Burrah Park –Badgerys Creek

MNES Assessment for Certified-Major Transport Land

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Abbreviations

Abbreviation	Description
AOBV	Areas of Outstanding Biodiversity Value
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
Biodiversity and Conservation SEPP	*State Environmental Planning Policy (Biodiversity and Conservation) 2021*
BMP	Biodiversity Management Plan
CBD	Central Business District
CPCP	Cumberland Plain Conservation Plan
CPW	Cumberland Plain Woodland
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DNG	Derived Native Grasslands
DPHI	Department of Planning, Housing and Infrastructure (NSW State Government)
ELA	Eco Logical Australia Pty Ltd
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FM Act	*Fisheries Management Act 1994*
HBV	High Biodiversity Value
HTW	High Threat Weeds
LGA	Local Government Area
MNES	Matters of National Environmental Significance
PCT	Plant Community Type
RFEF	River-flat Eucalypt Forest
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SSDA	State Significant Development Application
TEC	Threatened Ecological Community
Western Parkland City SEPP	*State Environmental Planning Policy (Precincts – Western Parkland City) 2021*

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1. Introduction

This report has been prepared to accompany the State Significant Development Application (SSDA) SSD-70316465, located at 1953-2109 Elizabeth Drive, Badgerys Creek NSW known as Burrah Park (the subject land).

The application seeks consent for a concept plan including future development lots and building footprints. The development also seeks consent for the Stage 1 works which will include bulk earthworks across the subject land, infrastructure delivery, road access/intersections, internal road construction, civil infrastructure and utilities, stormwater infrastructure works and the construction of three (3) warehouse buildings.

The NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)'s Biodiversity Conservation Division (BCD) (now Conservation Programs, Heritage and Regulation (CPHR) Group) provided the following advice in response to exhibition of the SSDA:

- *the Biodiversity Assessment Report (BAR) incorrectly states that the subject land does not require further assessment under the Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- *part of the subject land is identified as certified – major transport corridor under the Cumberland Plain Conservation Plan* (CPCP). *The proposed development is not consistent with the activities that the biodiversity certification covers, therefore a separate referral to the Australian Government may be required to determine whether the proposal would be considered a controlled action under the EPBC Act.*

The purpose of this report is to determine whether referral to the Australian Commonwealth Government is necessary on the basis that impacts to Matters of National Environmental Significance (MNES) are likely to occur because of the proposed development. Through the process of applying *Significant Impact Criteria* (CoA 2013), this assessment has concluded that a significant impact to MNES is unlikely to occur within the subject land – as such referral to the Commonwealth is not recommended.

Certified-major transport corridors do not require further assessment under the *Biodiversity Conservation Act 2016* (BC Act), as such this has not been undertaken. A discussion of relevant legislation and planning framework requirements for the entire subject land is provided in the Biodiversity Assessment (ELA 2025a) and non-certified land (Excluded Land) has been assessed under a Biodiversity Development Assessment Report (BDAR) (ELA 2025b).

1.1. Terms used in this report

1.1.1. Subject land

The subject land is defined as a solid red boundary in Figure 1, and refers to the land for which SSD-70316465 applies.

1.1.2. Impact Area

Defined in Figure 1, for the purposes of this report the 'impact area' refers to the area subject to development impacts on Certified-major transport corridor only.

1.2. Land excluded from this assessment

This assessment applies only to areas of the subject land which are being developed for purposes (i.e. urban and industrial uses) not strictly covered by the Commonwealth strategic approval on major transport corridors. The following land is subject to separate assessments:

- Certified-urban capable land – excluded from BC Act and EPBC Act assessment due to the effects of biodiversity certification. Subject to separate biodiversity assessment (ELA 2025a).
- Excluded Land – subject to separate assessment in the form of a Biodiversity Development Assessment Report (BDAR) (ELA 2025b). Impacts to MNES on Excluded Land have been considered in the BDARL, and cumulative impacts of both Certified-major transport corridor and Excluded land are described in this report (Section 4).

Please refer to the above reports for further information. Figure 1 describes the land for which this assessment applies, in relation to the total impact area.

Figure 1: Location context

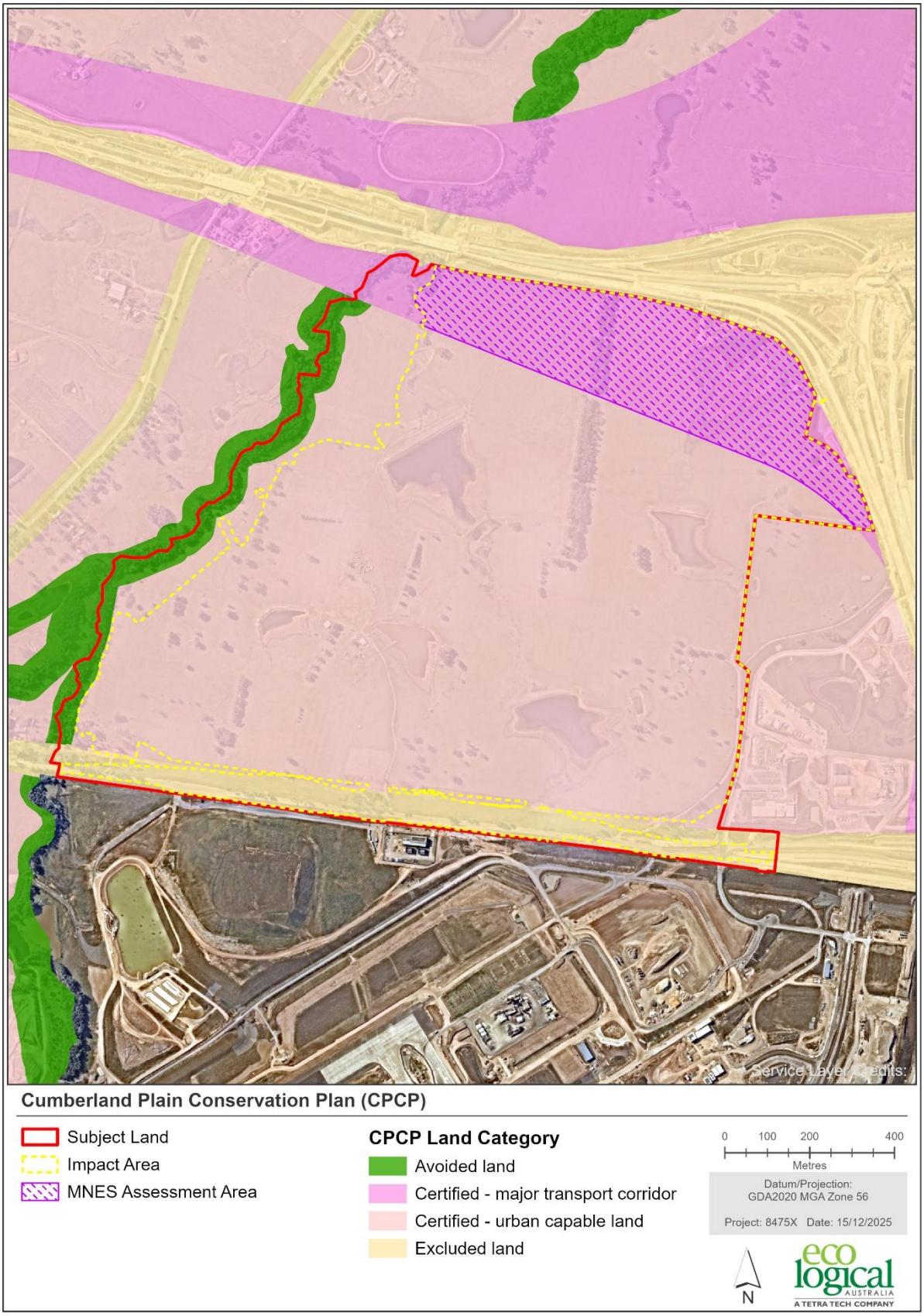

Figure 2: CPCP Land Categories

2. Strategic and Legislative Context

The EPBC Act establishes a regime for assessing and regulating the environmental impact of activities (including development) where a Matters of National Environmental Significance (MNES) may be affected. Under the EPBC Act, any action which has, will have, or is likely to have a significant impact on a matter of MNES is defined as a "controlled action", and requires approval from the Minister. The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is responsible for administering the EPBC Act.

The process includes undertaking an Assessment of Significance for listed threatened species and ecological communities that represent a matter of MNES that will be affected because of the proposed action. The *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (CoA 2013) provide overarching guidance on determining whether an action is likely to have a significant impact on a MNES.

In August 2022, the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) approved the Cumberland Plain Conservation Plan (CPCP). The CPCP applies biodiversity certification and protection measures to areas of Western Sydney, discussed in further detail below. Certified-urban capable land and Certified-major transport corridors (Figure 2) identify land within the CPCP Area for future urban development. The CPCP was submitted and assessed within the provisions of the bilateral agreement with the Commonwealth for strategic assessment.

On 26 March 2024, the Commonwealth Environment Minister granted approval for the actions described in the CPCP in accordance with Part 10 of the EPBC Act, which includes approval for urban and industrial development located on wholly certified-urban capable land.

The Commonwealth urban and industrial development approval states:

> *'Actions approved under this decision will not require separate referral, assessment or approval under the EPBC Act in order to be taken.'*

A separate Commonwealth approval was provided for 'transport projects'. It removes the need for further assessment on certified transport corridors for transport activities defined under the CPCP including the 'Outer Sydney Orbital between Box Hill and the Hume Motorway near Menangle'. The Outer Sydney Orbital (OSO) is under construction directly north and east of the subject land (Figure 2) and is the reason for major-transport corridor land within the subject land.

However, because the activities proposed on the major-transport land are *not* strictly for the purposes of transport projects – instead, the SSDA provides for warehouse lots, internal roads and basin infrastructure (Figure 3) – the EPBC Act approval does not apply to the development within the subject land.

As such, this assessment was undertaken to determine the presence of any MNES within the affected area, and whether a significant impact is likely (and subsequent referral required).

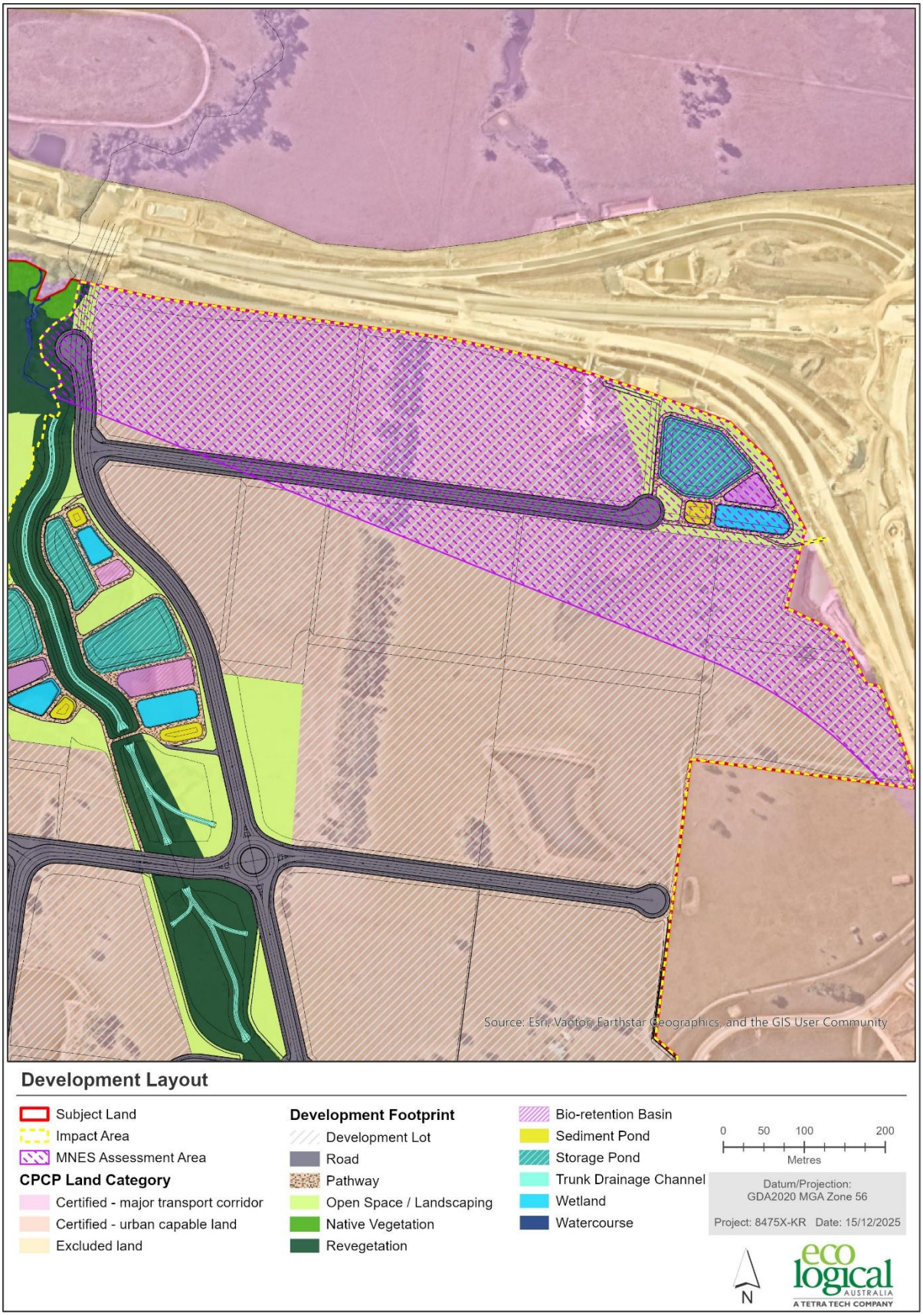

Figure 3: Development layout on major transport corridor land

3. Existing Environment

3.1. Subject land description

The proposed development (the Project) is located at 1953-2109 Elizabeth Drive, Badgerys Creek NSW. It is legally defined as Lot 1 in Deposited Plan (DP) 1306448, within the local government area (LGA) of Penrith City Council (Figure 1).

