydney, <i>E. ovata</i> occurs on the far south coast, <i>E. saligna</i> and <i>E. grandis</i> may occur north of Sydney, while <i>E. benthamii</i> is restricted to the Hawkesbury floodplain. A layer of small trees may be present, including <i>Melaleuca decora</i> , <i>M. styphelioides</i> , <i>Backhousia myrtifolia</i> , <i>Melia azaderach</i> , <i>Casuarina cunninghamiana</i> and <i>C. glauca</i> . Scattered shrubs include <i>Bursaria spinosa</i> , <i>Solanum prinophyllum</i> , <i>Rubus parvifolius</i> , <i>Breynia oblongifolia</i> , <i>Ozothamnus diosmifolius</i> , <i>Hymenanthera dentata</i> , <i>Acacia floribunda</i> and <i>Phyllanthus gunnii</i> .	Not Found
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	-	Critically Endangered	High-sandstone-influence sites have poor rocky soils, and many shrubs which rely on nitrogen-fixing root nodules and soil/root fungi to obtain nutrients. High-shale-influence sites often have a diverse and moderately dense groundcover stratum, with grasses a prominent and diverse component.	Not Found
Temperate Highland Peat Swamps on Sandstone	-	Endangered	The structure of the vegetation varies from open shrubland to closed heath or open heath (dominated by shrub species but with a sedge and graminoid understorey and occasionally with scattered low trees) to sedgeland and closed sedgeland. Topographic location, hydrology and soils significantly influence the dominant species composition.	Not Found
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	-	Critically Endangered	Occurs close to the shale/sandstone boundary on the more fertile shale influenced soils, in higher rainfall areas on the higher altitude margins of the Cumberland Plain, and on the shale ridge caps of sandstone plateaus. A transitional community, between Cumberland Plain Woodland in drier areas and Blue Gum High Forest on adjacent higher rainfall ridges.	Not Found

<i>Scientific Name</i> Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	-	Endangered	Generally tall open eucalypt forests found on igneous rock in, or adjacent to, the Sydney Basin Bioregion. Occurs in areas of high rainfall, generally ranging from 950 to 1600 mm/year and typically occurs at elevations between 650 and 1050 m above sea level. In the Blue Mountains, the ecological community occurs as small, disjunct patches scattered across the upper mountains on caps of post-Triassic basalt, or on basalt-like volcanics. The ecological community typically occurs as an open to tall open forest with a sparse to dense layer of shrubs and vines, and a diverse understorey of native grasses, forbs, twiners and ferns. However, the structure of the ecological community may vary from tall open forest with trees up to and above 30 m tall with a projected foliage cover of 30–70% to woodland with trees 10–30 m tall, with a projected foliage cover of 10–30% depending on aspect, slope, soil conditions, soil depth, and previous clearing and disturbance. Rainforest elements are also present in less coastal remnants with sheltered aspects and topography, and along watercourses.	Not Found
Western Sydney Dry Rainforest and Moist Woodland on Shale	-	Critically Endangered	Occurs typically on clay soils derived from Wianamatta Group shale geology, generally occurs in areas with a mean annual rainfall of 800 to 920 mm/year at higher elevations of the Cumberland Plain, up to 300 m above sea level (asl). It generally occurs in rugged terrain and other patches may occur on undulating terrain, with dry rainforest patches typically occupying steep lower slopes and gullies, and moist woodland patches typically occupying upper sections of the slope or where partial clearance or fire has disturbed the rainforest vegetation. A tree canopy layer is present forming a simple, low closed forest (often with emergents) to a more open woodland, with a small tree layer forming a sub-canopy. A shrub layer is usually present, though variable in density, and has good representation of mesic species. The ground layer is variable and generally sparse with a diverse mix of forbs, ferns and shade-tolerant grasses (the latter more typical of the moist woodland form). Vines and scramblers are typically present across the ecological community.	Not Found
Flora				

