Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Wurmbea uniflora	One-flower Early Nancy		v	2003		Moist, heathy lowland environments.	**Medium**	Local records in project area, suitable heathy habitat around Fairhaven
Xanthorrhoea caespitosa	Tufted Grass-tree		v	2011		Sandy and sometimes rocky soils in mallee and heathland communities.	**High**	Recent records from Anglesea. Suitable heathy habitat around Fairhaven.
Xanthosia leiophylla	Parsley Xanthosia		e	1983		Sandy heathland and heathy woodland.	**Medium**	Suitable habitat in the heathy vegetation around Fairhaven. However, the records are old > 20 years.
Xanthosia tasmanica	Southern Xanthosia		e	2020		Occurring mainly in coastal areas in heath on sand. .	**High**	Recent records from around Anglesea. Suitable habitat in the heathlands around Fairhaven.

A1.3 Threatened ecological communities

The following table includes the threatened ecological communities that have potential to occur within the project area. The list of threatened ecological communities has been compiled with reference to characteristics of FFG Act threatened communities (DEECA 2023c) and predictive output from the PMST (accessed on 23 April 2024).

Table 17 Threatened ecological communities predicted to occur within 5 km of the project area.

Community Name	Conservation status	Source	Description
National significance			
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	PMST	Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community is listed as an endangered ecological community under the EPBC Act. The community includes dynamic salt-wedge estuary systems occurring within the temperate climate, microtidal regime (<2 m), high wave energy coastline of western and central Victoria. The ecological community is characterised by the assemblage of native plants, animals and micro-organisms associated with dynamic salt wedge estuaries found under the conditions listed above. There are 25 river estuaries which are currently included in this ecological community, those that may be impacted by the concept trail are: - Painkalac Creek (Fairhaven) - Erskene River (Lorne) - Saint George River (Lorne) - Wye River - Kennet River It is concluded that this community is likely to be present within the project area. However, GTR 3 uses existing bridges to cross the river systems and estuaries where the proposed trail intersects this ecological community. Providing construction methodologies implement and follow a project CEMP, this ecological community is not likely to be impacted by the project.
Giant Kelp Marine Forests of South East Australia	Endangered	PMST	Giant kelp forests are found in temperate south-eastern waters on rocky reefs where conditions are cool and relatively nutrient rich. The Victorian ecological community typically grows at depths greater than 8 metres below sea level, and forms a closed (or semi-closed) surface. This structure that extends from the sea floor to the

Community Name	Conservation status	Source	Description
			surface is provided by a single species of kelp: Giant Kelp *Macrocystis pyrifera* that form a 'forest'. The project is unlikely to impact this ecological community.
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	PMST	Natural Damp Grassland of the Victorian Coastal Plains a grassland community that occurs in the South East Coastal Plain IBRA bioregion, generally on heavy grey silty-loamy soils. They are poorly drained, often damp and waterlogged, which are influenced from overflows from local creeks, rainfall or run-off from surrounding landscape, and occasionally ground water. The vegetation is generally dominated by tussock grasses, such as Kangaroo Grass *Themeda triandra* or Common Tussock-grass *Poa labillardierei.* Graminoids and forbs associated with damp sites also occur. Trees, when present, are usually sparse and include Eucalypt species such as Manna Gum *Eucalyptus viminalis* and Swamp Gum *E. ovata*. It is associated with the FFG Act community: 'Plains Grassland (South Gippsland) Community. No grassland communities were recorded within the assessment area, this ecological community is therefore not likely to be impacted by the project.
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	PMST	This community occurs as a narrow margin along the coastline within the South East Coastal Plain IBRA bioregion. These communities are usually under regular or intermittent tidal influence, usually in association with estuaries. The vegetation consists primarily of halophytes (salt-tolerant) plants including grasses, herbs, sedges, rushes, and shrubs. In Victoria, these communities are dominated by two genera: *Tecticornia* and *Sarcocornia*. This community is likely to occur within the project area. It is concluded that this community is likely to be present within the project area. However, GTR1 uses existing bridges to cross the river systems and estuaries where the proposed trail intersects this ecological community. Providing construction methodologies implement and follow a project CEMP, this ecological community is not likely to be impacted by the project.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	PMST	Occurring as a woodland or derived grassland, the tree layer is dominated by White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland where the canopy species still occur. The ground stratum consists of native tussock grasses and herbs, and scattered shrubs. The key canopy species that comprise this community are not modelled to occur in the Otway Ranges and Otway Plain bioregions. This TEC is therefore not likely to occur within the project area.

Community Name	Conservation status	Source	Description
State significance			
Cool Temperate Rainforest Community	Threatened		This vegetation community occurs in the wettest and most fire protected niches such as montane plateaus and gully systems of mountain ranges. In the Otway Ranges it occurs along south facing gullies, from 10 metres in elevation. The dominant floristic species include Myrtle Beech *Nothofagus cunninghamii*, Southern Sassafras *Atherosperma moschatum*, Black Olive-berry *Elaeocarpus holopetalus* and Blackwood *Acacia melanoxylon*. Shrubs and other small trees such as Musk Daisy-bush *Olearia argophylla*, Austral Mulberry *Hedycarya angustifolia* dominate the understorey with tree-ferns, and the ground stratum consisting primarily of ferns. This threatened community was not recorded within the assessment corridor of GTR 3.
Coastal Moonah (*Melaleuca lanceolata* subsp. *lanceolata*) Woodland Community	Threatened		This community is dominated by Moonah *Melaleuca lanceolata* subsp. *lanceolata*. Other characteristic species that occur in the understorey are: Small-leaved Clematis *Clematis microphylla*, Coast Wirilda *Acacia retinodes* var. *uncifolia,* Coast Swainson-Pea *Swainsona lessertiifolia*, Thyme Rice-flower *Pimelea serpyllifolia* subsp. *serpyllifolia,* Coast Tea-tree *Leptospermum laevigatum*, Coast Beard-heath *Leucopogon parviflorus* and Kidney-weed *Dichondra repens.* Associated EVCs include EVC 1 - Coastal Dune Scrub/Coastal Dune Grassland Mosaic that is modelled to occur within the project area. This community is therefore likely to be present in the project area. However, GTR 3 uses exiting trails where this community occurs. Furthermore, it was not recorded within the assessment corridor of GTR 3, this community is not likely to be further impacted by this project.

Appendix 2 Fauna

The following abbreviations and symbols are relevant to this Appendix:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
NT	Near threatened	
CD	Conservation dependent	
PMST	Protected Matters Search Tool	
State listings (FFG Act and DEECA Advisory List)[2]		
x	Extinct	Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
P	Protected (fish only)	

[2] The DEECA Advisory Lists for Threatened Terrestrial and Invertebrate Fauna were revoked in 2021 and are superseded by the current list of threatened species under the FFG Act 1988.

A2.1 Fauna species recorded in the project area

Table 18 Incidental vertebrate fauna recorded in the project area

Status	Scientific Name	Common Name
Indigenous species		
	Acanthiza lineata	Striated Thornbill
	Acanthiza pusilla	Brown Thornbill
	Acanthiza reguloides	Buff-rumped Thornbill
	Acanthorhynchus tenuirostris	Eastern Spinebill
e	*Accipiter novaehollandiae*	Grey Goshawk
	Acritoscincus duperreyi	Eastern Three-lined Skink
	Anas superciliosa	Pacific Black Duck
	Anthochaera carunculata	Red Wattlebird
	Anthochaera chrysoptera	Little Wattlebird
	Cacatua galerita	Sulphur-crested Cockatoo
	Cacomantis flabelliformis	Fan-tailed Cuckoo
	Caligavis chrysops	Yellow-faced Honeyeater
EN	*Callocephalon fimbriatum*	Gang-gang Cockatoo
	Calyptorhynchus funereus	Yellow-tailed Black-Cockatoo
	Chenonetta jubata	Australian Wood Duck
	Chroicocephalus novaehollandiae	Silver Gull
	Colluricincla harmonica	Grey Shrike-thrush
	Coracina novaehollandiae	Black-faced Cuckoo-shrike
	Cormobates leucophaea	White-throated Treecreeper
	Corvus tasmanicus	Forest Raven
	Dacelo novaeguineae	Laughing Kookaburra
v	*Dasyornis broadbenti caryochrous*	Rufous Bristlebird (Otway)
	Eolophus roseicapilla	Galah
	Eopsaltria australis	Eastern Yellow Robin
	Eulamprus tympanum tympanum	Southern Water Skink
	Gavicalis virescens	Singing Honeyeater
	Geocrinia victoriana	Victorian Smooth Froglet
	Grallina cyanoleuca	Magpie-lark
	Gymnorhina tibicen	Australian Magpie

Status	Scientific Name	Common Name
e	*Haliaeetus leucogaster*	White-bellied Sea-Eagle
	Macropus giganteus	Eastern Grey Kangaroo
	Malurus cyaneus	Superb Fairy-wren
	Melithreptus brevirostris	Brown-headed Honeyeater
	Microeca fascinans	Jacky Winter
	Neochmia temporalis	Red-browed Finch
VU	*Neophema chrysostoma*	Blue-winged Parrot
	Nesoptilotis leucotis	White-eared Honeyeater
	Notamacropus rufogriseus banksianus	Red-necked Wallaby
	Pachycephala olivacea	Olive Whistler
	Pachycephala pectoralis	Golden Whistler
	Pardalotus punctatus	Spotted Pardalote
	Petrochelidon nigricans	Tree Martin
	Phalacrocorax fuscescens	Black-faced Cormorant
	Phascolarctos cinereus	Koala
	Phylidonyris niger	White-cheeked Honeyeater
	Phylidonyris novaehollandiae	New Holland Honeyeater
	Phylidonyris pyrrhopterus	Crescent Honeyeater
	Platycercus elegans	Crimson Rosella
	Podargus strigoides	Tawny Frogmouth
	Pseudechis porphyriacus	Red-bellied Black Snake
	Ptilonorhynchus violaceus	Satin Bowerbird
	Ptilotula fusca	Fuscous Honeyeater
	Rhipidura albiscapa	Grey Fantail
	Rhipidura rufifrons	Rufous Fantail
	Sericornis frontalis	White-browed Scrubwren
	Strepera graculina	Pied Currawong
	Strepera versicolor	Grey Currawong
	Trichosurus vulpecula	Common Brush-tailed Possum
	Vanellus miles	Masked Lapwing
	Wallabia bicolor	Black-tailed Wallaby
	Zoothera lunulata	Bassian Thrush

Status	Scientific Name	Common Name
	Zosterops lateralis	Silvereye

Table 19 Vertebrate fauna recorded during nocturnal surveys within the Ground truthed route 1 project area

Status	Scientific Name	Common Name
	Macropus giganteus	Eastern Grey Kangaroo
	Ninox boobook	Southern Boobook
v	*Ninox strenua*	Powerful Owl
VU	*Petaurus australis*	Yellow-bellied Glider
	Petaurus notatus	Krefft's Glider
	Podargus strigoides	Tawny Frogmouth
	Trichosurus vulpecula	Common Brush-tailed Possum

Table 20 Bird species recorded during bird surveys within the Ground truthed route 1 Project Area

Status	Scientific Name	Common Name
	Acanthiza pusilla	Brown Thornbill
	Acanthorhynchus tenuirostris	Eastern Spinebill
	Anthochaera carunculata	Red Wattlebird
	Anthochaera chrysoptera	Little Wattlebird
	Cacomantis flabelliformis	Fan-tailed Cuckoo
	Caligavis chrysops	Yellow-faced Honeyeater
EN	*Callocephalon fimbriatum*	Gang-gang Cockatoo
	Chroicocephalus novaehollandiae	Silver Gull
	Colluricincla harmonica	Grey Shrike-thrush
	Coracina novaehollandiae	Black-faced Cuckoo-shrike
	Cormobates leucophaea	White-throated Treecreeper
	Corvus tasmanicus	Forest Raven
v	*Dasyornis broadbenti caryochrous*	Rufous Bristlebird (Otway)
	Eolophus roseicapilla	Galah
	Eopsaltria australis	Eastern Yellow Robin

Status	Scientific Name	Common Name
	Gymnorhina tibicen	Australian Magpie
e	*Haliaeetus leucogaster*	White-bellied Sea-Eagle
	Malurus cyaneus	Superb Fairy-wren
	Melithreptus brevirostris	Brown-headed Honeyeater
	Microeca fascinans	Jacky Winter
	Nesoptilotis leucotis	White-eared Honeyeater
	Pachycephala pectoralis	Golden Whistler
	Pardalotus punctatus	Spotted Pardalote
	Phalacrocorax fuscescens	Black-faced Cormorant
	Phylidonyris novaehollandiae	New Holland Honeyeater
	Phylidonyris pyrrhopterus	Crescent Honeyeater
	Platycercus elegans	Crimson Rosella
	Rhipidura albiscapa	Grey Fantail
	Sericornis frontalis	White-browed Scrubwren
	Strepera versicolor	Grey Currawong
	Zoothera lunulata	Bassian Thrush

Table 21 Fauna recorded on remote cameras deployed within the Ground truthed route 1 project area.

Status	Scientific name	Common name
Native species		
	Antechinus agilis	Agile Antechinus
	Zoothera lunulata	Bassian Thrush
	Trichosurus vulpecula	Common Brushtail Possum
	Rattus fuscipes	Bush Rat
	Macropus giganteus	Eastern Grey Kangaroo
	Strepera versicolor	Grey Currawong
	Phascolarctos cinereus	Koala
VU, v	*Potorous tridactylus trisulcatus*	Long-nosed Potoroo
	Turnix varius	Painted Button-quail
	Macropus rufogriseus	Red-necked Wallaby
	Pachycephala rufiventris	Rufous Whistler
	Tachyglossus aculeatus	Short-beaked Echidna
	Wallabia bicolor	Swamp Wallaby
	Malurus cyaneus	Superb Fairy-wren
	Sericornis frontalis	White-browed Scrubwren
Introduced species		
	Felis catus	Cat
	Vulpes vulpes	Red Fox

A2.2 Listed fauna species

The following table includes a list of threatened fauna species that have potential to occur within the project area. The list of threatened species is sourced from the VBA and PMST (accessed on 23 April 2024). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST has predicted that the species has potential to occur.

Table 22 Threatened fauna species recorded or predicted to occur within 10 km of the project area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
Pedionomus torquatus	Plains-wanderer	CR	cr		PMST	Native grassland with a sparse, open structure.	**Negligible**	No suitable habitat and beyond species current distribution.
Gallinago hardwickii	Latham's Snipe	VU		2020	PMST	A migrant to Australia from July to April occurring in a wide variety of permanent and ephemeral wetlands. Prefers open freshwater wetlands with nearby cover, but also recorded on the edges of creeks and rivers, river-pools and floodplains. Forages in soft mud at edge of wetlands and roosts in a variety of vegetation around wetlands including tussock grasslands, reeds and rushes, tea-tree scrub, woodlands and forests.	**Medium**	Species may occasionally occur along creeks and rivers within the assessment corridor, though limited availability of suitable habitat. Regularly recorded at Aireys Inlet (VBA), and recorded at Lorne in 2018 (BirdLife Birdata).
Rostratula australis	Australian Painted-snipe	EN	cr		PMST	Shallows of well-vegetated freshwater wetlands.	**Low**	Limited suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Botaurus poiciloptilus	Australasian Bittern	EN	cr	2007	PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	**Low**	Limited suitable habitat present within assessment corridor.
Falco hypoleucos	Grey Falcon	VU	v		PMST	Lightly timbered plains and Acacia scrub.	**Negligible**	Predominantly recorded in arid and semi-arid zones.
Callocephalon fimbriatum	Gang-gang Cockatoo	EN	e	2020	PMST	S Vic to E NSW. Forests and woodlands from coast to alpine areas. Autumn-winter dispersal from highlands to lower elevations. Forages in eucalypts, acacias and some exotic garden trees and shrubs.	**Recorded**	Heard within Shrubby Foothill Forest nearby assessment corridor during present assessment.
Neophema chrysogaster	Orange-bellied Parrot	CR	cr		PMST	Coastal vegetation including saltmarshes, dunes, pastures, shrublands, sewage plants, saltworks, islands, and beaches.	**Negligible**	No suitable habitat present within assessment corridor.
Neophema chrysostoma	Blue-winged Parrot	VU		2019	PMST	A range of coastal, sub-coastal and semi-arid regions throughout south-eastern Australia. Feeds on seeds of a range of native grasses and herbs.	**Recorded**	Recorded within Heathy Woodland nearby assessment corridor during present assessment.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Lathamus discolor	Swift Parrot	CR	cr	2017	PMST	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	**Low**	Individuals or flocks may forage on flowering eucalypts within the assessment corridor on occasion. However, the assessment corridor is not within the species core overwintering range.
Hirundapus caudacutus	White-throated Needletail	VU	v	2019	PMST	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	**High**	Numerous and recent observations recorded within Ground Truthed Alignment 1 project area. Individuals or flocks likely to fly over assessment on regular occasion.
Pachyptila turtur subantarctica	Fairy Prion (southern)	VU			PMST	Open ocean over continental shelves and slopes, and rarely coming close to shore except at breeding islands and during rough weather.	**Negligible**	No suitable habitat present within assessment corridor.
Pterodroma leucoptera leucoptera	Gould's Petrel	EN			PMST	The Gould's Petrel is a marine pelagic spending the majority of its time at sea. It has breeding colonies on Cabbage Tree Island and Boondelbah Island.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Thalassarche bulleri platei	Northern Buller's Albatross	VU			PMST	Buller's Albatross breeds in New Zealand and is a seasonal visitor to Victorian coastal waters where it occurs in pelagic and inshore waters.	**Negligible**	No suitable habitat present within assessment corridor.
Ardenna grisea	Sooty Shearwater	VU		2020	PMST	Moderately common migrant and visitor to Victoria, forages in pelagic waters and occasionally inshore. In Australia, the Sooty Shearwater breeds on islands off New South Wales and Tasmania.	**Negligible**	No suitable habitat present within assessment corridor.
Pterodroma mollis	Soft-plumaged Petrel	VU			PMST	A marine, oceanic species that breeds on islands including islands off Tasmania. Burrows among tussock grass and ferns on slopes and valleys.	**Negligible**	No suitable habitat present within assessment corridor.
Halobaena caerulea	Blue Petrel	VU			PMST	A marine species, usually pelagic but sometimes observed over shallow waters. A regular visitor to southern Australian waters.	**Negligible**	No suitable habitat present within assessment corridor.
Diomedea exulans	Wandering Albatross	VU	cr	1989	PMST	Occurs from Antarctic to subtropical areas in the southern hemisphere. In Australia, observed over continental shelves often in areas of continental upwellings. Regularly recorded feeding in sheltered harbours, often gathering at sewerage outfalls.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Thalassarche melanophris	Black-browed Albatross	VU		2019	PMST	Breeds in Antarctic and sub-Antarctic islands, but commonly occurs in pelagic waters off the coast of Victoria.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche carteri	Indian Yellow-nosed Albatross	VU	e	2016	PMST	Sub-Antarctic to subtropical waters off southern Australia, mostly in winter. Often close inshore. Breeds on Indian Ocean sub-Antarctic islands.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche chrysostoma	Grey-headed Albatross	EN	e	1987	PMST	Occurs in warmer areas over winter, its breeding grounds are found in the Antarctic and subantarctic islands. Generally, forages over the open oceans. There have been a small number of records over inshore and offshore areas along the Victorian coast.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche cauta	Shy Albatross	EN	e	2019	PMST	Sub-Antarctic to temperate waters off southern Australia, in all months. Often close inshore. Breeds on Albatross Is. (Bass Strait); the Mewstone & Pedra Branca Is. (S. Tas.).	**Negligible**	No suitable habitat present within assessment corridor.
Phoebetria fusca	Sooty Albatross	VU	cr		PMST	Subantarctic and subtropical marine waters.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Macronectes giganteus	Southern Giant-Petrel	EN	e	2019	PMST	Adults of this species are present all year round at Antarctic breeding colonies, from where immature birds disperse, some as far north as subtropical areas.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche bulleri	Buller's Albatross	VU	e	2018	PMST	Pelagic sub-Antarctic to subtropical waters off SE Australia, mostly Mar - June. Infrequent in Bass Strait. Breeds on NZ islands.	**Negligible**	No suitable habitat present within assessment corridor.
Macronectes halli	Northern Giant-Petrel	VU	e		PMST	Breeds in coastal habitats on subantarctic islands. Dispersal movements of juveniles are poorly known but have been observed along temperate coastal areas of Australia. Often seen around sewer outfalls or seal and penguin colonies.	**Negligible**	No suitable habitat present within assessment corridor.
Diomedea epomophora	Southern Royal Albatross	VU	cr		PMST	Pelagic sub-Antarctic to temperate waters off SE Australia, may occur in all months but mostly Jul - Oct. Breeds on NZ islands.	**Negligible**	No suitable habitat present within assessment corridor.
Diomedea sanfordi	Northern Royal Albatross	EN			PMST	Pelagic sub-Antarctic to temperate waters off SE Australia, may occur in all months but mostly May - Sept. Breeds Chatham Is. and single mainland site in NZ.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Diomedea antipodensis	New Zealand Wandering Albatross	VU			PMST	A marine, pelagic species that ranges widely throughout the Pacific region of the Southern Ocean. It visits off-shore waters of southern Australia.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche salvini	Salvin's Albatross	VU			PMST	Infrequent occurrence in pelagic sub-Antarctic to temperate waters off southern Australia. Breeds on Indian Ocean and NZ islands.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche steadi	White-capped Albatross	VU			PMST	Infrequent occurrence in pelagic sub-Antarctic to temperate waters off southern Australia. May be more common off southern NSW. Breeds on Auckland Is group, NZ.	**Negligible**	No suitable habitat present within assessment corridor.
Thalassarche impavida	Campbell Albatross	VU			PMST	Antarctic to subtropical waters from pelagic to shelf-break water including off-shore waters of southern and eastern Australia, mostly in winter. Breeds on Campbell Is. (NZ).	**Negligible**	No suitable habitat present within assessment corridor.
Limosa lapponica baueri	Bar-tailed Godwit (baueri)	VU	v		PMST	Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Sternula nereis nereis	Australian Fairy Tern	VU	cr		PMST	Fairy Terns inhabit coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	**Negligible**	No suitable habitat present within assessment corridor.
Arenaria interpres	Ruddy Turnstone	VU	e	2019		Mainly found on coastal beaches, exposed reefs, and rock platforms.	**Negligible**	No suitable habitat within assessment corridor.
Pluvialis squatarola	Grey Plover	VU	v	2018		Mudflats, saltmarsh, tidal reefs and estuaries.	**Negligible**	No suitable habitat within assessment corridor.
Thinornis cucullatus	Hooded Plover	VU	v	2021	PMST	Year-round resident. Sandy ocean beaches, margins of estuaries and coastal lakes.	**Negligible**	No suitable habitat present within assessment corridor.
Charadrius leschenaultii	Greater Sand Plover	VU	v		PMST	Intertidal mudflats and sandbanks of sheltered bays and estuaries.	**Negligible**	No suitable habitat present within assessment corridor.
Numenius madagascariensis	Eastern Curlew	CR	cr		PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, coastal lagoons and bays.	**Negligible**	No suitable habitat present within assessment corridor.
Tringa nebularia	Common Greenshank	EN	e	2018	PMST	A variety of ephemeral and permanent inland wetlands and sheltered coastal wetlands.	**Negligible**	No suitable habitat within assessment corridor.
Calidris ferruginea	Curlew Sandpiper	CR	cr	1978	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Calidris acuminata	Sharp-tailed Sandpiper	VU		1988	PMST	Prefers muddy edges of shallow fresh or brackish wetlands with inundated or emergent low vegetation. Occasionally use flooded paddocks and other ephemeral wetlands.	**Negligible**	No suitable habitat present within assessment corridor.
Calidris canutus	Red Knot	VU	e	2016	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat present within assessment corridor.
Melanodryas cucullata	Hooded Robin	EN	v	1996	PMST	Woodlands of eucalypt, Mallee, semi-cleared farmland.	**Negligible**	No suitable habitat within assessment corridor.
Aphelocephala leucopsis	Southern Whiteface	VU			PMST	Occurs in a wide range of open woodlands and shrublands, favouring sparsely treed areas with an herbaceous understorey containing grasses and/or shrubs.	**Low**	Limited suitable habitat within assessment corridor.
Grantiella picta	Painted Honeyeater	VU	v		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	**Low**	Predominantly recorded on inland slopes of the Great Dividing Range. May occasionally and seasonally use coastal forests.
Anthochaera phrygia	Regent Honeyeater	CR	cr	1893	PMST	A range of dry woodlands and forests dominated by nectar-producing tree species.	**Negligible**	Outside species current recognised range.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Stagonopleura guttata	Diamond Firetail	VU	v	2017	PMST	Open forests and woodlands with a grassy ground layer.	**Medium**	May occur within drier woodlands and heaths such as Sand Heathland and Heathy Woodland present within the eastern sections of the assessment corridor.
Climacteris picumnus	Brown Treecreeper	VU			PMST	Open eucalypt forests, woodlands and Mallee, often where there are stands of dead trees.	**Low**	Limited suitable habitat present within assessment corridor and no nearby records.
Balaenoptera borealis	Sei Whale	VU			PMST	An oceanic species recorded in Australian waters.	**Negligible**	No suitable habitat present within assessment corridor.
Dasyurus maculatus maculatus	Spot-tailed Quoll	EN	e	2000	PMST	Rainforest and wet and dry sclerophyll forests and woodlands.	**Low**	Most recent records within last 20 years have been recorded outside study area (nearby Conservation Ecology Centre; scat detected in 2012 by Parks Victoria).
Antechinus minimus maritimus	Swamp Antechinus	VU	v	2022	PMST	Dense wet heath and heathy woodland, sedgeland and dense tussock grassland.	**High**	May be present within Riparian Forest (at lower elevations), Coastal Dune Scrub, Sand Heathland or Heathy Woodland intercepted by the assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Perameles gunnii	Eastern Barred Bandicoot	EN	e	1933		Natural temperate grasslands and grassy woodlands.	**Negligible**	Outside species current recognised range.
Petauroides volans	Southern Greater Glider	EN	e		PMST	Wet and damp sclerophyll forest with large hollow-bearing trees.	**Low**	Beyond species typically distribution in Victoria and no local records.
Petaurus australis	Yellow-bellied Glider	VU	v	2022	PMST	Sclerophyll forest with large hollow-bearing trees, prefers mature eucalypt dominated forest and woodland. Distributed along South-eastern Australia.	**Recorded**	Recorded multiple times during nocturnal surveys within tall forest with dense shrubby understorey habitat.
Potorous tridactylus trisulcatus	Long-nosed Potoroo	VU	v	2018	PMST	Forest, heathy woodlands and heathlands.	**Recorded**	Recorded on camera trap footage from Biosis' assessment. Likely to be present throughout the project area.
Mastacomys fuscus mordicus	Broad-toothed Rat	EN	v	2018	PMST	Sub-alpine Woodland, Heathland, Sedgeland, and sedge-dominated areas within forest.	**High**	May be present within sedge or grass dominated drainage lines within wetter forest types intercepting the assessment corridor. The species is assumed to occur adjacent to Coalmine Creek (DEECA & GORCT Project Team

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								2024). Recorded from the existing trail alignment along Saint George River (Wild Otways Initiative 2023c).
Pseudomys novaehollandiae	New Holland Mouse	VU	e	1981	PMST	Coastal heathland, heathy woodland and dry sclerophyll forest.	**Low**	Species has not been detected at known sites within the eastern side of the Great Otway NP since 2003 by Deakin University.
Pseudomys fumeus	Smoky Mouse	EN	e	1933	PMST	Coastal heath and heathy woodland, wet forest, sub-alpine heath and dry sclerophyll forest.	**Negligible**	Outside species current recognised range.
Mirounga leonina	Southern Elephant Seal	VU		2015		Occurs in Antarctic and subantarctic areas. Victorian records likely to be of vagrants, which have been found on rare occasions along the entire Victorian coast, including Port Phillip and Hobsons Bay.	**Negligible**	No suitable habitat present within assessment corridor.
Eubalaena australis	Southern Right Whale	EN	e	2021	PMST	Migrates between summer feeding grounds in the Southern Ocean to warmer northern waters over winter, where it can be found along the Victorian coastline. The coast 8 km east of Warrnambool is a locally	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
						important calving and nursing site until late October or early November.		
Balaenoptera musculus	Blue Whale	EN	e	1992	PMST	Found throughout the Southern Ocean, though migration paths appear to be diffuse and widespread. Often enters coastal waters, including Victoria (particularly the smaller subspecies Balaenoptera physalus).	**Negligible**	No suitable habitat present within assessment corridor.
Balaenoptera physalus	Fin Whale	VU			PMST	Occurs worldwide with populations in the southern hemisphere undergoing extensive north-south migrations. Only one record in Victoria.	**Negligible**	No suitable habitat present within assessment corridor.
Arctophoca tropicalis	Subantarctic Fur Seal	EN		2019		Near coastal and offshore waters.	**Negligible**	No suitable habitat present within assessment corridor.
Isoodon obesulus obesulus	Southern Brown Bandicoot	EN	e	2021	PMST	Heathland, shrubland, sedgeland, heathy open forest and woodland; also exotic vegetation, such as blackberry thickets and rank grasses where native vegetation has been removed.	**Medium**	May occur within Coastal Dune Scrub, Sand Heathland or Heathy Woodland intercepted by the assessment corridor.
Pteropus poliocephalus	Grey-headed Flying-fox	VU	v	2014	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	**Medium**	May forage of flowering Eucalypts within study area on occasion.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Miniopterus orianae bassanii	Southern Bent-winged Bat	CR	cr	2000	PMST	Woodlands, grasslands, pasture especially near wetlands. Roosts in caves, crevices in cliff faces and in mines.	**High**	May undertake nightly foraging over assessment corridor on regular occasion. However, maternity and/or roosting caves are not present within the assessment corridor.
Chelonia mydas	Green Turtle	VU			PMST	Marine species with a pan-tropical distribution throughout the world. More abundant along the tropical coasts of Australia and the Great Barrier Reef. Green Turtles spend their first five to ten years drifting on ocean currents.	**Negligible**	No suitable habitat present within assessment corridor.
Lepidochelys olivacea	Pacific (Olive) Ridley	EN		1999		Marine species predominantly observed in tropical and sub-tropical regions of the Pacific and Indian Oceans.	**Negligible**	No suitable habitat present within assessment corridor.
Dermochelys coriacea	Leathery Turtle	EN	cr	2011	PMST	Marine species usually sighted along the eastern seaboard often in bays, estuaries and rivers. No major nesting events have been recorded in Australia.	**Negligible**	No suitable habitat present within assessment corridor.
Delma impar	Striped Legless Lizard	VU	e		PMST	Natural temperate grassland, grassy woodland and exotic grassland.	**Negligible**	Outside current distributional range.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Lissolepis coventryi	Swamp Skink	EN	e	1993	PMST	Densely vegetated swamps and associated watercourses, and adjacent wet heaths, sedgelands and saltmarshes.	**Low**	No suitable habitat identified within the assessment corridor in Coastal Dune Scrub or in areas adjacent to streams and creeks.
Caretta caretta	Loggerhead Turtle	EN			PMST	Loggerhead Turtles forage widely in the waters of coral and rocky reefs, seagrass beds and muddy bays throughout eastern, northern and western Australia. Nesting occurs in coastal environments of northern WA, NT and QLD.	**Negligible**	No suitable habitat present within assessment corridor.
Litoria raniformis	Growling Grass Frog	VU	v	1788	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation. [NOTE Due to recent taxonomic changes: Nth Vic GGF *is L. raniformis raniformis* and Sth Vic GGF L. raniformis major. No legislative implications]	**Low**	No recent observations recorded within Ground Truthed Alignment 1 project area. Not known from the Otway Region.
Thunnus maccoyii	Southern Bluefin Tuna	CD	cd		PMST	The species is highly migratory, occurring globally in waters between 30-50 degrees Celsius.	**Negligible**	No suitable habitat present within assessment corridor.
Carcharodon carcharias	Great White Shark	VU	e		PMST	Near coastal and offshore waters.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Prototroctes maraena	Australian Grayling	VU	e	1999	PMST	Adults inhabit cool, clear, freshwater streams.	**Medium**	Diadromous species recorded within the estuaries of a number of rivers and creeks intercepted by the assessment corridor.
Macquaria australasica	Macquarie Perch	EN	e	1981		Streams with clear water and deep, rocky holes with abundant cover.	**Negligible**	Occurs naturally north of the Great Dividing Range in tributaries of the Murray-Darling system.
Nannoperca obscura	Yarra Pygmy Perch	EN	v		PMST	Lakes, pools and slow-flowing streams with abundant aquatic vegetation.	**Negligible**	Outside current recognised range.
Seriolella brama	Blue Warehou	CD	cd		PMST	The species occurs predominantly in coastal shelf, upper continental slope and seamount waters offshore from New South Wales, Tasmania, Victoria and South Australia. The species occurs at depths between 3 and 550 m.	**Negligible**	No suitable habitat present within assessment corridor.
Galeorhinus galeus	School Shark	CD			PMST	School Shark is most abundant in cold to temperate continental seas, from the surf line and very shallow water to well offshore. Females and juveniles utilise inshore coastal areas around Victoria,	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
						Tasmania and parts of South Australia for nursery areas.		
Synemon plana	Golden Sun Moth	VU	v		PMST	Natural temperate grassland, grassy woodland and pasture supporting spear grasses and wallaby grasses and exotic grassland dominated by Chilean needle grass.	**Negligible**	Outside current recognised range.
State significance								
Geopelia cuneata	Diamond Dove		v	1985		Drier woodlands and scrub, spinifex and mulga.	**Negligible**	Predominantly observed in arid and semi-arid environments.
Lewinia pectoralis	Lewin's Rail		v	2019		Swamps, dense riparian vegetation and saltmarsh.	**Low**	Limited suitable habitat present within the assessment corridor.
Burhinus grallarius	Bush Stone-curlew		cr	1893		Open woodland, treed farmland.	**Negligible**	Predominantly recorded within the Northern Plains, in area bounded by Wodonga, Seymour and Kerang.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Antigone rubicunda	Brolga		e	2014		Shallow freshwater and brackish wetlands, crops, grassland and pasture. [NOTE: Due to recent taxonomic changes; genus Antigone has changed to Grus. Formally recognised by birdlife Australia]	**Low**	Limited suitable habitat present within the assessment corridor.
Egretta garzetta	Little Egret		e	2019		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds in trees standing in water.	**Low**	Limited suitable habitat present within the assessment corridor.
Ardea intermedia plumifera	Plumed Egret		cr	1999		Densely-vegetated freshwater wetlands including lakes, swamps and billabongs. Breeds in trees standing in water.	**Low**	Limited suitable habitat present within the assessment corridor.
Ardea alba modesta	Eastern Great Egret		v	2016		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.	**Low**	Limited suitable habitat present within the assessment corridor.
Ixobrychus dubius	Australian Little Bittern		e	1972		Freshwater swamps, lakes and rivers with dense reedbeds, saltmarsh and coastal lagoons.	**Low**	Limited suitable habitat present within the assessment corridor.
Spatula rhynchotis	Australasian Shoveler		v	2019		Variety of wetlands, with a preference for large, permanent, freshwater lakes/swamps with dense fringing vegetation.	**Low**	Limited suitable habitat present within the assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Stictonetta naevosa	Freckled Duck		e	2019		Large freshwater wetlands, generally with dense vegetation.	**Low**	Limited suitable habitat present within the assessment corridor.
Aythya australis	Hardhead		v	2019		Deep freshwater swamps and wetlands, with abundant aquatic and terrestrial vegetation for roosting. Can occur in sheltered estuaries.	**Low**	Limited suitable habitat present within the assessment corridor.
Oxyura australis	Blue-billed Duck		v	2017		Open or densely vegetated wetlands.	**Low**	Limited suitable habitat present within the assessment corridor.
Biziura lobata	Musk Duck		v	2019		Deep, permanent freshwater wetlands with areas of open water and patches of dense aquatic vegetation.	**Low**	Limited suitable habitat present within the assessment corridor.
Accipiter novaehollandiae	Grey Goshawk		e	2019		Rainforest, gallery forest, tall wet forest and woodland. Also partially cleared agricultural land.	**Recorded**	Recorded within riparian forest within Ground Truthed Alignment 2 during present assessment. May occur within wetter forest types intercepted by the assessment corridor (e.g. Wet Forest, Shrubby Foothill Forest, Riparian Forest, etc.).

