

Preliminary Biodiversity Assessment Report

Blocks 864 & 1151, Weston Creek

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1 INTRODUCTION AND PROJECT BACKGROUND

1.1 Project description

We understand that PBS Property Group are in the process of seeking Works Approval (WA) from the National Capital Authority (NCA) to develop the land at Blocks 864 and 1161 Weston Creek ACT (Figure 1) for the purposes of a Residential Aged Care (independent living units) development (Figure 2).

It is noted that the area of land subject to the proposed works is located within a Designated Area under the National Capital Plan, and consequently, the jurisdictional approval for undertaking the work lies with the National Capital Authority (NCA).

In order to obtain WA an assessment of the site's biodiversity values is required to understand if there are any ecological values of significance present at the site, such as listed threatened species and/or ecological communities under either the ACT *Nature Conservation Act 2014* (NC Act) or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Associated with this is a requirement to assess whether the proposed development may result in a significant impact¹ on any of matters of biodiversity conservation significance.

This Biodiversity Assessment Report (BAR) address the information requirements set out above. Specifically, it provides information on the assessment approach and scope of works undertaken for this assessment, a summary of the site assessment results, assessment of potential impacts of the proposed development, and summary conclusions, including information on whether the project may trigger the requirement for an EIS or an EPBC Referral as well as recommendations for any specific management or mitigation measures (if required) to avoid or reduce any potential impacts.

1.2 Aims of this Assessment

The aims of this consultancy project are to:

- Asses the biodiversity values of the site (via desktop and field based methods).
- Consider the potential for listed threatened species or ecological communities under the EPBC Act or ACT *Nature Conservation Act 2014* (NC Act) to occur at the site, as well as identify potential requirements for further survey of site if required.
- Assess/consider the potential impacts of the proposed development on biodiversity, including specifically impacts to listed threatened species and ecological communities.
- Consider the potential requirement for a referral of the action under the EPBC Act, (based on assumed development of most or all of the site).
- Provide recommendations where appropriate for either further assessment requirements (if necessary) or design measures to avoid or minimise potential impacts to biodiversity (if deemed appropriate).

¹ In accordance with Commonwealth's EPBC Act *Significant Impact Guidelines 1.1* (2013)

1.3 Site Context

The subject site for this assessment is Blocks 864 and 1151, Weston Creek and is located north of Cotter Road, west of Equestrian Park and the old Yarralumla Woolshed (see Figure 1). The site occupies a combined area of approximately 5.5 ha and is bordered to the south, west and north by (undeveloped rural land of) Block 1199 Weston Creek and Block 668 Weston Creek to the east supporting the Equestrian Park lands. The Molonglo River is situated approximately 300m north of the site.

As mentioned, the subject site is currently zoned as Designated Land under the National Capital Plan and ACT Territory Plan, and there are no applicable overlay zones.

The site currently supports a residence in the southern portion of the study area (Block 1151) as well as numerous buildings and other infrastructure throughout the southern and central parts of Block 864. The northern portion of the site in Block 864, appears to have been used for the storing of fill with a large stockpile occupying this area. PATH Co have been informed that this fill is not contaminated spoil.

While the residence appears to be currently occupied, the remaining buildings at the site are vacant and derelict and appear to have not been used for many years (it is not known exactly what the previous uses of the site were). Associated with this, the site in general appears to be subject to no form of current or ongoing management with the exception of the small grassed area near the residence in Block 1151 that appears to be regularly mown.

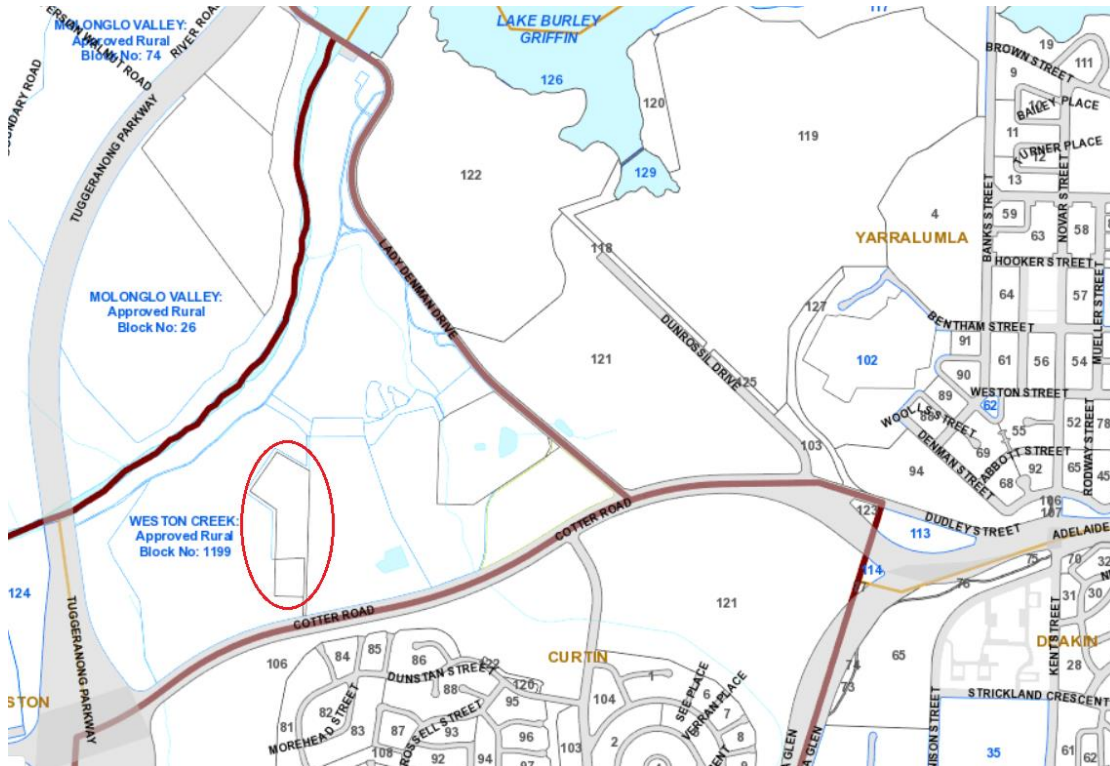


Figure 1. Study site location (yellow polygon)
(Figure source: ACTmapi, ACT Government, 2020)

Note:
 All measurements are to be confirmed with the 1:1000
 Overall Ground Level Plan. Dimensions are to be confirmed
 in the Survey Plan. All dimensions are to be confirmed
 in the Survey Plan.

SCHEMATIC DESIGN

Project No.	200063	Project No.	072220
Client	Yaraluma	Client	JC
Scale	1:1000	Scale	1:1000
Sheet No.	SK01.11	Sheet No.	SK01.11



Figure 2. General Plan of Proposed Development

2 ASSESSMENT APPROACH

The assessment of the site's biodiversity values included a combination of both desktop searches as well as a brief site inspection, as described further below.

2.1 Desktop Assessment

Background database searches were conducted to identify any existing known or recorded environmental values within the study site that may provide a potential to constraint to the development, or otherwise impact upon the planning and approval requirements to allow the works to proceed. These database searches include the following:

- Online Database searches including:
 - ACT ACTMapi *Significant Species, Vegetation Communities and Registered Trees* database maps (<http://app.actmapi.act.gov.au/actmapi/>), and
 - EPBC protected Matters Search Tool (<http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf>) applying a 10 km search area centred at the mid-point of the project area). A copy of the search results is included at Appendix A.
- Commonwealth Threatened Species Profiles (<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>)
- Atlas of Living Australia (ALA) (<https://www.ala.org.au/>)

The results of these background searches are summarised briefly in the assessment findings below and in the Threatened Species Evaluation Table (Appendix B).

2.2 Site Survey

An initial or preliminary site inspection was conducted on 13 April 2021 to undertake a broad and general assessment of the terrestrial biodiversity (flora and fauna) values within the site study area. Specifically, the site survey included the following components:

- Assess floristic values of the site for the identification of broad vegetation conditions and types, as well as assessing the general site conditions to help inform consideration of the potential for any listed threatened flora species or ecological communities to occur at the site (as identified from the database searches)²
- Identify the presence of fauna habitat features such as hollow-bearing trees, fallen logs, rocky outcrops and aquatic habitats.

Photos of the site conditions are provided in Appendix D.

² Note: the site survey for this preliminary assessment involved only a brief inspection and site traverse to identify the general composition of species present and the site habitat values. It was not intended to involve the collection of an exhaustive list of all flora/fauna species that may occur at the site, but rather is intended to inform the general values observed at the site to support the threatened species evaluations.

2.3 Survey Limitations

The Autumn timing of the surveys as well as the overall survey effort were adequate for the identification of the overall vegetation community, EEC status, condition and potential for threatened species, particularly given the highly modified nature of the site. Given the site conditions observed and as described below in this report, the single-day survey effort was considered adequate for identifying the site values and further targeted surveys are not considered warranted.

This assessment does not include the mapping or assessment of Protected Trees in accordance with the *ACT Tree Protection Act 2005*.

