MT FYANS
WIND FARM

APPENDIX F

FLORA AND FAUNA EXISTING CONDITIONS

BIOSIS

NOVEMBER 2022

Mount Fyans Wind Farm:

Flora and fauna existing conditions

FINAL REPORT

Prepared for Hydro Tasmania

16 November 2022

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Biosis staff involved in this project were:

- Dr Matt Dell, Tony Byrne, Felicity Humann, Thea Shell & Martin Lee: Field surveys.
- Gavin Thomas and Shona Arber: Field surveys, data analysis and reporting.
- John Miller and Ian Smales: Quality assurance
- Sally Mitchell, James Shepherd & Lachlan Milne: mapping.

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Summary

Biosis Pty Ltd was commissioned by Hydro Tasmania to undertake a flora and fauna assessment of the site of the proposed Mount Fyans Wind Farm for the purpose of describing the existing ecological conditions present. The study area is located near the township of Mortlake in western Victoria.

A preliminary flora and fauna assessment was undertaken in 2012 to document and map the extent of native vegetation and fauna habitats present. Subsequent assessments were undertaken in 2012, 2013, 2017, 2018, 2019, 2021 and 2022 to remap vegetation and habitat and assess roadsides and additional areas where construction works may be required.

The key ecological values identified within the study area are as follows:

- Nine Endangered ecological vegetation classes (EVCs) and one Vulnerable EVC.
- Scattered remnant trees.
- Eight fauna habitat types, including creeks, wetlands, grasslands and rock walls.
- Habitat or potential habitat for *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (FFG Act) listed species.
- Endangered communities, including Natural Temperate Grasslands of the Victorian Volcanic Plain and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.

Following the general flora and fauna assessments, further detailed targeted surveys for threatened species have been undertaken across the study area. The results of these surveys, along with an assessment of potential impacts associated with development and operation of the wind farm, is provided in a separate report (Biosis 2021a) which should be read in conjunction with this report.

1. Introduction

1.1 Project background

Biosis Pty. Ltd. was commissioned by Hydro Tasmania to undertake a detailed flora and fauna assessment of the site of the proposed Mt Fyans Wind Farm, Victoria. The purpose of the assessments was to describe the existing conditions within the proposed wind farm site, undertake detailed targeted surveys for threatened flora and fauna, and use the resulting information to inform the design development of the wind farm with a view to avoiding impacts on biodiversity values or otherwise minimising these impacts.

A preliminary flora and fauna assessment was undertaken in March 2012 to ascertain the general values for native vegetation and terrestrial fauna within the study area. Surveys were conducted in spring of 2012 following removal of grazing stock from several areas, to determine the potential extent of native vegetation across different vegetation types.

The Wind Farm study area was subsequently extended to the west ('Western Extension') and additional survey of the entire study area, including the new western extension, was undertaken in spring/summer 2012/13 (two visits) to accurately map the extent of native vegetation as well as the distribution and extent of *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed ecological communities and threatened flora/fauna habitat.

An assessment of roadside vegetation within and surrounding the study area was undertaken in June 2013. All potential habitat for threatened fauna was also mapped during this survey for the purpose of designing targeted assessments that were carried out over the spring/summer period of 2013-14.

The route of the proposed External Transmission Line was assessed in June 2013. Targeted surveys for threatened flora and fauna species were carried out within the study area and the western extension between 2012 and 2015.

Additional surveys of roadside vegetation were undertaken in 2017 and 2018 to aid in the selection of appropriate access points to the wind farm from the Hamilton Highway.

At the request of the Department of Environment, Land, Water and Planning (DELWP) a native vegetation survey was undertaken in 2019 to check on the currency of the vegetation mapping, in regard to changes within the study area and changes to state government vegetation policy, including a modification to the definition of native vegetation. During this assessment, DELWP identified one location within the transport plan as potentially impacted by vehicle movements and this was inspected. This site is located on the western side of Mortlake-Ararat Road near the intersection with the Hamilton Highway, inside the Mortlake township. No native vegetation was present at the site. The proponent undertook further investigations for alternative site access, including the use of South Road and an alternative construction compound, in 2021. Flora and fauna surveys were undertaken along South Road in March 2021, in anticipation of likely requirements to upgrade the road, which may involve road widening. In addition, a new transport route from Portland to the study area was included in the transport assessment which identified five sites requiring ecological assessment. An inspection of these small areas of road reserves (outside the study area) was undertaken in May 2021.

