

Appendix 10: Test of Significance

Appendix 4: NSW Biodiversity Act 2016 – Test of Significance

1 Legislative Context

Section 7.2 of the *Biodiversity Conservation Act 2016* (BC Act) requires that the significance of the impact of a development on threatened species and endangered ecological communities is assessed using a five-part test known as a Test of Significance. Where a significant impact is likely to occur, a Species Impact Statement (SIS) must be prepared in accordance with the Director-General's requirements, or a Biodiversity Development Assessment Report (BDAR) must be prepared by an accredited assessor in accordance with the Biodiversity Assessment Method (BAM).

The Test of Significance in this report has been prepared in accordance with requirements under Section 7.3 of the BC Act. It includes an assessment of the development against five parameters to determine whether there is likely to be a significant effect on the threatened species, ecological communities, or their habitats, which are recorded at or likely to occur at the site. The assessment has been conducted in accordance with the Threatened Species Test of Significance Guidelines (OEH 2018). It investigates the effects of the development proposal on threatened species, populations and ecological communities, as listed under the BC Act, pursuant to Section 1.7 of the *Environmental Planning & Assessment Act 1979* (EPA Act).

2 Development Background

The proposed development involves the re-alignment of pens and the effluent system for an existing approved 470 head feedlot to a capacity of 2,000 head of cattle within Inverell Shire. The property is known as "Rivendell" and is located approximately 20 kilometres east north-east of Inverell, on Woodstock Road in northern NSW. Rivendell currently supports a mixed grazing, cropping and stock rearing enterprise. The closest surface waterbodies to the proposal footprint are Main Gully and Swan Brook, located approximately 320 and 350m from the proposed feedlot at their closest points.

The area in which the feedlot will be constructed has already been considerably modified by human activities in association with the farm enterprise developed on the property for development of the existing feedlot. The footprint of the proposed development overlies previously cleared and developed land (i.e. existing cattle pens and associated infrastructure as well as cultivated ground).

Vegetated areas which will be disturbed by the proposed development consists of previously disturbed grassland areas which are mapped as PCT 0 – 'Non-native' on available mapping. Prior disturbance has occurred for earthworks as part of existing infrastructure construction, and historical grazing and cultivation. This includes a single immature Yellow Box tree. It is noted that approximately 0.3 Ha of this previously disturbed grassland vegetation will be removed as part of the proposed works. In addition, approximately 1.3 Ha of cultivated ground will be disturbed for the construction of the effluent pond. The specified BOS threshold for the area is 1 Ha.

Vegetation communities in the vicinity of the proposed feedlot include PCT 599 "Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion" which occurs north-west and west of the proposed development, and PCT 84 "River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion" which occurs along the Swan Brook, downslope of the proposed development. Neither of these communities will be directly impacted by the proposal.

Due to the undulating nature of the terrain, the wider locality retains relatively large areas of quality open woodland vegetation. The Swan Creek is also in the vicinity of the subject site, and it supports healthy native riparian vegetation. As previously discussed, the subject site does not, at present, offer

important habitat for threatened species. Areas of remnant vegetation, in addition to water-based habitat associated with creeks and rivers in the locality, are considered the preferred habitat for vulnerable species occurring throughout the study area.

A locality plan of Rivendell is shown in Figure 1 below.

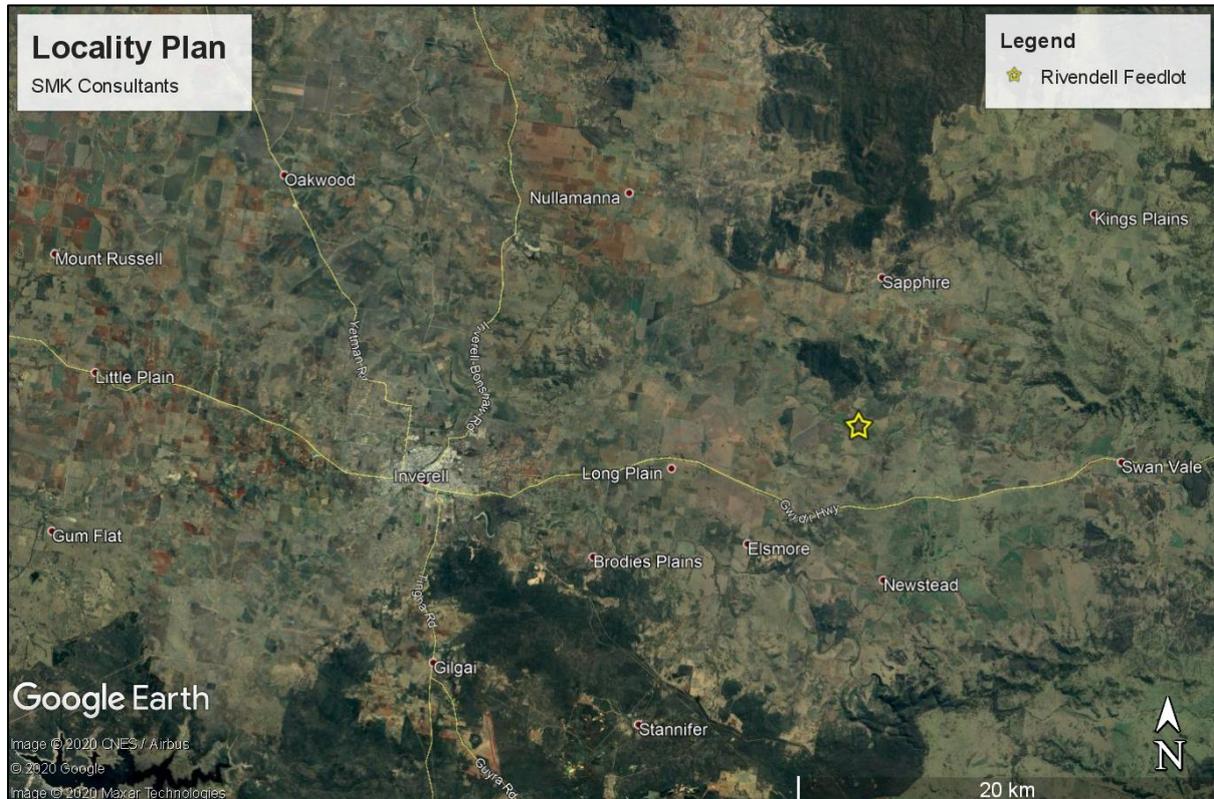


Figure 1: Rivendell Feedlot Locality Plan

3 Study Area and Subject Site Delineation

The following definitions are used throughout this report to refer to locations in the proposal area:

- The 'subject site' is all areas that would be directly impacted by the works. This consists of the footprint of the proposed development;
- The 'study area' includes the subject site and the areas adjacent that may be indirectly impacted by the proposed works;
- The 'search area' refers to a 10-kilometre area surrounding the subject site for the purpose of database searches.

The potential construction impacts of the development are predicted to be minimal. The subject site is located upon land which has already been cleared of native vegetation. Only a single immature tree will be cleared as a result of the proposed development. Construction will be undertaken in accordance with best practice construction measures to minimise the risk of erosion and protect environmental values.

A suite of measures will be implemented at the subject site to minimise the potential impact of the feedlot upon the surrounding environment. Measures include:

- Establishment of diversion banks to divert clean surface runoff from the surrounding region away from the feedlot site;
- Establishment of a Controlled Drainage Area (CDA) to capture polluted runoff generated from the subject site, for sustainable reuse/disposal; and

- The feedlot complex is to be located on compacted soil to a minimum depth of 300mm to a permeability of less than 1×10^{-9} m/s, to ensure protection of local groundwater resources.
- Weed management measures are implemented during the feedlot construction in order to ensure that the proposal does not become a source of weeds. A weed and pest management program will be implemented on site once the feedlot is operational;
- Ongoing establishment of native tree corridors.

Given the measures implemented to ensure that offsite impacts are minimised, the potential impact of the feedlot development is considered to be limited to the footprint of the feedlot site (i.e. the subject site).

4 Assessment of Potential Presence of Threatened Species

A search of the National Parks and Wildlife Atlas of NSW Wildlife (BioNet) identified species with recorded sightings within a 10km radius of the proposed development site. The complete search result for listed species is presented in Appendix A.

The project site is located with the Glen Innes – Guyra Basalts subregion of the New England Tablelands 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 New England Tablelands Bioregion (Glen Innes – Guyra Basalts subregion). A copy of the search results for listed species is presented in Appendix B.

Species were considered with regard to their known distribution and habitat requirements, to assess whether the subject site is likely to serve as suitable habitat, and subsequently whether/how the development is likely to impact upon the species. Each species with assigned a rating based on their likelihood to occur within the subject site. The 'likelihood of occurrence' categories is detailed in the following table. The habitat assessment is provided in Appendix B. Species assigned with a rating of 'Moderate' or higher and are considered potentially impacted by the proposed works have been considered further under relevant legislation within the assessment of significance.

Table 1: Likelihood of Occurrence Criteria

Likelihood Rating	Criteria
Known	The species was recorded within the study area during site surveys.
High	It is likely that a species would inhabit or utilise habitat within the subject site. Criteria for this category may include: <ul style="list-style-type: none"> • Species recently and/or regularly recorded in contiguous or nearby habitat; • High quality habitat types or resources present within study area; • Species is known or likely to maintain a resident population surrounding the study area; and • Species is known or likely to visit during migration or seasonal availability of resources.
Moderate	Potential habitat for a species occurs within the subject site. Criteria for this category may include: <ul style="list-style-type: none"> • Species previously recorded in contiguous habitat albeit not recently (>10 years); • Poor quality, depauperate or modified habitat types and/or resources present within study area; • Species has potential to utilise habitat during migration or seasonal availability of resources; and

Likelihood Rating	Criteria
	<ul style="list-style-type: none"> Cryptic flora species with potential habitat available within the subject site that have not been seasonally targeted by surveys.
Low	<p>It is unlikely that the species inhabits the area and would likely be considered a transient visitor if ever encountered. Criteria for this category may include:</p> <ul style="list-style-type: none"> The subject site or study area lacks specific habitat types or resources required by the species; and Non-cryptic flora species that were found to be absent during targeted surveys;
Unlikely	The habitat within subject site and study area is unsuitable for the species.

The following species, populations and communities, considered to have the potential to be present within available habitat in the subject site, are considered in the Test of Significance for the proposed development of a feedlot on Lot 63 in Deposited Plan 753316.

Table 2: Results of BioNet Atlas Search

Scientific Name	Common Name	Legal Status	Records ¹
Spotted Harrier	<i>Circus assimilis</i>	BC Act: V, P	1
Little Eagle	<i>Hieraaetus morphnoides</i>	BC Act: V, P	4
Square-tailed Kite	<i>Lophoictinia isura</i>	BC Act: V,P,3	2
Black Falcon	<i>Falco subniger</i>	BC Act: V, P	1
Little Lorikeet	<i>Glossopsitta pusilla</i>	BC Act: V, P	3
Barking Owl	<i>Ninox connivens</i>	BC Act: V,P,3	3
Masked Owl	<i>Tyto novaehollandiae</i>	BC Act: V,P,3	P
Koala	<i>Phascolarctos cinereus</i>	BC Act: V,P EPBC Act: V	30
Yellow-bellied Sheathtail-bat	<i>Saccolaimus flaviventris</i>	BC Act: V,P	3
Hawkweed	<i>Picris evae</i>	BC Act: E1,P EPBC Act: V	3
Bluegrass	<i>Dichanthium setosum</i>	BC Act: V EPBC Act: V	32
	<i>Prasophyllum sp. Wybong</i>	BC Act: Not Listed EPBC Act: E	P

¹Number of BioNet Atlas records in selected area. Status Abbreviations: Vulnerable (V), Endangered (E), Protected (P), and Sensitivity Class 3 (Sensitive Species Data Policy) (3).