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Hieraaetus morphnoides	Little Eagle		v	2014		Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	**Low**	No suitable habitat. Individuals may fly over study area in reach of suitable habitat.
Haliaeetus leucogaster	White-bellied Sea-Eagle		e	2020		Coastal areas such as beaches and estuaries, inland wetlands and major inland streams.	**Recorded**	Recorded within Grouth Truthed Alignment 1 project area, foraging above Coastal Dune Scrub.
Falco subniger	Black Falcon		cr	2019		Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.	**Low**	Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.
Ninox connivens	Barking Owl		cr	2007		Eucalypt forests and woodlands.	**Medium**	Scattered and sporadic records around Airey's Inlet. May occur within dry forest and woodland types, including Heathy Woodland, within the eastern section of the assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Ninox strenua	Powerful Owl		v	2021		Eucalypt forests and woodlands, well-treed urban areas.	**Recorded**	Male recorded within wetter forest types in Ground Truthed Alignment 2 project area during assessment. May roost or nest in large old trees throughout assessment corridor.
Tyto novaehollandiae	Masked Owl		cr	2019		A variety of lowland forests and woodlands.	**High**	Some records within study area, predominantly concentrated around Lorne. May roost or nest in large old trees throughout assessment corridor.
Neophema elegans	Elegant Parrot		v	1987		Woodlands, open woody grasslands, partially cleared farmlands and the fringes of clearings in forests, tree-lined watercourses and Mallee environments.	**Negligible**	No suitable habitat. Predominantly observed in western Victoria.
Pezoporus wallicus	Ground Parrot		e	1978		Coastal heathland and swamps.	**Low**	May occur within sand heathland within assessment on occasion.
Pelagodroma marina	White-faced Storm-Petrel		e	2020		Coastal in pelagic and inshore waters; breeding colonies on Mud and South Channel Islands in Port Phillip Bay.	**Negligible**	No suitable habitat within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Gelochelidon macrotarsa	Australian Gull-billed Tern		e	1978		Floodplains, saltmarsh, claypans and flooded pasture.	**Negligible**	No suitable habitat within assessment corridor.
Hydroprogne caspia	Caspian Tern		v	2020		Estuaries, inlets, bays, lagoons, inland lakes, flooded pasture, sewage ponds.	**Negligible**	No suitable habitat within assessment corridor.
Sternula albifrons	Little Tern		cr		PMST	This bird is mostly recorded in sheltered coastal environments, including bays, lagoons and estuaries. Nests on sandy substrates containing much shell-grit, which provides good camouflage for their eggs.	**Negligible**	No suitable habitat within assessment corridor.
Pluvialis fulva	Pacific Golden Plover		v	2018		A range of coastal habitats including mudflats, sandflats rocky shores and saltmarsh.	**Negligible**	No suitable habitat within assessment corridor.
Tringa glareola	Wood Sandpiper		e	1881		Well-vegetated shallow freshwater wetlands with emergent aquatic plants and dense fringing vegetation.	**Negligible**	No suitable habitat within assessment corridor.
Actitis hypoleucos	Common Sandpiper		v	2018	PMST	Migrates to Australia from Eurasia in August where it inhabits a wide variety of coastal and inland wetlands with muddy margins before departing north in March.	**Negligible**	No suitable habitat within assessment corridor.
Calamanthus pyrrhopygius	Chestnut-rumped Heathwren		v	2019		Woodland habitat with a dense, shrubby understorey.	**Medium**	May occur within Heathy Woodland present within the eastern sections of

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								the assessment corridor.
Dasyornis broadbenti caryochrous	Rufous Bristlebird (Otway)		v	2021		Dense coastal heathlands and undergrowth of wet forests.	**Recorded**	Recorded within Coastal Dune Scrub and Shrubby Foothill Forest within the assessment corridor. May occur throughout a variety of EVCs intercepting the project area where dense undergrowth is present.
Sminthopsis leucopus	White-footed Dunnart		v	2018		Lowland heathy woodland and forest, coastal scrub and coastal grasslands.	**Medium**	May occur within Sand Heathland, Heathy Woodland, Coastal Dune Scrub or Lowland Forest intercepted by the assessment corridor.
Thylogale billardierii	Rufous-bellied Pademelon		t	1979		Extinct on the mainland, occurs in Tasmania. Rainforest and wet forest is the preferred habitat, although wet gullies in dry open eucalypt forest are also used.	**Negligible**	Outside species current recognised range.
Arctophoca forsteri	Long-nosed Fur Seal		v	2019		Breeds on islands off the southern Australian coast.	**Negligible**	No suitable habitat present within assessment corridor.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Megaptera novaeangliae australis	Southern Humpback Whale		cr	2021		Migrate between summer feeding grounds in the Southern Ocean to Northern waters where birthing and mating occurs. Increasingly recorded along the Victorian coast, occasionally entering Port Phillip and Western Port.	**Negligible**	No suitable habitat present within assessment corridor.
Ornithorhynchus anatinus	Platypus		v	2022		A variety of freshwater waterbodies, particularly those with stable banks suitable for burrows, and shallow waters for foraging.	**Medium**	May be present within numerous creeks and streams intercepted by the assessment corridor.
Canis lupus dingo	Dingo		v	1865		Virtually all terrestrial environments but range reduced by exclusion fencing, persecution and hybridisation with domestic dogs.	**Low**	No recent records within or surrounding assessment corridor.
Miniopterus orianae oceanensis	Eastern Bent-winged Bat		cr	2004		A variety of treed and treeless habitats. Roosts in caves and man-made structures.	**Medium**	The distribution of the Southern Bent-wing Bat and the Eastern Bent-wing Bat overlap in western Victoria. The species may forage over treed environments within the assessment corridor on occasion.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Pseudemoia pagenstecheri	Tussock Skink		e	2003		On the ground in a range of grasslands or sparse grassy woodlands from alps to coast.	**Low**	Limited suitable habitat present within the assessment corridor, within the extent of the species current recognised range (e.g. Airey's Inlet).
Pseudophryne bibronii	Brown Toadlet		e	1971		A wide variety of woodland, forest and grassland habitats, where it shelters under leaf litter and other debris in moist soaks and depressions. Breeds in swamps and inundated habitats, and along creek lines.	**Medium**	May occur within open forests and woodland types within the eastern sections of the assessment corridor, such as Lowland Forest, Heathy Woodland and Sand Heathland.
Pseudophryne semimarmorata	Southern Toadlet		e	2011		A wide variety of woodland, forest and grassland habitats, where it shelters under leaf litter and other debris in moist soaks and depressions. Breeds in swamps and inundated habitats, and along creek lines.	**Medium**	Recorded in forest inland of Lorne, although predominantly recorded around Anglesea. May be present throughout the assessment corridor, within damp areas in Heathy Woodland, Shrubby Foothill Forest,

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								Lowland Forest and Wet Forest.
Neochanna cleaveri	Australian Mudfish		e	2012		Freshwater habitats with abundant aquatic vegetation such as streams, backwaters, billabongs and floodplain wetlands.	**Medium**	May occur within a number of streams and creeks which intercept the assessment corridor on occasion.
Victaphanta compacta	Otway Black Snail		e	2019		Wet forests and cool temperate rainforests in the Otway Ranges, Victoria.	**Recorded**	Recorded on numerous occasions in Wet Forest within the broader GTR 3 project area during assessment. May occur within Riparian Forest and Shrubby Wet Forest intersecting the GTR 3 trail alignment.
Pasma tasmanica	Two-spotted Grass-skipper Butterfly		e	1960		Mountainous areas containing tussock grass species such as *Microlaena stipoides*	**Low**	One observation recorded near Lorne within the study area. Predominantly known from mountainous areas east of Melbourne.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Hyridella narracanensis	Narracan Corrugated Mussel		e	2001		This species is found in instream areas shaded by overhanging vegetation, in shallow water with moderate currents over sandy, compacted substrata with low organic content. Requires clear and clean flowing water.	**Low**	Few occurrences from database records. May be present in streams of the Otway Ranges though not recorded for over 20 years.
Geocharax tasmanicus	Otway Bush Yabby		e	2017		Poorly known species with limited distribution within and in the vicinity of the Otway Coast Basin.	**Medium**	May be present within several streams and creeks intercepted by the assessment corridor.
Engaeus fultoni	Otway Burrowing Crayfish		v	1983		Wet sclerophyll forest at altitudes above 100m in the Otway Ranges, although some records exist from areas at sea level. Burrows are usually found adjacent to water courses, although not connected to areas of surface water.	**High**	Burrows detected in drainage line associated with Grey River during assessment. May occur throughout wetter forest types (e.g. Wet Forest, Riparian Forest, etc.) intercepted by the assessment corridor >100 m in altitude.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Engaeus sericatus	Hairy Burrowing Crayfish		v	2022		Burrows are connected to the water table, typically adjacent to creeks or on floodplains. Although it is widespread in Victoria, most records are found in an area extending from the Otways, west to Port Fairy and north to Ballarat.	**Negligible**	Outside species current recognised range.
Apsolidium densum	Sea Cucumber 5251		e	1985		Poorly known species. Marine environments with predominantly sandy substrates.	**Negligible**	No suitable habitat present within the assessment corridor.

A2.3 Migratory species (EPBC Act listed)

Table 23 Migratory fauna species recorded or predicted to occur within 10 km of the project area

Scientific name	Common name	Most recent record
Gallinago hardwickii	Latham's Snipe	2020
Pandion cristatus	Eastern Osprey	2014
Hirundapus caudacutus	White-throated Needletail	2019
Apus pacificus	Fork-tailed Swift	2016
Pandion haliaetus	Osprey	PMST
Ardenna grisea	Sooty Shearwater	2020
Ardenna tenuirostris	Short-tailed Shearwater	2016
Ardenna carneipes	Flesh-footed Shearwater	PMST
Procellaria cinerea	Grey Petrel	1984
Diomedea exulans	Wandering Albatross	1989
Thalassarche melanophris	Black-browed Albatross	2019
Thalassarche carteri	Indian Yellow-nosed Albatross	2016
Thalassarche chrysostoma	Grey-headed Albatross	1987
Thalassarche cauta	Shy Albatross	2019
Phoebetria fusca	Sooty Albatross	PMST
Fregata minor	Great Frigatebird	1987
Stercorarius parasiticus	Arctic Jaeger	2016
Calonectris leucomelas	Streaked Shearwater	1987
Macronectes giganteus	Southern Giant-Petrel	2019
Thalassarche bulleri	Buller's Albatross	2018
Macronectes halli	Northern Giant-Petrel	PMST
Stercorarius pomarinus	Pomarine Jaeger	2014
Sterna hirundo	Common Tern	2000
Diomedea epomophora	Southern Royal Albatross	PMST
Diomedea sanfordi	Northern Royal Albatross	PMST
Diomedea antipodensis	New Zealand Wandering Albatross	PMST
Thalassarche salvini	Salvin's Albatross	PMST
Thalassarche steadi	White-capped Albatross	PMST
Thalassarche impavida	Campbell Albatross	PMST
Hydroprogne caspia	Caspian Tern	2020
Thalasseus bergii	Crested Tern	2021
Sternula albifrons	Little Tern	PMST
Arenaria interpres	Ruddy Turnstone	2019
Pluvialis squatarola	Grey Plover	2018
Pluvialis fulva	Pacific Golden Plover	2018
Charadrius bicinctus	Double-banded Plover	2017
Charadrius leschenaultii	Greater Sand Plover	PMST

Scientific name	Common name	Most recent record
Numenius madagascariensis	Eastern Curlew	PMST
Limosa lapponica	Bar-tailed Godwit	2017
Tringa glareola	Wood Sandpiper	1881
Actitis hypoleucos	Common Sandpiper	2018
Tringa nebularia	Common Greenshank	2018
Calidris ferruginea	Curlew Sandpiper	1978
Calidris ruficollis	Red-necked Stint	2021
Calidris acuminata	Sharp-tailed Sandpiper	1988
Calidris canutus	Red Knot	2016
Calidris alba	Sanderling	2017
Calidris subminuta	Long-toed Stint	1978
Calidris melanotos	Pectoral Sandpiper	PMST
Motacilla flava	Yellow Wagtail	PMST
Rhipidura rufifrons	Rufous Fantail	2021
Myiagra cyanoleuca	Satin Flycatcher	2020
Monarcha melanopsis	Black-faced Monarch	2016
Balaenoptera borealis	Sei Whale	PMST
Megaptera novaeangliae	Humpback Whale	PMST
Lagenorhynchus obscurus	Dusky Dolphin	PMST
Eubalaena australis	Southern Right Whale	2021
Caperea marginata	Pygmy Right Whale	2015
Balaenoptera musculus	Blue Whale	1992
Balaenoptera physalus	Fin Whale	PMST
Physeter macrocephalus	Sperm Whale	2020
Orcinus orca	Killer Whale	2013
Chelonia mydas	Green Turtle	PMST
Lepidochelys olivacea	Pacific (Olive) Ridley	1999
Dermochelys coriacea	Leathery Turtle	2011
Caretta caretta	Loggerhead Turtle	PMST
Lamna nasus	Porbeagle	PMST
Carcharodon carcharias	Great White Shark	PMST

Appendix 3 Flora species - EPBC Significant Impact Criteria assessments

Anglesea Grevillea *Grevillea infecunda* (Vulnerable)

Occurrence in the project area

No individual plants or populations of Anglesea Grevillea were recorded along the proposed trail alignment during vegetation surveys or targeted surveys. While the distribution of this species is endemic to Victoria around Anglesea and Aireys Inlet, there is the potential for it to occur within the project area. The nearest recorded population occurs off Gentle Annie Track, north of Eastern View. Suitable habitat throughout the project area occurs on high to medium quality heathy woodland at the eastern extremity of the alignment, particularly as it winds through Eastern View, Moggs Creek and Fairhaven. Targeted surveys occurred along the following trails:

- Trail 4 (EVC 48 – Heathy Woodland of moderate quality)
- Trail 6 (EVC 48 – Heathy Woodland of high quality)
- Trail 12 (EVC 48 – Heathy Woodland of moderate to high quality)
- Trail 15 (EVC 48 – Heathy Woodland of moderate to high quality)
- Trail 19 (EVC 48 – Heathy Woodland of high quality)

Table 24 Anglesea Grevillea: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The national recovery plan (DSE 2006b) and the FFG Act Action Plan (DSE 2008) list 11 important or key populations for this species. All populations are confined to the Anglesea area, the closest of which occurs near Gentle Annie Track, Eastern View, within 2.5 kms of the proposed trail alignment. No plants were recorded along the trail alignment, therefore, it is not anticipated that any significant numbers of plants or populations will be destroyed that could lead to a decline in the size of an important population.
Reduce the area of occupancy of an important population	Unlikely	No plants were recorded on the proposed trail alignment, therefore, it is not anticipated that any significant numbers of plants or populations will be destroyed, or that habitat or area of occupancy will be reduced significantly.
Fragment an existing important population into two or more populations	Unlikely	No plants were recorded on the proposed trail alignment and the existing known populations will not be fragmented by the walking tracks and any resultant disturbance will be a permeable narrow barrier that will not affect physical or functional connectivity between populations.

Significant impact criteria	Likelihood of significant impact	Justification
Adversely affect habitat critical to the survival of the species	Unlikely	Critical habitat has not been declared for Anglesea Grevillea. Construction and operation of the trail may adversely impact its habitat through the spread of pathogens. weeds and diseases. Of particular concern is *Phytophthora* dieback disease that is likely to impact its habitat through vegetation loss. These risks will be managed appropriately during construction and operation of the trail. No plants were recorded along the trail alignment, therefore, it is not anticipated that any significant numbers of plants or populations will occupy the habitat adjoining the trail alignment.
Disrupt the breeding cycle of an important population	Unlikely	The trails and any resultant disturbance will be a permeable narrow barrier in a discrete location that is unlikely to affect pollination, seed dispersal, gene flow or vegetative reproduction.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The availability and quality of habitat will not decline significantly as a result of the works. Impacts to habitat are likely to be restricted to the trail edge, providing that weeds, diseases, and pathogens are managed appropriately. Therefore, Anglesea Grevillea is not likely to decline due to the reduction in extent or quality of habitat caused by the operation or construction of the trail network.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Soil disturbance and subsequent weed invasion will be minimised through construction management and follow up weed control. The project CEMP will specifically deal with controlling the introduction and spread of weed species, especially those species associated with walking track edges. Ongoing monitoring will be required to manage the establishment of weeds once the trails are operational.
Introduce disease that may cause the species to decline	Unlikely	The project is unlikely to introduce new diseases or pathogens to the project area providing hygiene protocols are adhered to in the CEMP. *Phytophthora cinnamomi* is already present along the proposed trail alignment, the operation and construction of the trail may spread the fungus. This risk requires mitigation through the project CEMP to include the use of uncontaminated soil during construction, and the implementation of cleaning stations to reduce the risk of walkers spreading the disease. No plants were recorded along the trail alignment. .rther surveys are required to determine whether Anglesea Grevillea occurs along the trail alignment.
Interfere substantially with the recovery of a species	Unlikely	There are no known recovery programs operational within the project area. The trail is therefore unlikely to interfere with the recovery of Anglesea Grevillea.

Conclusion for Anglesea Grevillea

It is unlikely that the project will result in a significant impact on Anglesea Grevillea based on an assessment against the significant impact criteria for vulnerable species. No plants were recorded present within the assessment corridor.

Wrinkled Buttons *Leiocarpa gatesii* (Vulnerable)

Occurrence in the project area

Multiple populations of Wrinkled Buttons were recorded within the assessment area. The largest population was recorded on the trails south-east of Cumberland River. Approximately 50-100 plants were recorded along assessment corridor of trail 62, however the population is likely to be much larger. Most often, this species was recorded on the drier slopes within EVC 21 – Shrubby Dry Forest, particularly along ridge lines. On occasion, individual plants were recorded on more sheltered slopes and exposed slopes where the vegetation community transitions from EVC 21 – Shrubby Dry Forest to EVC 45 – Shrubby Foothill Forest. As the species is rhizomatous, it is difficult to determine the population size within a group of plants. For the purposes of this assessment, it is assumed that a patch of uninterrupted plants without a clear break was considered as a single individual, however that is likely to be underrepresenting the population size. The largest populations of Winkled Buttons were recorded at the following locations:

- Trails 60, 61 and 62, east of Cumberland River campground
  - **Vegetation type**: EVC 21 – Shrubby Dry Forest, beneath a canopy of Scent Bark, and an understorey comprised of Prickle Bush-tree and Common Heath.
  - **Population size**: > 200 plants
- Trail 19, near Eastern View
  - **Vegetation type**: EVC 48 - Heathy Woodland. Beneath a canopy of Red Ironbark and an understorey of Varnish Wattle and Silver-top Wallaby Grass.
  - **Population size**: > 10 plants
- Trail 42, Lorne 61
  - **Vegetation type**: EVC 21 – Shrubby Dry Forest, beneath a canopy of Scent Bark, and an understorey comprised of Hop Wattle and Common Heath.
  - **Population size**: > 35 plants

Table 25 Wrinkled Buttons: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The recovery plan (DSE 2006a) lists 10 populations of this species, however there are many more recorded since the publishing of that report. There are no important populations specified in the recovery plan, however, given the species is endemic to Victoria with a restricted distribution between Lorne and Fairhaven, all populations are likely to be considered important. The proposed trail is unlikely to lead to a reduction in an important population, particularly along trail alignments specifically mentioned above through direct clearing and removal of suitable habitat. The recovery plan also suggests that disturbance may be beneficial for the species including track works, evidence of which was seen along trail 19, an established

Significant impact criteria	Likelihood of significant impact	Justification
		walking trail, of which Wrinkled Buttons was persisting along its edge. The trail had recently been graded with heavy machinery as a fuel break and the species was observed actively growing following that management (Photo 2). Wrinkled Buttons was also observed, near the Cumberland River, occupying the edges and centre of a seasonal vehicle management track. There may be some initial short-term reduction in population size, however the species is likely to recover and benefit from the disturbance and modification (thinning of the shrub layer) to its habitat.
Reduce the area of occupancy of an important population	Unlikely	All trails will be micro-sited to avoid the direct removal of Wrinkled Buttons. Targeted surveys along the assessment corridor indicate that Wrinkled Buttons the drier ridge lines of EVC 21 – Shrubby Dry Forest. The proposed GTR 3 alignment passes through five large Wrinkled Buttons populations (including 2 trails containing over 100 plants each). The construction of the trail is likely to result in an increase in the Wrinkled Buttons population given the justification mentioned above (i.e. observations on existing walking/vehicle trails where the species persists and the recovery plan identifying disturbance as a beneficial). Providing the trail can be constructed in a way that prevents direct removal of the species, the proposed trail is unlikely to result in significantly reducing the area of occupation of an important population.
Fragment an existing important population into two or more populations	Unlikely	The proposed works will result in a narrow trail network in discrete locations and would not present a major barrier for the movement of the species, retaining population scale connectivity. The species tolerance to disturbance suggests it will not be adversely affected by low impact, small-scale fragmentation such as walking trails as the species has the ability to respond and establish in that circumstance.
Adversely affect habitat critical to the survival of the species	Unlikely	Critical habitat has not been declared for Wrinkled Buttons. It was recorded almost exclusively on the drier slopes of the project area in EVC 21- Shrubby Dry Forest, on occasion along sheltered aspects. According to the Wrinkled Buttons recovery plan (Oberon 2006b), key threats relevant to this project include altered fire regimes and weed invasion. Weed invasion will be reduced through the implementation of a CEMP, and is anticipated to be kept low once the trail becomes operational. Fire regimes are expected to be maintained within The Great

Significant impact criteria	Likelihood of significant impact	Justification
		Otway National Park. Oberon (2006b) indicates the importance of fire triggering mass germination of the species and then declining following regeneration of the surrounding vegetation. A reduction in the fire regime within the species habitat (EVC 21) is likely to lead in long-term, significant declines in the species population size. This assessment is based on the maintenance of the current fire regime by public land managers which has resulted in the size and extent of the current Wrinkled Button populations.
Disrupt the breeding cycle of an important population	Unlikely	The trails and any resultant disturbance will be a permeable narrow barrier in a discrete location that is unlikely to affect pollination, seed dispersal, gene flow or vegetative reproduction.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The availability and quality of habitat will not decline significantly as a result of the works. As discussed above the species is known to grow along walking tracks and colonise disturbed areas, demonstrating its ability to respond to site-scale fragmentation.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Soil disturbance and subsequent weed invasion will be minimised through construction management and follow up weed control. The project CEMP will specifically deal with controlling the introduction and spread of weed species, especially those species associated with walking track edges. Ongoing monitoring will be required to manage the establishment of weeds once the trails are operational.
Introduce disease that may cause the species to decline	Unlikely	The project is unlikely to introduce diseases to the project area providing hygiene protocols are adhered to in the CEMP.
Interfere substantially with the recovery of a species	Unlikely	There are no known recovery programs operational within the project area. The trail is therefore unlikely to interfere with the recovery of Wrinkled Buttons.

Conclusion for Wrinkled Buttons

It is considered unlikely that the project will result in a significant impact on Wrinkled Buttons based on an assessment against the significant impact criteria for vulnerable species. Micro-siting will be used during construction to prevent plants being directly impacted by the alignment. Furthermore, targeted surveys were undertaken in in early Summer to determine populations size and extent along the GTR 3 assessment corridor. If the correct mitigation measures are adhered to the project should be considered unlikely to cause a significant not result in a long-term decline in species.

Green-striped Greenhood *Pterostylis chlorogramma* and Spiral Sun-orchid *Thelymitra matthewsii* (both Vulnerable)

Occurrence in the project area

These two orchid species have been assessed together against significant impact criteria as they are likely to be supported by similar habitat types and they are both listed as Vulnerable species under the EPBC Act. Neither species was recorded during the detailed ecological surveys or during targeted surveys at the correct with flowering time. Database records indicate nearby records at the following locations:

- **Green-striped Greenhood**: the VBA database has recent records of this species within EVC 48 - Heathy Woodland near Moggs Creek. GTR 3 is proposed to pass adjacent to using existing vehicle management trails.
- **Spiral Sun-orchid**: this species has been recorded predominately in the heathland communities around Anglesea. There are no local records near the proposed trail alignment however, suitable high quality occurs in EVC 48 – Heathy Woodland of Moggs Creek and Fairhaven.

Table 26 Green-striped Greenhood and Spiral Sun-orchid: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	Further surveys are required to ascertain whether these species occur within the assessment corridor of the proposed trail. • Green-striped Greenhood The recovery plan for Green-striped Greenhood (DSE 2009b) identifies nine populations across Victoria. The population near Moggs Creek is not listed in the recovery plan and should be considered an important population as records are more recent than the report. No plants were recorded during targeted surveys along the trail alignment; therefore, it is not anticipated that any significant numbers of plants or populations will be destroyed that could lead to a decline in the size of an important population. • Spiral Sun-orchid The recovery plan for Spiral Sun-orchid (DSE 2010) lists 31 populations across Victoria and South Australia, most of which are along the coastline. All remaining populations are small in size. No plants were recorded along the trail alignment during targeted surveys; therefore, it is not anticipated that any significant numbers of plants or populations will be destroyed that could lead to a decline in the size of an important population.
Reduce the area of occupancy of an important population	Unlikely	No plants were recorded within the assessment corridor of the proposed trail. Small scale clearing of habitat is unlikely to result in the reduction of an important population.

Significant impact criteria	Likelihood of significant impact	Justification
Fragment an existing important population into two or more populations	Unlikely	The proposed works will result in a narrow trail network in discrete locations and would not present a major barrier for the movement of the species, retaining population scale connectivity.
Adversely affect habitat critical to the survival of the species	Unlikely	Critical habitat has not been declared for Green-striped Greenhood and Spiral Sun-orchid. • Green-striped Greenhood Green-striped Greenhood has a broad distribution across Victoria and diverse habitat requirements that include a shrubby understorey in forests and woodlands. The trail alignment plans to use existing trails that pass adjacent to the only record in the project area. Further modifications to habitat on existing trails are not anticipated or are expected to be minimal, and restricted to the existing trail footprint. The amount of habitat removal proposed for construction of the walking trail is unlikely to jeopardize the long-term survival of the species. • Spiral Sun-orchid The habitat requirements for Spiral Sun-orchid are poorly known however appear to be heath woodland and forested communities (DSE 2010). There is also an association with disturbance, whereby the species can occupy trail edges and fuel breaks. The amount of habitat removal proposed for construction of the walking trail is unlikely to jeopardize the long-term survival of the species.
Disrupt the breeding cycle of an important population	Unlikely	The trails and any resultant disturbance will be a permeable narrow barrier in a discrete location that is unlikely to affect pollination, seed dispersal, gene flow or vegetative reproduction.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The availability and quality of habitat will not decline significantly as a result of the works. High quality habitat suitable for these two species occurs within EVC 48 – Heathy Woodland along the proposed trail alignment. It is considered unlikely that the quality will be reduced or modified significantly that would cause a decline in the species providing the project CEMP is adhered to during constriction.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Soil disturbance and subsequent weed invasion will be minimised through construction management and follow up weed control. The project CEMP will specifically deal with controlling the introduction and spread of weed species, especially those species associated with walking track edges. Ongoing monitoring will be required to manage the establishment of weeds once the trails are operational.

Significant impact criteria	Likelihood of significant impact	Justification
Introduce disease that may cause the species to decline	Unlikely	This is considered to be an unlikely impact. To ensure this does not occur, trail construction material to be used will be sourced from a weed and disease free locations and hygiene protocols will be in place for construction activities. Pathogens associated with orchid species include various fungal diseases which may be spread on the shoes and clothes of trail users. Wash-down stations will assist in reducing the impact on these species and their habitat.
Interfere substantially with the recovery of a species	Possible	The local community group ANGAIR (Anglesea, Aireys Inlet Society for the Preservation of Flora and Fauna) monitors populations of Green-striped Greenhood at Moggs Creek. It is possible that the trail alignment will provide greater access to these populations, even if the trail network includes the use of existing trails. Greater foot traffic along existing trails may provide greater access to these plants and conservation efforts

Conclusion for Green-striped Greenhood and Spiral Sun-orchid

It is unlikely that the proposed trail alignment will have a significant impact on Green-striped Greenhood and Spiral Sun-orchid. No plants were recorded along the assessment corridor during targeted surveys. The amount of habitat removal proposed for construction of the walking trail is unlikely to jeopardize the long-term survival of the species.