The details of the general flora and fauna assessments of the study area are presented in this report with the purpose of documenting the existing conditions for the site. Details of the targeted surveys for threatened flora and fauna, including the implications of relevant biodiversity legislation and policy are provided in a separate report (Biosis 2021a). A detailed assessment for potential Brolga breeding and flocking habitats within and adjacent to the proposed wind farm has been undertaken and is outlined in Biosis (2021b).

1.2 Scope of assessment

The objectives of this investigation are to document the existing ecological conditions for the proposed wind farm site, roadsides and associated external transmission route. The objectives are achieved by:

- Describing the vascular flora (ferns, conifers, flowering plants), vertebrate fauna (birds, mammals, reptiles, frogs, fishes) and decapod crustacea (e.g. crayfish).
- Mapping native vegetation and other habitat features.
- Reviewing the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017) as they apply to the project.

Over the course of the ecological assessments and surveys undertaken for Mount Fyans Wind Farm, the project design has been continually refined to avoid and minimise impacts to ecological values as they have been identified. The data collected throughout this process is documented in this report and Biosis (2021a), and remain included, even where impacts have been avoided through project design. In particular, all wind farm infrastructure has been excluded from the northern section of the study area due to constraints including cultural heritage, threatened species (migratory species, Corangamite Water Skink *Eulamprus tympanum marnieae*, Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens*, Basalt Rustyhood *Pterostylis basaltica*) and threatened ecological communities.

1.3 Study area

The study area is located near the township of Mortlake, approximately 200 kilometres west of Melbourne. It covers approximately 12,550 hectares and is bordered to the south by the Hamilton Highway, to the north by Woorndoo-Dundonnell Road, to the east by Six Mile Lane and Darlington-Nerrin Road and to the west by the Hamilton Highway and Salt Creek (Figure 1).

The majority of the study area is within the Farming Zone (FZ, Moyne Shire), with some areas of roadside within the Road Zone (RDZ1). No overlays relevant to flora and fauna are located within the study area.

The study area is contained within the Victorian Volcanic Plain Bioregion, and the surface geology is the result of quaternary basalt flows, with small areas of more recent alluvial sediments (derived from basalt) around lakes and waterways. The most recent basalt flows, which are confined to the northern section of the study area, have formed complex stony rises, interspersed with low-lying areas and wetlands. Older basalt flows in the southern section of the study area have weathered to an undulating or flat landscape.

Most of the study area has been cleared of native vegetation and is managed for grazing and cropping. However areas of remnant native vegetation persist within the stony rises, and in low-lying areas associated with depressions and drainage lines. Several roadsides within the wider area are known to support high-value native grasslands. Very few remnant native trees are present within the main wind farm area.

The study area includes upper reaches of Blind Creek, a number of unnamed tributaries of Stony Creek and Mount Emu Creek and a number of wetlands and farm dams (Figure 2).

The study area also includes the proposed transmission line corridor, which extends from the south-western edge of the wind farm, through an area supporting open River Red Gum woodland and a commercial Blue Gum plantation before terminating at the Mortlake Power Station (Figure 2).

The study area is within the:

- Victorian Volcanic Plain Bioregion.

- Hopkins River Basin.
- Management area of the Glenelg Hopkins CMA.
- Moyne Shire Local Government Area.

