Note – All photo point imagery was take North → East → South → West with the compass image showing north 1st. Ignore labelling of direction on the marked photos.

Vegetation community 1 - Open field with fringing invasive and native vegetation

Open field with lawn grasses predominating. Bordered by invasive species in the low canopy to shrub layer (5 – 0 m) where previous disturbance has occurred. These invasive species include:

- Easter cassia (*Senna pendula*)
- wild tobacco bush (*Solanum mauritianum*)

Native canopy is present in the form of a variety of Acacia sp. (*Acacia maidenii*) (to 12 m), planted natives such as weeping bottlebrush (*Melaleuca viminalis*) (to 4 m), matrush (*Lomandra* sp). and blue gum (*Eucalyptus saligna*) (to 26 m) on the boundary of the field. A picnic shelter, benches, an existing car park and toilet infrastructure are adjacent to the field.

Vege community 2 - Previously cleared area with significant regrowth (see Tertiary data sheet 12.8.1 for additional photos and information as well as vegetation community 2 photopoints)

This area has been previously cleared and replanted area with non-endemic species. These species include large canopy species such as swamp mahogany (*Eucalyptus robusta*), Manna gum (*Eucalyptus viminalis*), lemon-scented gum (*Corymbia citriodora*), Plunkett mallee (*Eucalyptus curtisii*) (to 4 m) and cadagi (*Corymbia torelliana*). Most of these species are of a significant height, up to 30 m. Other canopy species that occur within this area, but are likely to occur in the area include scattered blue gums (*Eucalyptus saligna*), New England blackbutt (*Eucalyptus andrewsii* subsp. *campanulata*), flooded gums (*Eucalyptus grandis*), hoop pine (*Araucaria cunninghamii*) and .flame trees (*Brachychiton acerifolius*). These species are likely encroaching from the remnant vegetation adjacent to the planting or were included within the planting.

The shrub layer contains invasive species and juvenile examples of the canopy species. The invasive species include Easter cassia (*Senna pendula*), lantana (*Lantana camara*) and wild tobacco bush (*Solanum mauritianum*). Native shrubs include white bollygum (*Neolitsea dealbata*), geebungs (*Persoonia media*), maiden's blush (*Sloanea australis*), Bangalow palm (*Archontophoenix cunninghamii*), a variety of wattles (*Acacia* sp.) and sandpaper figs (*Ficus coronata*).

The ground layer consisted of thickets of rose-leaf bramble (*Rubus rosifolius*), water vines (*Cissus* sp.) and rainbow fern (*Calochlaena dubia*).

This vegetation is not analogous with RE 12.8.8 which is what it was mapped as in the State mapping.

Vegetation Community 3 – Vegetation consistent with RE 12.8.1

This vegetation community was consistent with vegetation outlined in the RE description for RE 12.8.1. This included a canopy dominated by New England peppermint (*Eucalyptus andrewsii* subsp. *campanulata*) with occasional examples of blue gums (*Eucalyptus saligna*) in the canopy. Other canopy species recorded during an initial walkthrough in this area included tallowwood (*Eucalyptus microcorys*) and broad-leaved mahogany (*Eucalyptus carnea*) which also appears in the RE description. These trees reached heights of around 35 m.

The lower strata included a variety of rainforest species including Maiden's wattle (*Acacia maidenii*), geebungs (*Persoonia media*), maiden's blush (*Sloanea australis*), blue lilly pilly (*Syzygium oleosum*) and silver-leaved butterwood (*Callicoma serratifolia*).

The ground stratum contained a variety of native species including Lepidosperma sp. (*Lepidosperma* sp.), matrush sp. (*Lomandra* sp.) and rainbow fern (*Calochlaena dubia)*.

Vegetation Community 4 – Carpark Vegetation with formalised gardens

This area contained a mixture of species that have been planted in formalised garden beds and large, remnant individuals that border the carpark or have been incorporated into the carpark area. These individuals include New England peppermit (*Eucalyptus andrewsii* subsp. *campanulata*), silver-leaved butterwood (*Callicoma serratifolia*), maiden's blush (*Sloanea australis*), broad-leaved mahogany (*Eucalyptus carnea*) and a variety of large rainforest species.

The lower shrub stratum contains several species including cordyline sp. (*Cordyline* sp.), celerywood (*Polyscias elegans*) and tea tree species (*Lepotspermum* sp.). The ground stratum hosts a variety of species include matrushes (*Lomandra* sp.) and aneilema (*Aneilema acuminatum*).

Parts of this vegetation conform to RE 12.8.1.

Threatened Species Habitat Assessments

Mixophyes fleay and rainforest skink assessment 1

- M fleayi – Moderate – High quality habitat
    - Creek forms permanent habitat for developing tadpole which tend to overwinter as tadpoles before emerging in the spring
    - Ridges and higher points adjacent to the creekline are vegetation with significant leaf litter to shelter in for adults
- Assa *darlingtonii* – moderate – high quality habitat
    - Deep leaf litter in the area for breeding and shelter
- *Harrisoniascincus zia* – low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and basking activities
- *Coeranoscincus reticulatus*– low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and foraging activities
- *Euastacus maidae* – low to moderate
    - High altitudes rainforest stream with low turbidity and rocky habitat within the water feature. Good shelter and forage habitat.

Good habitat for *Litoria pearsoniana* with complex riparian vegetation, threatened under the NC Act I think.

Frog and skink habitat 2

- M fleayi – Moderate – High quality habitat
    - Creek forms permanent habitat for developing tadpole which tend to overwinter as tadpoles before emerging in the spring
    - Ridges and higher points adjacent to the creekline are vegetation with significant leaf litter to shelter in for adults
- Assa *darlingtonii* – moderate – high quality habitat
    - Deep leaf litter in the area for breeding and shelter
- *Harrisoniascincus zia* – low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and basking activities
- *Coeranoscincus reticulatus*– low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and foraging activities

Good habitat for *Litoria pearsoniana* with complex riparian vegetation, threatened under the NC Act I think.

