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Bunyip North BESS

Ecological Assessment Report

PREPARED FOR



DATE

23 March 2026

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Jenny Luk
Partner

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CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	4
1.1 PROJECT DESCRIPTION	4
1.2 PURPOSE OF THIS ASSESSMENT	4
2. METHODS	6
2.1 DESKTOP ASSESSMENT	6
2.2 LIKELIHOOD OF OCCURRENCE	7
2.3 LIMITATIONS	8
3. RESULTS	9
3.1 SITE DESCRIPTION	9
3.2 NATIVE VEGETATION	11
3.2.1 Patches	11
3.2.2 Scattered Trees	12
3.3 FAUNA	14
3.3.1 Fauna Habitat	14
3.4 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999	19
3.4.1 Flora	19
3.4.2 Fauna	19
3.4.3 Threatened Ecological Communities	24
3.5 FLORA AND FAUNA GUARANTEE ACT 1988	24
3.5.1 Listed Flora	24
3.5.2 Protected Flora	25
3.5.3 Fauna	25
3.5.4 Listed Ecological Communities	28
4. REGULATORY IMPLICATIONS	30
4.1 PLANNING AND ENVIRONMENT ACT 1987	30
4.1.1 Clause 52.17 Native Vegetation	30
4.1.2 Environmental Significance Overlay	30
4.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999	30
4.2.1 Flora	30
4.2.2 Fauna	31
4.2.3 Threatened Ecological Communities	33
4.3 FLORA AND FAUNA GUARANTEE ACT 1988	35
4.3.1 Flora	35
4.3.2 Fauna	35
4.4 ENVIRONMENT EFFECT ACT 1978	35
4.5 CATCHMENT AND LAND PROTECTION ACT 1984	35
5. CONCLUSION	37
6. REFERENCES	38

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APPENDIX A	FLORA SPECIES RECORDED IN THE ECOLOGY ASSESSMENT AREA	
APPENDIX B	FAUNA SPECIES RECORDED IN THE ECOLOGY ASSESSMENT AREA	
APPENDIX C	PROTECTED MATTERS SEARCH TOOL REPORT	
APPENDIX D	THREATENED FLORA LIKELIHOOD OF OCCURRENCE	
APPENDIX E	THREATENED FAUNA LIKELIHOOD OF OCCURRENCE	

LIST OF TABLES

TABLE 2-1	DATABASE DESKTOP SEARCHES	6
TABLE 2-2	LIKELIHOOD OF OCCURRENCE CRITERIA	8
TABLE 3-1	DESCRIPTION OF HABITAT ZONES	11
TABLE 3-2	HABITAT ZONE DETAILS	12
TABLE 3-3	LIKELIHOOD OF OCCURRENCE SUMMARY OF FLORA LISTED UNDER THE EPBC ACT	19
TABLE 3-4	LIKELIHOOD OF OCCURRENCE SUMMARY OF FAUNA LISTED UNDER THE EPBC ACT	20
TABLE 3-5	PMST SEARCH RESULTS FOR THREATENED ECOLOGICAL COMMUNITIES	24
TABLE 3-6	LIKELIHOOD OF OCCURRENCE SUMMARY OF FLORA LISTED UNDER THE FFG ACT	25
TABLE 3-7	LIKELIHOOD OF OCCURRENCE SUMMARY OF FAUNA LISTED UNDER THE FFG ACT	26
TABLE 3-8	ECOLOGICAL COMMUNITIES LISTED UNDER THE FFG ACT	29

LIST OF FIGURES

FIGURE 3-1	ECOLOGY ASSESSMENT AREA AND NATIVE VEGETATION	13
FIGURE 3-2	ECOLOGY ASSESSMENT AREA AND IMPORTANT FAUNA HABITAT	23
FIGURE 4-1	INDICATIVE DEVELOPMENT FOOTPRINT AND CONSTRAINTS	34

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PROJECT TERMINOLOGY

Term	Definition
Project Area	The land within which the Project will be developed totalling approximately 30.8 hectares. The Project Area consists of approximately 27.6 hectares of private freehold land and 3.2 hectares of public land.
Site	Approximately 27.6 hectares of private freehold land located on Lot 2 on Plan of Subdivision PS315155, at 30 Tonimbuk Road, Bunyip North.
Indicative Development Footprint	Represents the maximum extent of direct impacts and the indicative location of proposed Project works and infrastructure. It comprises an area of approximately 17.5 hectares.
Ecology Assessment Area	The area where the April 2025 ecology survey was completed. It covers an area of approximately 65 hectares and is inclusive of the Project Area and Indicative Development Footprint.
Locality	The area refers to the Project Area and the surrounding landscape within a 10 kilometre radius.

ACRONYMS AND ABBREVIATIONS

Term	Description
BESS	Battery Energy Storage System
BNTS	Bunyip North Terminal Station
CaLP Act	Catchment and Land Protection Act 1994 (State)
CEMP	Construction Environment Management Plan
CMA	Catchment Management Authority
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEECA	Department of Energy, Environment and Climate Action
DEHWA	(Former) Department of the Environment, Water, Heritage and the Arts (Commonwealth)
DEWLP	(Former) Department of Environment, Water, Land and Planning
DTP	Department of Transport and Planning
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
ERM	Environmental Resources Management Australia Pty Ltd
EVC	Ecological Vegetation Class
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
the Guidelines	<i>Guidelines for the removal, destruction or lopping of native vegetation</i> (DELWP 2017a)
ha	hectares
HZ	Habitat Zone

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Term	Description
km	kilometres
kV	kilovolt
m	metre
MNES	Matters of National Environmental Significance
MW	megawatts
PMST	Protected Matters Search Tool
Project	Bunyip North BESS
RES	RES Australia Pty Ltd
SPRAT	Species Profile and Threats Database
TEC	Threatened Ecological Community
VBA	Victorian Biodiversity Atlas
VQA	Vegetation Quality Assessment

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EXECUTIVE SUMMARY

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by RES Australia Pty Ltd (RES) to undertake an ecology assessment of the Bunyip North Battery Energy Storage System (BESS) (the Project), to determine potential impacts to flora and fauna and identify the associated regulatory implications, under both State and Commonwealth legislation.

The Project Area covers an area of approximately 30.8 hectares (ha) and is located on Lot 2 on Plan of Subdivision PS315155, at 30 Tonimbuk Road, Bunyip North, in south-east Victoria. The Project Area is located wholly within Cardinia Shire Council in the Highlands – Southern Fall bioregion.

The Project Area, being the land within which the Project is proposed to be developed, was found to comprise of highly modified agricultural land used for cattle grazing and hay production. This land was dominated by introduced grasses and commonly associated agricultural weeds. Other vegetation included planted windrows and hedges and amenity plantings, the latter within the adjacent Princes Freeway road reserve. Native vegetation was mostly restricted to remnant patches of riparian woodland associated with Cannibal Creek, which is located outside the Project Area approximately 250 metres (m) to the north. This vegetation may provide habitat for a range of threatened flora and fauna. Farm dams within the wider property may also be significant fauna habitat.

The Indicative Development Footprint represents the maximum extent of direct impacts and the location of proposed works and infrastructure within the Project Area. It comprises an area of approximately 17.5 ha.

Ecological surveys were conducted within the Ecology Assessment Area, which covers an area of approximately 65 ha and is inclusive of the Project Area and surroundings.

Implications under the *Planning and Environment Act 1987*

The Project will result in removal of native vegetation that has been planted (non-remnant) and is therefore exempt from the provisions of Clause 52.17 (Native Vegetation) of the Cardinia Planning Scheme. However, all vegetation within the Project Area is covered by an Environmental Significance Overlay under which a planning permit is required for any removal, including that of dead and non-native vegetation. Approval of such removal is not subject to the provision of offsets.

Implications under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)*

While no matters of national environmental significance (MNES) were recorded during the field survey, numerous flora and fauna species listed as threatened or migratory under the EPBC Act were determined to have the 'potential to occur' within the riparian vegetation and aquatic habitat along Cannibal Creek in the north. Several farm dams situated in proximity to the Project Area, positioned between the Project Area and Cannibal Creek, were also found to provide habitat that may support threatened species.

In particular, the following 5 fauna species were considered likely to occur within the Ecology Assessment Area:

- Dwarf Galaxias (*Galaxiella pusilla*);

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- Glossy Grass Skink (*Pseudemoia rawlinsoni*);
- Growling Grass Frog (*Ranoidea raniformis*);
- Southern Brown Bandicoot (*Isoodon obesulus obesulus*); and
- Swamp Skink (*Lissolepis coventryi*).

Although the Indicative Development Footprint does not impact habitat for these species directly, there is potential for proposed Project activities, especially during construction, to have indirect impacts on habitat values.

With appropriate mitigation measures incorporated into the design, development, construction and operation phases, the Project is unlikely to have a significant impact on any MNES, including those listed above, and a referral under the EPBC Act is unlikely to be required.

Implications under the *Flora and Fauna Guarantee Act 1988*

The implications of the proposed development do not apply to flora, fauna and ecological communities except where they occur on public land. No such biodiversity values were recorded within the Princes Freeway road reserve where Project access and egress are proposed.

Additionally, the known and potential occurrence of flora and fauna species listed as threatened or protected under the *Flora and Fauna Guarantee Act 1988* (FFG Act) is restricted to the north of the Ecological Assessment Area where MNES may also occur, including Growling Grass Frog. Protection and mitigation measures for this species is recommended below for EPBC Act matters would also avoid and mitigate impacts to additional species listed under the FFG Act.

Implications under the *Environment Effects Act 1978*

The Project does not meet any of the referral criteria (Ministerial Guidelines, 8th Edition, DTP) relating to ecological matters that would trigger the need for a referral under the *Environment Effects Act 1978*.

Recommendations

- Under Clause 42.01 Environmental Significance Overlay of the Cardinia Planning Scheme, a permit is required to remove any vegetation from the proposed development site, except for that within the Princes Freeway road reserve. This permit requirement includes for the removal of dead and non-native vegetation;
- Any changes to the Indicative Development Footprint that result in impacts to native vegetation in the Ecology Assessment Area will require provision of a *Native Vegetation Removal Report* (NVR Report) from the Department of Energy, Environment and Climate Action (DEECA) and a permit under Clause 52.17 of the Cardinia Planning Scheme. Depending on the extent of impacts, Vegetation Quality Assessment (VQA) of the patches of native vegetation may need to be undertaken to satisfy the application requirements under the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (DELWP, 2017);
- Maintain avoidance of all known habitats with the potential to support Growling Grass Frog, including dams and Cannibal Creek, with appropriate development buffers (at least 200 m) around key waterbodies. Additionally, mitigation measures incorporated in the design, construction, and operation of the Project must be considered, including sediment and exclusion fencing during construction. Development of any mitigation measures will be in

accordance with the guidance provided in the *Significant Impact Guidelines for the vulnerable Growling Grass Frog (Litoria raniformis)* (DEWHA, 2009) and *Conservation Advice for Litoria raniformis* (DCCEEW, 2024);

- Ensure the protection of retained native vegetation and fauna habitat through the development of a Construction Environment Management Plan (CEMP);
- Based on the current Indicative Development Footprint, construction is unlikely to disrupt or modify any potential habitat surrounding Cannibal Creek. However, if works are extended or revised in the future (e.g., creek crossing modification, access roads) resulting in incursion into the proposed 200 m buffer targeted species surveys and reassessment of impacts will be required; and
- Pre-clearance surveys and translocation of any wildlife by suitably qualified ecologist prior to any removal of trees within the Indicative Development Footprint.

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1. INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by RES Australia Pty Ltd (RES) to undertake an ecology assessment of the Bunyip North BESS (the Project) to determine potential impacts to flora and fauna, and identify the associated regulatory implications, under both State and Commonwealth legislation.

1.1 PROJECT DESCRIPTION

The Project will involve the construction, operation and decommissioning of a Battery Energy Storage System (BESS) for large-scale electricity storage and dispatch. The BESS is anticipated to have a storage capacity of up to 400 megawatts (MW) / 2,400 megawatt-hours (MWh), with a connection to the existing 220 kilovolt (kV) transmission network via a new transmission terminal station, the Bunyip North Terminal Station (BNTS).

The Project is wholly located within the Cardinia Shire local government area, approximately 80 kilometres (km) south-west of central Melbourne in Victoria's Gippsland region and approximately 2.5 km north of the Bunyip town centre.

The Project is bound within the Project Area. The Project Area occupies approximately 27.6 hectares (ha) of private freehold land (on Lot 2 on Plan of Subdivision PS315155) and 3.2 ha of public land which will accommodate a proposed new access point from the Princes Freeway. The Project is located at 30 Tonimbuk Road, Bunyip North within the Cardinia Shire Council Local Government Area and within a Green Wedge Zone. Within the Project Area, an Indicative Development Footprint occupies approximately 17.5 ha and represents the maximum spatial extent of direct impact as a result of the Project. The Indicative Development Footprint is considered 'worst-case' in terms of the extent of disturbance and may reduce over time as the Project evolves.

The Project Area is predominantly rural, characterised by open agricultural landscapes, scattered vegetation, low-density development and prominent high-voltage electricity infrastructure.

1.2 PURPOSE OF THIS ASSESSMENT

The purpose of this assessment is to determine the biodiversity values present within the Project Area and its surrounds, determine potential Project impacts to flora and fauna and address the implications for the Project with respect to relevant Commonwealth, State, and local environmental legislation, and to support a planning permit application under the *Planning and Environment Act 1987*.

Specifically, the objectives of this assessment are to:

- Review existing information on relevant biodiversity values, including previous ecological surveys detailed in the *Preliminary Flora and Fauna Assessment, 30 Tonimbuk Road, Bunyip North, Victoria* (Ecolink, 2022);
- Determine the Ecological Vegetation Class (EVC) and extent of native vegetation including patches and scattered trees;
- Determine the type, quality, and extent of fauna habitat present and connectivity within the broader landscape;
- Provide an inventory of flora and fauna recorded during a field survey;

- Assess the likelihood of occurrence of threatened flora, fauna, and ecological communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act);
- Describe and assess potential Project impacts (both direct and indirect) to ecological values and their underlying ecological processes (e.g. habitat connectivity, threatening processes etc.) within the Project Area;
- Describe measures taken to avoid, reduce and mitigate potential impacts (both direct and indirect) on fauna and flora species; and
- Determine the implications for the Project under Clause 52.17 (Native Vegetation) of the Cardinia Planning Scheme and other relevant regulatory legalisation.

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2. METHODS

Ecological surveys and flora and fauna habitat assessments were undertaken by ERM ecologists on 30 April 2025 within the Ecology Assessment Area. The Ecology Assessment Area occupies an area of approximately 65 ha and is inclusive of the Project Area and surroundings.

Habitat assessments were undertaken opportunistically and involved evaluation of habitat quality and macro/micro features necessary to support general biodiversity as well as specific target species. Survey techniques were non-invasive and aimed to provide a high-level assessment of the type and condition of potential fauna habitat present and identify areas of priority for further assessment.

The parameters measured during the habitat assessments included:

- context regarding landscape features (connectivity, proximity to water);
- terrestrial flora species present including canopy, shrub, and ground-layer height and size class;
- condition (presence of weeds, evidence of disturbance, invasive fauna species);
- breeding and roosting habitat features (hollow bearing trees, nests);
- foraging sources (flowering tree species, termite mounds);
- microhabitat presence (woody debris, leaf litter, decorticating bark, bare ground, soil cracks, surface rock, and rocky outcrops);
- wetland and/or waterway presence (presence of aquatic vegetation, water depth, and condition);
- signs of threatened species; and
- signs of invasive species (sightings, rabbit warrens, fox dens, tracks, and scats).