3 SITE VALUES

3.1 Vegetation

3.1.1 Flora

The vegetation at the site is characterised generally as being in a modified condition with the existing trees at the site comprising a mix of (mostly) planted native and non-native species and a modified and degraded and understorey.

The tree native species recorded at the site include Apple Box (*Eucalyptus bridgesiana*), Argyle Apple (*E. cinerea*), Broad-leaved Peppermint (*E. dives*), River Peppermint (*E. elata*), Southern Blugum (*E. globulus*), Brittle Gum (*E. mannifera*), Red Box (*E. polyanthemos*), Candlebark (*E. rubida*) and an unknown planted Ironbark species (not locally indigenous). Notably, there were no Blakely's Red Gum (*E. blakelyi*) or Yellow Box (*E. melliodora*) species recorded, which is important in considering the overall vegetation community status as discussed further below. The (planted) non-native trees at the site include Willows (*Salix* sp.), Ash (*Fraxinus* sp.) and Loquat (*Eriobotrya japonica*).

There was no natural shrubby understorey present at the site, with the site being almost completely devoid of any native/natural shrubs. Only a few small regrowth Wattles (*Acacia* sp) were seen at the site as well as a number of non-native shrubs such as Cotoneasters (*Cotoneaster glaucophyllus*).

The groundcover vegetation at the site was also observed to be highly modified. In general, all parts of the site were found to be dominated by non-native introduced (weed) varieties. The most prevalent introduced species observed at the site included numerous herb (non-grass) varieties such as Buchan Weed (*Hischfeldia incana*), Fleabane (*Conyza bonariensis*), Fat Hen (*Chenopodium album*), Ribwort Plantain (*Plantago lanceolata*), Dandelion (*Taraxacum officinale*), Red-flowered Mallow (*Modiola caroliniana*), and Wireweed (*Polygonum* sp.), as well as a number of non-native grass species including mainly African Lovegrass (*Eragrostis curvula*), Paspalum (*Paspalum dilatatum*), Brome (*Bromus catharticus?*).

Some native groundcover species were recorded at the site, however, these were generally sporadic and occurred in low (cover) densities. Some of the more common native groundcover species encountered at the site include Spear Grass (*Austrostipa* spp.), Native Geranium (*Geranium solanderi*), Grassland Wood Sorrel (*Oxalis perennense*), New-Holland Daisy (*Vittadinia* sp.) and the Australian Stonecrop (*Crassula sieberiana*) as well as a moderate amount of Couch (*Cynodon dactylon*; note: Couch may be regarded as a naturalised cultivar).

In considering the overall vegetation condition and status, as noted in the flora results table (Appendix C), there were a total of 59 plant species recorded at the site comprising 23 native species compared with 36 non-native species. Of the native species recorded, 11 of these were trees or (large) shrubs, including 9 eucalypt species, with the balance 12 species comprised of groundcover (i.e. grass, herb and forb) species. For the exotic vegetation component, only 5 species comprised of tree or shrub varieties with the balance 31 species comprised of groundcover (i.e. grass, herb and forb) varieties. For the groundcover vegetation, the overall relative abundance/cover of the non-native species was much greater than that observed for native species.

The implications of this species composition with respect to the potential occurrence of any listed threatened ecological communities at the site is discussed further below.

3.1.2 Threatened flora

There was no evidence of any local threatened flora species within the site.

A review of the ACTmapi Significant Species database also does not identify any records of any listed threatened flora as occurring either within or immediately adjacent to the site. The nearest records of any threatened flora species to the site are generally more than 5km from the site.

Based on the highly modified and disturbed site conditions as well as the lack of any nearby records of any threatened flora species, it is considered unlikely that any threatened flora would occur at the site.

With regard to other threatened flora species included in the EPBC PMST results (Appendix A), the degree disturbance and other features of the site suggest that there is little potential of any of these species occurring at the site. Refer to the threatened species evaluations (Appendix B) for further information on the potential likelihood of occurrence of these species at the site.

3.1.3 Threatened ecological communities

The site does not support any identifiable threatened ecological communities.

A review of the ACTmapi Significant Species database also does not identify any listed threatened communities occurring in or immediately adjacent to this area, with the ACTmapi Vegetation Communities layer database (based on the mapping of Baines et al, 2013) showing the site as supporting *URB: Urban and Developed Areas* across the majority of the central parts of the site, with *UOS: Urban Open Space* occupying the northern portion of the site (generally where the large earth spoil pile is located – see Figure 3).

The nearest records of any listed threatened ecological communities to the site includes a small area of *Natural Temperate Grassland of the South Eastern Highlands* (critically endangered ecological community (CEEC) under the EPBC Act); and/or *Natural Temperate Grassland* (endangered ecological community (EEC) under the ACT NC Act) occurring well to the northeast of the site (>800m) Governor General's property, east of Lady Denman Drive.

The EPBC PMST also revealed two listed threatened ecological communities that may have the potential to occur in the area, these include the following:

- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (critically endangered ecological community (CEEC) under the EPBC Act); and/or *Yellow Box Red Gum Grassy Woodland* (endangered ecological community (EEC) under the ACT NC Act); and
- *Natural Temperate Grassland of the South Eastern Highlands* (critically endangered ecological community (CEEC) under the EPBC Act); and/or *Natural Temperate Grassland* (endangered ecological community (EEC) under the ACT NC Act).

In considering the potential for either community to occur at the site, the Natural Temperate Grassland community can be ruled out on the basis of the highly modified

nature of the open grassland areas dominated almost exclusively by introduced species as described above.

The White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland community (Box Gum Woodland) can also be ruled out as having the potential to occur at the site given the limited treed parts of the site are comprised of mainly planted species and do not support (or considered likely to have previously supported) a canopy dominated by Yellow Box (*E. melliodora*) or Blakely's Red Gum (*E. blakelyi*) trees. Additionally, the highly modified groundcover vegetation dominated by non-native species as described previously would also rule out this community as occurring at the site (including any potential Derived Native Grassland community).

Given the above, the site does not support any identifiable listed threatened ecological community.

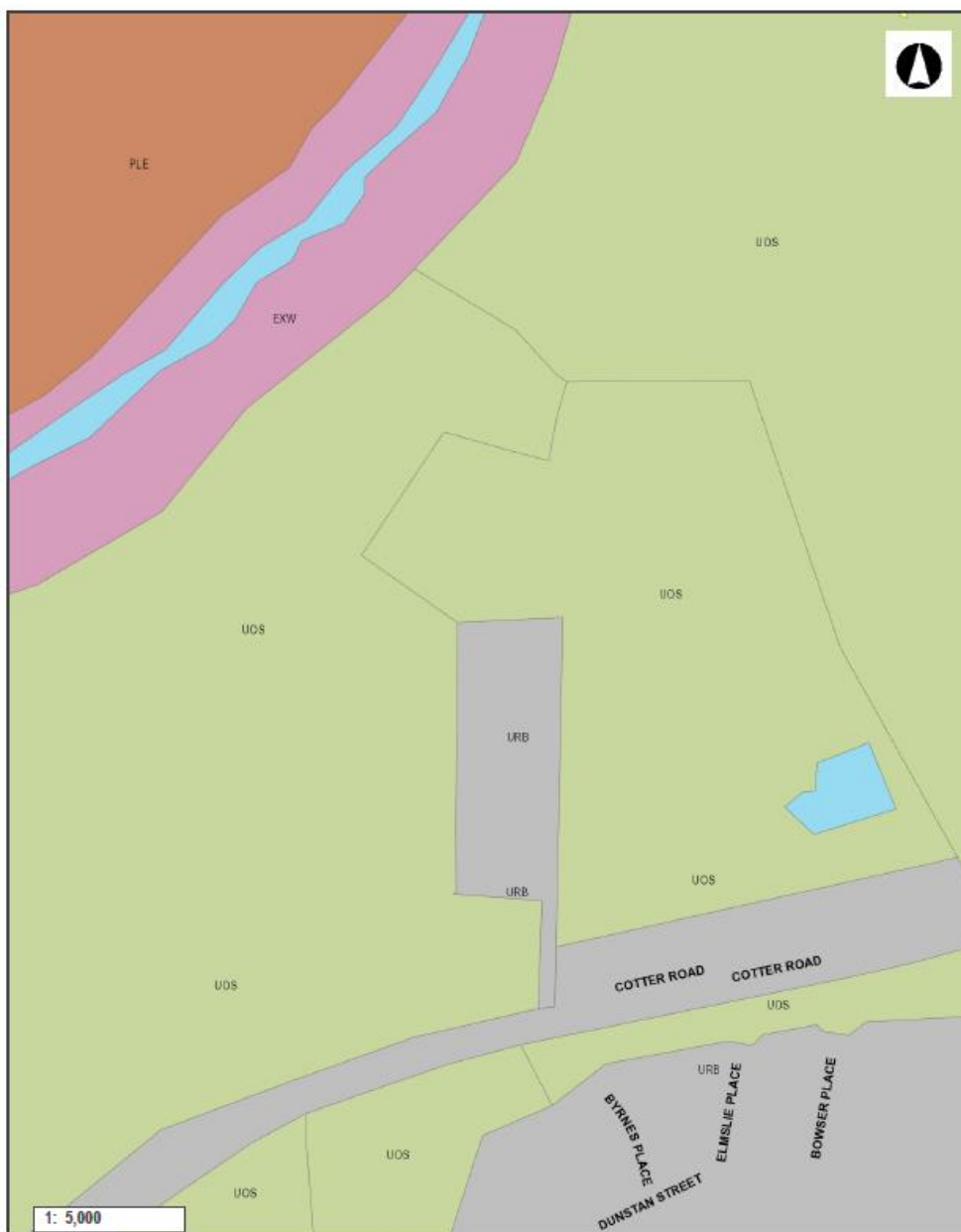


Figure 3. ACTmapi Vegetation Communities

3.2 Fauna and habitats

3.2.1 Fauna values at the site

As noted previously, the site assessment for this BAR focussed mainly on assessing habitat values and specifically, the potential for listed threatened species to occur at the site. Accordingly, detailed or targeted fauna surveys were not undertaken, and consequently, a full inventory list of all fauna species seen or likely to occur at the site has not been compiled.