Reptile and frog assessment 3

- M fleayi – Moderate – High quality habitat
    - Creek forms permanent habitat for developing tadpole which tend to overwinter as tadpoles before emerging in the spring
    - Ridges and higher points adjacent to the creekline are vegetation with significant leaf litter to shelter in for adults
- Assa *darlingtonii* – moderate – high quality habitat
    - Deep leaf litter in the area for breeding and shelter
- *Harrisoniascincus zia* – low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and basking activities
- *Coeranoscincus reticulatus*– low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and foraging activities

Good coverage of leaf litter, fallen timber for amphibian and Reptile sheltering habitat. Permanent water is near by for breeding for local amphibians. Underneath the leaf litter is moist for Assa sp. Good quality habitat that could be affected by bridge footing installation however there is significant habitat on the area, probably not a SIGNIFICANT residual impact

Arboreal mammals 1

Koala - high

Abundance of NJKHT in the form of E carnea, potential E andrewsi subsp campanulata, E microcorys nor in immediate plot but within the broader area. Ground stratum is not blocked by weeds facilitating movement for this species. Majority of trees in the area are NJKHT however their removal will not constitute a SIGNIFICANT reduction in habitat due to large areas of high-quality vegetation adjacent to the site. T1 individuals with a DBH of 470-790, 890 and mm, Sub canopy individuals less than 200 mm.

Greater Gliders – moderate to high

No trees in the immediate are with hollow large enough to act as shelter habitat for this species however they act as a significant food resource within the area. T1 individuals with a DBH of 470-790, 890 and mm, Sub canopy individuals less than 200 mm.

Terrestrial mammal 1

Potoroo – low to moderate

Prefer areas of high shrub density near gullies and water courses for cover and resources. Location is near a water course however low shrub and ground cover makes this immediate location suboptimal habitat for this species. Areas of greater cover exist

adjacent to this plot however they could be transient through these areas. Patch size is large enough.

River mouse – Low quality to non-existent

Prefers healthy understoreys and grassy understorey. This area does not meet this criteria.

Glossy blacks – Low quality habitat

- Sporadic and small examples or Allocasuarina and Casuarina species within the area. No sign of use as food trees. Lack of suitable hollows within the vicinity meeting approved conservation advice standards.

Burton quail – low quality habitat

- unlikely to have a dense enough understorey and vegetation types do not conform to those outlined in Approved advice.

Rufus scrub-bird – low quality habitat

- Prefers areas of dense understorey and low ground cover. High leaf litter for foraging. Areas adjacent to this plot have high fern and *Scleria* abundance and cover and leaf litter matrix. Adjacent to watercourse so slightly more humid microclimate which it prefers but shrub layer can not be described as dense. Foraging habitat potential.

Pink underwing moth – non-existent to poor (whole walked site)

- Unlikely no Caronia vine within the plot. Transient adult though this location.

Spiny crayfish 1 – High quality habitat

- High altitude rainforest stream with low turbidity and rocky habitat within the water feature. Good shelter and forage habitat.

All habitat assessment on bridge

Frogs and reptiles

- M fleayi – Moderate – High quality habitat
    - Creek forms permanent habitat for developing tadpole which tend to overwinter as tadpoles before emerging in the spring
    - Ridges and higher points adjacent to the creekline are vegetation with significant leaf litter to shelter in for adults
- Assa *darlingtonii* – moderate – high quality habitat
    - Deep leaf litter in the area for breeding and shelter

- *Harrisoniascincus zia* – low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and basking activities
- *Coeranoscincus reticulatus*– low to moderate
    - Deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and foraging activities

Arboreal mammals

Greater glider – Moderate to high quality

- Hollow bearing E campanulata meeting glider habitat standards and significance foraging resources surrounding the site.

Koala – moderate to high quality

Significance foraging resources with appropriate feed trees nearby. NJKHTs prevalent throughout the site for shelter and foraging. Appropriate shrub layer density for movement of individuals.

Terrestrial mammals

Potoroo - low to moderate habitat quality

- Medium density understorey for shelter
- Adjacent to a watercourse/gully which is a habitat preference.
- Individuals could be transient through this area

Hastings mouse – habitat non-existent to low quality

- No heathy or grassy understorey as preferred.

Birds

Button quail- low quality habitat

- unlikely to have a dense enough understorey and vegetation types do not conform to those outlined in Apprived advice.

Rufus scrub-bird - low quality habitat

- Prefers areas of dense understorey and low ground cover. High leaf litter for foraging. Areas adjacent to this plot have a vegetated cover and leaf litter matrix. Adjacent to watercourse so slightly more humid microclimate which it prefers. Foraging habitat potential but the shrub layer could not be described as dense.

All habitat assessment 2

Reptiles and amphibians -

- M fleayi – low quality habitat
    - Low leaf litter abundance for shelter and away from the creek.
    - Individuals are likely to be transient through this area if it is used at all
- Assa *darlingtonii* – low quality habitat
    - Lack of deep leaf litter in the area for breeding and shelter
- *Harrisoniascincus zia* – low
    - Lack of deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and basking activities
- *Coeranoscincus reticulatus*– low
    - Lack of deep leaf litter in the area for breeding and shelter
    - No flat rocks and low abundance of logs for shelter and foraging activities

Moderate habitat quality with low leaf litter abundance but thickets and dense covering of native raspberry (*Rubus*) and other lower strata plants. Marginal habitat for reptiles and amphibians of concern.

Arboreal mammals

Gliders – Moderate quality

- Plenty of foraging habitat with very little shelter value for glider species. Eucalyptus dominated but too young regrowth to play host to significant hollows.

Koala – Moderate quality

- Shrub layer becoming too dense for easy access in patches and movement through the habitat
- Appropriate number and size of food trees

Terrestrial mammals

Potoroo – low quality

- potential foraging habitat with dense native raspberry (*Rubus*) understory and ferns however the shrub layer is not dense.
- Away from the creek and gully.