The above-mentioned species will be considered within the assessment of significance.

5 Test of Significance - Assessment of Criteria and Discussion

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

The following 5-Part test is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

- **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,**

A viable local population of a threatened terrestrial flora or fauna species in this assessment is defined as a population that occurs within the study area and the connected habitat to the north, east and west of the proposed development.

Flora Species

Bluegrass, Hawkweed, Prasophyllum sp. Wybong

Bluegrass grows on heavy basaltic black soils and red-brown loams with clay subsoil. It is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. (Often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched). Species associated with Bluegrass include *Eucalyptus albens*, *Eucalyptus melanophloia*, *Eucalyptus melliodora*, *Eucalyptus viminalis*.

The main habitat for Hawkweed is open Eucalypt Forest; however, all recent collections appear to come from modified habitats such as weedy roadside vegetation and paddocks. It occurs on soils which 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.

Prasophyllum sp. Wybong is known to occur in open eucalypt woodland and grassland, is endemic to NSW and occurs in the locality of Inverell. The site inspection did not reveal the presence of a local population of any of the above listed species. The cryptic nature of some threatened species, however, 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, within the footprint of the sedimentation system and proposed drains. Larger areas of similarly disturbed habitat are present directly north and south of the subject site along the paddock edge, and in the wider locality. Should the above-mentioned species be present within the development footprint, they may be displaced in the short-term. 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.

Bats

Yellow-bellied Sheath-tail Bat

Yellow-bellied Sheath-tail Bat roosts singly or in groups of up to six, in tree hollows and buildings. It forages in most habitats across its very wide range, with and without trees, and appears to defend an aerial territory. There are scattered records of this species across the New England Tablelands and North West Slopes.

This species may use the project area for foraging on occasion, however given the lack optimal foraging habitat within the subject site and the presence areas of native woodland/forest habitat in the locality, it is unlikely that the subject site is regularly or heavily utilised by Yellow-bellied Sheath-tail Bat. Additionally, there is no roosting and/or breeding habitat within the proposed development footprint.

The risk to this bat species from the development is therefore limited to the loss of sub-optimal foraging habitat. It is therefore considered that no viable local population of any threatened species will be placed at risk of extinction as a result of the proposed development.

Woodland Species

Little Lorikeet

The species 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.

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. Woodland habitat will not be cleared or disturbed by the proposed development; clearing will be limited to the clearing of small areas of disturbed grassland and scattered, immature trees. Thus the above-mentioned species is not at risk of any direct impact.

The risk to these woodland species is therefore limited to indirect impacts such as potential habitat modification resulting from spread of weed species and increased sedimentation or nutrient enrichment. Weed management and sediment and erosion control measures will be implemented as part of the proposal in order to minimise the likelihood of these potential impacts. Provided that these measures are implemented, indirect impacts are considered minimal and are unlikely to place a viable population at risk of extinction.

Birds of Prey

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

Square-tailed Kite is found in a variety of timbered habitat but shows a preference for timbered watercourses. It 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 and occupies large hunting ranges of more than 100km². When nesting, Square-tailed Kites prefer large, tall trees in uncleared areas, and often nest in riparian areas.

Black Falcon is typically found along-tree lined watercourses and isolated woodlands in arid/semi-arid areas. It roosts in trees at night and often on power poles during the day. Common prey items are birds, small mammals, insects and reptiles and sometimes carrion. Black Falcons do not build their own nests. They either re-use or take over nests of other species - either other raptors' or those of corvids (ravens or crows).

Little eagle occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. The species nests in tall living trees within a remnant patch, and forages over wide areas.

Barking owl inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. The species is sometimes able to successfully breed along timbered watercourses in heavily cleared habitats, and the species roosts in shaded portion of tree canopies, including tall midstorey trees with dense foliage.

Masked Owl inhabits forests, woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging.

The above-mentioned species are highly mobile and have relatively large home ranges (>200 Ha). The subject site does not incorporate roosting or nesting habitat (mature trees or midstorey trees with dense foliage and hollows). The proposal would therefore impact a small area of potential foraging

habitat. It is noted that there are larger areas of similar and higher-quality habitat immediately adjacent to the proposal site and in the wider locality. It is therefore unlikely that the subject site is an important component of the home range of the above-mentioned species. The proposed clearing of a 0.3 Ha of disturbed grassland is therefore not deemed to pose a risk to viable local populations of the above-mentioned species.

Mammals

Koala

Koala is an arboreal marsupial with a fragmented distribution throughout eastern Australia. Habitat consists of preferred feed species, typically in eucalypt woodlands and forests. Suitable habitat for the Koala is determined by the presence of known feed tree species. There are feed tree species in the vicinity of the subject site, however the subject site does not contain any mature trees.

It is considered to be highly unlikely that the subject site would constitute important habitat for Koala, due to the following factors:

- The small size of the development footprint;
- The lack of mature trees and low conservation value of habitat within the site footprint; and
- The proximity of this area to existing areas of development and regular human activity on site.

The proposal is therefore not deemed to pose a risk to viable local populations of Koala.

No population of listed threatened species was identified within the subject site and minimal indirect impacts are expected to occur off site. It is therefore considered that no viable local population of any threatened species will be placed at risk of extinction as a result of the proposed development. Additionally, as the site is surrounded by areas of similar and/or higher-quality native vegetation, local populations of fauna species will have the ability to access or preference these surrounding areas. Therefore, it is considered unlikely that any local population of threatened species within the study area will be placed at risk of extinction.

- **in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**
 - **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**
 - **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,**

There is a patch of woodland to the west and north-west of the proposed development which has a vegetation composition consistent with PCT 599. This has associations with the EPBC listed critically endangered ecological community (CEEC) "White Box Yellow Box Blakely's Red Gum Woodland and Derived Native Grassland" and the BC listed "White Box Yellow Box Blakely's Red Gum 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 and Riverina Bioregions". The patch of woodland present in the vicinity of the proposal is considered to be eligible to be listed as the above-listed TECs.

