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ENVIRONMENTAL ASSESSMENT Flora and Fauna

“STRATHEDEN PROJECT”

777 and 815 Manilla Road, Tamworth NSW 2340

November 2022

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ENVIRONMENTAL ASSESSMENT

STRATHEDEN PROJECT AREA

777 & 815 Manilla Road, Tamworth NSW 2340

Prepared by: **SMK Consultants**

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November 2022

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TABLE OF CONTENTS

1. Introduction.....	1
1.1 Development Background	1
1.2 Scope and Purpose of Investigation	2
1.3 Landuse history	2
1.4 Development Footprint	2
1.5 Existing Vegetation.....	2
2. Flora and Fauna Legislative Context	5
2.1 Statutory Review of Existing Landuse.....	5
2.2 Preliminary Assessment under the BC Act.....	6
2.2.1 Biodiversity Values Map	6
2.2.2 Biodiversity assessment and approvals navigator	6
2.2.3 Biodiversity Offset Scheme Thresholds (BOS).....	7
2.2.4 Test of Significance	8
2.3 EPBC Act – Federal legislation	10
2.4 State Environmental Planning Policy (Biodiversity and Conservation) 2021	10
3. Flora and Fauna Assessment	11
3.1 Site Environmental Characteristics.....	11
3.1.1 IBRA Bioregions and Subregions	11
3.1.2 Mitchell Landscape Classification.....	12
3.1.3 Threatened Flora and Fauna	13
3.1.4 Koala	13
4. Discussion of Clearing Impacts	15
5. Conclusion	16
Appendix 1: Biodiversity Values Map	17
Appendix 2: Biodiversity Assessment and Approvals Navigator	19
6. Appendix 3: MNES Database Search Results and Assessment	21
EPBC Protected Matters Assessment.....	21

Annexure 1: Test of Significance

1. Introduction

1.1 Development Background

SMK Consultants were engaged by Bath Stewart Associates to undertake a range of assessments associated with the development of part of the land associated with the property of Stratheden and adjoining land. The following provides a list of Lots included in the proposed development footprint.

Table 1: Subject Site Property Description

Lot	Deposited Plan
1, 2, 3	997767
3, 5	209387
4	212658
12	245544
708	1252037

The development proposal involves a re-zoning of part of the properties associated with the above Lots. The land is located on the northern edge of Tamworth along the Manilla road and is within surrounding areas of rural residential and primary production land. A locality plan of the development site is presented in Figure 1.

Figure 1: Locality Plan



1.2 Scope and Purpose of Investigation

The scope of this report is to assess the environmental impact of the proposal in relation to flora and fauna.

This assessment can then be utilised to plan the development in a format that will consider the environment as part of the development process in accordance with appropriate legislation. In this case, the most relevant legislation is the Biodiversity Conservation Act 2016. The principles of this Act involve a process that follows the following steps:

- Avoid the loss of biodiversity if the project can be development so that no native habitat is lost;
- Minimise the loss of biodiversity if some native vegetation is to be cleared or removed;
- Provide biodiversity offsets in the form of like for like native vegetation if the loss of biodiversity is considered as significant, by a process of establishing an area of land to be conserved in perpetuity to offset the loss of biodiversity.

1.3 Landuse history

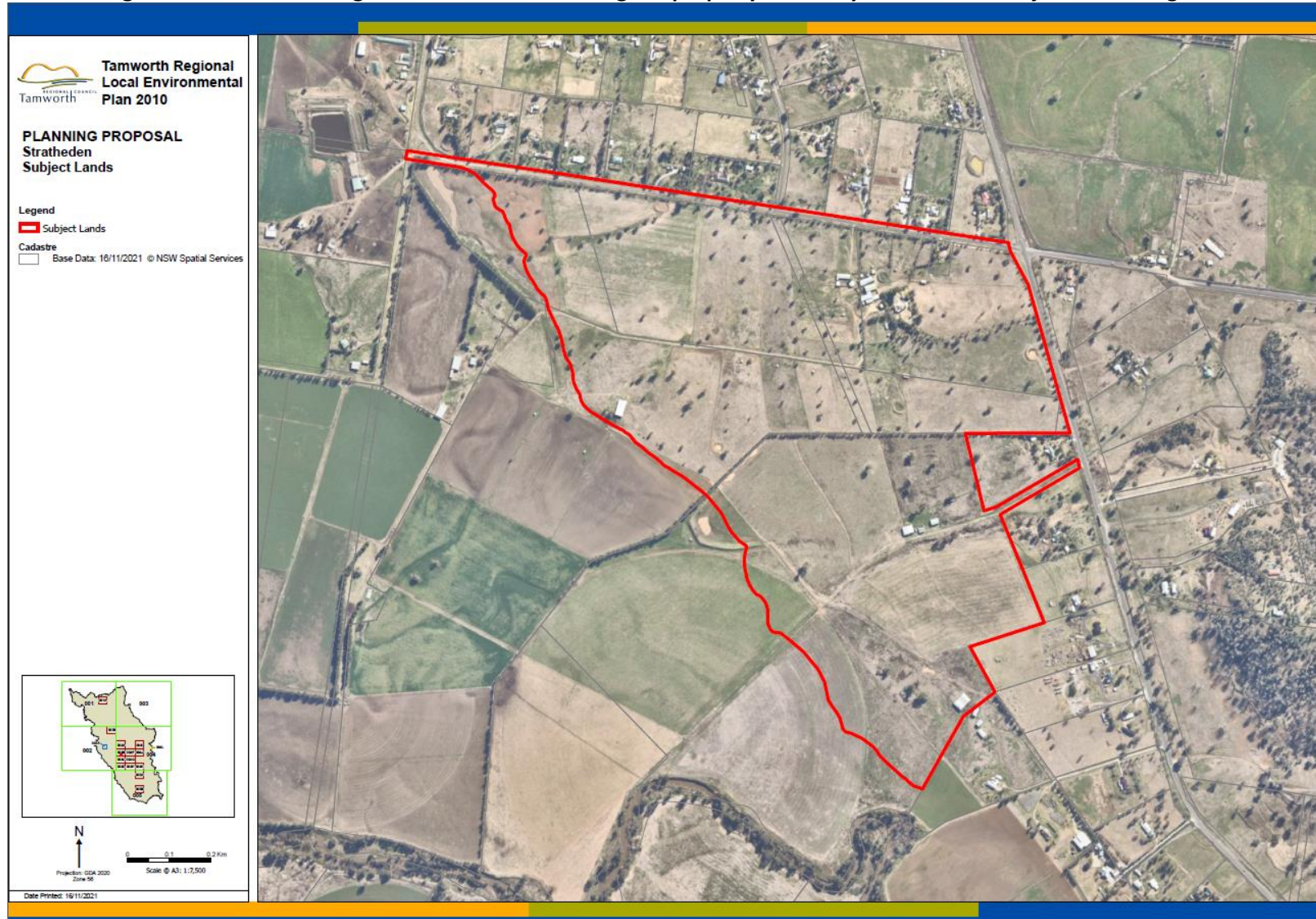
The Stratheden project area has been historically cleared and farmed for grazing and production of a range of crops. Records and advice from the Client and farm management indicated that clearing for agricultural purposes occurred prior to 1990. Clearing involved removal of most trees and all ground cover for the purpose of cultivation. Selected mature trees were retained and additional tree corridors have been planted around the boundary and within the property.

Cultivation and production of a range of crops for hay, cereals and grazing pastures is undertaken on a rotational basis.

The eastern more elevated section of the original Stratheden area supports a range of planted pasture species and common weeds associated with intensive grazing of horses. Stratheden has an extended history of horse breeding which commenced some 50-years ago. Part of the facilities in this eastern section of the property include a shed and stable complex for breeding and horse management. Paddocks around these sheds have been fenced into small paddocks to support the breeding enterprise.

Operation of the horse stud has included seasonal sowing of various crops such as oats and improved grasses to maintain pasture production to provide for the horses. The regularity of sowing is dependent on soil moisture and the number of horses held on the farm. During periods where a lot of horses have been kept on the farm, the sown pasture has degraded and fodder is supplemented with hay imported onto the property or grown in the lower western paddocks which can be irrigated. When opportunities to sow new pastures and crops occur (soil moisture is available), the paddocks have been cultivated and cropped to replace the degraded pasture.

The lower part of Stratheden which is outside of the area subject to the development proposal, has access to groundwater and the Peel River for irrigation water. A system of below ground pipes has been installed for spray irrigation across most of the property. This water also supplies stock water for the horse and cattle enterprise.

Figure 2: 2018 Aerial Image of “Stratheden” showing the property boundary and the area subject to investigation

1.4 Development Footprint

Figure 2 provides an aerial image with the outline of the area subject to this application marked in red. The image shows that the area has been subjected to cultivation and is cropped. This is noted as the farming lines that can be observed within the paddocks.

The development footprint is advised to be above flood levels along the Peel River. The western side of the development is advised to be above flood level.

The northern half of the development has been occupied by horse production commenced by the previous owners of the property of Stratheden. The paddocks were cleared prior to the horse production. The farm was divided into many smaller paddocks for horse breeding. A range of trees were planted in the paddocks for shade purposes. The driveway to the house was planted with a line of trees for landscaping purposes. Over time, the southern fence line was planted with rows of trees to reduce the visual impact of adjoining landuse (cultivation) on the adjacent horse paddocks which were being used for mothers and foals.

The southern part of the development consists of part of Lot 708 in DP1252037. This consists of a farm that includes dryland cultivation of sloping eastern sector of the property. The lower western part of the property is partly irrigated by a centre pivot and also includes dryland farming. This property is utilised for mainly hay and cereal crop production. It contains a few remnant paddock trees which have grown since the original clearing. The watercourse corridor along the Peel River has been retained with its native vegetation. Lot 708 includes a grassed waterway to carry overland flow from upslope land and some contour banks for erosion control purposes within the dryland cultivation paddocks. The land is cropped on a seasonal basis.

1.5 Existing Vegetation

Stratheden supports a range of ground cover including summer grass (*Digitaria sanguinalis*), safflower thistle (*Carthamus tinctorius*), variegated thistle (*Silybum marianum*), mallow (*Malva Parviflora*) and Paterson's curse (*Echium plantagineum*). Other species were present but too desiccated for identification. The following image shows the paddock.

Figure 3: Typical vegetation after planting of pastures without herbicide control of non-grazing species



A row of trees has been planted through a natural depression across this paddock. Trees include *E. blakelyi* and *E. leucoxylon*. These have been planted to stabilise a waterway generated as a result of water flowing down Browns Lane.

Lucerne and oats provide the dominant groundcover which is planted and managed for pasture production. The trees to the immediate east of the hay shed located in the centre of Stratheden are remnant isolated paddock trees or greater than 50-years in age. These trees have been identified as *E. blakelyi* and *E. camaldulensis*. These trees have hollows with signs of habitat. Galah have been observed to nest in the few hollows available in these trees. No tracks or scats were present to indicate the presence of possums or gliders.

The Stratheden homestead area and horse stables support a planted garden with a row of planted trees along the driveway to Manilla Road. Trees include Ironbark, Pepperina and Silky oak. Ground cover varies from mown lawn species where irrigation is occurring through to similar ground cover as described above in the adjoining paddocks.

Figure 4: Landscaped driveway entrance to homestead



Vegetation around the horse stables varies considerably. The area is mown and maintained as part of the landscaping associated with the homestead and shed complex. The area receives more water and therefore supports a range of species not present in the paddocks.

Tree corridors have been planted along the northern, eastern and southern boundary of the Stratheden to provide a visual buffer for horses. The trees include a range of eucalypts, pepperina, cedar and other decorative trees. Some are native to the area.

Figure 5: Planted tree buffer along southern perimeter of study area.



Lot 708 is managed as an active cultivation farm. Infrastructure on the property includes a range of hay, machinery and storage sheds. Ground cover is managed by cultivation as well as herbicide application. The use of herbicides is limited by the adjoining residential development which presents a risk if spray drift occurs.

Figure 6: Southern section of Lot 708 with centre pivot and hay shed in background.



The cultivation paddocks were not cropped with a winter cereal in 2022. The area has been managed with rye grass and a mix of lucerne which is regenerating for the purpose of hay production in the summer.

2. Flora and Fauna Legislative Context

2.1 Statutory Review of Existing Landuse

The Biodiversity Conservation Act 2016 (BCA) regulates the protection of flora, fauna and ecological communities and aims to achieve no net loss of biodiversity in NSW. This is the governing legislation that defines the steps to be followed when clearing native vegetation in NSW. It should be noted that clearing includes the removal of any native vegetation by various means. Native vegetation also includes native grasses and shrubs in addition to trees.

The BC Act applies to developments that require development consent under the Environment Planning and Assessment Act.

Rural land is also subject to the Local Land Service Act (LLS Act) and Regulation. This Act and Regulation includes a range of provisions for:

- Allowable activities;
- Code-based clearing; and
- Clearing that requires approval by the Native Vegetation Panel and/or Local Land Services (LLS).

The LLS Act defines different land categories as follows:

- Category 1 – exempt land; and
- Category 2 – regulated land.

Category 1 land is defined as follows under Part 5A of the LLS Act:

- 1) *Land is to be designated as category 1-exempt land if the Environment Agency Head reasonably believes that:*
 - a) *the land was cleared of native vegetation as of 1 January 1990, or*
 - b) *the land was lawfully cleared of native vegetation between 1 January 1990 and the commencement of this Part.*
- 2) *Land is to be designated as category 1-exempt land if the Environment Agency Head reasonably believes that:*
 - a) *the land contains low conservation value grasslands, or*
 - b) *the land contains native vegetation that was identified as regrowth in a property vegetation plan referred to in section 9 (2) (b) of the Native Vegetation Act 2003, or*
 - c) *the land is of a kind prescribed by the regulations as category 1-exempt land.*

It is noted that aerial imagery shows that the Stratheden Project area has been lawfully cleared prior to 1990 and has been subjected to ongoing regular disturbance in the form of cropping, grazing and pasture management since the 70's. Given the extent of the disturbance to the site, it is considered that most of the site is consistent with Category 1 – exempt land, being low conservation value grasslands.