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Acacia bynoeana</i> Bynoe's Wattle	Endangered	Vulnerable	Occurs on sandy soils, in heath or dry sclerophyll forest. Appears to have preference for open sites, sometimes disturbed, such as recently burnt areas, and roadside spoil mounds and trail margins. Grows with overstorey species including Scribbly Gum, Red Bloodwood, Narrow-leaved Apple, Saw Banksia and Parramatta Red Gum.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Acacia pubescens</i> Downy Wattle	Vulnerable	Vulnerable	Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravelly soils, often with ironstone. Occurs in open woodland and forest, in a variety of plant communities, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. Flowers from August to October.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Allocasuarina glareicola</i>	Endangered	Endangered	Grows in Castlereagh woodland on lateritic soil. Found in open woodland with <i>Eucalyptus parramattensis</i> , <i>Eucalyptus fibrosa</i> , <i>Angophora bakeri</i> , <i>Eucalyptus sclerophylla</i> and <i>Melaleuca decora</i> . Common associated understorey species include <i>Melaleuca nodosa</i> , <i>Hakea dactyloides</i> , <i>Hakea sericea</i> , <i>Dillwynia tenuifolia</i> , <i>Micromyrtus minutiflora</i> , <i>Acacia elongata</i> , <i>Acacia brownei</i> , <i>Themeda australis</i> and <i>Xanthorrhoea minor</i> .	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Cynanchum elegans</i> White-flowered Wax Plant	Endangered	Endangered	Usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest, Coastal Tea-tree – Coastal Banksia coastal scrub, Forest Red Gum aligned open forest and woodland, Spotted Gum aligned open forest and woodland, and Bracelet Honey Myrtle scrub to open scrub. Flowering occurs between August and May.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Dillwynia tenuifolia</i>	Vulnerable	-	Found in a variety of areas, including woodland, forest and grassland, generally on relatively heavy soils. May be found in natural, semi-natural, grazed or ungrazed areas.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Eucalyptus aggregata</i> Black Gum	-	Vulnerable	Grows in swamp margins, hillslopes, gullies and creekbanks and occurs within dry sclerophyll forest and tall damp heath on sandstone. Flowers September to November, fruit matures October to December.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Eucalyptus benthamii</i> Camden White Gum	Vulnerable	Vulnerable	Requires a combination of deep alluvial sands and a flooding regime that permits seedling establishment. Recruitment of juveniles appears to be most successful on bare silt deposits in rivers and streams. Most of the individuals are around 60 to 300m ASL with the highest at 750m. Occurs in open forest. Associated species include <i>Eucalyptus elata</i> , <i>E. bauerina</i> , <i>E. amplifolia</i> , <i>E. deanei</i> and <i>Angophora subvelutina</i> . Understorey species include <i>Bursaria spinosa</i> , <i>Pteridium esculentum</i> and a wide variety of agricultural weeds.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Genoplesium baueri</i> Yellow Gnat-orchid	Endangered	Endangered	Grows in dry sclerophyll forest and moss gardens over sandstone. Flowers February to March. The species has been recorded from locations between Ulladulla and Port Stephens, about half the records were made before 1960 with most of the older records being from Sydney suburbs.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Grevillea juniperina</i> subsp. <i>juniperina</i> Juniper-leaved Grevillea	Vulnerable	-	Found within the spray zone or associated drip lines and seepage areas of waterfalls on steep, sandstone cliffs and ledges, at altitudes between 680 and 1000 metres above sea level. Sites face south-east to south-west, and are heavily shaded.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Grevillea parviflora</i> subsp. <i>parviflora</i> Small-flower Grevillea	Vulnerable	Vulnerable	Grows in moist heath, often along seepage lines. The known population grows in moist sandy soil over sandstone amongst sedges and grasses in an area that appears to be regularly slashed by the local council. Flowering does not necessarily occur every year, often skipping years. Dormant over summer and leaves emerge around April and flowering occurs from September to December.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Haloragis exalata</i> subsp. <i>exalata</i> Wingless Raspwort	Vulnerable	Vulnerable	Found in three disjunct populations, all within the Central Tablelands and within 100kms of each other. These populations include Clarence, which covers an area of approximately 1 hectare; Mullions Range, covering approximately 5 hectares; and Aarons Pass, which is confined to 2.5km of road easements.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i> <i>Marsdenia viridiflora</i> R. Br. subsp. <i>viridiflora</i> population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and Penrith local government areas	Endangered	-	Grows in vine thickets and open shale woodland. Recent records are from Prospect, Bankstown, Smithfield, Cabramatta Creek and St Marys. Previously known north from Razorback Range.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Melaleuca deanei</i> Deane's Melaleuca	Vulnerable	Vulnerable	Occurs in sandy soils, woodlands and wet heath on sandstone. Found in mostly ridgetop woodland, with fewer sites in heath on sandstone.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Micromyrtus minutiflora</i>	Endangered	Vulnerable	Grows in vine thickets and open shale woodland.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Persicaria elatior</i> Knotweed	Vulnerable	Vulnerable	Normally grows in damp places, including coastal with swampy areas, along watercourses, streams and lakes, swamp forest and disturbed areas.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Persoonia acerosa</i> Needle Geebung	Vulnerable	Vulnerable	The Needle Geebung occurs in dry sclerophyll forest, scrubby low-woodland and heath on low fertility soils. This species seems to benefit from the reduced competition and increased light available on disturbance margins including roadsides;	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Persoonia hirsuta</i> Hairy Geebung	Endangered	Endangered	Found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone. It is usually present as isolated individuals or very small populations.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Persoonia nutans</i> Nodding Geebung	Endangered	Endangered	Northern populations are confined to aeolian and alluvial sediments and occur in a range of sclerophyll forest and woodland vegetation communities, with the majority of individuals occurring within Agnes Banks Woodland or Castlereagh Scribbly Gum Woodland and some in Cooks River / Castlereagh Ironbark Forests. Southern populations also occupy tertiary alluvium but extend onto shale sandstone transition communities and into Cooks River / Castlereagh Ironbark Forest. Peak flowering is from November to March with sporadic flowering all year round.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pimelea curviflora</i> var. <i>curviflora</i>	Vulnerable	Vulnerable	Occurs on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands. Also recorded in Illawarra Lowland Grassy Woodland habitat at Albion Park on the Illawarra coastal plain. Has an inconspicuous cryptic habit as it is fine and scraggly and often grows amongst dense grasses and sedges. Flowers October to May.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pimelea spicata</i> Spiked Rice-flower	Endangered	Endangered	In both the Cumberland Plain and Illawarra environments this species is found on well-structured clay soils. On the Cumberland Plain sites it is associated with Grey Box communities (particularly Cumberland Plain Woodland variants and Moist Shale Woodland) and in areas of ironbark. The co-occurring species in the Cumberland Plain sites are grey box, forest red gum and narrow-leaved ironbark. Blackthorn is often present at sites (and may be important in protection from grazing) and kangaroo grass is usually present in the groundcover (also indicative of a less intense grazing history). In the coastal Illawarra it occurs commonly in Coast Banksia open woodland with a better developed shrub and grass understorey. Coastal headlands and hilltops are the favoured sites.	Possible
<i>Pomaderris brunnea</i> Rufous Pomaderris	Endangered	Vulnerable	Populations occur on exposed sandstone cliff tops and terraces, at 960 - 1000m altitude and with aspects from south-east to south-west. Found in montane heath communities commonly including <i>Eucalyptus stricta</i> , <i>Allocasuarina nana</i> , <i>Dillwynia retorta</i> , <i>Epacris microphylla</i> and <i>Caustis flexuosa</i> . Flowering occurs in winter to late spring.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Pterostylis saxicola</i> Sydney Plains Greenhood	Endangered	Endangered	Most commonly found growing in small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines. All species of <i>Pterostylis</i> are deciduous and die back to fleshy, rounded underground tuberoids. Flowering occurs from October to December.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pultenaea parviflora</i>	Endangered	Vulnerable	Found in poor coastal country in shallow sandy soils overlying Hawkesbury sandstone and coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated with stunted species of <i>E. oblonga</i> , <i>E. capitellata</i> and <i>E. haemastoma</i> . Flowering period is irregular, flowers recorded throughout the year.	Possible
<i>Rhizanthella slateri</i> Eastern Underground Orchid	Vulnerable	Endangered	Occurs as a rare emergent tree in scrub, heath and low woodland on sandy soils, usually as isolated individuals or occasionally in small clustered groups. The sites at which it occurs are generally flat and on ridge tops. Associated soils are laterised clays overlying sandstone.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Rhodamnia rubescens</i> Scrub Turpentine	Critically Endangered	-	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Populations typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m a.s.l. in areas with rainfall of 1,000-1,600 mm. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Syzygium paniculatum</i> Magenta Lilly Pilly	Endangered	Vulnerable	On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Thelymitra kangaloonica</i> Kangaloon Sun Orchid	Critically Endangered	Critically Endangered	Occurs in dry eucalypt woodland or in shrubland on clayey lateritic soils, generally on flat to gently sloping terrain along ridges and spurs. Flowers August to September. Fruit produced October.	Unlikely Associated habitat does not occur on or in proximity to the site