It is noted that this patch of woodland will not be cleared, modified or disturbed by the proposed development. The extent of this woodland will therefore not be impacted by the proposal. The woodland may be subject to indirect impacts from the proposal. The species composition could be altered through changes in soil composition and/or soil hydrology, as a result of sediment-laden surface run-off from the subject site. The woodland community could also be adversely impacted by the introduction or spread of exotic/invasive species arising from earthworks and the movement of construction machinery and haul trucks throughout the site. However, a suite of measures will be

implemented throughout the duration of the project which will minimise the indirect impacts associated with the feedlot. These mitigation and best practice measures are listed in Section 3 of this report and Section 7 of the EIS. Provided these measures are implemented, the development proposal is therefore considered unlikely to impact on the extent or composition of the grassy woodland in the vicinity of the feedlot, or any potentially occurring EEC in the vicinity of the proposed project footprint.

- **in relation to the habitat of a threatened species or ecological community:**
 - **the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and**
 - **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**
 - **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,**

As outlined above, the subject site supports existing cattle pens, modified grassland and cultivated land. The proposal will involve the clearance of approximately 0.3 Ha of modified grassland habitat and 1.3 Ha of cultivated ground.

The proposal footprint already contributes to fragmentation. The entire footprint has historically been cleared of native vegetation. It is therefore not considered important habitat for threatened species in the locality. The most likely wildlife corridors in the study area are located along surface waterbodies, and these will not be impacted by the proposal.

Disturbance of the abovementioned habitat types are not considered to pose a threat to habitat availability for threatened species in the locality. The area of cultivation and the small area of modified grassland habitat is of a similar nature to extensive cropped areas and disturbed paddock edges throughout the wider district which will not be impacted by the proposed development. The subject site does not constitute an important habitat corridor for species within the locality; removal of the habitat area will not result in fragmentation of available habitat within the wider region. Overall, it is considered that disturbance of habitat within the subject site in association with the proposed development would not result in significant impacts upon habitat availability for threatened species within the area.

The land area which will be impacted by the proposed development is considered to have limited habitat value for threatened species and is already considered to contribute to the fragmentation of the landscape by having been historically cleared. None of the threatened species identified would breed or reside long-term within the study area and are only predicted to utilise the study area during times of duress (i.e. when food cannot be found in more suitable habitats). Modification of this land area is therefore not considered to pose a threat to habitat availability for threatened species within the region, as it is considered that the current habitat values of the site are low.

- **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),**

There are no areas of outstanding biodiversity value in the vicinity of the subject site. The subject site is located adjacent to Main Gully and Swan Brook (to the north and south of the subject site, respectively), and these are classified as areas of biodiversity value. Without proper site design and management, the proposed development would have some potential to result in off-site impacts to this river, through site erosion during periods of construction, and through generation of polluted runoff leaving the feedlot and entering the creeks. However, it is considered that appropriate site management and design will ensure that the river system is protected from potential impacts

associated with the proposed development, and therefore that the development will not have adverse impacts upon these localities.

Best practice construction measures will be implemented on site to minimise the risk of erosion from the subject site. Measures to be implemented may include (but will not be limited to):

- a) Limiting the footprint of disturbance;
- b) Implementing on-site speed limits for construction vehicles to minimise dust production;
- c) Utilising water trucks to minimise dust production (where required); and
- d) Use of diversion banks/bunds to control runoff from construction sites.

It is noted that there are existing rudimentary drains downslope of the existing pens, therefore runoff will be captured during the construction phase of the proposal. Once operational, the site will be contained within a Controlled Drainage Area (CDA). Earthen bunds around the subject site will divert clean runoff away from the feedlot, whilst runoff generated from the feedlot site itself will enter the site's internal drainage system and will be captured and stored in an effluent pond. From here, effluent will be disposed of by evaporation from the surface of the pond and by irrigation on existing cultivation paddocks. The effluent management system of the subject site has been designed and will be constructed in accordance with standards specified in the National Feedlot Guidelines and will be consistent with industry best practice.

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

- **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.**

Invasion of Native Plant Communities by Exotic Perennial Grasses

Invasion of Native plant communities by exotic perennial grasses is listed as a key threatening process. Exotic perennial grasses [e.g. Coolatai Grass (*Hyparrhenia hirta*), African Lovegrass (*Eragrostis curvula*), Phalaris (*Phalaris aquatica*), Buffel Grass (*Cenchrus ciliaris*), Rhodes Grass (*Chloris gayana*) and Kikuyu (*Pennisetum clandestinum*)] have the capacity to invade native plant communities, competing with an excluding native species. The invasion of these grasses also reduces the habitat value for many native fauna species.

Seeds of exotic perennial grasses and other weeds may be carried onto and distributed by vehicles and plant machinery entering and exiting the feedlot. Weeds will be managed in accordance with the following principles:

- Stabilisation measures must be planned to optimise establishment of a healthy groundcover devoid of weeds.
- All machinery, equipment and vehicles brought onto a property must be free of soil, seed or plant material. All soil and organic matter should be removed, including under the vehicle and in the cabin or trays.
- On-going weed monitoring and control will be carried out during the life time of the project as part of normal farm operations.

Provided these safeguards regarding weed management are implemented, the proposed works are unlikely to result in increased weed incursion. The proposed works are therefore considered unlikely to increase the impact of this key threatening process.

No other actions in the proposed subdivision and associated works involve any actions that constitute a key threatening process.

Conclusion

The proposed development is predominantly located on land which has previously been cleared for agricultural development. The subject site currently consists of existing cattle pens, modified and disturbed grassland and a cultivated paddock. Whilst the site may serve as marginal habitat for a number of 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 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.

References

Atlas of NSW Wildlife, "NSW Government Department of Environment and Heritage Website". Accessed April 2020. <http://www.bionet.nsw.gov.au/>

Office of Environment and Heritage (OEH) (2020), Atlas of NSW Wildlife Database. Licenced database accessed April 2020.