Advice provided by the NSW Office of Environment and Heritage (OEH) states that:

"Clearing of native vegetation on land that meets the definition of Category 1 land (under the Local Land Service Act) does not require assessment or offsetting under the Biodiversity Assessment Method (under the Biodiversity Conservation Act 2016). In practice, this means that native vegetation on Category 1 land is not included in any area clearing calculations when deciding whether a biodiversity development assessment report should be prepared."

“A development on Category 1 land may involve other biodiversity impacts for which a biodiversity development assessment report will still be required:

- the development will have a prescribed impact on land mapped on the biodiversity values map (prescribed impacts are listed in clause 6.1 of the Biodiversity Conservation Regulation 2017), not including native vegetation clearing associated with the prescribed impact*
- a test of significance finds that a significant impact on threatened species, ecological communities or their habitats is likely to result from the proposed development.” (OEH 2018)*

Under the BCA, three triggers for a BDAR have been established. These include the following:

1. Is there native vegetation clearing or a prescribed biodiversity impact on land mapped on the Biodiversity Values Map, or
2. Does the clearing of native vegetation exceed the area threshold, or
3. Is it likely to significantly affect threatened species, ecological habitats or the habitats, according to the threatened species test of significance (5-part test)

The proposed development will involve further disturbance of farmed paddocks and potentially a small number of planted trees which form part of the landscaping on the property which will be required to construct works associated for development of the site.

Disturbance of this site constitutes an activity requiring development consent under the Environmental Planning and Assessment Act 1979 and will therefore be considered under the BC Act to determine whether the disturbance to the site triggers a requirement for a Biodiversity Development Assessment Report (BDAR).

2.2 Preliminary Assessment under the BC Act

The BCA and guidelines aid in preliminary assessment of a proposed development to determine whether the development triggers various thresholds and provisions within the BCA. The initial step in this process involves determining whether the proposal triggers a requirement for a BDAR and/or exceeds minimum clearing thresholds. These preliminary assessments relate to the clearing of land under the assigned categories.

2.2.1 Biodiversity Values Map

The Biodiversity Values Map is an online tool which shows areas of high biodiversity values. This map was reviewed on several occasions to assess the presence of high value areas. A biodiversity values map was generated on the 5-11-22 to assess current high value area mapping. The BMAT is presented in appendix 1 of this report. The subject area was sketched on the map as an area of interest. The land does not include any areas of high value biodiversity.

2.2.2 Biodiversity assessment and approvals navigator

The Office of Local Government developed the Biodiversity assessment and approvals navigator which is an online tool to determine the appropriate pathway for determining the level of assessment required under the BCA. This tool was used to assess the proposed development on Stratheden project. The results of this assessment are presented in appendix 2.

The land to be impacted by the development proposal is cultivated land subjected to seasonal cropping. This seasonal cropping has been occurring prior to 1990 and therefore the cultivated land retains an existing use right for ongoing cultivation and production of a range of crops. These crops may include native and non-native species. The crops can be ploughed out or harvested at any stage by the landowner and the land can be returned to bare cultivation by either spray application of herbicides or physically cultivated. The land is managed for cropping and not native vegetation.

2.2.3 Biodiversity Offset Scheme Thresholds (BOS)

The BOS Threshold outlines the maximum area of land supporting native vegetation which may be cleared without requiring a more detailed assessment and calculation of offset habitat and species credits through a Biodiversity Development Assessment Report (BDAR). The BOS is based on the minimum lot size of the land in question.

The lot was assessed using the online BOS Entry Tool, which determines whether the proposed area to be cleared exceeds clearing area thresholds. The following excerpt from Guidelines presents the BOS thresholds.

Area clearing threshold

The area threshold varies depending on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan (LEP)), or actual lot size (where there is no minimum lot size provided for the relevant land under the LEP).

Minimum lot size associated with the property	Threshold for clearing, above which the BAM and offsets scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

The results of the assessment tool have been included within Appendix 2. Results indicate that no BDAR report is required. Based on the BCA, a BDAR is not required on the basis that the land to be disturbed in cropping land supporting a range of cultivated crops used for pasture and cereal production. The whole area had been previously cleared and is now used for seasonal cultivation.

In relation to the BOS threshold, area of native vegetation that can be cleared without triggering a requirement for a BDAR is identified as 1 Ha. The only remnant areas of native vegetation that is not subject to regular cultivation and production of managed crops is a long the Peel River. The Peel River corridor is outside of the footprint of the proposed development. No clearing along this corridor is involved in the project and as the corridor is

significant, many other provisions in a range of legislation would prevent clearing of this corridor.

2.2.4 Test of Significance

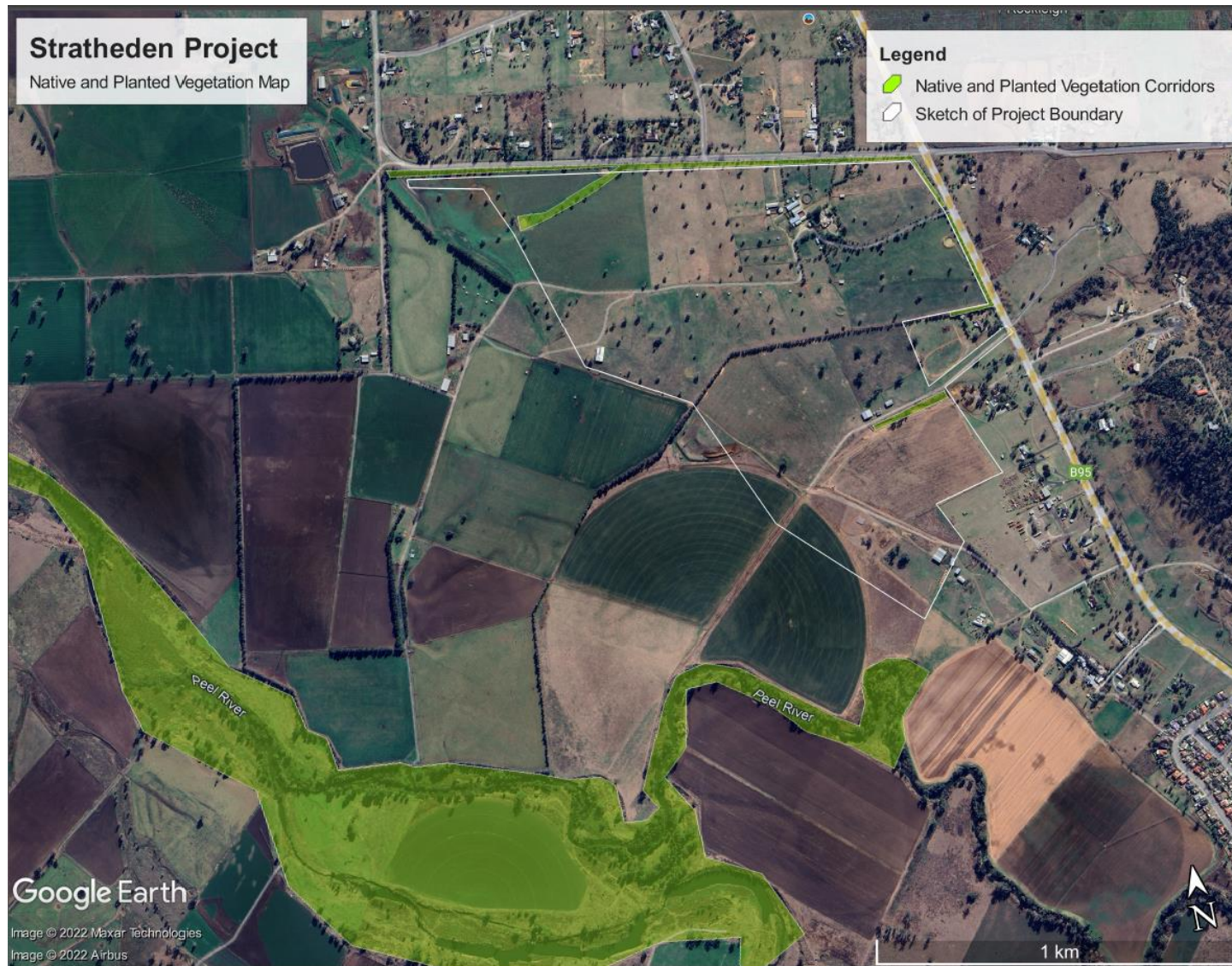
When it is determined that the proposed development will not exceed the limitations presented in the above two questions referred to as the BOS entry requirements under the BCA, the statutory process involves determining whether the ground disturbance required for the proposed development is “likely to significantly affect threatened species”. The aim of this test is to determine whether the development is considered to exceed an acceptable impact under the test presented in section 7.3 of the BC Act. If a development is considered “likely to significantly affect threatened species” under the BCA, then a Biodiversity Development Assessment Report (BDAR) is required.

Several searches of the NSW BioNet database were undertaken for this report to identify threatened species and ecological communities which are predicted to be present within the region. The result of these searches, including comments on identified species and an assessment of their potential to be present at the site is presented in Annexure 1. The list includes a range of threatened species that are likely to be present on the property. The assessment includes some ground truthing of flora species and assessment of potential for fauna species to utilise the available habitat.

The 5-part test presented in annexure 1 indicates that the land supports vegetation that is cropped and managed for the purpose of crop production on a regular basis. The presence of native vegetation is limited to fence lines and planted species. The planted species in the form of tree lines planted for landscaping purposes will be retained where possible. Further disturbance to this land that would be associated with development of a subdivision **is not considered to be an action that would significantly impact threatened species.**

The following plan provides a 2022 aerial image (Google Earth) of the Stratheden project area. The boundary of the project is sketched only. The mapping shows the Peel River corridor which is outside of the footprint. Isolated paddock trees that have mostly been planted are visible. The tree corridors along fence line which will be partly retained are also visible. This reflects the current status of cropping within the project area.

Figure 7: 2022 Aerial mapping showing native vegetation, planted corridors and cultivation land



2.3 EPBC Act – Federal legislation

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the EPBC Act as Matters of National Environmental Significance (MNES). Some of the species and communities are common with NSW protection measures but some are not. For a development proposal, matters under the EPBC Act must also be considered in relation to protection of species and communities.

The EPBC Act provides guidelines for a self-assessment process to determine whether a development needs referral to the Federal Department of Environment and Energy.

A search of the data base under the EPBC Act for MNES includes a list of species and communities that may be present on the property. These MNES have been assessed in accordance with the 'Assessment of Significance' guidelines outlined under the EPBC Act.

The assessment process has been simplified through a series of questions. The assessment is presented in appendix 3.

The assessment has determined that the development does not pose a significant threat to any MNES, and therefore that referral under this Act is not required.

2.4 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Chapter 4 of the *SEPP (Biodiversity and Conservation) 2021* applies to land within each local government area listed in Schedule 2 of the SEPP, with certain exceptions such as land zoned RU1 – Primary Production or land dedicated or reserved under the *National Parks and Wildlife Act 1974*, for example. The Tamworth Regional LGA is included in this schedule, and none of the exceptions listed apply to the site. The proposal is therefore to be assessed pursuant to Chapter 4 of the SEPP.

Clause 4.9 of the SEPP sets out the development assessment process where the proposal has an area of more than 1 Hectare and no approved Koala plan of management has been prepared for the land. These conditions apply to the current proposal.

An excerpt is provided below:

- 3) *If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application*
- 4) *If the council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, the council must, in deciding whether to grant consent to the development application, take into account a koala assessment report for the development.*
- 5) *However, despite subsections (3) and (4), the council may grant development consent if the applicant provides to the council—*
 - (a) information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject of the development application—*
 - (i) does not include any trees belonging to the koala use tree species listed in Schedule 3 for the relevant koala management area, or*
 - (ii) is not core koala habitat, or*
 - (b) information the council is satisfied demonstrates that the land subject of the development application—*

- (i) does not include any trees with a diameter at breast height over bark of more than 10 centimetres, or
- (ii) includes only horticultural or agricultural plantations.

The SEPP provides the following definitions:

- **Core Koala Habitat** means:
 - a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or
 - b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.
- **Koala Habitat** means koala habitat however described in a plan of management under this Chapter or a former Koala SEPP and includes core koala habitat

If the development site is determined to contain core koala habitat, then a plan of management must be prepared to protect koalas from impacts associated with the development.

This species is discussed in the following section.

3. Flora and Fauna Assessment

3.1 Site Environmental Characteristics

3.1.1 IBRA Bioregions and Subregions

The site is located within the Peel Subregion of the Nandewar Bioregion. A summary of the subregion is provided by the Office of Environment and Heritage (2016) and is outlined in the following table.

Table 2: Peel Subregion of the Nandewar Bioregion (OEH 2016)

Characteristics	Description
Geology	Fine grained Silurian to Devonian sedimentary rocks. Strongly folded and faulted with marked northwest alignment. Areas of sub-horizontal Carboniferous shales and sandstones in the north. Limited areas of basalt cap from the Nandewar and Liverpool Ranges are included. Linear outcrops of serpentinite and scattered bodies of limestone.
Landforms	Low peaked hills with north-westerly alignment. Basalt caps of dissected flows, moderate slopes and flat river valleys with alluvium. Karst landscapes in limestone.
Typical Soils	Shallow stony soils on ridges. Texture contrast soils on almost all slopes shifting in colour from red brown on upper slopes to yellow on lower slopes. Black earths on basalt. Dark, alkaline, pedal clays on limestone. Serpentinities have shallow stony profiles with concentrations of elements that are toxic to many plants. Alluvial loams and clays with moderate to high fertility in alluvium.
Vegetation	White box grassy woodlands, with yellow box and Blakely's red gum on lower slopes. Rough-barked apple and yellow box on flats. River oak and some river red gum along major streams. Patches of red stringybark and red ironbark on steeper slopes in the east. Silver-leaved ironbark on basalt caps, white cypress pine and kurrajong on stony areas in the west and north. Very large grass trees on serpentinite.