A summary of the site's habitat values for key fauna groups is provided below, followed by an assessment of the potential for the site to support any listed threatened fauna species.

Avifauna

The site was observed to provide some limited habitat values for avifauna (birds). Specifically, the site supported numerous trees, including a mix of exotic and native species which provide some resting/shelter and foraging opportunities for birds. However, as noted previously, (almost) all of the trees at the site are planted specimens, and collectively, do not form any notable intact natural or remnant woodland patches, and there is also a lack of an intact native shrubby understorey as previously mentioned. Additionally, none of these planted trees are fully mature or remnant trees, and none were observed to support any hollows (including the few dead trees which were not fully mature before their senescence). As such, there is no breeding habitat present within the site for any hollow-dependent avifauna species (which includes most of the locally threatened bird species).

The trees at the site may collectively still play a role in assisting with avifauna movements in the area, providing brief resting and shelter opportunities. However, given that the residential suburbs of Curtin and beyond occur immediately to the south, and that the site is relatively narrow in an east-west direction which highly mobile species such as birds can easily pass, the site in and of itself is not considered likely to play an important or key role in maintaining local avifaunal movement opportunities.

The site provides limited habitat for grassland bird species given the highly modified nature of this vegetation layer as previously described, and suitable for only a small number of more common grassland birds (such as the Australasian Pipit, *Anthus novaeseelandiae*). The site provides no aquatic habitats to support any wetland bird species.

Based on the above, the arboreal habitat values of the site are limited and likely to be used only by those common bird species that are already well-adapted to urban environments such as (but not limited to) Crested Pigeons (*Ocyphaps lophotes*), Sulphur-crested Cockatoos (*Cacatua galerita*), Galahs (*Eolophus roseicapilla*), Crimson (*Platycercus elegans*) and Eastern Rosellas (*P. eximius*), Australian Magpie (*Cracticus tibicen*), Pied Currawongs (*Strepera graculina*), Noisy Miners (*Manorina melanocephala*), Superb Fairy Wrens (*Malurus cyaneus*) and Willy Wagtails (*Rhipidura leucophrys*), as well as the introduced Indian Myna (*Acridotheres tristis*).

Consequently, the avifauna values of the site are not regarded as being of any particular conservation significance that could potentially affect future development

opportunities at the site. Importantly, given the observed arboreal values, the site is considered unlikely to provide any (notable) habitat for any threatened, rare or less common woodland bird species.

Mammals

The site provides some marginal habitat values for native mammals. As noted above for avifauna, there are a number of trees present at the site which could be used by some (common) native arboreal mammals. However, given the lack of any observable tree hollows, this use is likely to be restricted to only some foraging habitat for common arboreal mammals such as possums which are well-adapted to these peri-urban environments. No possum 'dreys' (nests) were observed in any trees at the site, and it is possible/likely that any resident possums would shelter within the disused buildings. Therefore, there may be some artificial nesting habitat for arboreal fauna provided by these manmade structures although these would be regarded as being of limited ecological conservation value.

The site also is regarded as providing only marginal habitat for terrestrial native mammals, limited mainly to common and mobile species such as Eastern Grey Kangaroos (*Macropus giganteus*), with evidence (scats) of their occasional presence at the site. However, given the abundance of many non-palatable weeds in the groundcover vegetation (such as Buchan Weed and Fleabane), the foraging values of the site for kangaroos are limited. Given this and the small area of the site in relation to the extent of available habitats surrounding the site, it is unlikely that the site would play an important role in providing/maintaining key foraging habitats that a local population would be heavily reliant on.

The site is also unlikely to provide important habitat for smaller native mammals. Notably, there is an almost complete lack of any suitable natural cover/shelter or potential breeding habitats for smaller native mammals with no notable fallen timber, rocky outcrops or other natural denning/nesting habitats present within the site. Although there is some artificial cover in the way of stored materials about the site, the use of these structures by smaller mammals is likely to be restricted mainly to introduced species such as Rats (*Rattus spp.*) and Mice (*Mus musculus*).

Other mammal species considered to have some potential to use the site include mainly common and mobile/wide-ranging species that are well-adapted to these peri-urban landscapes such as Echidnas (*Tachyglossus aculeatus*), Wombats (*Vombatus ursinus*) and other macropod species, as well as introduced species such as cats (*Felis catus*), Foxes (*Vulpes vulpes*) and Rabbits (*Oryctolagus cuniculus*).

Importantly, given the observed (minimal) terrestrial habitat values, the site is considered unlikely to provide any important or otherwise notable habitat for any listed threatened mammal species.

Reptiles

The site provides some suitable habitat for native reptiles, however, this is mainly in the form of the artificial cover and shelter features provided the numerous areas of stored materials as well as the disused structures about the property. Additionally, the groundcover vegetation, particularly areas of relatively dense/rank growth may provide some further cover values for reptiles, as well as some open areas around the site that

may be suitable for basking. Given this, some common reptile species such as Grass or Tussock Skinks (e.g. *Lampropholis* spp.) as well as snakes (e.g. Brown Snakes, *Pseudonaja textilis* and Red-bellied Black Snakes, *Pseudechis porphyriacus*) are considered likely or have some opportunity to occur at the site.

Importantly, and with respect to potential habitat values for listed threatened reptiles known from the local or surrounding area (mainly the Pink-tailed Worm-lizard, *Aprasia parapulchella* and possibly the Striped Legless Lizard, *Delma impar*), there are no rocky outcrops or suitable native tussocky grassland features present within the site that form important habitat for these species.

Amphibians

There are no aquatic habitats present in the site that would be suitable for supporting any amphibian populations. There is a small dam nearby to the north on the adjacent Block 1199, about 30m from the western site boundary. Given the presence of this features, it is possible that some individuals of locally common frog species may occur within the site to shelter under stored material or in cracks/crevices in the ground in the north-western parts of site.

Importantly, based on the observed habitat values and context of the dam, the site is considered highly unlikely to support any listed threatened amphibian species.

3.2.2 Threatened fauna

No threatened fauna species were recorded within the site during the (brief, limited) survey. A review of the ACTmapi Significant Species database also does not identify any habitat or records of any listed threatened fauna as occurring either within or immediately adjacent to the site. The nearest records of any threatened fauna species to the site include the following (and are shown in Figure 4 below):

- Golden Sun Moth (*Synemon plana*). A large area of mapped habitat (assumed records) occurs to the north, northeast within Block 1225 (which is also an environmental offset site), beginning approximately 100m from the site. The survey indicated that the site is unlikely to be suitable for this species given the low abundance of appropriate floristic values (i.e. very little Wallaby Grass or Chilean Needlegrass recorded).
- Pink-tailed Worm-lizard (*Aprasia parapulchella*). Numerous areas of habitat for this species are mapped along the Molonglo River corridor, commencing from about 1.5km west of the site. As noted previously, there are no suitable rocky habitats within the site to support this species.
- Perunga Grasshopper (*Perunga ochracea*). A small area of mapped habitat (assumed only a small number of records) within Section 83 Weston Creek, to the southwest of the Tuggeranong Parkway/Cotter Road intersection. The site survey indicated that the site is unlikely to be suitable for this species given the low abundance of appropriate floristic values, particularly a low abundance of native grasses such as Wallaby Grasses (*Rytidosperma* spp.), Speargrasses (*Austrostipa* spp.) or Kangaroo Grass (*Themeda triandra*), and a lack of tussock structure which are considered important habitat components for this species (ACT Government Action Plan for this species (ACT Gov 2017).

- Striped Legless Lizard (*Delma impar*). Large area of mapped habitat on the northern foreshores of Lake Burley Griffin at Yarramundi Reach, more than 3km to the northeast of the site. As noted previously, the lack of any suitable grass tussock structure indicates the site would not provide any suitable habitat for the species.