Incidental observations, both aural and visual, of listed threatened and migratory species, and non-threatened avifauna were recorded. Incidental observations of fauna provide insight into species utilisation and potential direct and/or indirect impacts of the Project.

2.1 DESKTOP ASSESSMENT

A desktop assessment of ecological values known, likely or predicted to be present within the Ecology Assessment Area, was undertaken using the government databases and spatial datasets outlined in Table 2-1 below. These were examined to review the modelled biodiversity values associated with the Ecology Assessment Area and a buffer area of 10 km (the Locality).

TABLE 2-1 DATABASE DESKTOP SEARCHES

Data Source	Description
EPBC Act Protected Matters Search Tool*	The EPBC Act Protected Matters Search Tool (PMST) (DCCEEW n.d.) provides predictive results on the occurrence of MNES based on mapping of known and potential species distribution, habitat, Threatened Ecological Communities (TECs) and wetlands within a defined area. For assessments of large projects, areas with connectivity or habitat linkages to regions of high biodiversity or potentially poorly studied areas, a standard buffer of 10 km was applied to the Ecology Assessment Area to capture a more comprehensive predictive dataset.

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Data Source	Description
The Victorian Biodiversity Atlas (VBA)	The VBA database, maintained by the Victorian Department of Energy, Environment and Climate Action (DEECA) provides flora and fauna species records (DEECA n.d. a). A standard search area expanded to include records within 10 km of the Ecology Assessment Area was applied to allow for consideration of potentially limited past survey effort in the region, greater habitat variation, and to account for movement of fauna species within the landscape.
VicPlan	VicPlan is an online tool maintained by the Victorian Department of Transport and Planning (DTP) that provides mapping of Planning Scheme controls including those related to biodiversity (DTP n.d.).
NatureKit	NatureKit is an online mapping and data exploration tool for biodiversity data integration and decision support.

*EPBC Act PMST can be found in Appendix C.

2.2 LIKELIHOOD OF OCCURRENCE

A likelihood of occurrence assessment was undertaken for the Ecology Assessment Area which was informed by desktop sources and subsequently updated in line with field survey findings.

Desktop sources were used to identify threatened flora, fauna, and TECs listed under the EPBC Act and/or FFG Act which have been recorded previously or are predicted to occur within the Ecology Assessment Area.

Habitat and distribution information for MNES was sourced from the Species Profile and Threats Database (SPRAT) and/or Conservation Advice as published from the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). This information was also supplemented by other primary sources (e.g. published literature). Species records were sourced from the VBA and the PMST which are maintained by the DEECA and the DCCEEW respectively.

Determinations were based on the criteria outlined in the matrix below (Table 2-2).

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TABLE 2-2 LIKELIHOOD OF OCCURRENCE CRITERIA

	Preferred habitat exists	General habitat exists ²	Habitat does not exist ³
Records ¹ within the Ecology Assessment Area	Known	Known	Known
Records within the Locality	Likely	Potential	Unlikely
No records within the Locality, but the Ecology Assessment Area is within known distribution	Potential	Potential	Unlikely
No records in the Locality, and the Ecology Assessment Area is outside of distribution	Unlikely	Unlikely	Unlikely

1. Records considered are those that have been recorded in the last 30 years.
2. Habitat may be considered general but not preferred because: some desired habitat features may be present (but not all), habitat may have poor connectivity or habitat may be known to be disturbed.
3. Based on sources reviewed and/or field survey results.

2.3 LIMITATIONS

Assessment of native vegetation in the Ecology Assessment Area was limited to mapping of the extent, determination of the corresponding EVCs, and recording scattered trees. No Vegetation Quality Assessment (VQA) was undertaken.

The timing of the survey (i.e. autumn) coincided with conditions that may limit the detection of some species. This includes some threatened flora, such as those that are only seasonally present above-ground (including many orchids) or for which detection or identification relies on the presence of particular characteristics such as flowers or fruits. However, due to historical clearing and current land use as agricultural pasture including for livestock grazing, it was considered unlikely that any such species occurred within or in proximity to the Project, nor would any seasonal variation in species presence or detectability result in changes to the recorded presence of such flora.

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3. RESULTS

3.1 SITE DESCRIPTION

The Ecology Assessment Area is located at the intersection of 2 Victorian bioregions: the south-western boundary of the Highlands – Southern Fall and the north-eastern limit of the Gippsland Plain. A section of Cannibal Creek is located within the north of the Ecology Assessment Area and is encompassed within the Gippsland Plain bioregion. The Ecology Assessment Area falls within the West Gippsland Catchment Management Authority (CMA). This Area is within the Green Wedge Zone (GWZ1) under the Cardinia Planning Scheme and is entirely covered by an Environmental Significance Overlay (ESO1). Under ESO1, a permit is required to remove, destroy, or lop vegetation including dead vegetation and planted vegetation regardless of whether native or introduced, with the exception of that used for crop raising or grazing animal production.

The Ecology Assessment Area is mostly highly modified, with private land primarily consisting of open grassy paddocks used for livestock grazing. The majority of the Ecology Assessment Area is dominated by introduced pasture species and commonly associated weeds.

Native vegetation is predominantly limited to the north of the Ecology Assessment Area where woodland associated with the riparian corridor of Cannibal Creek was dominated by Silver-leaf Stringybark (*Eucalyptus cephalocarpa*) and Swamp Gum (*Eucalyptus ovata*). Dead trees are common in part of this area and show fire damage from the Black Summer bushfires of 2019/2020.

Planted trees are present in the form of hedgerows between paddocks and along the southern perimeter of the Ecology Assessment Area adjacent to the Princes Freeway road reserve, which also supported clusters of planted trees.

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PHOTO 3-1 NATIVE VEGETATION IN THE NORTH OF THE ECOLOGY ASSESSMENT AREA



Native vegetation in the north of the Ecology Assessment Area, associated with Cannibal Creek.

PHOTO 3-2 NATIVE VEGETATION REGROWTH



Dead trees and native vegetation regrowth of swamp scrub post-fire.

PHOTO 3-3 PLANTED CLUSTERS OF TREES IN THE PRINCES FREEWAY ROAD RESERVE



Left: A stand of Swamp Gum (*Eucalyptus ovata*) – a locally indigenous species found naturally occurring and planted elsewhere in the Ecology Assessment Area. Right: Wallangara White-gum (*E. scoparia*) which are not native to Victoria.

The area surrounding Cannibal Creek consists of higher quality native vegetation. Within the Ecology Assessment Area, three dams are present, two of which support native emergent and fringing aquatic vegetation and instream aquatic species.

The landscape is predominantly flat with minor undulations and a slight downward slope towards Cannibal Creek. The Ecology Assessment Area is typical of landscapes dominating the broader region with extensive past clearing.

3.2 NATIVE VEGETATION

There were 77 flora species recorded during the field survey. This comprised 40 native species (52%) and 37 introduced species (48%). The full list of species is provided in Appendix A.

3.2.1 PATCHES

A total of 8.377 ha of native vegetation was recorded within the Ecology Assessment Area. This comprised three patches of EVC 83 Swampy Riparian Woodland in the north, and one patch of regrowth attributable to EVC 793 Damp Heathy Woodland in the south-east.

The location of these patches are shown in Figure 3-1, while Table 3-1 and Table 3-2 below provide a description and summary of each.

TABLE 3-1 DESCRIPTION OF HABITAT ZONES

Habitat Zone (HZ)	EVC	Description
A	EVC 83 Swampy Riparian Woodland	This HZ, located along Cannibal Creek, was a remnant patch of Swamp Gum (<i>Eucalyptus ovata</i>) dominated riparian woodland. The shrub layer was dominated by Prickly Tea-tree (<i>Leptospermum continentale</i>), Swamp Paperbark (<i>Melaleuca ericifolia</i>) and Prickly Cherry-bush (<i>Coprosma quadrifida</i>). The native understorey consisted of Red-fruited Saw-sedge (<i>Gahnia sieberiana</i>), Thatch Saw-sedge (<i>Gahnia radula</i>) and a diversity of native grasses and forbs. Two large trees were present. Weed cover was 20% due to the presence of high-threat weeds like Radiata Pine (<i>Pinus radiata</i>) and Blackberry (<i>Rubus fruticosus</i> spp. agg.).
B	EVC 83 Swampy Riparian Woodland	This HZ was highly disturbed and featured dense regrowth of Prickly Tea-tree (<i>Leptospermum continentale</i>) and Swamp Paperbark (<i>Melaleuca ericifolia</i>). No canopy was present with only isolated Swamp Gum (<i>Eucalyptus ovata</i>) as medium shrubs and one Large Patch Tree (that was dead but supported habitat hollows). The native groundcover was dominated by <i>Juncus</i> and <i>Gahnia</i> species. Weed cover was 20% with high-threat weeds Blackberry (<i>Rubus fruticosus</i> spp. agg.) and Couch (<i>Cynodon dactylon</i>). Log cover was considered high, with a total of 283 m of logs present. Due to extensive modification, likely resulting from disturbance associated with the 2019 Black Summer bushfires, this HZ more closely resembled EVC 53 Swamp Scrub.

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Habitat Zone (HZ)	EVC	Description
C	EVC 83 Swampy Riparian Woodland	This HZ, located along Cannibal Creek, was a remnant patch of riparian woodland dominated by Swamp Gum (<i>E. ovata</i>). The shrub layer was diverse and included Prickly Tea-tree (<i>Leptospermum continentale</i>), Shiny Cassinia (<i>Cassinia longifolia</i>), and Prickly Current-bush (<i>Coprosma quadrifida</i>). The native ground cover was diverse and included rushes and sedges (<i>Gahnia</i> and <i>Juncus</i> species), Bracken (<i>Pteridium esculentum</i>), and various grasses and forbs. Common Reed (<i>Phragmites australis</i>) and Cumbungi (<i>Typha</i> sp.) were present along watercourses. Six large trees were present.
D	EVC 793 Damp Heathy Woodland	This HZ, located along the Princes Freeway road reserve, comprised only dense, likely clonal regrowth of Swamp Paperbark (<i>Melaleuca ericifolia</i>) with otherwise introduced flora species including high threat weeds such as Blackberry (<i>Rubus fruticosus</i> spp. agg.), Sweet Pittosporum (<i>Pittosporum undulatum</i>), Couch (<i>Cynodon dactylon</i>) and annual grasses. Due to an absence of canopy elements and native ground cover species, this HZ more closely resembled EVC 53 Swamp Scrub.

TABLE 3-2 HABITAT ZONE DETAILS

Habitat Zone	EVC	Bioregional Conservation Status	Area (ha)	No. of Large Trees
A	EVC 83 Swampy Riparian Woodland	Vulnerable	5.192	2
B	EVC 83 Swampy Riparian Woodland	Vulnerable	1.479	1
C	EVC 83 Swampy Riparian Woodland	Vulnerable	1.504	6
D	EVC 793 Damp Heathy Woodland	Depleted	0.202	0
Total			8.377	9

3.2.2 SCATTERED TREES

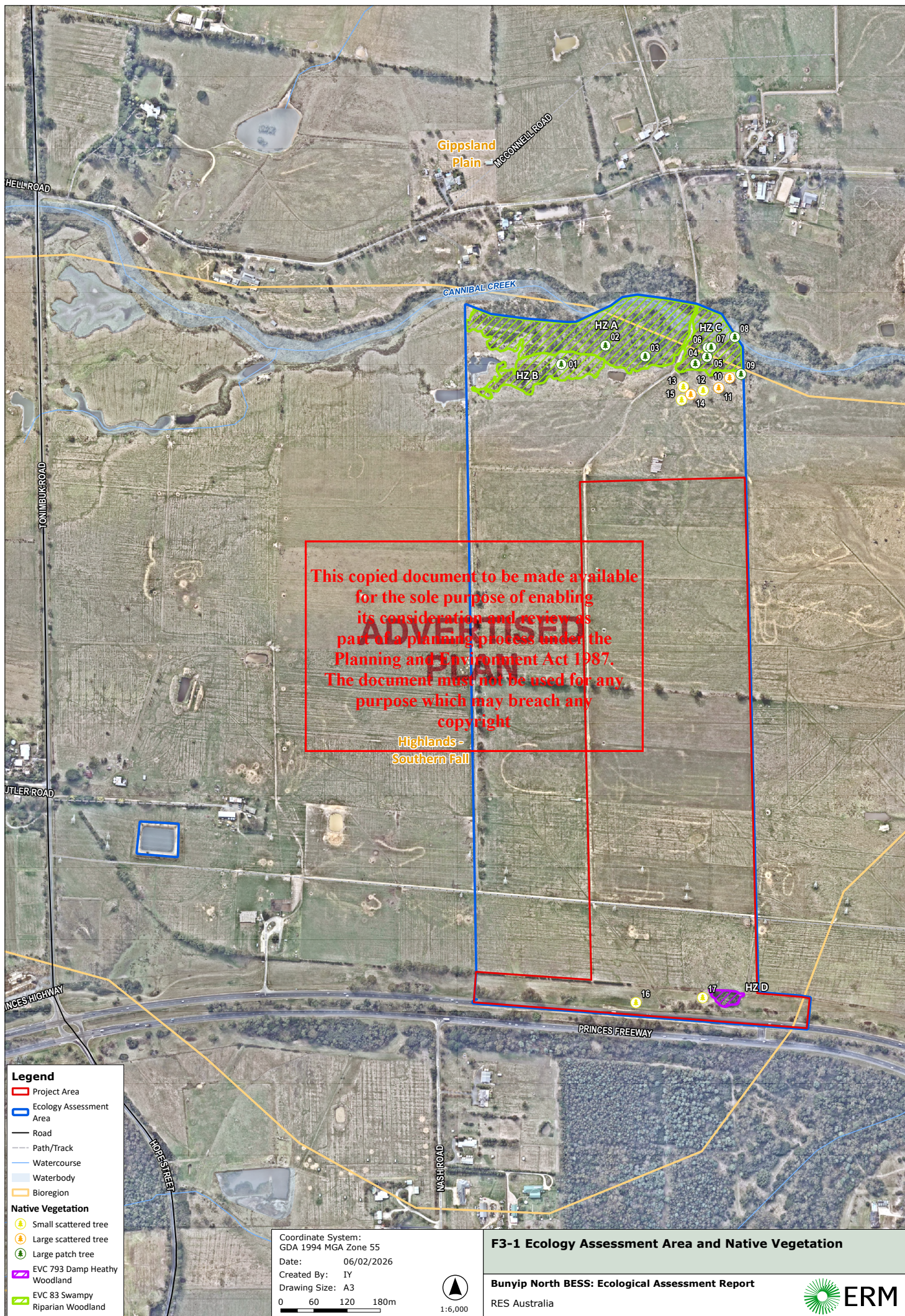
Scattered Trees recorded within the Ecology Assessment Area comprised:

- Three Large Scattered Trees; and
- Five Small Scattered Trees.

Species represented included Swamp Gum (*Eucalyptus ovata*) and Silver-leaf Stringybark (*Eucalyptus cephalocarpa*). Their locations are shown in Figure 3-1.

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3.3 FAUNA

There were 24 species of native fauna recorded in the Ecology Assessment Area. This included 22 native birds, one mammal, and one amphibian. All species are common for the region and many cosmopolitan species adapted to modified environments were present. Most were confined to or in proximity to the woodland habitat in the north of the Ecology Assessment Area associated with Cannibal Creek and surrounding vegetation.