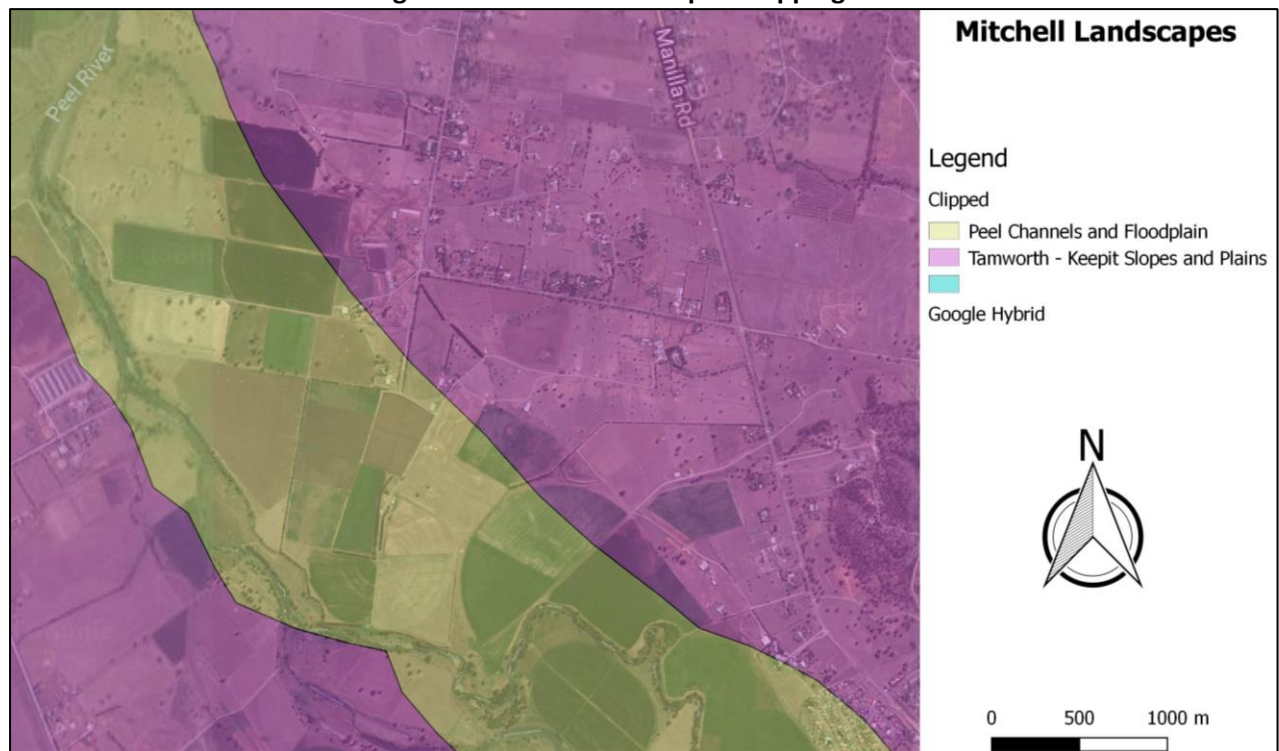
3.1.2 Mitchell Landscape Classification

The Mitchell Landscapes is a data layer derived from a range of input data including land system descriptions, geological mapping and Digital Elevation Models. The descriptions aim to categorise and identify the dominant landscape types across NSW. The Mitchell Landscapes data is used for a variety of purposes by the Office of Environment and Heritage, such as for the determination of over-cleared landscapes.

Mapping of Mitchell Landscapes indicates that the site is located wholly within the Tamworth – Keepit Slopes and Plains land system. The description of this land system is as follows (DECC 2002):

*“Extensive area of undulating to rolling slopes and plains with low hills and low ranges forming the western fall of the New England plateau. Complex geology of folded and faulted sedimentary and metamorphic rocks with minor interbedded volcanics. Rock types include; Silurian-Devonian chert, slate, phyllite, tuff, schist and Carboniferous conglomerate, sandstone, mudstone, andesite and small areas of limestone. General elevation 500 to 800m, local relief 250m, with some peaks reaching 1100m. Shallow stony soils on ridges. Texture-contrast soils on almost all slopes shifting in colour from red-brown on upper slopes to yellow with harsh subsoils prone to gully development on lower slopes. White box (*Eucalyptus albens*) grassy woodlands, with yellow box (*Eucalyptus melliodora*), Blakely’s red gum (*Eucalyptus blakelyi*), cooba (*Acacia salicina*) and lightwood (*Acacia implexa*) on lower slopes. Rough barked apple (*Angophora floribunda*) and yellow box (*Eucalyptus melliodora*) on flats. River oak (*Casuarina cunninghamiana*) along major streams with river red gum (*Eucalyptus camaldulensis*) increasing to the west. Patches of red stringybark (*Eucalyptus macrorhyncha*) and red ironbark (*Eucalyptus sideroxylon*) on steeper slopes in the east.”*

Figure 8: Mitchell Landscapes Mapping



3.1.3 Threatened Flora and Fauna

A search of threatened flora, fauna and ecological communities with potential to be present using the BioNet online search tool identified a total of 100 threatened species and 9 threatened ecological communities listed under the BC Act 2016. A list of identified threatened species and communities, and associated descriptions, is included in Annexure 1. Approximately 18 of these listed species may utilise or inhabit on the property.

The dominant natural ecological community across the local area is White box Yellow box Blakely's Red Gum woodland, which is a critically endangered ecological community in NSW. This community covers extensive areas in the region but has mostly been cleared for land developed for residential purposes in the Tamworth region. The community has been extensively cleared in areas suitable for cropping. Rural residential development has retained some areas. Small acreage farms in the local areas retain degraded areas of this community as they occupy old farming/grazing land. The subject land has been farmed for an extensive period and therefore this woodland has been removed for the purpose of farming activity. It may have supported this community prior to selective clearing for grazing some 80-years ago or more.

This community includes a diverse range of species which vary in their presence or absence. On Stratheden project area, the community has been cleared and property is developed for cultivation of crops and pasture. Only a few isolated paddock trees remain from the natural woodland. A range of introduced species of trees have been planted in corridors along the boundary fence line areas. Ground cover is limited to cropped cereals and pasture species within the study area in addition to lawn areas that are located near the horse stables and homestead area. The paddocks cannot be defined as White Box Yellow Box Blakely's red gum woodland in its present state.

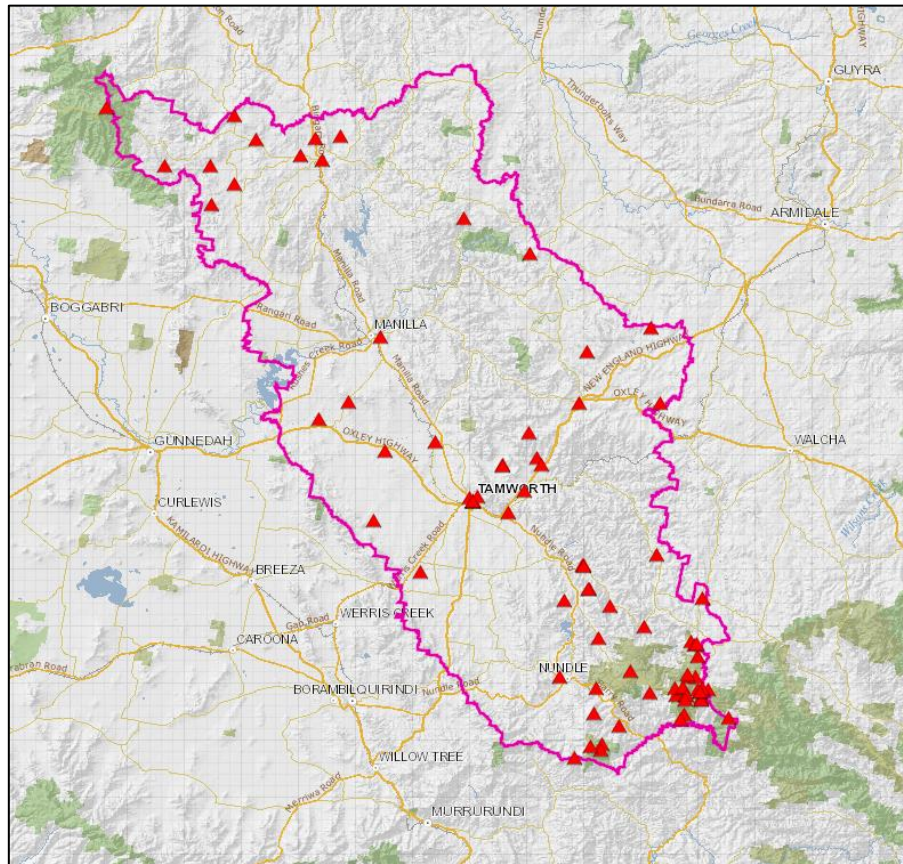
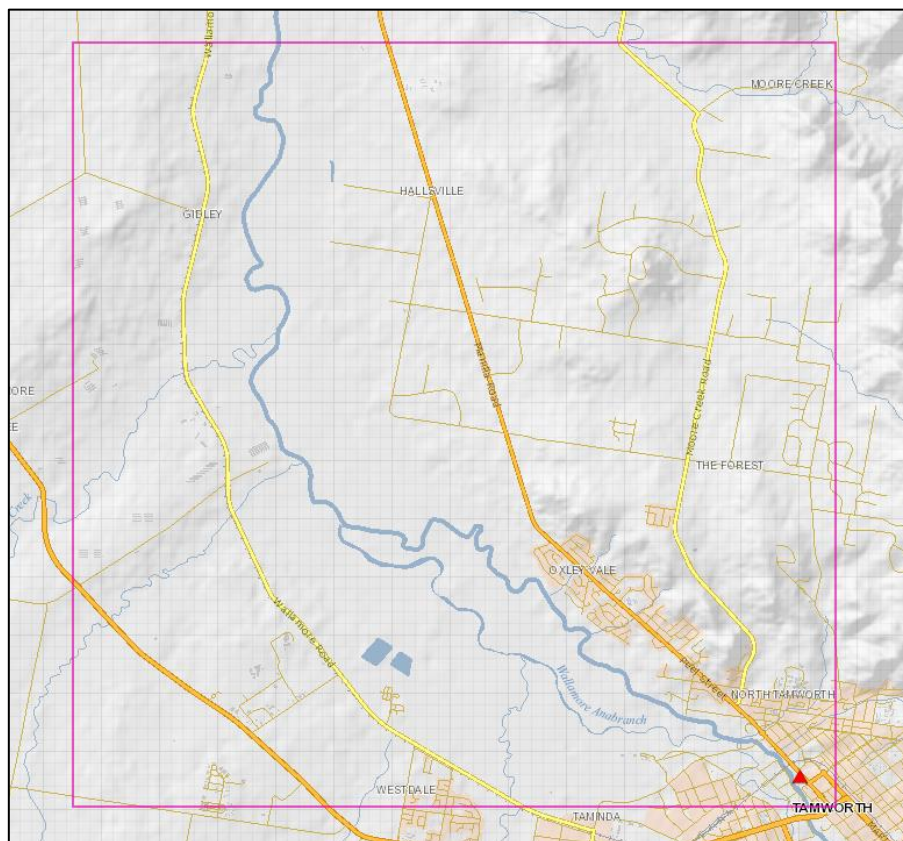
3.1.4 Koala

SEPP (Biodiversity and Conservation) 2021 requires that the site be assessed for the presence of Koala. The Tamworth Regional Council area was searched for known records of koalas in the Shire. A map of Koala sightings is presented in the following image obtained from the Bionet mapping tool.

Historical Koala records are indicated by red triangles. Results indicate that koalas are known to be present within the region; however, a low density of records around the vicinity of the development site indicates that the locality is unlikely to support a known important population of koalas.

Figure 10 shows the Koala records in a 10km x 10km zone centred around the proposed development. There is only 1 record within this area which dates from 2006 (16 years ago) and is located over 6 km south-east of the proposal within a Tamworth residential area.

The low density of records in the locality of the proposal is likely to be the result of a lack of suitable habitat or feed trees. It is noted that an important population of koalas is likely to occur approximately 50 km to the south of the subject site, near Nundle where remnant vegetation is preserved.

Figure 9: Locations of known Koala Records within Tamworth Regional LGA (Bionet, 2022)**Figure 10: Locations of known Koala Records within a 10km² area around the proposed development (Bionet, 2022)**

A search of the property did not identify any individual Koala or signs of regular habitation such as scats, tracks or scratches on trees that have been left by Koala. Local observation indicated that the species is not common or observed on a regular basis. Some feed tree species are present within the property and therefore the development area is considered to have some potential Koala habitat if Koala can access these isolated paddock trees. No woodland corridor is present to assist this process. The separation distance between trees would not encourage the presence of Koala.

The Peel River corridor may offer a Koala migration corridor. Land to the east of this property in the range associated with Mount Daruka, may support a Koala corridor. This is approximately 6 km or more to the east and the land between is highly developed for rural residential and hobby farms.

In a legislative context, the number of scheduled feed tree species is considered less than 15% of the total tree number.

The absence of Koala on the property and the lack of suitable feed tree species indicates that the property is not considered as potential Koala habitat. The development of the land will therefore not trigger further assessment requirements under SEPP (Biodiversity and Conservation) 2021.

4. Discussion of Clearing Impacts

Stratheden Project development area has been cleared for farming purposes. The whole area remains subjected to ongoing cultivation and farming of crops and improved pasture. This has occurred for a period of 50-years or more. The proposed development will be contained within these cultivated paddocks. The development may involve complete clearing of the remaining ground cover and replacement of such with lawns and landscaped areas associated with residential type development. Only small areas may be retained for preservation and potentially allowed to be remediated back to native species along kerbside areas and parks.

The development will therefore involve a potential return of some native species which have been removed as a result of historical landuse.

Some potential is available to retain the original native mature trees on the property if they are not deemed to be of danger to the intended landuse. The trees are old and have been subject to damage from storms due to their isolation in the open paddocks. The value of the hollows in these trees should be considered; however, field investigations indicated that the hollows are more commonly utilised by common species such as galah rather than threatened species. Some seasonal variations may occur that may allow seasonal inhabitation by microbats. However, the landscape in its present form is not considered preferable for possum or gliders due to the separation distance between trees being a barrier to such species.

The tree corridors planted around the property would provide some value as migratory paths for specific species that are unable to move across the open paddocks.

In relation to overall development of the property, it is recommended that the development is planned around the principles of avoiding clearing of isolated paddock trees and planted trees lines with the objective of:

- Retaining existing mature native trees;
- Retain tree corridors through the subdivision area to enable safe passage of native fauna if they enter the area once development is undertaken.
- Plant parkland with native species in preference to non-native to provide some habitat for fauna.