Most of the subject land is zoned as ENT (Enterprise) under the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP). A portion of the subject land is zoned as ENZ (Environment and Recreation), and SP2 (Infrastructure – Elizabeth Drive). The subject land is a strategic landholding situated immediately north of the new Western Sydney International (Nancy-Bird Walton) Airport (WSI). It is located approximately 12.5 km south-east of the Penrith Central Business District (CBD).

Under the NSW Mitchell landscapes classification, the subject land is underlain by Cumberland Plain and Hawkesbury Nepean Channels and Floodplains. Currently, land includes a mixture of native and exotic vegetation, waterbodies, and watercourses. In its current state, the subject land is used for agricultural purposes and is largely cleared of vegetation.

3.2. Field survey

ELA Ecologists Elliott Poulier and Cornelia Ersson carried out field survey of the Certified-major transport corridor within the subject land on 4 April 2025. The field survey aimed to complete:

- validation of vegetation within the subject land
- observe and record habitat features within the subject land
- collection of vegetation integrity (VI) plot data in accordance with the Biodiversity Assessment Method (BAM) to determine native species cover, condition, composition
- determine whether vegetation in the subject land meets the definition of any Threatened Ecological Community (TEC) listed under the EPBC Act.

3.3. Vegetation communities

Four native vegetation Plant Community Types (PCTs) were identified within the subject land in varying conditions, some of which are associated with TECs under the EPBC Act. These are:

- PCT 4023: Coastal Valleys Riparian Forest (Moderate) (corresponds to EPBC Act TEC, *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland*)
- PCT 4025: Cumberland Red Gum Riverflat Forest (Low) (does not conform to EPBC Act TEC)
- PCT 3320: Cumberland Shale Plains Woodland (Planted) (does not conform to EPBC Act TEC)
- PCT 3962: Coastal Floodplain Phragmites Reedland (not associated with EPBC Act TEC)

Additional habitat was identified in the subject land, in the form of farm dams (Figure 4). Descriptions of each vegetation zone are provided below and summarized in Table 1.

Field assessment and GIS analysis found that PCT 4023 within the subject land did not meet the condition thresholds for TEC listing under the EPBC Act as *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* (Endangered), being just

below the condition threshold. This community has still been further assessed considering this, and its location on the edge of a broader patch in better condition. The status of TEC associations within the study area have been discussed in further detail under Section 3.4.

Table 1: Validated vegetation and impacts

PCT and condition	EPBC Act Status	Total on major transport land (ha)	Impact (ha)
PCT 4023: Coastal Valleys Riparian Forest – Moderate	Endangered Ecological Community: *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland*	0.77	0.04
PCT 4025: Cumberland Red Gum Riverflat Forest – Low	Does not conform	0.38	0.14
PCT 3320: Cumberland Shale Plains Woodland – Planted	Does not conform	0.99	0.99
PCT 3962: Coastal Floodplain Phragmites Reedland	Does not conform	0.24	0.24
Farm dams	N/A	4.44	4.44
Exotic grassland	N/A	18.97	18.16
	Total	25.79	24.00

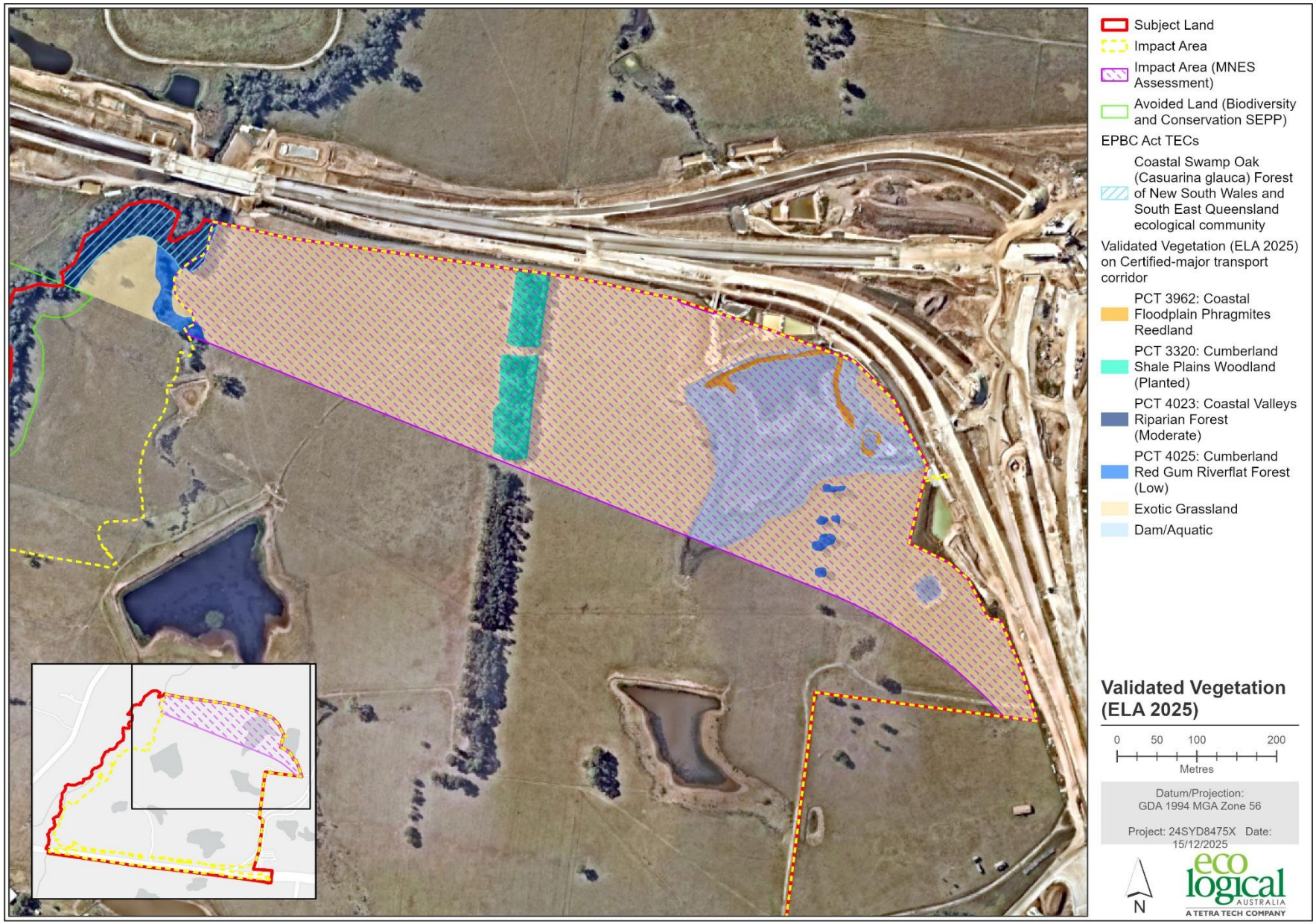

Figure 4: Validated vegetation within subject land, Certified-major transport corridor (ELA 2025)

PCT 4023: Coastal Valleys Riparian Forest – Moderate condition

PCT 4023 within the subject land occurred as a tall forest with a dense ground layer mostly dominated by exotic species, but with some areas of high native ground layer cover. The canopy consists of the native *Casuarina glauca* (swamp oak) in high cover, which was the only species in the upper stratum. *C. glauca* in this zone were young,, with abundant regeneration also identified. A sparse shrub layer is present and dominated by exotic species *Olea europaea* subsp. *cuspidata* (African olive), and native species *Melaleuca styphelioides* (prickly-leaved tea tree) in relatively even abundance and cover. Native species *Bursaria spinosa* subsp. *spinosa* (blackthorn) was also identified in this patch. Mature exotic *Solanum mauritianum* (wild tobacco bush) was also prevalent in the upper understorey, with juvenile plants also in the ground layer.

The ground layer is variable throughout the patch. More than half the patch contains exotic species including *Tradescantia fluminensis* (trad), *Cardiospermum grandiflorum* (balloon vine) and *Ehrharta erecta* (panic veldtgrass), these species occur in very high cover, often outcompeting most other species. Balloon vine is present in a few areas, spreading into the shrub layer, and reaching the top of the canopy. There was a mosaic of small areas within the patch dominated by native groundcover species including grasses such as *Microlaena stipoides* var. *stipoides* (weeping grass) and *Oplismenus aemulus* (Australian basket grass), as well as native herbs and scrambling species including *Dichondra repens* (kidney weed), *Plectranthus parviflorus* (cockspur flower) and *Rubus parvifolius* (native raspberry). Other native grasses, herbs and climbers identified include *Commelina cyanea*, *Glycine tabacina*, *Sigesbeckia orientalis* (Indian weed), *Arthropodium milleflorum* (pale vanilla-lily), *Brunoniella australis* (blue trumpet), *Clematis aristata* (old man's beard), *Dianella longifolia* (blueberry lily), *Echinopogon ovatus* (forest hedgehog grass), *Entolasia marginata* (bordered panic), *Galium leiocarpum*, *Phyllanthus similis*, *Lobelia purpurascens* (whiteroot), *Oxalis perennans* and *Solanum prinophyllum* (forest nightshade). The common cosmopolitan weeds *Araujia sericifera* (moth vine), *Cirsium vulgare* (spear thistle) *and Sida rhombifolia* (Paddy's lucerne) are also abundant, among other exotic species occurring more rarely.

Figure 5: PCT 4023 in northwest of subject land

PCT 4025: Cumberland Red Gum Riverflat Forest – Low condition

PCT 4025 occurs in a small patch (0.38 ha) around an eroded creek line which was dry at the time of survey. Mature trees occur throughout this zone, many of which have collapsed with eroded banks, with several dead trees evident. Exotic species are common in the understorey, particularly the shrub layer, and the bottom of the dry creek line. Exposed soil is prevalent in the creek bed, along with a high diversity of cosmopolitan herbaceous weeds and grasses. High disturbance from grazing is evident in this vegetation zone, with signs of soil compaction, high weed seed dispersion, herbivory of native flora and a large number of livestock fecal matter.

Native canopy species include *Angophora floribunda* (apple), *C. glauca* and *Eucalyptus eugenioides* (thin-leaved stringybark). Seven large trees (DBH > 45cm) were identified within this patch, the largest being an *A. floribunda* with a DBH of 125. Two hollow-bearing trees (HBT) were also identified in this zone. The exotic species *Lycium ferocissimum* (African boxthorn) was prevalent in this patch, along with *O. europaea* subsp. *cuspidata* in lower prevalence. Some mature Melaleucas including *Melaleuca linariifolia* (flax-leaved paperbark) and *M. styphelioides* were also present in this zone, as well as *B. spinosa* subsp. *spinosa* in low cover.