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Thesium australe</i> Austral Toadflax	Vulnerable	Vulnerable	Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. Often found in association with Kangaroo Grass. A root parasite that takes water and some nutrient from other plants, especially Kangaroo Grass.	Unlikely Associated habitat does not occur on or in proximity to the site
Gastropoda				
<i>Meridolum corneovirens</i> Cumberland Plain Land Snail	Endangered	-	Primarily inhabits the critically endangered ecological community Cumberland Plain Woodland and grassy open woodland with occasional dense patches of shrubs. Also known from Shale Gravel Transition Forests, Castlereagh Swamp Woodlands and the margins of River-flat Eucalypt Forest. Lives under litter, bark, leaves and logs, or shelters in loose soil around grass clumps. Occasionally shelters under rubbish. Generally active at night.	Possible
<i>Pommerhelix duralensis</i> Dural Land Snail	Endangered	Endangered	Occurs in forested habitats with woody debris and good native cover, with strong associated with communities on the interface between shale derived and sandstone-derived soils.	Unlikely Associated habitat does not occur on or in proximity to the site
Mammalia				
<i>Cercartetus nanus</i> Eastern Pygmy-possum	Vulnerable	-	Found in a variety of areas including open forest, rainforest, woodland, coastal heath and inland riparian forest. Uses tree hollows, logs, rock outcrops, small caves and rocky cliff faces as dens. Uses flat rocks amongst boulder sites, rocky stream beds or banks and rocky cliff faces as latrine sites.	Possible
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	Vulnerable	Vulnerable	Roosts in cave entrances, crevices in cliffs, old mine workings and the disused, bottle-shaped mud nests of the Fairy Martin, frequenting low to mid-elevation dry open forest and woodland close to these features. Females raise young in maternity roosts from November to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years.	Possible