5. Conclusion

This report presents an investigation of project area which is to be rezoned to allow closer residential development. The overall landuse will change from cultivated paddocks to residential development.

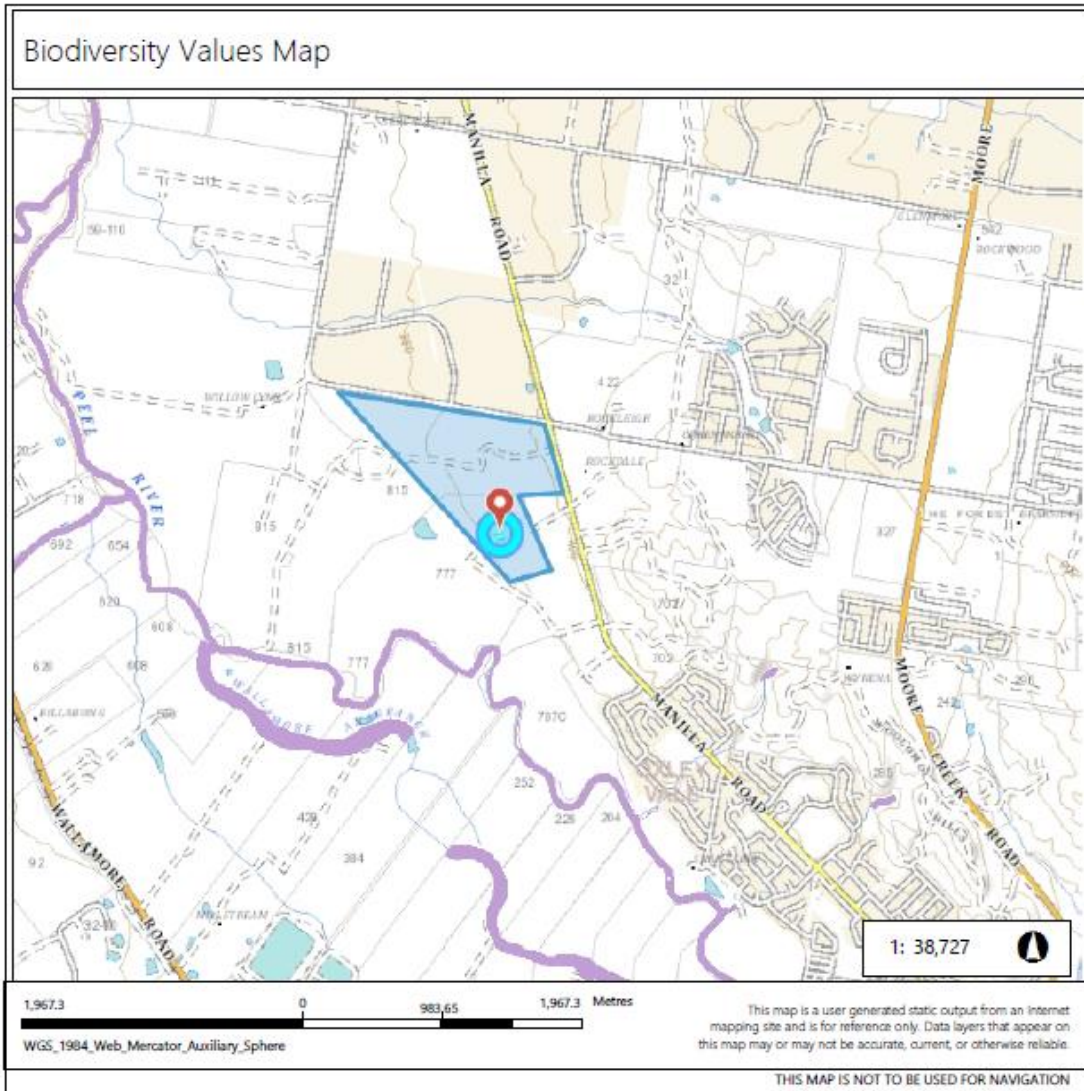
The current landuse within the project footprint involves seasonal cultivation of a range of crops for production of pasture, hay and cereals. The land is fully developed for cultivation with some areas retained isolated paddock trees and some planted tree corridors. The cultivation paddocks may seasonally contain some native species, but these are generally classified as weeds and either sprayed out using selective herbicides or cultivated for production of crops.

The subject area does not include any areas of retained native habitat which provides natural foraging areas for native fauna. Local native fauna when present, target the cropped species as a foraging area.

Two main biodiversity assessments are included with this assessment. The 5-Part test undertaken under the provisions of the BCA indicates a non-significant impact for the development. The test associated with the EPBC Act indicates that the project will not include significant impact on matters of National environmental significance.

In summary, the project area contain land that has been cultivated for 50-years or more and continues to be managed for this purpose. The impact of developing this area for potentially close residential development is not considered a significant impact on the region's Biodiversity or cause any significant loss of native vegetation and native habitat. The development area is not considered to support any significant native habitat value in its current landuse and condition.

Appendix 1: Biodiversity Values Map



Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

Notes

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Biodiversity Values Map and Threshold Report

Results Summary

Date of Calculation	05/11/2022 3:05 PM	BDAR Required*
Total Digitised Area	694,821.4 sqm	
Minimum Lot Size Method	LEP	
Minimum Lot Size 10,000sqm = 1ha	400,000 sqm	
Area Clearing Threshold 10,000sqm = 1ha	10,000 sqm	
Area clearing trigger Area of native vegetation cleared	Unknown #	Unknown #
Biodiversity values map trigger Impact on biodiversity values map(not including values added within the last 90 days)?	no	no
Date of the 90 day Expiry	N/A	

*If BDAR required has:

- at least one 'Yes': you have exceeded the BOS threshold. You are now required to submit a Biodiversity Development Assessment Report with your development application. Go to <https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor> to access a list of assessors who are accredited to apply the Biodiversity Assessment Method and write a Biodiversity Development Assessment Report
- 'No': you have not exceeded the BOS threshold. You may still require a permit from local council. Review the development control plan and consult with council. You may still be required to assess whether the development is "likely to significantly affect threatened species" as determined under the test in s. 7.3 of the Biodiversity Conservation Act 2016. You may still be required to review the area where no vegetation mapping is available.

Where the area of impact occurs on land with no vegetation mapping available, the tool cannot determine the area of native vegetation cleared and if this exceeds the Area Threshold. You will need to work out the area of native vegetation cleared - refer to the BMAT user guide for how to do this.

On and after the 90 day expiry date a BDAR will be required.

Disclaimer

This results summary and map can be used as guidance material only. This results summary and map is not guaranteed to be free from error or omission. The State of NSW and Department of Planning and Environment and its employees disclaim liability for any act done on the information in the results summary or map and any consequences of such acts or omissions. It remains the responsibility of the proponent to ensure that their development application complies with all aspects of the *Biodiversity Conservation Act 2016*.

The mapping provided in this tool has been done with the best available mapping and knowledge of species habitat requirements. This map is valid for a period of 30 days from the date of calculation (above).

Acknowledgement

I as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature _____ Date: 05/11/2022 03:05 PM

Appendix 2: Biodiversity Assessment and Approvals Navigator

Thank you for using the Biodiversity Assessment and Approvals Navigator. The Biodiversity Assessment and Approvals Decision Support tool assists in navigating the land management and biodiversity conservation framework to figure out which approvals apply to your vegetation clearing.

Please find, below, a copy of the information supplied using the navigator from the OLG website.

Question 1 – Are you carrying out a development that requires development consent from a council (under Part 4 of the Environmental Planning and Assessment Act 1979)?

Yes

Question 6a – Is your proposed development fulfilling the purpose of a subdivision that was approved prior to 25 August 2017 in a R1 to R4, RU5, B1 to B8 or IN1 to IN3 zone?

No

Question 6b – Will any part of your proposed development take place on land included on the Biodiversity Values Map? Note: The “parts” of a proposed development includes any land required for buildings, landscaping, access roads, bushfire asset protection zones, fencing and any associated infrastructure whether temporary or permanent.

No

Question 7a – Will your proposed development involve clearing native vegetation (not including ‘Category 1’ land under the Local Land Services Act 2013) in excess of the area clearing thresholds?

No

Question 8 – Is your proposed development likely to significantly affect threatened species or ecological communities, or their habitats, or being carried out in a declared area of outstanding biodiversity value?


No

Note

You do not need to obtain a Biodiversity Development Assessment Report to submit with your development application. The consent authority (which may be your local council) will consider whether to grant development consent. Your application of the test under section 7.3 of the Biodiversity

Conservation Act 2016 and evidence that your proposal does not trigger the offset scheme threshold must be included with your development application.

Consent

 Would you like to receive a copy of the information you have supplied by email?

Email

ptaylor@smk.com.au

6. Appendix 3: MNES Database Search Results and Assessment

EPBC Protected Matters Assessment

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance and impacts on the Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water and Environment.

Table 1: EPBC Protected Matters Assessment

Factor	Impact
a) Any impact on a World Heritage property? No impact. There are no World Heritage properties in the study area.	Nil
b) Any impact on a National Heritage place? No impact. There are no National Heritage properties in the study area.	Nil
c) Any impact on a wetland of international importance? No impact. There are no wetlands of international importance in the study area.	Nil
d) Any impact on a listed threatened species or communities? The proposed development footprint offers potential sub-optimal habitat for threatened species such as Swift Parrot and Corbens Long-eared Bat, Barking. The majority of the vegetation to be impacted consists of improved non-native grassland, and a few mature trees may be impacted for the development of roads. Given the small zone of impact to native vegetation, the dominance of non-native habitat present within the proposal footprint, and the presence of alternative habitat in the locality, the proposal is not considered likely to have a significant impact on threatened species and ecological communities which occur, or may occur, in the locality of the proposal.	Low
e) Any impacts on listed migratory species? Overall, the subject site is not considered to incorporate important habitat for migratory species, as the site is infrequently used by such species, and does not offer key habitat features such as permanent fresh water which may be utilised by these species en route during migration. The subject site is not considered to constitute important habitat for migratory species.	Nil
f) Any impact on a Commonwealth marine area? No impact. There are no Commonwealth marine areas in the study area.	Nil
g) Does the proposal involve a nuclear action (including uranium mining)? No impact. The proposal does not involve a nuclear action.	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land? No impact. There are no Commonwealth lands in the study area.	Nil

SMK

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NSW Biodiversity Act 2016 – Test of Significance

Stratheden Project Area

777 to 815 Manilla Road, Tamworth NSW 2340

Prepared by: **SMK Consultants**

39 Frome Street, Moree, NSW 2400

November 2022

NSW Biodiversity Act 2016 – Test of Significance

Development Background

The proposed development involves a rezoning of the property Stratheden and adjoining land for the purpose of closer subdivision. If the rezoning is permitted, most of the ground within the rezoned area will be subject to clearing and disturbance for construction of roads, houses, and other infrastructure. The vegetation on the property at present would mostly be removed.

Inspection of the property identified that the potential area of development has been farmed for production of fodder since the early 70's when horse breeding and production of dryland cereal cropping commenced. Stratheden was divided into numerous paddocks to support foaling and breeding facilities. All paddocks within the development area were cultivated and cropped to improve fodder production and cereal cropping. Horses are noted to eat most of the ground cover in drier times, leaving bare ground. Management of the horse paddocks involved cultivation and replanting of a range of crops to maintain a ground cover in the paddocks.

The horse paddocks contain isolated paddock trees consisting of a mix of Eucalypts including *E. camaldulensis* and *E. blakelyi* which are native to the area and possibly *E. leucoxylon*. A review of aerial imagery indicates that the *E. leucoxylon* has been planted in rows within the fenced horse paddocks. Tree corridors consisting of a range of non-native and native species to the region have been planted around the boundary of Stratheden to provide a visual barrier for the high value horses that have been bred on the property over the past 50-years.

In summary, landuse of the subject area continues for cropping purposes resulting in the seasonal removal of all native ground cover.

Description of Clearing Impacts

The potential development on this site will involve construction of roads and house pads with Lot sizes may eventually be reduced to 0.5 Ha or smaller. If this occurs, most of the ground cover will be removed and replaced with landscaped gardens. Where possible, the existing mature trees will be retained as part of the development proposal.

Clearing for this work would involve disturbance of the cultivated grasses and forbs. A small number of hollow-bearing trees may also require removal to facilitate construction works, such as for the formation of internal roads. The intent is however to preserve the majority of existing mature trees and surrounding tree buffers which are present within the proposed development footprint.

Data Base Searches for Flora and Fauna Species

A search of the National Parks and Wildlife Atlas of NSW Wildlife (BioNet) identified the following species with recorded sightings within a 10km radius of the proposed development (Table 1).

The project site is located with the Peel subregion of the Nandewar Bioregion. A broader search for species, populations and communities that may occur within the locality of the development site was therefore conducted through investigating known and predicted species' distributions within the

Nandewar Bioregion (Peel subregion). A copy of the search results for listed species is presented in Table 2.