New Holland mouse – no habitat

- No heathland or grassy understorey

Birds

Black breasted button quail – low quality to no habitat

Not dense enough habitat available for foraging and shelter and inappropriate species assemblage

Glossy Black cockatoo – low quality habitat

- No trees supporting hollows meeting the correct specifications
- No large examples of *Casuarina* and *Allocasuarina* feed trees

Rufus scrub bird – low habitat quality

- areas of dense ground cover with native raspberry (*Rubus*) however shrub layer is not dense
- low amounts of leaf litter for foraging - marginal foraging habitat for this species.

Habitat 3

Reptiles and amphibians

Where vegetation occurs leaf litter can be deep and form suitable habitat for Assa, rainforest skink and 3 clawed worm skinks. Potential for fleayi as well but more marginal habitat for this species.

Arboreal mammals

Gliders

Significant foraging resources however no hollow bearing trees within the vicinity to meet hollow requirements.

Koala

Lots of food trees of suitable palatable species and appropriate size. Shrub understorey is clear enough to promote movement.

Terrestrial mammals

New Holland mouse – no habitat

- No heathland or grassy understorey

Potoroo – low

- Understorey is no dense which is ideal for foraging.
- Site is located outside of a creek and gully

Birds

Glossy black – low quality to non-existent

- No hollows in the vicinity and no food trees within the vicinity

Black breasted button quail- low quality

- Not dense enough habitat available for foraging and shelter and inappropriate tree species assemblages

Rufus scrub bird - low

- Few areas of dense understorey however large matrix of areas with low vegetated ground cover.
- High leaf litter for foraging in patches.
- Suggesting marginal foraging habitat for this species

Threatened species found

- Smooth Scrub Turpentine (*Rhodamnia maideniana*) (Critically Endangered)
- *Westringia rupicola* (Vulnerable)
- Davidson's plum (*Davidsonia jerseyana*) (Endangered) – could have been planted as it was the only one around, no large individuals seen and I don't know if this changes how it is treated under the EPBC Act?

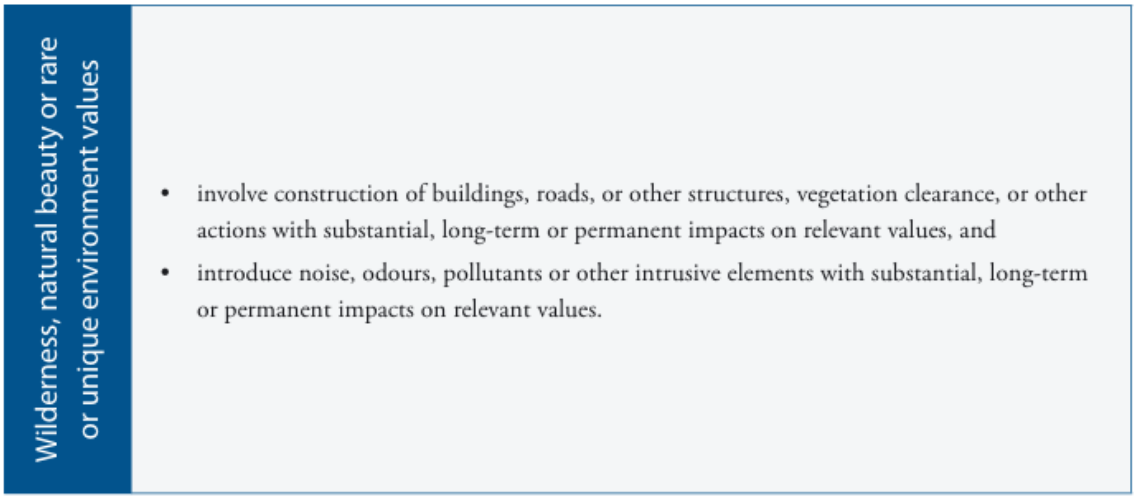
Springbrook Field work Checklist

1. EPBC Act items

1.1. World Heritage Property Assessment

An action is likely to have a significant impact on natural heritage values of a World Heritage property if there is a real chance or possibility that the action will:

Values associated with geology or landscape	• damage, modify, alter or obscure important geological formations in a World Heritage property • damage, modify, alter or obscure landforms or landscape features, for example, by excavation or infilling of the land surface in a World Heritage property • modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilising mobile landforms, such as sand dunes, in a World Heritage property • divert, impound or channelise a river, wetland or other water body in a World Heritage property, and • substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body in a World Heritage property.
Biological and ecological values	• reduce the diversity or modify the composition of plant and animal species in all or part of a World Heritage property • fragment, isolate or substantially damage habitat important for the conservation of biological diversity in a World Heritage property • cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a World Heritage property, and • fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a World Heritage property.



This section is most applicable to the installation of the bridge infrastructure but the works as a whole to determine whether we will be doing any of the above.

1.2. TECs

One TEC has the potential to occur within the site. This includes the following:

- Grey box-grey gum wet forest of subtropical eastern Australia

Table 1 TEC with the potential to be present

TEC	Threat Category	PMST Likelihood of occurrence	Associated REs	Site REs corresponding to TEC
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	May	12.9-10.3 12.8.14a 12.8.8a	12.8.8 (mapped as 12.8.8 but check if 12.8.8a)

1.3. Threatened Species

The Table below includes the threatened species likely to occur on site and the potential habitat that should be noted if encountered:

Table 2EPBC Act Threatened Species

Scientific name	Common name	Threat category	Description	Habitat
Amphibian				
Assa darlingtoni	Pouched Frog	Vulnerable		Closed forest communities (> 90% canopy cover), with an established layer of damp leaf litter is habitat critical to the survival of this species. The majority of known records for the species are from refugial closed forest communities, with individuals recorded on the forest floor, hidden under rocks or rotten logs or within damp leaf litter (OEH 2019; Mahony et al. 2021). Damp leaf litter is also required for reproduction (Ehmann & Swan 1985; Anstis 2017; Mahony et al. 2021; M Mahony 2022. pers comm 9 March). Lemckert (2000) observed that the pouched frog does not recolonise sites when the canopy is lost through disturbance, even after leaf litter is re-established.