In more than half of the patch, native species were dominant in cover in the lower stratum. Native grasses *M. stipoides* var. *stipoides*, *Sporobolus creber* (western rat-tail grass) and *Cynodon dactylon* (couch) were high in cover. Despite the disturbance, native diversity was high, and a variety of native grasses, herbs and vines were identified in this zone. Native grasses, sedges and rushes included *Juncus usitatus*, *Rytidosperma* sp., *Carex inversa*, *Cyperus gracilis* (slender flat-sedge), *Eragrostis leptostachya* (paddock lovegrass), *Eriochloa pseudoacrotricha* (early spring grass) and *Paspalidium distans*. Native herbs and groundcovers included *L. purpurascens, Alternanthera denticulata* (lesser joyweed), *C. cyanea*, *Dysphania pumilio* (small crumbweed), *Einadia nutans* (climbing saltbush), *Einadia trigonos* (fishweed), *Euchiton involucratus* (star cudweed), *O. perennans, Phyllanthus virgatus, Portulaca o*leracea (pigweed), *Rumex brownii* (swamp dock) and *Wahlenbergia gracilis* (sprawling bluebell). The native vines and climbers *C. aristata*, *Glycine clandestina* and *G. tabacina* were also identified in this zone.

The exotic species *Juncus acutus* subsp. *acutus* (sharp rush) was also patchily distributed throughout this zone, aligning the empty creekline, providing high cover at where it occurred. Exotic grass species were also common in this zone and included *Paspalum dilatatum* (paspalum), *E. erecta, Setaria parviflora* and *Sporobolus africanus* (Parramatta grass). The exotic herbaceous weeds *Solanum sisymbriifolium, Plantago lanceolata* (lamb's tongues), *Senecio madagascariensis* (fireweed) and *S. rhombifolia* were also abundant in this zone. Other prevalent exotic species in this patch included *Cenchrus clandestinus* (Kikuyu grass), *Chloris gayana* (Rhodes grass), *C. vulgare, Conyza* sp., *Eleusine indica* (crowsfoot grass), *Hypochaeris radicata* (castear) and *Lolium perenne* (perennial ryegrass).

Figure 6: PCT 4025 in west of subject land, north of Dam 3

Figure 7: PCT 4025 (scattered trees) in east of subject land

Planted native / PCT 3320: Cumberland Shale Plains Woodland

This vegetation zone consists of large native tree species planted in neat rows. Canopy species has been planted in groups, with distinct lines of separate species. The zone was heavily disturbed with loose topsoil, high weed cover and large amounts of dung from livestock as well as bones. Some exposed soil was evident in areas, particularly where canopy was absent.

Canopy species included *Corymbia maculata* (spotted gum), *Eucalyptus fibrosa* (red ironbark) and *Eucalyptus crebra* (narrow-leaved ironbark). Another unidentified ironbark species was observed in this patch, with a lower habit and shorter leaves than those of *E. fibrosa* or *E. crebra* planted in separate groups. A native midstorey was absent and the only shrub species was the weed species *L. ferocissimum* growing sparsely as individual plants. The ground layer was dominated by exotic species including *C. clandestinus*, *S. rhombifolia* and *S. parviflora* in moderate to high covers. Numerous other common weeds were present including *Conyza* sp., *Bidens pilosa* var. *pilosa* (cobblers pegs), *Sonchus oleraceus* (common sowthistle), *Solanum americanum* (glossy nightshade) and *Solanum linnaeanum* (apple of Sodom). A native ground layer was also present with moderate cover in some areas under the canopy. Native species included *M. stipoides* var. *stipoides, E. trigonos* and *C. dactylon*.

Figure 8: PCT 3320 in planted condition, north of patch within subject land

Figure 9: PCT 3320 in planted condition, south of patch within subject land

3.4. Threatened Ecological Communities

Descriptions of EPBC Act TECs associated with each of the identified PCTs within the subject land and whether the condition criteria were met is provided below and summarised in Table 2.

Table 2: Validated vegetation and associated EPBC Act TECs

PCT	Associated TEC	Impact area (ha)	Condition criteria met?
4023	*Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community*	0.04	Yes
4025	*River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria*	0.14	No
3320	*Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest*	0.99	No

Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community – listed as endangered under the EPBC Act.

PCT 4023 within the subject land was assessed against the condition criteria for the EPBC listed associated TEC. One 20 m x 20 m floristic plot was undertaken to determine native and exotic species cover by stratum and to record all species occurring. The condition criteria states that a medium (> 2 ha) or large (> 5 ha) patch of the community can classify as the TEC if non-native species comprise less than 80% of total understorey cover and transformer weed species comprise less than 50% of total understorey cover.

The patch size of this vegetation community conforming to the TEC is approximately 16 ha. A total of 0.77 ha of this occurs within the study area and would be affected by the proposed action up to 0.04 ha on the edge of the patch (Figure 4).

Plot data from this vegetation zone was analysed and it was determined that non-native understorey cover made up 80.17% of total understorey cover. Transformer weed species known to affect this community are listed in Appendix B of the conservation advice for the TEC. Species belonging to the transformer weed species list that occurred within the plot data for the vegetation zone included *A. sericifera*, *Conyza* sp., and *T. fluminensis* accounting for a total understorey cover of 39.22%, thus not high enough for exclusion.

Plot data from this location indicated that exotic species comprise more than 80% of total understorey cover, albeit marginally, and thus the vegetation zone can be excluded from the EPBC Act listing definition. However, a precautionary approach was taken, and a significant impact assessment this TEC under the EPBC act has been undertaken (see Appendix B). This was due to the close margin of inclusion and exclusion based on the non-native understorey vegetation cover, and the large patch size.

The significant impact assessment for *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* is presented in Table 6. The assessment concluded that a significant impact is not considered likely to result from the proposed action.

River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria – listed as critically endangered under the EPBC Act

PCT 4025 within the subject land was assessed against the condition criteria for the EPBC listed associated TEC. The condition criteria contained in the conservation advice for the TEC states that the minimum patch size included under the EPBC act definition of the community is 0.5 ha. The patch of

PCT 4025 within the subject land was approximately 0.27 ha, meaning it does not meet the EPBC Act listing criteria.

Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest – listed as critically endangered under the EPBC Act

Although vegetation in the PCT 3320 zone was clearly planted (Figure 10) and not a natural occurrence, canopy species were indigenous species to the locality and do occur naturally in PCT 3320 *Cumberland Shale Plains Woodland of the Western Sydney region*. This PCT is associated with the TEC listed under the EPBC Act*, Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest*, and was assessed against the condition criteria under a conservative approach, guided by the conservation advice (CoA 2013).

While the patch size for the community was large enough and areas of the ground layer had native cover high enough to conform, the vegetation zone was excluded for two reasons. Category C of the community requires that the patch is contiguous with a native vegetation remnant. As remnant vegetation did not occur within 100 m of the patch, Category C was excluded. Category D requires at least one large tree (DBH > 80 cm) or one HBT within 1 ha of the patch. In areas surveyed neither of these condition constraints were identified and therefore the patch was excluded from the TEC definition.

Figure 10: Planted PCT 3320 within the subject land

3.5. Threatened species

No threatened flora or fauna listed under the EPBC Act were opportunistically identified during field survey efforts. One threatened fauna species, *Hieraaetus morphnoides* (little eagle), was observed within the patch of PCT 3320 during survey. This species is listed as Vulnerable under the BC Act. It is not listed under the EPBC Act.

One threatened species, *Gallinago hardwickii* (Latham's snipe) has previously been recorded in February 2020 within the subject land around the farm dam. Several EPBC Act listed species have the potential or likelihood to occur or use habitat within the subject land (Appendix A). Assessments of Significance have been completed for these species (Appendix B) as follows:

- Green and golden bell frog (*Litoria aurea*) – listed as Vulnerable
- Grey-headed flying-fox (*Pteropus poliocephalus*) – listed as Vulnerable
- *Acacia pubescens* (Downy wattle) – listed as Vulnerable
- *Pimelea spicata* (spiked rice-flower) – listed as Vulnerable
- *Pultenaea parviflora*– listed as Vulnerable
- Latham's snipe (*Gallinago hardwickii*) – listed as Vulnerable and Migratory
- Sharp-tailed sandpiper (*Calidris acuminata*) – listed as Vulnerable and Migratory
- Regent honeyeater (*Anthochaera Phrygia*) – listed as Critically Endangered
- Swift parrot (*Lathamus discolor*) – listed as Critically Endangered

Assessments concluded that a significant impact is unlikely to occur because of the proposed development within the subject land (Appendix B).

4. Biodiversity Assessment – MNES

The application of the significant impact criteria (Appendix B) for this TEC and threatened species determined that the proposed action is unlikely to constitute a significant impact to MNES.

4.1. Threatened ecological communities

The proposed action within the Certified-major transport corridor would not remove any extent of PCT 4023. Although the patch within the subject land did not strictly meet the criteria for *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community,* this vegetation was on the edge of a broader patch of PCT 4023 of approximately 16 ha, occurring as riparian vegetation associated with Cosgroves Creek.

The patch of PCT 4023 exists in the subject land in a degradation condition which includes an understorey of exotic flora species (> 80%). However, there is potential for vegetation outside of the subject land within the greater patch (16 ha) to meet the TEC criteria. As a precautionary approach, all vegetation contiguous with the broader PCT 4023 has been considered part of the TEC.

This patch of vegetation will be retained and is located within an extensively protected corridor under the CPCP through the Avoided Land mechanism (Figure 2). Additionally, the riparian corridor will be managed under a Vegetation Management Plan (VMP) which seeks to increase the area and quality of riparian vegetation associated with Cosgroves Creek within the subject land.

4.2. Threatened species

Potential habitat for threatened species is affected on Certified-major transport corridor within the subject land, being:

- 0.04 ha of PCT 4023 (not EPBC Act condition)
- 0.14 ha of PCT 4025 (not EPBC Act condition)
- 0.99 ha of PCT 3320 (Planted) (not EPBC Act condition)
- 0.24 ha of PCT 3962 (not EPBC Act listed)
- 4.44 ha of farm dams

Additionally, a total of 0.38 ha of potential habitat for MNES is present on Excluded Land (see Section 4.3 below and ELA 2025b for further detail).

Most of the impact area contains exotic grassland. Potential habitat is present for the following threatened species listed under the EPBC Act:

- Fauna:
    - Green and golden bell frog (*Litoria aurea*)
    - Grey-headed flying-fox (*Pteropus poliocephalus*)
    - Latham's snipe (Gallinago hardwickii)
    - Sharp-tailed sandpiper (*Calidris acuminata*)
    - Regent honeyeater (*Anthochaera phrygia*)
    - Swift parrot (Lathamus discolor)

- Flora:
    - Acacia pubescens (Downy wattle)
    - *Pimelea spicata* (spiked rice-flower)
    - *Pultenaea parviflora*

Assessments of significance have concluded that the above listed species, while having the potential to occur within the subject land and use habitat to be removed, will not be significantly affected by the proposed development in relation to non-certified land under the CPCP (see Section 4.3 and Appendix B3).

4.3. Cumulative impacts

The project comprises impacts on three land types under the CPCP:

- Certified-major transport corridor
- Certified-urban capable land
- Excluded Land

Certified-urban capable land is excluded from further assessment due to the approval of the CPCP by the Commonwealth (ELA 2025a), having previously been considered and offset at the strategic assessment level. Excluded Land requires both BC Act and EPBC Act assessment, and has been addressed under a separate BDAR (ELA 2025b).

The potential effect of cumulative impacts to MNES across non-certified land categories (Excluded Land and Certified-major transport corridor) has been considered in applying the Significance Assessment criteria (Appendix B). Within Excluded Land, the following MNES have been considered and significant impacts found unlikely to occur (ELA 2025b):

- Grey-headed flying-fox (*Pteropus poliocephalus*) – proposed impacts to 0.38 ha (Excluded Land) and 1.41 ha (Certified-major transport corridor) of potential habitat considered (1.79 ha total).
- *Pultenaea parviflora* – proposed impacts to 0.38 ha (Excluded Land) and 1.41 ha (Certified-major transport corridor) of potential habitat considered (1.79 ha total).

No TECs which meet EPBC condition occur on Excluded Land, as such a cumulative impact is not expected. Overall, upon consideration of the marginal additional areas of potential MNES habitat within Excluded Land, a significant impact is not considered likely.

4.4. Consistency with CPCP

Chapter 13 'Strategic Conservation Planning' of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (Biodiversity and Conservation SEPP) provides development controls for the land type classifications under the CPCP. Specific controls for major-transport corridors are not provided in the SEPP. Table 3 below provides responses to the general development control.

Table 3: Biodiversity and Conservation SEPP Chapter 13 – Development Controls

Development Control	Response
Part 13.2 Development controls – general	
13.6 Koala fences and fauna crossings *Development involving the erection, maintenance or modification of a fauna crossing or koala fence may be carried out by or on behalf of a public authority without development consent if the crossing or fence is consistent with the Cumberland Plain Conservation Plan.*	Koala have not been recorded on the subject land or within proximity to it. The development does not propose to erect, maintain or modify fauna crossings or koala fencing.