<i>Scientific Name</i> Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	Vulnerable	Endangered	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Mostly nocturnal, although will hunt during the day. Spends most of the time on the ground but is also an excellent climber and will hunt possums and gliders in tree hollows and prey on roosting birds.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	Vulnerable	-	Prefers moist habitats, with trees taller than 20m and generally roosts in eucalypt hollows but has also been found under loose bark on trees or in buildings. Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy. Breeding occurs in late spring to early summer and hibernates in winter.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Micronomus norfolkensis</i> Eastern Coastal Free-tailed Bat	Vulnerable	-	Occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roosts mainly in tree hollows but will also roost under bark or in man-made structures. Usually solitary but also recorded roosting communally, probably insectivorous.	Possible
<i>Miniopterus australis</i> Little Bent-winged Bat	Vulnerable	-	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. Maternity colonies form in spring and birthing occurs in early summer.	Possible

Scientific Name Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat	Vulnerable	-	Caves are the primary roosting habitat, but also uses derelict mines, storm-water tunnels, buildings and other man-made structures. Forms discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves. Hunts in forested areas, catching moths and other flying insects above the tree tops.	Possible
<i>Myotis macropus</i> Southern Myotis	Vulnerable	-	Generally roost in groups of 10 - 15, close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface. In NSW, females have one young each year usually in November or December.	Possible
<i>Petauroides volans</i> Greater Glider	-	Vulnerable	Shelter during the day in tree hollows and will use up to 18 hollows in their home range. Give birth to a single young in late autumn or early winter. Can glide up to a horizontal distance of 100 m including changes of direction of as much as 90 degrees. Feeds exclusively on eucalypt leaves, buds, flowers and mistletoe.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Petaurus australis</i> Yellow-bellied Glider	Vulnerable	-	Found in a variety of areas including open forest, rainforest, woodland, coastal heath and inland riparian forest. Uses tree hollows, logs, rock outcrops, small caves and rocky cliff faces as dens. Uses flat rocks amongst boulder sites, rocky stream beds or banks and rocky cliff faces as latrine sites.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Petaurus norfolcensis</i> Squirrel Glider	Vulnerable	-	Generally only found in heath or open forest with a heathy understorey on sandy or friable soils. Often creates distinctive conical holes in the soil when digging for food. Nests during the day in a shallow depression in the ground covered by leaf litter, grass or other plant material. Nests may be located under <i>Xanthorrhoea</i> spp., blackberry bushes and other shrubs, or in rabbit burrows. The upper surface of the nest may be mixed with earth to waterproof the inside of the nest.	Possible