Note: Lake Burley Griffin and Molonglo River are mapped as habitat for the Murray Cod (*Maccullochella peelii peelii*). Given lack of any aquatic habitats within or immediately adjacent to site (that may be likely to be affected by development) this species has been discounted from further consideration.

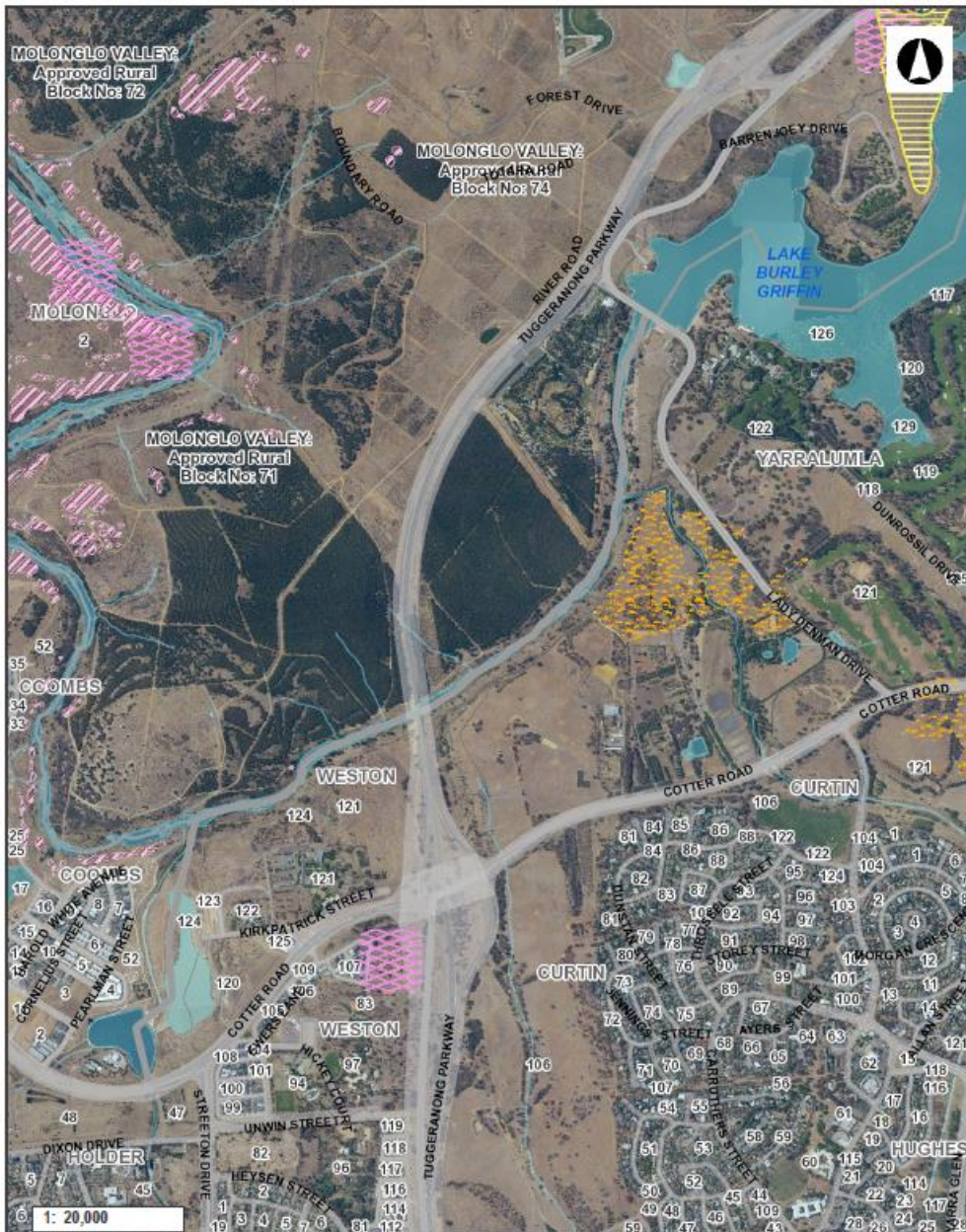


Figure 4. ACTmapi threatened fauna records in the local area

(Image legend: Orange dots = Golden Sun Moth; Purple diagonal hatch = Pink-tailed Worm-lizard; Purple cross-hatch = Perunga Grasshopper; Yellow hatch = Striped Legless Lizard)

3.2.3 Ecological Connectivity

Ecological connectivity is an important factor in determining overall habitat quality for almost all (native) fauna. Fauna movement is of vital importance in establishing viable populations of animals as it assists in breeding between individuals of different local sub-populations and populations which maintains genetic diversity, and also allows animals to be able to move between habitats either in response to seasonal factors or to exploit habitat resources in other areas (such as migratory species). Ecological connectivity also enables some species to move to new areas if the habitat quality of their original environment becomes degraded or otherwise unsuitable for them to persist there.

The subject site is not considered likely to play an important role in maintaining ecological connectivity in the local area given the lack of any important or notable habitats, including a lack of any natural woodland areas, combined with the occurrence of residential suburban areas to the south, and available habitats to the north along the river corridor which can maintain east-west connectivity in this area.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The preliminary assessment of the biodiversity values at Blocks 864 and 1151 Weston Creek, located off Cotter Road, ACT, found that the site is in a highly modified condition. Of note, the site has been previously developed and contains numerous disused buildings as well as a residential dwelling (currently occupied), and overall appears to be subject to very little ongoing management across most of the property area.

Although there are numerous trees present at the site, including many native species, almost all of these have been planted, and none appear to be (mature) remnant trees. There is very little native/natural shrubby understorey vegetation, and the groundcover vegetation is dominated by non-native species, including numerous weed varieties. Collectively, this vegetation does not provide any natural woodland or (derived) native grassland values and would not form part of any recognisable ecological community.

No listed threatened flora species were recorded at the site and given the high degree of modification of the groundcover vegetation and the dominance of weed varieties, there is considered to be little potential for any listed threatened flora species to occur at the site. In support of this conclusion, the desktop assessment also noted that there are no existing records of any threatened flora within or immediately adjacent to the site.

The fauna habitat values of the site are also considered to be marginal and restricted mainly to some limited values for common native species including a number of birds as well as some mammals including possums and kangaroos, and some reptile species. As noted, there is no discernible natural woodland ecosystem present at the site, and none of the trees were observed to support any tree hollows. Given this, there is no breeding habitat within the site suitable for most arboreal (and specifically hollow-dependant) fauna species, and so the values of the site for arboreal/avifauna groups are limited mainly to foraging and some limited cover/shelter. Consequently, the site is considered to provide no *important* habitat values for native arboreal mammals, and only limited/marginal habitat value for avifauna.

For grassland fauna habitat values, the site is also somewhat depauperate given the extent of weed infestation and lack of any native/natural grassland values, including a lack of any natural tussock grassland structure. Additionally, there is no naturally occurring shelter for (smaller) terrestrial fauna such as rocky outcrops or fallen timber, with the only ground-level structural elements provided mainly by (unused/discarded) material. Consequently, the site is expected to provide only limited habitat value for common terrestrial fauna types, with little potential for any threatened fauna species to occur at the site. In support of this conclusion, it was noted that no threatened native fauna are known to occur or have previously been recorded at the site.

Based on this assessment, the proposed future development of the site is not expected to trigger the requirement for a referral to the Commonwealth Department of Agriculture, Water and the Environment in accordance with the provisions of the EPBC Act.

Given the limited site values and low potential for any threatened species to occur at the site, further biodiversity surveys are not expected to be required (noting that this information does have a limited period of applicability and should there be a period of 3 or more years from now for when this information is used or relied upon, then another survey may be required to ensure the information remains current and acceptable to the authorities).

In conclusion, this assessment has found no evidence to suggest that the site is likely to provide important habitat for any listed threatened species or ecological community and that there are no obvious constraints to the future development of the site with regard to important biodiversity values.

4.2 Recommendations

Given the low potential for the development to result in any unacceptable ecological impacts, there are no specific recommendations believed necessary to protect any biodiversity matter of conservation significance. Notwithstanding this, some general management and mitigation measures to avoid/limit general ecological impacts are recommended, including:

- Protection of any trees (proposed to be retained in the future development of the site) in accordance with applicable ACT Tree Protection Guidelines.
- Establishment of sediment and erosion controls (in accordance with best practice) to prevent impacts of earthworks on stormwater systems and the nearby Molonglo River.
- Establishment of appropriate weed management measures to ensure that weeds are not spread from the works area.