5. Conclusion

This report has been undertaken to assess impacts to potential MNES within areas mapped under the CPCP as Certified-major transport corridor, and Excluded Land for cumulative impacts, within the subject land. These areas are not covered by biodiversity certification endorsed by the Australian Commonwealth Government. Assessment was undertaken to determine whether a referral is required for any MNES.

Field survey identified four native PCTs occurring within the subject land:

- PCT 4023: Coastal Valleys Riparian Forest (Moderate)
- PCT 4025: Cumberland Red Gum Riverflat Forest (Low)
- PCT 3320: Cumberland Shale Plains Woodland (Planted)
- PCT 3962: Coastal Floodplain Phragmites Reedland

Three of these PCTs (4023, 4025 and 3320) are associated with EPBC listed TECs. None of these PCTs within the subject land met the conditional criteria for the respective TECs. However, a precautionary approach was applied to PCT 4023 due to the only criteria preventing it from meeting the TEC being understorey coverage, of which it contained a cover of 80.17% non-native species, only 0.18% above the threshold. Assessment of significance was therefore undertaken for the 0.77 ha of PCT 4023, with up to 0.04 ha to be affected on Certified-major transport corridor land, and determined that the proposed action is unlikely to result in a significant impact to this vegetation.

Literature review identified the following MNES species as having the potential to occur within the subject land:

- Green and golden bell frog (*Litoria aurea*) – listed as Vulnerable
- Grey-headed flying-fox (*Pteropus poliocephalus*) – listed as Vulnerable
- *Acacia pubescens* (Downy wattle) – listed as Vulnerable
- *Pimelea spicata* (spiked rice-flower) – listed as Vulnerable
- *Pultenaea parviflora*– listed as Vulnerable
- Latham's snipe (*Gallinago hardwickii*) – listed as Vulnerable and Migratory
- Sharp-tailed sandpiper (*Calidris acuminata*) – listed as Vulnerable and Migratory
- Regent honeyeater (*Anthochaera Phrygia*) – listed as Critically Endangered
- Swift parrot (*Lathamus discolor*) – listed as Critically Endangered

Assessments of significance were conducted for each of these MNES and determined that the proposed action is unlikely to result in a significant impact to any of these MNES species. On this basis, referral to the Australian Commonwealth Government is not recommended for SSD-70316465.

6. References

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Appendix A EPBC Act Likelihood of Occurrence

BC Act Key: E1 = Endangered, E2 = Endangered Population, E4 = Extinct, E4A = Critically Endangered, V = Vulnerable

EPBC Act Key: M = Migratory, CD = Conservation Dependent, CE = Critically Endangered, E = Endangered, V = Vulnerable, X = Extinct, MAR=Marine

Table 4: Likelihood of occurrence for threatened fauna species

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
Amphibian							
Heleioporus australiacus australiacus	Giant Burrowing Frog	V	V	Southeastern NSW and Victoria, in two distinct populations: a northern population in the sandstone geology of the Sydney Basin as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria.	Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	Unlikely- there are records of this species within a 10 km radius to the subject land. The Swamp Oak Floodplain Forest within the riparian corridor provides low habitat for the species which is restricted to sandstone soil associations in the Sydney Basin.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Litoria aurea	Green and Golden Bell Frog	E1	V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region.	Marshes, dams and stream-sides, particularly those containing Typha spp. (bullrushes) or Eleocharis spp. (spikerushes). Some populations occur in highly disturbed areas.	Potential - there are records of this species within a 10 km radius to the subject land. The dams and Swamp Oak Floodplain Forest within the riparian corridor provide marginal habitat for the species.	Yes – refer to Appendix B (Table 7)
Bird: Woodland							
Anthochaera phrygia	Regent Honeyeater	E4A	CE	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions.	Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of *Casuarina cunninghamiana* (River Oak).	Potential - there are records of this species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provides marginal habitat for the species.	Yes – refer to Appendix B (Table 12)
Aphelocephala leucopsis	Southern Whiteface	V	V	Occurs across most of mainland Australia south of the tropics from the north-eastern edge of WA wheatbelt, east to the Great Dividing Range.	Usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Critical habitat includes relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both. Habitat with low tree densities and an herbaceous understory litter cover with provides essential foraging habitat. Living and dead trees with hollows and crevices which are essential for roosting and nesting.	Unlikely - there are no previous records for this species within a 10 km radius to the subject land. This species prefers undisturbed habitat, unlike that within the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	V	From eastern through central NSW, west to Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell.	Eucalypt woodlands and dry open forest.	Potential - there are records of this species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal-low habitat for the species. However, the species prefers ironbark eucalypts which are absent from the subject land.	No - species may have occurred there historically but very unlikely in recent times. Therefore, it is unlikely that the proposed action will impact this species or habitats associated with this species.
Grantiella picta	Painted Honeyeater	V	V	Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas.	Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	Unlikely - there are no previous records for this species within a 10 km radius to subject land. This species is known to occur inland to the Great Dividing Range.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	E1	E	Found throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies picata.	Open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas.	Unlikely – there are a few records on the outer boundary of the 10 km subject land, however, the species predominantly occurs to the west of the Great Dividing Range. The eucalypt woodland (planted) may provide marginal habitat for the species within the region.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pycnoptilus floccosus	Pilotbird	-	V	Endemic to south-east Australia. Upland Pilotbirds occur above 600 m in the Brindabella Ranges in the ACT, and in the Snowy Mountains in NSW and north-east VIC. Lowland Pilotbirds occur in forests from the Blue Mountains west of Newcastle, around the wetter forests of eastern Australia, to Dandenong near Melbourne.	Strictly terrestrial, living on the ground in dense forests with heavy undergrowth. Largely sedentary, they are typically seen hopping briskly over the forest floor and foraging on damp ground or among leaf-litter. Flight is described as fairly weak, though, if disturbed, birds can sometimes ascend into shrubs.	Unlikely - there are no previous records for this species within a 10 km radius to the subject land. This species prefers undisturbed wet sclerophyll habitat, unlike that within the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Stagonopleura guttata	Diamond Firetail	V	V	Widely distributed in NSW, mainly recorded in the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina, and less commonly found in coastal areas and further inland.	Grassy eucalypt woodlands, open forest, mallee, Natural Temperate Grassland, secondary derived grassland, riparian areas and lightly wooded farmland.	Unlikely - there are records of the species within a 10 km radius, however, very few records in the heavily cleared areas of the Cumberland Plain. The eucalypt woodland (planted) and surrounding grassland provide marginal habitat for the species.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Bird: Parrot (Hollow-dependent)							
Callocephalon fimbriatum	Gang-gang Cockatoo	E1	E	In NSW, distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. Isolated records known from as far north as Coffs Harbour and as far west as Mudgee.	Tall mountain forests and woodlands in summer; in winter, may occur at lower altitudes in open eucalypt forests and woodlands, and urban areas.	Unlikely - there are records of the species within a 10 km radius, however, very few records in the heavily cleared areas of the Cumberland Plain. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal habitat for foraging and shelter (non-breeding).	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Calyptorhynchus lathami lathami	Glossy Black-Cockatoo (southeast)	V	V	In NSW, widespread along coast and inland to the southern tablelands and central western plains, with a small population in the Riverina.	Open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur.	Unlikely - there are records of this species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal habitat for the species as Casuarina glauca is not a preferred feed tree for the species. This species prefers box-ironbark forests which are absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Lathamus discolor	Swift Parrot	E1	CE	Migrates from Tasmania to mainland in Autumn-Winter. In NSW, the species mostly occurs on the coast and the South West Slopes.	Box-ironbark forests and woodlands.	Potential - there are records of this species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal habitat for the species. The stands of *Eucalyptus tereticornis* (Forest Red Gum) and *Corymbia maculata* (Spotted Gum) also provide habitat for this species.	Yes – refer to Appendix B (Table 12)
Neophema chrysostoma	Blue-winged Parrot	V	V	A partial migrant, during the non-breeding period, from autumn to early spring, birds are recorded from northern VIC, eastern SA, south-western QLD and western NSW, with some birds reaching south-eastern NSW and eastern	The species inhabits a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. Prefers grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones	Unlikely - there are no previous records for this species within a 10 km radius to subject land. This species is known to occur south of the Great Dividing Range. There are no hollow-bearing trees mapped within the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
				VIC. The species breeds in TAS, coastal south-eastern SA and southern VIC in spring-summer.			
Bird: Raptor							
Erythrotriorchis radiatus	Red Goshawk	E4A	E	In NSW, extends to ~30°S. Recent records confined to the Northern Rivers region north of the Clarence River.	Open woodland and forest, often along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and coastal riparian Eucalyptus forest.	Unlikely - there are no previous records for this species within a 10 km radius to the subject land. The species is known to occur in a more northern distribution from QLD to Cape York.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Falco hypoleucos	Grey Falcon	V	V	Arid and semi-arid zones. In NSW, found chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range.	Shrubland, grassland and wooded watercourses, occasionally in open woodlands near the coast, and near wetlands.	Unlikely - there are no previous records for this species within a 10 km radius to the subject land. This species is known to occur in more western, arid regions of NSW.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pandion haliaetus	Eastern Osprey	V	-	Common around the northern NSW coast, and uncommon to rare from coast further south. Some records from inland areas.	Rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes.	Unlikely - there are records of this species within a 10 km radius to the subject land. It is likely this species is using higher quality habitat within the area as the species preferred habitat features are absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Bird: Wetland							
Botaurus poiciloptilus	Australasian Bittern	E1	E	Found over most of NSW except for the far north-west.	Permanent freshwater wetlands with tall, dense vegetation, particularly Typha spp. (bullrushes) and Eleocharis spp. (spikerushes).	Unlikely - there are records of this species within a 10 km radius to the subject land. The Swamp Oak Floodplain Forest within the riparian corridor and the dams provide marginal/low habitat for the species due to the degraded condition of the vegetation. Furthermore, the absence of associated species *Typha sp*. and *Elaeocharis sp*.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Rostratula australis	Australian Painted Snipe	E1	E	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys.	Swamps, dams and nearby marshy areas.	Unlikely - there are records of this species within a 10 km radius to the subject land in larger, intact vegetation. The Swamp Oak Floodplain Forest within the riparian corridor and the dams provide marginal/low habitat for the species due to the degraded condition of the vegetation. This species prefers more cover.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Gallinago hardwickii	Latham's Snipe	-	V,M	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW.	Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	Potential - there are records of this species within a 10 km radius to the subject land. The Swamp Oak Floodplain Forest within the riparian corridor and the dams provide marginal habitat for the species.	Yes – refer to Appendix B (Vulnerable and Migratory species Table 9 and Table 10)
Bird: Migratory							
Actitis hypoleucos	Common Sandpiper	-	M	Summer migrant. In NSW, widespread along coastline and also occurs in many areas inland.	Coastal wetlands and some inland wetlands, especially muddy margins or rocky shores. Also, estuaries and deltas, lakes, pools, billabongs, reservoirs, dams and claypans, mangroves.	Unlikely - there are no previous records of this species within a 10 km radius to the subject land. This species is known to occur more regularly in coastal/shoreline habitats. Preferred habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Apus pacificus	Fork-tailed Swift	-	M	Recorded in all regions of NSW.	Riparian woodland., swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	Likely - there are previous records within a 10 km radius to the subject land. This species has a wide distribution. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest provides marginal-low habitat for the species.	No - this species is mostly aerial only landing to roost where there is larger, intact habitat available within the region.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
Calidris acuminata	Sharp-tailed Sandpiper	-	V,M	Summer migrant. Widespread in most regions of NSW, especially in coastal areas, but sparse in the south-central Western Plain and east Lower Western Regions.	Shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	Potential - there are no previous records of this species within a 10 km radius to the subject land. This species has recorded in heavily degraded farm dams which are present within the subject land.	Yes – refer to Appendix B (Vulnerable and Migratory species Table 9 and Table 10)
Calidris ferruginea	Curlew Sandpiper	E1	CE, M	Occurs along the entire coast of NSW, and sometimes in freshwater wetlands in the Murray-Darling Basin.	Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	Unlikely - there are no previous records of this species within a 10 km radius to the subject land. This species is known to occur more regularly in heath/marshes/lakes habitats. Preferred habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Calidris melanotos	Pectoral Sandpiper	-	M	Summer migrant to Australia. Widespread but scattered in NSW. East of the Great Divide, recorded from Casino and Ballina, south to Ulladulla. West of the Great Divide, widespread in the Riverina and Lower Western regions.	Shallow fresh to saline wetlands, including coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	Unlikely - there are no previous records of this species within a 10 km radius to the subject land. This species is known to occur more regularly in heath/marshes/lakes habitats. Preferred habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Cuculus optatus	Oriental Cuckoo, Horsfield's Cuckoo	-	M	Northern and eastern Australia, records mainly coastal in NSW south to Bega area.	Nonbreeding habitat: monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodland.	Unlikely – this species is generally vagrant and recorded very rarely in Sydney region. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal-low habitat for the species.	No - this species is mostly aerial only landing to roost where there is larger, intact habitat available within the region.
Hirundapus caudacutus	White-throated Needletail	-	V,M	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide.	Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	Likely - there are previous records within a 10 km radius to the subject land. This species has a wide distribution. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest provides marginal-low habitat for the species.	No - this species is mostly aerial only landing to roost where there is larger, intact habitat available within the region.
Motacilla flava	Yellow Wagtail	-	M	Regular summer migrant to mostly coastal Australia. In NSW recorded Sydney to Newcastle, the Hawkesbury and inland in the Bogan LGA.	Swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land, lawns.	Unlikely – this species is generally vagrant and recorded very rarely in Sydney region. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal-low habitat for the species.	No - this species is mostly aerial only landing to roost where there is larger, intact habitat available within the region.
Numenius madagascariensis	Eastern Curlew	E	CE, M	Summer migrant to Australia. Primarily coastal distribution in NSW, with some scattered inland records.	Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	Unlikely - there are no previous records of this species within a 10 km radius to the subject land. This species is known to occur more regularly in coastal/shoreline habitats. Preferred habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Tringa nebularia	Common Greenshank	-	E,M	Summer migrant to Australia. Recorded in most coastal regions of NSW; also widespread west of the Great Dividing Range, especially between the Lachlan and Murray Rivers and the Darling River drainage basin, including the Macquarie Marshes, and north-west regions.	Terrestrial wetlands (swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans, saltflats, sewage farms and saltworks dams, inundated rice crops and bores) and sheltered coastal habitats (mudflats, saltmarsh, mangroves, embayments, harbours, river estuaries, deltas, lagoons, tidal pools, rock-flats and rock platforms).	Unlikely - there are no previous records of this species within a 10 km radius to the subject land. This species is known to occur more regularly in coastal/shoreline habitats. Preferred habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Mammal: Hollow-dependent							
Dasyurus maculatus maculatus	Spotted-tailed Quoll (SE mainland population)	V	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld.	Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	Potential - there are previous records of the species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide low habitat for the	No - the habitat within the subject land does not contain shelter (dens and ground hollows), or other preferred habitat compositions. The riparian corridor will not