Appendix 4 Fauna species - EPBC Significant Impact Criteria assessments

Latham's Snipe *Gallinago hardwickii* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species and migratory species under the EPBC Act and was not recorded during the fauna assessment. Suitable habitat is present at several limited locations along the length of the trail alignment including creek edges, estuarine and freshwater aquatic or wetland habitat such as Erskine River, Kennett River and Skenes Creek. The species has been frequently recorded around Painkalac Creek Estuary and individuals may occasionally occur within the assessment corridor during their non-breeding season.

Table 27 Latham's Snipe: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	Given the proximity of the trail alignment to known habitat such as Painkalac Creek Estuary, individuals may occasionally occur within or nearby the assessment corridor where the trail intersects similar creek edge or estuarine habitat. However, the proposed trail alignment intersects a minimal amount of potential habitat, which is unlikely to be of sufficient area to support an important population of Latham's Snipe. Additionally, most areas of potential habitat occur along existing walking trails and impacts on a population of Latham's Snipe will be minimal. Implementation of a site-specific Construction Environmental Management Plan (CEMP) with suitable erosion and pollutant control measures will be applied during construction to avoid indirect impacts on nearby waterways which may support suitable habitat for the species.
Reduce the area of occupancy of an important population	Unlikely	The proposed works would result in a narrow trail network of a 2.5 metre wide corridor in discrete locations. Most areas of potential habitat occur along existing walking trails and would not reduce the area of occupancy for the species within the project area.
Fragment an existing important population into two or more populations	Unlikely	The proposed works will result in a narrow trail network in discrete locations and would not present a major barrier for the movement of the species. The proposed trail alignment makes use of existing walking trails where it intersects potential creek edge and estuarine habitat. No population fragmentation is likely to occur.
Adversely affect habitat critical to the survival of the species	Unlikely	Habitat critical to the survival of this species includes areas needed:

Significant impact criteria	Likelihood of significant impact	Justification
		• For activities such as foraging, breeding, roosting, or dispersal • For the long-term maintenance of the species (including the maintenance of species essential to the survival of the Latham's snipe, such as macrobenthos) • To maintain genetic diversity and long-term evolutionary development • For the re-introduction of populations or recovery of the species. No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat. The proposed trail alignment intersects areas that may occasionally be utilised for foraging, roosting or dispersal. However, no adverse impacts to these habitats are likely to occur, and the trail alignment largely utilises existing walking trails at these locations. Indirect impacts to waterways during trail construction will be minimised with implementation of a CEMP, including suitable erosion and pollutant control measures.
Disrupt the breeding cycle of an important population	Unlikely	The impact footprint is unlikely to support an important population of the species as previously described above. Additionally, Latham's Snipe breed in the northern hemisphere and migrate to the southern hemisphere during their non-breeding season. Disruption to the species breeding cycle is unlikely to occur.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	Most areas of potential habitat for Latham's Snipe occur along or nearby existing walking trails. As such, the project is expected to result in minimal disturbance to species habitat and the level of disturbance in the context of available habitat will not lead to a broader species decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Invasive fauna species are already present within the project area (e.g. cats and foxes), it is highly unlikely that other invasive species harmful to Latham's Snipe will become established within the project area.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is harmful to the Latham's Snipe.
Interfere substantially with the recovery of a species	Unlikely	There is no accepted or adopted recovery plan associated for Latham's Snipe. The conservation advice outlines conservation and management priorities including avoiding habitat loss and degradation (DCCEEW 2024). The project is not considered likely to substantially interfere with the recovery of the species due to the minimal impact to potential habitat and localised area of

Significant impact criteria	Likelihood of significant impact	Justification
		potential impacts.

Conclusion for Latham's Snipe

The project is considered unlikely to result in a significant impact on Latham's Snipe based on an assessment against the significant impact criteria for vulnerable species. This conclusion has been reached on the basis that impacts to potential habitat, including creek edges and estuaries is minimal and the trail alignment make use of existing walking trails throughout most areas of suitable habitat. Indirect impacts to nearby waterways and aquatic habitat will be reduced with proper implementation of a site-specific CEMP, including applying suitable erosion and pollutant control measures during construction.

Blue-winged Parrot *Neophema chrysostoma* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was recorded during the fauna surveys nearby the assessment corridor at Moggs Creek and Fairhaven. Numerous VBA records also occur across the project area. This species occurs throughout a range of habitat types including woodland, forest, shrublands, grasslands and modified areas such as road reserves. Given this, suitable habitat is present throughout the project area and the species is likely to regularly occur.

Table 28 Blue-winged Parrot: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Rationale
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The species is a partial migrant, with varying numbers migrating over the Bass Strait to Tasmania during their breeding period in autumn and winter, though some individuals remain and breed in southern Victoria. Suitable habitat for Blue-winged Parrot includes woodland and forest patches present throughout the proposed trail alignment. It is possible that the project area supports an important key source population for breeding or dispersal, or that are necessary for maintaining genetic diversity, as little is known about the species genetics. Habitat loss has been minimised by utilising existing walking trails where possible, and works will be sited to avoid large trees with hollows and trees likely to become hollow bearing in future years within forest habitat. As such, it is unlikely that any potential breeding habitat will be impacted by the project. However, some areas within the trail alignment may provide occasional low to moderate quality foraging habitat as the species forages on the ground for various seeds. Minimal loss of lower quality foraging habitat is unlikely to lead to the long-term decrease in the size of an important population of a species. The potential for the project to lead to a long-term decrease in the size of the population is unlikely.

Significant impact criteria	Likelihood of significant impact	Rationale
Reduce the area of occupancy of an important population	Unlikely	Some areas of potential habitat are proposed to be directly impacted or removed, the majority of which is low to moderate quality foraging habitat. This may result in a reduction in the potential area of occupancy for the species. However, individuals are wide ranging and highly mobile, likely to utilise a range of more suitable habitat in the surrounding landscape. The proposed works will occur in intact forests that have a history of road/track construction, logging and bushfire and the majority of works will be restricted to understorey vegetation and small tree removal. The works area and the surrounding habitat will remain suitable for this species during and post construction. As such, while some habitat disturbance will occur during construction, the overall area of occupancy of the species will remain unchanged.
Fragment an existing important population into two or more populations	Unlikely	The species is partially migratory and highly mobile. The project entails no effects or mechanisms that might fragment the populations of Blue-winged Parrot.
Adversely affect habitat critical to the survival of a species	Unlikely	The Conservation Advice for Blue-winged Parrot (Commonwealth of Australia 2023) defines habitat critical to the survival of a species. It includes: *"Foraging and staging habitats found from coastal, sub-coastal and inland areas, right through to semi-arid zones including: grasslands, grassy woodlands and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs."* Based on this broad definition, some areas of potential critical habitat are proposed to be directly impacted or removed, the majority of which is low to moderate quality foraging habitat. However, individuals are wide ranging and highly mobile, likely to utilise a range of more suitable habitat in the surrounding landscape. The removal of a narrow corridor, up to 2.5 metres wide, of low to moderate quality understorey habitat is unlikely to be considered sufficient to adversely affect habitat critical to the survival of the species.

Significant impact criteria	Likelihood of significant impact	Rationale
Disrupt the breeding cycle of an important population	Unlikely	Blue-winged Parrot breed primarily in Tasmania, though some individuals remain and breed in southern Victoria in heathy forests and woodlands. Nesting occurs in tree hollows. The proposed works are highly unlikely to disrupt the breeding cycle of the species on the primary basis that all hollow-bearing trees will be retained, and very few small trees in forest or woodland patches are proposed to be removed, which are generally unlikely to provide breeding habitat.
Modify destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	Some areas of potential habitat are proposed to be directly impacted or removed, the majority of which is low to moderate quality foraging habitat. However, individuals are wide ranging and highly mobile, likely to utilise a range of suitable habitat in the surrounding landscape. While the works will result in the removal of understorey vegetation and small trees within forests that may be used by the species, this level of loss is unlikely to result in species decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	The project will not entail mechanisms for the potential introduction or establishment of invasive species harmful to Blue-winged Parrots.
Introduce disease that may cause the species to decline	Unlikely	The project will not entail mechanisms with potential for introduction or establishment of disease that might affect Blue-winged Parrots.
Interfere substantially with the recovery of the species	Unlikely	The species Conservation Advice (Commonwealth of Australia 2023) identifies priority recovery and threat abatement actions to support Blue-winged Parrot recovery, though no specific recovery plan has been published for the species within Victoria. Habitat loss caused by land clearing is identified as a key conservation and recovery action for the species, including to '*cease all land clearing of habitat critical for the survival of Blue-winged Parrot*'. As outlined above, some areas of potential habitat are proposed to be directly impacted or removed, majority of which is low to moderate quality foraging habitat. However, individuals are wide ranging and highly mobile, likely to utilise a range of more suitable habitat in the surrounding landscape. The scale of possible effects of the project on the species is not likely to interfere with the recovery of the species.

Conclusion for Blue-winged Parrot

The project is considered unlikely to result in a significant impact on Blue-winged Parrot based on an assessment against the significant impact criteria for vulnerable species. This conclusion has been reached on the basis that large and hollow-bearing tree removal will be avoided by micrositing during trail construction, and the high availability of foraging resources in the surrounding landscape. The impact footprint comprises a small component of foraging resources for Blue-winged Parrot and will not result in a long-term species decline.

Diamond Firetail *Stagonopleura guttata* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was not recorded during the fauna assessment. Potential habitat is present primarily towards the north-eastern end of the trail alignment near Fairhaven. However, the project area represents the southern extent of the species distribution with no database records south of Lorne. There are a few scattered records around Aireys Inlet and the species may infrequently occur within the assessment corridor, however the species typically occurs in open woodland and grassland habitats inland of the Great Dividing Range.

Table 29 Diamond Firetail: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The proposed trail alignment is at the southern extent of the species range, and provides little suitable open woodland and grassland habitat for the species. Habitat throughout majority of the area is unlikely to support Diamond Firetail. Given that the species has been infrequently recorded around Aireys Inlet, individuals may occasionally occur within or nearby the assessment corridor as a part of the populations' broader distribution. However, the limited suitability of the area suggests that the assessment corridor is unlikely to directly support a portion of the Diamond Firetail population. As such, it is highly unlikely that the proposed project will lead to a long-term decrease in the size of an important population of a species.
Reduce the area of occupancy of an important population	Unlikely	As described above, the assessment corridor is highly unlikely to support an important population of Diamon Firetail. The construction of a narrow trail designed to minimise native vegetation removal, maintain canopy connectivity and utilise existing walking trails where possible is unlikely to reduce the area of occupancy of an important population.
Fragment an existing important population into two or more populations	Unlikely	The disturbance associated with trail construction will be a discrete narrow disturbance that will not act as a barrier for dispersal for this species as the canopy will remain effectively contiguous in the context of this species dispersal and movement patterns.
Adversely affect habitat critical to the survival of the species	Unlikely	The conservation advice for Diamond Firetail states that any known or likely habitat should be considered habitat critical to the survival of the species (DCCEEW 2023). The north-eastern portion of the impact footprint intersects the species known range, and removal of vegetation in this area may be considered to meet this broad definition. However, individuals are wide ranging and highly mobile, likely to utilise a range of more suitable habitat in the surrounding landscape. The removal of a narrow corridor of marginally suitable potential habitat is unlikely to be considered sufficient to adversely affect habitat

Significant impact criteria	Likelihood of significant impact	Justification
		critical to the survival of the species.
Disrupt the breeding cycle of an important population	Unlikely	As described above, the assessment corridor is highly unlikely to support an important population of Diamon Firetail. The proposed project is unlikely to disrupt the breeding cycle of an important population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	Some areas of potential habitat are proposed to be directly impacted or removed, the majority of which is unlikely to be frequently utilised by Diamond Firetail. Additionally, individuals are wide ranging and highly mobile, likely to utilise a range of more suitable habitat in the surrounding landscape north of the project area. While the works will result in the removal of understorey vegetation and small trees within forests that may infrequently be used by the species, this level of loss is unlikely to result in species decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Invasive fauna species are already present within the project area (e.g. invasive weeds, cats and foxes), it is unlikely that other invasive species harmful to Diamond Firetail will become established within the project area. In particular, invasive annual grasses pose a key threat to the species (DCCEEW 2023). Actions should be taken to prevent the introduction and spread of weeds during and post trail construction.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is harmful to the Diamond Firetail.
Interfere substantially with the recovery of a species	Unlikely	The Conservation Advice for the species (DCCEW 2023) identifies the key threats to Diamond Firetail to include habitat loss, degradation and fragmentation and the reduction in the extent and quality of habitat due to weeds, die-back and damage caused by livestock and feral herbivores. Key conservation actions are identified as retaining, protecting, and maintaining areas of high-quality habitat, including woodland, open forest, grassland, and mallee habitat. The scale of possible effects of the project on the species is not likely to interfere with the recovery of the species.

Conclusion for Diamond Firetail

The project is considered unlikely to result in a significant impact on Diamond Firetail based on an assessment against the significant impact criteria for vulnerable species. This conclusion has been reached on the basis that the assessment corridor provides a small portion of potential habitat for Diamond Firetail at the southern extent of the species range, which is likely to be infrequently occupied by the population as a part of its broader key distribution throughout south-east mainland Australia.

Gang-gang Cockatoo *Callocephalon fimbriatum* (Endangered)

Occurrence in the project area

This species is listed as Endangered under the EPBC Act and was recorded during the fauna assessment within the assessment corridor in the foothills behind Moggs Creek. Suitable habitat is present throughout the project area, with numerous observations recorded across the project area.

Table 30 Gang-gang Cockatoo: self-assessment against Significant Impact Criteria (CoA 2013)

Significant Impact Criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of a population of a species	Unlikely	While the proposal may result in the removal of potential foraging and breeding habitat for Gang-gang Cockatoo, the total area of habitat being removed is small in relation to the amount of retained, and non-impacted habitat within the broader forested landscape and surrounding areas. Furthermore, the works will be sited to avoid large trees with hollows and likely to become hollow-bearing in future years within forest that provides primary breeding habitat for this species. Given the impact will predominantly affect the understorey and the scale of proposed impact is small compared to the available habitat in the region, it is unlikely that impacts will lead to a long-term decrease in the size of a Gang-gang Cockatoo population.
Reduce the area of occupancy of the species	Unlikely	Gang-gang Cockatoo is a seasonal altitudinal migrant and spends the winter months in drier woodlands and forest types and the summer months in sub-alpine and montane forests (DAWE 2022). The species is capable of occupying vegetation throughout this range and utilises a range of vegetation types and habitats. The proposed works will occur in intact forests that have a history of road/track construction, logging and bushfire and the majority of works will be restricted to understorey vegetation and small tree removal. As such the works area and the surrounding habitat will remain suitable for this species during and post construction. As such, while some habitat disturbance will occur during construction, the overall area of occupancy of the species will remain unchanged.
Fragment an existing population into two or more populations	Unlikely	Gang-gang Cockatoo is capable of dispersing between summer habitat in the Australian alpine area and winter habitat at lower elevations (DAWE 2022). It is also capable of dispersing and foraging within urban environments. As such the trail works will not act as a barrier to this highly mobile avian species.

Significant Impact Criteria	Likelihood of significant impact	Justification
Adversely affect habitat critical to the survival of the species	Unlikely	Critical habitat is defined by DAWE (2022) as all foraging habitat in both breeding and non-breeding seasons and stands of suitable hollow-bearing trees, for breeding and nesting. Also important are stands of trees within or adjacent to known breeding areas, that are likely to become hollow-bearing in future years. Hollow-bearing trees are expected to be avoided during construction works by locating trails around large trees. Vegetation to be removed or impacted includes potential foraging habitat, however the scale and type of vegetation to be disturbed is not critical to the species survival in the location or nationally.
Disrupt the breeding cycle of a population	Unlikely	Gang-gang Cockatoo breeds during the summer months between October and January. Given the extent of habitat available in the surrounding landscape, the spatially restricted nature of works and that hollow-bearing trees are expected to be avoided during construction, with the proposed trail unlikely to disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The project will likely impact a small amount of the habitat available in the broader landscape. The proposed trail is not likely to isolate populations as the trail will not constitute a barrier to movement. While the works will result in the removal of understorey vegetation and small trees within forests that are likely to be used by the species, this level of loss is not likely to result in the decline of the species at a local or national scale.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat	Unlikely	Feral animals and plants are established in the project area. Some of these are known to negatively impact Gang-gang Cockatoo including cats, and to a lesser extent, foxes. Some native species are also likely to compete with Gang-gang Cockatoo for hollow resources. However, it is unlikely that the trail would result in the establishment of new pest species.
Introduce disease that may cause the species to decline	Unlikely	Psittacine beak and feather disease (PBFD) is known to impact Gang-gang Cockatoo and is generally transmitted via contact with infected birds or water sources. It is unlikely that the trail would exacerbate or introduce this disease into the area.
Interfere substantially with the recovery of a species	Unlikely	DAWE (2022) contains a number of recovery items aimed at halting the decline of Gang-gang Cockatoo. While some aspects of the trail are counter to the objectives of the recovery actions, specifically halting land clearing in known Gang-gang Cockatoo habitat areas, the scale and type of disturbance proposed is unlikely to interfere substantially with the recovery of the species, particularly given the avoidance of hollow-bearing trees.

Conclusion for Gang-gang Cockatoo

Gang-gang Cockatoo will likely forage and nest within the assessment corridor. However, there will unlikely be a significant impact to the species due to avoiding the removal of hollow-bearing trees and the high availability of foraging resources in the surrounding landscape. The assessment corridor comprises a small component of resources for the Gang-gang Cockatoo and will not result in a long-term decline in species.

Yellow-bellied Glider *Petaurus australis* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was recorded during the nocturnal surveys of the fauna assessment. Suitable habitat is present throughout the project area.

Table 31 Yellow-bellied Glider: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	Yellow-bellied Glider was recorded during nocturnal surveys and likely present along the assessment corridor and broader local area. Impacts associated with the project are to be restricted to understorey vegetation, therefore it is unlikely that this impact would lead to a broader decline in the population.
Reduce the area of occupancy of an important population	Unlikely	The area of occupancy for Yellow-bellied Glider will remain unchanged as the trail alignments will be a discrete narrow disturbance and the canopy will remain effectively contiguous in the context of this species dispersal and movement patterns.
Fragment an existing important population into two or more populations	Unlikely	The disturbance associated with trail construction will be a discrete narrow disturbance that will not act as a barrier for dispersal for this species as the canopy will remain effectively contiguous in the context of this species dispersal and movement patterns.
Adversely affect habitat critical to the survival of the species	Unlikely	Habitat critical to the survival of this species includes areas dominated by winter-flowering and smooth-barked eucalypts, with living hollow-bearing trees and sap trees. Several trees with evidence of sap extraction were observed in areas of Yellow-bellied Glider observations. Impacts associated with the project will be restricted to mostly understorey vegetation, therefore it is unlikely that this impact would lead to impacts that would adversely affect the survival of the species. Furthermore, all hollow-bearing trees will be avoided and as such critical breeding habitat will not be impacted. Sap trees should also be avoided to prevent an impact to a local food resource.
Disrupt the breeding cycle of an important population	Unlikely	The project will predominantly remove understorey vegetation and will avoid direct impacts to breeding sites by avoiding removal of hollow-bearing trees during construction. If operation of the trails is restricted to daylight hours when the species is inactive, any potential disturbance from noise and lighting at night will be avoided. It is therefore unlikely that impacts of the trail construction and operation will disrupt the breeding cycle of Yellow-bellied Gliders.

Significant impact criteria	Likelihood of significant impact	Justification
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The project will remove understorey vegetation only and will avoid direct impacts to breeding sites by avoiding removal of hollow-bearing trees during construction. This level of disturbance in the context of available habitat will not lead to a broader species decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Invasive fauna species are already present within the project area (e.g. cats and foxes), it is highly unlikely that other invasive species harmful to Yellow-bellied Glider will become established within the project area.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is harmful to the Yellow-bellied Glider.
Interfere substantially with the recovery of a species	Unlikely	There is no accepted or adopted recovery plan associated for Yellow-bellied Glider. The conservation advice outlines maintaining and protecting habitat from threats such as high severity bushfires and restoring habitat connectivity (DPE 2017). Considering the above factors, the project will not interfere with the recovery of Yellow-bellied Glider.

Conclusion for Yellow-bellied Glider

The project is considered unlikely to result in a significant impact on Yellow-bellied Glider based on an assessment against the significant impact criteria for vulnerable species. This conclusion has been reached on the basis that vegetation removal in forested areas will be restricted to understorey species and all hollow-bearing trees will be avoided. If any treatment of large or hollow-bearing trees, that are deemed hazardous, is required then this will be done in consultation with the land manager, project ecologist and arboriculture specialist.

Australian Grayling *Prototroctes maraena* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act. Aquatic surveys were not undertaken during the fauna assessment, therefore the species was not recorded. Areas of suitable habitat within the project area occur in the number of streams that are intercepted by the assessment corridor. This species has been recorded within estuaries of rivers and creeks within the GTR 3 project area.

Table 32 Australian Grayling: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	This species has previously been recorded within estuaries of rivers and creeks intercepted by the assessment corridor, with last known records in Erskine River in 1999. The development of a trail is not likely to lead to a long-term decrease in the size of a population of Australian Grayling if instream works are avoided and a site-specific CEMP implementing suitable erosion and pollutant control measures are applied during construction.
Reduce the area of occupancy of an important population	Unlikely	Known locations are limited and the overall area of species occupancy is in decline. The proposed works would result in a narrow trail network in discrete locations and would not reduce the area of occupancy for the species within the project area. Proven effective measures should be implemented in a project CEMP, e.g. single span bridges, sustainable trail design and sediment controls.
Fragment an existing important population into two or more populations	Unlikely	The proposed works will result in a narrow trail network in discrete locations and would not present a major barrier for the movement of the species.
Adversely affect habitat critical to the survival of the species	Unlikely	Critical habitat is not defined to particular locations; however, all rivers and streams where this species is found are considered important to the species' survival, due to the limited understanding of reproductive success. Habitat is unlikely to be affected by trail construction in the project area, as river and creek systems will not be altered and indirect impacts through sedimentation will be managed appropriately.
Disrupt the breeding cycle of an important population	Unlikely	The proposed works are unlikely to disturb or create a barrier to stream and river connectivity. Breeding cycles will not be adversely affected by the project.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed works are unlikely to affect the quality of habitat available if instream works are avoided and effective erosion and pollutant control measures are applied during construction.

Significant impact criteria	Likelihood of significant impact	Justification
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	It is unlikely that the construction of the trail would cause the establishment of invasive species. Hygiene controls to reduce the risk of the spread or introduction of aquatic weeds, pathogens and predators should be included in a project CEMP.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is harmful to Australian Grayling.
Interfere substantially with the recovery of a species	Unlikely	Threats to Australian Grayling include barriers to movements, river regulation, poor water quality, siltation, impact of introduced fish, climate change, disease and fishing, angling and whitebaiting. The project is not considered likely to substantially interfere with the recovery of the species due to the localised area of potential impacts.

Conclusion for Australian Grayling

It is considered a low likelihood that the project would result in a significant impact on these species within or downstream of the assessment corridor, as long as instream works are avoided and a site-specific Construction Environmental Management Plan (CEMP) implementing suitable erosion and pollutant control measures are applied during construction.

Broad-toothed Rat *Mastacomys fuscus mordicus* (Endangered)

Occurrence in the project area

This species is listed as Endangered under the EPBC Act and was not recorded during the fauna assessment undertaken by Biosis. Suitable habitat is present in areas of high ground cover of sedges and grasses and may persist in gullies throughout the project area. The GORCT team obtained advice from the Wild Otways Initiative, who undertook additional survey and investigation for several threatened fauna, including the Broad-toothed Rat (DEECA & GORCT Project Team 2024, Wild Otways Initiative 2023b). In the 2023 surveys, the species was detected around Aireys Inlet, Reedy Creek and Lorne. The species is also assumed to occur at Grey River given the presence of suitable habitat, though they were not detected during the 2023 surveys (Wild Otways Initiative 2023b). The closest detection of the species in relation to the trail alignment was approximately 50 metres from an existing walking trail along Saint George River (DEECA & GORCT Project Team 2024). The investigation by DEECA and the Wild Otways Initiative concluded that the proposed trail alignment is considered low risk and impact to the species, subject to the incorporation of a 25 metre boardwalk at the mouth of Grey River to mitigate direct impacts to known habitat.

Table 33 Broad-toothed Rat: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of a population of a species	Unlikely	Broad-toothed Rat has a highly fragmented distribution, with the population at the Otway Ranges persisting at a small number of sites. The proposed works will consist of a narrow trail through suitable habitat, and existing walking trails will be utilised where possible to reduce the overall impact on species habitat and native vegetation. Additionally, incorporation of the boardwalk at Grey River will further avoid habitat removal at this location. With the appropriate mitigation measures to minimise impacts, it is unlikely that the proposed works with lead to a long-term decrease in the size of the Broad-toothed Rat population.
Reduce the area of occupancy of the species	Unlikely	This species has low dispersal capacity and is already restricted in distribution in the Otway Ranges. Individuals recorded in the assessment corridor along Saint George River are adjacent to an existing walking trail to be incorporated into the alignment, as such no further impact to habitat is anticipated to occur at this location. Habitat removal at Grey River will be largely avoided and minimised through the proposed incorporation of a 25-metre board walk, and appropriate measures should be implemented to maintain and restore groundcover vegetation during and post trail construction. The trail should avoid all areas where the species is recorded or potential habitat is located, such as high grass and sedge ground cover. It may also be necessary to micro-site the trail to avoid areas for potential nesting and high connectivity (identified by tracks and tunnels through understorey vegetation). The remainder of the trail alignment is considered low risk to the species (DEECA & GORCT Project Team 2024) and utilising existing trails and the boardwalk design will avoid reducing the

Significant impact criteria	Likelihood of significant impact	Justification
		species area of occupancy.
Fragment an existing population into two or more populations	Unlikely	The proposed works would result in a narrow trail in discrete locations and would not present a major barrier for the movement of the species. Whisson et al. (2015) demonstrates that Broad-toothed Rats in alpine environments freely disperse through and around significantly fragmented and disturbed landscapes and utilises drains, pipes and introduced vegetation to move through inhospitable landscapes.
Adversely affect habitat critical to the survival of the species	Unknown	All habitat where Broad-toothed Rat occurs, or could occur, is considered critical to the survival of the species (DCCEW 2023). The proposed works will remove understorey vegetation, which is a key component of habitat for this species. As described above, key habitat areas will be avoided by utilising existing walking trails where possible and incorporating a boardwalk design though likely habitat areas. Given this, the project is unlikely to adversely impact habitat critical to the survival of Broad-toothed Rat.
Disrupt the breeding cycle of a population	Unlikely	The proposed works will result in a narrow trail that would not affect the movement or dispersal of the species. In areas where the species was recorded or potential habitat, the trail should be micro-sited to avoid areas for potential nesting and evidence of high connectivity (identified by tracks and tunnels through understorey vegetation). Construction in suitable habitat should avoid the breeding season (October to March) to mitigate impacts on breeding success.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed works will consist of a narrow trail that will allow dispersal to suitable surrounding habitat. However, a small extent of habitat modification or removal is expected to occur from the trail construction. By adopting mitigation measures to avoid and reduce impacts on Broad-toothed Rat habitat, these impacts are unlikely to occur to the extent of species decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat	Unlikely	Invasive fauna species are already present within the project area; however, the trail may assist dispersal of predators and increase predation pressure within the project area. Implementing a comprehensive pest animal program targeting foxes, cats and deer may reduce the risk of predation and habitat destruction. Additionally, invasive weeds species can modify or simplify vegetation structure that may indirectly influence Broad-toothed Rat habitat through altered structure and/or hydrology. Soil disturbance and subsequent weed invasion should be minimised through construction management and follow up weed control. With the above effective mitigation measures in place, it is highly unlikely that an

Significant impact criteria	Likelihood of significant impact	Justification
		invasive species harmful to Broad-toothed Rat will become established within the project area.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is directly harmful to Broad-toothed Rat (see discussion below regarding Phytophthora indirect habitat impacts).
Interfere substantially with the recovery of a species	Unlikely	The Conservation Advice for the species (DCCEW 2023) identifies the key threats to Broad-toothed Rat including predation, fire, climate change, habitat loss and fragmentation and the reduction in the extent and quality of habitat due to weeds, die-back and damage caused by livestock and feral herbivores. Key conservation actions are identified as controlling predators and maintaining and protecting habitat. Areas of suitable Broad-toothed Rat habitat have been identified within the project area and the species has been recorded nearby the trail alignment. The project may cause habitat loss, increase predation risk and increase the spread of dieback if threats are not managed effectively. Other impacts associated with trail construction includes the likelihood of human traffic walking off track and trampling potential Broad-toothed Rat habitat. These potential impacts are likely to be reduced by avoiding and minimising habitat removal, including use of existing walking trails and boardwalk construction through key habitat, incorporating interpretative signage to increase visitor awareness, and implementation of the GORCT Phytophthora Dieback Management Plan. The project should also consider incorporating fencing along key habitat areas, such as along the boardwalk, to discourage visitors from walking off track. With successful implementation of these measures, the project is unlikely to substantially interfere with the species recovery. The State of the Environment Pty Ltd recommendations included a community-led threatened fauna management project at the Great Ocean Road Coastal Trail Grey River Mouth Boardwalk (DEECA & GORCT Project Team 2024) which may assist to further mitigate the project's impacts and assist in species recovery.

Conclusion for Broad-toothed Rat

It is unlikely that the project will result in a significant impact on Broad-toothed Rat based on the assessment against the significant impact criteria for endangered species. This conclusion has been reached based on the proposed alignment utilising existing walking trails where possible, reducing impacts to key habitat at Grey River through incorporating a boardwalk design, and strict implementation of the GORCT Phytophthora Dieback Management Plan.

Southern Bent-winged Bat *Miniopterus orianae bassanii* (Critically Endangered)

Occurrence in the project area

This species is listed as a Critically Endangered species under the EPBC Act. Known records have been located south of Lorne and near Wye River.

Table 34 Southern Bent-winged Bat: self-assessment against Significant Impact Criteria (CoA 2013)

Significant Impact Criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of a population	Unlikely	The proposed works are unlikely to contribute to the long-term decrease in a population of Southern Bent-wing Bat.
Reduce the area of occupancy of the species	Unlikely	The project is unlikely to lead to a reduction in the area occupancy of this species as there are no maternal or roost caves within the assessment corridor.
Fragment an existing population into two or more populations	Unlikely	The proposed works are unlikely to fragment the population the species is highly mobile and the project area does not contain maternal or roost caves.
Adversely affect habitat critical to the survival of a species	Unlikely	The project will not adversely affect habitat critical to the survival of the species as the project area does not contain maternal or roost caves.
Disrupt the breeding cycle of a population	Unlikely	The project is not likely to affect the breeding cycle of the species as it is not located in close proximity to a maternity site or on a known movement route between breeding and non-breeding habitats.
Modify destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The project has no potential to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Unlikely	The proposed works are unlikely to establish invasive species that are not already present in the environment.

Significant Impact Criteria	Likelihood of significant impact	Justification
Introduce disease that may cause the species to decline	Unlikely	The project does not include any known mechanism that would result in introduction of any disease that is not already present in the environment.
Interfere with the recovery of the species	Unlikely	The scale and type of disturbance proposed is unlikely to interfere with the recovery of the species.

Conclusion for Southern Bent-winged Bat

Whilst Southern Bent-wing Bats are capable of long distance flights; both during nightly foraging and in broader movements between roosts, the project will not impact on a roost or maternity cave of either species. Ground based activities proposed by the project are therefore considered unlikely to have any impact on the species.

Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was not recorded during the fauna assessment. Foraging habitat present throughout the project area.