Introduced fauna comprised three commonly occurring birds and three pest mammals. Of the pest mammals, Red Fox (*Vulpes vulpes*) and European Rabbit (*Oryctolagus cuniculus*) are ubiquitous throughout the State. Fallow Deer (*Dama dama*) were observed in the north of the Ecology Assessment Area, however, likely forage throughout the broader landscape.

The full list of fauna species observed is provided in Appendix B.

3.3.1 FAUNA HABITAT

The Ecology Assessment Area was found to possess variable quality habitat for native fauna. The following broad habitat types were categorised according to distinguishing characteristics of fauna resources for each:

- Aquatic habitat;
- Woodland;
- Scrub; and
- Grassland.

3.3.1.1 AQUATIC HABITAT

The Ecology Assessment Area contains one natural and three artificial waterbodies that may have importance for fauna within the landscape.

Cannibal Creek, located within the north of the Ecology Assessment Area, is likely to provide high quality habitat for a variety of fauna species. It also provides important connectivity with other waterways in the broader landscape.

Artificial dams, as defined by the DEECA, are present throughout the Ecology Assessment Area and are typically surrounded by cleared land with little to no wetland vegetation. Submerged vegetation was present in the more permanently flooded dam near Cannibal Creek, which also supported emergent and fringing vegetation including Tall Rush (*Juncus procerus*) and Cumbungi (*Typha* sp.). Two of the three artificial dams within the Ecology Assessment Area contained emergent and fringing vegetation. Water birds were observed utilising the dams frequently, including Australasian Grebe (*Tachybaptus novaehollandiae*), Pacific Black Duck (*Anas superciliosa*), Grey Teal (*Anas gracilis*), Eurasian Coot (*Fulica atra*), Little Pied Cormorant (*Microcarbo melanoleucos*) and Purple Swamphen (*Porphyrio melanotus*). Soil plugging and erosion of banks from livestock was extensively observed.

Artificial dams that support permanent water are likely to be utilised by fauna at disproportionately higher rates than the surrounding landscape. Cannibal Creek and its surrounding vegetation are also likely to provide suitable habitat for Growling Grass Frog (*Ranoidea raniformis*). Strong habitat connectivity exists between the Cannibal Creek and the artificial water bodies within the Ecology Assessment Area including the terrestrial vegetation in between. This connectivity would support the species movement, foraging and present sheltering opportunities.

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PHOTO 3-4 DAMS WITHIN THE ECOLOGY ASSESSMENT AREA



Farm Dams with emergent aquatic vegetation, Tall Spike-rush (*Eleocharis sphacelata*), located in the Ecology Assessment Area. Left: Dam located in the west of the Ecology Assessment Area. Centre: Dam located in the north-west of the Ecology Assessment Area near Cannibal Creek. Right: Cannibal Creek with emergent and fringing vegetation (e.g. Southern Water-ribbons [*Cycnogeton alcockiae*] and Common Reed [*Phragmites australis*] respectively).

3.3.1.2 WOODLAND

Wooded vegetation within the Ecology Assessment Area is predominantly limited to remnant native roadside vegetation along the southern boundary near the Princes Highway and native woodland surrounding Cannibal Creek and the north-west. Scattered plantings of woodland trees are present throughout the Project Area these are generally isolated, and the surrounding vegetation is heavily cleared.

The heathy woodland adjacent to Cannibal Creek is dominated by Swamp Gum (*Eucalyptus ovata*) with an understory representative of the bioregional characteristic communities. Heathy understory vegetation was dominated by Prickly Tea-tree (*Leptospermum continentale*), Swamp Paperbark (*Maleleuca ericifolia*) and Prickly Current-bush (*Coprosma quadrifida*). Groundcover was particularly dense, consisting of mainly grasses, sedges and small shrubs under 1 m in height, dominated by Red-fruited Saw-sedge (*Gahnia sieberiana*), Thatch Saw-sedge (*Gahnia radula*), and Weeping Grass (*Microlaena stipoides*). This denser vegetation structure is preferred by the Southern Brown Bandicoot (*Isodon obesulus obesulus*), providing important shelter and foraging habitat. Tree hollows of varying sizes were observed and are expected to provide critical breeding habitat to a variety of hollow-nesting birds, particularly owls.

Damp heathy woodlands are also expected to function as important habitat corridors through an otherwise heavily cleared landscape. Species diversity and utilisation was found to be high with riparian vegetation. Damp heathy woodlands and swampy riparian woodlands are expected to provide important habitat features for a range of fauna, particularly reptiles, birds and mammals. Key structural elements observed included dense leaf litter, coarse woody debris, hollow logs, and dense shrub and grass cover. It is also expected that habitat will be suitable for amphibian communities during periods of inundation. Stick nests were recorded, with sizes suitable for medium raptors.

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PHOTO 3-5 HEATHY WOODLAND IN THE ECOLOGY ASSESSMENT AREA ASSOCIATED WITH CANNIBAL CREEK



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Open woodland in the Ecology Assessment Area.

Scattered trees were recorded throughout the Ecology Assessment Area, mostly within grazed paddocks. These trees were largely represented by two species: Swamp Gum (*Eucalyptus ovata*) and Silver-leaf Stringybark (*Eucalyptus cephalocarpa*). Trees ranged from poor to moderate and good health. No hollows were observed in the scattered trees recorded. However, fauna scratches were present on a few trunks, most likely attributable to arboreal marsupials based on their height and pattern. Scattered trees may provide habitat for some of the mobile avifauna moving between more contiguous patches of wooded vegetation.

Hedgerow in the Ecology Assessment Area comprised planted native and introduced trees. These habitats were sparse and fragmented with little additional vegetation structure suggesting they provide limited habitat values similar to the scattered trees.

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PHOTO 3-6 SCATTERED TREES WITHIN THE ECOLOGY ASSESSMENT AREA



Examples of scattered trees within the Ecology Assessment Area (*Eucalyptus* spp.).

PHOTO 3-7 HEDGEROW



Left: Hedgerow between paddocks comprising planted native and non-native species. Right: A hedge of Flax-leaf Paperbark (*Melaleuca linariifolia*) in the south of the Ecology Assessment Area.

3.3.1.3 SCRUB

Areas of scrub vegetation, both from native species such as Prickly Tea-tree (*Leptospermum continentale*) and Swamp Paperbark (*Melaleuca ericifolia*) and as infestations of introduced Blackberry (*Rubus fruticosus* spp. agg.) may provide habitat for a range of fauna including Southern Brown Bandicoot.

PHOTO 3-8 SCRUB VEGETATION



Left: Dense regrowth of suckering Swainson's Paperbark (*Melaleuca viridifolia*) and rushes (*Juncus* spp.). Right: Native sedges (*Ghania* spp.) and a Bladder Rush (*Ruppia frutescens*) infestation.

3.3.1.4 GRASSLAND

The Ecology Assessment Area was dominated by grassland in the form of cleared pastoral land used primarily for livestock grazing. The ground cover was a predominantly a combination of annual and perennial pastoral grasses, such as Rye Grass (*Lolium* sp.), Paspalum (*Paspalum dilatatum*), and Cocksfoot (*Dactylis glomerata*). Exotic annual and perennial weeds were also common and included flatweed (*Hypochaeris radicata*), and Buck's-horn Plantain (*Plantago coronopus*). Paddocks had been subjected to heavy grazing pressures with ground cover vegetation providing little to no cover refugia for native fauna species.

Fauna usage in cleared paddocks is expected to be limited to generalist belonging to the order Passeriformes, such as the Australian Raven (*Corvus coronoides*) and Australian Magpie (*Gymnorhina tibicen*). Parrots, such as the Sulphur-crested Cockatoo (*Cacatua galerita*) are also likely to utilise the grassy paddocks for foraging, with mixed species flocks likely to occur. Native mammals, such as the Black-tailed Wallaby (*Wallabia bicolor*) and the Southern Brown Bandicoot, have the potential to utilise grassy paddocks for foraging. However, they are likely to be restricted to the riparian woodland of Cannibal Creek. Wombat (*Vombatus ursinus*) may regularly venture further into the paddocks due to their foraging behaviour.

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3.4 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

No flora, fauna or TECs listed under the EPBC Act were recorded during the field survey, nor were any recorded previously by Ecolink (2022).

3.4.1 FLORA

Based on the likelihood of occurrence analysis for threatened flora presented in Appendix D, it was determined that two species listed under the EPBC Act have the potential to occur in the Ecology Assessment Area. This likelihood is summarised in Table 3-3.

TABLE 3-3 LIKELIHOOD OF OCCURRENCE SUMMARY OF FLORA LISTED UNDER THE EPBC ACT

Scientific name	Common name	EPBC Act status	Likelihood of occurrence
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	Vulnerable	Potential to occur
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	Vulnerable	Potential to occur

3.4.2 FAUNA

The likelihood of occurrence analysis for threatened and migratory fauna is provided in Appendix E and a summary of those species considered likely or potential to occur within the Ecology Assessment Area is provided in Table 3-4. It was determined that 17 fauna species (11 birds, two mammals, two reptiles, one fish, and one amphibian) may occupy, utilise, or pass over habitat within the Ecology Assessment Area.

Most of these species, if present, are likely to only occasionally visit the Ecology Assessment Area for foraging, temporary refuge, or dispersal between higher quality habitats. All migratory listed birds in Table 3-4 have the potential to fly across the Ecology Assessment Area but it is unlikely the Ecology Assessment Area offers habitat critical to their survival.

Five species, however, were considered likely to occur within the Ecology Assessment Area, based on the presence of preferred habitat and recent records within the Locality:

- Dwarf Galaxias (*Galaxiella pusilla*);
- Glossy Grass Skink (*Pseudemoia rawlinsoni*);
- Growling Grass Frog (*Ranoidea raniformis*);
- Southern Brown Bandicoot (*Isoodon obesulus obesulus*); and
- Swamp Skink (*Lissolepis coventryi*).

Habitat values within the Ecology Assessment Area likely to be utilised by these species, are shown in Figure 3-2. Additionally, each of these areas may provide habitat for other threatened species with the potential to occur. The remainders of the Ecology Assessment Area is low-quality habitat which may offer occasional or incidental refuge and foraging opportunities but is unlikely to be of significant value to any EPBC Act listed species.

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TABLE 3-4 LIKELIHOOD OF OCCURRENCE SUMMARY OF FAUNA LISTED UNDER THE EPBC ACT

Species	Common name	EPBC Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
Birds				
<i>Acrocephalus australis</i>	Reed-Warbler	Migratory	Potential habitat is likely restricted to dense reeds and vegetation alongside water in the north of the Ecology Assessment Area.	Potential to occur
<i>Ardea alba modesta</i>	Eastern Great Egret	Migratory	Potential low-quality habitat is present at the farm dams, and more so shallower waters during periods of inundation in the floodplain of Cannibal Creek.	Potential to occur
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	Potential habitat is likely restricted to freshwater wetlands with tall dense vegetation dominated by rushes and reeds (<i>Typha</i> and <i>Juncus</i>) alongside Cannibal Creek.	Potential to occur
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Endangered	Eucalypt woodlands and hollow bearing trees within dead or living remnant lots. Habitat likely concentrated within the north of the Ecology Assessment Area. Habitat value influenced by woodland assemblage.	Potential to occur
<i>Gallinago hardwickii</i>	Latham's Shipe	Vulnerable, Migratory	Shallow flooded creek edges with dense vegetation covers comprising of grasses, lignum reeds and rushes have the potential to support foraging habitat for the species.	Potential to occur
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable, Migratory	Species occur over most types of habitats including above wooded areas and also below the canopy between trees or clearings. The species also forages while flying over farmland, including cleared pasture and/or remnant vegetation along paddock edges. The Ecology Assessment Area encompasses all of the above and has the potential to support the species by providing suitable foraging habitat and contributing to the species broader movement pathways.	Potential to occur

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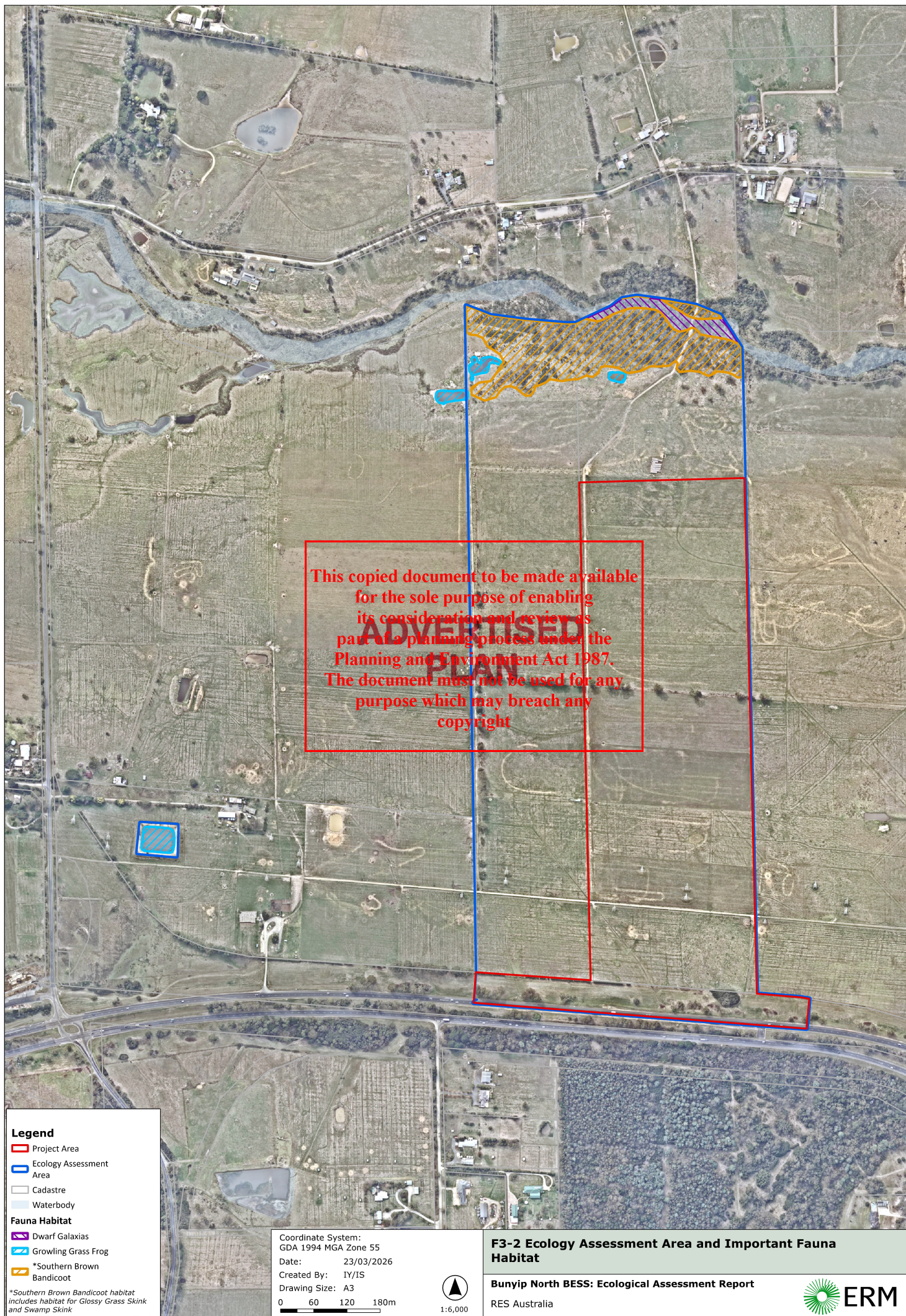
Species	Common name	EPBC Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
<i>Lichenostomus melanops cassidix</i>	Helmeted Honeyeater	Critically Endangered	Vegetation of stream sides where Swamp Gum (<i>Eucalyptus camphora</i> and <i>E. ovata</i>) are the dominant tree species. Habitat is likely concentrated in the north of the Ecology Assessment Area.	Potential to occur
<i>Myiagra cyanoleuc</i>	Satin Flycatcher	Migratory	Eucalypt forest along watercourses. Potential habitat likely concentrated within the north of the Ecology Assessment Area.	Potential to occur
<i>Neophema chrysostoma</i>	Blue-winged Parrot	Vulnerable	Heathy woodlands have the potential to support species breeding habitat. It is likely concentrated within the north of the Ecology Assessment Area.	Potential to occur
<i>Pycnoptilus floccosus</i>	Pilotbird	Vulnerable	Potential habitat is restricted to the moist ground vegetation surrounding Cannibal Creek.	Potential to occur
<i>Rhipidura rufifrons</i>	Rufous Fantail	Migratory	Moist dense habitats have the potential to support the species. Potential habitat is likely concentrated in the very north of the Ecology Assessment Area.	Potential to occur
Mammals				
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot	Endangered	Heathland and dense vegetation. Species may utilise the dense heath vegetation north of the Ecology Assessment Area to shelter and forage. Potential habitat is restricted to the heathy woodland adjacent of Cannibal Creek.	Likely to occur
<i>Petauroides volans</i>	Southern Greater Glider	Endangered	Moist eucalypt woodlands with relatively old trees. Potential habitat is restricted to woodlands surrounding Cannibal Creek	Potential to occur
Reptiles				
<i>Lissolepis coventryi</i>	Swamp Skink	Endangered	Densley vegetated freshwater creek line adjacent to wet heaths (<i>Melaleuca</i> or <i>Leptospermum</i>) within the north of the Ecology Assessment Area may support habitat for the species.	Likely to occur