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
						species. However, the species only prefers wet sclerophyll, rainforest and margins of rainforest.	be impacted by the proposed action and the species movement within the region.
Petauroides volans	Greater Glider	E1	E	Eastern Australia, from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest).	Eucalypt forests and woodlands. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	Unlikely - there are records of this species within a 10 km radius to the subject land. These records occur in larger, intact native vegetation of higher quality to that within the subject land. This species requires multiple hollows, and prefers old, mature forests.	No - the subject land does not contain preferred habitat features (hollows, mature woodlands/forests). The riparian corridor will not be impacted by the proposed action and the species movement within the region.
Petaurus australis australis	Yellow-bellied Glider	-	V	Along the eastern coast to the western slopes of the Great Dividing Range, from southern Qld to Victoria.	Tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils.	Unlikely - there are records of this species within a 10 km radius to the subject land. These records occur in larger, intact native vegetation of higher quality to that within the subject land. This species requires multiple hollows, and prefers wet sclerophyll and old, mature forests.	No - the subject land does not contain preferred habitat features (hollows, mature woodlands/forests). The riparian corridor will not be impacted by the proposed action and the species movement within the region.
Mammal							
Notamacropus parma	Parma Wallaby	V	V	Confined to the coast and ranges of central and northern NSW from the Gosford district to the Qld border.	Moist eucalypt forest, rainforest margins and occasionally drier eucalypt forest.	Potential - there are previous records of the species within a 10 km radius to the subject land. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal-low habitat for the species. However, the species only prefers wet sclerophyll, rainforest and margins of rainforest.	No - the habitat within the subject land does not contain shelter (dens and ground hollows), or other preferred habitat compositions. The riparian corridor will not be impacted by the proposed action and the species movement within the region.
Petrogale penicillata	Brush-tailed Rock-wallaby	E1	V	In NSW they occur from the Qld border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit.	Rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges.	Unlikely - there are previous records of this species within a 10 km radius to the subject land. These records occur in larger, intact native vegetation of higher quality to that within the subject land. This species rocky outcrops within large, intact native vegetation which is free from predation by feral fauna species.	No - the subject land does not contain preferred habitat features (rocky outcrops). The riparian corridor will not be impacted by the proposed action and the species movement within the region.
Phascolarctos cinereus	Koala	V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands.	Eucalypt woodlands and forests.	Potential - there are previous records of. The eucalypt woodland (planted) and Swamp Oak Floodplain Forest within the riparian corridor provide marginal-low habitat for the species. However, the species only prefers wet sclerophyll, rainforest and margins of rainforest.	No - the habitat within the subject land does not contain shelter (dens and ground hollows), or other preferred habitat compositions. The riparian corridor will not be impacted by the proposed action and the species movement within the region.
Pseudomys novaehollandiae	New Holland Mouse	-	V	Fragmented distribution across eastern NSW.	Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	Unlikely- there are previous records of the species within a 10 km radius to the subject land in more suitable habitat (heathlands or woodlands denser understorey).	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria.	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Likely - there are previous records of the species within a 10 km radius to the subject land. The PCT vegetation communities within the subject land include key feed trees for the species, refer to Section 3.3.	Yes – refer to Appendix B (Table 8)
Chalinolobus dwyeri	Large-eared Pied Bat	E	E	Recorded from Rockhampton in Qld south to Ulladulla in NSW. Largest concentrations of populations occur in the sandstone escarpments of the Sydney basin and the NSW north-west slopes.	Wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country. Roosts in caves, rock overhangs and disused mine shafts and as such is usually associated with rock outcrops and cliff faces. It also possibly roosts in the hollows of trees. The species is	Potential - there are previous records of this species within a 10 km radius to the subject land. There is low condition foraging habitat for the species within the subject land. However. the previous records occur in larger, intact native vegetation of higher quality to that within the subject land. These habitats would contain roosting (cliffs,	No - the subject land does not contain preferred habitat features (cliffs, escarpments, and rocky outcrops). The riparian corridor will not be impacted by the proposed action and the species movement within the region.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact assessment required?
					thought to require roosting habitat that is adjacent to higher fertility sites which are used for foraging. This species probably forages for small, flying insects below the forest canopy.	escarpments, rocky outcrops), which is absent from the subject land.	
Reptile							
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V	In NSW, only known from the Central and Southern Tablelands, and the South Western Slopes.	Sloping, open woodland areas with predominantly native grassy ground layers, rocky outcrops or scattered, partially buried rocks.	Unlikely - there are no previous records within a 10 km radius to the subject land. The species is known to occur on the western slopes of the Great Dividing Range. Key habitat (rocky outcrops, native grasslands) is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Hoplocephalus bungaroides	Broad-headed Snake	E	E	Largely confined to Triassic and Permian sandstones within the coast and ranges in an area within approximately 250 km of Sydney.	Dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	Unlikely - the species is known to occur within the Sydney bioregion and there are previous records of the species within a 10 km radius to the subject land. However, these records occur in larger, intact native vegetation which contains preferred habitat features, being sandstone ridges, escarpments, and outcrops which are absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Snail							
Pommerhelix duralensis	Dural Land Snail	E1	E	Endemic to NSW. Occurs along the northwest fringes of the Cumberland Plain, within the Hills Shire, Blue Mountains City, Penrith City, Hornsby Shire and Parramatta City LGAs.	Shale-sandstone transitional landscapes. Found in Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest; Turpentine-Ironbark Forest; Shale/Sandstone Transition Forest; Turpentine Ironbark Margin Forest; Hinterland Sandstone Gully Forest; and Sydney Hinterland Transition Woodland.	Unlikely - there are records of this species within a 10 km radius to the subject land occurring in higher quality habitat. Soils associated with the species are absent from the subject land.	No - the proposed action will not impact the species or associated habitats, which are absent from the subject land.
Fish							
Macquaria australasica	Macquarie Perch	E1	E	Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury and Shoalhaven catchments.	River and lake habitats, especially the upper reaches of rivers and their tributaries.	No - there are no rivers or streams within the subject land, making it outside the species distribution.	No - the proposed action will not impact the species or associated habitats, which are absent from the subject land.
Prototroctes maraena	Australian Grayling	-	V	Streams and rivers on the eastern and southern flanks of the Great Dividing Range; in NSW, it occurs south from the Shoalhaven River.	Coastal rivers and streams, fresh and brackish coastal lagoons.	No - there are no rivers or streams within the subject land, making it outside the species distribution.	No - the proposed action will not impact the species or associated habitats, which are absent from the subject land.