Table 35 Grey-headed Flying-fox: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The closest camp of Grey-headed Flying-fox is located in Colac approximately 54 km north-west of the project area. Another camp is also located in Geelong approximately 65 km north-east of the project area. Grey-headed Flying-fox are likely to forage across the region with individuals able to travel over 50 kilometres from camps in a night. Due to the extent of large contiguous habitat surrounding the project area, it is unlikely that the proposed works will reduce habitat critical for survival. The species is highly mobile and as there are no known roost sites within the project area, the proposed works are unlikely to fragment an existing population.
Reduce the area of occupancy of an important population	Unlikely	
Fragment an existing important population into two or more populations	Unlikely	
Adversely affect habitat critical to the survival of the species	Unlikely	Whilst the species may visit the project area on occasion, suitable trees located within the project area are unlikely to provide habitat critical to the survival of the species given the large extent of other available food sources and the species high mobility.
Disrupt the breeding cycle of an important population	Unlikely	No breeding population occurs within the project area, and the project will not result in the disruption of the species during their breeding period.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The potential habitat located within the project area is not critical to the survival of the species and is unlikely to cause a decline in this species.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	The proposed works will not result in the establishment or introduction of an invasive species or disease that could cause the species to decline. The project will not introduce disease that may cause any impact on the species.
Introduce disease that may cause the species to decline	Unlikely	
Interfere substantially with the recovery of a species	Unlikely	The small scale of proposed works and the removal of vegetation primarily in the understorey is unlikely to interfere with the recovery of the species.

Conclusion for Grey-headed Flying-fox

Grey-headed Flying-fox is likely to forage on flowering Eucalypts within the assessment corridor. However, as these trees form a very small component of a much larger network of foraging habitat utilised across much of Victoria and parts of South Australia, New South Wales and Queensland the proposed removal of any trees within the assessment corridor is considered unlikely to result in a significant impact on this species.

Long-nosed Potoroo *Potorous tridactylus tridactylus* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was recorded during the fauna assessment during the remote camera trap survey. Several records located across the project area and nearby the assessment corridor.

Table 36 Long-nosed Potoroo: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	The population located at the Otway Ranges is considered an important population. Long-nosed Potoroo was recorded during the remote camera trap survey at site 58, located off the existing Cumberland Track and along the proposed Alternate Trail 4. Known records of Long-nosed Potoroo are within close proximity to existing tracks and walking trails, therefore it is unlikely the proposed trail will cause a long-term decrease in the population.
Reduce the area of occupancy of an important population	Unlikely	Long-nosed Potoroo exist throughout the Otway Ranges where there are existing networks of roads, maintenance tracks and informal trails. The removal of understorey vegetation will reduce cover and decrease the connectivity and amount of suitable habitat available. If proposed works predominantly utilise existing tracks where Long-nosed Potoroos are known or expected to occur, the area of occupancy for this population is unlikely to be reduced.
Fragment an existing important population into two or more populations	Unlikely	Prominent roads and vehicle tracks are present throughout the Otway Ranges, therefore the proposed works are unlikely to cause the fragmentation of the overall population. However, at a local scale, proposed works may cause barriers to dispersal from loss of connectivity to suitable habitat. Long-nosed Potoroo prefer dense understorey vegetation and canopy cover. The proposed works will predominantly remove understorey vegetation. Possible mitigation measures to reduce impact include utilising existing tracks and avoiding new construction in areas of known and expected Long-nosed Potoroo occupancy.
Adversely affect habitat critical to the survival of the species	Unlikely	Habitat critical to the survival of Long-nosed Potoroo includes occupied forested habitats larger than 0.1 km^2. Unoccupied forested areas (larger than 0.1 km^2) may also be considered critical if they are adjacent or proximal to extant subpopulations, as they can provide future habitat. Also, areas of habitat that once supported Long-nosed Potoroo are critical habitat for reintroductions in the future. The proposed works are unlikely to affect critical habitat if habitat patches are not reduced to less than 0.1 km^2.

Significant impact criteria	Likelihood of significant impact	Justification
Disrupt the breeding cycle of an important population	Unlikely	Long-nosed Potoroos breed through-out the year but have had seasonal peaks recorded in late winter to early spring. Disruption to breeding may occur after vegetation removal, as dispersal between individuals may be impacted. However, as breeding occurs year-round, the capacity for breeding is unlikely to be impacted upon.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed works will remove and decrease suitable habitat, however recent records near existing roads and tracks suggest the proposed works will not cause a decline in the population.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Invasive species, such as Red Fox and Feral Cat, are already established throughout the project area. The removal of dense understorey vegetation may increase exposure to predation. Foxes are known to utilise tracks and roads for dispersal, the proposed works may facilitate greater dispersal throughout the landscape.
Introduce disease that may cause the species to decline	Unlikely	The presence and spread of forest dieback from *Phytophthora cinnamomi* may affect the abundance of the preferred food source (underground fungi) and alter the vegetation composition preferred by Long-nosed Potoroo. Maintaining clean equipment during construction and providing cleaning stations along the trail will reduce the likelihood of dieback from spreading and impacting the project area.
Interfere substantially with the recovery of a species	Unlikely	It is unlikely that this species will substantially affect the national recovery of the southern subpopulation of Long-nosed Bandicoot, as this species has population strongholds in other areas of south-eastern Australia.

Conclusion for Long-nosed Potoroo

Long-nosed Potoroo were recorded nearby the assessment corridor and are expected to regularly occur within the assessment corridor. The species is sensitive to fragmentation within suitable habitat, however recent records of the species adjacent to existing tracks suggest this species is unlikely to be impacted by the creation of a new trail. The proposed removal of any vegetation within the assessment corridor is considered unlikely to result in a significant impact, as long as a site-specific Fauna Management Plan implementing suitable salvage techniques and mitigation measures are applied during construction. Mitigation measures include utilizing existing tracks, avoiding canopy removal and preventing fragmentation of habitat between tracks.

Swamp Antechinus *Antechinus minimus maritimus* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable under the EPBC Act and was not recorded during Biosis' fauna assessment, however database records indicate that Swamp Antechinus have been previously recorded throughout the project area. The GORCT team obtained advice from the Wild Otways Initiative, who undertook additional survey and investigation for several threatened fauna, including the Swamp Antechinus (Wild Otways Initiative 2023a, State of the Environment Pty Ltd 2023). In the 2021-23 surveys, the species was detected nearby the trail alignment at Grey River and at Coalmine Creek within approximately 125 metres of the trail alignment, as well as more broadly in the region around Aireys Inlet and Painkalac Creek, and Moggs Creek (DEECA & GORCT Project Team 2024).

The investigation by DEECA and the Wild Otways Initiative concluded that the majority of the proposed trail alignment is considered low risk and impact to the species, subject to the incorporation of a 25 metre boardwalk at the mouth of Grey River to mitigate direct impacts to known habitat.

Given the limited distribution of the species, and small and fragmented nature of the remaining populations, the project area is considered to support an important population for the purpose of this assessment.

Table 37 Swamp Antechinus: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	Overall species distribution is highly fragmented and population size is likely to be continually declining due to ongoing habitat loss, degradation and fragmentation, as well as feral predators and fire. Therefore, the remaining small and isolated populations are vulnerable to local extinction. The proposed works will consist of a narrow trail through suitable habitat, and existing walking trails will be utilised where possible to reduce the overall impact on species habitat and native vegetation. Additionally, incorporation of the boardwalk at Grey River will further avoid habitat removal at this location. With the appropriate mitigation measures to minimise impacts, it is unlikely that the proposed works with lead to a long-term decrease in the size of the Swamp Antechinus population.
Reduce the area of occupancy of an important population	Unlikely	Impacts to the species in the impact footprint at Grey River and at Coalmine Creek will be mitigated through adjustments to the trail design. Habitat removal at Grey River will be largely avoided and minimised through the proposed incorporation of a 25-metre board walk, and appropriate measures should be implemented to maintain and restore groundcover vegetation during and post trail construction. Impacts to habitat at Coalmine Creek will be low risk, as the trail is above the creek line and has been determined unlikely to impede animal movement and dispersal (DEECA & GORCT Project Team 2024). At this point, the trail will cross Coalmine Creek via a small low-level bridge further north of the species record.

Significant impact criteria	Likelihood of significant impact	Justification
Fragment an existing important population into two or more populations	Unlikely	The limited dispersal capacity of this species increases the risk of fragmentation. However, the proposed works would result in a narrow trail in discrete locations and would not present a major barrier for the movement of the species. Mitigation measures including utilising existing tracks and modifying the trail design in key habitat areas at Grey River and Coalmine Creek to assist in retaining connectivity.
Adversely affect habitat critical to the survival of the species	Unlikely	There is no habitat listed as critical to the survival of Swamp Antechinus. However due to their limited and isolated distribution, the areas currently occupied and adjacent are important to the species. Preferred habitat includes dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps and shrubby woodlands. As described above, key habitat areas will be avoided by utilising existing walking trails where possible and incorporating a small bridge or boardwalk design though likely habitat areas. Given this, the project is unlikely to adversely impact habitat critical to the survival of Swamp Antechinus.
Disrupt the breeding cycle of an important population	Unlikely	The proposed works will result in a narrow trail that would not affect the movement or dispersal of the species. Due to males dying post-breeding, any disturbance to breeding could have subsequent impacts on the breeding success in the area for following years. Construction in areas of confirmed habitat at Grey River and Coalmine Creek, or potential habitat including dense damp vegetation, should occur outside of the key breeding period in May to August.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed works will consist of a narrow trail that will allow dispersal to suitable surrounding habitat. However, a small extent of habitat modification or removal is expected to occur from the trail construction. By adopting mitigation measures to avoid and reduce impacts on Swamp Antechinus habitat, these impacts are unlikely to occur to the extent of species decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	Invasive species, such as Red Fox and Feral Cat, are already established throughout the project area. The removal of dense understorey vegetation may increase exposure to predation.
Introduce disease that may cause the species to decline	Unlikely	The proposed works will not result in the introduction of a disease that is directly harmful to Swamp Antechinus. However, there is an increased risk of the spread of forest dieback from *Phytophthora cinnamomi*. Maintaining clean equipment during construction and providing cleaning stations along the trail will reduce the likelihood of dieback from spreading and impacting

Significant impact criteria	Likelihood of significant impact	Justification
		the project area.
Interfere substantially with the recovery of a species	Unlikely	The Conservation Advice for the species (DCCEW 2023) identifies the key threats to Swamp Antechinus including too frequent fire, habitat loss and fragmentation, predation by foxes and cats, habitat degradation and climate change. Key conservation actions are identified as reducing frequency and intensity of burns, protecting habitat and restoring degraded habitat. Areas of suitable Swamp Antechinus habitat have been identified within the project area and the species has been recorded nearby the trail alignment. The project may cause a small extent of habitat loss, increase predation risk and increase the spread of dieback if threats are not managed effectively. Other impacts associated with trail construction includes the likelihood of human traffic walking off track and trampling potential Swamp Antechinus habitat. These potential impacts are likely to be reduced by avoiding and minimising habitat removal, including use of existing walking trails and boardwalk construction through key habitat, incorporating interpretative signage to increase visitor awareness, and implementation of the GORCT Phytophthora Dieback Management Plan. The project should also consider incorporating fencing along key habitat areas, such as along the boardwalk, to discourage visitors from walking off track. With successful implementation of these measures, the project is unlikely to substantially interfere with the species recovery. The State of the Environment Pty Ltd recommendations included a community-led threatened fauna management project at the Great Ocean Road Coastal Trail Grey River Mouth Boardwalk (DEECA & GORCT Project Team 2024) which may assist to further mitigate the project's impacts and assist in species recovery. Recommendations provided by the State of Environment also included implementation of a detailed Swamp Antechinus assessment in the region to assist in species conservation actions.

Conclusion for Swamp Antechinus

The project is considered unlikely to result in a significant impact on Swamp Antechinus. This conclusion has been reached based on the proposed alignment utilising existing walking trails where possible, reducing impacts to key habitat at Grey River through incorporating an elevated boardwalk design, conducting works outside of the species key breeding period, and investigation by DEECA and the Wild Otways Initiative condlucing that the majority of the proposed trail alignment is considered low risk and impact to the species.

Southern Brown Bandicoot *Isodon obesulus* (Endangered)

Occurrence in the project area

This species is listed as Endangered under the EPBC Act and was not recorded during the fauna assessment during the remote camera trap survey. Several records located across the project area and nearby the assessment corridor.

Table 38 Southern Brown Bandicoot: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of a population	Unlikely	All populations of Southern Brown Bandicoot are considered important. Known records for Southern Brown Bandicoot are concentrated within the north-east of the Otway Ranges, mostly north of Painkalac Creek. These records are nearby or adjacent to existing roads and tracks, therefore it is unlikely that the proposed works will lead to a long-term decrease to the Otways population.
Reduce the area of occupancy of the species	Unlikely	The permanent removal of potentially suitable habitat will reduce the area of available habitat within the project area, however surrounding habitat may still be utilised by Southern Brown Bandicoot. As such the overall area of occupancy will remain unchanged post construction.
Fragment an existing population into two or more populations	Unlikely	Likely to occupy a small-medium home range (<10 ha) with local scale movement patterns. Loss of dense understorey cover can fragment habitat. The habitat in the project area will not be extensively fragmented by the proposed works and any resultant disturbance will consist of permeable narrow trails in discrete locations that will not affect physical or functional connectivity between populations or breeding individuals.

Significant impact criteria	Likelihood of significant impact	Justification
Adversely affect habitat critical to the survival of the species	Unlikely	There is no declared critical habitat for Southern Brown Bandicoot. The species inhabits areas of dense vegetation, primarily dense ground cover greater than 50 per cent average foliage density within the 0.2-1 m height range. The proposed works will predominantly remove understorey vegetation, however the large extent of surrounding suitable habitat will enable this species survival.
Disrupt the breeding cycle of a population	Unlikely	Impacts likely to disrupt the breeding cycle of Southern Brown Bandicoot include direct mortality, disturbance to breeding sites, loss of breeding and sheltering habitat, loss and fragmentation of foraging habitat and fragmentation of movement corridors. Southern Brown Bandicoots typically breed from winter to late summer. Avoiding construction during this time will prevent any disruptions to the breeding cycle.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The habitat in the project area will not be extensively fragmented by the proposed trails and any resultant disturbance will consist of permeable narrow trails in discrete locations that will not affect physical or functional connectivity between populations or breeding individuals. The habitat in the project area will not be modified or destroyed to the point that the species is likely to decline, given the extent and quality of adjacent habitats.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Unlikely	Invasive fauna species are already present within the project area (e.g. cats and foxes). The removal of dense understorey vegetation may increase exposure to predation.
Introduce disease that may cause the species to decline	Unlikely	The project will not result in the introduction of a disease that is harmful to Southern Brown Bandicoot.

Significant impact criteria	Likelihood of significant impact	Justification
Interfere with the recovery of a species	Unlikely	The removal of suitable habitat is counter to the recovery of this species, however, the extent and nature of the vegetation removal in the context of available suitable habitat within the broader local area will not interfere with the recovery of this species.

Conclusion for Southern Brown Bandicoot

The project is considered unlikely to result in a significant impact on Southern Brown Bandicoot due to the small footprint of proposed works, in comparison to the large extent of suitable habitat in the surrounding landscape. This species is known to occur in areas with existing tracks and roads, therefore it is unlikely that the proposed trail will affect the recovery or population status of this species. Effective mitigation measures, including a comprehensive pest animal program targeting foxes, cats and deer are recommended to be implemented throughout the duration of the project. These measures will assist in addressing potential changes to local movements of pest animals and their potential impacts on this species.

White-throated Needletail *Hirundapus caudacutus* (Vulnerable)

Occurrence in the project area

This species is listed as a Vulnerable species under the EPBC Act and was not recorded during the fauna assessment. There are several records located across the project area and nearby the assessment corridor.

Table 39 White-throated Needletail: self-assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species	Unlikely	White-throated Needletails are considered to function as one single migratory population when present in Australia, therefore the entire population is considered to be an important population for the purpose of this assessment. White-throated Needletails are almost exclusively aerial when present in Australia, however some birds have been recorded roosting in hollows and canopy foliage of tall trees in forest and woodland (DAWE 2021). The species may therefore occasionally utilise tall trees in the project area for roosting. The use of roosting habitat in Australia is not well understood. Despite this, the project will not remove canopy trees and therefore the project is highly unlikely to result in a decrease in size of the population, nor reduce the area of occupancy for the species.
Reduce the area of occupancy of an important population	Unlikely	
Fragment an existing important population into two or more populations	Unlikely	The White-throated Needletail occurs as a single, migratory non-breeding population when present in Australia (DAWE 2021), and as such the project has no capacity to result in fragmentation of the population.
Adversely affect habitat critical to the survival of the species	Unlikely	White-throated Needletails are almost exclusively aerial when present in Australia, however they may utilise tall trees within the project area for roosting on occasions. The project will not result in the removal of any canopy trees and therefore will not result in impacts that could affect habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	Unlikely	White-throated Needletails do not breed in Australia, and the project will not result in impacts (e.g. via impacts to migration or mortality of adults) that could affect breeding success elsewhere. The project therefore has no capacity to disrupt the breeding cycle of White-throated Needletails.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	White-throated Needletails may utilise tall trees within the project area for roosting on occasions, however the project will avoid removal of all canopy trees. It is therefore considered highly unlikely that the project will result in any changes to availability or quality of habitat that could result in species decline.

Significant impact criteria	Likelihood of significant impact	Justification
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Unlikely	The project will not result in the establishment or introduction of an invasive species or disease that could cause the species to decline.
Introduce disease that may cause the species to decline	Unlikely	
Interfere substantially with the recovery of a species	Unlikely	The project does not conflict with information regarding key threats to the species (DAWE 2021, DoE 2015). The species is described as having few threats in Australia or elsewhere. Collisions with tall structures such as overhead wires, buildings and wind farms are the only listed threats in Australia (DAWE 2021) and are not applicable to this project.

Conclusion for White-throated Needletail

White-throated Needle-tail has high likelihood to fly over the assessment corridor on occasion. There is also potential for individuals to roost within the assessment corridor on some occasions. However, as the species is predominantly considered an aerial species within Australia, ground-based activities proposed by the project are considered unlikely to have any impact on this species.

Appendix 5 Locations of the remote cameras

Camera #	Latitude	Longitude	GTR 1 project area	GTR 3 project area
Camera 1	-38.462423	144.069343	✓	✓
Camera 2	-38.461828	144.067851	✓	✓
Camera 3	-38.502667	143.981666	✓	✓
Camera 4	-38.503369	143.979809	✓	✓
Camera 5	-38.721754	143.722603	✓	
Camera 6	-38.720673	143.725361	✓	
Camera 7	-38.698737	143.788081	✓	
Camera 8	-38.690904	143.838052	✓	
Camera 9	-38.690549	143.838994	✓	✓
Camera 10	-38.672002	143.83999	✓	
Camera 11	-38.672708	143.837875	✓	
Camera 12	-38.660844	143.800799	✓	
Camera 13	-38.662168	143.799527	✓	
Camera 14	-38.661157	143.790172	✓	
Camera 15	-38.659871	143.791392	✓	
Camera 16	-38.664701	143.764613	✓	
Camera 17	-38.666061	143.763728	✓	
Camera 18	-38.703215	143.762146	✓	
Camera 19	-38.702399	143.761314	✓	
Camera 20	-38.697003	143.802152	✓	
Camera 50	-38.474041	144.015469	✓	✓
Camera 51	-38.474784	144.015491	✓	✓
Camera 53	-38.659106	143.814078	✓	
Camera 54	-38.659224	143.816439	✓	
Camera 55	-38.577501	143.939589	✓	✓
Camera 56	-38.578968	143.934421	✓	✓
Camera 57	-38.579988	143.922222	✓	✓
Camera 58	-38.578441	143.92179	✓	
Camera 59	-38.487459	144.015301	✓	✓
Camera 60	-38.4887	144.014708	✓	✓

Appendix 6 Photos of the project area

Photo 1 Wrinkled Buttons flowering near proposed GTR 3 alignment in EVC 21 – Shrubby Dry Forest

Photo 2 Wrinkled Buttons growing on vehicle track after construction of fuel break (Trail 19)

Photo 3 EVC 21 – Shrubby Dry Forest

Photo 4 EVC 48 – Heathy Woodland

Photo 5 EVC 16 – Lowland Forest

Photo 6 EVC 18 – Riparian Forest

Photo 7 EVC 22 – Grassy Dry Forest

Photo 8 EVC 45 – Shrubby Foothill Forest

Photo 9 EVC 161 – Coastal Headland Scrub

Photo 10 EVC 201 – Shrubby Wet Forest

Photo 11 EPBC Act listed Wrinkled Buttons

Photo 12 Sweet Pittosporum infestation throughout gully near Eastern View

Photo 13 Dense Boneseed (bright green) infestation mid-forest

Photo 14 An Austral Grass-tree most likely killed by Phytophthora dieback disease

Appendix 7 Vegetation impact assessment results

A7.1 Vegetation Quality Assessment results

Table 40 VQA results: Otway Plain Bioregion EVC condition states in the assessment corridor

Site ID			GORCT	GORCT	GORCT
Bioregion			Otway Plain	Otway Plain	Otway Plain
VQA #			SAH VQA1	STT VQA1	SAH VQA2
EVC #: Name			21 - Shrubby Dry Forest	48 - Heathy Woodland	48 - Heathy Woodland
Condition State			High	Moderate	High
		Max Score	**Score**	**Score**	**Score**
Site Condition	Large Old Trees	10	3	0	4
	Canopy Cover	5	5	5	3
	Lack of Weeds	15	15	13	15
	Understorey	25	15	15	20
	Recruitment	10	10	10	10
	Organic Matter	5	5	3	5
	Logs	5	2	0	2
	Total Site Score		55	46	59
Landscape Value	Patch Size	10	8	8	8
	Neighbourhood	10	7	6	7
	Distance to Core	5	4	4	4
	Total Landscape Score		19	18	19
HABITAT SCORE		100	74	64	78
Habitat points = #/100		1	**0.74**	**0.64**	**0.78**

Table 41 VQA results: Otway Ranges Bioregion EVC condition states in the assessment corridor

Site ID			GORCT	GORCT	GORCT	GORCT	GORCT	GORCT
Bioregion			Otway Range	Otway Range	Otway Range	Otway Range	Otway Range	Otway Range
VQA #			STT VQA3	STT VQA4	SAH VQA3	SAH VQA4, STT VQA5, STT VQA6	SAH VQA5	SAH VQA10
EVC #: Name			16 - Lowland Forest	18 - Riparian Forest	18 - Riparian Forest	21 - Shrubby Dry Forest	21 - Shrubby Dry Forest	22 - Grassy Dry Forest
Condition State			High	High	Low	High	Moderate	Moderate
		Max Score	Score	Score	Score	Score	Score	Score
Site Condition	Large Old Trees	10	10	10	10	10	10	0
	Canopy Cover	5	5	3	3	5	3	3
	Lack of Weeds	15	13	13	7	13	7	9
	Understorey	25	15	25	5	20	15	15
	Recruitment	10	6	6	10	6	10	10
	Organic Matter	5	3	5	5	3	5	3
	Logs	5	5	5	2	5	5	4
	Total Site Score		57	67	42	62	55	44
Landscape Value	Patch Size	10	8	8	8	8	8	8
	Neighbourhood	10	8	8	7	8	7	6
	Distance to Core	5	4	4	4	4	4	4
	Total Landscape Score		20	20	19	20	19	18
HABITAT SCORE		100	77	87	61	82	74	62
Habitat points = #/100		1	**0.77**	**0.87**	**0.61**	**0.82**	**0.74**	**0.62**

Site ID			GORCT	GORCT	GORCT	GORCT	GORCT	GORCT
Bioregion			Otway Range	Otway Range	Otway Range	Otway Range	Otway Range	Otway Range
VQA #			STT VQA7, STT VQA8, STT VQA9	SAH VQA 6, STT VQA 10	STT VQA11	SAH VQA7	SAH VQA8	SAH VQA9, STT VQA15
EVC #: Name			45 - Shrubby Foothill Forest	45 - Shrubby Foothill Forest	45 - Shrubby Foothill Forest	48 - Heathy Woodland	48 - Heathy Woodland	201 - Shrubby Wet Forest
Condition State			High	Moderate	Low	High	Moderate	High
		Max Score	**Score**	**Score**	**Score**	**Score**		
Site Condition	Large Old Trees	10	10	10	10	10	0	8
	Canopy Cover	5	5	5	5	5	5	5
	Lack of Weeds	15	13	7	4	15	13	15
	Understorey	25	20	20	15	15	15	20
	Recruitment	10	10	10	6	10	10	10
	Organic Matter	5	5	5	5	5	5	5
	Logs	5	5	5	0	2	2	4
	Total Site Score		68	62	45	62	50	67
Landscape Value	Patch Size	10	8	8	8	8	8	8
	Neighbourhood	10	8	8	5	6	7	8
	Distance to Core	5	4	4	4	4	4	4
	Total Landscape Score		20	20	17	18	19	20
HABITAT SCORE		100	88	82	62	80	69	87
Habitat points = #/100		1	**0.88**	**0.82**	**0.62**	**0.8**	**0.69**	**0.87**

Site ID			GORCT	GORCT	GORCT
Bioregion			Otway Range	Otway Range	Otway Range
VQA #			STT VQA12	STT VQA13	STT VQA14
EVC #: Name			161 - Coastal Headland Scrub	161 - Coastal Headland Scrub	161 - Coastal Headland Scrub
Condition State			High	Moderate	Low
		Max Score	**Score**	**Score**	**Score**
Site Condition	Large Old Trees	10	na	na	na
	Canopy Cover	5	na	na	na
	Lack of Weeds	15	11	4	2
	Understorey	25	20	15	10
	Recruitment	10	10	10	3
	Organic Matter	5	3	3	4
	Logs	5	5	5	5
	Total Site Score		49	37	24
	EVC standardiser (x 75/55)		1.25	1.25	1.25
	Adjusted Site Score		61.25	46.25	30
Landscape Value	Patch Size	10	8	8	8
	Neighbourhood	10	6	6	3
	Distance to Core	5	4	4	4
	Total Landscape Score		18	18	15
HABITAT SCORE		100	79.25	64.25	45
Habitat points = #/100		1	**0.79**	**0.64**	**0.45**

A7.2 Tree data

Table 42 Large trees within patches within the assessment area identified as deemed lost due to TPZ encroachment

Scientific name	Common name	Circumference (cm)	Habitat zone/EVC	Tree retention zone (m)	Other attributes	Status
Eucalyptus globulus* subsp. *globulus	Southern Blue-gum	251		9.6		Removed
Eucalyptus globulus* subsp. *globulus	Southern Blue-gum	361		13.8		Removed
Eucalyptus globulus* subsp. *globulus	Southern Blue-gum	267		10.2		Removed
Eucalyptus globulus* subsp. *globulus	Southern Blue-gum	408		15.6	Has numerous hollows	Removed
Eucalyptus globulus	Southern Blue-gum	188		7.2		Removed
Eucalyptus globulus	Southern Blue-gum	195		7.44		Removed
Eucalyptus cypellocarpa	Mountain Grey-gum	346		13.2		Removed
Eucalyptus aromaphloia	Scentbark	204		7.8	Has numerous hollows	Removed

Appendix 8 Native Vegetation Removal Report

Native vegetation removal report

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report **is not an assessment by DELWP** of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Date of issue: **06/06/2024**
Time of issue: **12:49 pm**

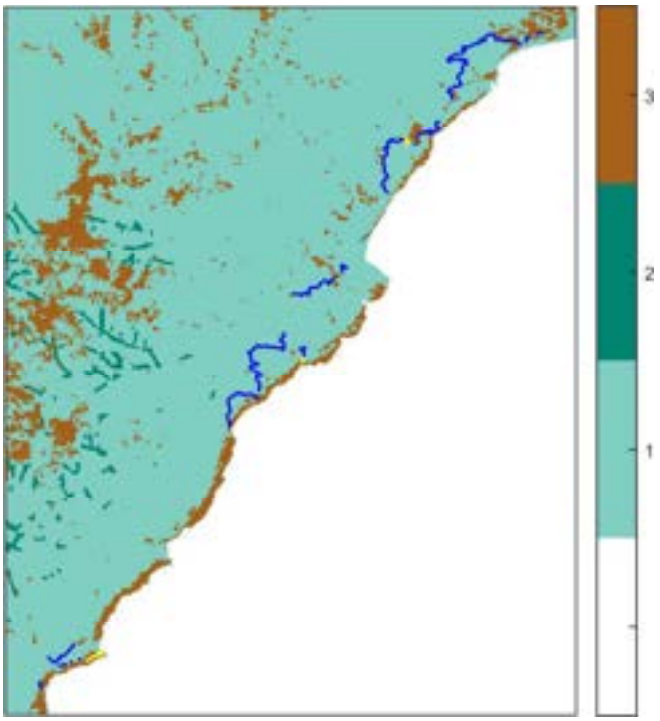
Report ID: BIO_2024_044

Project ID	Gort_ENSYM_GT3_160524

Assessment pathway

Assessment pathway	**Detailed Assessment Pathway**
Extent including past and proposed	8.919 ha
Extent of past removal	0.000 ha
Extent of proposed removal	8.919 ha
No. Large trees proposed to be removed	6
Location category of proposed removal	Location 3 The native vegetation is in an area where the removal of less than 0.5 hectares could have a significant impact on habitat for one or more rare or threatened species.

1. Location map



Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

General offset amount[1]	0.432 general habitat units
Vicinity	Corangamite Catchment Management Authority (CMA) or Surf Coast Shire Council
Minimum strategic biodiversity value score[2]	0.676
Large trees*	0 large trees
Species offset amount[3]	6.501 species units of habitat for Wrinkled Buttons, *Leiocarpa gatesii* 0.865 species units of habitat for Coast Correa, *Correa backhouseana var. backhouseana* 0.024 species units of habitat for Otway Black Snail, *Victaphanta compacta* 0.135 species units of habitat for Southern Blue-gum, *Eucalyptus globulus subsp. globulus*
Large trees*	6 trees
*** The total number of large trees that the offset must protect**	6 large trees to be protected in either the general, species or combination across all habitat units protected

NB: values within tables in this document may not add to the totals shown above due to rounding

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

1 The general offset amount required is the sum of all general habitat units in Appendix 1.

2 Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

3 The species offset amount(s) required is the sum of all species habitat units in Appendix 1.

Next steps

Any proposal to remove native vegetation must meet the application requirements of the Detailed Assessment Pathway and it will be assessed under the Detailed Assessment Pathway.

If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. Council will refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native* vegetation (the Guidelines) for a full list of application requirements This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (partly met)
- Maps showing the native vegetation and property (partly met)
- Information about the impacts on rare or threatened species.
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defendable space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- A site assessment report including a habitat hectare assessment of any patches of native vegetation and details of trees
- An offset statement that explains that an offset has been identified and how it will be secured.

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

Appendix 1: Description of native vegetation to be removed

The species-general offset test was applied to your proposal. This test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the species offset threshold. The threshold is set at 0.005 per cent of the mapped habitat value for a species. When the proportional impact is above the species offset threshold a species offset is required. This test is done for all species mapped at the site. Multiple species offsets will be required if the species offset threshold is exceeded for multiple species.