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Species	Common name	EPBC Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink	Vulnerable	Densley vegetated freshwater creek line adjacent to wet heaths (<i>Melaleuca</i> or <i>Leptospermum</i>) within the north of the Ecology Assessment Area may support habitat for the species.	Likely to occur
Fish				
<i>Galaxiella pusilla</i>	Dwarf Galaxias	Endangered	Shallow freshwater habitat, slow flowing waters and ephemeral dams primarily consisting of emergent and submerged vegetation are present in the Ecology Assessment Area including Cannibal Creek.	Likely to occur
Amphibians				
<i>Ranoidea raniformis</i>	Growling Grass Frog	Vulnerable	Open terrestrial vegetation around large artificial waterbodies with emergent aquatic vegetation has the potential to support foraging and sheltering habitat.	Likely to occur

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3.4.3 THREATENED ECOLOGICAL COMMUNITIES

Based on the PMST results, two TECs have values known or modelled to occur in the Ecology Assessment Area. Analysis of the likelihood of these TECs being present is provided in Table 3-5. All TECs are considered unlikely to occur in the Ecology Assessment Area.

TABLE 3-5 PMST SEARCH RESULTS FOR THREATENED ECOLOGICAL COMMUNITIES

Community name	Listing status	Likelihood of occurrence
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Canopy of requisite dominant species not recorded during the field survey. Unlikely to occur
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	No native grasslands were recorded during the field survey. Unlikely to occur

3.5 FLORA AND FAUNA GUARANTEE ACT 1988

3.5.1 LISTED FLORA

No flora listed as threatened under the FFG Act were recorded from the field survey. However, Green Scentbark (*Eucalyptus fulgens*) is known to occur in the north of the Ecology Assessment Area (Ecolink, 2022), although outside of the Project Area.

Ten other species, shown in Table 3-6, are considered known to occur or have the potential to occur in the Ecology Assessment Area, with all habitat limited to the remnant patches of native vegetation associated with Cannibal Creek in the north.

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TABLE 3-6 LIKELIHOOD OF OCCURRENCE SUMMARY OF FLORA LISTED UNDER THE FFG ACT

Scientific name	Common name	FFG Act	Likelihood of occurrence
<i>Bossiaea riparia</i>	River Leafless Bossiaea	Endangered	Potential to occur
<i>Correa reflexa</i> var. <i>lobata</i>	Powelltown Correa	Endangered	Potential to occur
<i>Eucalyptus fulgens</i>	Green Scentbark	Endangered	Known to occur
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	Critically Endangered	Potential to occur
<i>Eucalyptus yarraensis</i>	Yarra Gum	Critically Endangered	Potential to occur
<i>Lepidosperma canescens</i>	Hoary Rapier-sedge	Endangered	Potential to occur
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	Endangered	Potential to occur
<i>Pultenaea juniperina</i>	Prickly Beauty	Vulnerable	Potential to occur
<i>Pultenaea weindorferi</i>	Swamp Bush-pea	Endangered	Potential to occur
<i>Sowerbaea juncea</i>	Rush Lily	Vulnerable	Potential to occur
<i>Xanthosia tasmanica</i>	Southern Xanthosia	Endangered	Potential to occur

3.5.2 PROTECTED FLORA

Two flora species protected under the FFG Act were recorded from the north of the Ecology Assessment Area in HZ C:

- Black Wattle (*Acacia mearnsii*); and
- Spreading Wattle (*Acacia genistifolia*).

3.5.3 FAUNA

No species listed under the FFG Act were recorded within the Ecology Assessment Area.

The likelihood of occurrence analysis of fauna (Appendix E) identified 24 species considered to have at least the potential to be present in the Ecology Assessment Area. The results are summarised in Table 3-7, and comprised 14 birds, three mammals, three reptiles, two fish, and two amphibians. These results also include five species listed under the EPBC Act that are likely to occur. Habitat for these species, discussed for each in Table 3-7, is primarily limited to the riparian vegetation associated with Cannibal Creek in the north of the Ecology Assessment Area and the farm dams in the north and west (though some of the birds may occasionally utilise the trees within the hedgerows to forage within the pastures).

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TABLE 3-7 LIKELIHOOD OF OCCURRENCE SUMMARY OF FAUNA LISTED UNDER THE FFG ACT

Scientific name	Common name	FFG Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
Birds				
<i>Ardea alba modesta</i>	Eastern Great Egret	Vulnerable	Potential habitat is likely restricted to shallow water habitats throughout the Ecology Assessment Area including the artificial dams and Cannibal Creek to the north.	Potential to occur
<i>Ardea intermedia plumifera</i>	Plumed Egret	Critically Endangered	Potential habitat is likely restricted to shallow water habitats throughout the Ecology Assessment Area including the artificial dams and Cannibal Creek to the north.	Potential to occur
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Critically Endangered	Potential habitat is likely restricted to freshwater wetlands with tall dense vegetation dominated by rushes and reeds (<i>Typha</i> and <i>Juncus</i>) alongside Cannibal Creek.	Potential to occur
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Endangered	Eucalypt woodlands and hollow bearing trees with dead or living eucalypts. Habitat likely concentrated within the north of the Ecology Assessment Area. Habitat value influenced by woodland assemblage.	Potential to occur
<i>Dupetor flavicollis</i>	Black Bittern	Endangered	Open vegetation around Cannibal Creek provides suitable habitat.	Potential to occur
<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Widespread species with habitat including wooded and open areas including the paddocks in the Ecology Assessment Area.	Potential to occur
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable	Species occur over most types of habitats including above wooded areas and also below the canopy between trees or clearings. The species also forages while flying over farmland, including cleared pasture and/or remnant vegetation along paddock edges. The Ecology Assessment Area encompasses all of the above and has the potential to support the species by providing suitable foraging habitat and contributing to the species broader movement pathways.	Potential to occur

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Scientific name	Common name	FFG Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
<i>Lewinia pectoralis</i>	Lewin's Rail	Vulnerable	Farm dams with dense vegetation have the potential to support the species by providing preferred sheltered habitat and foraging opportunities along shallow water edges.	Potential to occur
<i>Lichenostomus melanops cassidix</i>	Helmeted Honeyeater	Critically Endangered	Vegetation of stream sides where Swamp Gum (<i>E. ovata</i>) are the dominant tree species. Habitat is likely concentrated in the north of the Ecology Assessment Area.	Potential to occur
<i>Ninox connivens</i>	Barking Owl	Critically Endangered	Habitats dominated by eucalypt species along watercourses adjacent to farmland. Potential habitat likely concentrated to the north of the Ecology Assessment Area near Cannibal Creek.	Potential to occur
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Tall open woodland with dense understorey along watercourses have the potential to support the species by providing suitable roosting habitat and hunting opportunities.	Potential to occur
<i>Pycnoptilus floccosus</i>	Pilotbird	Vulnerable	Potential habitat is restricted to the moist ground vegetation surrounding Cannibal Creek.	Potential to occur
<i>Tyto novaehollandiae</i>	Masked Owl	Endangered	Woodland that provide mature trees will have the potential to support the species by providing suitable nesting and roosting habitat.	Potential to occur
<i>Tyto tenebricosa</i>	Sooty Owl	Endangered	Forest dominated by eucalypts have the potential to support the species by providing suitable roosting and nesting habitat as well as hunting opportunities.	Potential to occur
Mammals				
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot	Endangered	Heathland and dense vegetation. Species may utilise the dense understorey vegetation in the north of the Ecology Assessment Area to shelter and forage. Potential habitat is restricted to the woodland and scrub adjacent to Cannibal Creek, although if present, Southern Brown Bandicoot may also utilise the Blackberry infestations within and venture into pasture to forage.	Likely to occur
<i>Ornithorhynchus anatinus</i>	Platypus	Vulnerable	Freshwater bodies. Potential habitat is restricted to Cannibal Creek.	Potential to occur

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Scientific name	Common name	FFG Act status	Habitat values within the Ecology Assessment Area	Likelihood of occurrence
<i>Petauroides volans</i>	Southern Greater Glider	Endangered	Moist eucalypt woodlands with relatively old trees. Potential habitat is restricted to woodlands surrounding Cannibal Creek.	Potential to occur
Reptiles				
<i>Lissolepis coventryi</i>	Swamp Skink	Endangered	Densley vegetated freshwater creek line adjacent to wet heaths (<i>Melaleuca</i> or <i>Leptospermum</i>) in the north of the Ecology Assessment Area may support habitat for the species.	Likely to occur
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink	Endangered	Densley vegetated freshwater creek line adjacent to wet heaths (<i>Melaleuca</i> or <i>Leptospermum</i>) in the north of the Ecology Assessment Area may support habitat for the species.	Likely to occur
<i>Varanus varius</i>	Lace Monitor	Endangered	Limited woodland habitat available for this species in the north and south of the Project Area.	Potential to occur
Fish				
<i>Galaxiella pusilla</i>	Dwarf Galaxias	Endangered	Shallow freshwater habitat, slow flowing waters and ephemeral pools primarily consisting of emergent and submerged vegetation are present in the Ecology Assessment Area.	Likely to occur
<i>Nannoperca sp. 1</i>	Flinders Pygmy Perch	Vulnerable	Slow flowing creeks with submerged and emergent vegetation. Potential habitat is restricted to Cannibal Creek in the north of the Ecology Assessment Area.	Potential to occur
Amphibians				
<i>Ranoidea raniformis</i>	Growing Grass Frog	Vulnerable	Open terrestrial vegetation around large artificial waterbodies with emergent aquatic vegetation has the potential to support foraging and sheltering habitat.	Likely to occur
<i>Pseudophryne semimarmorata</i>	Southern Toadlet	Endangered	Damp areas with leaf litter and logs within heathy woodlands have the potential to support the species' habitat.	Potential to occur

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3.5.4 LISTED ECOLOGICAL COMMUNITIES

Two ecological communities listed under the FFG Act were identified within the desktop assessment as potentially occurring within the Ecology Assessment Area based on modelling by DEECA. As determined in Table 3-8, none of these communities are considered to have the potential to be present in the Ecology Assessment Area.

TABLE 3-8 ECOLOGICAL COMMUNITIES LISTED UNDER THE FFG ACT

Ecological Community	Likelihood of occurrence
Herb-rich Plains Grassy Wetland (West Gippsland)	This ecological community is modelled to occur within the Locality. It is associated with EVC 937 Swampy Woodland which was not recorded in the Ecology Assessment Area. No floristic elements typical of the community, except for Swamp Gum (<i>Eucalyptus ovata</i>) which can occasionally be an emergent canopy species, were present, and the structural composition of distinctly zonal vegetation distinctions was not observed. Unlikely to occur
Sedge-rich <i>Eucalyptus camphora</i> Swamp	Although this community is associated with EVC 83 Swampy Riparian Woodland, the representative patches of this EVC in the Ecology Assessment Area did not match the community description and the requisite canopy species. Mountain Swamp-gum (<i>Eucalyptus camphora</i> subsp. <i>humeana</i>) was not recorded, with the Ecology Assessment Area being outside this specie's known distribution. A key understorey species, Woolly Tea-tree (<i>Leptospermum lanigerum</i>), was also absent. This community is only known from the Yellingbo Nature Conservation Reserve approximately 33 km north-west of the Ecology Assessment Area. Unlikely to occur.

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4. REGULATORY IMPLICATIONS

The Project design is preliminary and subject to detailed design. As such, this assessment has been conducted based on the Indicative Development Footprint as shown in Figure 4-1. Future detailed design that does not result in new and/or additional impacts will not require further assessment.

4.1 PLANNING AND ENVIRONMENT ACT 1987

4.1.1 CLAUSE 52.17 NATIVE VEGETATION

The only native vegetation within the Indicative Development Footprint that is potentially impacted by the Project are incidental trees within a hedgerow that bisects the Ecology Assessment Area, and trees on the southern periphery of several clusters of Swamp Gum (*Eucalyptus ovata*) and Wallangara White-gum (*E. scoparia*) in the road reserve of Princes Freeway. As this native vegetation is planted, it is exempt from the requirement for a permit for removal under Clause 52.17 of the Cardinia Planning Scheme. All other vegetation likely to be impacted is not classified as native vegetation under the *Guidelines for the removal, destruction, or lopping of native vegetation* (the Guidelines) (DELWP, 2017a) nor the Cardinia Planning Scheme.

4.1.2 ENVIRONMENTAL SIGNIFICANCE OVERLAY

Except for vegetation within the Princes Freeway road reserve, all native vegetation in the Ecology Assessment Area, including dead vegetation and non-native species, is covered by an ESO. A permit is required to remove any of this vegetation under Clause 42.01 of the Cardinia Planning Scheme.

Impacts to vegetation covered by this overlay do not require assessment in accordance with the Guidelines and do not trigger the need for compensatory offsets.

4.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

Provided the Indicative Development Footprint does not directly impact the biodiversity values identified in the Ecology Assessment Area and mitigation measures identified below are implemented throughout the construction and post-construction phases, significant impacts to MNES are considered unlikely. The self-assessment of the potential impacts has been completed, and identified no likely potentially significant impacts on MNES. If these controls cannot be undertaken or the development is likely to impact the areas of native vegetation and/or wetlands in the north of the Ecology Assessment Area associated with Cannibal Creek (i.e. riparian vegetation and habitat in proximity to the existing farm dams), additional surveys will be needed to determine the presence of and potential impacts to MNES.

4.2.1 FLORA

The following two flora species, both listed as Vulnerable under the EPBC Act, were considered to have the potential to occur in the Ecology Assessment Area:

- Green-striped Greenhood (*Pterostylis chlorogramma*); and
- Strzelecki Gum (*Eucalyptus strzeleckii*).