Table 5: Likelihood of occurrence for threatened flora species

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact Assessment Required
Acacia bynoeana	Bynoe's Wattle	E1	V	Found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains.	Heath or dry sclerophyll forest on sandy soils.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. The species is known to occur within the Hunter region and western slopes of the Blue Mountains. Habitat is absent or been previously disturbed (cleared).	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Acacia pubescens	Downy Wattle	V	V	Restricted to the Sydney region around the Bankstown-Fairfield-Rookwood and Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon.	Open woodland and forest, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. Occurs on alluviums, shales and at the intergrade between shales and sandstones.	Potential - there are previous records within a 10 km radius to the subject land. Associated habitat for the species is in marginal-low condition.	Yes – refer to Appendix B (Table 11)
Allocasuarina glareicola	-	E1	E	Primarily restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool.	Castlereagh woodland on lateritic soil. Found in open woodland *with Eucalyptus parramattensis, Eucalyptus fibrosa, Angophora bakeri, Eucalyptus sclerophylla* and *Melaleuca decora.*	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. The species is known to occur within the Cumberland Plains.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Cynanchum elegans	White-flowered Wax Plant	E1	E	Restricted to eastern NSW, from Brunswick Heads on the north coast to Gerroa in the Illawarra region, and as far west as Merriwa in the upper Hunter River valley.	Dry rainforest; littoral rainforest; Leptospermum laevigatum-Banksia integrifolia subsp. integrifolia (Coastal Tea-tree– Coastal Banksia) coastal scrub; *Eucalyptus tereticornis* (Forest Red Gum) or *Corymbia maculata* (Spotted Gum) open forest and woodland; and Melaleuca armillaris (Bracelet Honeymyrtle) scrub.	Unlikely - there are records of this species within a 10 km radius to the subject land. These records occur in larger, intact native vegetation of higher quality to that within the subject land. The species is associated *Eucalyptus tereticornis* and *Corymbia maculat*a which are planted within the subject land, however, due to the low condition and previous disturbance it is unlikely the species will occur.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Eucalyptus aggregata	Eucalyptus aggregata H.Deane & Maiden population in the Wingecarribee local government area	E2,V	V	Population located in the Wingecarribee local government area, at Berrima, Medway and Sutton Forest.	Alluvial soils, on cold, poorly drained flats and hollows adjacent to creeks and small rivers. Usually occurs in open woodland with a grassy groundlayer.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. This population is in a different LGA. Associated habitats do not occur within the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Eucalyptus benthamii	Camden White Gum	V	V	Alluvial flats of the Nepean River and its tributaries. Mainly Kedumba Valley of the Blue Mountains National Park and Bents Basin State Recreation Area. Also, along the Nepean River around Camden and Cobbitty, at Werriberri (Monkey) Creek in The Oaks, and on the Nattai River in Nattai National Park.	Occurs in open forest. Requires a combination of deep alluvial sands and a flooding regime.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Known records occur in conservation areas, with minimal disturbance which are absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Genoplesium baueri	Bauer's Midge Orchid	E1	E	Has been recorded from locations between Nowra and Pittwater and may occur as far north as Port Stephens.	Dry sclerophyll forest and moss gardens over sandstone.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land. However, this species is cryptic and targeted flora surveys are recommended.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Grevillea parviflora subsp. parviflora	Small-flower Grevillea	V	V	Sporadically distributed throughout the Sydney Basin and in the Hunter in the Cessnock - Kurri Kurri area. Also known from Putty to Wyong and Lake Macquarie on the Central Coast.	Heath and shrubby woodland to open forest on sandy or light clay soils usually over thin shales.	Unlikely - there are previous records within a 10 km radius to the subject land. However, associated habitat (shrubby woodlands) for the species is in low condition due to previous	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact Assessment Required
						disturbance or absent from the subject land.	
Hakea dohertyi	Kowmung Hakea	E1	CE	Kowmung Valley in Kanangra Boyd National Park, in the Bindook area and at Tonalli Cove on Lake Burragorang.	Dry sclerophyll forest, usually dominated by grey gum or silvertop ash.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. The species is not known to occur in other areas, and associated habitat does not occur within the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Haloragis exalata subsp. exalata	Square Raspwort	V	V	Disjunct distribution in the Central Coast, South Coast and North Western Slopes botanical subdivisions of NSW.	Protected and shaded damp situations in riparian habitats.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Melaleuca deanei	Deane's Paperbark	V	V	Ku-ring-gai/Berowra area, Holsworthy/Wedderburn area, Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas.	Heath on sandstone.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Habitat associated with the species (heath on sandstone) is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Micromyrtus minutiflora	-	E1	V	Restricted to the general area between Richmond and Penrith, western Sydney.	Castlereagh Scribbly Gum Woodland, Ironbark Forest, Shale/Gravel Transition Forest, open forest on tertiary alluvium and consolidated river sediments.	Unlikely- there are records of this species within a 10 km radius to the subject land and is restricted to the region (western Sydney). However, species is restricted to remaining/known populations.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Persicaria elatior	Tall Knotweed	V	V	In south-eastern NSW recorded from Mt Dromedary, Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW known from Raymond Terrace (near Newcastle) and the Grafton area (Cherry Tree and Gibberagee State Forests).	Beside streams and lakes, swamp forest or disturbed areas.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Persoonia hirsuta	Hairy Geebung	E1	E	Scattered distribution around Sydney, from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west.	Sandy soils in dry sclerophyll open forest, woodland and heath on sandstone.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Persoonia nutans	Nodding Geebung	E1	E	Restricted to the Cumberland Plain in western Sydney, between Richmond in the north and Macquarie Fields in the south.	Northern populations: sclerophyll forest and woodland (Agnes Banks Woodland, Castlereagh Scribbly Gum Woodland and Cooks River / Castlereagh Ironbark Forest) on aeolian and alluvial sediments. Southern populations: tertiary alluvium, shale sandstone transition communities and Cooks River / Castlereagh Ironbark Forest.	Unlikely - there are records of this species within a 10 km radius to the subject land and is restricted to the region (western Sydney). However, PCTs within the subject land are too degraded from heavy grazing. The species was not identified during the field surveys.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pimelea curviflora var. curviflora	-	V	V	Confined to the coastal area of the Sydney and Illawarra regions between northern Sydney and Maroota in the north-west and Croom Reserve near Albion Park in the south.	Woodland, mostly on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes.	Unlikely - there are records of this species within a 10 km radius to the subject land and is restricted to the region (western Sydney). However, PCTs within the subject land are too degraded from heavy grazing. The species was not identified during the field surveys.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pimelea spicata	Spiked Rice-flower	E1	E	Two disjunct areas; the Cumberland Plain (Marayong and Prospect Reservoir south to Narellan and Douglas	Well-structured clay soils. Eucalyptus moluccana (Grey Box) communities and in areas of ironbark on the Cumberland	Potential - there are previous records within a 10 km radius to the subject	Yes – refer to Appendix B (Table 11)

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact Assessment Required
				Park) and the Illawarra (Landsdowne to Shellharbour to northern Kiama).	Plain. Coast Banksia open woodland or coastal grassland in the Illawarra.	land. Associated habitat for the species is in marginal-low condition.	
Pomaderris brunnea	Brown Pomaderris	E1	V	In NSW, found around the Colo, Nepean and Hawkesbury Rivers, including the Bargo area and near Camden. It also occurs near Walcha on the New England tablelands.	Moist woodland or forest on clay and alluvial soils of flood plains and creek lines.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Habitat associated with the species (s absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pterostylis gibbosa	Illawarra Greenhood	E1	E	Known from a small number of populations in the Hunter region (Milbrodale), the Illawarra region (Albion Park and Yallah) and the Shoalhaven region (near Nowra).	Open forest or woodland, on flat or gently sloping land with poor drainage.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pterostylis saxicola	Sydney Plains Greenhood	E1	E	Restricted to western Sydney between Freemans Reach in the north and Picton in the south.	Small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines, adjacent to sclerophyll forest or woodland on shale/sandstone transition soils or shale soils.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Pultenaea parviflora	-	E1	V	Endemic to the Cumberland Plain. Mainly from Windsor to Penrith and east to Dean Park, with outlier populations at Kemps Creek and Wilberforce.	Dry sclerophyll forest, especially Castlereagh Ironbark Forest, Shale Gravel Transition Forest and transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland.	Potential - there are previous records within a 10 km radius to the subject land. Associated habitat for the species is in marginal-low condition.	Yes – refer to Appendix B (Table 11)
Rhizanthella slateri	Eastern Australian Underground Orchid	V	E	In NSW, currently known from fewer than 10 locations, including near Bulahdelah, the Watagan Mountains, the Blue Mountains, Wiseman's Ferry area, Agnes Banks and near Nowra.	Sclerophyll forest in shallow to deep loams.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Rhodamnia rubescens	Scrub Turpentine	CE	CE	Known to occur within coastal districts from Batemans Bay NSW to Bundaberg QLD.	Commonly occurs in all rain forest subforms except cool temperate rainforest. Volcanically derived and sedimentary soils and is a common pioneer species in eucalypt forests. Often recorded in wet sclerophyll associations in rainforest transition zones (including open forest of *Eucalyptus tereticornis* and *E. bosistoana* in the Sydney region) and creekside riparian associations)	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat (rainforest transitions and Creekside vegetation) is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Syzygium paniculatum	Magenta Lilly Pilly	E1	V	Only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest.	"Subtropical and littoral rainforest on gravels, sands, silts and clays.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.
Thelymitra kangaloonica	Kangaloon Sun Orchid	E4A	CE	Only known to occur on the southern tablelands of NSW in the Moss Vale / Kangaloon / Fitzroy Falls area at 550-700 m above sea level.	Swamps in sedgelands over grey silty grey loam soils.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land. However, this species is cryptic and targeted flora surveys are recommended.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.

Scientific Name	Common Name	BC Act	EPBC Act	Distribution	Habitat	Likelihood of occurrence	Impact Assessment Required
Thesium australe	Austral Toadflax	V	V	In eastern NSW it is found in very small populations scattered along the coast, and from the Northern to Southern Tablelands.	Grassland on coastal headlands or grassland and grassy woodland away from the coast.	Unlikely - there are no previous records of the species within a 10 km radius to the subject land. Due to the low condition (planted) and previous disturbance, associated habitat is absent from the subject land.	No - it is unlikely that the proposed action will impact this species or habitats associated with this species.

Appendix B Assessment of Significance – EPBC Act

This appendix provides an assessment of the significance of potential impacts from the proposed activity on MNES. The EPBC Act Administrative Guidelines on Significance set out 'Significant Impact Criteria' that are to be used to assist in determining whether a proposed action is likely to have a significant impact on matters of national environmental significance.

An action will require federal approval if the action has, will have, or is likely to have a significant impact on a species listed in any of the following categories:

- Extinct in the wild
- Critically Endangered
- Endangered
- Vulnerable
- Migratory

The following impact assessments 'Significant Impact Assessment' applies to the threatened flora and fauna species listed below. Threatened species descriptions are provided in Section B1 below.

Endangered Threatened Ecological Communities

- *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community*[1]

Vulnerable fauna species

- Green and golden bell frog (*Litoria aurea*)
- Grey-headed flying-fox (*Pteropus poliocephalus*)

Vulnerable flora species (grouped)

- *Acacia pubescens* (Downy wattle)
- *Pimelea spicata* (spiked rice-flower)
- *Pultenaea parviflora*

Vulnerable and Migratory bird species (grouped)

- Latham's snipe (*Gallinago hardwickii*)
- Sharp-tailed sandpiper (*Calidris acuminata*)

Critically Endangered or Endangered bird species (grouped)

- Regent honeyeater (*Anthochaera Phrygia*)
- Swift parrot (*Lathamus discolor*)

[1] No direct impacts to this TEC occur as a result of the proposed development

B1 Threatened Ecological Community (TEC) profile

Endangered Ecological Community

Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland TEC

The structure of this community varies from open forests to low woodlands, scrubs or reed lands with scattered trees. It has a dense to sparse tree layer in which *Casuarina glauca* (swamp oak) is the dominant species northwards from Bermagui.

Other trees including *Acmena smithii* (lilly pilly), *Glochidion* spp. (cheese tree) and *Melaleuca* spp. (paperbarks) may be present as subordinate species and are found most frequently in stands of the community northwards from Gosford. *Melaleuca ericifolia* is the only abundant tree in this community south of Bermagui.

The understorey is characterised by frequent occurrences of vines, *Parsonsia straminea*, *Geitonoplesium cymosum* and *Stephania japonica* var. *discolor*, a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter.

The composition of the ground stratum varies depending on levels of salinity in the groundwater.

The TEC is distributed on the Coastal floodplains of NSW. It is known from parts of the local government areas of Tweed, Byron, Lismore, Ballina, Richmond Valley, Clarence Valley, Coffs Harbour, Bellingen, Nambucca, Kempsey, Hastings, Greater Taree, Great Lakes, Port Stephens, Maitland, Newcastle, Cessnock, Lake Macquarie, Wyong, Gosford, Pittwater, Warringah, Hawkesbury, Baulkham Hills, Hornsby, Lane Cove, Blacktown, Auburn, Parramatta, Canada Bay, Rockdale, Kogarah, Sutherland, Penrith, Fairfield, Liverpool, Bankstown, Wollondilly, Camden, Campbelltown, Wollongong, Shellharbour, Kiama, Shoalhaven, Eurobodalla and Bega Valley.

This TEC is associated with grey-black clay-loams and sandy loams, where the groundwater is saline or sub-saline, on waterlogged or periodically inundated flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. Generally, the TEC will occur below 20 m elevation.

B2 Threatened species profiles

Vulnerable fauna species

- Green and golden bell frog (*Litoria aurea*)

The green and golden bell frog occurs on coastal lowlands between Yuraygir National Park in New South Wales and Lake Tyers in Victoria. The species occurs in a range of permanent/ephemeral and natural/manmade aquatic habitats but is primarily associated with lentic (still) rather than lotic (fast flowing) water. The species will utilise both natural and man-made water bodies, including dams. Breeding recorded in, shallow and unshaded aquatic sites with emergent aquatic plants and free of predatory fish and is more frequent in ephemeral ponds rather than fluctuating or permanent ponds. Adjacent terrestrial habitat usually consists of grassy/cleared areas or low vegetation with diurnal and over-wintering shelter sites. If vegetation is present, it is generally no taller than woodland, but adjacent forest has been reported.

Threats to the habitat destruction and degradation, changes to the structure and diversity of aquatic vegetation, habitat fragmentation, predation of eggs and tadpoles by predatory exotic fish species, infection with amphibian chytrid fungus (*Batrachochytrium dendrobatidis*), changes to hydrology and water quality, and disturbance due to increased public access.

- Grey-headed flying-fox (*Pteropus poliocephalus*)

Grey-headed flying-fox are generally found within 20 km of the eastern coast of Australia. The species occurs in a range of habitats from subtropical and temperate rainforest, tall sclerophyll forest and woodlands to heaths and swamps. Grey-headed flying-fox roost in camps of up to tens of thousands and generally located within 20 km of regular food sources.

Threats to the Grey-headed flying-fox includes loss of roosting and foraging sites, electrocution on powerlines, entanglement in netting and barbed-wire, heat stress, and illegal shooting.

Vulnerable and Migratory bird species (grouped)

- Latham's snipe (*Gallinago hardwickii*)

Latham's snipe is a migratory species that breeds overseas. In Australia, the species occurs from the Cape York Peninsula to the south-eastern South Australia, in mainly coastal areas. A wide variety of permanent and ephemeral wetlands are utilised by the species which include open, freshwater wetlands with low, dense vegetation but can also inhabit brackish or saline water such as saltmarsh. The Latham Snipe has also been recorded utilising artificial habitats such as pastures.

Threats to the Latham's Snipe include loss of habitat by the drainage or modification of wetlands, excessive mortality due to hunting, collisions with vehicles and disturbance by human activity.