Mixophyes fleayi	Fleay's Frog	Endangered		Fleay's Barred Frog is a ground-dwelling amphibian inhabiting montane rainforest and adjoining wet sclerophyll forest habitat (Doak 2005; Anstis 2017). This species mostly occurs at higher altitudes (above 400 m) but has been found at elevations ranging from 100–1000 m (Goldingay et al. 1999; Hines & the South-east Queensland Threatened Frogs Recovery Team 2002). Fleay's Barred Frog is an obligate stream breeding species relying on permanent and semi-permanent freshwater streams for breeding habitat (Hines & the South-east Queensland Threatened Frogs Recovery Team 2002). It's habitat is usually defined in terms of stream environments, but terrestrial habitat may be of greater importance to species recovery, with females spending most of their time (often at a significant distance) away from breeding sites, including along ridge tops (Hines & the South-east Queensland Threatened Frogs Recovery Team 2002; Doak 2005).
Reptiles				
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink	Vulnerable	A diurnal, burrowing lizard with head and body length of up to 23 cm and a thick, long tail, four very short legs, each with three clawed toes. Teeth are long and curved (Cogger et al., 1993; Cogger, 2000; DEC, 2005). Body colour varies from fawn to	Diet consists of earthworms, beetle larvae, insect remains and mud (McDonald, 1977). The species is found in leaf litter, in rotting logs or in soil under fallen timber (Cogger, 2000). Recorded from both logged and unlogged forest (DECCW, 2009a). In Queensland the species is known

			dark brown, with individual flecked scales streaked with dark brown, a dark collar on the back of the neck and fine patterning on the belly (Cogger, 2000). Adults have dark eye patch, dark ear markings and a pale snout	to inhabit rainforest and occasionally moist eucalypt forest, on loamy or sandy soils (DEC, 2005).
Harrisoniascincus zia	Rainforest Cool-skink	Vulnerable	The rainforest cool-skink is a small reptile species that grows up to 55 mm snout-vent length. It has well-developed legs with five toes on each limb, and a long tail. The colour varies from light to dark brown, becoming more copper towards the snout. There are scattered dark and pale specks on the back. It has a dark line, beginning at the snout and breaking up after the back leg, which has a clear upper and lower edge, and fades into pale specks along the sides. The chin, throat and neck are speckled in black, and the belly is bright yellow. The end of the tail is suffused with red-brown that becomes brighter towards the tip (Ingram & Ehmann 1981; Wilson & Swan 2021). The rainforest cool-skink can be differentiated from similar small brown skinks (including juveniles of larger robust skinks) that co-occur in similar ecosystems	The rainforest cool-skink occurs in cool, high elevation rainforest including (but not restricted to) areas with Nothofagus moorei (Antarctic beech) (Ingram & Ehmann 1981, Wilson & Swan 2021). These ecosystems are relicts within the broader landscape due to moist and cool conditions and lack of significant fire activity (Schuster 1981). The rainforest cool-skink occurs in both undisturbed closed canopy areas and in small clearings within rainforests. It is a secretive species that inhabits moist areas of deep leaf-litter where it shelters under flat rocks and logs. It basks among leaf-litter and at the edges of cleared tracks (Ingram & Ehmann 1981; Environment Australia 1999; Wilson & Swan 2021).

			across its distribution by having a bright yellow chest and belly that lacks dark flecking, well-developed legs with five toes on each limb, and a large transparent scale in its lower eyelid (Ingram & Ehmann 1981; Wilson & Swan 2021).	
Crustacean				
Euastacus maidae	Hinterland Spiny Crayfish, Hinterland Crayfish	Critically Endangered		
Insect				
Phyllodes imperialis smithersi	Pink Underwing Moth	Endangered	Adult Phyllodes imperialis southern ssp. ANIC 3333 has leaf-shaped grey-brown forewings marked with white; the hindwings are black with a pink central patch and fringed with seven or more white spots. The thorax and abdomen are grey-brown. Its outspread wings measure 13–14 cm across.	Look for Carronia multisepalea
Mammals				
Phascolarctos cinereus	Koala	Endangered		
Petauroides volans	Greater Glider	Endangered		
Petaurus australis australis	Yellow-bellied Glider	Vulnerable		
Potorous tridactylus tridactylus	Long-nosed Potoroo (northern)	Vulnerable		
Pseudomys novaehollandiae	New Holland Mouse, Pookila	Vulnerable		
Birds				
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable		
Turnix melanogaster	Black-breasted Button-quail	Vulnerable		Habitat considered critical to the survival of the black-breasted button-quail includes: Vine thickets and rainforest vegetation types that are periodically water-

				stressed. These include: semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest, Araucarian notophyll vine forest and Brachychiton scrubs that may incorporate bottle trees (Brachychiton sp.), brigalow (Acacia harpophylla) and belah (Casuarina cristata) Low thickets or woodlands with a dense understorey but little ground cover, typically dominated by Acacia spp. In littoral situations, dry vine scrubs, acacia thickets and areas densely covered in shrubs, particularly midgen berry Austromyrtus dulcis.
Atrichornis rufescens	Rufous Scrub-bird	Endangered	The rufous scrub-bird is a small (17-18.5cm), dark-coloured ground-dwelling bird with short rounded wings, long rounded tail, strong legs and a short wedge-shaped bill merging into long flat forehead. Adults are mostly dark rufous-brown with faint darker barring, and with a buff belly. The male has an obvious blackish triangle on chin, throat and breast joining large blackish patches on sides of upper belly and a white strip along sides of chin and throat	Rufous scrub-birds occur in rainforests above 600m elevation, including subtropical, warm temperate and cool temperate rainforests, and nearby moist and wet eucalypt forests. They require dense ground cover, a moist microclimate at ground level and abundant leaf litter, which is usually restricted to ecotones, forested watercourses and wetlands, and areas regenerating from fires, storms or along roadsides. They forage on small invertebrates, including snails and insects, on the ground and over fallen logs, amongst leaf litter and on other ground vegetation and debris, within the dense understorey
Plants				