5 REFERENCES

- ACT Government 2017. *Perunga Grasshopper Perunga ochracea Action Plan*. Environment, Planning and Sustainable Development Directorate, Canberra ACT.
- Atlas of Living Australia (ALA: 2018) *Spatial Portal*. <http://spatial.ala.org.au> accessed in April 2021.
- Baines, g., Webster, m., Cook, E., Johnston, L and Seddon, J. (2013). THE VEGETATION OF THE KOWEN, MAJURA AND JERRABOMBERRA DISTRICTS OF THE AUSTRALIAN CAPITAL TERRITORY Prepared for: Conservation Planning and Research, ACT Government Technical Report 28 November 2013 Conservation Planning.
- Department of Environment and Heritage (DEH: 2006). EPBC Act Policy Statement: *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (available online at: <http://www.environment.gov.au/system/files/resources/be2ff840-7e59-48b0-9eb5-4ad003d01481/files/box-gum.pdf>)
- Department of Environment (2013). *Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth of Australia, Canberra, ACT 2601.

APPENDIX A. EPBC PMST Results



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 02/05/21 12:36:24

[Summary](#)

[Details](#)

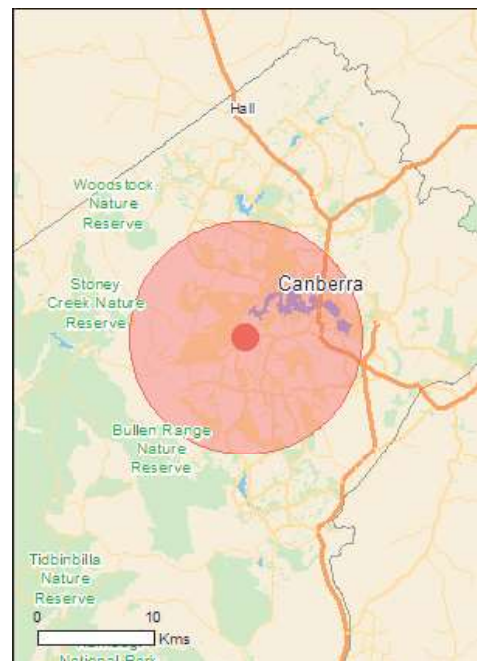
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[Extra Information](#)

[Caveat](#)

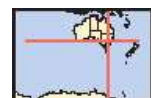
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	4
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	44
Listed Migratory Species:	14

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:	14
Commonwealth Heritage Places:	58
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	1
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:	26
Regional Forest Agreements:	None
Invasive Species:	37
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties			[Resource Information]
Name	State	Status	
Historic			
Australian Academy of Science Building	ACT	Listed place	
Australian War Memorial and the Memorial Parade	ACT	Listed place	
High Court - National Gallery Precinct	ACT	Listed place	
Old Parliament House and Curtilage	ACT	Listed place	

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Banrock station wetland complex	700 - 800km upstream	
Hattah-kulkyne lakes	500 - 600km upstream	
Riverland	700 - 800km upstream	
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream	

Listed Threatened Ecological Communities			[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.			

Name	Status	Type of Presence
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species			[Resource Information]
Name	Status	Type of Presence	
Birds			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known 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 known to occur within area	
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	

Name	Status	Type of Presence
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Fish		
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat known to occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat likely to occur within area
Litoria castanea Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat may occur within area
Insects		
Synemon plana Golden Sun Moth [25234]	Critically Endangered	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 likely 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 known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may 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 likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		

Name	Status	Type of Presence
Ammobium craspedioides Yass Daisy [20758]	Vulnerable	Species or species habitat likely to occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia actensis Canberra Spider Orchid [76138]	Critically Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat likely to occur within area
Lepidium ginninderrense Ginninderra Peppercross [78474]	Vulnerable	Species or species habitat known to occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercross, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat known to occur within area
Muehlenbeckia tuggeranong Tuggeranong Lignum [64934]	Endangered	Species or species habitat likely to occur within area
Neoastelia spectabilis [6404]	Vulnerable	Species or species habitat known to occur within area
Pomaderris cotoneaster Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area
Pomaderris pallida Pale Pomaderris [13684]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Rutidosis leptorhynchoides Button Wrinklewort [67251]	Endangered	Species or species habitat known to occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat likely to occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area
Tympanocryptis pinguicolla Grassland Earless Dragon [66727]	Endangered	Species or species habitat known to occur within area

Listed Migratory Species [[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat 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 known to 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 known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		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

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

Defence - 139 CANBERRA AVE - FYSHWICK
 Defence - ADC / JSSC - WESTON
 Defence - ADFA MARINE FACILITY - YARRALUMLA
 Defence - AIDAB Building
 Defence - BELCONNEN RADIO STATION ; BELCONNEN COMMUNICATIONS STATION
 Defence - DEAKIN OFFICES
 Defence - DEFENCE RECRUITING UNIT - GIO BUILDING
 Defence - HEWLETT PACKARD BUILDING - FERNHILL PARK
 Defence - MAWSON OFFICE ACCOMM
 Defence - NCC BUILDING - CANBERRA CITY
 Defence - NORTHBOURNE HOUSE
 Defence - ROYAL MILITARY COLLEGE - DUNTROON
 Defence - RUSSELL HILL COMPLEX
 Defence - WERRIWA DEPOT

Commonwealth Heritage Places

[[Resource Information](#)]

Name	State	Status
Natural		
State Circle Cutting	ACT	Listed place
Synemon Plana Moth Habitat	ACT	Listed place
Indigenous		
Aboriginal Embassy Site	ACT	Within listed place
Historic		
Acton Conservation Area	ACT	Listed place
Acton Peninsula Building 1	ACT	Listed place
Acton Peninsula Building 15	ACT	Listed place
Acton Peninsula Building 2	ACT	Listed place
Acton Peninsula Limestone Outcrops	ACT	Listed place
Apostolic Nunciature	ACT	Listed place
Australian American Memorial and Sir Thomas Blamey Square	ACT	Listed place
Australian Forestry School (former)	ACT	Listed place
Australian National Botanic Gardens (part)	ACT	Listed place
Australian War Memorial	ACT	Listed place
Blundells Farmhouse, Slab Outbuilding and Surrounds	ACT	Listed place
CSIRO Main Entomology Building	ACT	Listed place
Cameron Offices (Wings 3, 4 and 5, and Bridge)	ACT	Listed place
Canberra School of Art	ACT	Listed place
Canberra School of Music	ACT	Listed place
Carillon	ACT	Listed place
Casey House and Garden	ACT	Listed place
Commencement Column Monument	ACT	Listed place
Communications Centre	ACT	Listed place
Drill Hall Gallery	ACT	Listed place
East Block Government Offices	ACT	Listed place
Edmund Barton Offices	ACT	Listed place
High Court - National Gallery Precinct	ACT	Listed place
High Court of Australia	ACT	Listed place
Institute of Anatomy (former)	ACT	Listed place
John Gorton Building	ACT	Listed place
King George V Memorial	ACT	Listed place
Lennox House Complex	ACT	Listed place
Mount Stromlo Observatory Precinct	ACT	Listed place
National Gallery of Australia	ACT	Listed place
National Library of Australia and Surrounds	ACT	Listed place
National Rose Gardens	ACT	Listed place
Old Parliament House Gardens	ACT	Listed place
Old Parliament House and Curtilage	ACT	Listed place
Parliament House Vista	ACT	Listed place
Parliament House Vista Extension - Portal Buildings	ACT	Listed place

Name	State	Status
Patent Office (former)	ACT	Listed place
Phytotron	ACT	Listed place
R G Menzies Building ANU	ACT	Listed place
Reserve Bank of Australia	ACT	Listed place
Royal Australian Naval Transmitting Station	ACT	Listed place
Russell Precinct Heritage Area	ACT	Listed place
Sculpture Garden National Gallery of Australia	ACT	Listed place
The CSIRO Forestry Precinct	ACT	Listed place
The Lodge	ACT	Listed place
The Royal Australian Mint	ACT	Listed place
The Surveyors Hut	ACT	Listed place
Toad Hall ANU	ACT	Listed place
University House and Garden	ACT	Listed place
West Block and the Dugout	ACT	Listed place
West Portal Cafeteria	ACT	Listed place
Westridge House & Grounds	ACT	Listed place
Yarralumla and Surrounds	ACT	Listed place
York Park North Tree Plantation	ACT	Listed place
Russell Cafeteria	ACT	Within 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 known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat 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
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur

Name	Threatened	Type of Presence
Merops ornatus Rainbow Bee-eater [670]		within area 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 known to occur within area

Critical Habitats	[Resource Information]
Name	Type of Presence
Lepidium ginninderrense (Ginninderra Peppercross) - Northwest corner Belconnen Naval Transmission Station, ACT	Listed Critical Habitat

Commonwealth ReservesTerrestrial	[Resource Information]	
Name	State	Type
Australian National	ACT	Botanic Gardens

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Aranda Bushland	ACT
Black Mountain	ACT
Bruce Ridge	ACT
Bullen Range	ACT
Callum Brae	ACT
Cooleman Ridge	ACT
Farrer Ridge	ACT
Gossan Hill	ACT
Isaacs Ridge	ACT
Jerrabomberra Wetlands	ACT
Kama	ACT
Lower Molonglo River Corridor	ACT
McQuoids Hill	ACT
Mt Ainslie	ACT
Mt Mugga Mugga	ACT
Mt Painter	ACT
Mt Pleasant	ACT
Mt Taylor	ACT
O'Connor Ridge	ACT

Name	State
Oakey Hill	ACT
Red Hill	ACT
Stony Creek	ACT
The Pinnacle	ACT
Unnamed	ACT
Urambi Hills	ACT
Wanniassa Hills	ACT

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
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
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
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
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		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
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
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

Name	Status	Type of Presence
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
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

Nationally Important Wetlands		[Resource Information]
Name		State
Jerrabomberra Wetlands		ACT

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

-35.31394 149.07074

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.