Office of Environment and Heritage, "Threatened Species Profiles". Accessed April 2020. <http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/index.aspx>

Appendix A: Bionet Threatened Species, Populations and Communities Search Results for a 10-kilometre radius from the Subject Site

Scientific Name	Common Name	Legal Status	Records
<i>Glossopsitta pusilla</i>	Little Lorikeet	BC Act: V,P	1
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	BC Act: V,P	1
<i>Phascolarctos cinereus</i>	Koala	BC Act: V,P EPBC Act: V	1
<i>Picris evae</i>	Hawkweed	BC Act: V EPBC Act: V	1
<i>Thesium australe</i>	Austral Toadflax	BC Act: V EPBC Act: V	1

Appendix B: Bionet Threatened Species, Populations and Communities Search Results for New England Tablelands Bioregion (Glenn Innes-Guyra Basalts IBRA Subregion)

Note:

The following definitions are used throughout the table below to refer to locations in the proposal area:

- The 'subject site' describes all areas that would be directly impacted by the works. This includes the access route and the footprint of the proposed feedlot and Controlled Drainage Area (CDA);
- The 'study area' includes the site and the areas adjacent that may be indirectly impacted by the proposed works;
- The 'search area' refers to a 10-kilometre area surrounding the proposal for the purpose of database searches.

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
Aves					
<i>Anseranas semipalmata</i> Magpie Goose	BC Act – V	Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. The species' activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off;	1	Low The subject site is not within the species' range, and there is no suitable habitat within the subject site.	No
<i>Oxyura australis</i> Blue-billed Duck	BC Act - V	Prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. Feeds on the bottom of swamps and will feed by day far from the shore, particularly if dense cover is available in the central parts of the wetland. It is widespread in NSW, but most common in the southern Murray-Darling Basin area.	3	Unlikely There is no suitable habitat in the subject site.	No
<i>Stictonetta naevosa</i> Freckled Duck	BC Act - V	Prefers permanent freshwater swamps and creeks 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.	1	Unlikely There is no suitable habitat in the subject site.	No
<i>Ephippiorhynchus asiaticus</i>	BC Act – E1	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key	1	Unlikely	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
Black-necked Stork		habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries.		There is no suitable habitat in the subject site.	
<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 is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands	1	Moderate This species may hunt throughout the subject site, given the availability of suitable habitat nearby and the species' relatively large home range.	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 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.	3	Unlikely There is no suitable habitat in the subject site.	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.	4	Moderate This species may hunt throughout the subject site, given the availability of suitable habitat nearby and the species' relatively large home range.	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.	2	Moderate This species may hunt throughout the subject site, given the availability of suitable habitat nearby and the species' relatively large home range.	Yes

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		Appears to occupy large hunting ranges of more than 100km.			
<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 that falcons are highly mobile, commonly travelling hundreds of kilometres.	1	Moderate This species may hunt throughout the subject site, given the availability of suitable habitat nearby and the species' relatively large home range.	Yes
<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. They feed using their heavy straight bill as a 'crowbar' to probe the ground or turn it over, primarily on sedge roots and tubers. The nest comprises a platform of grasses and sticks, augmented with mud, on an island or in the water.	1	Low The subject site is not considered important for this species given its dependence on wetlands, a habitat absent from the site and its vicinity.	No
<i>Burhinus grallarius</i> Bush Stone-curlew	BC Act – E1	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 groundlayer and fallen timber. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch.	P	Unlikely There is no suitable habitat in the subject site.	No
<i>Irediparra gallinacea</i> Comb-crested Jacana	BC Act - V	Inhabit permanent freshwater wetlands, either still or slow-flowing, with a good surface cover of floating vegetation, especially water-lilies, or fringing and aquatic vegetation. Forages on floating vegetation, walking with a characteristic bob and flick. They feed primarily on insects and other invertebrates, as well as some seeds and other vegetation.	K	Unlikely There is no suitable habitat in the subject site.	No
<i>Rostratula australis</i> Australian Painted Snipe	BC Act – E1	In NSW, many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal,	4	Low	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.		The subject site is not considered important for this species due to a lack of suitable habitat in the subject site.	
<i>Callidris ferruginea</i> Curlew Sandpiper	BC Act – E1	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. In New South Wales is mainly found in intertidal mudflats of sheltered coasts.	K	Low The subject site is not considered important for this species due to a lack of suitable habitat.	No
<i>Calyptorhynchus 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.	1	Unlikely There is no suitable habitat in the subject site.	No
<i>Glossopsitta pusilla</i> Little Lorikeet	BC Act - V	Forages primarily in the canopy of open Eucalyptus Forest and woodland. 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. Roosts in treetops, often distant from feeding areas. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3 cm) and usually high above the ground (2–15 m).	3	Moderate This species is unlikely to occur on the subject site however there is a record of the species in the locality; the species is therefore considered in this assessment as a precautionary measure.	Yes
<i>Lathamus discolor</i> Swift Parrot	BC Act – E1	In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are	1	Low The subject site is not located within the species' main range, and there is	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Forest Red Gum, Mugga Ironbark, and White Box. Breed in Tasmania from September to January.		a paucity of suitable habitat within the site. The species is therefore not considered in this assessment.	
<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.	1	Low There is no woodland habitat either in the subject site or adjoining it. The subject site is therefore not considered important habitat for the species.	No
<i>Ninox connivens</i> Barking Owl	BC Act - V	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile riparian soils.	3	Moderate This species is unlikely to occur on the subject site however there is suitable habitat within the study area. The species could therefore hunt in the subject site, and is considered in this assessment.	Yes
<i>Tyto novaehollandiae</i> Masked Owl	BC Act - V	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. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides.	P	Low The species is considered in this assessment as the subject site borders woodland habitat. It is therefore considered important habitat for the species.	Yes
<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	6	Low This species is unlikely to occur on the subject site due to a paucity of suitable habitat; most eucalypts in the area are smooth barked. There	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		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.		species is therefore not considered in this assessment.	
<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 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.	17	Unlikely The species is not considered in this assessment due to a paucity of suitable habitat. The subject site has a low structural diversity.	No
<i>Anthochaera phrygia</i> Regent Honeyeater	BC Act - V	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. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. The Regent Honeyeater is a generalist forager, although it feeds mainly on the nectar from a relatively small number of eucalypts that produce high volumes of nectar. Key eucalypt species include Mugga Ironbark, Yellow Box, White Box and Swamp Mahogany. The species breeds	1	Unlikely The species is not considered in this assessment 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
		between July and January in Box-Ironbark and other temperate woodlands and riparian gallery forest dominated by River Sheoak.			
<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 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> .	P	Unlikely The species is not considered in this assessment due to a paucity of suitable habitat.	No
<i>Melithreptus gularis gularis</i> Black-chinned Honeyeater	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.	1	Unlikely The species is not considered in this assessment due to a paucity of suitable habitat.	No
<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 decorticating bark, dead branches, standing dead trees, and from small branches and twigs in the tree canopy.	3	Unlikely There is no forest or woodland habitat within the subject site.	No
<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	2	Unlikely There is no forest or woodland habitat 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
		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.			
<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.	1	Unlikely There is insufficient structural diversity and a lack of suitable habitat on the subject site.	No
<i>Petroica boodang</i> Scarlet Robin	BC Act - V	The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. In NSW, it occurs from the coast to the inland slopes.	13	Low There is no forest or woodland habitat within the subject site.	No
<i>Petroica phoenicea</i> Flame Robin	BC Act - V	In NSW, the species breeds in upland areas and in winter, many birds move to the inland slopes and plains. 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. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains).	K	Unlikely The species is not considered in this assessment due to a paucity of suitable habitat and a low recorded abundance in the subregion.	No
<i>Peophila cincta cincta</i> Black-throated Finch (southern subspecies)	BC Act – E4	Black-throated Finches inhabit dry, open, grassy woodlands, often along watercourses. They have been recorded in riparian Tee tree and Melaleuca thickets surrounded by open grassy areas in the Inverell district. They are mainly granivorous, consuming primarily	1	Unlikely There is no suitable habitat within the subject site.	No