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If present, both are only likely to be present within the native vegetation patches associated with Cannibal Creek (i.e., HZ A, B and C). Therefore, based on the Project Area, there are unlikely to be any significant impacts to EPBC Act-listed flora species resulting from the proposed development.

Should the Indicative Development Footprint be modified to impact this vegetation, targeted surveys for these two species are recommended.

4.2.2 FAUNA

To mitigate impacts to threatened species listed under the EPBC Act, final infrastructure layout design should prioritise the avoidance of areas identified as suitable habitat for listed species in the Ecology Assessment Area. Where avoidance is not possible, additional targeted surveys may be required to assess species' presence, the extent of impacts, and identify suitable compensatory and impact mitigation measures.

The five fauna species listed as threatened under the EPBC Act that are considered likely to occur within the Ecology Assessment Area are discussed in further detail below. In lieu of targeted surveys, the presumption of presence of these species will not compromise the Project, and by avoiding development in the areas determined as potential habitat, this will protect these species should they occur or allow potential future occupation.

Growling Grass Frog

There is a historical record of Growling Grass Frog (*Ranoides raniformis*) near Two Mile Creek West approximately 2.5 km to the north of the Ecology Assessment Area. Like Cannibal Creek, Two Mile Creek West drains east to join Bunyip Creek, and there are numerous farm dams in open pasture between the wetlands in the Ecology Assessment Area and this confirmed location, suggesting a high degree of habitat connectivity. There are also recent records approximately 5 km to the south in apparently similar habitat to that in the Ecology Assessment Area.

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Growling Grass Frog is known to forage considerable distances from their aquatic habitat, particularly in grassland. Although preferring the greater cover provided by taller, tussock-forming grasses, this species will also venture into grazed paddocks. Because of this behaviour, a buffer of at least 200 m is required between wetlands that support this species and any construction (DEWHA, 2009). It is therefore recommended that presence of this species be assumed in the aquatic habitats and a development buffer be implemented accordingly. These habitats and the applicable construction buffer are shown in Figure 4-1.

If changes to the Indicative Development Footprint of the Project result in incursion into this buffer zone, targeted surveys will be required to determine the status of Growling Grass Frog in the Ecology Assessment Area. If, however, any alteration of the Indicative Development Footprint remains within the confines of the Project Area and the requisite buffer distance will be maintained, then targeted surveys will not be required.

Additional mitigations measures during construction must also be implemented to minimise the potential for indirect impacts, including the installation of sediment fencing that prevents contamination of the wetlands and additionally inhibits movement of Growling Grass Frog into the construction area.

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Dwarf Galaxias

There are records of this species in similar habitat to Cannibal Creek nearby, suggesting it may be present in the Ecology Assessment Area. Any disturbance to this waterway, either directly or resulting from development activities such as vegetation clearing, earthworks or pollutant runoff, may therefore impact this species. It is recommended that the presence of Dwarf Galaxias (*Galaxiella pusilla*) in the creek is assumed, and appropriate mitigation measures undertaken to avoid potential impacts. The measures outlined for Growling Grass Frog above would also be suitable for protection of Dwarf Galaxias and other aquatic species that may inhabit Cannibal Creek.

Southern Brown Bandicoot

The Ecology Assessment Area supports high-quality habitat for Southern Brown Bandicoot (*Isoodon obesulus obesulus*) in the north of the Ecology Assessment Area in the form of dense scrub and open woodland with an understorey featuring native species such as Swamp Paperbark (*Melaleuca ericifolia*), Prickly Tea-tree (*Leptospermum continentale*) and Prickly Current-bush (*Coprosma quadrifida*), and a ground layer of sedges, rushes and tussock grasses. Additionally, although narrow, there is connectivity of this habitat throughout the broader landscape particularly in association with riparian vegetation but also potentially through planted windrows and hedges between agricultural fields and along property boundaries. Within the Ecology Assessment Area, these latter, however, were relatively isolated and did not support understorey vegetation suitable for providing shelter for Southern Brown Bandicoot and therefore are not considered suitable habitat.

This species will emerge from the shelter of covering vegetation to forage in open grassland including domestic lawns and grazed pastures. Therefore, there is potential for this species, if present, to be impacted by the Project. However, adherence to the construction buffer and fencing requirements associated with Growling Grass Frog will also mitigate any potential impacts to Southern Brown Bandicoot.

Glossy Grass Skink and Swamp Skink

Swamp Skink (*Lissolepis coventryi*) occupies densely vegetated freshwater and saltwater wetlands in south-eastern Australia which have natural hydrological regimes and contain shelter sites. Habitat typically has little to no overstorey. Swamp Skink is generally found in areas of poorly-drained peaty soils (DCCEEW, 2022). It basks and forages within dense, low vegetation and areas which may include fallen timber, driftwood, litter, and rocks, although these are not critical attributes for habitat to be suitable for the species. During periods of inactivity, Swamp Skink shelters in burrows, or beneath logs, rocks, driftwood and other ground debris (DCCEEW, 2022).

Glossy Grass Skink (*Pseudemoia rawlinsoni*) requires densely vegetated habitat that remains moist, such as that occurring alongside creeks and other wetlands and areas with a damp substrate. It typically prefers low, complex vegetation structures such as open understoreys of matted grasses and sedges and undisturbed swampy areas, though is thought to have the capacity to disperse into adjacent cleared areas if they are left to regenerate.

Habitat in the Ecology Assessment Area is similar for both lizard species and is a subset of that considered suitable for Southern Brown Bandicoot, which is shown Figure 3-2, but excludes the more stratified woodland areas along the creekline and likely limited to the floodplain of

Cannibal Creek where the vegetation is dominated by sedges and rushes, scrub or a grassy understorey in open woodland.

Targeted surveys have not been conducted for these lizard species and neither has been recorded from the Ecology Assessment Area. There are many records of Swamp Skink nearby, with the closest being approximately 1.5 km north in similar habitat. Only one nearby record exists for Glossy Grass Skink but having only recently been listed as threatened under the EPBC Act, survey effort is likely to be much less. Presence was assumed given the proximity to records and suitability and contiguity of habitat.

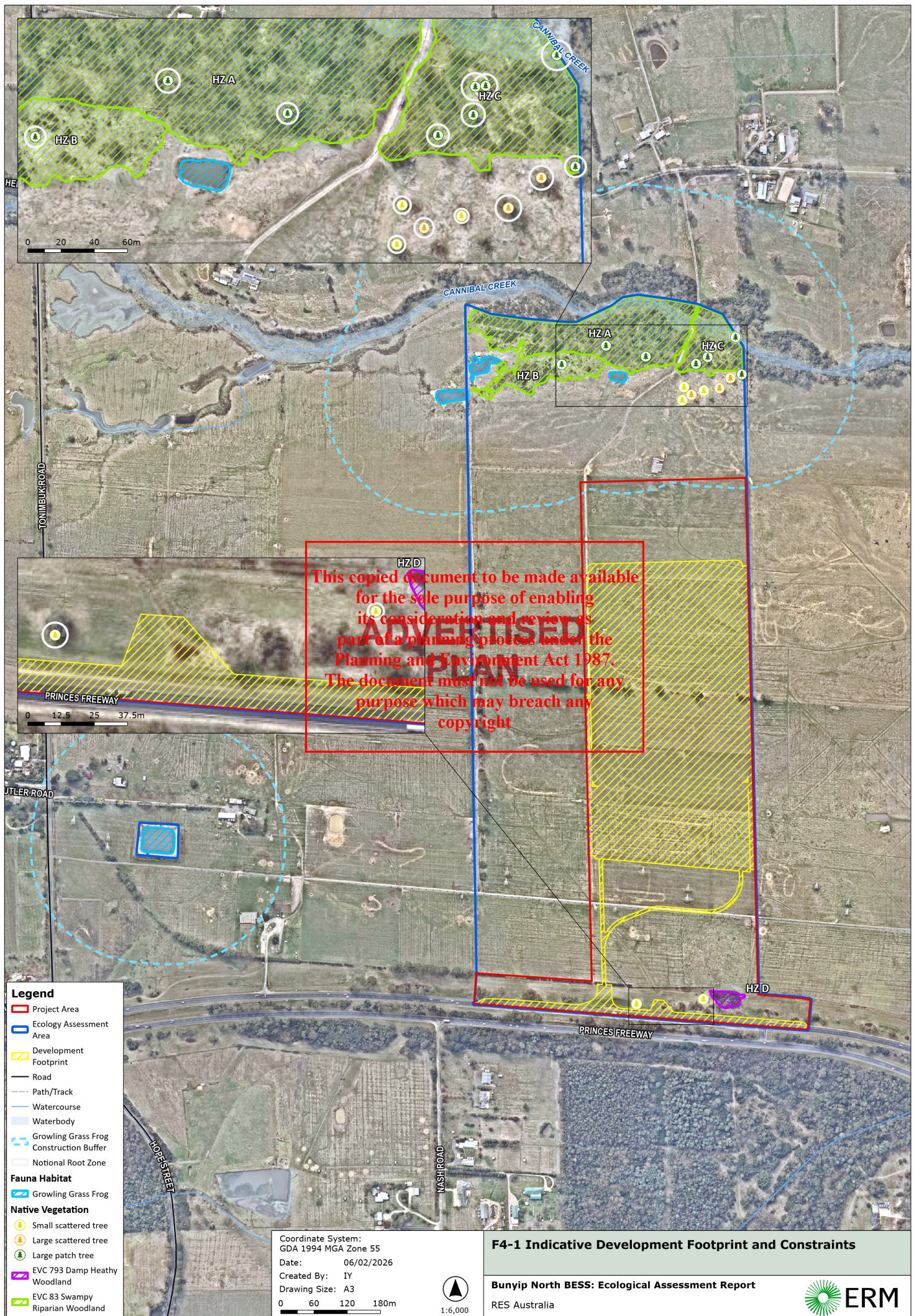
There is potential for these species, if present, to be impacted by the Project. However, adherence to the construction buffer and fencing requirements associated with Growling Grass Frog will also mitigate any potential impacts to Glossy Grass Skink and Swamp Skink.

4.2.3 THREATENED ECOLOGICAL COMMUNITIES

No TECs are present within the Ecology Assessment Area.

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4.3 FLORA AND FAUNA GUARANTEE ACT 1988

The FFG Act is the key piece of Victorian legislation for the conservation of threatened species and communities for the management of potentially threatening processes. Under the FFG Act, a permit is required from DEECA to take, kill, injure, disturb, or collect threatened or protected flora species from public land.

4.3.1 FLORA

A Protected Flora Permit will be required to be obtained from DEECA for any flora species listed as threatened or protected under the FFG Act impacted by the Project where they occur on public land. Such a permit can only be obtained once a Planning Permit quantifying the approved removal is obtained.

Listed and protected flora were recorded from the north of the Ecology Assessment Area only, with none observed within the road reserve of Princes Freeway where Project impacts are proposed.

4.3.2 FAUNA

To avoid impacts on threatened species listed under the FFG Act, as with the Indicative Development Footprint, the final infrastructure layout design should continue to prioritise the avoidance of areas identified as suitable habitat (i.e. aquatic habitats and vegetation associated with Cannibal Creek in the north of the Ecology Assessment Area). While some species may utilise the planted trees within the windrows and the Princes Freeway road reserve, removal of this low-quality habitat is unlikely to have any significant impact on any listed fauna. Adherence to the recommendations in relation to the MNES, specifically for Growling Grass Frog (which is also listed under the FFG Act) will also mitigate implications for State threatened fauna.

However, should any future amendments to the Indicative Development Footprint involve the potential to impact Cannibal Creek and surrounds, targeted surveys and additional mitigation measures may be required.

4.4 ENVIRONMENT EFFECT ACT 1978

As no native vegetation will be removed, no threatened flora are present in the Project Area, and potential impacts to fauna listed under the FFG Act can be effectively managed through designation of habitat buffers and construction management measures, a referral under the *Environment Effects Act 1978* is not triggered for biodiversity matters.

4.5 CATCHMENT AND LAND PROTECTION ACT 1984

Under the *Catchment and Land Protection Act 1994* (CaLP Act), all landowners are legally required to manage declared noxious weeds and pest animals on their land. This means landowners must take all reasonable steps to:

- Eradicate regionally or State Prohibited weeds;
- Prevent the growth and spread of regionally or State Controlled weed; and
- Prevent the spread of, and as far as possible eradicate, established pest animals on their land.

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Trade in Restricted weeds (either as plants, seeds, or contaminants in other material) is prohibited.

The following three regionally Controlled weeds were recorded from the Ecology Assessment Area:

- African Box-thorn (*Lycium ferrocissimum*);
- Blackberry (*Rubus fruticosus* spp. agg.); and
- Spear Thistle (*Cirsium vulgare*).

Blackberry was mainly in vegetation associated with Cannibal Creek, particularly in areas affected by bushfire, as well as in the road reserve along Princes Freeway. African Box-thorn also occurred within mapped patches of native vegetation associated with Cannibal Creek and also in the roadside, while Spear Thistle was scattered throughout the Ecology Assessment Area.

Pest animals recorded from the Ecology Assessment Area were:

- European Rabbit (*Oryctolagus cuniculus*); and
- Red Fox (*Vulpes vulpes*).

Diggings and scats from European Rabbit were observed throughout the Ecology Assessment Area but primarily in the north around the farm dams, while fox scats were also found among mapped native vegetation. Both these species are, however, likely to forage throughout the Ecology Assessment Area and broader landscape.

Although another pest animal, Fallow Deer (*Dama dama*), was recorded, this species is not covered by the CaLP Act and, like other deer, is protected under the *Wildlife Act 1975*.

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5. CONCLUSION

The assessment demonstrates that, while the Project Area is largely agricultural and highly modified, it sits adjacent to ecological features that may support important biodiversity values. The analysis of the site survey findings against legislative frameworks and recommended mitigation measures confirms that the Project can proceed with minimal environmental risk, provided that established buffers, avoidance strategies, and vegetation management requirements are maintained. Considering this, environmental referrals under the EPBC Act and EE Act can be avoided, however a planning permit will be required.

The following recommendations have been made with consideration to fulfilling the assessment requirements under local government, Victorian, and Commonwealth regulations in relation to biodiversity impact assessment of the Project:

- Maintain avoidance of all known habitats with the potential to support Growling Grass Frog, including dams and Cannibal Creek, with appropriate development buffers (at least 200 m) around key waterbodies. Additionally, construction mitigation measures incorporated in the design, construction, and operation of the Project must be considered, including sediment and exclusion fencing during construction. Development of any mitigation measures will be in accordance with the guidance provided in the *Significant Impact Guidelines for the vulnerable Growling Grass Frog (Litoria raniformis)* (DEWHA, 2009) and *Conservation Advice for Litoria raniformis* (DCCEEW, 2024);
- Protection of retained native vegetation and fauna habitat as part of a Construction Environment Management Plan (CEMP);
- Construction is unlikely to disrupt or modify any potential habitat surrounding Cannibal Creek, including the recommended habitat buffers. However, if works are extended or revised in the future (i.e. creek crossing modification, access roads) targeted species surveys will be required;
- Any changes to the Indicative Development Footprint that result in impacts to recorded native vegetation in the Ecology Assessment Area will require provision of a *Native Vegetation Removal Report* (NVR Report) from DEECA and will require a permit under Clause 52.17 of the Cardinia Planning Scheme. Depending on the extent of impacts, VQA of the patches of native vegetation may need to be undertaken to satisfy the application requirements under the Guidelines;
- A planning permit is required under Clause 42.01 of the Cardinia Planning Scheme for removal of any vegetation within the Ecology Assessment Area, except for that in the road reserve of Princes Freeway; and
- Preclearance surveys and translocation of any wildlife by suitably qualified ecologist prior to any removal of trees within the Indicative Development Footprint.