- Sharp-tailed sandpiper (*Calidris acuminata*)

The Sharp-tailed sandpiper is a migratory species, and a non-breeding visitor to East Asian – Australian. During this non-breeding season, the species will occur within all states of Australia, mostly being recorded in the southeast. This species is more flexible in its habitat choice in comparison to other shorebird species during the non-breeding season occurring in both inland and coastal wetlands – from fresh to hypersaline and are more tolerant of grassy vegetation than most shorebirds. The highest density of the species can be found around grassy edges of shallow inland freshwater wetlands. It is also found around sewage farms, flooded fields, mudflats, mangroves, rocky shores, and beaches.

Threats to the Sharp-tailed sandpiper is habitat loss, degradation, and fragmentation (primarily from land clearing due to agricultural practices, or residential/commercial development), change in hydrology, effects of climate change including rising sea and prolonged droughts, invasive species, and anthropocentric actions (fishing bycatch, hunting, and pollution).

Vulnerable flora species (grouped)

- *Acacia pubescens* (Downy wattle)

The Downy wattle is restricted to the Sydney region of NSW. Its distribution is concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. This species is recorded to occur as individuals or in small clumps (up to 20) in open woodland and forest, in a number of plant communities. Most sites are within Cooks River / Castlereagh Ironbark Forest, Shale Gravel Transition Forest or Shale Plains Woodland.

Threats to the Downy wattle are identified as habitat loss and fragmentation, competition with invasive species, habitat disturbance due to illegal tracks and maintenance activities, inappropriate fire regimes, and hybridization.

- *Pimelea spicata* (Spiked rice-flower)

The spiked rice-flower has a highly fragmented distribution occurring in two disjunct regions of the Sydney Basin IBRA bioregion in NSW: the Cumberland Plain in western Sydney and the coastal region of the lllawarra, south of Sydney. This species occurs on undulating topography Cumberland Plain structured clay soils derived from Wianamatta shale. In this region, the species is restricted to areas supporting, or that previously supported, the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest and the Western Sydney Dry Rainforest and Moist Woodland on Shale ecological communities (protected under the EPBC Act and BC Act).

Threats to the spiked rice-flower are identified as habitat loss and fragmentation, competition with invasive species, habitat disturbance, broad-scale weed mechanical and aerial spraying management operations, and inappropriate fire regimes.

- *Pultenaea parviflora*

Pultenaea parviflora inhabits scrubby or dry heath areas within the Castlereagh Ironbark Forest, predominantly in Penrith, Windsor and Blacktown and there are outlier populations in Liverpool. Within these areas the species may also occur in transitional areas where the Castlereagh Ironbark. The distribution of this species overlaps with the 'Shale/Sandstone Transition Forest, and Cumberland Plain Woodlands' EPBC Act-listed threatened ecological community.

Threats to the Downy wattle are identified as habitat loss and fragmentation, competition with invasive species, habitat disturbance and modification and inappropriate fire regimes.

Critically Endangered or Endangered bird species (grouped)

- Regent honeyeater (*Anthochaera phrygia*)

The regent honeyeater primarily inhabits inlands slope of the Great Dividing Range. The species is primarily associated with box-ironbark eucalypt woodland and dry sclerophyll forest but is also known to inhabit riparian vegetation such as Sheoak (*Casuarina* spp.) where it feeds on needle-leaved mistletoe. Occasionally, the Regent Honeyeater will utilise lowland coastal forest, remnant patches in farmland or urban areas, roadside reserves and travelling stock routes. The species movements are primarily motivated by flowering of select eucalypt species, breeding will also vary with eucalypt and mistletoe species flowering times. Nests are often placed in the canopy of mature trees with rough bark which may be near or far from food sources.

A primary threat to the Regent Honeyeater is loss, fragmentation, degradation of its habitat, notably, the removal of large mature trees which are relied on for foraging and breeding. Other threats include competition with other native and non-native bird species primarily being with aggressive honeyeaters, Noisy Friarbird, and Noisy Miners as well as predation by native nest predators (e.g. Pied Currawongs).

- Swift parrot (*Lathamus discolor*)

The swift parrot breeds in Tasmania during spring and summer, migrating to south-eastern Australia in autumn and winter months. In NSW, the species mostly occurs on the coast and southwest slopes. The species occurs where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. The species may return to some foraging sites on a cyclic basis depending on food availability. This species breeds in Tasmania from September to January in hollows of old trees. Threats to the species includes by loss and fragmentation of habitat, food competition from introduced bees and honeyeaters, Psittacine Beak and Feather Disease, weed invasion, habitat exclusion by over abundant Noisy Miner, predation by cats, illegal capture and trade, and collision with human made structures.

B3 Significant impact criteria

B3.1. Endangered Threatened Ecological Communities

It is noted that vegetation within the subject land did not meet the TEC condition criteria for *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* or will be impacted. However, this was due to a non-native understorey cover of 80.17%, only 0.18% above the coverage which would then result in it meeting the TEC condition criteria. Therefore, a precautionary approach has been undertaken, and an assessment of significance completed below to determine whether indirect impacts would affect this patch of vegetation (Table 6).

Table 6: Assessment of significance for *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland* ecological community

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:		
1)	reduce the extent of an ecological community	The proposed action will not reduce the extent of the Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community (TEC) within the subject land. The total TEC patch area is 16 ha and is comprised of PCT 4023, of which 0.77 ha within the subject land did not conform to the condition criteria. There is potential for vegetation within the greater patch to meet the condition criteria for this TEC, however, direct impacts to this patch are avoided. A total of 0.04 ha of this area would be affected by the proposed action which would not substantially reduce the extent of this community, being 0.25% on the edge of a larger patch.
2)	fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	The proposed action will not fragment the TEC. The section which will be affected occurs on the boundary of the TEC and the western edge of the impact area, refer to Figure 4. The proposed action will not directly clear or reduce the area of 16 ha of this greater patch, which partly occurs in the subject land on the western riparian corridor.
3)	adversely affect habitat critical to the survival of an ecological community	As per conservation advice under the EPBC Act habitat most critical to the survival of the TEC are those patched of a reasonable size and in the best condition. However, this does not mean that areas which meet the minimum thresholds are unimportant as many patches contain suites of species, habitat features or other biodiversity values. Under the EPBC Act, the vegetation identified within the subject land is part of a larger patch (16 ha). Vegetation within the subject land did not meet the condition criteria for this TEC. However, other areas of this patch of vegetation may meet the condition criteria. The extent within the subject land is in a low to medium quality due to the dominance of exotic species in the understorey. The proposed action occurs adjacent to, but not within, a patch of vegetation which is a low to moderate condition and does not conform to a TEC. It is unlikely this vegetation will be further affected, given the already degraded state, and the larger patch of vegetation will not be affected by the action.

Criterion	Question	Response
4)	modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	The proposed action avoids impacting a potential TEC located in avoided land as riparian vegetation associated with Cosgroves Creek. The proposed action will not directly modify or destroy the greater area of 16 ha of the contiguous patch of vegetation. The proposed development may change surface water drainage patterns if no mitigation measures are included in the development design, and minor realignment of the watercourse at the location of this community, however extensive stormwater management will be in place to maintain flows. The proposed action is not anticipated to impact the groundwater levels or soil and nutrients for the contiguous adjacent 16 ha of this potential TEC.
5)	cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	High coverage of weed species is already present within vegetation in the subject land, with *Tradescantia fluminensis*, *Cardiospermum grandiflorum* and *Ehrharta erecta* most dominant. It is unlikely that the proposed action will significantly change the species composition of the vegetation which occurs within the subject land.
6)i	cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:	The TEC occurs in a degraded condition due to historic disturbance including clearing and agricultural land use. It is unlikely that the proposed action will cause continued substantial reduction in the quality of the TEC within the subject land.
6)ii	assisting invasive species, that are harmful to the listed ecological community, to become established, or	In the absence of weed management protocols, the proposed action may spread exotic weed species already present within the subject land. However, it is unlikely the proposed action will introduce or reduce flora species to a degree which will change the composition. The vegetation within the subject land already exists in a degradation condition which includes an understorey of exotic flora species (> 80%). It is unlikely that the proposed development will result in an increase in the presence of feral/domestic animals above the current level for the subject land.
Conclusion	Is there likely to be a significant impact?	It is unlikely that the action will have a significant impact on the *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* considering direct impacts to PCT 4023 are marginal (0.04 ha) and that this vegetation does not conform to the EPBC Act TEC criteria within the subject land.

B3.2. Vulnerable fauna species

Table 7: Assessment of significance for Green and Golden Bell Frog (*Litoria aurea*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is unlikely that the proposed action will lead to a long-term decrease in the size of an important population (known records of the species). An important population of the green and golden bell frog is not known to occur within the subject land. As per the Conservation Advice there are no known (or important) populations identified within the subject land. Recent studies have found that populations in the Sydney, Illawarra, and Hunter regions the species have been recorded in sites with high concentrations of heavy metals which suggests that these pollutants may inhibit the growth and proliferation of chytrid fungus (*Batrachochytrium dendrobatidis*). The species breed in still, shallow and unshaded aquatic sites with emergent aquatic plants and free of predatory fish and are more frequent in ephemeral ponds rather than fluctuating or permanent ponds frogs. It is not anticipated that the direct or indirect impacts of the proposed action will lead to the decline in the size of an important population. There are no known populations of the species within the subject land. Habitat critical to the species for breeding or refugee from disease are absent from the subject land.
2)	reduce the area of occupancy of an important population	The proposed action will not reduce the area of occupancy for an important population. No important population has been identified within the subject land. The proposed action will remove marginal habitat for the species (4.44 ha of farm dams) which would prevent the species occupying the subject land in the future.
3)	fragment an existing important population into two or more populations	The proposed action will not fragment an existing important population. An important population of the green and golden bell frog does not occur within the subject land.
4)	adversely affect habitat critical to the survival of a species	It is not anticipated that the proposed action will adversely affect habitat critical to the survival of the species. As no known population occurs in the marginal habitat available within the subject land, this habitat is not considered critical for the survival of the species.
5)	disrupt the breeding cycle of an important population	The proposed action will not impact the breeding cycle of an important population. An important population of the green and golden bell frog does not occur within the subject land. The indirect impacts of the proposed action are not anticipated to impact the breeding cycle of a population occurring outside of the subject land.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove and/or modify up to 5.96 ha of associated habitat to the species. The species is associated with the PCTs and farm dams which occur in the subject land in a degraded condition.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to already occur within the subject land due to the degraded

Criterion	Question	Response
		condition. This includes habitat damage from domestic stock or predation from feral animals (e.g., cats and foxes).
8)	introduce disease that may cause the species to decline, or	The proposed action will not introduce disease (Chytridiomycosis caused by chytrid fungus) that may cause the species to decline.
9)	interfere substantially with the recovery of the species.	The proposed action is not identified as a 'threat' under the Conservation Advice and is unlikely to interfere with the recovery of this species.
Conclusion	Is there likely to be a significant impact?	**It is unlikely that the action will have a significant impact on green and golden bell frog as marginal habitat exists within the subject land and it is considered unlikely that a population of the species occurs within the subject land.**

Table 8: Assessment of significance for Grey-headed Flying-fox (*Pteropus poliocephalus*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is unlikely that the proposed action will lead to a long-term decrease in the size of an important population (known records of the species). An important population (or camp) of the grey-headed flying-fox is not known to occur within the subject land, as camps will re-visit stable roosting sites over many years. However, the vegetation communities within the subject land may provide roosting habitat for a camp or food during shortages. Camps may occur in a range of vegetation patches as little as 1 ha (DAWE, 2021). It is likely the species will occur in the subject land due to the species large distribution and the high-quality habitat within the region. The species is associated with the PCTs mapped within the subject land and are likely to utilise the vegetation communities (up to 1.79 ha) for foraging and roosting. It is not anticipated that the direct or indirect impacts of the proposed action will lead to the decline in the size of an important population or camp. The removal of up to 1.79 ha of potential habitat for the species is a relatively small scale in comparison to the higher quality habitat within the region.
2)	reduce the area of occupancy of an important population	The proposed action is likely to reduce the area of occupancy for the individuals within the region by removing up to 1.79 ha of potential habitat. However, subject land is not known to host an important population or camp.
3)	fragment an existing important population into two or more populations	The proposed action will not fragment an existing important population. The species moves aerially and will not be restricted or displaced by the proposed action.
4)	adversely affect habitat critical to the survival of a species	The proposed action will remove up to 1.79 ha of potential feeding and roosting habitat for the species. As per the National Recovery Plan for the grey-headed flying-fox, vegetation communities which contain winter or spring feed trees for the species is considered critical habitat. This includes *Eucalyptus tereticornis* and *Corymbia maculata* which occur within the subject land.