APPENDIX B. Threatened Species Evaluations

The tables in this appendix present the habitat evaluation for threatened species, ecological communities and endangered populations included in the database search results using a 5 km buffer around project site, for those identified as potentially occurring in the area according to the Commonwealth EPBC *Protected Matters Search Tool*³, as well as records of species in the local area included in the ACT Government's ACTMapi online mapping database.

It was assumed that this search area and use of government databases would bring in all of the relevant species, although the list of species below omits many irrelevant ones found in aquatic habitats (i.e. fish species), or typically found within large waterbodies or coastal areas.

The likelihood of occurrence is based on presence of habitat, proximity of nearest records and mobility of the species (where relevant).

An assessment of potential impacts to these entities is not provided here given that no design and siting plans have yet been prepared upon which a detailed consideration of the likely impacts can be based.

The following classifications are used:

Presence of habitat

- Present: Potential or known habitat is present within the study area
- Marginal: Habitat present is not typical but may be suitable or habitat type is suitable but condition and microhabitat requirements of species are not present
- Absent: No potential or known habitat is present within the study area

Likelihood of occurrence

- None: Species known or predicted within the locality but no suitable habitat present within the study area
- Unlikely: Species known or predicted within the locality but unlikely to occur in the study area
- Possible: Species could occur in the study area
- Present: Species was recorded during the field investigations

³ This online tool is designed for the public to search for matters protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It is managed by the Commonwealth Department of the Environment, Water, Heritage and the Arts.

B.1 Evaluation of the likelihood of EPBC threatened flora species and ecological communities

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
Flora			
Yass Daisy <i>Ammobium craspedioides</i> V EPBC	Most populations of the Yass Daisy occur in the Yass District, at Lake Burrinjuck, Bookham, Rye Park and Dalton. The species is not known from the ACT. The Yass Daisy occurs in dry forest, box gum woodland and secondary grassland derived from clearing of these communities. It grows in association with a large range of eucalypts including Blakely's Red Gum (<i>Eucalyptus blakelyi</i>), Apple Box (<i>E. bridgesiana</i>), Broad-leaved Peppermint (<i>E. dives</i>), Long-leaved Box (<i>E. goniocalyx</i>), Red Stringybark (<i>E. macrorhyncha</i>), Brittle Gum (<i>E. mannifera</i>), Yellow Box (<i>E. melliodora</i>), Red Box (<i>E. polyanthemos</i>) and Candlebark (<i>E. rubida</i>). The species tolerates light grazing, as populations persist in some grazed sites. Also, some sites occurring a number of cemeteries that are mown or slashed.	Marginal	Unlikely
River Swamp Wallaby-grass <i>Amphibromus fluitans</i> V EPBC	River Swamp Wallaby-grass grows mostly in permanent swamps and also lagoons, billabongs, dams and roadside ditches. The species requires moderately fertile soils with some bare ground; conditions that are caused by seasonally-fluctuating water levels (NSW OEH 2013h).	Absent	None
Canberra Spider Orchid <i>Caladenia actensis</i> CE EPBC	The Canberra Spider-orchid grows on shallow gravelly brown clay loam soils of volcanic origin. Plants occur amongst a ground cover of grasses, forbs and low shrubs, often among rocks. It grows in transitional vegetation zones between open grassy woodland (dominated by <i>Eucalyptus blakelyi</i> , <i>E. melliodora</i> , and <i>E. pauciflora</i>) and dry sclerophyll forest (dominated by <i>E. rossii</i>)	Marginal	Unlikely

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
Trailing Hop-bush <i>Dodonaea procumbens</i> V EPBC	The Trailing Hop-bush is widely but patchily distributed across south-eastern Australia, where it occurs in New South Wales, Victoria and South Australia. This species grows in low-lying, often winter-wet areas in woodland, low open forests, heathland and grasslands, on sands and clays. Most populations in New South Wales occur either in natural grassland or grassy woodland of Snow Gum (<i>Eucalyptus pauciflora</i>), usually on crests or slopes and on tilted sediments.	Absent	None
Black Gum <i>Eucalyptus aggregata</i> V EPBC	The Black Gum is a rare species found from Capertee and Bathurst in central New South Wales, south through the central and southern tablelands. It typically grows in low lying areas with soils that are generally poorly drained, alluvial or swampy, and also in areas where there are natural frost hollows.	Absent	None
Ginninderra Peppercress <i>Lepidium ginninderense</i> V EPBC	This short-lived forb species is known from only one site on Belconnen Naval Station, on the Ginninderra Creek floodplain, growing in grassland.	Marginal	Unlikely
Basalt Peppercress <i>Lepidium hyssopifolium</i> E EPBC	This short-lived forb species occurs in a variety of habitats including woodland with a grassy understorey and grassland. It appears to respond to disturbance, having appeared after soil disturbance at one site near Bungendore.	Marginal	Unlikely
Hoary Sunray <i>Leucochrysum albicans</i> subsp. <i>albicans</i> var. <i>tricolor</i> E EPBC	This species may be locally common on the Southern Tablelands,. It grows in natural and secondary grasslands and grassy woodlands, often colonising disturbed sites such as road verges and other areas with thin soils, but does not persist well in grazed situations.	Marginal	Unlikely – species was not observed at the site

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
<p>Tuggeranong Lignum <i>Muehlenbeckia tuggeranong</i> E EPBC</p>	<p>M. tuggeranong was described from a single female plant and six male plants discovered in the Murrumbidgee River Corridor (MRC) near Tuggeranong in 1997. Although extensive searches have been undertaken, this population appears to be the only one in existence. The species is thought to occur at higher altitudes (680 – 1200 m a.s.l.) in the ACT, NSW Southern Highlands, Victoria, Tasmania and New Zealand.</p> <p>The known habitat of the species is restricted to flood terraces, altitude c. 550 m, on the eastern bank of the Murrumbidgee River near Tuggeranong in the ACT, in areas of rocky outcrops with pockets of silty sandy soil. The species is found in a highly disturbed riparian shrubby woodland association, heavily invaded by exotic weeds. The tree layer is largely remnant. The species is found on almost bare rock, or tangled amongst other vegetation</p>	Absent	None
<p>Silver Sword Lily <i>Neoastelia spectabilis</i> V EPBC</p>	<p>The Silver Sword Lily is a very rare species that is restricted to the eastern edge of the New England Tablelands in NSW. It occurs at high (900 to 1150 m) altitudes on precipitously steep slopes, often around waterfalls and along cold, dark creek lines on the edge of the New England Plateau.</p>	Absent	None
<p>Cotoneaster Pomaderris <i>Pomaderris cotoneaster</i> E EPBC</p>	<p>The Cotoneaster Pomaderris has been recorded in a range of habitats in predominantly forested country. The habitats include forest with deep, friable soil, amongst rock beside a creek, on rocky forested slopes and in steep gullies between sandstone cliffs. Little is known about the ecology of the species. It is probably killed by fire but plants have been observed to re-sprout from the stem following death of the crown from apparent drought. Populations tend to be isolated and range in size from a few individuals to many hundreds. Populations are not apparently influenced by local variations in habitat - it is not obvious why they are only growing where they are.</p>	Absent	None

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
Pale Pomaderris <i>Pomaderris pallida</i> E-EPBC	The Pale Pomaderris is currently known from the ACT, southern NSW and eastern Victoria. In the ACT, this species is scattered along the Cotter, Paddys and Murrumbidgee Rivers and through the Molonglo Gorge. The Pale Pomaderris is found at numerous small sites along the plateau edge and very steep upper slopes and cliffs of river valleys at 480-600 m above sea level. The ACT sites are only on the eastern banks of the rivers, with an aspect ranging from north-westerly through westerly to southerly. The soils are shallow, pale brown sandy loams over granite rock and large, exposed granite boulders may be present.	Absent	None
Tarengo Leek Orchid <i>Prasophyllum petilum</i> E-EPBC	Known from three sites on the Southern Tablelands, at Boorowa, and Captain's Flat in NSW and Hall in the ACT, growing in grassland, Box-Gum Woodland or moist grassy flats, with kangaroo grass or wallaby grasses (<i>Austrodanthonia spp.</i>). Flowers Oct-Nov (Bishop 1996).	Marginal	Unlikely
Button Wrinklewort <i>Rutidosia leptorhynchoides</i> E EPBC	This perennial forb grows in scattered populations in natural temperate grassland or grassy woodland on the Southern Tablelands. It occurs mainly in Box-Gum Woodland, secondary grassland derived from Box-Gum Woodland or in Natural Temperate Grassland; and often in the ecotone between the two communities. It typically, grows on soils that are usually shallow, stony red-brown clay loams; tends to occupy areas where there is relatively less competition from herbaceous species (either due to the shallow nature of the soils, or at some sites due to the competitive effect of woodland trees). The species exhibits an ability to colonise disturbed areas (eg. vehicle tracks, bulldozer scrapings and areas of soil erosion), although it is also apparently susceptible to grazing, being retained in only a small number of populations on roadsides, rail reserves and other un-grazed or very lightly grazed sites.	Marginal	Unlikely
Large-fruit Fireweed, Large-fruit Groundsel <i>Senecio macrocarpus</i> V EPBC	The Large-fruit Groundsel is a small perennial plant endemic to south-eastern Australia, where it occurs primarily in South Australia and Victoria, and formerly occurred in Tasmania. It is also known from a small number of records in the NSW Southern Tablelands, north of the ACT and west of Lake George. It occurs in a variety of habitats, including grasslands, sedgeland, shrublands and woodlands, generally on sparsely vegetated sites on sandy loam to heavy clay soils, often in depressions that are waterlogged in winter.	Marginal	None