Arthraxon hispidus	Hairy-joint Grass	Vulnerable		
Baloghia marmorata	Marbled Balogia, Jointed Baloghia	Vulnerable		
Clematis fawcettii	Stream Clematis	Vulnerable		
Coleus nitidus	Nightcap Plectranthus, Silver Plectranthus	Endangered (listed as Plectranthus nitidus)		
Cryptocarya foetida	Stinking Cryptocarya, Stinking Laurel	Vulnerable		
Cyperus semifertilis	null	Vulnerable		
Diploglottis campbellii	Small-leaved Tamarind	Endangered		
Endiandra hayesii	Rusty Rose Walnut, Velvet Laurel	Vulnerable		
Floydia praealta	Ball Nut, Possum Nut, Big Nut, Beefwood	Vulnerable		
Fontainea australis	Southern Fontainea	Vulnerable		
Hicksbeachia pinnatifolia	Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak	Vulnerable		
Leichhardtia longiloba	Clear Milkvine	Vulnerable (listed as Marsdenia longiloba)		
Lenwebbia sp. Main Range (P.R.Sharpe+ 4877)	null	Critically Endangered		
Macadamia integrifolia	Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak	Vulnerable		
Macadamia tetraphylla	Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut	Vulnerable		
Ochrosia moorei	Southern Ochrosia	Endangered		
Owenia cepiodora	Onionwood, Bog Onion, Onion Cedar	Vulnerable		
Ozothamnus vagans	Wollumbin Dogwood	Vulnerable		
Pterostylis bicornis	null	Vulnerable		
Randia moorei	Spiny Gardenia	Endangered		
Rhodamnia maideniana	Smooth Scrub Turpentine	Critically Endangered		
Rhodamnia rubescens	Scrub Turpentine, Brown Malletwood	Critically Endangered		
Rhodomyrtus psidioides	Native Guava	Critically Endangered		

Sarcochilus fitzgeraldii	Ravine Orchid	Vulnerable		
Symplocos baeuerlenii	*Symplocos baeuerlenii*	Vulnerable		
Syzygium hodgkinsoniae	*Syzygium hodgkinsoniae*	Vulnerable		
Syzygium moorei	*Syzygium moorei*	Vulnerable		
Thesium australe	*Thesium australe*	Vulnerable		
Vincetoxicum woollsii	*Vincetoxicum woollsii*	Endangered (listed as Tylophora woollsii)		
Westringia rupicola	*Westringia rupicola*	Vulnerable		

1.4. Migratory Species

One migratory species under the EPBC Act is likely to occur within the area. This includes is the Oriental cuckoo (*Cuculus optatus*). ALA indicates this species has been found within the area. This species has the following habitat requirements:

- monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodlands. Frequently at edges or ecotones between habitat types.