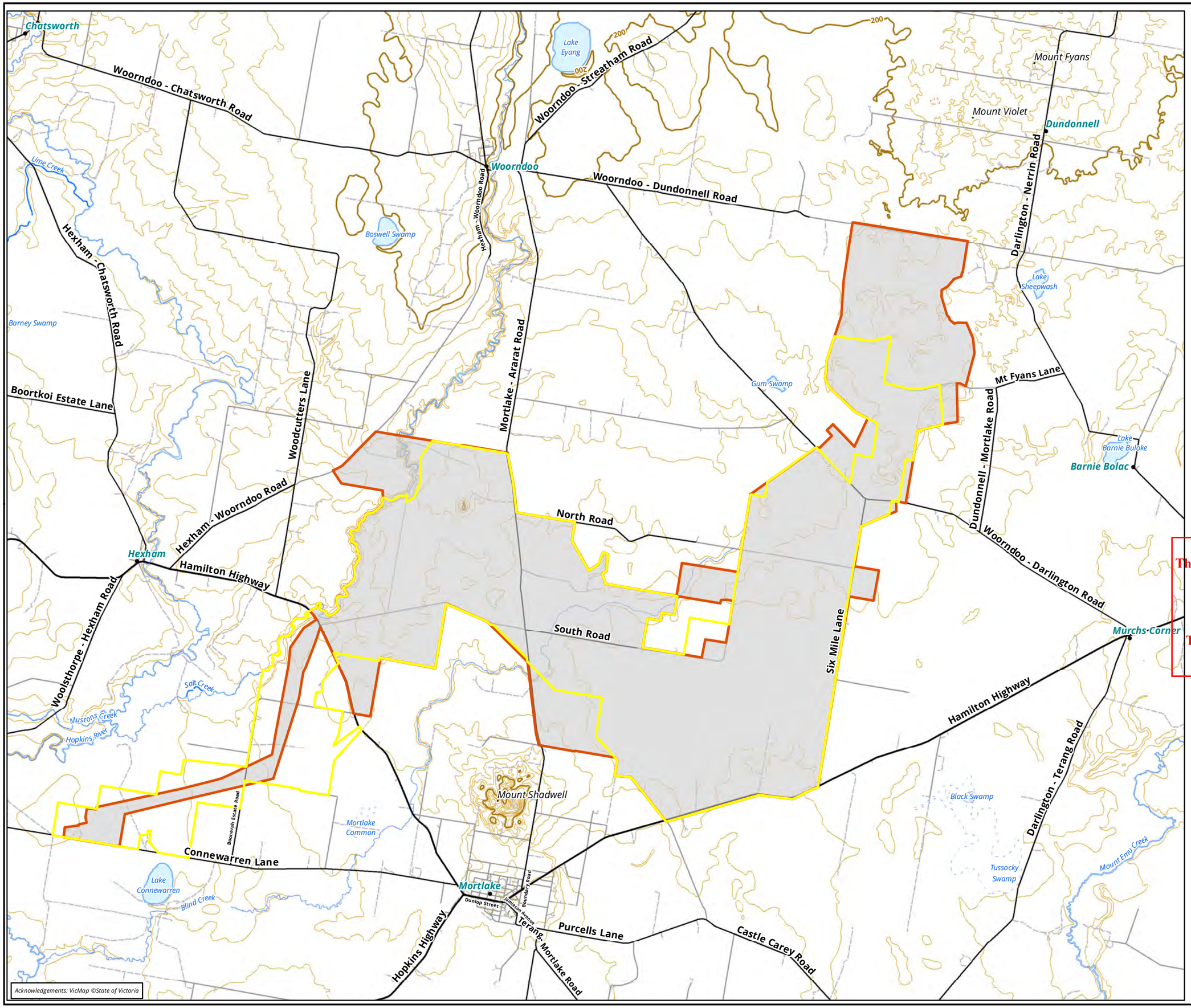
1.4 Landscape context

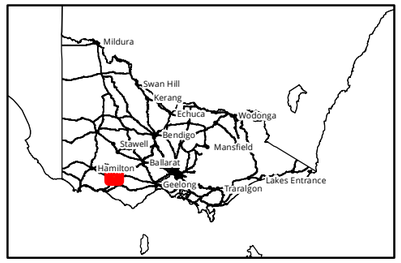
The study area falls within a section of the volcanic plain which has very few areas of remnant vegetation or habitats managed for conservation. The largest nearby conservation areas are the Cobra Killuc Wildlife Reserve, between Hexham and Woorndoo, and the Mortlake Common Flora Reserve to the west of Mortlake. The study area is typical of much of the surrounding landscape, being largely cleared with low relief and intersected by intermittently flowing creeks and ephemeral and permanent wetlands.

A large proportion of the study area, particularly adjacent to creeks and drainage lines, is subject to flooding (VicMap Hydro 1:25,000 flat_sti (subject to inundation) mapping layer).

The Western District Lakes Ramsar site includes a number of wetlands that are primarily located within the Lake Corangamite Basin, however, the most westerly component of this Ramsar site (Lake Bookar) is located within the Mount Emu Creek catchment (Hopkins River Basin) and is located approximately 25 kilometres south-east of the study area. There does not appear to be any direct hydrological connectivity between the study area and Lake Bookar.

The section of Blind Creek within the study area (Reach 24 – a 54 kilometre reach upstream of Salt Creek) was assessed in the 2004 Index of Stream Condition assessment to be in moderate condition (DSE 2005). Aquatic life was not assessed, and the streamside zone was considered to be in excellent condition, with all other sub-indices (physical form, hydrology and water quality) considered to be in poor-moderate condition (3-4/10). The condition of Blind Creek within the study area is primarily affected by extensive historical clearing and hydrological alterations associated with extraction for agricultural purposes and subsequent summer stress (4/10) (DSE 2005).