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6. REFERENCES

- DCCEEW. 2024. *Conservation Advice for Litoria raniformis (southern bell frog)*. Department of Climate Change, Energy, the Environment and Water. Canberra.
- DELWP. 2017a. *Guidelines for the removal, destruction or lopping of native vegetation*. Department of Environment, Water, Land and Planning. East Melbourne.
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- DEWHA. 2009. *Significant impact guidelines for the vulnerable growling grass frog (Litoria raniformis): Nationally threatened species and ecological communities EPBC Act policy statement 3.14*. Department of the Environment, Water, Heritage and the Arts. Canberra.
- DTP. 2024. *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978: 8th edition*. Victorian Government.
- Ecolink. 2022. *Preliminary Flora and Fauna Assessment, 30 Tonimbuk Road, Bunyip, Victoria*. Ecolink Consulting Pty Ltd, Northcote.

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APPENDIX A

FLORA SPECIES RECORDED IN THE ECOLOGY ASSESSMENT AREA

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Native species				
Scientific name	Common name	EPBC Act	FFG Act	
			Listed	Protected
<i>Acacia genistifolia</i>	Spreading Wattle	-	-	P
<i>Acacia mearnsii</i>	Black Wattle	-	-	P
<i>Acacia melanoxylon</i>	Blackwood	-	-	-
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	-	-	-
<i>Alternanthera denticulata</i>	Lesser Joyweed	-	-	-
<i>Austrostipa mollis</i>	Supple Spear-grass	-	-	-
<i>Billardiera mutabilis</i>	Common Apple-berry	-	-	-
<i>Bursaria spinosa</i>	Sweet Bursaria	-	-	-
<i>Carex fascicularis</i>	Tassel Sedge	-	-	-
<i>Cassinia longifolia</i>	Shiny Cassinia	-	-	-
<i>Coprosma quadrifida</i>	Prickly Currant-bush	-	-	-
<i>Crassula helmsii</i>	Swamp Crassula	-	-	-
<i>Cuscuta australis</i>	Australian Dodder	-	-	-
<i>Cycnogeton alcockiae</i>	Southern Water-ribbons	-	-	-
<i>Eleocharis sphacelata</i>	Tall Spike-sedge	-	-	-
<i>Eucalyptus cephalocarpa</i>	Silver-leaf Stringybark	-	-	-
<i>Eucalyptus ovata</i>	Swamp Gum	-	-	-
<i>Gahnia radula</i>	Thatch Saw-sedge	-	-	-
<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge	-	-	-
<i>Gonocarpus tetragynus</i>	Common Raspwort	-	-	-
<i>Gratiola peruviana</i>	Austral Brooklime	-	-	-
<i>Hydrocotyle</i> sp.	Pennywort	-	-	-
<i>Juncus bassianus</i>	Bass Rush	-	-	-
<i>Juncus procerus</i>	Tall Rush	-	-	-
<i>Juncus sarophorus</i>	Broom Rush	-	-	-
<i>Juncus subsecundus</i>	Finger Rush	-	-	-
<i>Leptospermum continentale</i>	Prickly Tea-tree	-	-	-
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	-	-	-
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i> [†]	Giant Honey-myrtle	-	-	-

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Native species				
<i>Melaleuca ericifolia</i>	Swamp Paperbark	-	-	-
<i>Microlaena stipoides</i>	Weeping Grass	-	-	-
<i>Oxalis perennans</i>	Grassland Wood-sorrel	-	-	-
<i>Pittosporum undulatum</i> #	Sweet Pittosporum	-	-	-
<i>Persicaria decipiens</i>	Slender Knotweed	-	-	-
<i>Phragmites australis</i>	Common Reed	-	-	-
<i>Pteridium esculentum</i> subsp. <i>esculentum</i>	Austral Bracken	-	-	-
<i>Senecio minimus</i>	Shrubby Fireweed	-	-	-
<i>Tricoryne elatior</i>	Yellow Rush-lily	-	-	-
<i>Typha</i> sp.	Bulrush	-	-	-

= native species occurring outside their natural range. * = planted native species. EPBC Act = listing status under the EPBC Act; FFG Act Listed = listing status under the FFG Act; FFG Act Protected = protected under the FFG Act (a permit is required to take protected flora).

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Introduced species		CaLp Act
Scientific name	Common name	
<i>Agrostis capillaris</i>	Brown-top Bent	-
<i>Arctotheca calendula</i>	Cape Weed	-
<i>Cenchrus clandestinus</i>	Kikuyu	-
<i>Cirsium vulgare</i>	Spear Thistle	C
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Couch	-
<i>Cyperus eragrostis</i>	Drain Flat-sedge	-
<i>Dactylis glomerata</i>	Cocksfoot	-
<i>Daucus carota</i>	Carrot	-
<i>Ehrharta erecta</i>	Panic Veldt Grass	-
<i>Ehrharta longiflora</i>	Annual Veldt Grass	-
<i>Euphorbia</i> sp.	Spurge	-
<i>Fumaria</i> sp.	Fumitory	-
<i>Galium aparine</i>	Cleavers	-
<i>Hypochaeris radicata</i>	Flatweed	-
Lamiaceae sp.	Labiata	-
<i>Leontodon saxatilis</i>	Hairy Hawkbit	-



Introduced species		
<i>Lepidium draba</i>	Hoary Cress	-
<i>Lolium</i> sp.	Rye Grass	-
<i>Lycium ferrocissimum</i>	African Box-thorn	C
<i>Medicago</i> sp.	Medic	-
<i>Melaleuca linariifolia</i>	Flax-leaf Paperbark	-
<i>Onopordum acanthium</i>	Scotch Thistle	-
<i>Paspalum dilatatum</i>	Paspalum	-
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	-
<i>Phytolacca octandra</i>	Inkweed	-
<i>Pinus radiata</i>	Radiata Pine	-
<i>Plantago coronopus</i>	Buck's-horn Plantain	-
<i>Plantago lanceolata</i>	Ribwort	-
<i>Prunus cerasifera</i>	Cherry Plum	-
<i>Rapistrum rugosum</i>	Giant Mustard	-
<i>Rubus fruticosus</i> spp. agg.	Blackberry	C
<i>Rumex crispus</i>	Curled Dock	-
<i>Solanum laxum</i>	Jasmine Nightshade	-
<i>Solanum pseudocapsicum</i>	Madeira Winter-cherry	-
<i>Stellaria media</i>	Chickweed	-
<i>Trifolium</i> sp.	Clover	-
<i>Urtica dioica</i>	Giant Nettle	-

CaLP Act = listing under the CaLP Act (P = regionally or State Prohibited, R = regionally or State Restricted, C = regionally Controlled).

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APPENDIX B

FAUNA SPECIES RECORDED IN THE ECOLOGY ASSESSMENT AREA

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Scientific name	Common name	EPBC Act	FFG Act
Birds			
<i>Anas gracilis</i>	Gray Teal	-	-
<i>Anas superciliosa</i>	Pacific Black duck	-	-
<i>Aquila audax</i>	Wedge-tailed eagle	-	-
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	-	-
<i>Carduelis carduelis</i> *	European Goldfinch	-	-
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	-	-
<i>Falco longipennis</i>	Australian Hobby	-	-
<i>Fulica atra</i>	Eurasian Coot	-	-
<i>Grallina cyanoleuca</i>	Magpie-Lark	-	-
<i>Gymnorhina tibicen</i>	Australian Magpie	-	-
<i>Hirundo neoxena</i>	Welcome Swallow	-	-
<i>Malurus cyaneus</i>	Superb Fairy-wren	-	-
<i>Manorina melanocephala</i>	Noisy Miner	-	-
<i>Manorina melanophrys</i>	Bell Miner	-	-
<i>Cincloramphus timoriensis</i>	Tawny Grassbird	-	-
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	-	-
<i>Neochmia temporalis</i>	Red-browed Finch	-	-
<i>Petroica phoenicea</i>	Flame Robin	-	-
<i>Porphyrio melanotus</i>	Australasian Swamphen	-	-
<i>Rhipidura albiscapa</i>	Grey Fantail	-	-
<i>Rhipidura leucophrys</i>	Willie Wagtail	-	-
<i>Sturnus vulgaris</i> *	Common Starling	-	-
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	-	-
<i>Tadorna tadornoides</i>	Australian Shelduck	-	-
<i>Turdus merula</i> *	Common Blackbird	-	-
Mammals			
<i>Dama dama</i> *	Fallow Deer	-	-
<i>Oryctolagus cuniculus</i> *	European Rabbit	-	-
<i>Vombatus ursinus</i>	Bare-nosed Wombat	-	-



Scientific name	Common name	EPBC Act	FFG Act
<i>Vulpes vulpes</i> *	Red Fox	-	-
<i>Wallabia bicolor</i>	Black-tailed Wallaby	-	-
Amphibians			
<i>Crinia signifera</i>	Common Froglet	-	-

* = introduced species. EPBC Act = listing status under the EPBC Act; FFG Act = listing status under the FFG Act.

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APPENDIX C

PROTECTED MATTERS SEARCH TOOL REPORT

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Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 24-Feb-2026

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

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Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	54
Listed Migratory Species:	10

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Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

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Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	11
Regional Forest Agreements:	2
Nationally Important Wetlands:	None
EPBC Act Referrals:	25
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)			[Resource Information]
Ramsar Site Name	Proximity	Buffer Status	
Western port	10 - 20km upstream from Ramsar site	In feature area	

Listed Threatened Ecological Communities			[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.			
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.			

Community Name	Threatened Category	Presence Text	Buffer Status
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.			
Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area	In feature area
Botaurus poiciloptilus			
Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Lichenostomus melanops cassidix Helmeted Honeyeater, Yellow-tufted Honeyeater (Helmeted) [26011]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat known to occur within area	In feature area
Nannoperca obscura Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area	In feature area
FROG			
Ranoidea raniformis listed as Litoria raniformis Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [94668]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Synemon plana Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat may occur within area	In buffer area only

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Gymnobelideus leadbeateri			
Leadbeater's Possum [273]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area
Mastacomys fuscus mordicus			
Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
Potorous tridactylus trisulcatus			
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pseudomys fumeus			
Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
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OTHER			
Megascolides australis			
Giant Gippsland Earthworm [64420]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Astelia australiana Tall Astelia [10851]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Caladenia orientalis Eastern Spider Orchid [83410]	Endangered	Species or species habitat may occur within area	In buffer area only
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long- legs [2119]	Vulnerable	Species or species habitat may occur within area	In feature area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat likely to occur within area	In feature area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area	In feature area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pomaderris vacciniifolia Round-leaf Pomaderris [4256]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat known to occur within area	In feature area

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area	In feature area

REPTILE

Liopholis montana Mountain Skink [87162]	Endangered	Species or species habitat may occur within area	In buffer area only
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudemoia rawlinsoni Glossy Grass Skink, Swampland Cool-skink, Rawlinson's Window-eyed Skink [59160]	Vulnerable	Species or species habitat likely to occur within area	In feature area

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Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area

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Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

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Scientific Name	Threatened Category	Presence Text	Buffer Status
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright	Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Migration route may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Bunyip	State Park	VIC	In buffer area only
Bunyip G13 SS.R.	Natural Features Reserve	VIC	In buffer area only
Bunyip G212 B.R.	Natural Features Reserve	VIC	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Cannibal Creek SS.R.	Natural Features Reserve	VIC	In buffer area only
Diamond Creek	Reference Area	VIC	In buffer area only
Drouin West G82 B.R.	Natural Features Reserve	VIC	In buffer area only
Drouin West G83 B.R.	Natural Features Reserve	VIC	In buffer area only
Koo-Wee-Rup East B.R.	Natural Features Reserve	VIC	In buffer area only
Labertouche Creek B.R.	Natural Features Reserve	VIC	In buffer area only
Robin Hood SS.R.	Natural Features Reserve	VIC	In buffer area only
Tarago River, Picnic Point Streamside Reserve	Natural Features Reserve	VIC	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please refer to the associated resource information for specific caveats and use limitations associated with RFA founding information.

RFA Name	State	Buffer Status
Central Highlands	Victoria	In feature area
Gippsland	Victoria	In buffer area only

As have been included. Please refer to its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Gippsland Rail Line Upgrade - Pakenham to Longwarry East	2019/8563		Completed	In buffer area only
Controlled action				
Bunyip Main Drain Bank Rehabilitation Works	2011/5992	Controlled Action	Post-Approval	In buffer area only
Garfield North Rock Quarry, Bunyip North, Vic	2015/7574	Controlled Action	Assessment Approach	In buffer area only
Racecourse Development	2010/5530	Controlled Action	Post-Approval	In buffer area only
Replacement of Existing Bayles Bridges 1 and 2 on Koo Wee Rup - Longwarry Road over Yallock Creek	2005/1990	Controlled Action	Post-Approval	In buffer area only

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Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Residential subdivision, 61-63 Abeckett Road, Bunyip, Vic	2018/8242	Controlled Action	Completed	In buffer area only
Not controlled action				
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed	In buffer area only
Building Demolition at Garfield Primary School	2011/6143	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Line of Sight Clearing on the Eastern Corridor, Regional Fast Rail	2010/5481	Not Controlled Action	Completed	In buffer area only
Longwarry Bandicoot Walking Track Fire Recovery Project	2010/5587	Not Controlled Action	Completed	In buffer area only
McGlones Road Widening, Drouin, Vic	2018/8345	Not Controlled Action	Completed	In buffer area only
Pakenham Level Crossing Removal Project	2021/8943	Not Controlled Action	Completed	In buffer area only
Regional Fast Rail Project - Latrobe Valley Country Works Package	2002/654	Not Controlled Action	Completed	In buffer area only
Removal of Strzelecki Gum as part of the Regional Fast Rail Project	2006/2936	Not Controlled Action	Completed	In buffer area only
Residential Development 555 Railway Avenue, Garfield, Victoria	2014/7219	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
116 Lot subdivision and rezoning, 53 Martin Road, Longwarry	2011/5816	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Construction of a Sewerage Transfer Pipeline	2008/4177	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Gippsland Rail Line Upgrade - Longwarry East to Traralgon	2019/8564	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

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Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Regional Fibre Optic Project (RFOP)	2003/916	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Residential Development 61-140 Nash Road Bunyip Vic	2013/7084	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Residential Development on Lot 1 Nylander Road, Bunyip	2013/6795	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed	In feature area

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Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

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2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
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The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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APPENDIX D THREATENED FLORA LIKELIHOOD OF OCCURRENCE