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		native grass seed, although insects will also be taken. Typically forage in small flocks on the ground.			
<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.	3	Unlikely There is no suitable habitat within the subject site.	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 large home ranges from 500 to over 4000 hectares.	12	Low The subject site is not considered important habitat for this species given that no potential den sites observed on the subject site or in its vicinity.	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, ranging from less than two ha to several hundred hectares in size.	30	Moderate There are no mature trees on the subject site, however mature trees directly adjacent to the proposed works footprint are mapped as core Koala Habitat on the DPI & E mapping. Furthermore there is a record of the species within a 10 kilometres radius of the proposed feedlot. The species is therefore considered in this assessment.	Yes

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<i>Cercartetus nanus</i> Eastern Pygmy-possum	BC Act - V	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it 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. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes.	P	Unlikely The subject site is unlikely to support this species due to a paucity of suitable habitat.	No
<i>Petauroides Volans</i> Greater Glider	BC Act – Not Listed	The greater glider is restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest), with an elevational range from sea level to 1200 m above sea level. The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species.	K	Unlikely There is no woodland or forest habitat within the subject site. The species is therefore not considered in this assessment.	No
<i>Petrogale penicillate</i> Brush-tailed Rock-wallaby	BC Act – E1	In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. The species occupies rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Browses on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.	1	Low The subject site is not considered important habitat given the low occurrence of the species in inland areas and the lack of suitable habitat on 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	5	Low	No

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		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.		There is no suitable habitat for the species in the subject site; the site is therefore not considered important for the species.	
<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. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	3	Moderate There species may pass through and forage within the subject site.	Yes
<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. Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy.	3	Low The species' distribution is extremely limited, there are no records within the search area and no hollows were observed in trees adjacent to the subject site.	No
<i>Myotis Macropus</i> Southern Myotis	BC Act - V	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	2	Low Given the rarity of the species in inland habitat and the lack of major waterways in the vicinity, the subject site is unlikely to support the Southern Myotis bat. It is therefore not considered in this assessment.	No
<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. 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	4	Low There is no woodland habitat within the subject site, therefore the site is unlikely to support the species.	No

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		hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects			
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat	BC Act - V	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Hunt in forested areas, catching moths and other flying insects above the tree tops.	9	Low No roosting or foraging habitat was observed within the subject site. It is therefore unlikely that the species utilises the subject site, and it is therefore not considered important habitat.	No
Reptilia					
<i>Myuchelys bellii</i> Western Sawshelled Turtle, Bell's Turtle	BC Act – E1	In NSW, currently found in four disjunct populations in the upper reaches of the Namoi, Gwydir and Border Rivers systems, on the escarpment of the North West Slopes. Occupies 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.	P	Low There is no suitable habitat for the species within the proposed development footprint.	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	Low There is no suitable habitat for the species within the proposed development footprint.	No
Amphibia					

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
<i>Adelotus brevis</i> Tusked Frog population in the Nandewar and New England Tableland Bioregions	BC Act – E2	Found along the coast and in adjacent ranges from central Queensland to southern NSW. Tusked Frogs were once found west to the New England Tableland and North West Slopes (Nandewar bioregion) but are now very rare there. Habitat consists of rainforests, wet forests and flooded grassland and pasture. They are usually found near creeks, ditches and ponds, and call while hidden amongst vegetation or debris.	P	Low There is no suitable habitat for the species within the subject site.	No
<i>Litoria booroolongensis</i> Booroolong Frog	BC Act – E1	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. Lives along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	P	Low There is no suitable habitat for the species within the subject site.	No
<i>Litoria castanea</i> Yellow-spotted Tree Frog	BC Act – E4	A population near Yass remains the only known extant site of the species. The species requires large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation.	23	Unlikely The species is only known to occur in Yass, which is located at distance from the proposed development.	No
<i>Litoria piperata</i> Peppered Tree Frog	BC Act – E4	The species has not been definitely recorded in the wild since the 1970s. It was previously found on the New England Tablelands from south of Armidale to the Gibraltar Range, at an altitude of 800 to 1000 m. Found in streamside vegetation and under rocks and fallen timber along rocky streams flowing eastward from the Tablelands.	P	Unlikely The subject site occurs at an altitude lower than 800m which is outside of the known altitude range for the species. Furthermore, the subject site does not have suitable habitat for the species.	No
Flora					
<i>Picris evae</i> Hawkweed	BC Act – V	Known in NSW north from the Inverell area, in the north-western slopes and plains regions. Where collected, the species abundance has been rare, locally occasional and locally frequent. All recent collections	3	Moderate The species is known to occur in weedy vegetation and paddocks, and it also occurs in the Inverell area. The	Yes