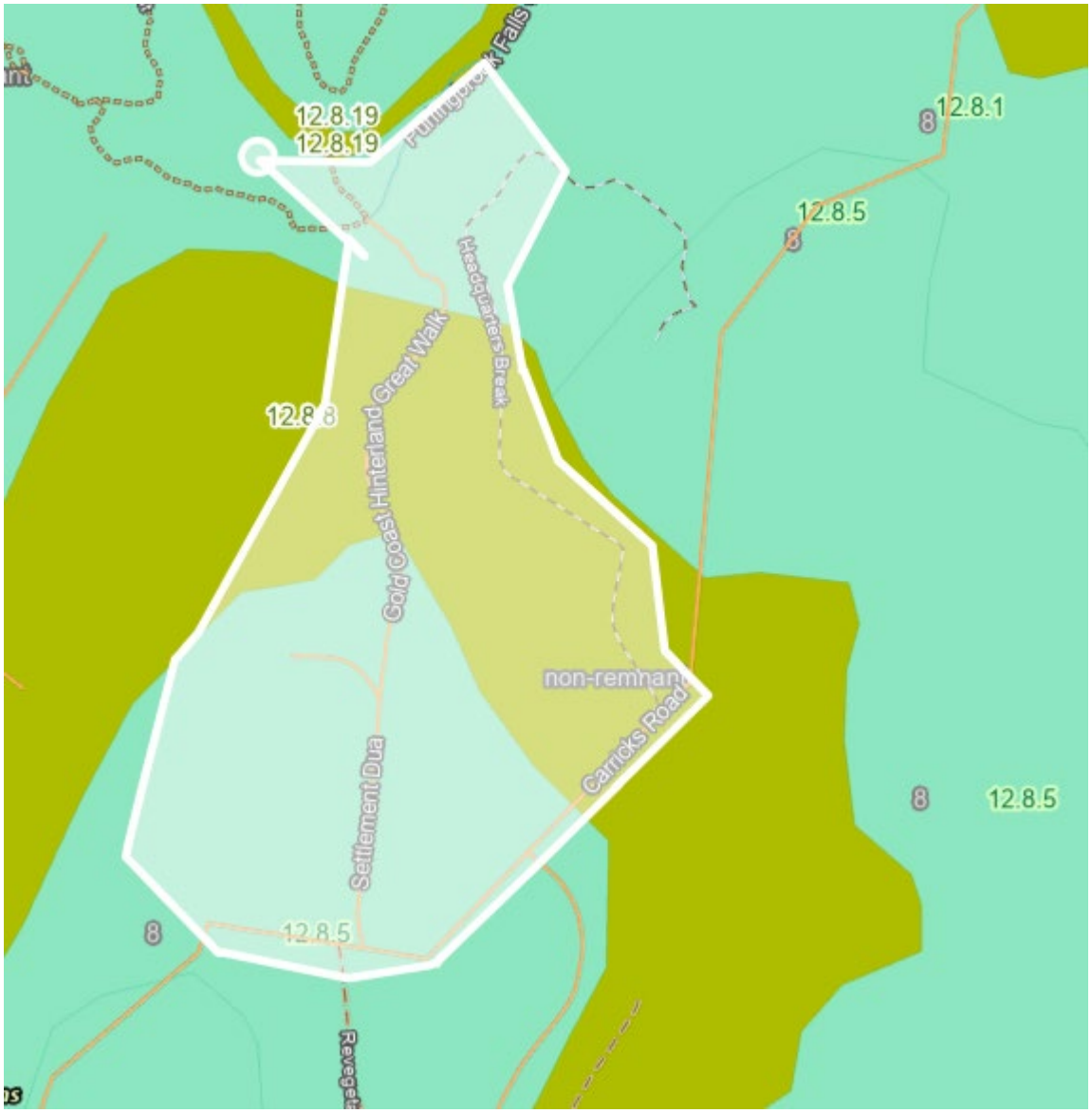
2. State Items

2.1. Regional Ecosystem Validation

Three REs were mapped on site (Queensland Globe and Vegetation Management Report) including the following:

- **12.8.1** - Eucalyptus campanulata tall open forest on Cainozoic igneous rocks (Least Concern)
- **12.8.5** - Complex notophyll vine forest on Cainozoic igneous rocks, usually altitude of more than 600m (Least Concern)
- **12.8.8** - Eucalyptus saligna or E. grandis tall open forest on Cainozoic igneous rocks (Of Concern)

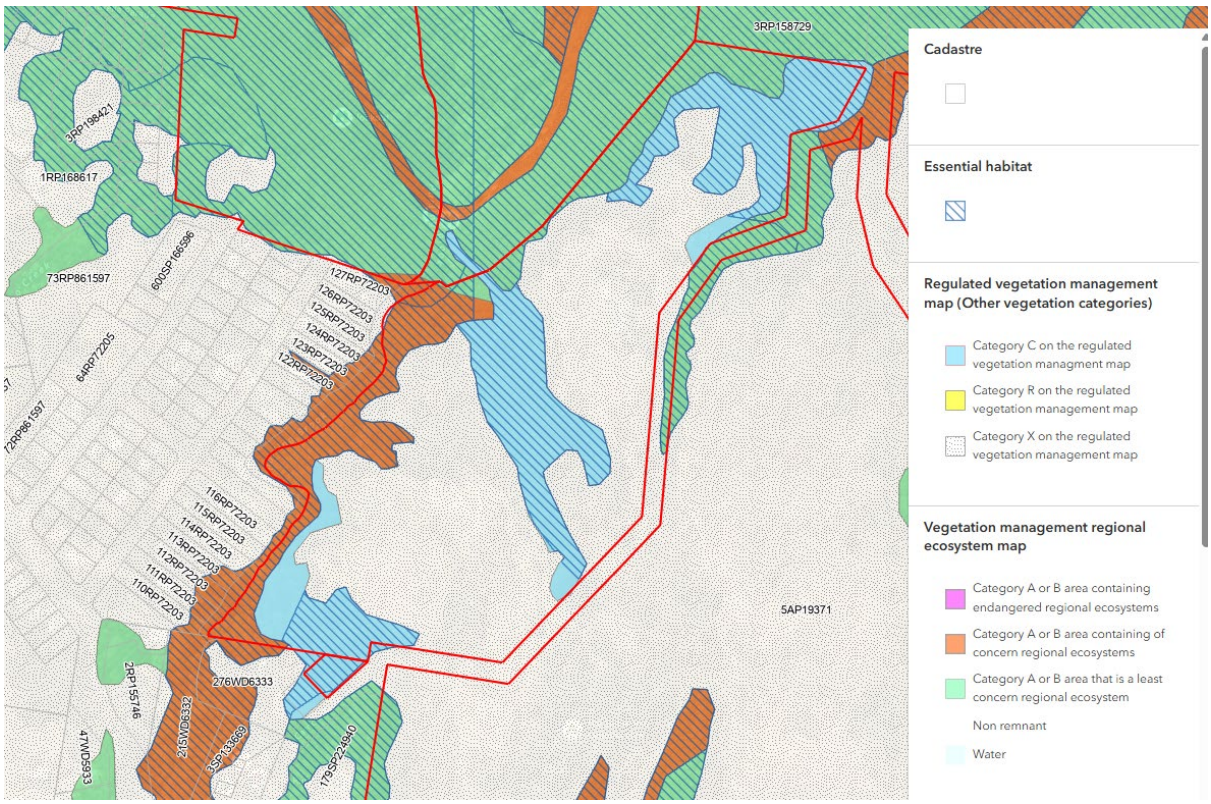
The ID of these REs must be validated and their extent confirmed throughout the site.



2.2. Regulated Vegetation Mapping Validation

Vegetation classified as the following:

- Category X
- Category C
- Category B with endangered RE
- Category B with least concern RE



2.3. Recording any CREVNT Species within the area

I have attached my WildNet searches for 2, 5 and 10 km radius for the area so this document is not too large and I don't spend too much more time on this. Today. There are several species to look out for however with Chris doing a survey in this area it is unlikely, unless we are going somewhere new, that he has missed anything. However it has been 2 years since the initial report was completed so new individuals could have germinated since then.