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	Vulnerable	Grows mostly in permanent swamps. Requires wetlands which are moderately fertile and have some bare ground with seasonally fluctuating water levels. Largely confined to permanent swamps, principally along the Murray River between Wodonga and Echuca, uncommon to rare in the south (e.g. Casterton, Moe, Yarram), probably due to historic drainage of wetlands. Flowers November–March.	PMST	0	N/A	- Ecology Assessment Area is within the distribution - No records exist for this species within the Ecology Assessment Area or Locality. - Suitable habitat was present in the Ecology Assessment Area but is highly disturbed. - The closest record is approximately 33km southwest from the Ecology Assessment Area. Unlikely to occur
<i>Astelia australiana</i>	Tall Astelia	Vulnerable	Endemic in Victoria. Rare, confined to a few gully-heads and stream margins in the Powelltown-Beenak district (upper Latrobe and Bunyip River catchments, Tomahawk Creek), and a similar site near Lavers Hill in the Otways. Plants form large colonies on humus-rich, waterlogged soils in Myrtle Beech (<i>Nothofagus cunninghamii</i>) and Mountain Ash (<i>Eucalyptus regnans</i>) forests.	PMST	0	N/A	- Ecology Assessment Area is outside known distribution. - No records exist for this species within the Ecology Assessment Area or Locality. - No suitable habitat was present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Asterolasia asteriscophora</i> subsp. <i>albiflora</i>	White Star-bush	Critically Endangered	Restricted to the Emerald-Monbulk area of the southern Dandenong Ranges where growing in damp sclerophyll forest. A collection purportedly from the Grampians is of unlikely provenance.	PMST	0	N/A	- Ecology Assessment Area is outside known distribution. - No records exist for this species within the Ecology Assessment Area or Locality. - No suitable habitat was present in the Ecology Assessment Area. Unlikely to occur
<i>Caladenia orientalis</i>	Eastern Spider Orchid	Endangered	The eastern spider-orchid is found in coastal heathland and heath-woodland, generally on deep sands, in the South East Coastal Plain Interim Biogeographic Regionalisation for Australia Bioregion. Flowers September-October.	PMST	0	N/A	- Ecology Assessment Area is not within the known distribution for this species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid	Vulnerable	Thick-lipped Spider-orchid is a perennial orchid that sprouts annually from an underground tuber. It has a single slender flowering stem which bears one or two 3 cm yellow-green flowers (with maroon stripes and suffusions), is hairy and grows to 30 cm in height. Thick-lipped Spider-orchid is confined to eastern Victoria from near-coastal healthy woodlands to open forests on well-drained sandy soils.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Dianella amoena</i>	Matted Flax-lily	Endangered	Matted Flax-lily is a perennial, tufted, mat-forming lily. Plants are rhizomatous and can form loose clumps up to 5 m wide. This species generally found in drier grassy woodland and grassland communities south of the Dividing Range.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist for this species within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	Vulnerable	Largely restricted to the western section of the Strzelecki Range, from Neerim South in the north, south to Foster, and with a few isolated records from the Otway ranges. Favours ridges, slopes and streambanks and deep fertile soils.	VBA, PMST	279	15/08/2022	- Ecology Assessment Area is within the distribution for this species. 279 records exist within the Locality. - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Glycine latrobeana</i>	Clover Glycine	Vulnerable	This species is widespread but of sporadic occurrence and rarely encountered, growing mainly in grasslands and grassy woodlands.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist for this species within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Lepidium aschersonii</i>	Spiny Peppercress	Vulnerable	This species is widespread but of sporadic occurrence and rarely encountered, growing mainly in grasslands and grassy woodlands.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Pomaderris vacciniifolia</i>	Round-leaf Pomaderris	Critically Endangered	Endemic in Victoria. Largely confined to moist forest and scrubs in the upper catchment of the Yarra, Plenty and Yea Rivers in an area bounded by Healesville, Marysville and Whittlesea, but also in the Tyers-Walhalla areas.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	Endangered	Maroon Leek-orchid grows mainly in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. Sites are generally low altitude, flat and moist. Soils are generally moderately rich damp sandy or black clay loams. Climate is mild, with an annual rainfall of 600–1100 mm, occurring predominantly in winter and spring. Occurs in grassland, heathland and open forest on well-drained or water-retentive sand or clay loams. Preferred habitat is present as EVCs 48, 3, 6 and 16. Flowers October–November.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	Vulnerable	Dense Leek-orchid is a tall, slender, deciduous terrestrial orchid endemic to south-eastern Australia. It is distributed from the south Gippsland region of Victoria to the far south-east of South Australia. Dense Leek-orchid has been previously recorded within the study area and is largely found in coastal heath and sandhills. It is localised across southern Victoria in coastal heathland and near-coastal heathy forest on sandy soils.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	Vulnerable	Apparently localized in Victoria, but exact range uncertain due to confusion with closely allied species. Grows in moist areas of heathy and shrubby forest, on well-drained soils. Flowers July–September.	VBA	67	24/08/2015	- Ecology Assessment Area is within the distribution for the species. 67 records exist for the species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Pterostylis cucullata</i>	Leafy Greenhood	Vulnerable	Widely distributed but disjunct, mostly occurring in small groups in coastal areas, sometimes near inland watercourses.	PMST	0	N/A	- Ecology Assessment Area is outside known distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Senecio psilocarpus</i>	Swamp Fireweed	Vulnerable	Swamp Fireweed is an erect, native, rhizomatous perennial herb. It is restricted in Victoria to a few herb-rich winter-wet swamps throughout the south of the state, west from Sale, growing on volcanic clays or peaty soils. EVC Type: 125: Plains Grassy Wetland	PMST	0	N/A	- Ecology Assessment Area is outside the known distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Thelymitra epipactoides</i>	Metallic Sun-orchid	Endangered	The metallic sun-orchid is a rare orchid growing 21-52 cm tall with a single long, narrow leaf. The flowers are highly variable in size and colour and the way the colours infuse gives a bronzy or metallic appearance. Metallic Sun-orchid grows mostly in coastal heathland, grassland and woodland, but extending further inland into similar habitats in the western part of its range. Substrates may be moist or dry sandy soils. Flowers September–November, with flowers opening freely on warm days.	PMST	0	N/A	- Ecology Assessment Area is within* the distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Thelymitra orientalis</i>	Hoary Sun-orchid	Critically Endangered	Grows in damp heathy flats and seepage areas usually in peaty white sands. Victorian records suggest the species may be extinct in the state, or in an isolated population on the Mornington Peninsula. Flowers October–November, with flowers only opening on warm, humid days.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Thesium australe</i>	Austral Toadflax	Vulnerable	The species is a hairless, yellowish-green perennial herb with slender, wiry stems to 40 cm high and tiny, white flowers. Currently only known in Victoria in Gippsland. Occurs in subtropical, temperate and subalpine climates on soils derived from sedimentary, igneous and metamorphic substrates on a range of soils. Found in open grassy heath with a range of dominant shrubs, <i>Themeda</i> grassland surrounded by eucalypt woodland and <i>Cymbopogon refractus</i> dominated grassland.	PMST	0	N/A	- Ecology Assessment Area is outside the known distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Xerochrysum palustre</i>	Swamp Everlasting	Vulnerable	Swamp Everlasting is a perennial, erect herb growing to 30-100 cm tall. The species occurs in lowland swamps, usually on black cracking clay soils, scattered from near the South Australian border north-west of Portland to Bairnsdale district, but rare due to habitat depletion. Flowers November-March.	PMST	0	N/A	- Ecology Assessment Area is outside known distribution for the species. - No records exist for this species in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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APPENDIX E

THREATENED FAUNA LIKELIHOOD OF OCCURRENCE

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
Birds							
<i>Acrocephalus australis</i>	Reed-Warbler	Migratory	Reed-Warbler is a small migratory songbird, inhabiting freshwater wetlands, with a preference for dense vegetation. The species prefers dense vegetation alongside water, especially thick reed beds, as well as tall crops, bamboo thickets and lantana.	VBA	13	1/24/2025	- Ecology Assessment Area is within the distribution for this species. 13 records exist within the Locality. - Suitable habitat was present north of the Ecology Assessment Area near Cannibal Creek. Potential to occur
<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Regent Honeyeater is a striking black and yellow bird that has a patchy distribution between south-east Queensland and central Victoria. Preferred habitat includes eucalypt forests and woodlands, particularly in blossoming trees and mistletoe.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist for this species within the Locality. - Suitable habitat (<i>Eucalyptus sideroxylon</i>, <i>E. albens</i>, <i>E. melliodora</i>, <i>E. leucoxylon</i>) is not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Aphelocephala leucopsis</i>	Southern Whiteface	Vulnerable	Southern whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist for this species within the Locality. - Suitable habitat was not present Unlikely to occur
<i>Ardea alba modesta</i>	Eastern Great Egret	Migratory	Eastern Great Egret is a large waterbird found throughout Australia. This species prefers shallow water habitats, but can inhabit a range of habitats including fresh, coastal, and saline wetlands, swamps, marshes, and lakes.	VBA	5	1/19/2019	- Ecology Assessment Area is within the distribution for this species. 5 records exist within the Locality. - Suitable habitat (shallow water) present in the Ecology Assessment Area. Potential to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	Australasian bittern inhabits shallow, permanent freshwater wetlands and brackish swamps or lagoons that are densely vegetated (e.g., tall reeds, sedges, lignum).	VBA, PMST	2	10/1/2015	- Ecology Assessment Area is within the distribution for this species. 2 records exist within the Locality. - Suitable habitats present in north of the Ecology Assessment Area Potential to occur
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable, Migratory	Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. They are widespread in most regions of Victoria, especially in coastal areas, but they are sparse in north-east and north-central Victoria. They also occur occasionally inland and on Bass Strait islands.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat present in the Ecology Assessment Area Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Calidris canutus</i>	Red Knot	Vulnerable, Migratory	Red Knot is a medium-sized, dumpy grey wader with a short neck and long body. Roosting habitat includes sandy beaches and mudflats. Other habitat includes terrestrial saline wetlands in coastal areas.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered, Migratory	Small, slim sandpiper that mainly occurs on intertidal mudflats in sheltered coastal areas and around non-tidal swamps, lakes and lagoons near the coast. They are also recorded inland around ephemeral and permanent waterbodies. Mostly occur in eastern Tasmania as well as several sites in Northwest Tasmania.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Endangered	Gang-Gang Cockatoo is a small, stocky cockatoo, readily distinguished by their plumage (especially in males with their scarlet-coloured heads). This species occurs primarily within the temperate eucalypt forest and woodland of south-east Australia. It migrates from higher altitudes in summer, to lower altitudes in winter.	VBA, PMST	163	9/28/2023	- Ecology Assessment Area is within the distribution for this species. 163 records exist within the Locality, with the closest sighting being approximately 3 km from Ecology Assessment Area. - Suitable habitat was present in the Ecology Assessment Area Potential to occur
<i>Charadrius leschenaultii</i>	Greater Sand Plover	Vulnerable, Migratory	Greater Sand Plover is a small-to-medium sized shorebird with a straight longish bill that bulges towards the end but has a pointed tip. The legs are long and olive-grey. Sexes are non-distinguishable from each other when in non-breeding plumage. However, sexes differ when in breeding plumage with males having a chestnut breast band and rufous Ongoing to the head and nape and with black on the face. Victoria - mostly recorded from Corner Inlet, Western Port and Port Phillip Bay.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper	Vulnerable	Brown treecreepers (south-eastern) occupy dry open eucalypt forests and woodlands. The subspecies mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. They also occur in mallee, forests and woodlands subject to periodic inundation, e.g., River Red-gum (<i>Eucalyptus camaldulensis</i>) woodlands with an open understorey of acacias, Saltbush, Lignum, Cumbungi and grasses in the upper Murray River.	VBA, PMST	2	9/14/1974	- Ecology Assessment Area is within the distribution for this species. - No records of the species within the past 30 years in the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Falco hypoleucos</i>	Grey Falcon	Vulnerable	Grey Falcon is distributed sparsely over Australia's arid and semi-arid zones. It prefers arid and semi-arid Australia and frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined watercourses. This species has also been observed in treeless areas, frequenting tussock grassland and open woodland for foraging. Grey Falcon is noted as absent from south of the Great Dividing Range in Victoria.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist for this species within the Locality - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Gallinago hardwickii</i>	Latham's Snipe	Vulnerable, Migratory	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e., it travels through northern Australia to reach non-breeding areas located further south). It is found in all regions of Victoria except for the north-west. usually inhabit open, freshwater wetlands with low, dense vegetation (e.g., swamps, flooded grasslands or heathlands, around bogs and other water bodies); however, may also occur inland and in artificial habitats and those located close to humans or human activity	VBA, PMST	38	11/25/2024	- Ecology Assessment Area is within the distribution for this species. 38 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area Potential to occur
<i>Grantiella picta</i>	Painted Honeyeater	Vulnerable	Painted Honeyeater is endemic to Australia and is found across eastern and northern parts of the country. Over spring and summer its distribution stretches from inland central Victoria through scattered parts of much of New South Wales and the ACT and into southern Queensland. The species inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of Black Box and River Red-gum, box-ironbark-Yellow Gum woodlands, <i>Acacia</i> -dominated woodlands, paperbarks, casuarinas, <i>Callitris</i> , and trees on farmland or gardens.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist for this species within the Locality - Suitable habitat was not present in the Ecology Assessment Area. No mistletoe recorded during the field survey. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable, Migratory	Occurs over most types of habitat but recorded most often above wooded areas including open forest and rainforest. Mainly occurs within Australia during non-breeding season from September to November.	VBA, PMST	36	12/1/2001	- Ecology Assessment Area is within the distribution for this species. 36 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Lathamus discolor</i>	Swift Parrot	Critically Endangered	Habitat in Victoria is primarily associated with box-ironbark assemblages, however foraging and roosting can be in a variety of mature, reliably flowering eucalypts.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Lichenostomus melanops cassidix</i>	Helmeted Honeyeater	Critically Endangered	Helmeted Honeyeater depends on the vegetation of streamsides and swamps, where Manna Gum (<i>Eucalyptus viminalis</i>), Mountain Swamp-gum (<i>E. camphora</i>) and Swamp Gum (<i>E. ovata</i>) are the dominant tree species and where a dense shrub layer provides nest sites. Helmeted Honeyeater is a specialist forager on vegetation, particularly the foliage and branches of eucalypts. Its diet is a variety of arthropods and sugars; the latter being derived from nectar, manna and honeydew.	VBA, PMST	108	9/26/2012	- Ecology Assessment Area is within the distribution for this species. 108 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern)	Endangered	Hooded Robin (south-eastern) occurs in south-eastern Australia from far south-east Queensland to Yorke Peninsula, South Australia, intergrading with <i>Melanodryas cucullata picata</i> in the southern Murray-Darling basin. They prefer dry eucalypt and acacia woodlands and shrublands with an open understorey, some grassy areas and a complex ground layer. They avoid woodlands with tall trees or dense tree cover but sometimes occur in tall, dense heaths with scattered open areas.	VBA, PMST	1	(6/14/1975)	- Ecology Assessment Area is within the distribution for this species. 1 record for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Migratory	Satin Flycatcher is a eucalypt forest and woodland inhabitant. It is particularly common in tall wet sclerophyll forest, often in gullies or along water courses. In woodlands it prefers open, grassy woodland.	VBA	58	11/23/2023	• Ecology Assessment Area is within the distribution for this species. • 58 records exist for this species within the Locality • Suitable habitat was present in the Ecology Assessment Area. Potential to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Neophema chrysostoma</i>	Blue-winged Parrot	Vulnerable	Blue-winged Parrot inhabits a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones. The species can also be seen in altered environments such as airfields, golf courses and paddocks. Pairs or small parties of Blue-winged Parrot forages mainly near or on the ground for seeds of a wide range of native and introduced grasses, herbs and shrubs. During the breeding season (spring and summer), birds occupy eucalypt forests and woodlands. In Victoria, birds are known to breed mainly in heathy forests and woodlands and in wetter forests soon after fire or logging. Before migrating from Tasmania in autumn, many birds congregate on saltmarshes and agricultural land before departing north. While on the mainland, mobile flocks feed in saltmarsh and rough pasture in coastal Victoria. Birds are known to move more than 100 km inland during winter to feed in semi-arid chenopod shrubland and sparse grassland.	VBA, PMST	7	12/11/2009	- Ecology Assessment Area is within the distribution for this species. 7 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered, Migratory	Largest migratory shorebird in the world. Rarely recorded inland. A summer migrant to Australia, the eastern curlew inhabits estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	PMST	0	N/A	• Ecology Assessment Area is outside the distribution for this species. • No records exist within the Locality. • Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Pedionomus torquatus</i>	Plains-wanderer	Critically Endangered	Plains-wanderer lives in semi-arid, lowland native grasslands that typically occur on hard red-brown soils. These grasslands support a high diversity of plant species, including a number of state and nationally threatened species. Habitat structure appears to play a more important role than plant species composition. Preferred habitat of Plains-wanderer typically comprises 50% bare ground, 10% fallen litter, and 40% herbs, forbs and grasses. Most of the grassland habitat of the Plains-wanderer is <5 cm high, but some vegetation up to a maximum of 30 cm is important for concealment, as long as grass tussocks are spaced 10-20 cm apart. During prolonged drought, the denudation of preferred habitats may force birds into marginal denser and taller grassland habitats that become temporarily suitable.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Plegadis falcinellus</i>	Glossy Ibis	Migratory	Glossy Ibis frequents swamps and lakes throughout much of the Australian mainland but is most numerous in the north. It is a non-breeding visitor to Tasmania and the south-west of Western Australia. Glossy Ibis requires shallow water and mudflats, so is found in well-vegetated wetlands, floodplains, mangroves and rice fields	VBA	1	9/1/1977	- Ecology Assessment Area is within the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Pycnoptilus floccosus</i>	Pilotbird	Vulnerable	Upland Pilotbirds occur above 600 m in the Brindabella Ranges in the Australian Capital Territory, and in the Snowy Mountains in New South Wales and north-east Victoria. Lowland Pilotbirds occur in forests from the Blue Mountains west of Newcastle, around the wetter forests of eastern Australia, to Dandenong near Melbourne. Pilotbirds are strictly terrestrial, living on the ground in dense forests with heavy undergrowth. Pilotbirds are found in the ground level of wet forests on coastal mountain ranges and in moist gullies timbered with mature gumtrees and with a dense understorey of bracken, low shrubs or tree ferns.	VBA, PMST	10	3/19/2007	- Ecology Assessment Area is within the distribution for this species. 10 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Rhipidura rufifrons</i>	Rufous Fantail	Migratory	All subspecies of Rufous Fantail inhabit moist, dense habitats, including mangroves, rainforest, riparian forests and thickets, and wet eucalypt forests. Structural features of suitable habitat include a moderately dense canopy cover often with two lower strata: a 2-6 m high layer and a shrubby or heath understorey 1-2 m high.	VBA	56	10/1/2020	- Ecology Assessment Area is within the distribution for this species. 56 records exist for this species within the Locality - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered	The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum (<i>Muehlenbeckia</i> spp.) or Cane-grass (<i>Eragrostis australasica</i>) or sometimes tea-tree (<i>Melaleuca</i> spp.). Australian Painted Snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable	Diamond Firetail occurs in eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats, including farmland and grassland with scattered trees. They prefer areas with relatively low tree density, few large logs, and little litter cover but high grass cover.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Sternula nereis nereis</i>	Australian Fairy Tern	Vulnerable	Australian Fairy Tern nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. The subspecies has been found in embayments of a variety of habitats including offshore, estuarine or lacustrine (lake) islands, wetlands and mainland coastline. The bird roosts on beaches at night.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Tringa nebularia</i>	Common Greenshank	Endangered, Migratory	Widespread in coastal regions, mainly between Gippsland Lakes and Port Phillip Bay. Inland the species is known mostly in the west and in the Murray River Valley. Inhabits terrestrial wetlands (swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans, salt flats, sewage farms and saltworks dams, inundated rice crops and bores) and sheltered coastal habitats (mudflats, saltmarsh, mangroves, embayments, harbours, river estuaries, deltas, lagoons, tidal pools, rock-flats and rock platforms). Small wetlands and swamps within study area. Limited records associated with estuaries.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
Mammals							
<i>Antechinus minimus maritimus</i>	Swamp Antechinus (mainland)	Vulnerable	Swamp Antechinus has a head to body length of 95-140 mm with a tail length 70% of the head to body length. It is a thickset antechinus with a long slender muzzle, long foreclaws, short ears that do not protrude far beyond the fur and pale eye-rings. It mainly occurs in damp areas, particularly at sites with dense Swamp Antechinus habitat is typically wet heath, heathy woodland, sedgeland and dense tussock grassland, rarely above 200m (DE 1996, Menkhorst 2004).	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll (southeastern mainland population)	Endangered	A medium carnivorous marsupial found in wet forest and coastal habitats across several discrete areas of Victoria. Spot-tailed Quoll is predominantly nocturnal and rests during the day in dens. Spot-tailed Quoll prefers mature wet forest habitat. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. Individuals also require an abundance of food, such as birds and small mammals, and large areas of relatively intact vegetation through which to forage.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Gymnobelideus leadbeateri</i>	Leadbeater's Possum	Critically Endangered	A small arboreal marsupial found only in Victoria. There are two distinct populations, one in a small area of the lowland swamps of the Yellingbo Nature Conservation Reserve and the other in the alpine ash and sub-alpine trees of central highlands of Victoria. Leadbeater's Possums are heavily reliant upon dense, continuous vegetation to allow them to move around off the ground to forage, as well as the presence of hollow-bearing trees to den in.	VBA, PMST	2	12/31/1915	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot	Endangered	In Victoria, the Southern Brown Bandicoot occurs south of the Great Diving Range, mainly at lower altitudes and generally within 50 km of the coastline, exceptions being the Greater Grampians bioregion and the Glenelg Plain bioregion. Habitat comprises scrubby heathlands and woodlands often associated with well drained soils.	VBA, PMST	210	9/27/2022	- Ecology Assessment Area is within the distribution for this species. 210 records exist within the Locality. - Preferred habitat was present in the Ecology Assessment Area. Likely to occur
<i>Mastacomys fuscus mordicus</i>	Broad-toothed Rat	Endangered	The Broad-toothed rat is a terrestrial and mostly nocturnal rodent which inhabits high rainfall areas. They prefer a moderate-to-dense ground cover of grasses or sedges, with shrubs usually present, particularly along valley floors near to streams. At lower altitudes in South Gippsland Highlands and the Great Dividing Range the Broad-toothed Rat inhabits areas with a dense wet understorey within tall open-forest and open-forest communities. The understorey may be patches of sedgeland and fernland on creek flats where there is a gap in the forest canopy or thickets of <i>Tetrarrhena juncea</i> , <i>Rubus</i> sp. and ferns beneath the canopy.	VBA, PMST	2	5/14/1993	- Ecology Assessment Area is within historical distribution for this species though may be outside its current range. - No recent records exist within the Locality, despite surveys efforts to find it. - Suitable habitat present in the Ecology Assessment Area. Unlikely to occur.