<i>Scientific Name</i> Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Petrogale penicillata</i> Brush-tailed Rock-wallaby	Endangered	Vulnerable	Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night. Live in family groups of 2 to 5 adults and usually one or two juvenile and sub-adult individuals. Breeding is likely to be continuous, at least in the southern populations, with no apparent seasonal trends in births.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Phascolarctos cinereus</i> Koala	Vulnerable	Vulnerable	Inhabits eucalypt woodlands and forests. Feeds on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browsing species. Inactive for most of the day, feeding and moving mostly at night. Spends most of their time in trees but will descend and traverse open ground to move between trees.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pseudomys novaehollandiae</i> New Holland Mouse	-	Vulnerable	Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It is a social animal, living predominantly in burrows shared with other individuals. Distribution is patchy in time and space, with peaks in abundance during early to mid-stages of vegetation succession typically induced by fire.	Unlikely Associated habitat does not occur on or in proximity to the site
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox	Vulnerable	Vulnerable	Occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young, some camps have been used for centuries. Feeds on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees, vines, cultivated gardens and fruit crops.	Possible

<i>Scientific Name</i> Common Name	NSW status	C'wealth status	Habitat ¹²	Likelihood
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheathtail-bat	Vulnerable	-	Roosts singly or in groups of up to six, in tree hollows and buildings, in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees. Breeding has been recorded from December to mid-March, when a single young is born.	Possible
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	Vulnerable	-	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m, as it searches for beetles and other large, slow-flying insects. This species has also been known to eat other bat species. Little is known of its reproductive cycle, however a single young is born in January.	Possible
Reptilia				
<i>Hoplocephalus bungaroides</i> Broad-headed Snake	Endangered	Vulnerable	Occurs in boggy soils that appear to be permanently wet, in isolated and naturally fragmented sedge and shrub swamp habitat. The vegetation in these swamps is typically sedgelands that is interspersed with shrubs, but can also occur as dense shrub thicket.	Unlikely Associated habitat does not occur on or in proximity to the site

Appendix B

Species list

Scientific name	Common name
<i>Acetosella vulgaris</i>	Sheep Sorrel*
<i>Ageratina adenophora</i>	Crofton Weed*
<i>Angophora floribunda</i>	Rough-barked Apple
<i>Aristida vagans</i>	Threeawn Speargrass
<i>Bursaria spinosa subsp. spinosa</i>	
<i>Cheilanthes sieberi</i>	Mulga Fern
<i>Chloris ventricosa</i>	Tall Chloris
<i>Chloris virgata</i>	Feathery Rhodes-grass*
<i>Cynodon dactylon</i>	Bermuda Grass*
<i>Dichondra repens</i>	Kidney Weed
<i>Digitaria ischaemum</i>	Smooth Crabgrass*
<i>Entolasia stricta</i>	Wiry Panic
<i>Eucalyptus microcarpa</i>	Grey Box
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Glycine tomentella</i>	Woolly Glycine
<i>Microlaena stipoides</i>	Weeping Grass
<i>Olea europaea subsp. europaea</i>	Olive*
<i>Panicum simile</i>	Two Colour Panic
<i>Paspalum dilatatum</i>	Dallisgrass*
<i>Persicaria decipiens</i>	Slender Knotweed
<i>Portulaca oleracea</i>	Duck Weed
<i>Ranunculus parviflorus</i>	Smallflower Buttercup*
<i>Setaria pumila</i>	Yellow Foxtail*
<i>Solanum linnaeanum</i>	Apple of Sodom*
<i>Tradescantia fluminensis</i>	Wandering Jaw*
<i>Verbena bonariensis</i>	Purpletop*

*Denotes exotic species

Appendix C

Assessment of significance

To comply with State legislative requirements, an Assessment of Significance under 5A of the *Environmental Planning and Assessment Act 1979* and 7.3 of the *Biodiversity Conservation Act 2016* has been undertaken for the following species:

Birds

- *Anthochaera Phrygia* - Regent Honeyeater
- *Lathamus discolor* - Swift Parrot
- *Ninox connivens* - Barking Owl
- *Ninox strenua* - Powerful Owl
- *Petroica boodang* - Scarlet Robin
- *Petroica phoenicea* - Flame Robin
- *Stagonopleura guttata* - Diamond Firetail
- *Tyto novaehollandiae* - Masked Owl
- *Tyto tenebricosa* - Sooty Owl