Where a zone requires species offset(s), the species habitat units for each species in that zone is calculated by the following equation in accordance with the Guidelines:

Species habitat units = extent x condition x species landscape factor x 2, where the species landscape factor = 0.5 + (habitat importance score/2)

The species offset amount(s) required is the sum of all species habitat units per zone

Where a zone does not require a species offset, the general habitat units in that zone is calculated by the following equation in accordance with the Guidelines:

General habitat units = extent x condition x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)

The general offset amount required is the sum of all general habitat units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	**Type**	**BioEVC**	**BioEVC conservation status**	**Large tree(s)**	**Partial removal**	**Condition score**	**Polygon Extent**	**Extent without overlap**	**SBV score**	**HI score**	**Habitat units**	**Offset type**
2-HZ	Patch	otp_0048	Least Concern	0	yes	0.320	0.060	0.060	0.985	0.830	0.035	501942 Wrinkled Buttons *Leiocarpa gatesii*
3-HZ	Patch	otp_0048	Least Concern	0	yes	0.320	0.028	0.028	1.000	0.846	0.017	501942 Wrinkled Buttons *Leiocarpa gatesii*
7-HZ	Patch	otp_0048	Least Concern	0	yes	0.320	0.000	0.000	1.000	0.850	0.000	501942 Wrinkled Buttons *Leiocarpa gatesii*
9-HZ	Patch	otr_0021	Least Concern	0	yes	0.370	0.042	0.042	0.850		0.021	General
10-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.004	0.004	0.850		0.002	General
11-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.029	0.029	0.883		0.017	General
15-HZ	Patch	otr_0048	Least Concern	0	yes	0.400	0.014	0.014	0.960		0.008	General
17-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.022	0.022	0.960	0.830	0.016	501942 Wrinkled Buttons *Leiocarpa gatesii*

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
18-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.173	0.173	0.953	0.846	0.131	501942 Wrinkled Buttons *Leiocarpa gatesii*
20-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.013	0.013	0.850		0.008	General
22-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.035	0.035	0.960		0.020	General
23-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.036	0.036	0.888	0.780	0.028	501942 Wrinkled Buttons *Leiocarpa gatesii*
24-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.005	0.005	0.890		0.003	General
25-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.007	0.007	0.890		0.004	General
26-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.047	0.047	0.965	0.835	0.033	501942 Wrinkled Buttons *Leiocarpa gatesii*
27-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.155	0.155	0.762	0.825	0.116	501942 Wrinkled Buttons *Leiocarpa gatesii*
28-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.018	0.018	0.690		0.010	General
29-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.023	0.023	0.890		0.014	General
30-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.168	0.168	0.979	0.828	0.135	501942 Wrinkled Buttons *Leiocarpa gatesii*
31-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.027	0.027	0.966	0.828	0.020	501942 Wrinkled Buttons *Leiocarpa gatesii*
33-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.079	0.079	0.988		0.048	General
34-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.018	0.018	0.812		0.010	General
35-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.011	0.011	0.840		0.007	General

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
36-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.023	0.023	0.799	0.760	0.018	501942 Wrinkled Buttons *Leiocarpa gatesii*
37-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.069	0.069	0.813		0.041	General
38-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.274	0.274	0.947	0.830	0.205	501942 Wrinkled Buttons *Leiocarpa gatesii*
39-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.041	0.041	0.961	0.825	0.033	501942 Wrinkled Buttons *Leiocarpa gatesii*
40-HZ	Patch	otr_0018	Least Concern	0	yes	0.435	0.013	0.013	0.890	0.760	0.010	501942 Wrinkled Buttons *Leiocarpa gatesii*
41-HZ	Patch	otr_0018	Least Concern	0	yes	0.435	0.003	0.003	0.830		0.002	General
42-HZ	Patch	otr_0018	Least Concern	0	yes	0.435	0.021	0.021	0.877	0.760	0.016	501942 Wrinkled Buttons *Leiocarpa gatesii*
43-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.046	0.046	0.890		0.029	General
44-HZ	Patch	otr_0018	Least Concern	0	yes	0.435	0.020	0.020	0.890		0.012	General
49-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.158	0.158	0.898	0.820	0.118	501942 Wrinkled Buttons *Leiocarpa gatesii*
50-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.083	0.083	0.873	0.810	0.066	501942 Wrinkled Buttons *Leiocarpa gatesii*
51-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.004	0.004	0.880		0.002	General
52-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.106	0.106	0.881	0.814	0.085	501942 Wrinkled Buttons *Leiocarpa gatesii*
53-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.207	0.207	0.877	0.791	0.163	501942 Wrinkled Buttons *Leiocarpa gatesii*
54-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.002	0.002	0.830		0.001	General

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
55-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.049	0.049	0.852	0.766	0.038	501942 Wrinkled Buttons *Leiocarpa gatesii*
57-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.044	0.044	0.970	0.827	0.033	501942 Wrinkled Buttons *Leiocarpa gatesii*
58-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.022	0.022	0.910	0.810	0.018	501942 Wrinkled Buttons *Leiocarpa gatesii*
59-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.020	0.020	0.830		0.012	General
60-HZ	Patch	otr_0201	Least Concern	0	yes	0.435	0.020	0.020	0.888		0.012	General
61-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.061	0.061	0.947	0.743	0.047	501942 Wrinkled Buttons *Leiocarpa gatesii*
62-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.010	0.010	0.882	0.749	0.007	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.014	0.007	504369 Coast Correa *Correa backhouseana var. backhouseana*
63-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.041	0.041	0.880	0.800	0.033	501942 Wrinkled Buttons *Leiocarpa gatesii*
64-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.075	0.075	0.926	0.817	0.052	501942 Wrinkled Buttons *Leiocarpa gatesii*
65-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.040	0.040	0.939	0.850	0.029	501942 Wrinkled Buttons *Leiocarpa gatesii*
66-HZ	Patch	otr_0016	Depleted	0	yes	0.385	0.082	0.082	0.893	0.847	0.058	501942 Wrinkled Buttons *Leiocarpa gatesii*
68-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.139	0.139	0.945	0.789	0.102	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.016	0.093	504369 Coast Correa *Correa backhouseana var. backhouseana*
76-B	Patch	otr_0045	Least Concern	1	no	0.880	0.067	0.067	0.820	0.810	0.106	501942 Wrinkled Buttons *Leiocarpa gatesii*

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
77-B	Patch	otr_0018	Least Concern	1	no	0.870	0.062	0.062	0.838	0.790	0.097	501942 Wrinkled Buttons *Leiocarpa gatesii*
80-HZ	Patch	otr_0045	Least Concern	0	yes	0.310	0.065	0.065	0.695		0.026	General
81-HZ	Patch	otr_0201	Least Concern	0	yes	0.435	0.043	0.043	0.723		0.024	General
82-HZ	Patch	otr_0201	Least Concern	0	yes	0.435	0.043	0.043	0.890	0.804	0.034	501942 Wrinkled Buttons *Leiocarpa gatesii*
84-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.006	0.006	0.890		0.004	General
85-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.032	0.032	0.884	0.807	0.026	501942 Wrinkled Buttons *Leiocarpa gatesii*
86-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.132	0.132	0.903	0.813	0.105	501942 Wrinkled Buttons *Leiocarpa gatesii*
87-HZ	Patch	otr_0201	Least Concern	0	yes	0.435	0.050	0.050	0.800	0.801	0.040	501942 Wrinkled Buttons *Leiocarpa gatesii*
88-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.110	0.110	0.826	0.799	0.087	501942 Wrinkled Buttons *Leiocarpa gatesii*
89-HZ	Patch	otr_0045	Least Concern	0	yes	0.440	0.128	0.128	0.908	0.834	0.103	501942 Wrinkled Buttons *Leiocarpa gatesii*
90-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.098	0.098	0.949	0.829	0.074	501942 Wrinkled Buttons *Leiocarpa gatesii*
92-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.165	0.165	0.894	0.800	0.121	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.167	0.135	504491 Southern Blue-gum *Eucalyptus globulus subsp. globulus*
95-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.069	0.069	0.770	0.793	0.051	501942 Wrinkled Buttons *Leiocarpa gatesii*
96-HZ	Patch	otr_0018	Least Concern	0	yes	0.305	0.002	0.002	0.800		0.001	General

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
97-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.019	0.019	1.000	0.859	0.014	501942 Wrinkled Buttons *Leiocarpa gatesii*
98-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.085	0.085	0.961	0.845	0.064	501942 Wrinkled Buttons *Leiocarpa gatesii*
99-HZ	Patch	otr_0045	Least Concern	0	yes	0.410	0.106	0.106	0.900	0.832	0.080	501942 Wrinkled Buttons *Leiocarpa gatesii*
2-A	Patch	otr_0018	Least Concern	0	yes	0.305	0.012	0.012	0.786		0.005	General
3-A	Patch	otr_0021	Least Concern	0	yes	0.370	0.039	0.039	0.888	0.810	0.026	501942 Wrinkled Buttons *Leiocarpa gatesii*
4-A	Patch	otr_0045	Least Concern	0	yes	0.410	0.019	0.019	0.880	0.810	0.014	501942 Wrinkled Buttons *Leiocarpa gatesii*
5-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.032	0.032	0.880	0.810	0.024	501942 Wrinkled Buttons *Leiocarpa gatesii*
6-A	Patch	otr_0045	Least Concern	0	yes	0.410	0.058	0.058	0.777		0.032	General
8-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.095	0.095	0.870	0.805	0.070	501942 Wrinkled Buttons *Leiocarpa gatesii*
9-A	Patch	otr_0018	Least Concern	0	yes	0.435	0.006	0.006	0.909	0.800	0.005	501942 Wrinkled Buttons *Leiocarpa gatesii*
10-A	Patch	otr_0045	Least Concern	0	yes	0.410	0.002	0.002	0.770	0.780	0.001	501942 Wrinkled Buttons *Leiocarpa gatesii*
11-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.040	0.040	0.877	0.797	0.032	501942 Wrinkled Buttons *Leiocarpa gatesii*
12-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.097	0.097	0.776	0.800	0.076	501942 Wrinkled Buttons *Leiocarpa gatesii*
13-A	Patch	otr_0201	Least Concern	0	yes	0.435	0.036	0.036	0.843	0.809	0.029	501942 Wrinkled Buttons *Leiocarpa gatesii*
14-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.136	0.136	0.924	0.824	0.109	501942 Wrinkled Buttons *Leiocarpa gatesii*
15-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.027	0.027	0.930	0.819	0.022	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.643	0.024	15050 Otway Black Snail *Victaphanta compacta*
16-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.069	0.069	0.900	0.808	0.051	501942 Wrinkled Buttons *Leiocarpa gatesii*
17-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.041	0.041	0.909	0.809	0.031	501942 Wrinkled Buttons *Leiocarpa gatesii*
19-A	Patch	otr_0045	Least Concern	0	yes	0.410	0.062	0.062	0.814	0.815	0.046	501942 Wrinkled Buttons *Leiocarpa gatesii*

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
22-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.041	0.041	0.784	0.815	0.030	501942 Wrinkled Buttons *Leiocarpa gatesii*
23-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.071	0.071	0.701	0.811	0.056	501942 Wrinkled Buttons *Leiocarpa gatesii*
24-A	Patch	otr_0045	Least Concern	0	yes	0.410	0.134	0.134	0.818	0.813	0.100	501942 Wrinkled Buttons *Leiocarpa gatesii*
25-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.056	0.056	0.600	0.814	0.045	501942 Wrinkled Buttons *Leiocarpa gatesii*
26-A	Patch	otr_0201	Least Concern	0	yes	0.435	0.047	0.047	0.572	0.804	0.037	501942 Wrinkled Buttons *Leiocarpa gatesii*
27-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.010	0.010	0.600	0.820	0.007	501942 Wrinkled Buttons *Leiocarpa gatesii*
28-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.156	0.156	0.652	0.805	0.115	501942 Wrinkled Buttons *Leiocarpa gatesii*
30-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.082	0.082	0.832	0.804	0.061	501942 Wrinkled Buttons *Leiocarpa gatesii*
31-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.053	0.053	0.570	0.818	0.042	501942 Wrinkled Buttons *Leiocarpa gatesii*
33-A	Patch	otr_0161	Depleted	0	no	0.640	0.056	0.056	0.854		0.050	General
34-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.066	0.066	0.663	0.813	0.049	501942 Wrinkled Buttons *Leiocarpa gatesii*
35-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.012	0.012	0.660	0.810	0.009	501942 Wrinkled Buttons *Leiocarpa gatesii*
38-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.026	0.026	0.640	0.806	0.021	501942 Wrinkled Buttons *Leiocarpa gatesii*
39-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.063	0.063	0.656	0.812	0.050	501942 Wrinkled Buttons *Leiocarpa gatesii*
40-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.087	0.087	0.664	0.804	0.064	501942 Wrinkled Buttons *Leiocarpa gatesii*
44-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.040	0.040	0.716	0.811	0.032	501942 Wrinkled Buttons *Leiocarpa gatesii*
45-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.079	0.079	0.692	0.805	0.063	501942 Wrinkled Buttons *Leiocarpa gatesii*
46-B	Patch	otr_0045	Least Concern	1	no	0.880	0.064	0.064	0.842	0.813	0.102	501942 Wrinkled Buttons *Leiocarpa gatesii*
49-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.040	0.040	0.610	0.810	0.032	501942 Wrinkled Buttons *Leiocarpa gatesii*
50-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.018	0.018	0.670	0.820	0.014	501942 Wrinkled Buttons *Leiocarpa gatesii*
51-A	Patch	otr_0201	Least Concern	0	yes	0.435	0.057	0.057	0.610	0.802	0.045	501942 Wrinkled Buttons *Leiocarpa gatesii*
52-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.022	0.022	0.605	0.811	0.016	501942 Wrinkled Buttons *Leiocarpa gatesii*

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
53-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.078	0.078	0.663	0.803	0.058	501942 Wrinkled Buttons *Leiocarpa gatesii*
54-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.132	0.132	0.684	0.809	0.098	501942 Wrinkled Buttons *Leiocarpa gatesii*
55-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.098	0.098	0.636	0.801	0.078	501942 Wrinkled Buttons *Leiocarpa gatesii*
56-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.157	0.157	0.796	0.809	0.125	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.244	0.125	504369 Coast Correa *Correa backhouseana var. backhouseana*
57-A	Patch	otr_0201	Least Concern	0	yes	0.435	0.021	0.021	0.623	0.800	0.016	501942 Wrinkled Buttons *Leiocarpa gatesii*
58-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.038	0.038	0.564	0.797	0.030	501942 Wrinkled Buttons *Leiocarpa gatesii*
59-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.026	0.026	0.860	0.823	0.021	501942 Wrinkled Buttons *Leiocarpa gatesii*
60-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.018	0.018	0.890	0.820	0.013	501942 Wrinkled Buttons *Leiocarpa gatesii*
61-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.100	0.100	0.702	0.802	0.079	501942 Wrinkled Buttons *Leiocarpa gatesii*
62-A	Patch	otr_0021	Least Concern	0	yes	0.410	0.023	0.023	0.622	0.800	0.017	501942 Wrinkled Buttons *Leiocarpa gatesii*
63-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.039	0.039	0.860	0.825	0.032	501942 Wrinkled Buttons *Leiocarpa gatesii*
64-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.041	0.041	0.689	0.800	0.033	501942 Wrinkled Buttons *Leiocarpa gatesii*
65-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.088	0.088	0.931	0.810	0.070	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.203	0.069	504369 Coast Correa *Correa backhouseana var. backhouseana*
67-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.045	0.045	0.961	0.719	0.034	504369 Coast Correa *Correa backhouseana var. backhouseana*
69-A	Patch	otr_0018	Least Concern	0	yes	0.435	0.013	0.013	0.860	0.790	0.010	501942 Wrinkled Buttons *Leiocarpa gatesii*
70-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.374	0.374	0.800	0.794	0.295	501942 Wrinkled Buttons *Leiocarpa gatesii*
72-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.022	0.022	0.770	0.800	0.017	501942 Wrinkled Buttons *Leiocarpa gatesii*
74-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.062	0.062	0.693	0.804	0.049	501942 Wrinkled Buttons *Leiocarpa gatesii*
75-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.033	0.033	0.890	0.799	0.026	501942 Wrinkled Buttons *Leiocarpa gatesii*

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Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
76-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.104	0.104	0.803	0.794	0.082	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.017	0.082	504369 Coast Correa *Correa backhouseana var. backhouseana*
77-A	Patch	otr_0161	Depleted	0	no	0.790	0.021	0.021	0.814	0.791	0.030	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.705	0.030	504369 Coast Correa *Correa backhouseana var. backhouseana*
78-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.039	0.039	0.813	0.784	0.031	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.365	0.031	504369 Coast Correa *Correa backhouseana var. backhouseana*
79-A	Patch	otr_0161	Depleted	0	no	0.640	0.104	0.104	0.968	0.763	0.118	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.765	0.118	504369 Coast Correa *Correa backhouseana var. backhouseana*
80-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.013	0.013	0.960	0.783	0.010	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.783	0.010	504369 Coast Correa *Correa backhouseana var. backhouseana*
81-A	Patch	otr_0161	Depleted	0	no	0.450	0.100	0.100	0.515	0.748	0.079	504369 Coast Correa *Correa backhouseana var. backhouseana*
82-A	Patch	otr_0161	Depleted	0	no	0.790	0.038	0.038	0.962	0.768	0.053	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.768	0.053	504369 Coast Correa *Correa backhouseana var. backhouseana*
83-A	Patch	otr_0161	Depleted	0	no	0.790	0.021	0.021	0.960	0.790	0.030	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.790	0.030	504369 Coast Correa *Correa backhouseana var. backhouseana*
84-A	Patch	otr_0161	Depleted	0	no	0.640	0.010	0.010	0.930	0.610	0.011	504369 Coast Correa *Correa backhouseana var. backhouseana*
85-A	Patch	otr_0018	Least Concern	0	yes	0.305	0.033	0.033	0.930	0.750	0.017	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.664	0.017	504369 Coast Correa *Correa backhouseana var. backhouseana*

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
86-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.089	0.089	0.876	0.770	0.069	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.159	0.069	504369 Coast Correa *Correa backhouseana var. backhouseana*
87-A	Patch	otr_0018	Least Concern	0	yes	0.435	0.011	0.011	0.930	0.750	0.008	501942 Wrinkled Buttons *Leiocarpa gatesii*
										0.012	0.008	504369 Coast Correa *Correa backhouseana var. backhouseana*
46-A	Patch	otr_0045	Least Concern	0	yes	0.440	0.004	0.004	0.890	0.820	0.003	501942 Wrinkled Buttons *Leiocarpa gatesii*
56-B	Patch	otr_0045	Least Concern	3	no	0.880	0.070	0.070	0.810	0.805	0.112	501942 Wrinkled Buttons *Leiocarpa gatesii*
75-B	Patch	otr_0021	Least Concern	0	no	0.820	0.118	0.118	0.924	0.830	0.177	501942 Wrinkled Buttons *Leiocarpa gatesii*
1-QQ	Patch	otr_0021	Least Concern	0	yes	0.410	0.299	0.299	0.970	0.840	0.225	501942 Wrinkled Buttons *Leiocarpa gatesii*
6-QQ	Patch	otr_0021	Least Concern	0	yes	0.410	0.025	0.025	1.000	0.850	0.019	501942 Wrinkled Buttons *Leiocarpa gatesii*
67-HZ	Patch	otr_0021	Least Concern	0	yes	0.410	0.029	0.029	1.000	0.854	0.022	501942 Wrinkled Buttons *Leiocarpa gatesii*
4-QQ	Patch	otr_0048	Least Concern	0	yes	0.400	0.093	0.093	0.880	0.796	0.067	501942 Wrinkled Buttons *Leiocarpa gatesii*
8-HZ	Patch	otr_0048	Least Concern	0	yes	0.345	0.013	0.013	0.933		0.006	General
3-QQ	Patch	otr_0022	Least Concern	0	yes	0.310	0.093	0.093	0.962	0.811	0.052	501942 Wrinkled Buttons *Leiocarpa gatesii*
2-QQ	Patch	otr_0045	Least Concern	0	yes	0.440	0.130	0.130	0.788	0.664	0.095	501942 Wrinkled Buttons *Leiocarpa gatesii*
5-QQ	Patch	otr_0048	Least Concern	0	yes	0.400	0.019	0.019	0.853	0.480	0.011	501942 Wrinkled Buttons *Leiocarpa gatesii*
7-QQ	Patch	otr_0048	Least Concern	0	yes	0.400	0.010	0.010	1.000	0.850	0.008	501942 Wrinkled Buttons *Leiocarpa gatesii*
8-QQ	Patch	otr_0021	Least Concern	0	yes	0.410	0.003	0.003	1.000	0.850	0.002	501942 Wrinkled Buttons *Leiocarpa gatesii*

Appendix 2: Information about impacts to rare or threatened species' habitats on site

This table lists all rare or threatened species' habitats mapped at the site.

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Southern Blue-gum	*Eucalyptus globulus subsp. globulus*	504491	Rare	Highly Localised Habitat	Habitat importance map ; special site	0.0844
Otway Black Snail	*Victaphanta compacta*	15050	Endangered	Highly Localised Habitat	Habitat importance map ; special site	0.0353
Coast Correa	*Correa backhouseana var. backhouseana*	504369	Vulnerable	Dispersed	Top ranking map	0.0160
Coast Correa	*Correa backhouseana var. backhouseana*	504369	Vulnerable	Dispersed	Habitat importance map	0.0138
Wrinkled Buttons	*Leiocarpa gatesii*	501942	Vulnerable	Dispersed	Top ranking map ; special site	0.0084
Currant-wood	*Monotoca glauca*	503859	Rare	Dispersed	Top ranking map	0.0035
Coast Twin-leaf	*Zygophyllum billardierei*	503615	Rare	Dispersed	Top ranking map	0.0030
Wrinkled Buttons	*Leiocarpa gatesii*	501942	Vulnerable	Dispersed	Habitat importance map ; special site	0.0027
Broad-leaf Prickly Moses	*Acacia verticillata subsp. ruscifolia*	504211	Rare	Dispersed	Habitat importance map	0.0022
Dune Poa	*Poa poiformis var. ramifer*	504826	Rare	Dispersed	Habitat importance map	0.0017
Brooker's Gum	*Eucalyptus brookeriana*	501256	Rare	Dispersed	Habitat importance map ; special site	0.0015
Currant-wood	*Monotoca glauca*	503859	Rare	Dispersed	Habitat importance map	0.0015
Otway Grey-gum	*Eucalyptus litoralis*	504557	Vulnerable	Dispersed	Habitat importance map	0.0015
Southern Xanthosia	*Xanthosia tasmanica*	504088	Rare	Dispersed	Habitat importance map	0.0014
Coast Twin-leaf	*Zygophyllum billardierei*	503615	Rare	Dispersed	Habitat importance map	0.0013
Slender Pink-fingers	*Caladenia vulgaris*	504449	Rare	Dispersed	Habitat importance map	0.0012
Dwarf Sickle-fern	*Pellaea nana*	504812	Rare	Dispersed	Habitat importance map	0.0011

Dwarf Silver Wattle	*Acacia nano-dealbata*	500064	Rare	Dispersed	Habitat importance map	0.0011
Wiry Bossiaea	*Bossiaea cordigera*	500435	Rare	Dispersed	Habitat importance map	0.0010
Sea Bindweed	*Calystegia soldanella*	500606	Vulnerable	Dispersed	Top ranking map	0.0010
Bog Gum	*Eucalyptus kitsoniana*	501290	Rare	Dispersed	Habitat importance map	0.0009
Green-striped Greenhood	*Pterostylis chlorogramma*	504728	Vulnerable	Dispersed	Habitat importance map	0.0008
Hoary Rapier-sedge	*Lepidosperma canescens*	501915	Rare	Dispersed	Habitat importance map	0.0008
Southern Bent-wing Bat	*Miniopterus schreibersii bassanii*	61343	Critically endangered	Dispersed	Habitat importance map	0.0008
Coast Ballart	*Exocarpos syrticola*	501354	Rare	Dispersed	Habitat importance map	0.0007
Long Clubmoss	*Huperzia varia*	502084	Vulnerable	Dispersed	Habitat importance map	0.0007
Coast Ballart	*Exocarpos syrticola*	501354	Rare	Dispersed	Top ranking map	0.0007
Western Peppermint	*Eucalyptus falciformis*	505358	Rare	Dispersed	Habitat importance map	0.0006
Coast Bush-pea	*Pultenaea canaliculata*	502839	Rare	Dispersed	Top ranking map	0.0006
Forest Bitter-cress	*Cardamine papillata*	505034	Vulnerable	Dispersed	Habitat importance map	0.0006
Tufted Club-sedge	*Isolepis wakefieldiana*	501789	Rare	Dispersed	Habitat importance map	0.0006
Sea Bindweed	*Calystegia soldanella*	500606	Vulnerable	Dispersed	Habitat importance map	0.0006
Grassland Earless Dragon	*Tympanocryptis pinguicolla*	12922	Critically endangered	Dispersed	Habitat importance map	0.0006
Australian Mudfish	*Neochanna cleaveri*	4703	Critically endangered	Dispersed	Habitat importance map	0.0006
Swamp Skink	*Lissolepis coventryi*	12407	Vulnerable	Dispersed	Habitat importance map	0.0006
Parsley Xanthosia	*Xanthosia leiophylla*	504562	Rare	Dispersed	Habitat importance map	0.0006
Australian Grayling	*Prototroctes maraena*	4686	Vulnerable	Dispersed	Habitat importance map	0.0006
Satinwood	*Nematolepis squamea subsp. squamea*	504814	Rare	Dispersed	Habitat importance map	0.0005
Strzelecki Gum	*Eucalyptus strzeleckii*	504558	Vulnerable	Dispersed	Habitat importance map	0.0005
Leafy Twig-sedge	*Cladium procerum*	500786	Rare	Dispersed	Habitat importance map	0.0005

Coast Bush-pea	*Pultenaea canaliculata*	502839	Rare	Dispersed	Habitat importance map	0.0005
River Hook-sedge	*Carex nemoralis*	503473	Rare	Dispersed	Habitat importance map	0.0004
Coast Needlewood	*Hakea decurrens subsp. platytaenia*	505072	Rare	Dispersed	Habitat importance map	0.0004
Port Campbell Guinea-flower	*Hibbertia truncata*	505441	Rare	Dispersed	Habitat importance map	0.0004
Slender Fork-fern	*Tmesipteris elongata*	503403	Vulnerable	Dispersed	Habitat importance map	0.0003
Bristly Shield-fern	*Lastreopsis hispida*	501878	Rare	Dispersed	Habitat importance map	0.0003
Grey Goshawk	*Accipiter novaehollandiae novaehollandiae*	10220	Vulnerable	Dispersed	Habitat importance map	0.0003
Southern Toadlet	*Pseudophryne semimarmorata*	13125	Vulnerable	Dispersed	Habitat importance map	0.0003
Common Bent-wing Bat (eastern ssp.)	*Miniopterus schreibersii oceanensis*	61342	Vulnerable	Dispersed	Habitat importance map	0.0003
Tall Astelia	*Astelia australiana*	500296	Vulnerable	Dispersed	Habitat importance map	0.0003
Strzelecki Gum	*Eucalyptus strzeleckii*	504558	Vulnerable	Dispersed	Top ranking map	0.0003
Naked Sun-orchid	*Thelymitra circumsepta*	503383	Vulnerable	Dispersed	Habitat importance map	0.0003
Nodding Baeckea	*Euryomyrtus ramosissima subsp. prostrata*	504258	Rare	Dispersed	Habitat importance map	0.0003
Lime Fern	*Pneumatopteris pennigera*	502578	Endangered	Dispersed	Habitat importance map	0.0002
Slender Tree-fern	*Cyathea cunninghamii*	500896	Vulnerable	Dispersed	Habitat importance map	0.0002
Peninsula Daisy-bush	*Olearia sp. 2*	502348	Rare	Highly Localised Habitat	Habitat importance map	0.0002
Anglesea Grevillea	*Grevillea infecunda*	503744	Vulnerable	Dispersed	Habitat importance map	0.0002
Tremont Bundy	*Eucalyptus aff. goniocalyx (Dandenong Ranges)*	507008	Vulnerable	Dispersed	Habitat importance map	0.0002
Leafy Greenhood	*Pterostylis cucullata subsp. cucullata*	505911	Endangered	Dispersed	Habitat importance map	0.0002
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	11008	Endangered	Dispersed	Habitat importance map	0.0001
Powerful Owl	*Ninox strenua*	10248	Vulnerable	Dispersed	Habitat importance map	0.0001
Lacey River Buttercup	*Ranunculus amplus*	505019	Rare	Dispersed	Habitat importance map	0.0001

Swamp Greenhood	*Pterostylis tenuissima*	502819	Vulnerable	Dispersed	Habitat importance map	0.0001
Swamp Diuris	*Diuris palustris*	501082	Vulnerable	Dispersed	Habitat importance map	0.0001
Yarra Gum	*Eucalyptus yarraensis*	501326	Rare	Dispersed	Habitat importance map	0.0001
White-throated Needletail	*Hirundapus caudacutus*	10334	Vulnerable	Dispersed	Habitat importance map	0.0001
Top Bog-sedge	*Schoenus turbinatus*	503057	Rare	Dispersed	Habitat importance map	0.0001
Yarra Pygmy Perch	*Nannoperca obscura*	4882	Vulnerable	Dispersed	Habitat importance map	0.0001
Grey-headed Flying-fox	*Pteropus poliocephalus*	11280	Vulnerable	Dispersed	Habitat importance map	0.0001
Hooded Plover	*Thinornis rubricollis rubricollis*	10138	Vulnerable	Dispersed	Habitat importance map	0.0001
Beech Finger-fern	*Notogrammitis angustifolia subsp. nothofageti*	503742	Vulnerable	Dispersed	Habitat importance map	0.0001
Winter Sun-orchid	*Thelymitra hiemalis*	505006	Endangered	Dispersed	Habitat importance map	0.0001
Dune Wood-sorrel	*Oxalis rubens*	502390	Rare	Dispersed	Habitat importance map	0.0001
Australasian Bittern	*Botaurus poiciloptilus*	10197	Endangered	Dispersed	Habitat importance map	0.0001
Annual Fireweed	*Senecio glomeratus subsp. longifructus*	507144	Rare	Dispersed	Habitat importance map	0.0001
Dense Leek-orchid	*Prasophyllum spicatum*	504506	Endangered	Dispersed	Habitat importance map	0.0001
Wine-lipped Spider-orchid	*Caladenia oenochila*	503694	Vulnerable	Dispersed	Habitat importance map	0.0001
Common Sandpiper	*Actitis hypoleucos*	10157	Vulnerable	Dispersed	Habitat importance map	0.0001
Showy Lobelia	*Lobelia beaugleholei*	502733	Rare	Dispersed	Habitat importance map	0.0001
Spurred Helmet-orchid	*Corybas aconitiflorus*	500835	Rare	Dispersed	Habitat importance map	0.0001
Small Sickle Greenhood	*Pterostylis lustra*	504876	Endangered	Dispersed	Habitat importance map	0.0001
Ground Spleenwort	*Asplenium appendiculatum subsp. appendiculatum*	500293	Rare	Dispersed	Habitat importance map	0.0001
Bog Gum	*Eucalyptus kitsoniana*	501290	Rare	Dispersed	Top ranking map	0.0000
Hoary Rapier-sedge	*Lepidosperma canescens*	501915	Rare	Dispersed	Top ranking map	0.0000
Spiral Sun-orchid	*Thelymitra matthewsii*	503378	Vulnerable	Dispersed	Habitat importance map	0.0000

Snowy Mint-bush	*Prostanthera nivea var. nivea*	502746	Rare	Dispersed	Habitat importance map	0.0000
Green Leek-orchid	*Prasophyllum lindleyanum*	502702	Vulnerable	Dispersed	Habitat importance map	0.0000
Blotched Sun-orchid	*Thelymitra benthamiana*	503369	Vulnerable	Dispersed	Habitat importance map	0.0000
Paper Flower	*Thomasia petalocalyx*	503392	Rare	Dispersed	Habitat importance map	0.0000
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	10226	Vulnerable	Dispersed	Habitat importance map	0.0000
Lewin's Rail	*Lewinia pectoralis pectoralis*	10045	Vulnerable	Dispersed	Habitat importance map	0.0000
Swamp Fireweed	*Senecio psilocarpus*	504659	Vulnerable	Dispersed	Habitat importance map	0.0000
Baillon's Crake	*Porzana pusilla palustris*	10050	Vulnerable	Dispersed	Habitat importance map	0.0000
Brown's Mitre-moss	*Calyptrochaeta brownii*	506252	Rare	Dispersed	Habitat importance map	0.0000
Coast Fescue	*Poa billardierei*	501361	Rare	Dispersed	Habitat importance map	0.0000
Grey Plover	*Pluvialis squatarola*	10136	Endangered	Dispersed	Habitat importance map	0.0000
Forked Rice-flower	*Pimelea hewardiana*	502522	Rare	Dispersed	Habitat importance map	0.0000
Brooker's Gum	*Eucalyptus brookeriana*	501256	Rare	Dispersed	Top ranking map ; special site	0.0000
Robust Spider-orchid	*Caladenia valida*	501022	Endangered	Dispersed	Habitat importance map	0.0000
Blue-billed Duck	*Oxyura australis*	10216	Endangered	Dispersed	Habitat importance map	0.0000
Black Falcon	*Falco subniger*	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Australasian Shoveler	*Anas rhynchotis*	10212	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Silver Wattle	*Acacia nano-dealbata*	500064	Rare	Dispersed	Top ranking map	0.0000
Spotted Hyacinth-orchid	*Dipodium pardalinum*	500324	Rare	Dispersed	Habitat importance map	0.0000
Chestnut-rumped Heathwren	*Calamanthus pyrrhopygius*	10498	Vulnerable	Dispersed	Habitat importance map	0.0000
Fairy Lanterns	*Thismia rodwayi*	503390	Vulnerable	Dispersed	Habitat importance map	0.0000
Hardhead	*Aythya australis*	10215	Vulnerable	Dispersed	Habitat importance map	0.0000
Intermediate Egret	*Ardea intermedia*	10186	Endangered	Dispersed	Habitat importance map	0.0000
Dwarf Boronia	*Boronia nana var. pubescens*	504278	Rare	Dispersed	Habitat importance map	0.0000