Legend

- Study area
- Project boundary

ADVERTISED PLAN

Figure 1 Location of the Mt Fyans Wind Farm study area

0 1 2 3 4 5 N

Kilometers

Scale: 1:100,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

Matter: 35163,
Date: 18 August 2022,
Checked by: MV/MSG/KS, Drawn by: SKM, Last edited by: smitchell
Location:P:\35100s\35163\Mapping\35163_21630_F1_Locality

2. Methods

2.1 Database review

In order to provide a context for the study, information about flora and fauna from within 10 kilometres of the study area (the 'local area') was obtained from relevant biodiversity databases. Aquatic fauna records were searched upstream of the confluence of Mount Emu Creek and Hopkins River, into which Blind Creek and the unnamed tributaries drain. Records from the following databases were collated and reviewed over time, with the latest review undertaken on 30 April 2021:

- The Victorian Government Department of Environment, Land Water and Planning (DELWP) Victorian Biodiversity Atlas (VBA), including the 'VBA_FLORA25, FLORA100 & FLORA Restricted' and 'VBA_FAUNA25, FAUNA100 & FAUNA Restricted' datasets.
- BirdLife Australia Atlas of Australian Birds (BA).
- Protected Matters Search Tool of the Australian Government Department of Agriculture, Water and the Environment (DAWE) for matters protected by the EPBC Act.

Other sources of biodiversity information were examined including:

- DELWP Biodiversity Interactive Map (when it was in operation).
- DELWP's NatureKit mapping tool.
- DELWP's Habitat Importance maps.
- DELWP's Native Vegetation Information Management (NVIM) system.
- Biosis Research (2009). Mt Fyans Wind Farm Due Diligence Ecological Assessment. Report for Roaring 40s Renewable Energy. Authors: Sofo, K., Wong, N. & Mossop, D. Biosis Research Pty. Ltd.
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2.2 Definitions of significance

The significance of a species or ecological community is determined by its listing status under Commonwealth or State legislation / policy (Table 1).

Table 1 Criteria for determining significance of species & ecological communities

Significance	
National	Listed as critically endangered, endangered or vulnerable under the EPBC Act
State	Listed as critically endangered, endangered, vulnerable or rare under the *Flora and Fauna Guarantee Act 1988* (FFG Act)

Lists of significant species generated from the databases are provided in Appendix 1 (flora) and Appendix 2 (fauna) and the species have been assessed to determine the likelihood of their occurrence based on the process outlined below. These species are not discussed further in this report unless they have been recorded within the study area, are considered to have a medium or higher likelihood of occurrence, or are identified as having habitat within the study area determined by the DELWP Habitat Importance Modelling.

2.3 Determining likelihood of occurrence of significant species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the study area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of the habitats on site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. Those species for which there is little or no suitable habitat within the study area are assigned a likelihood of low or negligible and are not considered further.

Species which have at least medium likelihood of occurrence are given further consideration in this report. The need for targeted survey for these species was considered and forms the basis of the targeted survey and impact assessment report (Biosis 2021a). Subsequently, results of the targeted surveys have also been factored into the likelihood assessment.

2.4 Site investigation

2.4.1 Flora assessment

The flora assessment has been undertaken in stages:

- A preliminary flora assessment and mapping was undertaken to assess general native vegetation values of the study area: 12-16 March 2012.
- Investigation following the removal of grazing and spring survey of identified native vegetation to confirm extent and distribution of ecological vegetation classes (EVCs): 15-17 October 2012 and 5-7 November 2012.
- Flora survey and mapping of the small extension to the study area ("Western Extension") near Woorndoo-Dundonnell Road: 15-17 October 2012.
- Flora survey and mapping of the western extension: 29-30 January 2013.
- Flora survey and mapping of roadsides: 3-4 June 2013.
- Flora survey and mapping of external transmission line corridor: 11-13 June 2013.

- Flora survey and mapping of land near the Mortlake Powerstation (Tilt Renewables): 9 November 2017.
- Flora survey and mapping of vegetation within the Hamilton Highway road reserve and Six-Mile Lane road reserve: 8 November 2017, 19-20 April 2018, 21 May 2018.
- Flora survey and revision of vegetation mapping within the study area: 6-8 March 2019. An area of Mortlake-Ararat Road identified within the transport report as potentially impacted was also inspected.
- Flora survey and habitat mapping of the South Road reserve: 4 March 2021.
- Flora survey of five intersections (Portland, Hamilton and Lake Bolac) along the new transport route: 25 May 2021.
- Flora survey within the road reserve of South Road on 8 February 2021, 3 March 2021 and 29-30 July 2021.
- Flora survey of road crossing and entry points on 4 February 2022.

A list of flora species was collected across the entire study area (including the Wind Farm and Transmission Line): list S1444100. This list was submitted to DELWP for incorporation into the Victorian Biodiversity Atlas. The flora species list is intended to provide an overview of common indigenous and introduced species present across the site and is not an exhaustive inventory. Planted species have not been recorded unless they are naturalised.