Table 1: Species Recorded Within Vicinity of the Proposed Development Site

Scientific Name	Common Name	BC Act Legal Status	EPBC Act Legal Status
<i>Falco subniger</i>	Black Falcon	Vulnerable	
<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable	
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable	
<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable	
<i>Phascolarctos cinereus</i>	Koala	Endangered	Endangered
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Vulnerable
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	Vulnerable	
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	Vulnerable	
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	Vulnerable	
<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	Vulnerable	Vulnerable
<i>Dichanthium setosum</i>	Bluegrass	Vulnerable	Vulnerable

Table 2: Assessment of Threatened Species Identified by NSW Bionet Database

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
Aves					
<i>Alectura lathamii</i> Australian Brush-turkey	BC Act - E	Largely coastal distribution from Cape York south as far as the Illawarra in NSW. Occurs in forested and wooded areas of tropical and warm-temperate districts, particularly above 300 m to at least 1200 m altitude. Usually prefers dry rainforest that is found within the Semi-evergreen Vine Thicket.	251	Low The subject site is outside of the species' range and there is no suitable habitat for the species within the subject site - the subject site is therefore not considered important habitat.	No
<i>Anseranas semipalmata</i> Magpie Goose	BC Act - V	The Magpie Goose is still relatively common in the Australian northern tropics, and since the 1980s there have been an increasing number of records in central and northern NSW. The species is mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off.	K	Unlikely The subject site does not contain suitable habitat for this species.	No
<i>Oxyura australis</i> Blue-billed Duck	BC Act - V	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. It will fly if disturbed but prefers to dive if approached.	1	Unlikely The subject site does not contain suitable habitat for this species.	No
<i>Stictonetta naevosa</i> Freckled Duck	BC Act - V	It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species prefers permanent freshwater swamps and creeks	K	Unlikely The subject site does not contain suitable habitat for this species.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.			
<i>Ephippiorhynchus asiaticus</i> Black-necked Stork	BC Act - E	Black-necked Storks are widespread in coastal and subcoastal northern and eastern Australia, as far south as central NSW. Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries.	1	Unlikely The subject site does not contain suitable habitat for this species.	No
<i>Botaurus poiciloptilus</i> Australasian Bittern	BC Act - E	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. The species favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.).	K	Unlikely There is no suitable habitat for the species in the subject site.	No
<i>Circus assimilis</i> Spotted Harrier	BC Act - V	In New South Wales, this species is widespread from coast to inland, including the western slopes of the Great Dividing Range and farther west. It is sparsely scattered in, or largely absent from, much of the Upper Western region. Primarily inhabits woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. Generally, the understorey is open with sparse eucalypt saplings, acacias and other shrubs, including heath.	14	Moderate This species may hunt within the grassland on the subject site.	Yes
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	BC Act - V	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and	7	Unlikely The subject site does not contain suitable habitat for this species.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea.			
<i>Hamirostra melanosternon</i> Black-breasted Buzzard	BC Act - V	The Black-breasted Buzzard is found sparsely in areas of less than 500mm rainfall. The species lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. It also hunts over grasslands and sparsely timbered woodlands.	K	Low The site is considered unsuitable due to higher rainfall levels than that with which the species is associated. Mean annual rainfall in the locality exceeds 638.5mm (1992-2022). (BOM Station 055325).	No
<i>Hieraaetus morphnoides</i> Little Eagle	BC Act - V	The Little Eagle is found throughout the Australian mainland. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	61	Moderate Potential foraging habitat is available within the subject site.	Yes
<i>Lophoictinia isura</i> Square-tailed Kite	BC Act - V	In NSW, the species is a regular resident in the north, north-east and along the major west-flowing river systems. Found in a variety of timbered habitats including dry woodlands and open forests. Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage. Appears to occupy large hunting ranges of more than 100km.	7	Moderate Given its large home range, this species may hunt in grassland on the subject site.	Yes
<i>Pandion cristatus</i> Eastern Osprey	BC Act - V	Eastern Ospreys are a coastal species and feeds on fish over clear, open water. They are common around the northern coast, especially on rocky shorelines, islands and reefs. There are a handful of records from inland areas.	1	Low The subject site is outside of the species' range.	No
<i>Falco subniger</i> Black Falcon	BC Act - V	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given	12	Moderate Given its large home range, this species may hunt in grassland on the subject site.	Yes

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		that falcons are highly mobile, commonly travelling hundreds of kilometres.			
<i>Grus rubicunda</i> Brolga	BC Act - V	Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged.	P	Unlikely The species is dependent on wetlands, and there is no such habitat in the subject site.	No
<i>Burhinus grallarius</i> Bush Stone-curlew	BC Act - E	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber. The species feeds on insects and small vertebrates, such as frogs, lizards and snakes.	2	Low There is no suitable habitat for this species within the subject site and it is therefore not considered important for the species.	No
<i>Irediparra gallinacea</i> Comb-crested Jacana	BC Act - V	The Comb-crested Jacana occurs on freshwater wetlands in northern and eastern Australia, mainly in coastal and subcoastal regions. The species inhabits permanent freshwater wetlands, either still or slow-flowing, with a good surface cover of floating vegetation, especially water-lilies, or fringing and aquatic vegetation.	1	Unlikely Comb-crested Jacana is a wetland species, and there are no wetlands within the subject site.	No
<i>Rostratula australis</i> Australian Painted Snipe	BC Act - E	The Australian Painted Snipe's preferred habitat is the fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella.	1	Unlikely This is a wetland species, and there is no suitable habitat for the species in the subject site.	No
<i>Limosa limosa</i> Black-tailed Godwit	BC Act - V	This species is primarily a coastal species. In NSW, the species is most frequently recorded at Kooragang Island (Hunter River estuary), with occasional records elsewhere along the coast and inland. Inland, the species is typically found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps.	P	Low Black-tailed Godwit is a coastal species. The subject site is therefore not within this species' range.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Callocephalon fimbriatum</i> Gang-gang Cockatoo	BC Act - V	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. The species is found in tall mountain forests and woodlands in spring/summer, particularly in mature wet sclerophyll forests. It moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages.	K	Low There is no suitable habitat within the subject site for the species. The subject site predominantly consists of cleared habitat, with a few scattered trees.	No
<i>Calyptrorhynchus lathamii</i> Glossy Black-Cockatoo	BC Act - V	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak and Forest Sheoak are important foods. Inland populations feed on a wide range of sheoak. Belah is also utilised and may be a critical food source for some populations. Feeds almost exclusively on the seeds of several species of she-oak (<i>Casuarina</i> and <i>Allocasuarina</i> species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites.	2	Low There is no suitable habitat within the subject site for the species and it is therefore not considered important habitat for the Glossy Black-Cockatoo. No Sheoak was recorded on the subject site or in the study area.	No
<i>Glossopsitta pusilla</i> Little Lorikeet	BC Act - V	NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species.	384	Moderate Potential habitat available. Hollows available in the older trees within the paddocks.	Yes

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Lathamus discolor</i> Swift Parrot	BC Act - E	In NSW the species mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there is abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i> , Spotted Gum <i>Corymbia maculata</i> , Red Bloodwood <i>C. gummifera</i> , Forest Red Gum <i>E. tereticornis</i> , Mugga Ironbark <i>E. sideroxylon</i> , and White Box <i>E. albens</i> .	15	Moderate The presence of flowering eucalypts provides potential habitat for this species.	Yes
<i>Neophema pulchella</i> Turquoise Parrot	BC Act - V	Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants or browsing on vegetable matter. Nests in tree hollows, logs or posts, from August to December.	428	Moderate Potential foraging habitat may be available within the subject site.	Yes
<i>Ninox connivens</i> Barking Owl	BC Act - V	This species occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Many populations crashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. It also inhabits woodland and open forest, including fragmented remnants and partly cleared farmland.	10	Moderate Potential foraging habitat may be available within the subject site.	Yes
<i>Ninox strenua</i> Powerful Owl	BC Act - V	In NSW, the Powerful Owl is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The species requires large tracts of forest or	6	Moderate Potential foraging habitat may be available within the subject site.	Yes

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		woodland habitat but can occur in fragmented landscapes as well.			
<i>Tyto novaehollandiae</i> Masked Owl	BC Act - V	The distribution of this species extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. Its habitat consists of dry eucalypt forests and woodlands from sea level to 1100m. While it is a forest owl, it often hunts along the edges of forests, including roadsides.	14	Moderate Potential foraging habitat may be available within the subject site.	Yes
<i>Tyto tenebricosa</i> Sooty Owl	BC Act - V	The Sooty Owl occupies the easternmost one-eighth of NSW, occurring on the coast, coastal escarpment and eastern tablelands. Its habitat consists of rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests.	1	Low No suitable habitat for the species within the subject site.	No
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	BC Act - V	The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. When foraging in trees and on the ground, they peck and probe for insects, mostly ants, amongst the litter, tussocks and fallen timber, and along trunks and lateral branches. Hollows in standing dead or live trees and tree stumps are essential for nesting.	568	Low No preferred habitat is present.	No
<i>Chthonicola sagittata</i> Speckled Warbler	BC Act - V	The Speckled Warbler has a patchy distribution throughout the eastern half of NSW. There has been a decline in population density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100ha survive. Typical habitat would include scattered	508	Low The subject site is not considered important habitat for the species, given that key habitat characteristics required by the species (such as the presence of	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. The diet consists of seeds and insects, with most foraging taking place on the ground around tussocks and under bushes and trees. The rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter.		native tussock grasses, a sparse shrub layer) are absent from the subject site.	
<i>Anthochaera phrygia</i> Regent Honeyeater	BC Act - E	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. 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. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species.	149	Unlikely There is no woodland or forest habitat with a high abundance and species richness of birds within the subject site; it is therefore unlikely that Regent Honeyeater would utilise the subject site.	No
<i>Epthianura albifrons</i> White-fronted Chat	BC Act - V	In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. The species is gregarious and is usually found foraging on bare or grassy ground in wetland areas, singly or in pairs.	4	Low The subject site is outside of the species range and does not contain suitable habitat for the species.	No
<i>Grantiella picta</i> Painted Honeyeater	BC Act - V	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. Inhabits Boree/ Weeping Myall (<i>Acacia pendula</i>), Brigalow (<i>A. harpophylla</i>) and Box-Gum	6	Low The subject site is not considered important habitat for the species due to a paucity of suitable habitat. The species is a specialist feeder of	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		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> .		mistletoe fruits, which are absent from the subject site.	
<i>Melithreptus gularis gularis</i> Black-chinned Honeyeater (eastern subspecies)	BC Act - V	The Black-chinned Honeyeater has two subspecies, with only the nominate (<i>gularis</i>) occurring in NSW where it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts. Feeding territories are large making the species locally nomadic. Recent studies have found that the Black-chinned Honeyeater tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares.	107	Low No preferred habitat is present.	No
<i>Pomatostomus temporalis temporalis</i> Grey-crowned Babbler (eastern subspecies)	BC Act - V	In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Feed on invertebrates, either by foraging on the trunks and branches of eucalypts and other woodland trees or on the ground, digging and probing amongst litter and tussock grasses.	150	Moderate Potential foraging habitat may be available within the subject site.	Yes
<i>Daphoenositta chrysoptera</i> Varied Sittella	BC Act - V	Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decortivating bark, dead branches, standing dead trees, and from small branches and twigs in the tree canopy.	107	Moderate Potential foraging habitat may be available within the subject site.	Yes
<i>Pachycephala olivacea</i> Olive Whistler	BC Act - V	The Olive Whistler inhabits the wet forests on the ranges (above 500m) of the east coast. It has a disjunct distribution in NSW chiefly occupying the beech forests around	P	Unlikely No suitable habitat for the species within the subject site.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		Barrington Tops and the MacPherson Ranges in the north and wet forests from Illawarra south to Victoria.			
<i>Artamus cyanopterus cyanopterus</i> Dusky Woodswallow	BC Act - V	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. Primarily eats invertebrates, mainly insects, which are captured whilst hovering or sallying above the canopy or over water. Most breeding activity occurs on the western slopes of the Great Dividing Range.	281	Low The subject site does not contain suitable foraging habitat required to support this species and is therefore not considered important habitat for the species.	No
<i>Melanodryas cucullata cucullata</i> Hooded Robin (south-eastern form)	BC Act - V	The south-eastern form (subspecies <i>cucullata</i>) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies <i>picata</i> . Two other subspecies occur outside NSW. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	105	Low No habitat with sufficient structural diversity is present.	No
<i>Petroica boodang</i> Scarlet Robin	BC Act - V	In NSW, it occurs from the coast to the inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat.	21	Low The subject site is not considered important habitat due to a paucity of suitable habitat.	No
<i>Petroica phoenicea</i> Flame Robin	BC Act - V	In NSW, the Flame Robin breeds in upland areas and in winter, many birds move to the inland slopes and plains to drier, more open habitats. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. The species breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes.	1	Low The subject site is not considered important habitat for this species as the habitat type is not compatible with the species' ecological requirements.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		It prefers clearings or areas with open understoreys, with a ground layer dominated by native grasses.			
<i>Stagonopleura guttata</i> Diamond Firetail	BC Act - V	Found in grassy eucalypt woodlands, including Box-Gum Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Prefers clearings or areas with open understoreys. Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects. Nests are globular structures built either in the shrubby understorey, or higher up, especially under hawk's or raven's nests. Birds roost in dense shrubs or in smaller nests built especially for roosting.	286	Low No preferred habitat is present due to absence of understorey layers.	No
Mammalia					
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	BC Act - V	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Females occupy home ranges of 200-500 hectares, while males occupy very large home ranges from 500 to over 4000 hectares.	48	Low The species may travel through or rest within the subject site given its very large home range, however it is not considered important habitat for the species. No potential den sites were observed on the subject site.	No
<i>Phascogale tapoatafa</i> Brush-tailed Phascogale	BC Act - V	In NSW the Brush-tailed Phascogale is mainly found east of the Great Dividing Range although there are occasional records west of the divide. This species prefers dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. It also inhabits heath, swamps, rainforest and wet sclerophyll forest.	P	Low There are no forests within the subject site. There are only occasional records of the species west of the Great Dividing Range, and the subject site is therefore not considered important habitat for the species.	No
<i>Phascolarctos cinereus</i> Koala	BC Act - V	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Home range size varies with quality of habitat,	156	Unlikely While there are some feed tree species present within the subject site, these consist of isolated paddock trees only.	No