3. Proposed field work

1. Perform tertiary plots within the REs to confirm their identity
2. If RE 12.8.8 could be called 12.8.8a then perform TEC Determination Surveys to determine the condition of the TECs present – if clearing is minimal on the plans we may not need to do this if there will only be a small impact?
3. Perform some kind of assessment with images against the criteria for a World Heritage Property looking at Natural Values only not cultural as we are not cultural heritage experts
4. Record the location of any CREVNT species found within the site (flora and fauna)
5. For those species identified within the site make note of suitable habitat and its extent
6. Validate the regulated vegetation mapping within the site

7. Use Table 2 where possible or necessary to identify species of conservation significance within the site AND its habitat.

I have data sheets for the Tertiary Plots AND the TEC determination developed from the Approved Conservation Advice for this potential TEC.

TEC Determination	Site:	Staff
General Descriptive data	Description	
R.E. Mapped		
R.E. Field		
General Description		
Key Diagnostic Characteristics	Yes/No	
Not occurring on alluvial landforms of if so occurs on shallower alluvial soils on margin of floodplain or allivial system		
Tree canopy > 20%		
Canopy **contains** E mollucana and/or E propinqua and/or E punctata		
Canopy **dominated** by E mollucana, E propinqua, E punctata, E siderophloia or Araucaria cunninghamii		
Has understorey typically with drier rainforest/rainforest flora		
Condition Class Diagnostic Features	Data vaues	
Number of large trees (> 45 cm DBH).		
% understorey vegetation (all veg below canopy layer) native species		
Other Data		
Photos taken	Yes/No	
Plot alignment GPS Points taken	Yes/No	

Date: 23/04/25	**Collector:**	CM JA	**SITE: 12.8.1 site 1**
Time:	**Job No.**		

Mapped RE:	12.8.1 **Lot on Plan:**
Field RE:	12.8.1
Description:	Eucalyptus campanulata forest with rainforest understory and ground later

Slope:10	**Aspect:**	**Landform (local): 8**	**Landform (broad): 8**
Slope Shape:			

Soils:	Dark brown loam	**Soil Core Photo:**	
		Surface Soils Photo:	

Litter: 80%	**Bare Soil: 0%**		**Timber: 10%**		**Rock: 0%**		**Groundcover: 10%**	
PHOTOS:Y	**Photo No**							
	Direction							

NOTES:

-
-
-
-
-

REMNANT	**Y**	N	Y/N?	**Zone:**	**Datum:** GDA94 **WGS84**	
Vegetative Structure and Composition				**Waypoint:**	**Easting:**	**Northing:**

Stratum	Median	Height range (m)	Intercept	Dominance	Species
T1 [EDL]		25-30	70%	D	*Eucalyptus campanulata*
				A	*Eucalyptus saligna*
T2		5-13	90	A	*Acacia maidenii, Sloanea australis, Alphitonia excelsa*
				D	*Diveiea arboraea*
				A	*Persoonia media*
				A	*Syzygium oleosum*
T3					
S1		2	40%		*Neolitsea dealbata, Archirhodomyrtus beckleri, Allocasuarina torulosa, Pilidiostigma glabrum, Lantana camara, Bangalow palm, Elaeocarpus reticulatus, Sloanea australis, Notelaea longifolia, Persoonia media, Cyanthia sp., Euroschinus falcata, Psydrax odorata,*
S2					
G					*Lepidosperma sp., Lomandra longifolia, Ocheanopleuis cartienginea, Hibbertia delutula, Calochlaena dubia*

Herbarium RE definitions

dominance: **d -** dominant; **c** - co-dominant; **a** - associated; **s** - suppressed

crown cover intercept: I: isolated (0.2-2%); **V:** very sparse (2-20%), **S:** sparse (20-50%); **M:** mid-dense (50-80%); **D:** dense (80-100%)

Walter and Hopkins height classess: **1-3m** - dwarf, **3-6m** - low, **6-12m** - mid-high, **12-20m** - tall, **20-35m** - very tall, >35m - *extremely tall*

Walter and Hopkins crown cover classes: <0.2% - isolated trees or clumps; 0.2-20% - open woodland, 20-50% - woodland; 50-80% - open forest, 80-100% - closed forest

BASAL AREA [fixed point Bitterlich technique: factor 1cm]

Species	S1 / S2	S1 / T3	T2	T1 / E

CONDITION

Type	Severity (0 to 3)
Fire (& height in m)	0
Clearing	0
Thinning/Ringbarking	0
Grazing	0
Exotic Flora	0
Canopy Dieback	0
Erosion	0
Recruitment	0
Drought	0

Date: 23/04/2025	**Collector:**	CM JA	**SITE: 12.8.1 site 2**
Time:	**Job No.**		

Mapped RE:	12.8.1 **Lot on Plan:**
Field RE:	12.8.1
Description:	Eucalyptus campanulata canopy with rainforest shrub understorey and ground layer

Slope:5	**Aspect:**	8	**Landform (broad):** 8
Slope Shape:			
Soils:	Dark loam		**Soil Core Photo:** / **Surface Soils Photo:**

Litter: 80	**Bare Soil:0**		**Timber: 15**		**Rock: 0**		**Groundcover: 5**		
PHOTOS:Y	**Photo No**								
	Direction								

NOTES:

-
-
-
-
-

REMNANT	**Y**	N	Y/N?	**Zone:**	**Datum:** GDA94 **WGS84**
Vegetative Structure and Composition				**Waypoint:**	**Easting:** / **Northing:**

Stratum	Median	Height range (m)	Intercept	Dominance	Species
T1 [EDL]		35-40	70%	D	*Eucalyptus campanulata*
				A	*Eucalyptus saligna*
T2		10-16	80%	D	*Callicoma serratifolia*
				A	*Syzygium oleosum, Pittosporum undulatum, Psychoptrix stipata, Neolitsea dealbata, Bangalow palm, Tropocarpus laurina, Elaeocarpus reticulatus*
T3					
S1		2	30%		*Cryptocarya meisneriana, Myrsine variabilis, Pilidiostigma glabra, Ceratopetalum apetalum, Cryptocarya glaucescens, Elaeocarpus reticulatus, Bangalow palm, Jagera pseudorhus, Callicoma serratifolia, Cinnamomum oliveri, Neolitsea dealbata, Smilax australis*
S2					
G					*Smilax australis, Cissus hypoglauca, Stephania japonica*