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		appear to come from modified habitats such as weedy roadside vegetation and paddocks. 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 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.		species is therefore included in this assessment as a precautionary measure.	
<i>Rutidosis heterogama</i> Heath Wrinklewort	BC Act – V	Grows in heath on sandy soils and moist areas in open forest, and has been recorded along disturbed roadsides. The species occurs on the New England Tablelands from Torrington and Ashford south to Wandsworth south-west of Glen Innes.	P	Low The subject site is not considered important habitat for the species due to a lack of suitable habitat.	No
<i>Aldrovanda vesiculosa</i> Waterwheel Plant	BC Act – E1	Known in NSW only from lagoons in the Moruya area on the south coast, from the Evans Head area on the north coast and from north of Guyra on the New England Tablelands. Found free-floating in near-coastal shallow freshwater lagoons that are rich in organic matter.	2	Low The species has a restricted distribution, and is not known to occur in the locality of the proposal site. The species is therefore not considered in this assessment.	No
<i>Almaleea cambagei</i> Torrington Pea	BC Act – E1	The majority of <i>Almaleea cambagei</i> populations occur within Torrington State Conservation Area on the New England Tablelands, with a few populations potentially occurring in the adjacent agricultural lands. Usually grows in wet heath and acid swamp areas and along watercourses on granite, above 900 m altitude.	P	Low The species has a restricted distribution, and is not known to occur in the locality of the proposal site. The species is therefore not considered in this assessment.	No
<i>Swainsona sericea</i> Silky Swainson-pea	BC Act – V	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. Found in Natural Temperate Grassland and Snow Gum <i>Eucalyptus pauciflora</i> Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Habitat on plains unknown.	4	Low The grassland habitat on the site has been modified through agricultural activity, and the species was not observed during a survey of the subject site. The subject site is considered unlikely to support the species and is therefore not	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
				considered important habitat for the species.	
<i>Callistemon pungens</i>	BC Act – V	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. Often in rocky watercourses, usually with sandy granite (occasionally basalt) creek beds.	2	Low There is no suitable habitat for the species within the proposed development site; the species is therefore not considered in this assessment.	No
<i>Eucalyptus camphora</i> subsp. <i>relicta</i> Warra Broad-leaved Sally	BC Act – E	Confined to Warra National Park near Backwater east of Guyra, where it is known from two stands (the largest of these two stands is just 20 m by 150 m in area) and Capoompeta National Park east of Bolivia. Found scattered on open swampy flats. <i>Eucalyptus camphora</i> subsp. <i>relicta</i> requires swampy and waterlogged habitats, located on relatively infertile granite soils. Sites also appear to be protected from fire.	1	Low The species is confined to the Warra National Park (at distance from the proposed development); it is therefore not considered in this assessment.	No
<i>Eucalyptus magnificata</i> Northern Blue Box	BC Act – E	Known in NSW from only a few widely separate populations on the New England Tablelands, around Hillgrove east of Armidale and in the Glen Innes and Tenterfield region, where they occur individually or in small populations. Most populations occur on travelling stock routes or private property. Only a single population occurs in a conservation reserve, in Oxley Wild Rivers National Park. Occurs on grassy open forest or woodland on shallow, sandy or loamy soils.	P	Low The species' distribution is restricted to a few localities, and there is no suitable for the proposed development within the subject site. The species is therefore not considered in this assessment.	No
<i>Eucalyptus mckieana</i> McKie's Stringybark	BC Act – V	Confined to the drier western side of the New England Tablelands of NSW, from Torrington to Bendemeer. Most populations occur on private property, but it does occur in Kings Plain National Park, Torrington State Conservation Area and Severn River Nature	10	Low The soil and habitat type within the subject site are not suitable for McKie's Stringybark; it is therefore unlikely that 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
		Reserve. <i>Eucalyptus mckieana</i> is found in grassy open forest or woodland on poor sandy loams, most commonly on gently sloping or flat sites.		constitutes important habitat for the species.	
<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. Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock.	17	Low The soil and habitat type within the subject site are not suitable for Narrow-leaved Black Peppermint; it is therefore unlikely that the subject site constitutes important habitat for the species.	No
<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. Found in grassy woodland on medium or high fertility soils.	230	Low This species is not known to occur in the locality of the subject site; it is therefore not considered in this assessment.	No
<i>Micromyrtus grandis</i> Severn River Heath-myrtle	BC Act – E	Restricted to Severn River Nature Reserve and an adjacent property, about 60km north-west of Glen Innes on the New England Tablelands. Severn River Heath-myrtle grows in heath and low woodland in crevices of acid volcanic rocky outcrops and in the shallow soil of surrounding areas, at altitudes of 600 to 750 m. It occurs in open and exposed sites.	P	Low The species is only known from a single population at a distance from the subject site. The site is therefore not considered important habitat for the species.	No
<i>Chiloglottis platyptera</i> Barrington Tops Ant Orchid	BC Act – V	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. Grows in moist areas in tall open eucalypt forest with a grassy understorey, and also around rainforest edges. It generally occurs in rich brown loam soils.	P	Low The subject site is not considered important 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>Diuris pedunculata</i> Small Snake Orchid	BC Act – E	Confined to north east NSW. It was originally found scattered from Tenterfield south to the Hawkesbury River, but is now mainly found on the New England Tablelands, around Armidale, Uralla, Guyra and Ebor. The Small Snake Orchid grows on grassy slopes or flats. Often on peaty soils in moist areas. Also on shale and trap soils, on fine granite, and among boulders.	35	Low The subject site is not considered important habitat for the species due to a paucity of suitable habitat.	No