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
Small purple-pea <i>Swainsona recta</i> E EPBC	The Small Purple-pea occurs mainly on the Southern Tablelands and western slopes of NSW where it is found mostly in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum, Yellow Box, Candlebark Gum and Long-leaf Box/Bundy. It grows in association with understorey dominants that include Kangaroo Grass, Poa tussocks and Spear-grasses.	Marginal	Unlikely
Austral Toadflax <i>Thesium australe</i> V EPBC	This species is found in small populations across eastern NSW, on the coast and from the Northern to Southern Tablelands. It occurs in grassland or grassy woodland, sometimes in damp sites, and is almost invariably associated with kangaroo grass (<i>Themeda australis</i>).	Marginal	Unlikely
EEC's			
Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory	<p>Natural Temperate Grassland occurs on ridges, crests, hillsides, undulating plains, valleys and lower slopes, creeks, drainage lines and river flats. It is usually associated with heavy textured soils with low nutrient levels.</p> <p>Natural temperate grassland comprises of closed grassland, grassland and open grassland whose biomass is <u>dominated</u> by two or more of the perennial native tussock grasses <i>Themeda triandra</i> (Kangaroo Grass), <i>Austrodanthonia</i> spp (wallaby grasses), <i>Austrostipa</i> spp (speargrasses), <i>Bothriochloa macra</i> (Red Grass, Red-leg Grass) and/or <i>Poa</i> spp (snowgrasses). Mature tussock grasses range in height from moderately tall (25–50 cm) to tall (50–100 cm) (Commonwealth Endangered Species Scientific Subcommittee 2000). The spaces between the dominant grass tussocks are occupied by graminoids (grasses and grass-like plants) and a wide range of forbs (herbaceous, non-graminoid plants) which may comprise up to 70% of all plant species and form a distinct, lower layer of vegetation (Environment ACT 2005). Many forbs are from the daisy family (Asteraceae), or are lilies or native legumes.</p> <p>The perennial <u>native grasses together with the native graminoids and forbs usually comprise more than 50% of the total plant cover</u> (Environment ACT 2005).</p>	Marginal	None - condition of vegetation not consistent with mapping criteria

Species	Description of habitat	Presence of habitat	Likelihood of occurrence
Box Gum Woodland CEC EPBC	White Box, Yellow Box, Blakely's Red Gum Woodland (commonly referred to as Box-Gum Woodland) is an open grassy woodland community (sometimes occurring as a forest formation) , in which the dominant species are White Box <i>Eucalyptus albens</i> , Yellow Box <i>E. melliodora</i> or Blakely's Red Gum <i>E. blakelyi</i> .	Marginal –	None - condition of understorey vegetation and canopy species not consistent with mapping criteria
<p>CE EPBC = listed as Critically Endangered under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i>.</p> <p>E EPBC = listed as Endangered under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i>.</p> <p>V EPBC = listed as Vulnerable under the Commonwealth <i>EPBC Act 1999</i></p>		<p>CEEC EPBC = Critically Endangered Ecological Community listed under the Commonwealth <i>EPBC Act 1999</i></p> <p>EEC EPBC = Endangered Ecological Community listed under the Commonwealth <i>EPBC Act 1999</i></p>	

B.2 Evaluation of the likelihood and extent of impact on threatened fauna

The fauna species list is derived from a search of the EPBC Protected Matters Search Tool, both utilising a 10km buffer around the subject site. With regards to the evaluations provided below for each species included in the search results, fish species and marine waterbirds/shorebirds were collectively discounted from the evaluations given the complete lack of any identifiable suitable aquatic habitat that could potentially support these species.

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
Aves			
Regent Honeyeater <i>Anthochaera phrygia</i> E EPBC	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia, particularly Box-Ironbark woodland, and riparian forests of River She-oak. Birds are also found in drier coastal woodlands and forests in some years. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. The species is a generalist forager, mainly feeding on nectar from a wide range of eucalypts and mistletoes. Key eucalypt species include Mugga Ironbark, Yellow Box, Blakely's Red Gum, White Box and Swamp Mahogany. Regent Honeyeaters usually nest in horizontal branches or forks in tall mature eucalypts and Sheoaks or in mistletoe clumps.	Very marginal. The site does not provide breeding habitat,	Unlikely
Grey Falcon <i>Falco hypoleucos</i> V EPBC	The species occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and Western Australia. The species is mainly found where annual rainfall is less than 500 mm, except when wet years are followed by drought, when the species might become marginally more widespread, although it is essentially confined to the arid and semi-arid zones at all times. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses and has been	Marginal – no suitable breeding habitat	Unlikely

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
	observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter.		
Painted Honeyeater <i>Grantiella picta</i> V EPBC	The Painted Honeyeater is nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. The species 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> .	Absent. Lack of suitable woodland vegetation and no mistletoe seen present on trees.	Unlikely
White-throated Needletail <i>Hirundapus caudacutus</i> V EPBC	The White-throated Needletail breeds in Asia, from central and south-eastern Siberia and Mongolia, east to the Maritime Territories of Russia, Sakhalin and the Kuril Islands and south to northern Japan and north-eastern China. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia and is widespread in eastern and south-eastern Australia. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest.	Absent	Unlikely
Swift Parrot <i>Lathamus discolor</i> E EPBC	Abundance of flowering eucalypts and banksias is required by this species, whose range includes southern Queensland to South Australia. This nectar feeder can gather in large groups when feed trees are in flower. It breeds in Tasmania and migrates to the south-east mainland between March and October.	Marginal - foraging habitat only. Some flowering trees in the surrounding area. No breeding habitat (breeds only in Tasmania)	Unlikely
Superb Parrot <i>Polytelis swainsonii</i>	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west, although the species has been moving south into the ACT in recent years	Marginal. No Hollow-bearing trees present so no breeding	Unlikely

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
V EPBC	(OEH, 2018). Inhabits Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. Nests in large tree hollows. Species known to be used for nesting are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants.	habitat. Possible marginal foraging habitat.	
Mammals			
Large-eared Pied Bat, Large Pied Bat <i>Chalinolobus dwyeri</i> V EPBC	Roosting habitat typically consists of sandstone cliffs and fertile woodland valley habitat within close proximity of each other.	Absent.	None
Spotted-tailed Quoll <i>Dasyurus maculatus</i> E EPBC	This species is found in a variety of habitat types including rainforest, open forest, woodland, coastal heath and inland riparian forest from the subalpine zone to the coastline. Species requires hollow bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces as den sites.	Absent.	None
Greater Glider <i>Petauroides Volans</i> V - EPBC	The greater glider is the largest gliding possum in Australia, and is largely restricted to eucalypt forests and woodlands in eastern Australia. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. The species has relatively low persistence in small forest fragments, and disperses poorly across vegetation that is not native forest. Modelling suggests that they require native forest patches of at least 160 km ² to maintain viable populations.	Absent.	None
Brush-tailed Rock-wallaby <i>Petrogale penicillata</i> V - EPBC	This species inhabits rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks.	Absent.	None