Herbarium RE definitions

dominance: **d -** dominant; **c** - co-dominant; **a** - associated; **s** - suppressed

crown cover intercept: I: isolated (0.2-2%); **V:** very sparse (2-20%), **S:** sparse (20-50%); **M:** mid-dense (50-80%); **D:** dense (80-100%)

Walter and Hopkins height classess: **1-3m** - dwarf, **3-6m** - low, **6-12m** - mid-high, **12-20m** - tall, **20-35m** - very tall, >35m - *extremely tall*

Walter and Hopkins crown cover classes: <0.2% - isolated trees or clumps; 0.2-20% - open woodland, 20-50% - woodland; 50-80% - open forest, 80-100% - closed forest

BASAL AREA [fixed point Bitterlich technique: factor 1cm]

Species	S1 / S2	S1 / T3	T2	T1 / E

CONDITION

Type	Severity (0 to 3)
Fire (& height in m)	0
Clearing	0
Thinning/Ringbarking	0
Grazing	0
Exotic Flora	0
Canopy Dieback	0
Erosion	0
Recruitment	0
Drougfht	0

Date:			**Collector:**					**SITE:**	
Time:			**Job No.**						
Mapped RE:					**Lot on Plan:**				
Field RE:									
Description:									
Slope:	**Aspect:**		**Landform (local):**		**Landform (broad):**				
Slope Shape:									
Soils:								**Soil Core Photo:**	
								Surface Soils Photo:	
Litter:	**Bare Soil:**		**Timber:**		**Rock:**		**Groundcover:**		
PHOTOS:	**Photo No**								
	Direction								

NOTES:

-
-
-
-
-

REMNANT	**Y**	N	Y/N?	**Zone:**	**Datum:** GDA94 WGS84	
Vegetative Structure and Composition				**Waypoint:**	**Easting:**	**Northing:**

Stratum	Median	Height range (m)	Intercept	Dominance	Species
T1 [EDL]					
T2					
T3					
S1					
S2					
G					

Herbarium RE definitions

dominance: **d -** dominant; **c** - co-dominant; **a** - associated; **s** - suppressed

crown cover intercept: I: isolated (0.2-2%); **V:** very sparse (2-20%), **S:** sparse (20-50%); **M:** mid-dense (50-80%); **D:** dense (80-100%)

Walter and Hopkins height classess: **1-3m** - dwarf, **3-6m** - low, **6-12m** - mid-high, **12-20m** - tall, **20-35m** - very tall, >35m - *extremely tall*

Walter and Hopkins crown cover classes: <0.2% - isolated trees or clumps; 0.2-20% - open woodland, 20-50% - woodland; 50-80% - open forest, 80-100% - closed forest

BASAL AREA [fixed point Bitterlich technique: factor 1cm]

Species	S1 / S2	S1 / T3	T2	T1 / E

CONDITION

Type	Severity (0 to 3)
Fire (& height in m)	0
Clearing	0
Thinning/Ringbarking	0
Grazing	0
Exotic Flora	0
Canopy Dieback	0
Erosion	0
Recruitment	0
Drougfht	0

Date: 23/04/2025	**Collector:**	CM JA	**SITE: 12.8.8 site 1**
Time:	**Job No.**		

Mapped RE:	12.8.8 **Lot on Plan:**
Field RE:	Non-remnant
Description:	Mixed *Eucalyptus* and *Corymbia* woodland comprised of non-endemic species including *Eucalyptus robusta, Eucalyptus viminalis and Corymbia torelliana.*

Slope:	**Aspect:**	**Landform (local):**	**Landform (broad):**
Slope Shape:			

Soils:	**Soil Core Photo:**	
	Surface Soils Photo:	

Litter:	**Bare Soil:**		**Timber:**		**Rock:**		**Groundcover:**	
PHOTOS:Y	**Photo No**							
	Direction							

NOTES:

-
-
-
-
-

REMNANT	**Y**	N	Y/N?	**Zone:**	**Datum:** GDA94 **WGS84**	
Vegetative Structure and Composition				**Waypoint:**	**Easting:**	**Northing:**

Stratum	Median	Height range (m)	Intercept	Dominance	Species
T1 [EDL]					Eucalyptus robusta
					Eucalyptus viminalis
					Eucalyptus grandis
					Eucalyptus campanulata *Araucaria cunninghamii* *Brachychiton acerifolius* *Grevillea robusta*
T2					
T3					
S1					*Neolitsea dealbata*
					Archontophoenix cunninghamiana
					Alphitonia excelsa
					Lantana camara *Rubus rosifolius**
S2					
G					

Herbarium RE definitions

dominance: **d -** dominant; **c** - co-dominant; **a** - associated; **s** - suppressed

crown cover intercept: I: isolated (0.2-2%); **V:** very sparse (2-20%), **S:** sparse (20-50%); **M:** mid-dense (50-80%); **D:** dense (80-100%)

Walter and Hopkins height classess: **1-3m** - dwarf, **3-6m** - low, **6-12m** - mid-high, **12-20m** - tall, **20-35m** - very tall, >35m - *extremely tall*

Walter and Hopkins crown cover classes: <0.2% - isolated trees or clumps; 0.2-20% - open woodland, 20-50% - woodland; 50-80% - open forest, 80-100% - closed forest

BASAL AREA [fixed point Bitterlich technique: factor 1cm]

Species	S1 / S2	S1 / T3	T2	T1 / E

CONDITION

Type	Severity (0 to 3)
Fire (& height in m)	0
Clearing	0
Thinning/Ringbarking	0
Grazing	0
Exotic Flora	0
Canopy Dieback	0
Erosion	0
Recruitment	0
Drougfht	0