Criterion	Question	Response
		It is unlikely that the removal of this relatively small area of potential habitat for the species will have an adverse impact on the survival of the grey-headed flying-fox.
5)	disrupt the breeding cycle of an important population	The proposed action will not impact the breeding cycle of an important population. No important populations or maternity camps are known to occur within the subject land. There are no camps identified within the vicinity of the subject land which may be indirectly impacts such as light, noise, or dust during the construction phase.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove up to 1.79 ha of associated habitat for the species. It is not anticipated that this relatively small-scale impact will lead to the decline of the species.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to already occur within the subject land due to the degraded condition. This includes habitat damage from domestic stock or predation from feral animals (e.g., cats and foxes).
8)	introduce disease that may cause the species to decline, or	The proposed action will not introduce disease which may cause the species to decline. There are no diseases identified as a key threat for the species (DAWE, 2021)
9)	interfere substantially with the recovery of the species.	The proposed action will remove 1.79 ha of critical habitat as *Eucalyptus tereticornis* and *Corymbia maculata* which occur within the subject land. Clearing winter flowering species is a threat for the species as it can result in inadequate food resources during this time (DAWE, 2021). However, it is unlikely that this will substantially interfere with the recovery of the species due to the relatively small scale of associated vegetation to be removed. There is higher quality habitat within the region protected in National Parks and Reserves.
Conclusion	Is there likely to be a significant impact?	It is unlikely that the action will have a significant impact on Grey-headed Flying-fox due to: ● the relatively small amount of potential foraging habitat to be removed as part of the action (1.79 ha cumulatively on both Certified-major transport corridor and Excluded land) ● potential foraging habitat to remain available in the surrounding landscape ● no camps are identified within the subject land ● the species is highly mobile and will be able to relocate to other areas of potential habitat.

B3.3. Vulnerable and Migratory species

Table 9: Assessment of significance for threatened wetland birds (Latham's snipe and short-tailed sandpiper)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is unlikely that the proposed action will lead to a long-term decrease in the size of an important population (known records of the species). An important population of the Latham Snipe and Short-tailed Sandpiper is not known to occur within the subject land. Both wetland species are non-breeding visitors to Australia and will utilise a range of wetlands with freshwater to saline water as well as artificial habitats such as farm dams. The proposed action will impact up to 4.44 ha of farm dams which are potential habitat for these species. The species is not associated with the PCTs mapped within the subject land. As per the species Conservation Advice, habitat is considered important if it supports up to 0.1 % of the flyway population or 2,000 individuals. It is unlikely the degraded, agricultural habitat within the subject land would be able to support these numbers of migratory birds. It is not anticipated that the direct or indirect impacts of the proposed action will lead to the decline in the size of an important population. Habitat suitable to support important populations of the species within Australia is absent from the subject land.
2)	reduce the area of occupancy of an important population	The proposed action will not reduce the area of occupancy for an important population. No important population has been identified within the subject land. The proposed action will remove marginal habitat for the species (4.44 ha of farm dams) which would prevent individuals from occupying the subject land in the future.
3)	fragment an existing important population into two or more populations	The proposed action will not fragment an existing important population. An important population of the Latham Snipe or Short-tailed Sandpiper do not occur within the subject land. These species move aerially and will not be restricted by the proposed action.
4)	adversely affect habitat critical to the survival of a species	It is not anticipated that the proposed action will adversely affect habitat critical to the survival of the species. An important population (0.1% of flyway population or 2,000 individuals) are not known to occur within the subject land. The potential habitat (4.44 ha of farm dams) does not meet the criteria to be habitat critical to the survival of the species as per the species Conservation Advice.
5)	disrupt the breeding cycle of an important population	The proposed action will impact the breeding cycle of these wetland bird species, both species are non-breeding visitors to Australia.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove up to 4.44 ha of associated habitat to the species, this habitat occurs in a degraded condition. It is unlikely that the removal of this habitat will leave to the species decline.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to already occur within the subject land due to the degraded

Criterion	Question	Response
		condition. This includes habitat damage from domestic stock or predation from feral animals (e.g., cats and foxes).
8)	introduce disease that may cause the species to decline, or	The proposed action will not introduce disease which may cause the species to decline. There are no diseases identified as a key threat for the species in the Conservation Advice.
9)	interfere substantially with the recovery of the species.	The proposed action is not identified as a 'threat' under the Conservation Advice and is unlikely to interfere with the recovery of this species.
Conclusion	Is there likely to be a significant impact?	**It is unlikely that the action will have a significant impact on the Latham's snipe and short-tailed sandpiper species due to the marginal amount of potential habitat present within the subject land (4.44 ha), which is not considered enough to support an important population for either species.**

Table 10: Assessment of significance for migratory birds (Latham's snipe and sharp-tailed sandpiper)

Criterion	Question	Response
An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:		
1)	substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	The proposed action will remove up to 4.44 ha of associated habitat to the species (farm dams) for the Latham snipe and short-tailed sandpiper. This habitat occurs in a degraded condition. It is unlikely that the removal of this habitat will leave to the species decline. It is not anticipated that the proposed action will substantially modify, destroy or isolate an area of important habitat for the species. The farm dams do not meet the criteria to be important habitat for the species as they are not suitable to sustain 0.1% of the flyway population or 2,000 individuals.
2)	result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to already occur within the subject land due to the degraded condition. This includes habitat damage from domestic stock or predation from feral animals (e.g., cats and foxes).
3)	seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	The Latham snipe and short-tailed sandpiper are non-breeding visitors to Australia and will utilise a range of wetlands with freshwater to saline water as well as artificial habitats such as farm dams. The proposed action will impact up to 4.44 ha of farm dams which are potential habitat for these species. The species is not associated with the PCTs mapped within the subject land.
Conclusion	Is there likely to be a significant impact?	**It is unlikely that the action will have a significant impact on the Latham Snipe and Short-tailed Sandpiper species due to the marginal habitat within the subject land (4.44 ha) not considered to meet the criteria for important habitat for either species and that the action is unlikely to result in establishing an invasive species harmful to either species.**

B3.4. Vulnerable flora species

Table 11: Assessment of significance for threatened flora species (*Acacia pubescens*, *Pimelea spicata*, and *Pultenaea parviflora*)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	It is unlikely that the proposed action will lead to a long-term decrease in the size of an important population (known records of the species). An important population of *Acacia pubescens*, *Pimelea spicata*, and *Pultenaea parviflora* is not known to occur within the subject land. All threatened flora species are associated with the PCTs mapped within the impact area (1.43 ha). However, the vegetation communities occur in a degraded condition from overgrazing and historical clearing. It is likely that invasive weed species, such as the exotic grassland (18.13 ha) within the subject land, reduce reproductive activity of these species. Where invasive species occur, it has been recorded that only mature plants of these species can survive. These species reproduce through seed stored in the soil which is enhanced by disturbances such as fire or slashing. It is not anticipated that the direct or indirect impacts of the proposed action will lead to the decline in the size of an important population within vicinity to the subject land. The removal of up to 1.43 ha of potential habitat for the species is a relatively small scale in comparison to the higher quality habitat within the region.
2)	reduce the area of occupancy of an important population	The proposed action is likely to reduce the area of occupancy for the individuals which may occur within the subject land. It is unlikely the proposed action will reduce the area of occupancy for an important population. Important populations are not known to occur within the subject land and are unlikely to occur due to the degradation vegetation communities from overgrazing and previous clearing.
3)	fragment an existing important population into two or more populations	The proposed action will not fragment an existing important population. Important populations are not known to occur within the subject land and are unlikely to occur due to the degradation vegetation communities from overgrazing and previous clearing.
4)	adversely affect habitat critical to the survival of a species	The proposed action will remove up to 5.93 ha of low-degraded habitat for these species. As the potential habitat within the subject land is unlikely to support a viable or important population it is unlikely the proposed action will have an adverse impact on the survival of the species.
5)	disrupt the breeding cycle of an important population	The proposed action will not impact the breeding cycle of an important population. These species reproduce through seed production, in which the proposed action is not listed as a threat.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove up to 5.93 ha of associated habitat to the species. It is not anticipated that this relatively small-scale impact will lead to the decline of the species.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to

Criterion	Question	Response
		already occur within the subject land due to the degraded condition.
8)	introduce disease that may cause the species to decline, or	The proposed action will not introduce disease which may cause the species to decline. There are no diseases identified as a key threat for the species.
9)	interfere substantially with the recovery of the species.	It is unlikely the action will interfere substantially with the recovery of the species. Conservation Advice and Recovery Plans for these species suggest the survival of the species is primarily focussed on protecting known populations from decline. The proposed action will remove up to 5.93 ha of low-degraded habitat for these species. As the potential habitat within the subject land is unlikely to support a viable or important population it is unlikely the proposed action will have an adverse impact on the survival of the species.
Conclusion	Is there likely to be a significant impact?	It is unlikely that the action will have a significant impact on the *Acacia pubescens*, *Pimelea spicata*, and *Pultenaea parviflora* species as it is unlikely that an important population exists within the subject land due to the degradation of vegetation present from historical land use (management and overgrazing).

B3.5. Critically Endangered or Endangered species

Table 12: Assessment of significance for threatened forest birds (Swift parrot and regent honeyeater)

Criterion	Question	Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility of the following:		
1)	will the action lead to a long-term decrease in the size of a population	It is unlikely that the proposed action will lead to a long-term decrease in the size of an important population (known records of the species). A population of regent honeyeater or swift parrot is not known to occur within the subject land. However, both species are associated with the PCTs mapped within the subject land (1.43 ha). It is likely the species will occur in the subject land due to the species large distribution and the high-quality habitat within the region. There are very few known breeding sites known for the regent honeyeater none of which occur within the subject land. The swift parrot is a non-breeding visitor to New South Wales breeding in Tasmania and Victoria. It is not anticipated that the direct or indirect impacts of the proposed action will lead to the decline in the size of an important population or camp. The removal of up to 1.43 ha of potential habitat for the species is a relatively small scale in comparison to the higher quality habitat within the region.
2)	will the action reduce the area of occupancy of the species	The proposed action is likely to reduce the area of occupancy for the individuals within the region by removing up to 1.43 ha of potential habitat. However, a known population is not known to frequently utilise the vegetation within the subject land. There is higher quality habitat for these species within the region which is accessible to these species.
3)	will the action fragment an existing population into two or more populations	The proposed action will not fragment an existing important population. The species moves aerially and will not be restricted or displaced by the proposed action.
4)	will the action adversely affect habitat critical to the survival of a species	The proposed action will remove up to 1.43 ha of potential feeding and roosting habitat for the species. as per the national recovery plan for these species, critical habitat for the regent honeyeater are any known breeding areas. the subject land is not listed as a key breeding area for the regent honeyeater. for the swift parrot, critical habitat for the species is any habitat which is necessary: ● for activities such as foraging, breeding, roosting, or dispersal ● for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators) ● to maintain genetic diversity and long-term evolutionary development; or ● for the reintroduction of populations or recovery of the species or ecological community. The vegetation communities within the subject land do not meet the criteria to be identified as critical habitat for the swift parrot.

Criterion	Question	Response
5)	will the action disrupt the breeding cycle of a population	The proposed action will not impact the breeding cycle of a population of these species. The subject land does not identify as a breeding site for either species.
6) i	will the action modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove up to 1.43 ha of associated habitat to the species. It is not anticipated that this relatively small-scale impact will lead to the decline of the species.
6) ii	will the action result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	It is unlikely that the proposed action will not increase the occurrence of in invasive species that are harmful to a vulnerable species becoming established in habitat associated with the species. Invasive species are known to already occur within the subject land due to the degraded condition. This includes habitat damage from domestic stock or predation from feral animals (e.g., cats and foxes).
7)	will the action introduce disease that may cause the species to decline	The proposed action will not introduce disease which may cause the species to decline. There are no diseases identified as a key threat for the species, as per their Recovery Plans.
8)	will the action interfere with the recovery of the species	The proposed action will remove 1.43 ha of marginal foraging and roosting habitat for these species as the vegetation communities occur in a low-degraded condition. The proposed action is not anticipated to substantially interfere with the recovery of the species due to the higher quality habitat within the region protected in National Parks and Reserves.
Conclusion	Is there likely to be a significant impact?	It is unlikely that the action will have a significant impact on the Swift Parrot and Regent Honeyeater species due to not impacting known breeding habitat for either species and that higher quality habitat is likely available within the region.