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
Koala <i>Phascolarctos cinereus</i> V EPBC	This species inhabits eucalypt woodlands and forests over a broad but fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In NSW it mainly occurs on the central and north coasts; they are also known from several sites on the southern tablelands.	Absent.	None
Grey-headed Flying-fox <i>Pteropus poliocephalus</i> V EPBC	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Bundaberg in Queensland to Melbourne in Victoria. Occur in rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source, commonly found in gullies, close to water, or in vegetation with a dense canopy. The closest is likely to be the large colony at Batemans Bay. Forage on the nectar and pollen of native trees, in particular <i>Eucalyptus</i> , <i>Melaleuca</i> and <i>Banksia</i> , and fruits of rainforest trees and vines. Travel up to 50 km to forage.	Marginal – lack of suitable feed trees and no camp trees present in area	Unlikely – potential occasional visitor
Amphibians			
Green and Golden Bell Frog <i>Litoria aurea</i> V - EPBC	The Green and Golden Bell Frog occurs mainly along coastal lowland areas of eastern NSW and Victoria. The furthest inland record of the species is at a recently discovered population near Hoskinstown in the Southern Tablelands (referred to as the Molonglo population) (Osborne et al. 2008). The species was previously known from elsewhere in the Southern Tablelands, but is now considered to have disappeared from the ACT and central slopes around Bathurst. Green and Golden Bell Frogs have been found in differing habitat in NSW and Victoria. In NSW, the species commonly occupies disturbed habitats, and breeds largely in ephemeral ponds, but also need various other habitats for different aspects of their life cycle including foraging, breeding, over-wintering and dispersal.	Absent	None
Booroolong Frog <i>Litoria booroolongensis</i>	The Booroolong Frog is restricted to tablelands and slopes in NSW and north-east Victoria at 200–1300 m above sea level. The species is predominantly found along the western-flowing streams and their headwaters of the Great Dividing Range, and a small number of eastern-flowing streams in the north	Absent	None

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
E EPBC	end of its range. The Booroolong Frog occurs along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. Adults occur on or near cobble banks and other rock structures within stream margins, or near slow-flowing connected or isolated pools that contain suitable rock habitats.		
Yellow-spotted Tree Frog <i>Litoria castanea</i> E EPBC	Requires large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation. Adults are active during spring and summer and bask on sunny days, and moves and forages at night on grassy banks.	Absent	None
Reptiles			
Pink-tailed Worm-lizard <i>Aprasia parapulchella</i> V EPBC	The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South West Slopes. There is a concentration of populations in the Canberra/Queanbeyan Region. The species inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (<i>Themeda australis</i>). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. Commonly found beneath small, partially-embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites.	Absent. No suitable rocky outcrops are present within the site.	None.
Striped Legless Lizard <i>Delma impar</i> V EPBC	The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes and possibly the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma and Tumut areas. Also in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component and in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass <i>Themeda australis</i> , <i>Austrostipa</i> spp., <i>Poa</i> spp., and occasionally wallaby grasses <i>Rytidosperma</i> spp. Goes below ground or under rocks or logs over winter.	Marginal. Lack of suitable native tussocky grassland.	Unlikely.

Species and Status	Description of habitat ⁴	Presence of habitat	Likelihood of occurrence
Grassland Earless Dragon <i>Tympanocryptis pinguicolla</i> E EPBC	The grassland earless dragon is a native grassland specialist inhabiting natural temperate grasslands (as described above in Appendix A), where it occupies burrows of the wolf spider (<i>Lycosa</i> spp.) and wood cricket (<i>Cooraboorama canberrae</i>), embedded surface rocks and tussocks.	Absent – lack of suitable rocky habitat	None
Insects			
Golden Sun Moth <i>Synemon plana</i> CE EPBC	The golden sun moth has been recorded in native grasslands and grassy woodlands containing wallaby grass (<i>Austrodanthonia</i> spp.), speargrass (<i>Austrostipa</i> spp.), and <i>Bothriochloa</i> , as well as in degraded grasslands dominated by the exotic Chilean needlegrass (<i>Nassella nessiana</i>), a weed of national significance.	Marginal	Unlikely
CE EPBC = listed as Critically Endangered under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i> . E EPBC = listed as Endangered under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i> . V EPBC = listed as Vulnerable under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i> .		M EPBC = listed as Migratory under the Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i> . CAMBA = Chinese-Australia Migratory Bird Agreement JAMBA = Japan-Australia Migratory Bird Agreement	

APPENDIX C: Flora and fauna records.

C.1 FLORA SURVEY RESULTS

Relative abundance is given by a cover abundance scale/score (modified Braun-Blanquet) for a given patch (approx. 50 m x 50m) as follows:

1. 1 to a few individuals present, less than 5% cover
2. many individuals present, but still less than 5% cover
3. 5 - < 15% cover
4. 15 - < 25% cover
5. 25 - < 50% cover
6. 50 - < 75% cover
7. 75 - 100% cover

GF Code Refers to the Growth Form as follows: T = tree; S = shrub; G = groundcover.

Note: for this site, six (6) 'patches' were established across the site and the results below averaged across the six patches.

Species	Common name	GF Code	Cover Score
Exotic Species			
<i>Acetosella vulgaris</i>	Sorrel	G	3
<i>Bromus (catharticus?)</i>	Brome	G	3
<i>Chenopodium album</i>	Fat Hen	G	4
<i>Chloris (gayana?)</i>	Rhodes Grass	G	3
<i>Cirsium vulgare</i>	Spear Thistle	G	2
<i>Conyza bonariensis</i>	Fleabane	G	4
<i>Cotoneaster glaucophyllus</i>	Cotoneaster	S	1
<i>Eleusine tristachya</i>	Goose grass	G	3
<i>Eragrostis cilianensis</i>	Stinkgrass	G	3
<i>Eragrostis curvula</i>	African Lovegrass	G	4
<i>Eragrostis sp</i>	a Lovegrass	G	3
<i>Eriobotrya japonica</i>	Loquat	T	1
<i>Erodium sp.</i>	a Storks-bill	G	2
<i>Fraxinus sp.</i>	an Ash tree	T	1
<i>Hirschfeldia incana</i>	Buchan Weed	G	5
<i>Hypericum perforatum</i>	St John's Wort	G	2
<i>Hypochaeris sp.</i>	Flatweed	G	3
<i>Lepidium sp.</i>	Peppercress	G	4
<i>Malva (neglecta?)</i>	Dwarf Mallow	G	4
<i>Marrubium vulgare</i>	Horehound	G	2
<i>Modiola caroliniana</i>	Red-flowered Mallow	G	3
<i>Panicum miliaceum</i>	Millet Panic	G	2
<i>Paspalum dilatatum</i>	Paspalum	G	4
<i>Phalaris aquatica</i>	Phalaris	G	3
<i>Plantago lanceolata</i>	Ribwort Plantain	G	4
<i>Polygonum (aviculare?)</i>	a Wireweed	G	4
<i>Rubus sp.</i>	Blackberry	S	1

<i>Salix sp.</i>	Willow tree	T	1
<i>Salvia verbenaca</i>	Wild Sage	G	3
<i>Solanum chenopodioides</i>	Whitelip Nightshade	S	2
<i>Sonchus asper</i>	Prickly Sowthistle	G	3
<i>Taraxacum officinale</i>	Dandelion	G	3
<i>Tragopogon dubius</i>	Goatsbeard	G	2
<i>Trifolium (subterraneum?)</i>	a (Subterraneum) Clover	G	3
<i>Verbascum thapsus</i>	Great Mullein	G	2
<i>Vinca major</i>	Blue Periwinkle	G	2
Total Exotic Species = 36		G = 31	
Native Species			
<i>Acacia baileyana</i>	Cootamundra Wattle	S	2
<i>Acacia sp.</i>	a Wattle	S	2
<i>Austrostipa begeniculata</i>	Tall Speargrass	G	3
<i>Chloris truncata</i>	Windmill Grass	G	3
<i>Chrysocephalum apiculatum</i>	Billy Buttons	G	2
<i>Cymbonotus lawsonianus</i>	Austral Bears-ear	G	2
<i>Cynodon dactylon</i>	Couch	G	4
<i>Dyshphania (pumilo?)</i>	Crumbweed	G	3
<i>Entolasia sp?</i>	a Wiry Panic	G	2
<i>Eucalyptus bridgesiana</i>	Apple Box	T	2
<i>Eucalyptus cinerea</i>	Argyle Apple	T	2
<i>Eucalyptus dives</i>	Broad-leaved Peppermint	T	2
<i>Eucalyptus elata</i>	River Peppermint	T	1
<i>Eucalyptus globulus</i>	Southern Bluegum	T	2
<i>Eucalyptus mannifera</i>	Brittle Gum	T	1
<i>Eucalyptus polyanthemos</i>	Red Box	T	1
<i>Eucalyptus rubida</i>	Candlebark	T	1
<i>Eucalyptus (sideroxylon?)</i>	an Ironbark species (<i>planted</i>)	T	2
<i>Geranium sp</i>	Geranium	G	3
<i>Oxalis (perennanse?)</i>	Grassland Wood Sorrel	G	3
<i>Poa sp.</i>	Poa Tussock	G	3
<i>Vittadinia sp.</i>	New-holland Daisy	G	3
<i>Wahlenbergia stricta</i>	Tall Bluebell	G	2
Total Native Species = 23		G = 12	

APPENDIX D. Site Photos



Site Photo 1. Front of property, Block 1151, near existing residence.



Site Photo 2. Northern/rear portion of Block 1151



Site Photo 3. Area in southwest corner of Block 864



Site Photo 4. Area is southeast corner of Block 864



Site Photo 5. Area in central/eastern portion of Block 864.



Site Photo 6. View south of central portion of Block 864



Site Photo 7. View of north-western portion of Block 864.