Flora

- *Pimelea spicata* - Spiked Rice-flower
- *Pultenaea parviflora*

Gastropods

- *Meridolum corneovirens* - Cumberland Plain Land Snail

Mammals

- *Cercartetus nanus* - Eastern Pygmy-possum
- *Chalinolobus dwyeri* - Large-eared Pied Bat
- *Micronomus norfolkensis* - Eastern Coastal Free-tailed Bat
- *Miniopterus australis* - Little Bent-winged Bat
- *Miniopterus orianae oceanensis* - Large Bent-winged Bat
- *Myotis macropus* - Southern Myotis
- *Petaurus norfolcensis* Squirrel Glider
- *Pteropus poliocephalus* - Grey-headed Flying-fox
- *Saccolaimus flaviventris* - Yellow-bellied Sheathtail-bat
- *Scoteanax rueppellii* - Greater Broad-nosed Bat

Threatened ecological community

- Cumberland Plain Woodland in the Sydney Basin Bioregion

(a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

It is unlikely that the proposed development would have an adverse effect on the life cycle of any species such that a viable local population is likely to be at risk of extinction.

Avian species are highly mobile and are likely to utilise habitat and resources within and adjacent to the site. The area impacted by the proposed development is disturbed. The proposed development would decrease the total area of habitat and resources available however the majority of vegetation on the site would not be affected.

Threatened flora species may exist on the site. The proposed activity would occur within the middle portion of the property. Vegetation within this portion of the property is well-represented in the study area and the removal or disturbance of this vegetation is unlikely to have a significant impact on any viable local flora population. The area impacted by the proposed development is generally disturbed and adversely affected by exotic plants and weeds. While recruitment and regeneration is occurring across the site no threatened flora species were observed during the field survey.

The **Cumberland Plain Land Snail** may occur on the site. The area impacted by the proposed development is generally disturbed. If the snails are present on site then it is likely that they occur in higher quality habitat within vegetation in the southern portion of the site. It is considered unlikely that further disturbance or vegetation removal within the middle portion of the site would result in extinction of a local land snail population.

Mammals may utilise habitat resources within the site. The proposed development would decrease the total area of habitat and resources available however the majority of vegetation on the site would not be affected. The proposed activity would result in removal of vegetation and habitat with a long history of disturbance associated with grazing and it is considered unlikely that the middle portion of the property is essential for the viability of any local population.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

The proposed action is not likely to have an adverse effect on the extent or composition of any **endangered ecological community**.

The site survey has revealed that the proposal is unlikely to impact critical habitat for the critically endangered ecological community. The proposed impact area has been previously cleared and is now adversely affected by exotic plants and weeds, this decreasing the quality of habitat for the EEC. It is unlikely that the original vegetation community in this area would recover without assistance. It is unlikely that this proposal would place the CEEC at risk of extinction or cause a serious or irreversible impact.

(c) in relation to the habitat of a threatened species or ecological community:

i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality

The proposed activity would result in the removal of disturbed vegetation within the middle portion of the property. The habitat features within this portion of the property are present within the north-western portion of the property and in the surrounding study area.

The removal of vegetation and habitat from the middle portion of the property would not result in isolation or fragmentation of any existing or potential habitat.

The proposed activity would occur within an already disturbed area of the property and is not considered to constitute important habitat.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

The site and study area are not listed as a declared area of outstanding biodiversity value.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process

The proposed action constitutes key threatening processes as listed in Schedule 4 of the *Biodiversity Conservation Act 2016* to the survival or evolutionary development of species in the study area.

The following key threatening processes would be addressed through the prevention of access to vegetation and habitat within the north-western portion of the property:

- Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners;
- Infection of native plants by *Phytophthora cinnamomic*; and
- Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae.

Access to the property would be contained to fenced areas where industrial activities have been approved. Access to vegetated areas of the property would be restricted to the land owners and would be subject to quarantine and infection control procedures appropriate to preventing the introduction of pathogens to the vegetated area.

The following key threatening processes would be limited to the middle portion of the property:

- Loss of hollow-bearing trees;
- Removal of dead wood and dead trees; and
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process).

Appendix D

Matters of national environmental significance



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: 08/03/21 13:54:02

[Summary](#)

[Details](#)