<i>Prasophyllum sp.</i> <i>Wybong</i>	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.	P	Moderate The species is known to occur in the locality of the subject site and occurs in grassland. While it is unlikely that the species would occur in modified habitat within the subject site, it is considered in this assessment as a precautionary measure.	Yes
<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.	32	Moderate The species was not recorded during the site survey, however there is potential habitat on the site.	Yes
<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 podsolic soil on granite in layered open forest.	2	Low The species was not recorded during the site survey. Given the lack of woodland/forest habitat on the subject site, it is not considered important habitat for the species	No
<i>Boronia granitica</i> Granite Boronia	BC Act – V	Granite Boronia occurs in scattered localities on the New England Tablelands and North West Slopes north from the Armidale area to the Stanthorpe district in southern Queensland. Grows on granitic soils amongst	3	Low The subject site is not considered important habitat for the species due to the lack 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
		rock outcrops, often in rock crevices, and in forests and woodlands on granite scree and shallow soils.			
<i>Thesium australe</i> Austral Toadflax	BC Act – V	Found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. Occurs in grassland or grassy woodland, often found in damp sites in association with Kangaroo Grass (<i>Themeda triandra</i>).	64	Low The grassland habitat on the site has been modified through agricultural activity, and the species was not observed during a survey of the subject site. The subject site is considered unlikely to support the species and is therefore not considered important habitat for the species.	No
Communities					
Carex Sedgeland of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions	BC Act – E3	Carex Sedgelands are mostly found at higher altitude on tablelands but extend onto the slopes. The community has been recorded from the local government areas of Armidale Dumaresq, Warrumbungle, Glen Innes Severn, Guyra, Gwydir, Inverell, Liverpool Plains, Tamworth Regional, Uralla and Walcha. <i>Carex Sedgelands</i> mainly occur in drainage depressions in valley floors, frost hollows, and undulating terrain between 440 and 1360 m in altitude.	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No
McKies Stringybark/Blackbutt Open Forest in the Nandewar and New England Tableland Bioregions	BC Act – E3	Restricted distribution on the North West Slopes and New England Tablelands, from Kings Plains to Bundarra and to west of Uralla. The community has been severely fragmented, and generally occurs along roadsides and on Travelling Stock Routes and private property. This community is found on reddish, weathered (laterite) soils in low-lying areas, hill slopes and open depressions. The shrub layer is generally sparse and with a ground layer of grass and forbs, but this community composition varies by site and disturbance history.	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions	BC Act – E3	Montane Peatlands and Swamps comprises a dense, open or sparse layer of shrubs with soft-leaved sedges, grasses and forbs. It is the only type of wetland that may contain more than trace amounts of Sphagnum spp., the hummock peat-forming mosses. Small trees may be present as scattered emergents or absent. Montane Peatlands typically have a dense groundcover of sedges, grasses and forbs, except where a dense cover of tall shrubs casts deep shade.	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No
New England Peppermint (<i>Eucalyptus nova-anglica</i>) Woodland on Basalts and Sediments in the New England Tableland Bioregion	BC Act – E4B	In NSW all sites are within the New England Tablelands. This community is or has been known to occur in the Armidale Dumaresq, Guyra, Inverell, Severn and Tenterfield Local Government Areas. This woodland community is dominated by trees of New England Peppermint <i>Eucalyptus nova-anglica</i> and occasionally Mountain Gum <i>E. dalrympleana</i> subsp. <i>heptantha</i> , and is usually 8-20 metres tall. The woodland has a predominantly grassy understorey with few shrubs.	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No
Ribbon Gum Mountain Gum Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion	BC Act – E3	Ribbon Gum—Mountain Gum—Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion is currently known from parts of the Local Government Areas of Armidale, Dumaresq, Bellingen, Clarence Valley, Glen Innes Severn, Guyra, Inverell, Tenterfield, Uralla and Walcha, but may occur elsewhere in this bioregion. Throughout the range of this community, most of the understorey is highly modified, with many weeds present and a reduced native species richness. Common overstorey species include <i>Eucalyptus viminalis</i> (Ribbon Gum), <i>E. dalrympleana</i> subsp. <i>heptantha</i> (Mountain Gum), <i>E. pauciflora</i> (Snow Gum or White Sallee) and occasionally <i>E. stellulata</i> (Black Sallee). The mid-layer and understorey comprise sparse layers of small trees and shrubs, including <i>Acacia dealbata</i> (Silver Wattle),	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No

Species Name	Status	Habitat Description and Locally Known Populations	Local Records	Potential to Occur and Importance of Habitat Present	Assessment of Significance
		Pultenaea microphylla and Pimelea linifolia (Slender Rice-flower) and a dense to very dense grassy ground cover dominated by Poa sieberiana var. sieberiana (Snowgrass), P. labillardieri var. labillardieri (Tussock).			
Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion	BC Act – E3	Known to occur between the Tenterfield and Uralla Local Government Areas but may occur elsewhere within the New England Tablelands. This community is composed of a series of high altitude wetlands in the New England Tablelands of Northern NSW. The wetlands have small local catchments, and range from shallow and temporary to near-permanent wetlands. Vegetation is usually a combination of sedges, rushes, spike-rushes, grasses and other aquatic plants, occurring either on the shores of open water or extending across shallow or dry wetland beds, and can die back during dry periods.	K	Low There are no trees on the subject site and a survey of adjacent woodland/forest habitat did not reveal the presence of this EEC.	No
White Box Yellow Box Blakely's Red Gum Woodland	BC Act – E3	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	Low There are no mature trees on the subject site, and any grassland vegetation present has been highly disturbed through past clearance and earthworks.	No