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		ranging from less than two ha to several hundred hectares in size.		The separation distance between trees would not encourage the presence of Koala. The subject site is therefore not considered important habitat for the species.	
<i>Cercartetus nanus</i> Eastern Pygmy-possum	BC Act - V	In NSW the species range extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest.	P	Unlikely The subject site is not considered to constitute important habitat for the species due to a paucity of habitat. Further, there are no known records of the species within the subject IBRA subregion. The species is therefore not considered in this assessment.	No
<i>Petaurus australis</i> Yellow-bellied Glider	BC Act - V	This species of Glider occurs in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. It ranges from the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria.	1	Low The species is not included in this assessment due to a paucity of suitable habitat within the subject site.	No
<i>Petaurus norfolcensis</i> Squirrel Glider	BC Act - V	Squirrel Gliders inhabit mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. They prefer mixed species stands with a shrub or Acacia midstorey.	123	Low Historical clearing has removed suitable habitat from the subject site.	No
<i>Petauroides volans</i> Greater Glider	BC Act – Not listed	The distribution of the Greater Glider includes the ranges and coastal plain of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands. Adult Greater Gliders occupy a relatively small home range with an average size of 1 to 3 ha from which they rarely disperse.	43	Low Historical clearing has removed suitable habitat from the subject site.	No
<i>Aepyprymnus rufescens</i> Rufous Bettong	BC Act - V	In NSW, Rufous Bettong has largely vanished from inland areas but there are sporadic, unconfirmed records from the Pilliga and Torrington districts.	P	Low The species is not known to occur in the locality of the subject site. The subject	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
				site is therefore not considered to provide important habitat for the species.	
<i>Macropus dorsalis</i> Black-striped Wallaby	BC Act - E	Black-striped Wallaby's preferred habitat is characterised by dense woody or shrubby vegetation within three metres of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat. On the north west-slopes of NSW, the species occurs south of Narrabri and is associated with dense vegetation, including brigalow, Ooline and semi-evergreen vine thicket.	334	Unlikely The subject site does not have habitat characteristics (dense vegetation) known to support Black-striped Wallaby. The subject site is therefore not considered important habitat for the species.	No
<i>Onychogalea fraenata</i> Bridled Nailtail Wallaby	BC Act - E	The species' range has declined dramatically during the last century; it is currently presumed extinct in NSW and for over 30 years the species was believed to be extinct across its range.	1	Low The species is presumed extinct in NSW.	No
<i>Petrogale penicillata</i> Brush-tailed Rock-wallaby	BC Act - E	In NSW, the species occurs from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Brush-tailed Rock-wallaby occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north.	1	Unlikely There is no suitable habitat for the species within the subject site.	No
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox	BC Act - V	Occur in subtropical and temperate 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 and are commonly found in gullies, close to water, in vegetation with a dense canopy.	41	Unlikely Unlikely to occur due to lack of free water and forage habitat.	No
<i>Saccolaimus flaviventris</i> Yellow-bellied Sheath-tail-bat	BC Act - V	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country.	87	Moderate This species forages in most habitats, and therefore may forage within open areas on the subject site, given the	Yes

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		Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.		availability of roosting habitat in the site vicinity.	
<i>Micronomus norfolkensis</i> Eastern Coastal Free-tailed Bat	BC Act - V	The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW. The species occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	1	Low The site is not within the species' known range.	No
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	BC Act - V	It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features.	620	Low The site is not considered important habitat for the species. No suitable roosting habitat was observed in the vicinity of the subject site.	No
<i>Chalinolobus picatus</i> Little Pied Bat	BC Act - V	Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress pine forest and mallee and Bimbil box woodlands. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. Feeds on moths and possibly other flying invertebrates.	22	Moderate There is potential foraging and roosting (tree hollows) within the subject site. The species is therefore considered in this assessment.	No
<i>Falsistrellus tasmaniensis</i> Eastern False Pipistrelle	BC Act - V	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. It prefers moist habitats, with trees taller than 20 m, and generally roosts in eucalypt hollows.	63	Moderate There is potential foraging and roosting (tree hollows) within the subject site. The species is therefore considered in this assessment.	No
<i>Nyctophilus corbeni</i> Corben's Long-eared Bat	BC Act - V	Inhabits a variety of vegetation types, including mallee, bullock and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation. Roosts in tree hollows, crevices, and under loose bark. Slow flying agile bat, utilising the understorey to hunt non-flying prey - especially caterpillars and beetles - and will even hunt on the ground.	56	Moderate There is potential foraging and roosting (tree hollows) within the subject site. The species is therefore considered in this assessment.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Scoteanax rueppellii</i> Greater Broad-nosed Bat	BC Act - V	In NSW it is widespread on the New England Tablelands, however, does not occur at altitudes above 500 m. The species utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings.	9	Unlikely The preferred habitat for this species (tall, wet forest), is not present in the subject site or in its surrounds. The species is therefore not considered in this assessment.	No
<i>Vespadelus troughtoni</i> Eastern Cave Bat	BC Act - V	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals.	28	Low There is no suitable habitat for the species within the subject site. Additionally, no roosting habitat was recorded in the vicinity of the site. It is therefore not considered important habitat for the species.	No
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat	BC Act - V	Caves are the primary roosting habitat for this species, but they also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves. The species forages in grassland and timbered forest.	333	Low The site is not considered important habitat for the species. No suitable roosting habitat was observed in the vicinity of the subject site.	No
Reptilia					
<i>Myuchelys bellii</i> Western Sawshelled Turtle, Bell's Turtle	BC Act - E	The main habitat for this species consists of shallow to deep pools in upper reaches or small tributaries of major rivers in granite country. Occupied pools are most commonly less than 3 m deep with rocky or sandy bottoms and patches of vegetation. Most typically uses narrow stretches of rivers 30 - 40 m wide. Most surrounding habitat has been converted to grazing land. In NSW, it is currently found in four disjunct populations in the upper reaches of the Namoi, Gwydir and	P	Unlikely There is no suitable habitat for the species in the subject site.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		Border Rivers systems, on the escarpment of the North West Slopes.			
<i>Uvidicolus sphyrurus</i> Border Thick-tailed Gecko	BC Act - V	Found only on the tablelands and slopes of northern NSW and southern Queensland, reaching south to Tamworth and west to Moree. As implied by another of its common names (Granite Thick-tailed Gecko), this species often occurs on steep rocky or scree slopes, especially granite. Recent records from basalt and metasediment slopes and flats indicate its habitat selection is broader than formerly thought and may have extended into areas that were cleared for agriculture. Favours forest and woodland areas with boulders, rock slabs, fallen timber and deep leaf litter. Occupied sites often have a dense tree canopy that helps create a sparse understorey.	46	Unlikely Cultivated paddocks do not provide suitable habitat for this species.	No
<i>Hoplocephalus bitorquatus</i> Pale-headed Snake	BC Act - V	A patchy distribution from north-east Queensland to the north-eastern quarter of NSW. In NSW it has historically been recorded from as far west as Mungindi and Quambone on the Darling Riverine Plains, across the north west slopes, and from the north coast from Queensland to Sydney. Found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest. In drier environments, it appears to favour habitats close to riparian areas.	P	Unlikely The species is not considered likely to occur within the subject site due to a paucity of suitable habitat. It is therefore not considered in this assessment.	No
Amphibia					
<i>Adelotus brevis</i> Tusked Frog population in the Nandewar and New England Tableland Bioregions	BC Act – E	Tusked Frogs were once found west to the New England Tableland and North West Slopes (Nandewar bioregion) but are now very rare there, and the population in these regions has been listed as an Endangered Population under the Threatened Species Conservation Act. They remain more common in lower elevation coastal areas. The species occurs in rainforests, wet forests and flooded grassland and	P	Unlikely The species is very rare in the locality of the subject site. Furthermore, the site does not contain habitat utilised by the species. Tusked Frog is therefore not considered in this assessment.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		pasture. They are usually found near creeks, ditches and ponds, and call while hidden amongst vegetation or debris.			
<i>Litoria booroolongensis</i> Booroolong Frog	BC Act – E	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands; however, several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. It lives along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	1564	Unlikely There is no suitable habitat for the species within or in the vicinity of the subject site.	No
<i>Litoria daviesae</i> Davies' Tree Frog	BC Act – V	Davies' Tree Frog occurs as a series of small populations along the eastern escarpment of the Great Divide and adjacent tablelands above 400 m elevation. Its habitat is highly fragmented and restricted to the region from Carrai Plateau to the Barrington Tops area. Davies' Tree Frog occurs in permanent, slow-flowing small streams above 400 m elevation, mostly in the headwaters of eastern-flowing streams (although it does occur in the headwaters of the western-flowing Peel River).	6	Unlikely There is no suitable habitat for the species within or in the vicinity of the subject site.	No
Flora					
<i>Tylophora linearis</i>	BC Act – V	Grows in dry scrubland that may have a eucalypt, <i>Callitris glaucophylla</i> and/or <i>Allocasuarina luehmannii</i> overtopping the scrub, in the Barraba, Mendooran, Temora and West Wyalong districts.	7	Unlikely There is no scrubland within the subject site. The species is therefore not considered in this assessment.	No
<i>Picris evae</i> Hawkweed	BC Act – V	Known in NSW north from the Inverell area, in the north-western slopes and plains regions. It has been collected from Elsmore and Myall Creek (both near Inverell) as well as in Inverell, Oxley Park (Tamworth) and also from Dangar Falls in the Oxley Wild Rivers National Park in the northern tablelands of NSW. Its main habitat is open Eucalypt forest including a canopy of <i>Eucalyptus melliodora</i> , <i>E. crebra</i> , <i>E. populnea</i> , <i>E. albens</i> , <i>Angophora subvelutina</i> , <i>Allocasuarina</i>	P	Unlikely The species is not known to occur in the subject site locality. The species described habitat does not occur within the subject site, it is therefore not considered important habitat for Hawkweed.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		<i>torulosa</i> , and/or <i>Casuarina cunninghamiana</i> with a <i>Dichanthium</i> grassy understory. Soils are black, dark grey or red-brown (specified as shallow, stony soil over basalt for one collection) and reddish clay-loam or medium clay soils.			
<i>Stenopetalum velutinum</i> Velvet Thread-petal		<i>Stenopetalum velutinum</i> is currently distributed in Queensland, Western Australia, South Australia, and the Northern Territory. It is presumed extinct in NSW.	1	Low Velvet Thread-petal is presumed extinct within NSW.	No
<i>Acalypha eremorum</i> Acalypha		Though widespread and moderately common in south-east Queensland, in NSW it occurs in only a few localities, including the Chaelundi, Lismore and Burringbar areas. <i>Acalypha</i> is found in Subtropical rainforest, dry rainforest and vine thickets.	1	Unlikely The habitat types in which <i>Acalypha</i> typically occurs are not found in or near the subject site. The site is therefore not considered important habitat for the species.	No
<i>Monotaxis macrophylla</i> Large-leafed Monotaxis		Large-leafed <i>Monotaxis</i> is recorded from several highly disjunct populations in NSW: eastern edge of Deua NP (west of Moruya), Bemboka portion of South East Forests National Park, Cobar area (Hermitage Plains), the Tenterfield area, and Woodenbong (near the Queensland border). <i>Monotaxis macrophylla</i> displays the properties of a fire ephemeral species in many ways. Germination is stimulated by the passage of fire, individual plants have a short life span, a large biomass is produced in a short period of time, flowering occurs shortly after germination, and populations do not persist in the absence of fire.	P	Low The species has a very restricted range and is not known to occur in the locality of the subject site. The site is therefore not considered important habitat for the species.	No
<i>Acacia atrox</i> Myall Creek Wattle		Myall Creek Wattle is known from two populations near Delungra and Gurley. Each population occupies less than 5 hectares.	10	Low The subject site is outside of the known distribution of the species.	No
<i>Haloragis exalata</i> subsp. <i>Velutina</i> Tall Velvet Sea-berry		This subspecies of Tall Sea-berry occurs on the north coast of NSW and south-eastern Queensland. It grows in damp places near watercourses and in woodland on the steep rocky slopes of gorges.	2	Low The subject site is outside of the known distribution of the species.	No