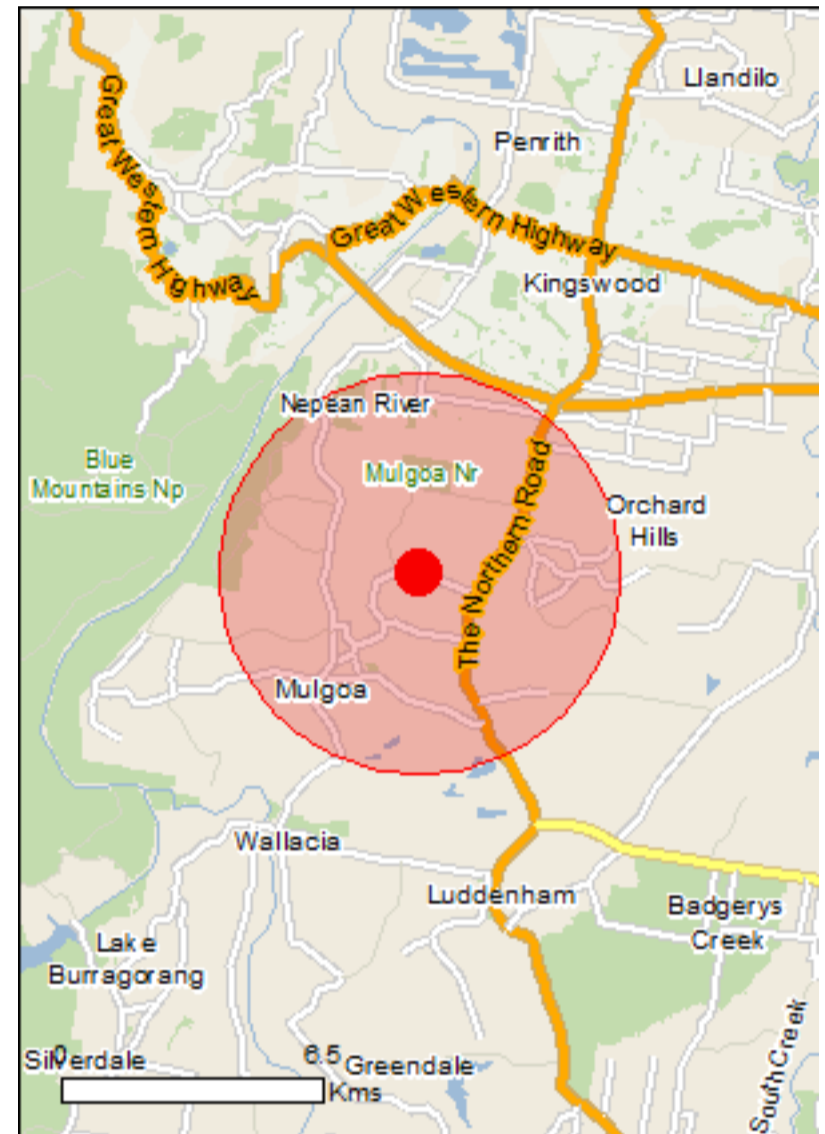
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

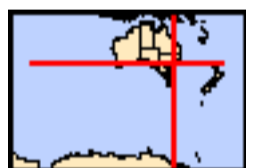
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

[Coordinates](#)

Buffer: 5.0Km



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:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	9
Listed Threatened Species:	42
Listed Migratory Species:	15

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:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	21
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:	49
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Greater Blue Mountains Area	NSW	Declared property

National Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Natural		
The Greater Blue Mountains Area	NSW	Listed place

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
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically Endangered	Community likely to occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	Endangered	Community may occur within area
Western Sydney Dry Rainforest and Moist Woodland on Shale	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	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may 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 likely to occur within area

Name	Status	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	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
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat known to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to 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
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to 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 known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Other		
Pommerhelix duralensis Dural Land Snail [85268]	Endangered	Species or species habitat likely to occur within area
Plants		
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Allocasuarina glareicola [21932]	Endangered	Species or species habitat likely to occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat may occur within area
Eucalyptus benthamii Camden White Gum, Nepean River Gum [2821]	Vulnerable	Species or species habitat likely to occur within area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat may occur within area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat known to occur within area
Micromyrtus minutiflora [11485]	Vulnerable	Species or species habitat likely to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat likely to occur within area
Persoonia nutans Nodding Geebung [18119]	Endangered	Species or species habitat may occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat known to occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis saxicola Sydney Plains Greenhood [64537]	Endangered	Species or species habitat may occur within area
Pultenaea parviflora [19380]	Vulnerable	Species or species habitat known to occur within area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Thelymitra kangaloonica Kangaloon Sun Orchid [81861]	Critically Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	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		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known 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
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 may 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 known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Defence Housing Authority Defence - 1CAD ORCHARD HILLS KINGSWOOD Defence - RANMME (DEOH)

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Natural		
Orchard Hills Cumberland Plain Woodland	NSW	Listed place

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 known 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 may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known 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
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known 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
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to 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 likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Blue Mountains	NSW
Mulgoa	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
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Birds

Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
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Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
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Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
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Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
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Carduelis chloris European Greenfinch [404]		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
--	--	--

Lonchura punctulata Nutmeg Mannikin [399]		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
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Pycnonotus jocosus Red-whiskered Bulbul [631]		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
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Frogs

Rhinella marina Cane Toad [83218]		Species or species
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Name	Status	Type of Presence
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
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		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
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [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
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		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
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
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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

-33.81786 150.67215

Acknowledgements

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

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

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

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

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Appendix E

Federal legislative considerations for threatened species

The *Significant Impact Guidelines 1.1* provide guidelines on determining whether a proposed action is likely to have a significant impact on a matter of national significance. The following assessment has been undertaken considering the impacts of the proposed development on the following species, listed on Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999*:

Critically endangered and endangered species

Birds

- *Anthochaera Phrygia* - Regent Honeyeater
- *Lathamus discolor* - Swift Parrot

Flora

- *Pimelea spicata* -Spiked Rice-flower

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

...lead to a long-term decrease in the size of a population

...reduce the area of occupancy of the species

...fragment an existing population into two or more populations

...adversely affect habitat critical to the survival of a species

...disrupt the breeding cycle of a population

...modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

...result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat

...introduce disease that may cause the species to decline, or;

...interfere with the recovery of the species.

The action is not likely to have a significant impact on a critically endangered or endangered species.

No critically endangered or endangered avian, gastropod or flora species has been observed on the site.

It is unlikely that the middle portion of the property supports critically endangered or endangered flora species. This area has been subject to long-term disturbance characteristic of extensive agriculture.

Removal of vegetation from the middle portion of the property would affect isolated trees with disturbed or absent understorey.

The area of occupancy for any endangered or critically endangered species would not be reduced because of the proposed activity. Natural vegetation communities occur within southern portion of the property and in the adjacent study area and are likely to provide critical roosting and foraging habitat to avian species.

The site does not constitute habitat identified in any recovery plan as habitat critical for any species or habitat listed on the Register of Critical Habitat.

It is unlikely that any endangered or critically endangered species relies on the property for breeding habitat or resources. It is unlikely that removal of the middle portion of the property would result in the modification, destruction, removal or isolation of habitat to the extent that any species is likely to decline.

Vulnerable species

Flora

- *Pultenaea parviflora*

Mammals

- *Pteropus poliocephalus* - Grey-headed Flying-fox
- *Chalinolobus dwyeri* -Large-eared Pied Bat

Significant impact criteria

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

...lead to a long-term decrease in the size of an important population of a species

...reduce the area of occupancy of an important population

...fragment an existing important population into two or more populations

...adversely affect habitat critical to the survival of a species

...disrupt the breeding cycle of an important population

...modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

...result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

...introduce disease that may cause the species to decline, or;

...interfere substantially with the recovery of the species.

The proposed action is not likely to lead to a long-term decrease in the size of any important population of a species.

The site is unlikely to support an important population of a species as identified in any recovery plan.

The area of occupancy for any important population of a species would not be reduced because of the proposed activity. Natural vegetation communities occur within southern portion of the property and in the adjacent study area and are likely to provide critical roosting and foraging habitat to avian species. The proposed activity would not fragment any existing important population.

It is unlikely that any important population relies on the property for breeding habitat or resources and it is unlikely that removal of the middle portion of the property would result in the modification, destruction, removal or isolation of habitat to the extent that any important population is likely to decline.

The proposed activity is not likely to substantially interfere with the recovery of any species.

Listed migratory species

Aves

- *Hirundapus caudacutus* - White-throated Needletail

Significant impact criteria

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

...substantially modify (including fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species

...result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or

...seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

The action is not likely to have a significant impact on a migratory species.

The site does not constitute important habitat for a migratory species.

It is unlikely that removal of the middle portion of the property would result in the modification, destruction, removal, or isolation of important habitat for a migratory species.

Vegetation removal and disturbance would occur within previously disturbed middle portion of the property. Higher-quality habitat and resources are likely to be available in the north-western portion of the property and in the adjacent study area.

It is not likely that a significant proportion of a population of a migratory species is dependent on the site for breeding, feeding, migration or resting.

Appendix F

AHIMS report

First Field Environmental
PO Box 6318
Silverwater New South Wales 1811
Attention: Michelle Evans
Email: mevans7227@gmail.com

Date: 08 March 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 22, DP:DP244610 with a Buffer of 200 meters, conducted by Michelle Evans on 08 March 2021.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.