Growling Grass Frog	*Litoria raniformis*	13207	Endangered	Dispersed	Habitat importance map	0.0000
Metallic Sun-orchid	*Thelymitra epipactoides*	503367	Endangered	Dispersed	Habitat importance map	0.0000
Ruddy Turnstone	*Arenaria interpres*	10129	Vulnerable	Dispersed	Habitat importance map	0.0000
Eastern Great Egret	*Ardea modesta*	10187	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Brooklime	*Gratiola pumilo*	503753	Rare	Dispersed	Habitat importance map	0.0000
Elegant Parrot	*Neophema elegans*	10307	Vulnerable	Dispersed	Habitat importance map	0.0000
Clover Glycine	*Glycine latrobeana*	501456	Vulnerable	Dispersed	Habitat importance map	0.0000
Square-tailed Kite	*Lophoictinia isura*	10230	Vulnerable	Dispersed	Habitat importance map	0.0000
Small-flower Mat-rush	*Lomandra micrantha subsp. tuberculata*	504711	Rare	Dispersed	Habitat importance map	0.0000
Australian Little Bittern	*Ixobrychus dubius*	10195	Endangered	Dispersed	Habitat importance map	0.0000
Masked Owl	*Tyto novaehollandiae novaehollandiae*	10250	Endangered	Dispersed	Habitat importance map	0.0000
Ground Parrot	*Pezoporus wallicus wallicus*	10311	Endangered	Dispersed	Habitat importance map	0.0000
Oval-leaf Logania	*Logania ovata*	502032	Rare	Dispersed	Habitat importance map	0.0000
Snowdrop Wood-sorrel	*Oxalis magellanica*	502385	Rare	Dispersed	Habitat importance map	0.0000
Greater Sand Plover	*Charadrius leschenaultii*	10141	Critically endangered	Dispersed	Habitat importance map	0.0000
Musk Duck	*Biziura lobata*	10217	Vulnerable	Dispersed	Habitat importance map	0.0000
Velvet Daisy-bush	*Olearia pannosa subsp. cardiophylla*	502317	Vulnerable	Dispersed	Habitat importance map	0.0000
Freckled Duck	*Stictonetta naevosa*	10214	Endangered	Dispersed	Habitat importance map	0.0000
Lesser Sand Plover	*Charadrius mongolus*	10139	Critically endangered	Dispersed	Habitat importance map	0.0000
Little Egret	*Egretta garzetta nigripes*	10185	Endangered	Dispersed	Habitat importance map	0.0000

Habitat group

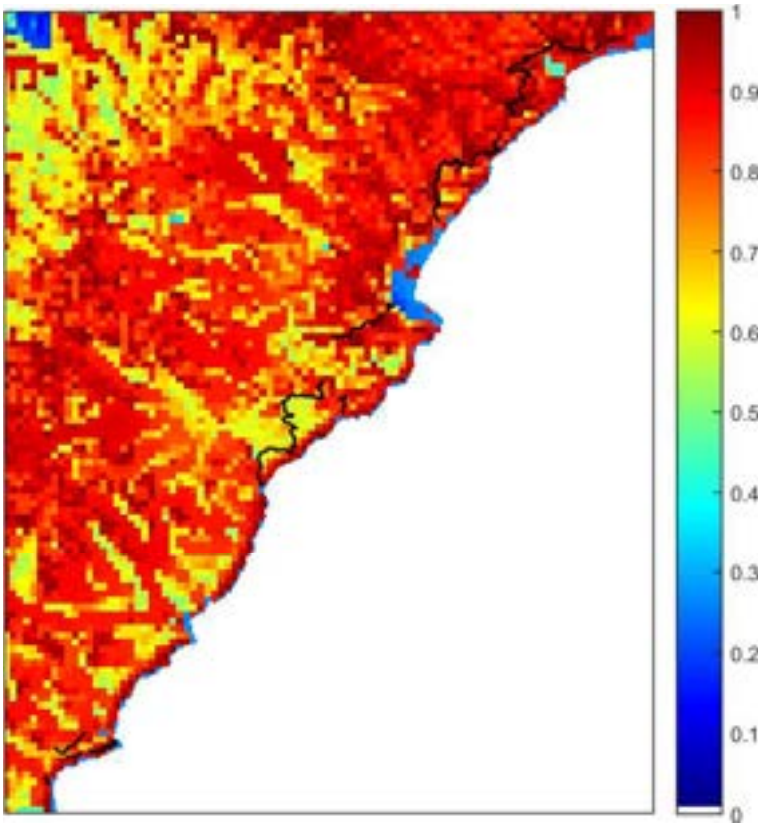
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance scores in dispersed species habitat maps and selected VBA records
- Selected VBA record is an area in Victoria that represents a large population, roosting or breeding site etc.

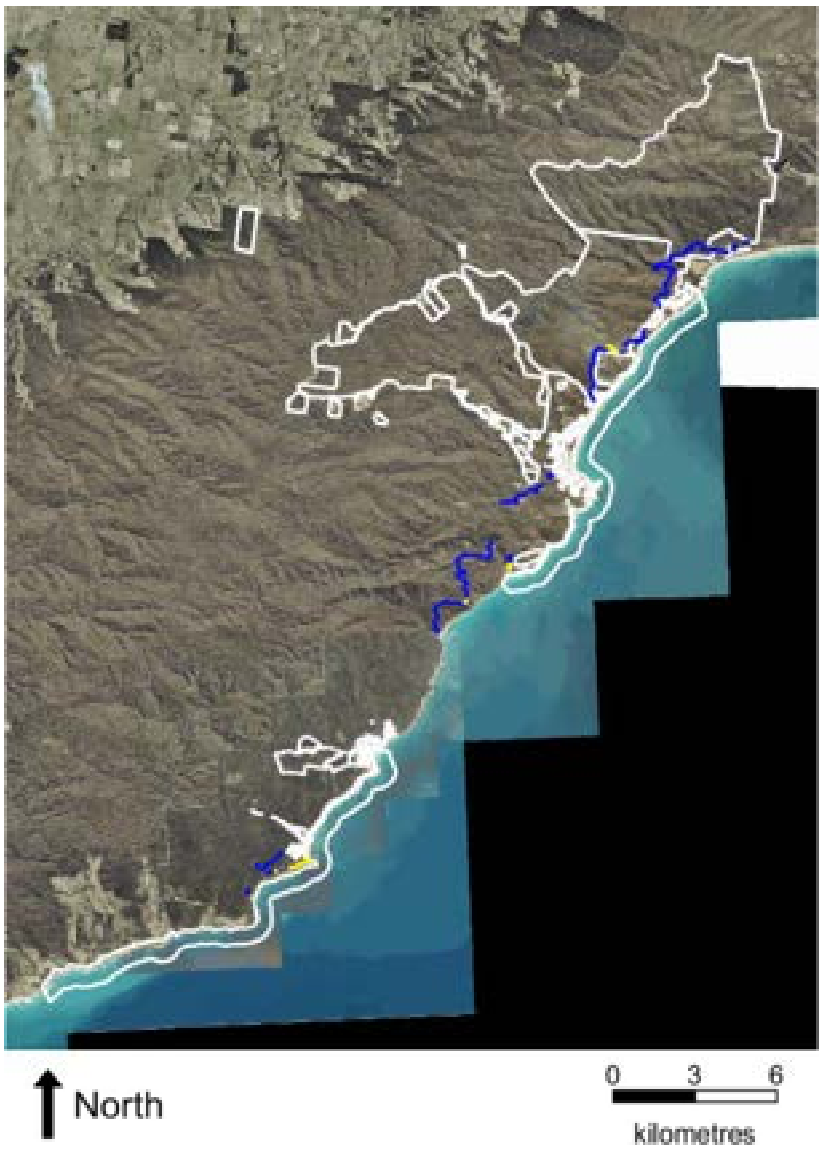
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

4. Map of the property in context

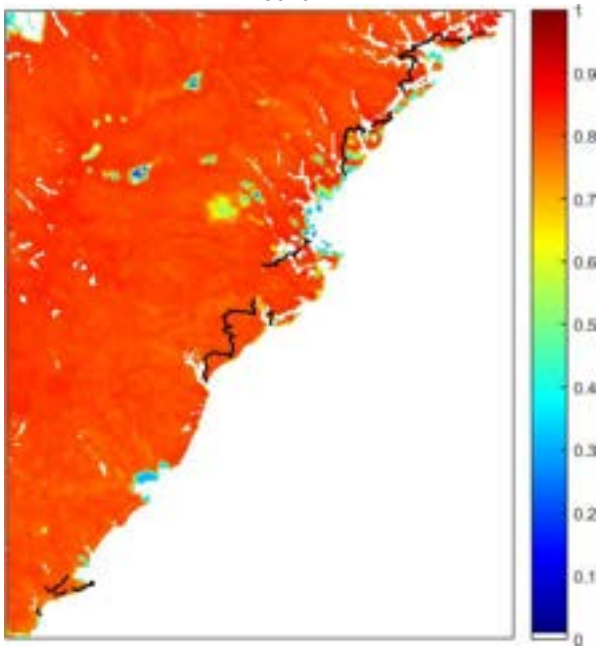


Yellow boundaries denote areas of proposed native vegetation removal.

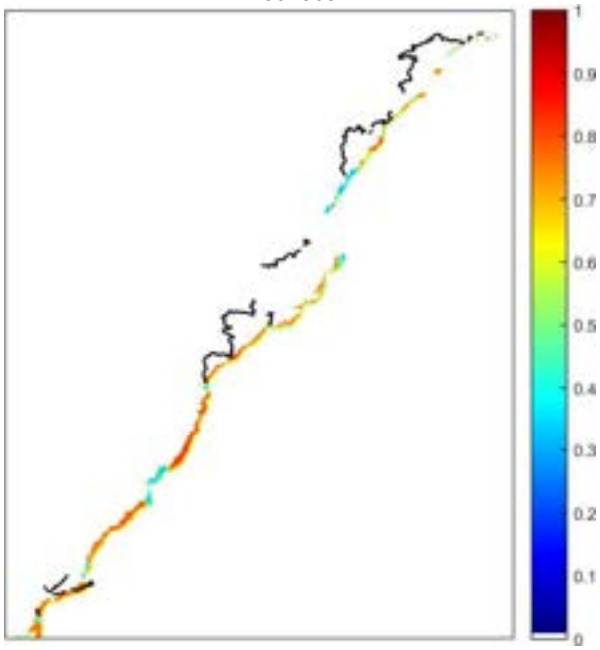
Blue boundaries denote zones of partial removal with a halved condition score.

4. Habitat importance maps

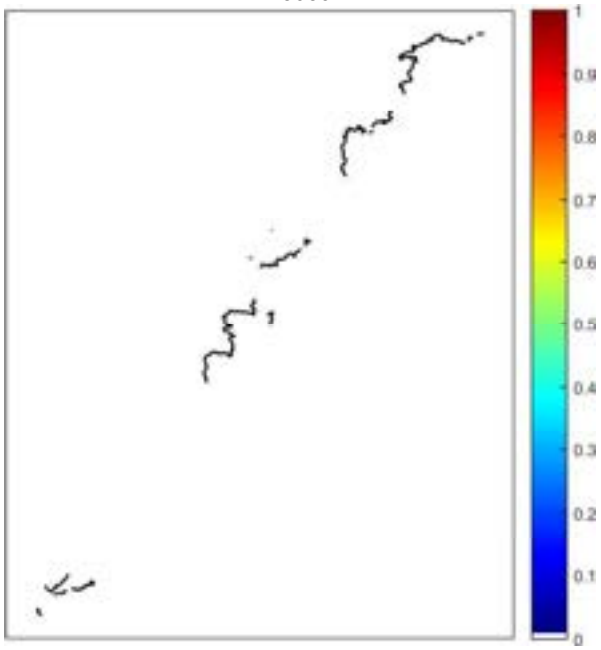
Wrinkled Buttons
Leiocarpa gatesii
501942



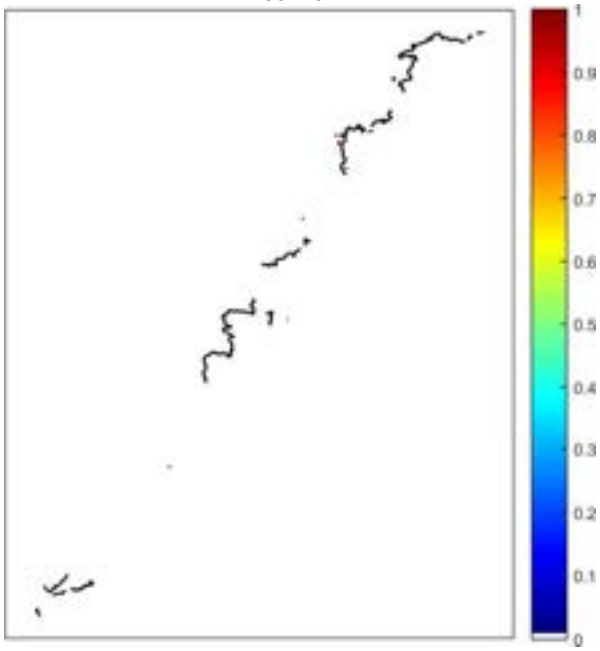
Coast Correa
Correa backhouseana var. backhouseana
504369



Otway Black Snail
Victaphanta compacta
15050



Southern Blue-gum
Eucalyptus globulus subsp. globulus
504491



Appendix 9 Arborist Report

Arborist Report/Tree Management Plan

Great Ocean Road Walking Trail Project

Prepared For:
Biosis
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Contents

1 Introduction

Axiom Tree Management Pty Ltd has been engaged to provide advice on impacts to trees as part of the construction of the Great Ocean Road Coastal Trail (GORCT). The assessment was carried out in June 2022 and included assessment along selected section of new and existing walking trails. Locations include:

- McPhillamy Road (off Golf Links Rd), Eastern View
- Big Hill Track
- Allenvale Rd, Lorne
- Grey River Rd, Kennett River
- Cumberland River campground

The proposed walking trail includes a mixture of new and existing trails over approximately 90 km that provide a link between the Surf Coast Walk and the Great Ocean Walk. The State of Victoria requires projects on native bushland to obtain a Native Vegetation Removal (NVR) permit before progressing to construction. Approval of the permit requires the calculation and purchase of project specific NVR offset credits.

A standardized assessment method for calculating the impact of walking trail construction on native vegetation is not currently established. The existing standard (AS 4970-2009 Protection of Trees on Development Sites) is designed for the assessment of high-impact, deep, and/or broad-area excavations, typical of building developments, roads, pipelines etc. Due to its focus on excavation area without consideration of depth, undertaking tree loss assessments through a typical application of the Standard would result in inaccurately high NVR offset costs prohibitive to the progression of most projects. The shallow and comparatively low impact of trail construction necessitates an industry appropriate interpretation of the Standard, to be undertaken by suitably qualified and experienced arborists.

With the intent of designing a replicable, best-practice method of assessing and minimising vegetation loss, the following approach was guided by the principals of *avoid, minimise, and offset.* By employing the methods described in this plan, the Project will minimise tree impact from trail construction while accurately calculating NVR offset requirements. Several vegetation communities are present throughout the length of the trail that have the potential to be impacted by trail construction.

Documents viewed as part of the preparation of this report include:

- AS 4970 – 2009 – Protection of trees on development sites.
- AS 4373-2007 – Pruning of amenity trees.
- Assessors' handbook Applications to remove, lop or destroy native vegetation V1.1 October 2018; and
- Guidelines for the removal, destruction or lopping of native vegetation December 2017.
- Desktop ecological values and constraints assessment: Great Ocean Road Coastal Trail Prepared by Biosis 29 March 2022.

1.1 Existing Standard

AS 4970-2009 Protection of Trees on Development Sites provides guidance on the principles for protecting trees on land subject to development and follows, in sequence the stages of development from planning to implementation (AS 4970-2009). The standard is to be used by qualified Arborists (AQF level 5) who interpret and use the standard based on data collected on-site to inform and justify decisions in relation to protecting the tree (Moore, 2018).

AS 4970-2009 provides methods for calculating the approximate area that a tree requires to remain viable and upright. It was primarily developed for the protection of trees on development sites in urban areas and is commonly applied to determine tree impact during the construction of buildings, roads and various infrastructure and provide guidance for working within these areas.

1.1.1 Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) Specifications

The principal method of protecting trees throughout development is by establishing a tree protection zone (TPZ). TPZs have been calculated according to *Protection of Trees on Development Sites* (AS 4970-2009) for all trees to be retained calculating the TPZ as 12 times the trunk diameter at 1.4m above ground level (DBH). The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. This method is commonly used for trees in urban situations and is an effective way of protecting trees.

$$TPZ = DBH \times 12$$

The SRZ is the minimum volume of roots required by the tree to remain stable in the ground. If the SRZ is breached the chances of windthrow are increased. It is important to note that the SRZ is not related to tree health. It refers to the physical volume of roots required for the tree to remain stable in the ground. It is in no way related to the physiological requirements of the tree but is the minimum volume of roots required for the tree to remain standing.

$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

1.1.2 Encroachment

Encroachment into the TPZ of trees is allowed under certain circumstances depending on several factors including site and tree conditions. Encroachment of less than 10% of the TPZ and outside the SRZ is deemed to be minor encroachment provided construction proceeds with caution and standard tree protection measures are adhered to. Detailed root investigations should not be required but must be compensated with an extension to the TPZ elsewhere. Variations must be made by the project arborist considering other relevant factors including tree health, vigour, stability, species sensitivity and soil characteristics.

Encroachment of more than 10% of the TPZ or into the SRZ will require a qualified Arborist (AQF level 5) to demonstrate that the tree(s) will remain viable. This may require the Arborist to consider the following:

- Root investigation by non-destructive methods
- Location and distribution of the roots
- Tree species and tolerance to root disturbance.
- Lean and stability of the tree
- Root sensitive construction techniques and design
- The potential loss of root mass from encroachment
- Age, vigour, and size of the tree.
- Soil traits and volume, topography, and drainage.
- The presence of existing or past structures or obstacles affecting root growth (AS4970-2009).

1.1.3 Construction

Construction of the proposed trails will follow a flagged gps alignment, utilising natural features and minimising vegetation disturbance, in line with trail building practices and project specific construction requirements. Excavation equipment includes 1.7-ton and labourers using hand tools. Most of the trail will be 1m wide, relatively low impact with minimal excavation. However, in steep terrain deeper excavation may be required.

Given much of the construction of the trails will be low impact and determined on the day of construction the application of TPZs in accordance with AS4970-2009 throughout the site will not be practical. Development of guidelines for works close to trees for trail workers to follow in combination with periodic compliance checks to assess native vegetation offsets is proposed. This method is an effective way of reducing the impact on trees and cost effective and allow for the determination of native vegetation offsets in accordance with the legislation. Construction along existing trails will follow a similar method; however, impacts are likely to be significantly reduced due to previous impact and influence on roots.

1.2 Impacts from Walking Trail Construction and Use

Various impacts are likely to occur from the construction and subsequent use of walking trails associated with the completed Great Ocean Road walking trail. Impacts include compaction from various stakeholders accessing the site for assessment purposes, mechanical/hand excavation for construction of the trail (Trail, surface, steps, bridges and boardwalks), and ongoing compaction from normal use of the trails.

1.2.1 Construction Impacts

Walking trail construction will follow culturally, historically, ecologically and land manager approved, GPS mapped alignments and will be overseen by a dedicated Construction Manager. Where suitable trail design utilises existing geological features to reduce impact, while enhancing trail user experience.

Where possible, trail construction will require the removal of ground cover and understory vegetation only. Impacts to trees will vary depending on the proximity of the trail to trees and the depth of excavation. Trail builders will follow the established industry principals of sustainable trail building, constructing trail which passively sheds and drains water with minimal erosion and maintenance requirements.

Construction equipment typically includes a 1.7-ton excavator, followed by laborers using hand tools to perform the final shaping of the trail surface. Construction depth will vary depending on site-specific terrain and the style of the trail. Predominantly, the trail network will involve shallow, low impact construction, consisting of the removal of ground cover and organic matter, followed by minimal shaping of the mineral earth below. Potential construction impact to trees may include:

- Soil excavation resulting in damage or removal of roots.
    - Removal of small feeder roots reduce the amount of water and chemicals that are conducted throughout the tree for normal function. Although fibrous roots are highly regenerative, recovering from a loss of root mass requires additional energy.
    - Damage or removal of larger lateral roots removes the trees' ability to transport water and chemical from the feeder roots to the rest of the tree.
    - Removal or damage of large roots within the SRZ of the tree not only affects the transport of water and chemicals to the tree but may also impact the structural stability of the tree.
- Soil fills in the form of soil placement over roots:
    - Placement of soil over large areas of a tree root system create a layer that inhibits or completely prevents water infiltration and gas exchange with the soil that is required for normal tree function. In the long term, the placement soil fill can result in reduced tree function and growth and dieback of roots leading to tree death or complete failure in extreme cases.

1.2.2 Soil Compaction

Subsequent damage from soil compaction and the impact on tree roots is a major cause of decline in urban areas. Depending on land use, this can also occur in a bush or rural setting. Soil compaction can come in many forms including pedestrian traffic, vehicles, and construction equipment. Roots provide mechanical stability to a tree and are the organs which absorb water and nutrients required to carry out life processes such as photosynthesis, transpiration, and cell respiration. Compaction occurs when repeated mechanical pressure forces the air out of the soil, and reduces the space between soil particles (Harris, Matheny, and Clark, 2004) which would have been available for water and air to penetrate.

Trees can tolerate some degree of soil compaction over time and may adapt to certain amounts. Soil compaction is likely to result from trail construction equipment and labourers, normal use of trails and trail users stopping along the trails for rest stops

Activities that may cause soil compaction include:

- Trail construction equipment and labourers:
  - This type of soil compaction will occur during construction from excavation equipment and labourers walking through the site and is likely to be short term and for the period of construction.
  - Provided excavation equipment and pedestrian traffic is confined to the area of trail construction, the long-term impact to the tree's health is expected to be minor.
- Normal use of trails by walkers:
  - This type of compaction will occur within the footprint of the trail and will occur in already compacted soil over an extended period.
  - Provided periodic trail maintenance is carried out to avoid trail deviation from the accumulation of water and mud, the long-term impact to the tree's health is expected to be minor.
- Trail users stopping along the trails for rest stops:
  - Trail users stopping to rest and for may result in soil compaction from foot traffic outside the defined trail corridor.
  - To reduce soil compaction, rest stops should be constructed to provide space for multiple trail users to stop and rest.
  - Construction of rest stop surfaces should include clean gravel free from weed seed and pathogens to allow for water infiltration and to reduce compaction.

1.3 Method Reducing Impact to Trees

The proposed walking trail has been mapped within areas where native vegetation is present and have the potential to be impacted. The trail will be aligned to reduce the impact on adjoining trees, to avoid areas of significant ground cover and to allow for safe low maintenance trail design. Where impacts to trees have the potential to impact tree health and longevity, mitigation measures should be used. Where avoidance or mitigations options are not available, the tree may be required to be included in offset calculations. Sample Arborist assessments have been conducted along a variety of vegetation types and terrain to assess the impact on trees. Strategies for constructing the walking trail while accounting for impacts to trees include:

1. Trail is aligned to avoid trees and trees impacts with minimal excavation and soil fill.
   a. No preliminary Arborist assessment or supervision required.
   b. Tree impacts are minor within TPZ areas and no TPZ impacts will be included in the vegetation removal footprint.
   c. Follow up Arborist assessment following completion of the project to determine tree impacts that have not previously been accounted for.
2. Trail is aligned within steep terrain and excavation required for the installation of bridges/steps etc.
   a. Preliminary Design completed for the alignment of the trail and infrastructure used.
   b. Detailed Arborist assessment within these areas to determine the impact to the trees and TPZ impacts to be included in the vegetation removal footprint.

1.3.1 Planning and Pre-Construction

Under typical development conditions in urban areas, trees would be assessed, located and TPZ/SRZ areas applied as part of a preliminary tree assessment to assist in design purposes and to reduce potential impacts on trees and determine retention prior to plans being finalised. Given most of the trails will be through bushland areas with significant numbers of trees, carrying out detailed site survey is not feasible. In most cases the exact location of the trail will be determined at the time of construction, limiting the scope of preliminary assessments. Given most of the trails will consist of low impact construction, impacts to the tree TPZ will be minor. Where excavation is required in steep terrain for steps, retaining walls and rock armouring, detailed design and individual tree assessment may be required to determine the impact on the TPZ.

1.3.2 Engagement of the Project Arborist

A project Arborist should be engaged to advise on actions that are required to be undertaken during defined stages of construction. The project Arborist must be suitably qualified in Arboriculture and experienced in tree protection on development sites and hold minimum AQF level 5 in Arboriculture.

1.3.3 Trail Construction Inductions

Site inductions are to be carried out for all trail workers prior to being able to carry out trail works. Site inductions are to be conducted by the Site supervisor and project Arborist and will include:

- Basic tree function and the impact of damage from trail construction;
- Construction guidelines for working close to trees; and
- Procedure for when damage/removal occur to substantial roots requiring native vegetation offsets.

1.3.4 Construction Guidelines

Trail construction works close to trees have the potential to damage above and below ground parts of the trees. Specifications include:

- Trail construction works within proximity of trees should be carried out with care not to damage below and above ground parts of the tree;
- Excavation within a 1m radius of the main stem of the tree should be carried out by hand with no excavation equipment used;
- Where the alignment of the trail is close to the main stem of large trees, preference should be given for construction to the high side of the main stem where root growth may be reduced; and
- Where substantial roots are uncovered and not damaged/removed, soil fill should be used over the root, or the trail alignment moved;
- Where large numbers of substantial roots are uncovered and limited trail construction options exist, the project Arborist should be consulted.

1.3.4.1 Placement of Fill

The placement of fill may be used close the main stem of the tree provided the following specifications are adhered to including:

- Fill is not to extend greater than 50% of the circumference of the main stem;
- The placement of fill should not exceed 100mm in depth against the main stem;
- The composition of fill should include larger diameter gravel (>10mm) where possible to allow for water infiltration; and
- Damage to roots or the main stem should be avoided during the placement of fill.

1.3.4.2 Exposed Roots

Given the large population of trees and proximity to them, tree roots may be a feature within new trails. Specifications for incorporating exposed roots include:

- Where possible having exposed roots within the trail should be avoided. However, construction of trails may result in exposed roots over time through wear and erosion.
- Where exposed roots are required to be incorporated within the trail, gravel (diameter > 10mm) should be used to reduce erosion and wear over time.

1.3.4.3 Trail Construction through Riparian Areas

Most of the large significant trees are located along waterways and riparian areas. Trail construction works are likely to impact substantial roots in these areas. Review of trail design by the project Arborist and possible root investigations to assess the impact of the trail and to determine appropriate alignment of the trail through areas that do not impact substantial roots.

1.3.4.4 Native Vegetation Offset Requirements

Where substantial roots greater than a defined diameter are damaged or removed native vegetation offsets may be required. The size of substantial roots for different sized trees include:

- Trees with trunk diameters of <200mm - Substantial roots greater than 30mm;
- Trees with trunk diameters of between 200mm and 600mm - Substantial roots greater than 50mm;
- Trees with trunk diameters of between 600 and 1000mm - Substantial roots greater than 70mm; and
- Trees with trunk diameters greater than 1000mm - Substantial roots greater than 100mm

Where substantial roots are damaged or removed, the long-term health and structure of the tree may be significantly impacted, and native vegetation offsets will most likely be required. Where damage to substantial roots occur, the location and dimension of the tree are to be recorded and located for inspection by the project Arborist during routine compliance inspections. Suitably qualified arborist will determine if a tree is considered to be lost or retained.

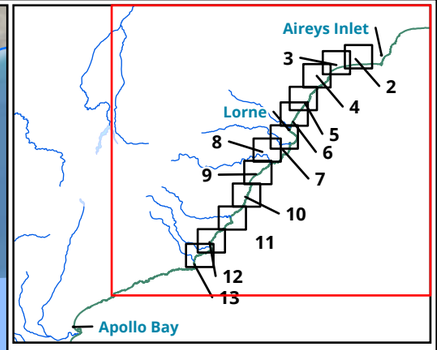
1.3.5 Compliance Checks

Periodic compliance checks will be carried by the project Arborist to monitor construction methods and to assess the impact on trees that have been determined to be significantly impacted and may require native vegetation offsets. Arborist compliance will be required to be carried out at agreed intervals throughout the project. Compliance timeframes and actions are outlined in Table 1 below.

Table 1. Arborist compliance

Timeframe	Action
First day (induction)	Arborist will be onsite to induct trail workers regarding various tree impacts and recommended construction methods
First week (Induction and supervision)	Arborist will be onsite supervising construction for 2 days during the first week including initial induction
First month (Induction, supervision and compliance)	Arborist will be onsite for at least 1 day per week for supervision and compliance excluding first week
Every month following initial month (supervision and compliance)	Arborist will be onsite for at least 1 day per month primarily for compliance. Based on 10km per month. Where additional resources are used additional inspections will be required. Trees along the trail will be assessed based on damage/removal to substantial roots. Only trees considered to be significantly impacted and are likely to die within the next five years will be recorded photographed and DGPS located.

Appendix 10 Additional figures



Legend

- Project area
- *Phytophthora* Infection

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Chrysanthemoides monilifera* - Boneseed
- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Beach/Rock Shelf
- Existing Informal Trail
- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail
- New Walking Trail

Figure 4.1 Weed and pathogen distribution in the project area

0 1,000 2,000 3,000 4,000 5,000

Metres

N

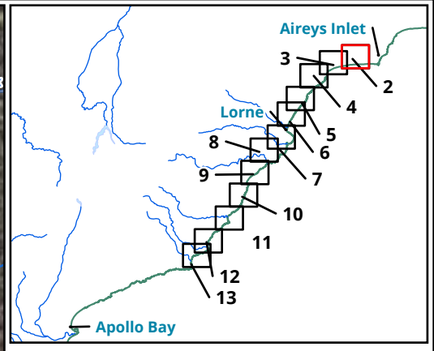
Scale: 1:130,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

Matter: 35990,
Date: 04 June 2024,
Prepared for: ML, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_weeds
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Acknowledgements: BaseMap - VicMap ©State of Victoria



Legend

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Trail alignment

- Existing Informal Trail
- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail

Figure 4.2 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

Matter: 35990,
Date: 04 June 2024,
Prepared for: ML, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_weeds
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Legend

Phytophthora Infection

Observed weed species

Weed - High to Very High threat

Weed - Other threat

Weed Infestations

Chrysanthemoides monilifera - Boneseed

Pittosporum undulatum - Sweet Pittosporum

Trail alignment

Existing Informal Trail

Existing MVO Track

Existing Road/Footpath

Existing Walking Trail

New Walking Trail

Figure 4.3 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

biosis.