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Petauroides volans</i>	Southern Greater Glider	Endangered	Greater Glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species.	VBA, PMST	50	5/15/2019	- Ecology Assessment Area is within the distribution for this species. 50 records exist within the Locality. - Suitable habitat was present in the Ecology Assessment Area. Potential to occur
<i>Petaurus australis</i>	Yellow-bellied Glider	Vulnerable	Yellow-bellied Glider is a large, active, sociable and vocal glider, found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. Typically prefers mature old growth forest that provides suitable trees for foraging and shelter.	VBA, PMST	10	6/4/2009	- Ecology Assessment Area is within the distribution for this species. 10 records exist within the Locality. - No suitable habitat was present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Potorous tridactylus trisulcatus</i>	Long-nosed Potoroo (southern mainland)	Vulnerable	In Victoria, Long-nosed Potoroo is concentrated at six main geographically isolated locations: East Gippsland, Wilsons Promontory, French Island, Otway Ranges, Lower Glenelg, and Grampians. Long-nosed Potoroo inhabits coastal heaths and eucalypt forests generally on nutrient-poor sandy or light soils where there is dense groundcover that provides microhabitat for shelter and protection from introduced predators.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Pseudomys fumeus</i>	Smoky Mouse	Endangered	Smoky Mouse occurs in a variety of vegetation communities, ranging from coastal heath to dry ridgeline forest, sub-alpine heath and, occasionally, wetter gullies. Except for the wetter sites, a consistent feature of Smoky Mouse habitats is the diversity of heath and bush-pea species present, combined with potential shelter sites in the form of woody debris or rocks.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	Vulnerable	A small, burrowing native rodent, New Holland Mouse is similar in size and appearance to the introduced House Mouse (<i>Mus musculus</i>), although it can be distinguished by its slightly larger ears and eyes, the absence of a notch on the upper incisors and the absence of a distinctive 'mousy odour'. Across the species' range New Holland Mouse is known to inhabit open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Grey-headed Flying-Fox is one of the largest bats in the world with a head-body length of 230–289 mm. Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. Roost sites are typically located near water, such as lakes, rivers or the coast.	PMST	0	N/A	- Ecology Assessment Area is within the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
Reptiles							
<i>Liopholis montana</i>	Mountain Skink	Endangered	Mountain Skink occupies habitats with granite and basalt boulders, rocks, slabs, rock screes or tors and large logs in tall open-forest, woodland, and heathland vegetation in montane and subalpine areas of south-east Australia from 600-1700 m above sea level.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Lissolepis coventryi</i>	Swamp Skink	Endangered	Swamp Skink occupies densely vegetated swamps, freshwater and saltwater wetlands and adjacent wet heaths (<i>Melaleuca</i> or <i>Leptospermum</i> thickets), sedgelands and saltmarshes) in south-eastern Australia which have natural hydrological regimes and contain shelter sites. Habitat typically has little to no overstorey. Swamp Skink is generally found in areas of poorly drained, peaty soils, except for in coastal saltmarsh sites which often have sandy substrates.	VBA, PMST	18	2015	- Ecology Assessment Area is within the distribution for this species. - Numerous records exist within the Locality. - Suitable habitat was present in the Ecology Assessment Area. Likely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink	Vulnerable	Glossy Grass Skink is a habitat specialist that occurs in densely vegetated and moist areas, typically those found at the margins of creeks, swamps, lakes or otherwise boggy areas. Specific habitats include bog, wet heath (<i>Baeckea-Epacris</i> spp.), fen and wet sod-tussock grassland. Sites are characterised by ground layer vegetation that is tall and dense, with a high cover of matted vegetation. Although this species is confined to complex and mostly undisturbed swampy vegetation, it also has the capacity to disperse into adjacent disturbed and structurally simple vegetation communities that, if left to regenerate, may become sufficiently complex and habitable for the species to persist in the area. Glossy Grass Skink habitat is very similar to that of Swamp Skink (<i>Lissolepis coventryi</i>). Approximately 50 % of the modelled range of Glossy Grass Skink is shared with the Swamp Skink.	VBA, PMST	1	21/6/1981	- Ecology Assessment Area is within the distribution for this species. - One nearby record within the Locality with one approximately 6.5 km north-east. - Suitable habitat was present in the north of the Ecology Assessment Area. Likely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
Fish							
<i>Galaxiella pusilla</i>	Dwarf Galaxias	Endangered	Dwarf Galaxias is a tiny, slender, freshwater fish that averages 30-40 mm in length. Like other Galaxiidae, it has all soft-rayed fins, a body lacking scales, and a single dorsal fin positioned well back on the body. Population distribution is patchy and unknown due to habitat being lowland, shallow and swampy.	VBA, PMST	46	3/4/2020	- Ecology Assessment Area is within the distribution for this species. 46 records exist within the Locality, with some records present in Cannibal creek which runs adjacent to the Ecology Assessment Area. - Preferred habitat was present in the Ecology Assessment Area. Likely to occur
<i>Macquaria australasica</i>	Macquarie Perch	Endangered	Occurs naturally north of the Great Dividing Range in tributaries of the Murray-Darling system. Introduced to numerous waters south the Divide, but now persisting as self-supporting populations only in the Yarra River and Wannon River.	VBA	1	1/1/1970	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
<i>Nannoperca obscura</i>	Yarra Pygmy Perch	Endangered	Yarra Pygmy Perch prefers slow-moving or still waters, such as pools in rivers and streams or in lakes. It prefers sites which have abundant submerged and emergent aquatic vegetation, sometimes with wood debris. Yarra Pigmy Perch has been recorded from 42 locations, extending from Dandenong Creek in Victoria through to Lake Alexandrina near the mouth of the Murray River in South Australia.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Prototroctes maraena</i>	Australian Grayling	Vulnerable	Dark green to dark grey fish with silvery sides and a dark mid-lateral stripe. Adults live and breed in freshwater rivers, and the larvae are swept downstream into coastal waters. Juveniles then remain in marine waters for about six months before returning to the freshwater adult habitat.	VBA, PMST	21	7/10/2023	- Ecology Assessment Area is within the distribution for this species. 21 records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
Amphibians							
<i>Ranoidea raniformis</i>	Growling Grass Frog	Vulnerable	Growling Grass Frog is a habitat generalist, occupying a wide variety of still or slow-moving waterbodies across its distribution, including floodplain wetlands, forested wetlands, ephemeral swamps, oxbow lagoons, pools within streams, farm dams, irrigation canals, and disused quarries. Population viability is greatest where there is a high proportion of emerged, submerged, and floating aquatic vegetation, including Cumbungi (<i>Typha</i> spp.), Common Reed (<i>Phragmites australis</i>) and Spike Sedges (<i>Eleocharis</i> spp.). The southern bell frog prefers open terrestrial habitats around waterbodies, which facilitate foraging and movement. Frogs from the northern lineage occupy large wetland complexes in semi-arid areas, some many thousands of hectares in size, with breeding occurring in ephemeral waterbodies adjacent to permanent waterbodies. These wetlands are dominated by River Red-gum (<i>Eucalyptus camaldulensis</i>), Black Box (<i>E. largiflorens</i>), Nitre Goosefoot (<i>Chenopodium nitriaceum</i>), and Lignum (<i>Muehlenbeckia</i> spp.) and <i>Typha</i> species.	VBA, PMST	3	3/15/2020	- Ecology Assessment Area is within the distribution for this species. 3 records exist for this species within the Locality. - Preferred habitat was present on site (in the form of vegetated farm dams) Likely to occur

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Scientific name	Common name	EPBC status	Notes	Source	No. of records	Last record	Likelihood of occurrence
Invertebrates							
<i>Megascolides australis</i>	Giant Gippsland Earthworm	Vulnerable	The Giant Gippsland Earthworm range is confined to an area of approximate 400 km ² in West Gippsland, Victoria but the viable habitat areas are very small and often fragmented. Suitable habitat for the species is restricted to very small areas; generally, in moist, blue-grey clay soils on flats and above the flood level near the banks of streams or along soaks and watercourses on south or west-facing slopes.	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur
<i>Synemon plana</i>	Golden Sun Moth	Vulnerable	The Golden Sun Moth is found in south-eastern Australia and occurs in native grasslands dominated by Wallaby Grass (<i>Rytidosperma</i> spp.), in particular <i>R. carphoides</i> , <i>R. auriculata</i> , <i>R. eriantha</i> , and <i>R. setacea</i> .	PMST	0	N/A	- Ecology Assessment Area is outside the distribution for this species. - No records exist within the Locality. - Suitable habitat was not present in the Ecology Assessment Area. Unlikely to occur

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