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<i>Commersonia procumbens</i>		Endemic to NSW, mainly confined to the Dubbo-Mendooran-Gilgandra region, but also in the Pilliga and Nymagee areas. <i>Commersonia procumbens</i> grows in sandy sites, often along roadsides.	P	Low The subject site is not considered important habitat for the species due to a paucity of suitable habitat.	No
<i>Callistemon pungens</i>		In NSW the species occurs from near Inverell to the eastern escarpment in New England National Park. It also occurs in the northern tablelands of south-eastern Queensland, mainly in the Stanthorpe area. Habitats range from riparian areas dominated by <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> to woodland and rocky shrubland.	2	Low The subject site is outside of the known distribution of the species.	No
<i>Eucalyptus mckieana</i> McKie's Stringybark		<i>Eucalyptus mckieana</i> is found in grassy open forest or woodland on poor sandy loams, most commonly on gently sloping or flat sites. It is confined to the drier western side of the New England Tablelands of NSW, from Torrington to Bendemeer.	2	Low The species was not identified within the subject site.	No
<i>Eucalyptus nicholii</i> Narrow-leaved Black Peppermint	BC Act – V	This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors. Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Tends to grow on lower slopes in the landscape.	6	Low The species was not identified within the subject site.	No
<i>Eucalyptus oresbia</i> Small-fruited Mountain Gum	BC Act – V	The species is found at altitudes between 800 m and 1100 m in very steep valleys and deeply incised creek lines with primarily south to southwest exposure (i.e. warm yet moist).	33	Low The subject site is outside of the species altitudinal range. Furthermore, the species was not observed during the site inspection and the local topographic characteristics are not	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
				consistent with those preferred by Mountain Gum.	
<i>Eucalyptus rubida</i> subsp. <i>barbigerorum</i> Blackbutt Candlebark	BC Act – V	Known from scattered populations on the New England Tablelands from Guyra to the Tenterfield area. Most populations occur on private property however the species is recorded in Barayamal and Guy Fawkes National Parks. This tree occurs in grassy woodland on medium or high fertility soils.	2	Low The species was not observed within the subject site. Furthermore, the subject site is outside of the species' known range.	No
<i>Homoranthus prolixus</i> Granite Homoranthus	BC Act – V	Occurs in scattered locations between Inverell and Manilla. <i>Homoranthus prolixus</i> grows in heath patches, in skeletal soil among crevices of granite outcrops.	1	Unlikely There is no suitable habitat for this species within the subject site.	No
<i>Syzygium paniculatum</i> Magenta Lilly Pilly	BC Act – E	The Magenta Lilly Pilly is found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest.	1	Low The subject site is outside of the species' known range.	No
<i>Chiloglottis platyptera</i> Barrington Tops Ant Orchid	BC Act – V	This orchid is found along the eastern edge of the New England Tablelands, from Ben Halls Gap to east of Tenterfield, and also in the Barrington Tops area. It grows in moist areas in tall open eucalypt forest with a grassy understorey, and also around rainforest edges.	P	Low The subject site is outside of the species' known range. Furthermore, there is no suitable habitat for the species within the subject site.	No
<i>Prasophyllum</i> sp. Wybong	BC Act – Not Listed	Endemic to NSW, it is known from near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell, Tenterfield, Currabubula and the Pilliga area. Most populations are small, although the Wybong population contains by far the largest number of individuals. Known to occur in open eucalypt woodland and grassland.	1	Low The subject site has been highly modified due to historical clearing and agricultural development. As such it is considered unlikely to support any threatened native species. Furthermore, the species is not known to occur in this locality. The species is therefore not considered in this assessment.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Euphrasia arguta</i>	BC Act – E	<i>Euphrasia arguta</i> was rediscovered in the Nundle area of the NSW north western slopes and tablelands in 2008. Historically, <i>Euphrasia arguta</i> has only been recorded from relatively few places within an area extending from Sydney to Bathurst and north to Walcha.	84	Low The species has a restricted distribution and is not known to occur in the locality of the subject site. The subject site is therefore not considered important habitat for <i>Euphrasia arguta</i> .	No
<i>Dichanthium setosum</i> Bluegrass	BC Act – V	Bluegrass occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture.	36	Moderate This species was not observed during the site assessment. However, it is known to occur in moderately disturbed areas and the subject site has potential habitat for the species. The species is therefore included in this assessment.	Yes
<i>Digitaria porrecta</i> Finger Panic Grass	BC Act – E	In NSW, the most frequently recorded associated tree species are <i>Eucalyptus albens</i> and <i>Acacia pendula</i> . Common associated grasses and forbs in NSW sites include <i>Austrostipa aristiglumis</i> , <i>Enteropogon acicularis</i> , <i>Cyperus bifax</i> , <i>Hibiscus trionum</i> and <i>Neptunia gracilis</i> . Found in native grassland, woodlands or open forest with a grassy understorey, on richer soils.	15	Unlikely The subject site is not considered suitable habitat for the species due to a paucity of suitable habitat.	No
<i>Homopholis belsonii</i> Belson's Panic	BC Act – E	Occurs on the northwest slopes and plains of NSW, mostly between Wee Waa, Goondiwindi and Glen Innes. It also occurs in Queensland, mainly in the Brigalow Belt South bioregion. Grows in dry woodland (e.g. Belah) often on poor soils, although sometimes found in basalt-enriched sites north of Warialda and in alluvial clay soils.	3	Unlikely The subject site is not considered suitable habitat for the species due to a paucity of suitable habitat.	No
<i>Polygala linariifolia</i> Native Milkwort	BC Act – E	North from Copeton Dam and the Warialda area to southern Queensland. The species has been recorded from the Inverell and Torrington districts growing in dark sandy loam on granite in shrubby forest of <i>Eucalyptus caleyi</i> , <i>Eucalyptus dealbata</i> and <i>Callitris</i> , and in yellow podzolic soil on granite in layered open forest.	10	Unlikely The subject site is not considered suitable habitat for the species due to a paucity of suitable habitat.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Hakea pulvinifera</i> Lake Keepit Hakea	BC Act – E	Lake Keepit Hakea is confined to the North West Slopes of NSW, where it is known from a single population near Lake Keepit, north-east of Gunnedah.	12	Low This species is confined to a single location at distance from the subject site.	No
<i>Asterolasia beckersii</i> Dungowan Starbush	BC Act – E	Dungowan Starbush is only known from eleven locations in the local region around Dungowan Dam near Tamworth. The tenure of the locations is varied with five locations within conservation reserves, three locations are in the vicinity of the dam within a restricted-access area and three within state forests.	11	Low This species' range is extremely restricted and does not include the subject site's locality.	No
<i>Boronia ruppia</i> Rupp's Boronia	BC Act – E	Rupp's Boronia is restricted to Woods reef, east of Barraba where it occurs on serpentine geology. It grows in dry eucalypt woodland on soils derived from serpentinite rock. Recent extensive surveys indicate over a dozen small subpopulations remain scattered across the local site, but the species does not extend to other regional serpentine areas.	496	Low Rupp's Boronia only occurs in Woods reef and its range does not extend to other serpentine areas within the region. The subject site is therefore not considered important habitat for the species	No
<i>Phebalium glandulosum</i> subsp. <i>Eglandulosum</i> Rusty Desert Phebalium	BC Act – E	Found in the Torrington district and in Severn River Nature Reserve north-west of Glen Innes, on the New England Tablelands. This species is restricted to granite outcrop country on the New England Tablelands. Favours exposed and heathy granite areas with cracks and depressions of skeletal sandy soil located amongst the boulders. Sites tend to be relatively open, with the shrubs forming a spreading habit over the bare rocks.	1	Unlikely There is no granite outcrop in the subject site.	No
<i>Zieria odorifera</i> subsp. <i>copelandii</i>	BC Act – E	Widely scattered but not common in north-east NSW and in Queensland. It is known from several locations on the NSW north coast and a few locations on the New England Tablelands and North West Slopes, including near Torrington and Coolatai. Found in moist eucalypt forest or sheltered woodlands with a shrubby understorey, and occasionally along creeks.	P	Unlikely There is no suitable habitat for the species within the subject site. The species is therefore not considered in this assessment.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Thesium australe</i> Austral Toadflax	BC Act – V	Austral Toadflax is found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. It is often found in association with Kangaroo Grass (<i>Themeda australis</i>).	26	Moderate There is broadly suitable habitat for this species within the subject site.	No
<i>Dodonaea stenophylla</i>	BC Act – V	<i>Dodonaea stenophylla</i> is known to be widespread across central Queensland and into the Northern Territory. Within NSW, the species has a highly restricted geographic distribution within the Bingara area. The species was considered extinct in NSW until being rediscovered in 1994 which was confirmed in 2010. In NSW, this species is found on very steep slopes on unconsolidated and loose stony metasedimentary soils on mid to upper slopes and crests on crests facing NE to NW between 400 and 600 m altitude.	57	Unlikely There is no suitable habitat for this species in the subject site.	No
<i>Cadellia pentastylis</i> Ooline	BC Act – V	Occurs along the western edge of the North West Slopes from north of Gunnedah to west of Tenterfield. Ooline typically forms a closed or open canopy mixing with eucalypt and cypress pine species. The total area occupied by Ooline is only about 1200 hectares, with remaining populations in NSW still threatened to various degrees by clearing for agriculture and grazing pressures.	12	Unlikely The species was not observed within the subject site. The species is therefore not considered in this assessment.	No
Communities					
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	BC Act – EEC	The Brigalow community is a low woodland or forest community dominated by Brigalow (<i>Acacia harpophylla</i>), with pockets of Belah (<i>Casuarina cristata</i>) and Poplar Box (<i>Eucalyptus populnea</i> subsp. <i>bimbil</i>). The canopy tends to be quite dense and the understorey and ground cover are only sparse.	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No
<i>Cadellia pentastylis</i> (Ooline)	BC Act – EEC	The Ooline community is an unusual and distinctive forest community with the canopy dominated by the tree Ooline	K	Low	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
community in the Nandewar and Brigalow Belt South Bioregions		(<i>Cadellia pentastylis</i>). The understorey is made up of a range of shrubs, such as Wattles (<i>Acacia</i> spp.), and grasses. This community has been extensively cleared and now known from only seven main locations on the North West Slopes in NSW, between Narrabri and the Queensland border, and also in Queensland.		This EEC does not occur on the site, and the site is thus not considered important habitat.	
Carbeen Open Forest Community in the Darling Riverine Plains and Brigalow Belt South Bioregions	BC Act – EEC	This was previously an open forest community of flora and fauna that may now exist as woodland or as remnant trees. Characteristic tree species are Carbeen (<i>Corymbia tessellaris</i>) and White Cypress Pine (<i>Callitris glaucophylla</i>).	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No
Howell Shrublands in the New England Tableland and Nandewar Bioregions	BC Act – EEC	The Howell Shrublands are a community usually dominated by low shrubs, particularly <i>Babingtonia densifolia</i> and Granite <i>Homoranthus Homoranthus prolixus</i> , with a range of other shrubs, forbs and grasses also present. The mix of species at a site changes over time, and occasionally all the shrubs may be absent, giving the community a grassland structure, or various eucalypts and cypress pine may be present, giving a low open shrubby woodland structure. This community is confined to areas of extensive granite outcropping.	P	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Penepplain, Nandewar and Brigalow Belt South Bioregions	BC Act – EEC	Inland Grey Box Woodland occurs on fertile soils of the western slopes and plains of NSW. The community generally occurs where average rainfall is 375- 800 mm pa and the mean maximum annual temperature is 22- 26°C. Inland Grey Box Woodland includes those woodlands in which the most characteristic tree species, <i>Eucalyptus microcarpa</i> (Inland Grey Box), is often found in association with <i>E. populnea</i> subsp. <i>bimbil</i> (Bimble or Poplar Box), <i>Callitris glaucophylla</i> (White Cypress Pine), <i>Brachychiton populneus</i>	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		(Kurrajong), <i>Allocasuarina luehmannii</i> (Bulloak) or <i>E. melliodora</i> (Yellow Box), and sometimes with <i>E. albens</i> (White Box). Shrubs are typically sparse or absent, although this component can be diverse and may be locally common, especially in drier western portions of the community. A variable ground layer of grass and herbaceous species is present at most sites. At severely disturbed sites the ground layer may be absent.			
Mount Kaputar high elevation and dry rainforest land snail and slug community in the Nandewar and Brigalow Belt South Bioregions	BC Act – EEC	The Mount Kaputar snail and slug Endangered Ecological Community (EEC) is an assemblage of 11 native land snails and one slug known from high elevation and dry rainforests of the Mount Kaputar region. The EEC is restricted to higher altitudes (above about 1000 m) and dry rainforest (including semi-evergreen vine thicket) areas at lower elevations (above 500 m) in and around Mount Kaputar.	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No
Native Vegetation on Cracking Clay Soils of the Liverpool Plains	BC Act – EEC	Native Vegetation on Cracking Clay Soils of the Liverpool Plains is mainly a native grassland community which includes a range of small forb and herb species. The main grass species include Plains Grass (<i>Austrostipa aristiglumis</i>), Queensland Bluegrass (<i>Dichanthium sericeum</i>) and Eucalypts Grass (<i>Panicum queenslandicum</i>). This community is located around Coonabarabran, Gunnedah, Murrurundi, Narrabri, Tamworth and Quirindi, on the North West Slopes and Plains. Most surviving remnants of the community are on Travelling Stock Routes.	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No
Semi-evergreen Vine Thicket in the Brigalow Belt South and Nandewar Bioregions	BC Act – EEC	A low, dense form of dry rainforest generally less than 10 m high, made up of vines and rainforest trees as well as some shrubs. This community often occurs on rocky hills, in deep, loam, high nutrient soils derived from basalt or other volcanic rocks, in areas which are sheltered from frequent fire.	K	Low This EEC does not occur on the site, and the site is thus not considered important habitat.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner	BC Act – EEC	White Box Yellow Box Blakely's Red Gum Woodland is an open woodland, in which the most obvious species are one or more of the following: White Box <i>Eucalyptus albens</i> , Yellow Box <i>E. melliodora</i> and Blakely's Red Gum <i>E. blakelyi</i> . Intact sites contain a high diversity of plant species, including the main tree species, additional tree species, some shrub species, several climbing plant species, many grasses and a very high diversity of herbs. Characterised by the presence or prior occurrence of White Box, Yellow Box and/or Blakely's Red Gum. Shrubs are generally sparse or absent, though they may be locally common. Remnants generally occur on fertile lower parts of the landscape where resources such as water and nutrients are abundant.	K	<p>Low</p> <p>This EEC does not occur on the site, and the site is thus not considered important habitat.</p>	No

Assessment of Eligibility for Consideration under the Biodiversity Conservation Act 2016 Five Parameter Test

Species were considered with regards to their known distribution and habitat requirements, to assess whether the site is likely to serve as suitable habitat, and subsequently whether/how the development is likely to impact upon the species. Only species that have the potential to be present within the available habitat, as listed in Table 2 are assessed in this test of significance.

The following species, populations and communities have the potential to occur within the local area and have been considered in this Test of Significance.

Table 3: Results of BioNet Atlas Search

Scientific Name	Common Name	Legal Status	Records
<i>Circus assimilis</i>	Spotted Harrier	BC Act: V, P	14
<i>Lophoictinia isura</i>	Square-tailed Kite	BC Act: V, P	7
<i>Hieraaetus morphnoides</i>	Little Eagle	BC Act: V, P	
<i>Falco subniger</i>	Black Falcon	BC Act: V, P	12
<i>Glossopsitta pusilla</i>	Little Lorikeet	BC Act: V, P	384
<i>Lathamus discolor</i>	Swift Parrot	BC Act: E, P	15
<i>Neophema pulchella</i>	Turquoise Parrot	BC Act: V, P	428
<i>Ninox connivens</i>	Barking Owl	BC Act: V,P	10
<i>Ninox strenua</i>	Powerful Owl	BC Act: V, P	6
<i>Tyto novaehollandiae</i>	Masked Owl	BC Act: V, P	14
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	BC Act: V, P	150
<i>Daphoenositta chrysoptera</i>	Varied Sittella	BC Act: V, P	107
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	BC Act: V,P	87
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	BC Act: V, P	63
<i>Chalinolobus picatus</i>	Little Pied Bat	BC Act: V,P	22
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	BC Act: V, P	56
<i>Dichanthium setosum</i>	Bluegrass	BC Act: V	36
<i>Thesium australe</i>	Austral Toadflax	BC Act: E, P	26

¹Number of BioNet Atlas records in selected area. Status Abbreviations: Vulnerable (V), Endangered (E), Protected (P)

Test of Significance – The Five Parameter Test

The Test of Significance outlined under Section 7.3 of the *Biodiversity Conservation Act 2016* includes the assessment of the development against five parameters to determine whether there is likely to be a significant effect on the threatened species recorded at or likely to occur at the site. The test aims to determine whether a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

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

Woodland Species

Little Lorikeet, Swift Parrot, Turquoise Parrot, Grey-crowned Babbler, Varied Sittella

Habitat loss and/or degradation as a result of clearing, increased weed invasion, under-shrubbing and “tidying up”, are all significant threats for these species.