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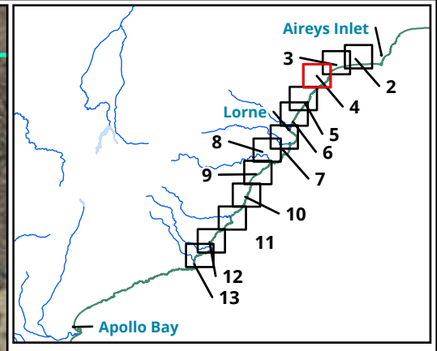

Legend

Phytophthora Infection

Observed weed species

Weed - High to Very High threat

Weed - Other threat

Weed Infestations

Chrysanthemoides monilifera - Boneseed

Pittosporum undulatum - Sweet Pittosporum

Trail alignment

Existing Informal Trail

Existing MVO Track

New Walking Trail

Figure 4.4 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

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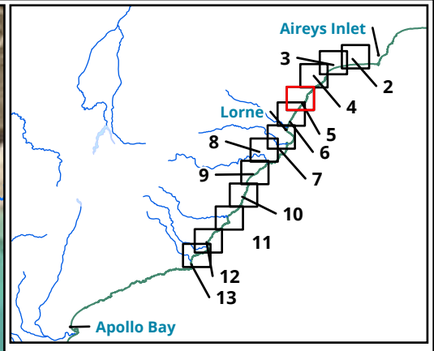

Legend

- *Phytophthora* Infection

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Chrysanthemoides monilifera* - Boneseed
- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Existing Informal Trail
- Existing MVO Track
- New Walking Trail

Figure 4.5 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

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Date: 04 June 2024,
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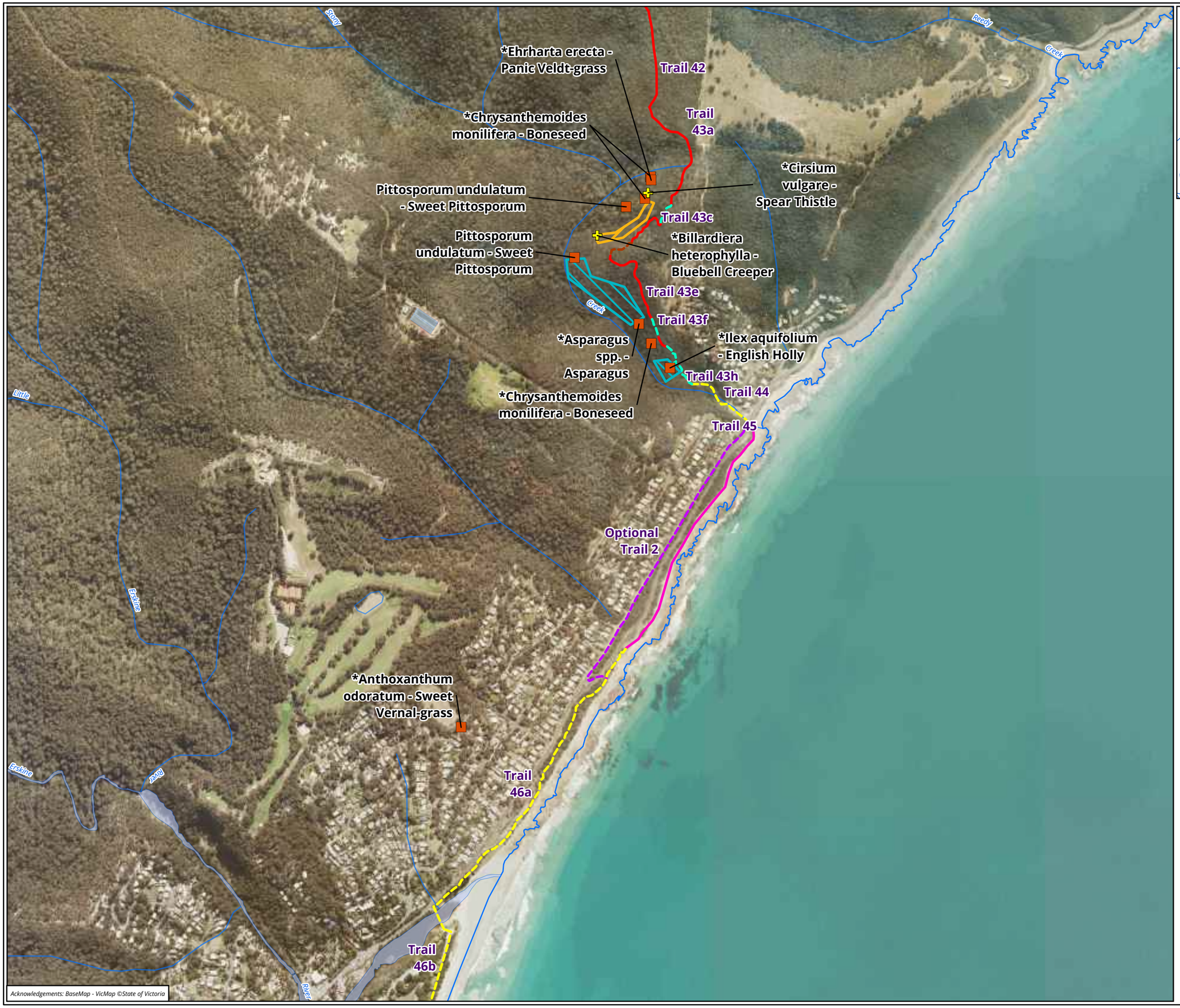

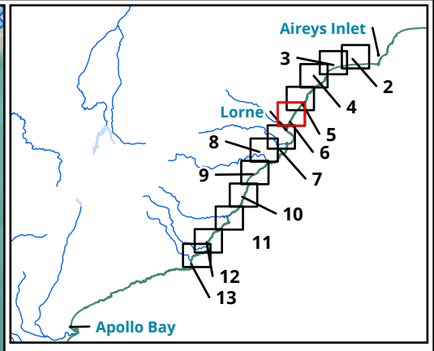

Legend

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Chrysanthemoides monilifera* - Boneseed
- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Beach/Rock Shelf
- Existing Informal Trail
- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail
- New Walking Trail

Figure 4.6 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

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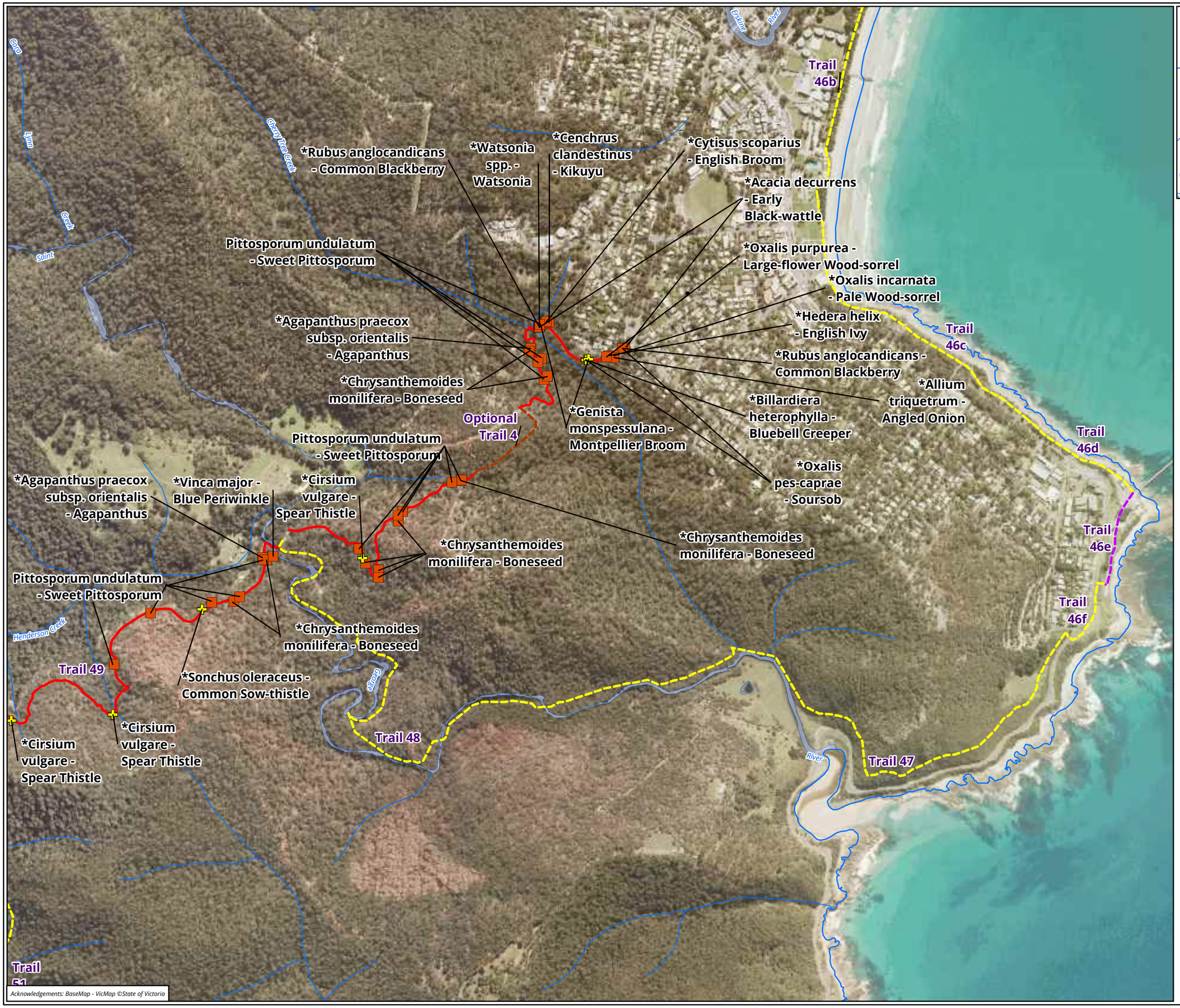

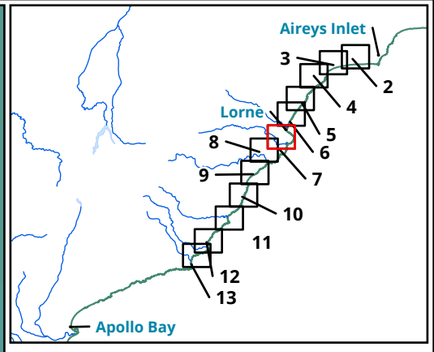

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Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Trail alignment

- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail
- New Walking Trail

Figure 4.7 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

Matter: 35990,
Date: 04 June 2024,
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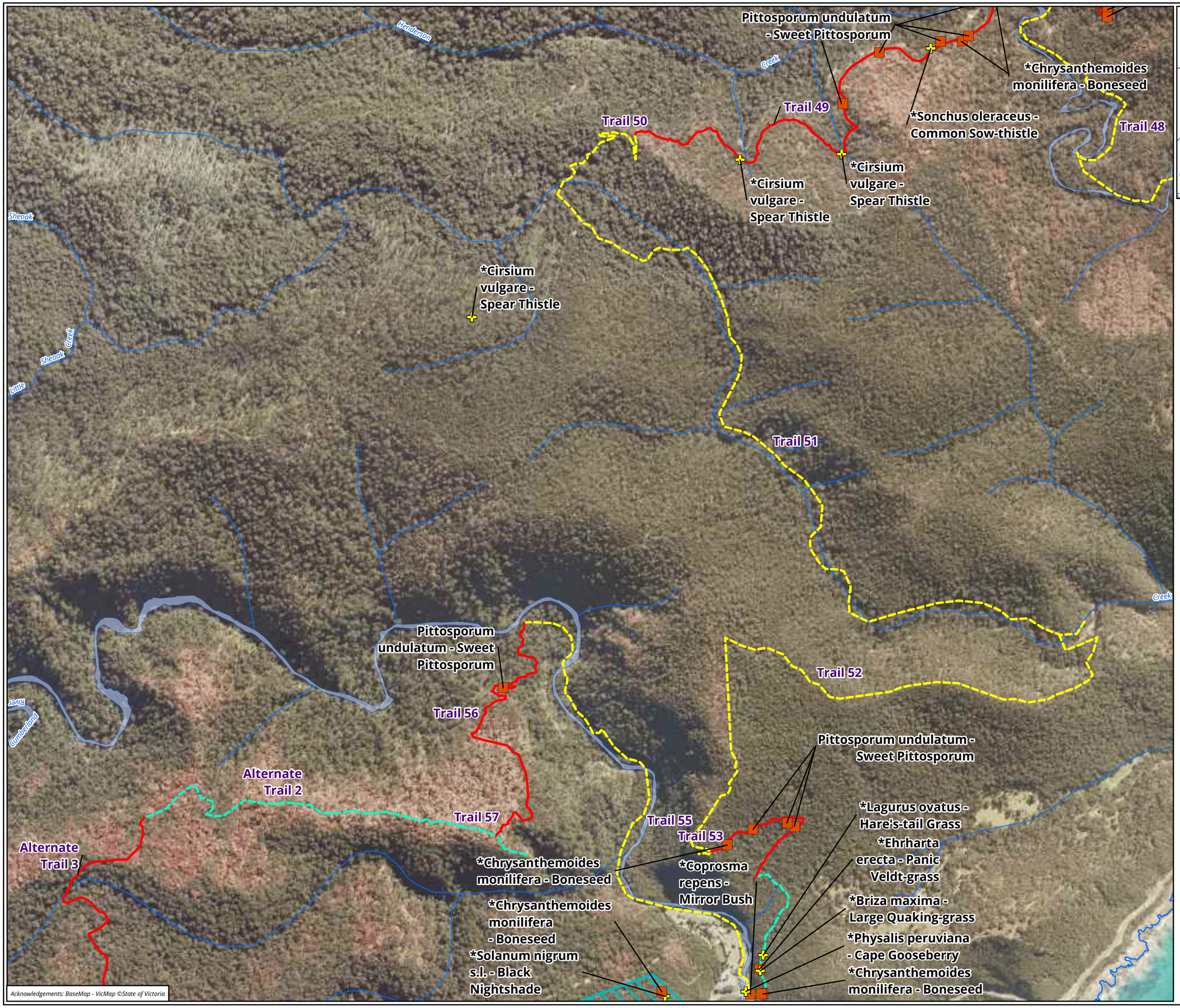

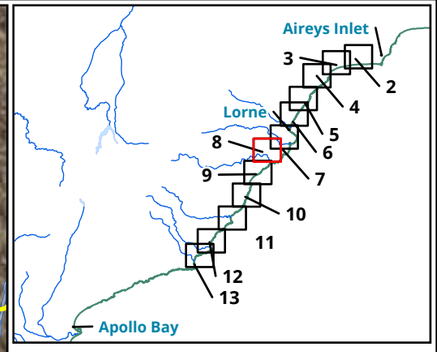

Legend

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Existing Informal Trail
- Existing Walking Trail
- New Walking Trail

Figure 4.8 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

biosis.

Matter: 35990,
Date: 04 June 2024,
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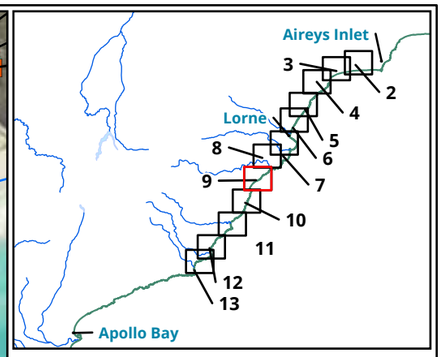

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Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Existing Informal Trail
- Existing MVO Track
- Existing Walking Trail
- New Walking Trail

Figure 4.9 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

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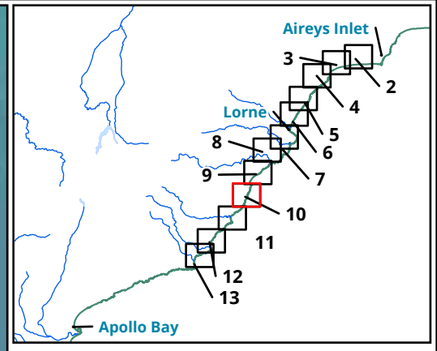
Trail 66

Trail 67a



Legend

Trail alignment

- Existing MVO Track
- Existing Walking Trail

Figure 4.10 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

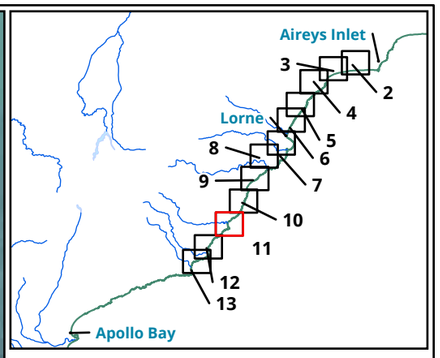
N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

Matter: 35990,
Date: 04 June 2024,
Prepared for: ML, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_weeds
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail

Figure 4.11 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

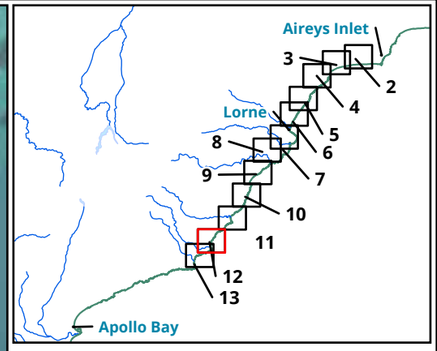
N

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

Matter: 35990,
Date: 04 June 2024,
Prepared for: ML, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_weeds
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Legend

Observed weed species

- Weed - High to Very High threat
- Weed - Other threat

Weed Infestations

- *Pittosporum undulatum* - Sweet Pittosporum

Trail alignment

- Existing MVO Track
- Existing Walking Trail
- New Walking Trail

Figure 4.12 Weed and pathogen distribution in the project area

0 80 160 240 320 400

Metres

Scale: 1:10,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

biosis.

Matter: 35990,
Date: 04 June 2024,
Prepared for: ML, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_weeds
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

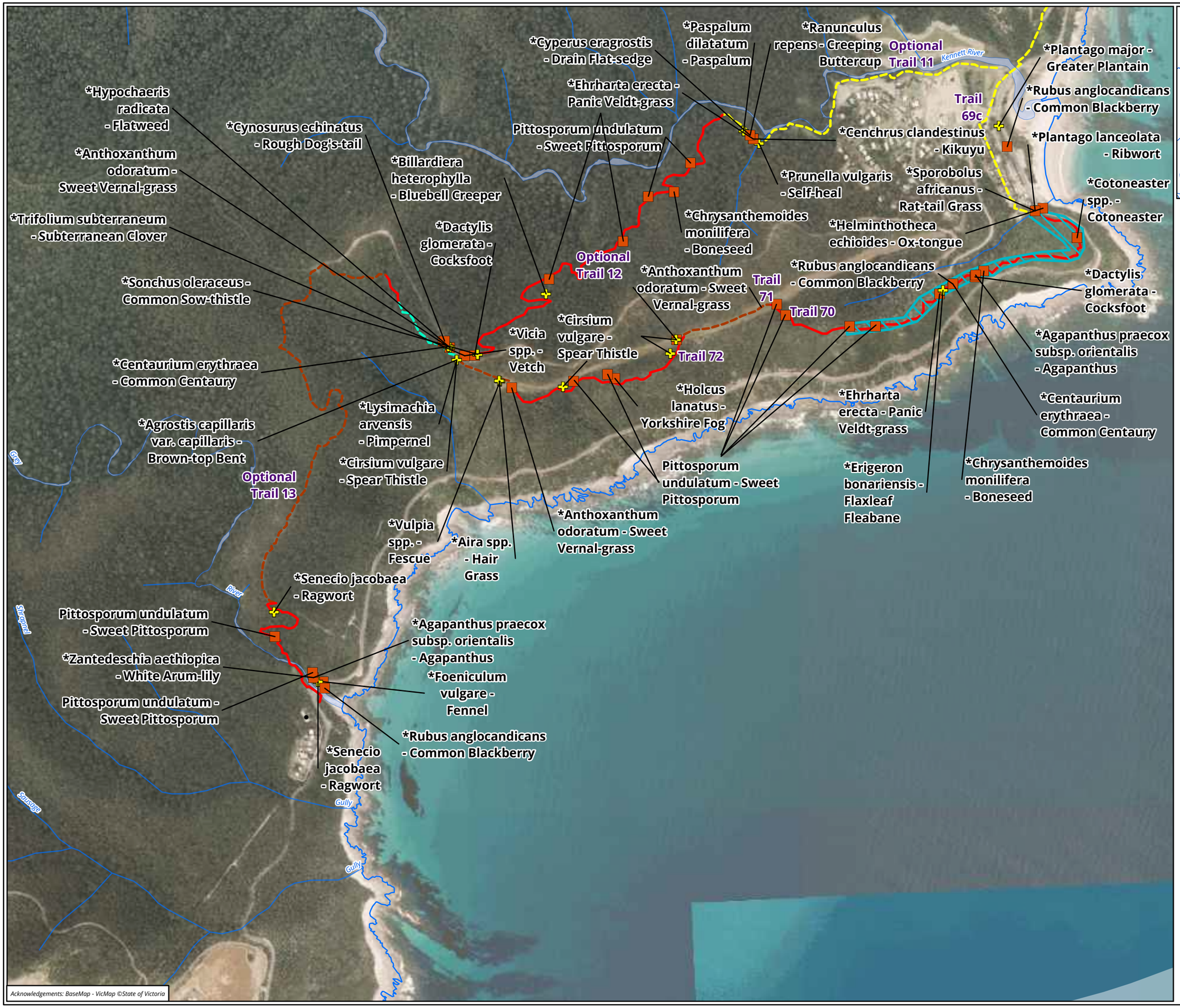
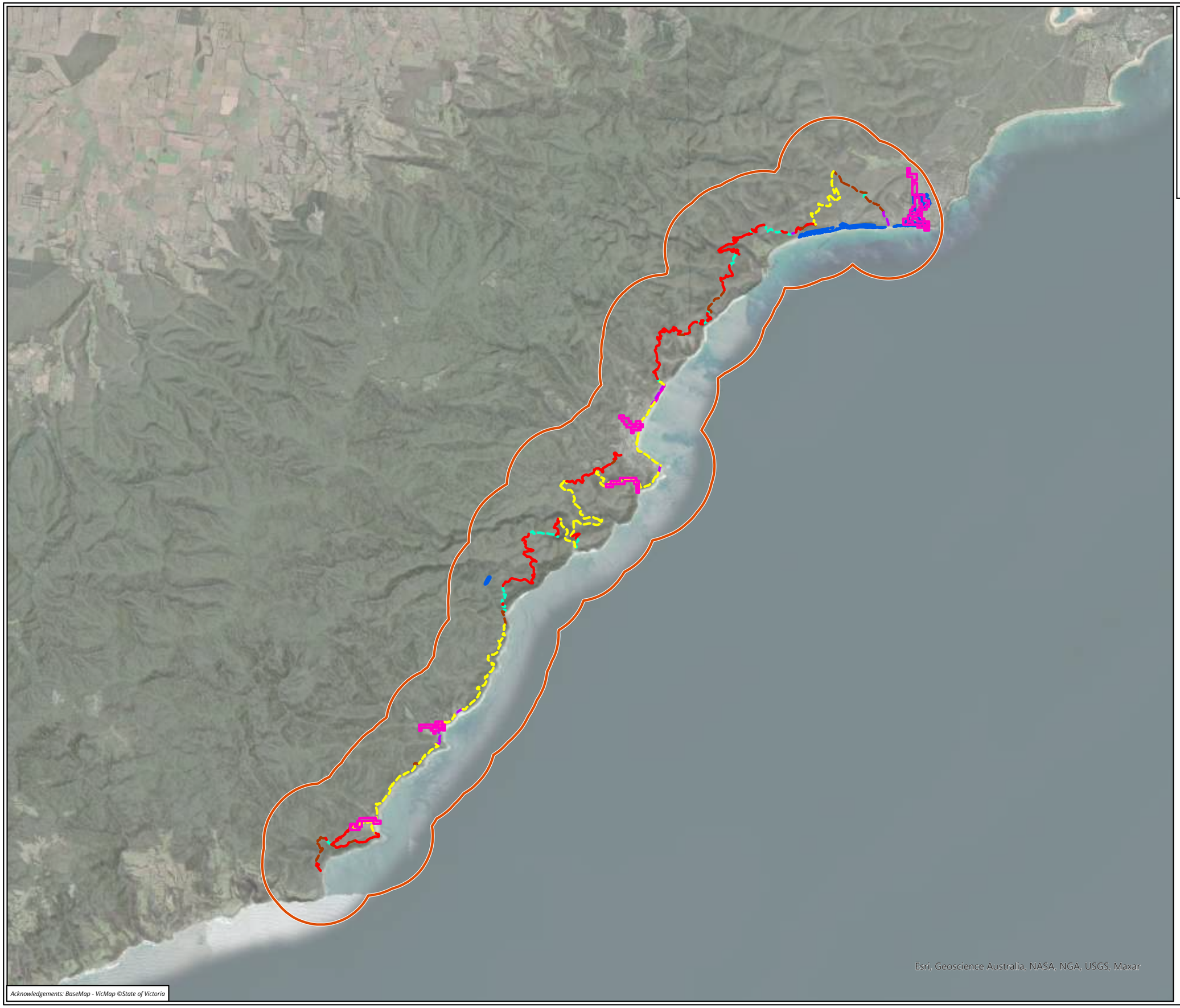
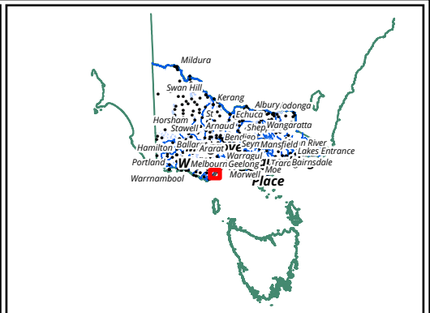


Figure 4.13 Weed and pathogen distribution in the project area





Legend

Project area

Trail alignment

- Beach/Rock Shelf
- Existing Informal Trail
- Existing MVO Track
- Existing Road/Footpath
- Existing Walking Trail
- New Walking Trail

Protected communities

- Flora and Fauna Guarantee Act listed communities
- EPBC Act Ecological Communities of National Environmental Signficance

Figure 5.1 Ecological features in the study area

0 1,000 2,000 3,000 4,000 5,000

Metres

Scale: 1:130,000 @ A3

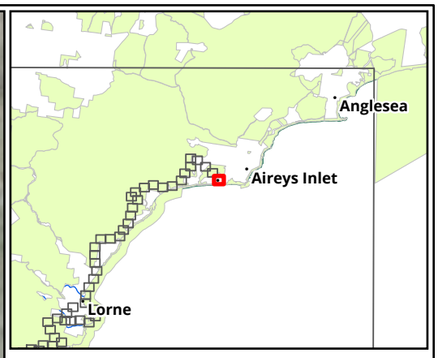
Coordinate System: GDA 1994 VICGRID94

biosis.

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Acknowledgements: BaseMap - VicMap ©State of Victoria



Legend

Trail alignment

- Existing MVO Track
- Existing Road/Footpath

Protected communities

- Flora and Fauna Guarantee Act listed communities

Figure 5.2 Ecological features in the study area

0 20 40 60 80 100

Metres

Scale: 1:2,000 @ A3

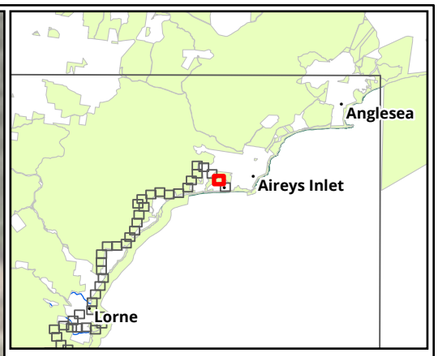
Coordinate System: GDA 1994 VICGRID94

biosis

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Acknowledgements: BaseMap - VicMap ©State of Victoria



Legend

Trail alignment

- Existing MVO Track
- Existing Road/Footpath

Figure 5.3 Ecological features in the study area

0 20 40 60 80 100

Metres

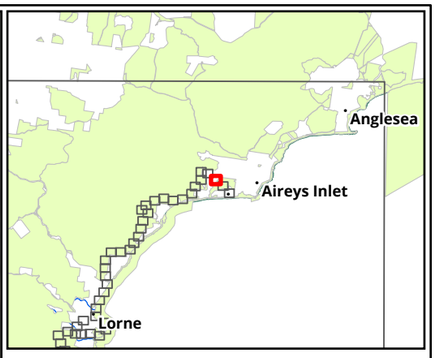
Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

- Existing Informal Trail
- Existing MVO Track

Large trees in patch

- *Eucalyptus obliqua* - Messmate Stringybark

Figure 5.4 Ecological features in the study area

0 20 40 60 80 100

Metres

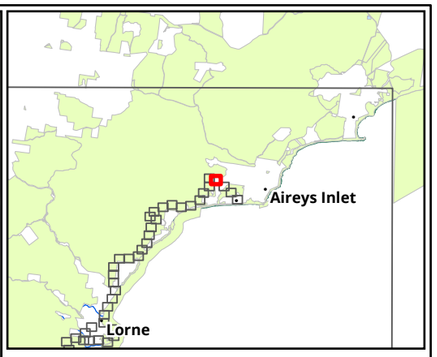
Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Acknowledgements: BaseMap - VicMap ©State of Victoria

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

- Existing MVO Track

Large trees in patch

- Dead
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Acknowledgements: BaseMap - VicMap ©State of Victoria

Figure 5.5 Ecological features in the study area

0 20 40 60 80 100

Metres

Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Legend

Trail alignment

- Existing MVO Track
- Existing Walking Trail

Large trees in patch

- Dead
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Figure 5.6 Ecological features in the study area

0 20 40 60 80 100

Metres

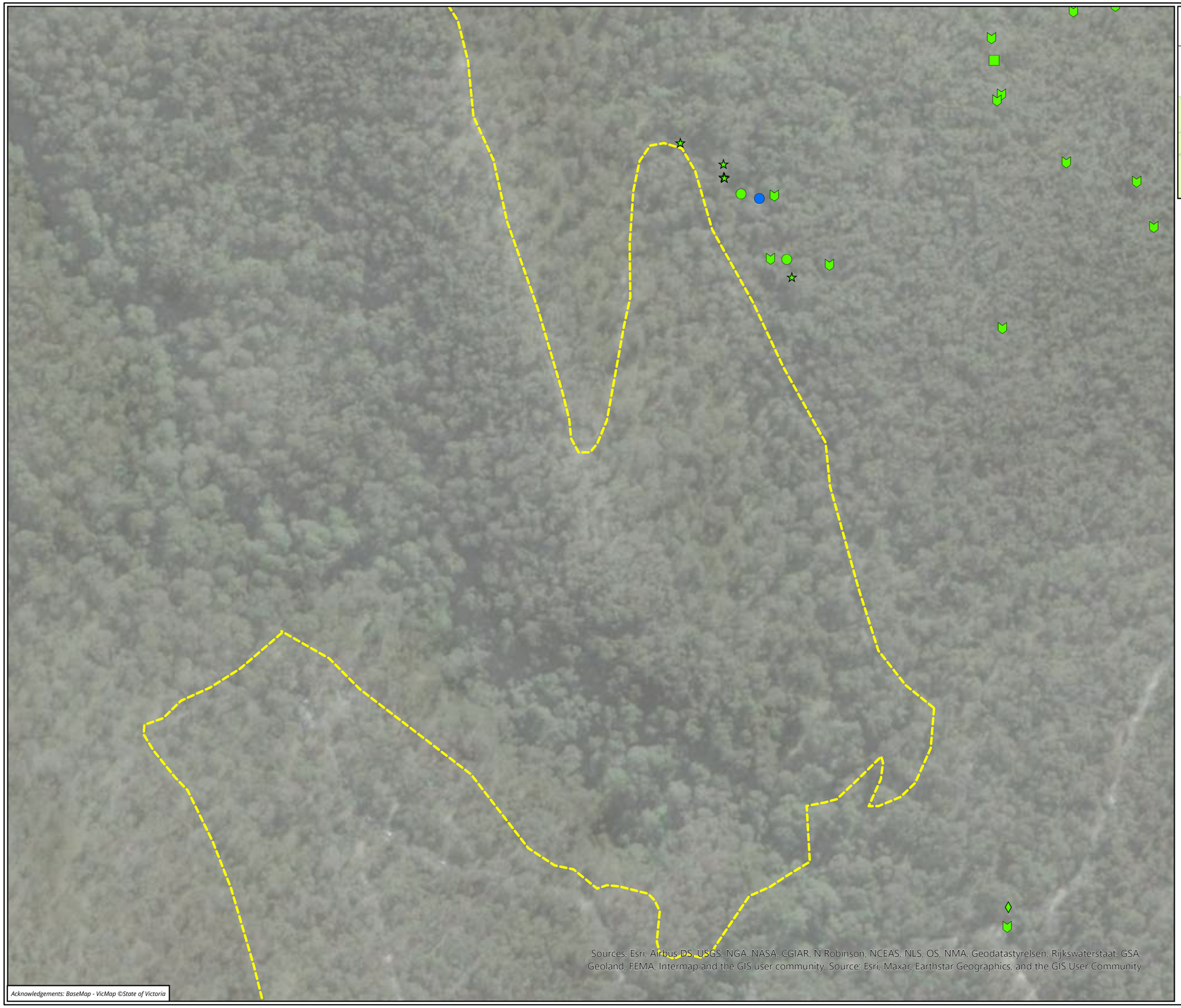
Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Acknowledgements: BaseMap - VicMap ©State of Victoria

Legend

Trail alignment

- Existing Walking Trail

Large trees in patch

- Dead
- *Eucalyptus aromaphloia* - Scentbark
- *Eucalyptus cypellocarpa* - Mountain Grey-gum
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Figure 5.7 Ecological features in the study area

0 20 40 60 80 100

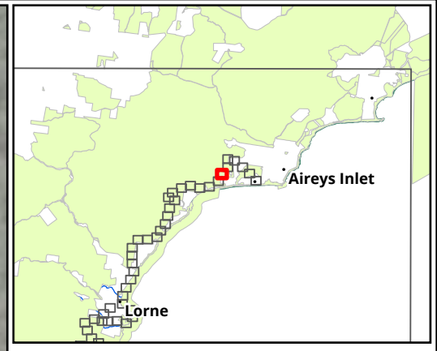
Metres

Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

Existing Walking Trail

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Acknowledgements: BaseMap - VicMap ©State of Victoria

Figure 5.8 Ecological features in the study area

0 20 40 60 80 100

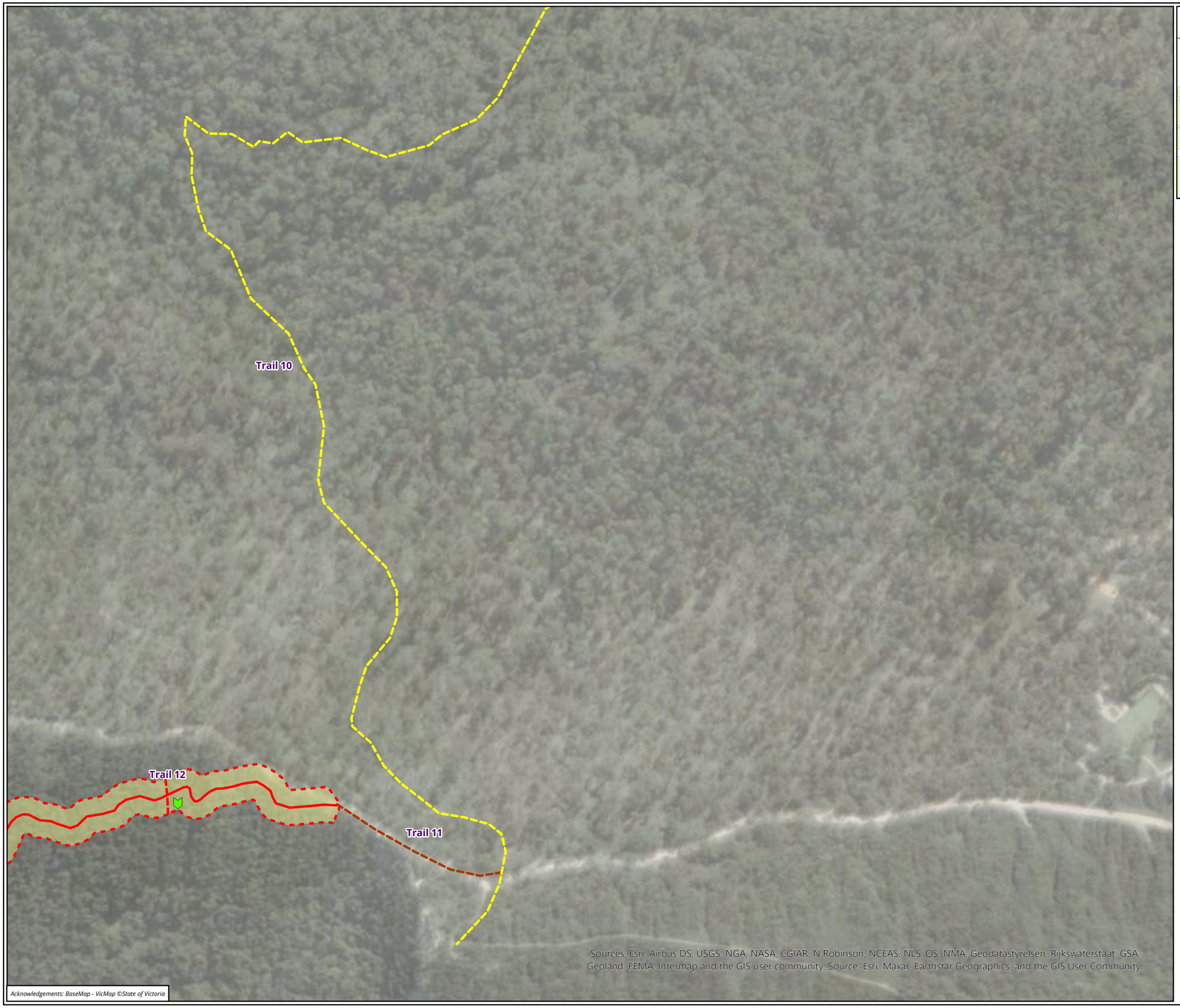
Metres

Scale: 1:2,000 @ A3

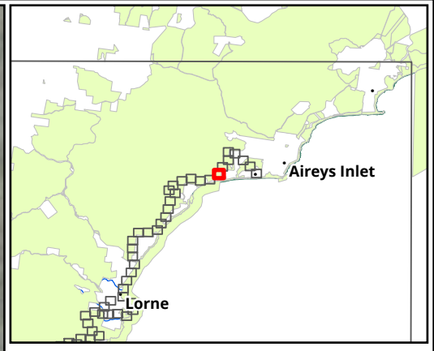
Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Acknowledgements: BaseMap - VicMap ©State of Victoria



Legend

Trail alignment

- Existing MVO Track
- Existing Walking Trail
- New Walking Trail

Large trees in patch

- *Eucalyptus obliqua* - Messmate Stringybark

Habitat zones (EVC)

- (OtP_0048) Heathy Woodland

Condition/quality state

- High

Figure 5.9 Ecological features in the study area

0 20 40 60 80 100

Metres

Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

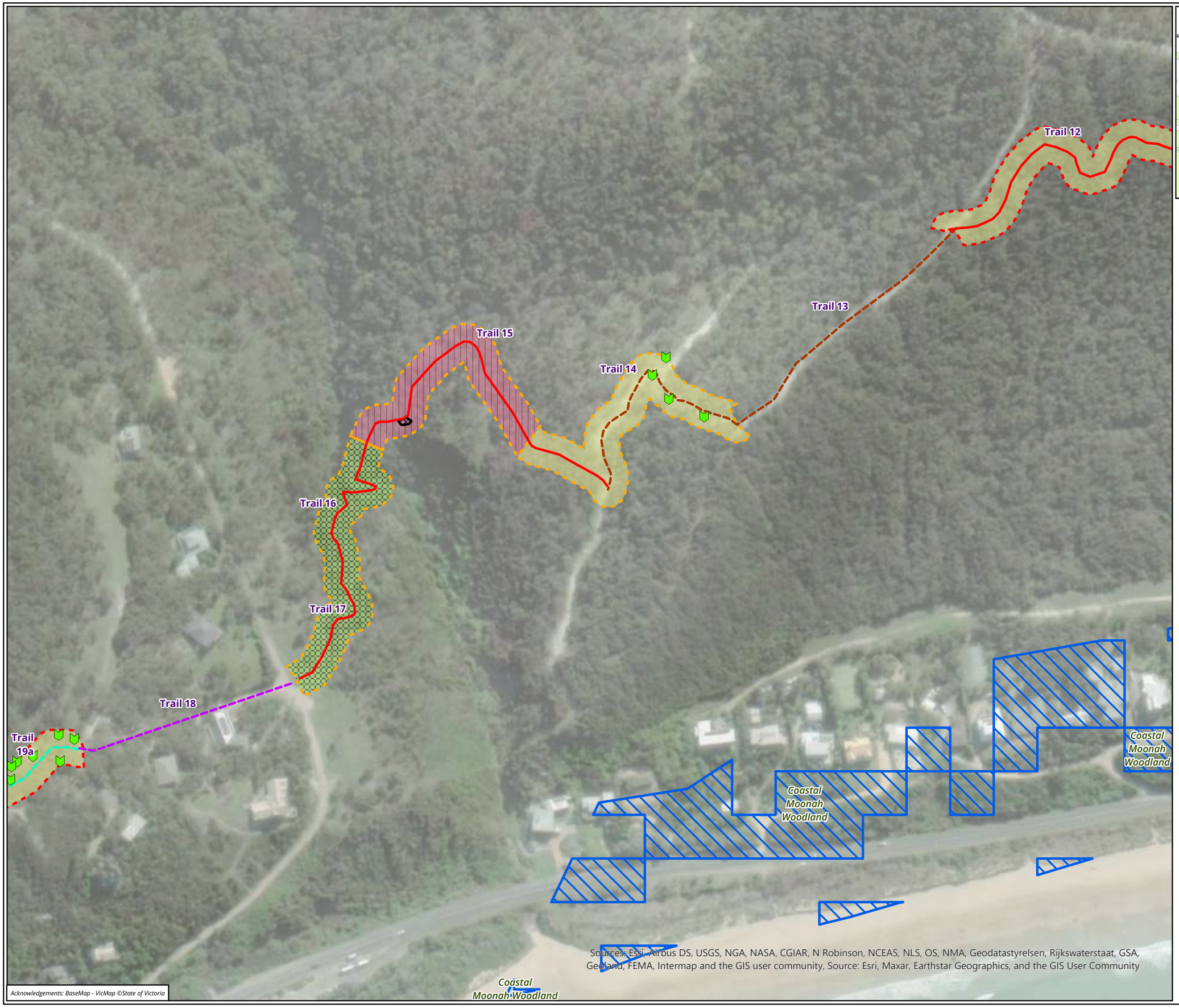
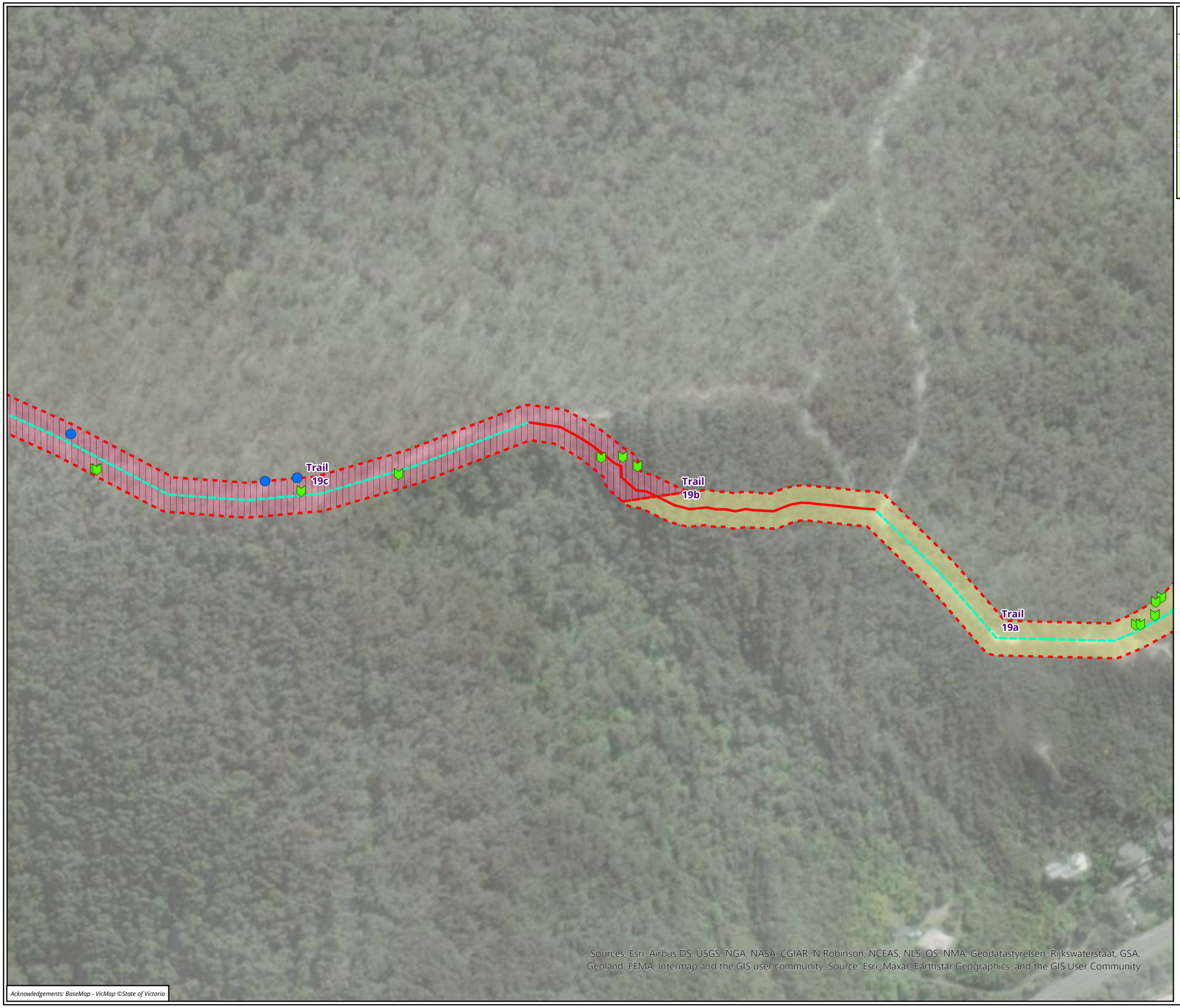
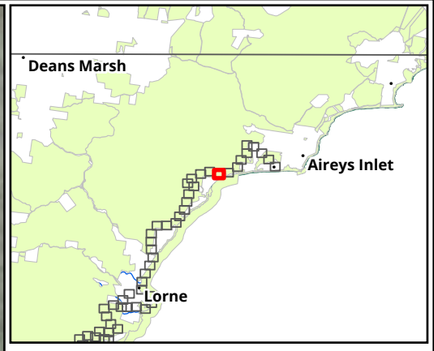


Figure 5.10 Ecological features in the study area

biosis.

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\35990_GORT_WT_Ecology_Figures.aprx





Legend

Trail alignment

- Existing Informal Trail
- New Walking Trail

Large trees in patch

- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Habitat zones (EVC)

- (OtR_0021) Shrubby Dry Forest
- (OtR_0048) Heathy Woodland

Condition/quality state

- High

Figure 5.11 Ecological features in the study area

0 20 40 60 80 100

Metres

Scale: 1:2,000 @ A3

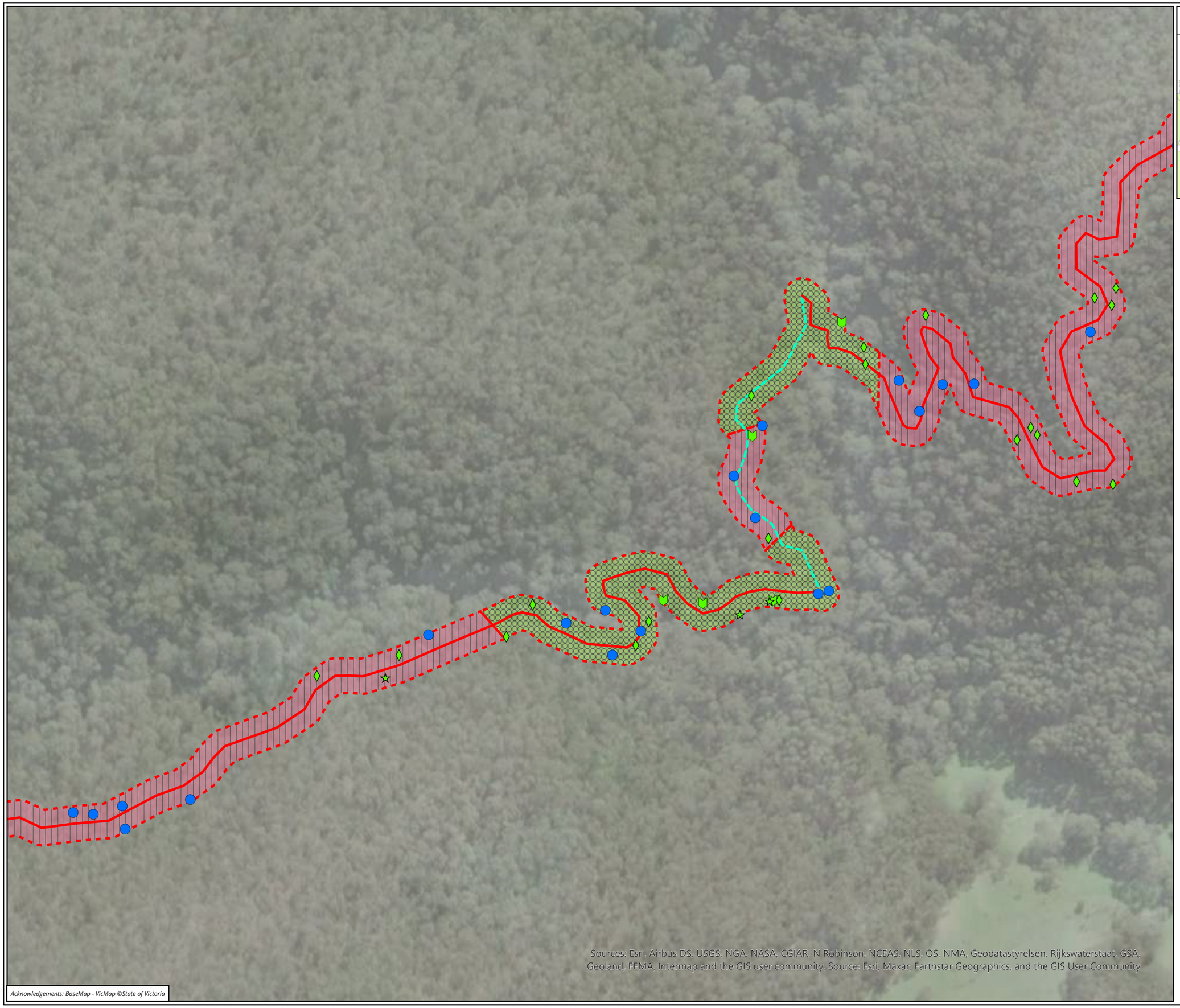
Coordinate System: GDA 1994 VICGRID94

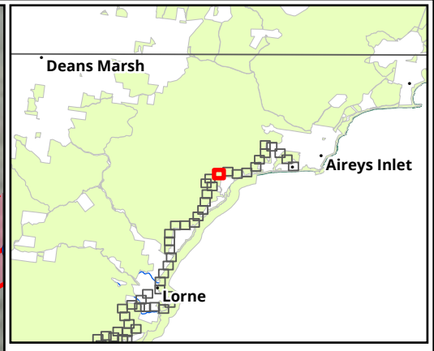
N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx

Figure 5.12 Ecological features in the study area

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\35990_GORT_WT_Ecology_Figures.aprx





Legend

Trail alignment

- Existing Informal Trail
- New Walking Trail

Large trees in patch

- *Eucalyptus cypellocarpa* - Mountain Grey-gum
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Habitat zones (EVC)

- (OtR_0021) Shrubby Dry Forest
- (OtR_0045) Shrubby Foothill Forest

Condition/quality state

- High

Figure 5.13 Ecological features in the study area

0 20 40 60 80 100

Metres

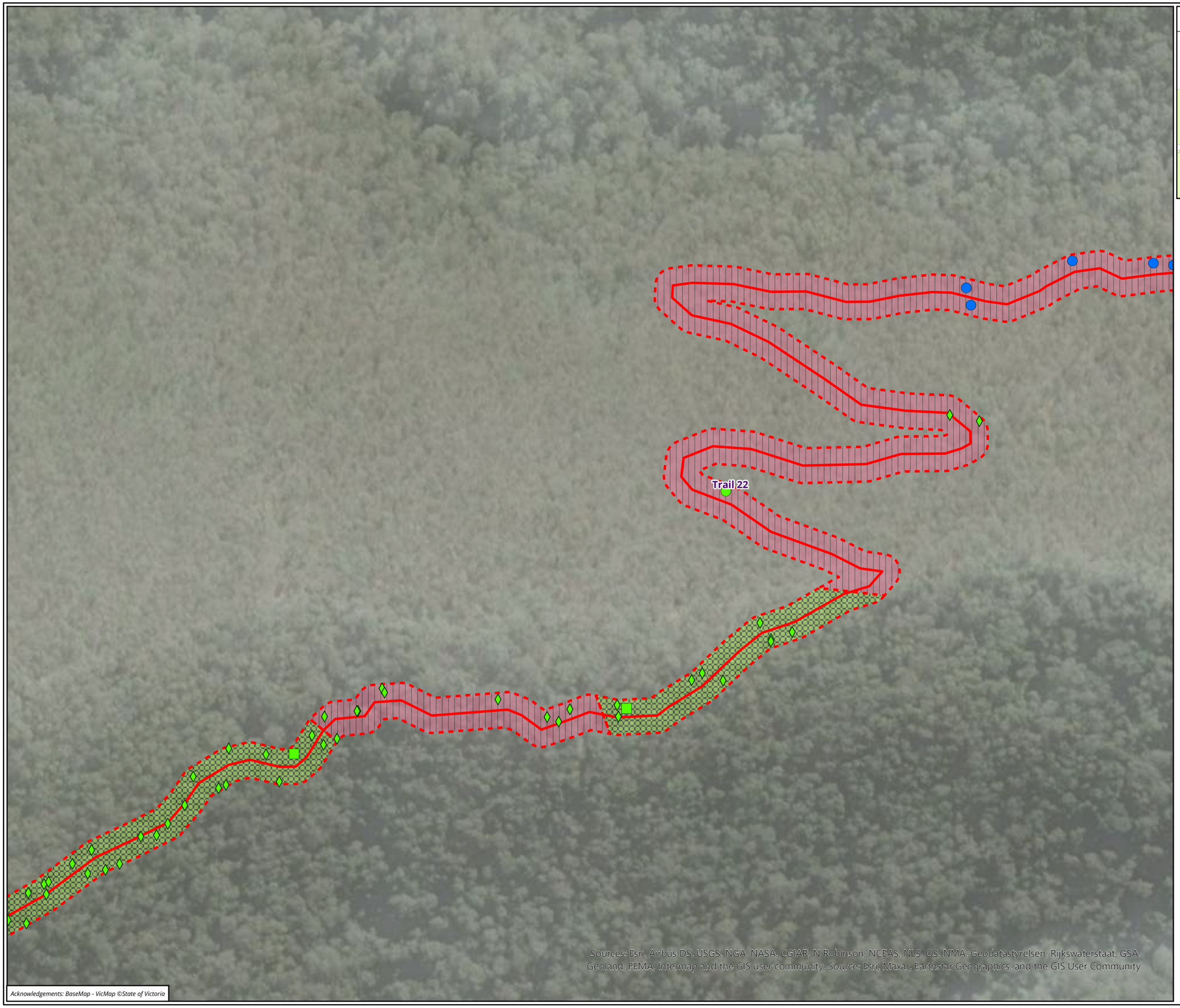
Scale: 1:2,000 @ A3

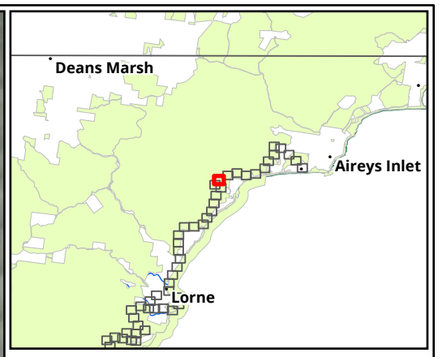
Coordinate System: GDA 1994 VICGRID94

biosis

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx





Legend

Trail alignment

- New Walking Trail

Large trees in patch

- Dead
- *Eucalyptus aromaphloia* - Scentbark
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus tricarpa* - Red Ironbark

Habitat zones (EVC)

- (OtR_0021) Shrubby Dry Forest
- (OtR_0045) Shrubby Foothill Forest

Condition/quality state

- High

Figure 5.14 Ecological features in the study area

0 20 40 60 80 100

Metres

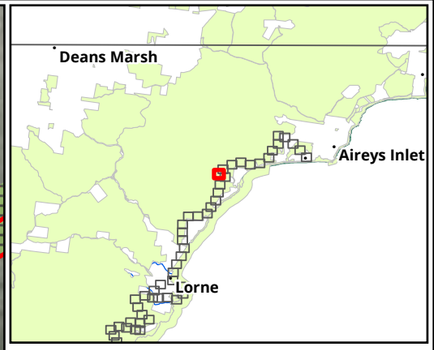
Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis.

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

- Existing Informal Trail
- New Walking Trail

Large trees in patch

- Dead
- *Eucalyptus cypellocarpa* - Mountain Grey-gum
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Habitat zones (EVC)

- (OtR_0018) Riparian Forest
- (OtR_0021) Shrubby Dry Forest
- (OtR_0045) Shrubby Foothill Forest

Condition/quality state

- High

Figure 5.15 Ecological features in the study area

0 20 40 60 80 100

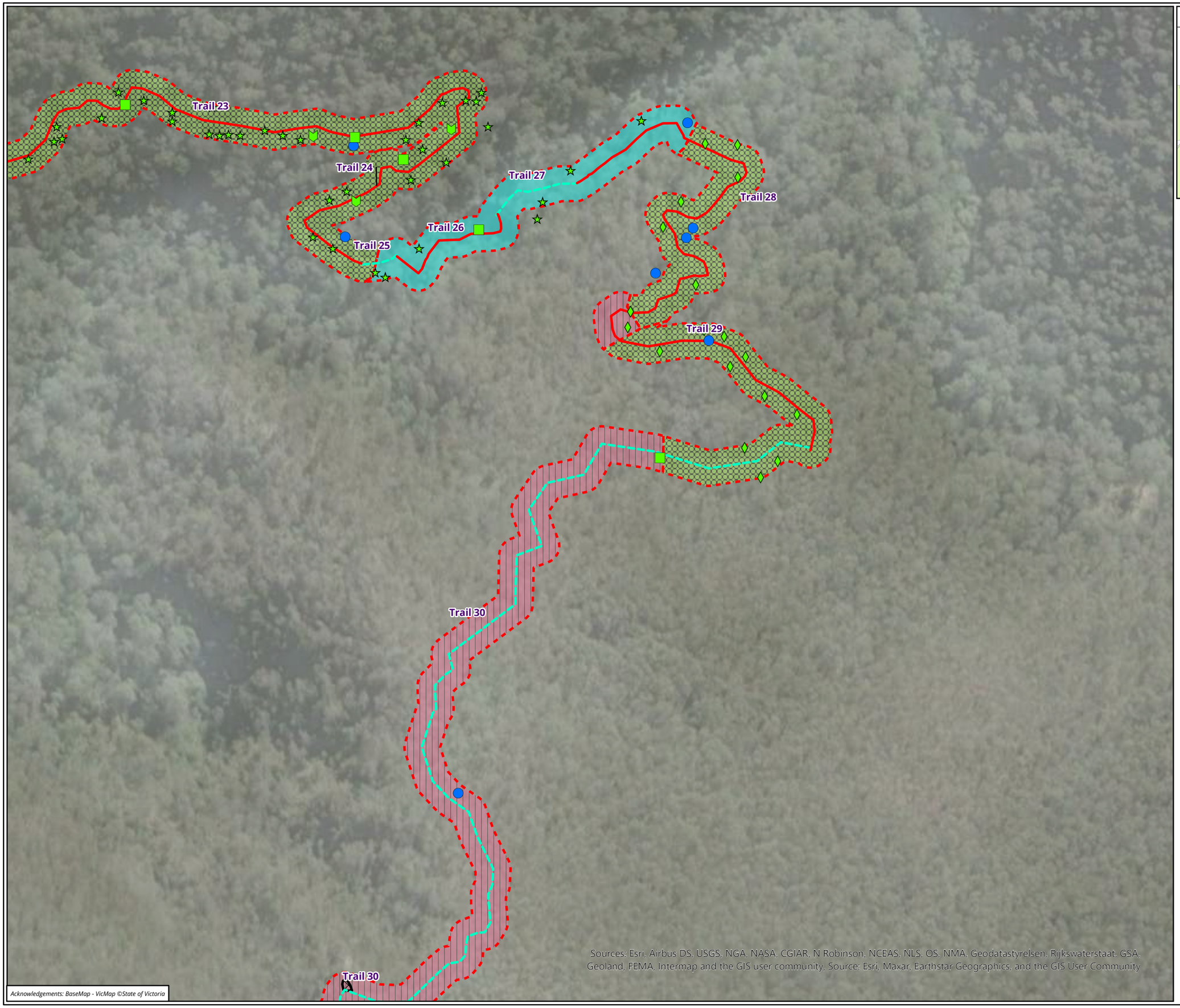
Metres

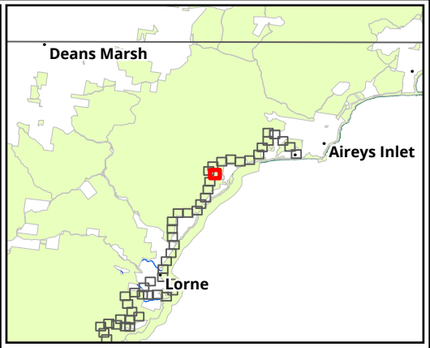
Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx





Legend

Trail alignment

- Existing Informal Trail
- New Walking Trail
- Campground/Lookout

Large trees in patch

- Dead
- *Eucalyptus cypellocarpa* - Mountain Grey-gum
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus obliqua* - Messmate Stringybark
- *Eucalyptus tricarpa* - Red Ironbark

Habitat zones (EVC)

- (OtR_0018) Riparian Forest
- (OtR_0021) Shrubby Dry Forest
- (OtR_0045) Shrubby Foothill Forest

Condition/quality state

- High

Figure 5.16 Ecological features in the study area

0 20 40 60 80 100

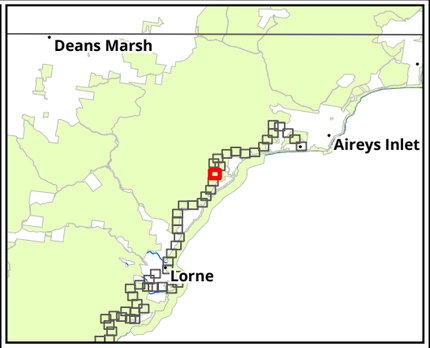
Metres

Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\
35990_GORT_WT_Ecology_Figures.aprx



Legend

Trail alignment

- Existing Informal Trail
- New Walking Trail
- Campground/Lookout

Large trees in patch

- Dead
- *Eucalyptus globulus* - Southern Blue-gum
- *Eucalyptus tricarpa* - Red Ironbark
- *Eucalyptus globulus subsp. globulus* - Southern Blue-gum

Habitat zones (EVC)

- (OtR_0021) Shrubby Dry Forest
- (OtR_0045) Shrubby Foothill Forest

Condition/quality state

- High

Figure 5.17 Ecological features in the study area

0 20 40 60 80 100

Metres

Scale: 1:2,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis

N

Matter: 35990,
Date: 06 June 2024,
Prepared for: XXXX, Prepared by: MK, Last edited by: mknudsen
Layout: 35990_F6_EcoFeatures
Project: P:\35800s\35871\Mapping\35990_GORT_WT_Ecology_Figures.aprx