It is noted that no permanent population of the above-listed species are predicted to rely upon the subject site for foraging. Their range would be more extensive and significantly seasonal. The crop land which will be disturbed by construction is considered to have the potential to offer marginal foraging habitat. The lorikeet and parrots may be attracted to the area with grass seed. Grass will continue to be present if development proceeds. While a small number of hollow-bearing trees may be cleared as part of the proposal, hollows were observed to be occupied by Galahs during the site inspection. Direct impacts to these species are therefore considered to be limited.

The risk to these woodland species is therefore limited to indirect impacts such as noise disturbance and potential habitat modification resulting from spread of weed species. Noise disturbance is not expected to be significant, and noise levels would remain similar to current levels, as the area is bordering a road and there are several rural residences in the area already.

Weed control measures would be implemented during any construction works to prevent the introduction of new weeds onto the site and their spread to adjoining areas. Provided that these measures are implemented, secondary impacts are not considered significant and are unlikely to place a viable population at risk of extinction.

Birds of Prey

Spotted Harrier, Square-tailed Kite, Little Eagle, Black Falcon, Barking Owl, Powerful Owl, Masked Owl

Furthermore, species such as Square-tailed Kite and Black Falcon typically display a preference for tree-lined watercourses, Little Eagle nests in trees within remnant patches and owls typically roost/nest in areas with higher tree density. The subject site is considered to provide sub-optimal foraging habitat for most of these species. There is potential roosting and breeding habitat for Spotted Harrier within the paddock trees in the subject site. It is noted however that no owl or bird of prey nests were identified in the isolated trees that remain on the property.

On occasion, large owls and birds of prey may fly across the area looking for rats or similar sized prey. This prey may be more common in the closer subdivision proposed. Stratheden may offer a small part of a home range with owls.

The possible removal of a small number isolated paddock trees is unlikely to result in a significant adverse impact to any of the above-listed species, given the availability of higher-quality habitat in the vicinity of the subject site, in particular areas of open woodland within 500m of the proposal, to the south-east. Similarly, the loss of sub-optimal foraging habitat (improved non-native grassland/cropland) over an area of 70 Ha is unlikely to have an adverse impact on these species due to the availability of alternative habitat. Furthermore, given the large home ranges (typically >200 Ha) and high degree of mobility of the above-mentioned species, should any displacement or disturbance

be incurred, there would not be a significant impact to these species as sufficient alternative similar- and higher-quality is present in the locality.

The proposed development is therefore deemed not to pose a risk to viable local populations of the above-mentioned species. There is therefore no risk of a viable population being placed at risk of extinction.

Bats

Yellow-bellied Sheath-tail Bat, Eastern False Pipistrelle, Little Pied Bat, Corben's Long-eared Bat

The above-listed bat species may forage and roost in mature trees within the subject site, however given the lack optimal foraging/roosting habitat (woodland habitat) within the subject site and the availability of higher-quality native woodland habitat in the locality, it is unlikely that the subject site is regularly or heavily utilised by the above listed species. A small number of hollow-bearing trees may be removed as part of the construction works and some of these trees may have small and medium-sized hollows which offer potential roosting habitat. Despite the removal of this area of potential habitat, the proposal is considered unlikely to significantly affect any occurring local population of the above-listed species as only a relatively small area of habitat would be impacted relative to the extent of available habitat in the study area. It is also noted that the mature trees which may be impacted are subject to regular disturbance by human activities; this habitat is of lower quality and value to fauna than relatively undisturbed woodland in the study area

It is therefore considered that no viable local population of any of the above-listed threatened species will be placed at risk of extinction as a result of the proposed development.

Flora

Bluegrass, Austral Toadflax

None of the other above-listed species were recorded on the site. Such species would have been removed as a result of the regular cultivation practices for the past 50-years. The cryptic nature of some threatened species is such that the species may not have been visible during the time of the site visit, and therefore it must be assumed that viable populations of threatened flora species may be present within the region in accordance with the precautionary principle.

Potential habitat for these species is present within the subject site, however larger areas of similarly habitat are present all around the subject site. Should the above-mentioned species be present within the development footprint, they would be displaced and there would be a minor area of net habitat loss. However, given that adjoining vegetation retains the potential to support these species, it is considered that the risk of a viable population being placed at risk of extinction is minimal.

The proposed development is therefore not considered to risk the local extinction of viable populations of threatened species if it was present outside of the cultivated area to be occupied by the proposed development.

- b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**
- i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or**
 - ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,**

The subject site has been cleared of native vegetation, and therefore does not support any endangered or critically endangered ecological communities. No direct impacts to any EECs are therefore predicted.

In the event of construction works, erosion and sediment control measures would be implemented to minimise off-site impacts of the proposal. A number of weed control measures would need to be implemented to reduce the potential introduction and spread of weed species to and from the subject site.

Provided weed control measures are implemented, the development proposal is considered unlikely to impact on the extent or composition of any potentially occurring EEC in the vicinity of the proposed project footprint.

- c) in relation to the habitat of a threatened species or ecological community:**
- i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and**
 - ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and**
 - iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,**

The area of the proposed development consists of paddocks that are cropped to support an intense grazing regime and seasonal cropping of mainly winter cereals and hay. This has occurred for approximately 50-years. The proposal would result in the removal of approximately 70Ha of this cropland, with the possible removal of some isolated paddock trees if required for the formation of internal roads or as part of the proposed development. The habitat value of this land for threatened species is considered limited. The few remaining tree hollows may support several individuals, but it is noted that the trees are mainly occupied by galah nests. Available habitat within the subject site is not considered to be of importance to threatened native species.

The remaining habitat in the local area has been highly fragmented for a period of more than 50-years. The exception to this is the watercourse corridor along the Peel River. Some larger remnants of native vegetation have been retained along the river. The river provides a corridor more than a larger habitat area for all species other than aquatic species. The river is outside of the subject site.

The study area does not support a threatened ecological community at present.

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

The Peel River which forms the western boundary of the subject land, but outside of the area of this proposal, is declared as vulnerable land. Land to the immediate north of the subject land (north of Browns Lane) is land excluded from the LLS Act and is to be solely assessed under the BC Act. NSW mapping of biodiversity is relatively limited at present.

The area identified for potential development consists of cropped paddocks. A few natural isolated paddock trees remain. A large proportion of the trees within the paddocks are *E. leucoxylon* which have been planted to provide shade lines.

The study area has minimal biodiversity value as it has been farmed and cropped for an extensive period. The development proposed will involve closer subdivision. Properties in rural residential type development to the immediate north of the land support considerably more native and non-native vegetation, other than landscaped areas associated with the homestead. It is expected that houses on smaller lots would landscape the whole properties once the houses are established. This will secure the soil and eliminate any potential impact that agricultural activities (spraying, cultivation) would have on the surrounding areas of higher biodiversity value, mainly the Peel River.

The development is therefore not considered to pose a risk to declared areas of outstanding biodiversity value within the wider region.

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

A total of 35 key threatening processes are listed for the Nandewar-Peel IBRA region by the Bionet search of the region. The following Table 4 presents a list of these processes and comment. Based on the number identification in the list, the following discussion is presented to assess the process.

Processes 19, 20, 21, 22, 23 and 24 involve invasion by plant species. Some of the listed species are declared as noxious weeds and therefore managed by programs of weed control, including weed programs enforced by local Council under direction orders or funded weed control programs. The property has utilised a wide range of hay and imported fodder to feed horses over the past 50-years. Numerous species of weed have been brought with the hay, however, cropping programs and spot spraying have limited the spread of some weeds. It is noted that Tiger pear is present in the surrounding tree corridors. LLS and other weed authorities are encouraging biological control of this species.

Figure 1: Tiger pear (*Opuntia aurantiaca*) at Stratheden – A weed of National significance.



The specific species identified in processes 20, 22 and 24 were not observed during field inspections. A range of improved pasture species have been planted on Stratheden in the past 50-years to improve productivity for grazing. The remainder of the land is maintained as minimal till cultivation which includes control of weed species by herbicide application. This process minimises the regeneration of any areas of native species that would grow through a process of recolonising the cropped land if it was abandoned and allow to regrow. Species of concern in NSW such as buffel grass, have not been included in the planted pasture species.

Processes 26 and 27 can be related to garden plants. Lantana is a common garden plant due to its heavy flowering and hardy nature. A wide range of common garden plants would be introduced into a rural or residential development as part of landscaping and growing of lawns. The main point of control of what species are grown is the local nursery facilities. Appropriate controls are present to avoid nurseries from selling highly invasive species, but many exotic species that could be introduced could tend to spread outside of a landscaped area from a rural or residential subdivision. The current farm management system of cropping and spraying, controls such issues. It is noted that the farming land between the proposed development area and the Peel River will be retained for farming. This will provide a barrier between the development and the river corridor which remains as a remnant of high biodiversity value but also a corridor for the spread of feral plant species.

Process 28 for loss of hollow bearing trees has already occurred. Only a limited number of mature trees remain within the development area that have hollows. Most trees have been planted and are not of an age to support hollows. The opportunity exists to retain the larger trees that have hollows; however, the age and potential isolation of these trees would be of concern for their longevity.

Processes 30 - 34 relate to introduction of feral animals include dogs, foxes, cats, and pigs. Domesticated dogs in the wild are not identified as a significant issue in the local area, however, stock losses occur as a result of stray domesticated dogs on occasions. This is a matter for Council to manage under existing policy. Stray cats in the wild are an issue and again this is a matter of local Council policy and management. Foxes remain active in the region. Standard policy remains in place for control, but no special program has been undertaken to reduce excessive numbers other than standard bating programs in the woodland areas surrounding the rural residential-hobby farm region around Tamworth. Bating is limited due to the presence of residential development and therefore

domesticated animals. The stray and feral animals represent a threat to native species of birds and mammals, as well as reptiles. The number of these stray and feral animals mostly decline as a result of closer subdivision. The proposed development will potentially increase population density in the area and therefore feral animals tend to move away into more secluded areas.

Conclusions

The proposed development is to occur on land which has previously been cleared of all native vegetation and is currently used for crop production. Whilst the site may serve as marginal habitat for several threatened species within the region, the site would not function as ecologically important habitat for any identified species and therefore alteration of the site is not predicted to pose a risk to threatened flora and fauna within the wider locality. The development would result in a change of use from seasonal cultivation and managed lawns and landscaping with a residential area. All core habitat that could support a wide range of native species has been removed from the area for a period of up to 50-years.

The above assessment was conducted under the provisions of the *Biodiversity Conservation Act 2016* and determined that the proposal would not have a *significant* impact on any listed threatened species or their habitat and as such further assessment is not required. The study area has been highly modified for more than 50-years.

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References

Atlas of NSW Wildlife (accessed 2022). NSW Government Department of Environment and Heritage
Website: <http://www.bionet.nsw.gov.au/>

Table 4: Key Threatening Processes Listed for Nandewar-Peel IBRA region

#	Listing of Key Threatening Processes for Nandewar - Peel IBRA Subregion	Comment
1	Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners <i>Manorina melanoccephala</i>	No extensive woodland present.
2	Alteration of habitat following subsidence due to longwall mining	Not applicable
3	Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	Not applicable
4	Anthropogenic Climate Change	Appropriate actions can occur. Scale of development would result in limited or no impact.
5	Bushrock removal	Not applicable
6	Clearing of native vegetation	Already cleared
7	Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)	Rabbits not a pest at this location.
8	Competition and habitat degradation by Feral Goats, <i>Capra hircus</i> Linnaeus 1758	No goats present.
9	Competition from feral honey bees, <i>Apis mellifera</i> L.	Any feral bees will be eradicated if present.
10	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	No woodland remains on property. Majority of trees have been planted.
11	Habitat degradation and loss by Feral Horses (brumbies, wild horses), <i>Equus caballus</i> Linnaeus 1758	No wild horses present
12	Herbivory and environmental degradation caused by feral deer	No deer present
13	High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	Fires excluded from existing and proposed development
14	Importation of Red Imported Fire Ants <i>Solenopsis invicta</i> Buren 1972	No fire ants present.
15	Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	Not applicable
16	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	Very limited frog habitat available.
17	Infection of native plants by <i>Phytophthora cinnamomi</i>	<i>Phytophthora</i> not observed to be present.
18	Introduction of the Large Earth Bumblebee <i>Bombus terrestris</i> (L.)	Not present
19	Invasion and establishment of exotic vines and scramblers	Discussed above.
20	Invasion and establishment of Scotch Broom (<i>Cytisus scoparius</i>)	Discussed above.
21	Invasion and establishment of the Cane Toad (<i>Bufo marinus</i>)	No suitable habitat available at present. Recommend a bounty on cane toads.
22	Invasion of native plant communities by African Olive <i>Olea europaea</i> subsp. <i>cuspidata</i> (Wall. ex G. Don) Cif.	Discussed above.

#	Listing of Key Threatening Processes for Nandewar - Peel IBRA Subregion	Comment
23	Invasion of native plant communities by <i>Chrysanthemoides monilifera</i>	Discussed above.
24	Invasion of native plant communities by exotic perennial grasses	Discussed above.
25	Invasion of the Yellow Crazy Ant, <i>Anoplolepis gracilipes</i> (Fr. Smith) into NSW	Not present yet.
26	Invasion, establishment and spread of Lantana (<i>Lantana camara</i> L. sens. Lat)	None present
27	Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	Discussed above
28	Loss of Hollow-bearing Trees	Land had been cleared 50-years previously. Discussed above.
29	Loss or degradation (or both) of sites used for hill-topping by butterflies	No hilltop sites present.
30	Predation and hybridisation by Feral Dogs, <i>Canis lupus familiaris</i>	Discussed above.
31	Predation by <i>Gambusia holbrooki</i> Girard, 1859 (Plague Minnow or Mosquito Fish)	No watercourse within study area.
32	Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)	Discussed above
33	Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)	Discussed above.
34	Predation, habitat degradation, competition and disease transmission by Feral Pigs, <i>Sus scrofa</i> Linnaeus 1758	Discussed above.
35	Removal of dead wood and dead trees	No remnant woodland supporting dead wood present.



PLANNING PROPOSAL
Stratheden
Subject Lands

Legend
Subject Lands

Cadastre
Base Data: 16/11/2021 © NSW Spatial Services