The general condition of native vegetation was observed as well as the effects of seasonal conditions at the time of surveys. Notes were made on specific issues such as noxious weed infestations, evidence of management works, grazing impacts and the regeneration capacity of the vegetation.

Classification of native vegetation is based on EVCs. An EVC contains one or more floristic (plant) communities, and represents a grouping of broadly similar environments. Definitions of EVCs and benchmarks (condition against which vegetation quality at the site can be compared) are as determined by DELWP.

Species nomenclature for flora follows the Flora Information System (FIS).

2.4.2 Fauna assessment

The fauna assessment has been undertaken in stages:

- The preliminary fauna assessment and mapping of fauna habitat was undertaken over five days: 12-16 March 2012.
- Fauna survey and habitat assessment of the small extension to the study area ("Western Extension") near Woorndoo-Dundonnell Road: 15-17 October 2012.
- Fauna survey and habitat assessment of the western extension: 29-30 January 2013.
- Fauna survey and habitat assessment and mapping of roadsides: 3-4 June 2013.
- Fauna survey of external transmission line corridor: 11-13 June 2013.
- Fauna species were also recorded opportunistically during all flora survey periods listed in Section 2.4.1.
- Habitat assessment of the South Road reserve: 4 March 2021.
- Habitat assessment of five intersections (Portland, Hamilton and Lake Bolac) along the new transport route: 25 May 2021.

- Habitat assessment of road crossing and entry points on 4 February 2022.

The fauna values were determined primarily on the basis of the types and qualities of habitat(s) present. All species of fauna observed during the assessment were noted and active searching for fauna was undertaken. This included direct observation, searching under rocks and logs, examination of tracks and scats and identifying calls. Particular attention was given to searching for significant species and their habitats. Fauna species were recorded with a view to characterising the values of the site and the investigation was not intended to provide a comprehensive survey of all fauna that has potential to utilise the site over time.

Fauna records are submitted to DELWP for incorporation into the Victorian Biodiversity Atlas.

2.4.3 Permits

Biosis undertakes flora and fauna assessments under the following permits and approvals:

- Research Permit/Management Authorisation and Permit to Take Protected Flora & Protected Fish issued by DELWP under the *Wildlife Act 1975, Flora and Fauna Guarantee Act 1988* and *National Parks Act 1975* (Permit number 10007569).
- Approvals 07.15 and 14.12 from the Wildlife and Small Institutions Animal Ethics Committee.
- Permit RP1220 issued by DELWP (Fisheries Victoria) under the *Fisheries Act 1995.*

2.5 Qualifications

Ecological surveys provide a sampling of flora and fauna at a given time and season. There are a number of reasons why not all species will be detected at a site during survey, such as low abundance, patchy distribution, species dormancy, seasonal conditions, and migration and breeding behaviours. In many cases these factors do not present a significant limitation to assessing the overall biodiversity values of a site.

The ecological assessments documented in this report were conducted over multiple seasons (autumn, spring and summer) and over many years, in order to gain a good understanding of the vegetation present and fauna species that use the site.

At the time of early assessments, many areas of roadside reserve vegetation had been burnt as part of DELWP's controlled burning regime. These areas were re-assessed in January 2017 and additional surveys to confirm currency of mapping were undertaken in March 2019. The road reserve of South Road was assessed in February 2021, March 2021 and July 2021.

Access was restricted in a small area of transmission line at the most southern extent however this area was visible from the boundary fence of adjoining land. An over the fence assessment was adequate as the area supported only Blue Gum plantation and degraded treeless vegetation (cleared plantation).

2.6 Legislation and policy

The implications for the project were assessed in relation to the Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017). Other key biodiversity legislation and policy relevant to the project is covered in detail in the Targeted Surveys and Impact Assessment Report (Biosis 2021a).

2.7 Mapping

Hydro Tasmania supplied aerial photography, the study area boundary and the project development plan.

Mapping was conducted using hand-held (uncorrected) GPS units, hand-held GPS-enabled tablets and aerial photo interpretation. The accuracy of this mapping is therefore subject to the accuracy of the GPS units (generally ± 7 metres) and dependent on the limitations of aerial photo rectification and registration.

Mapping has been produced using a Geographic Information System (GIS). Electronic GIS files which contain our flora and fauna spatial data are available to incorporate into design concept plans.

3. Results

The ecological features of the study area are described below and mapped in Figure 2.

Species recorded during the flora and fauna assessments of the study area are listed in Appendix 1 (flora) and Appendix 2 (fauna). The results of the targeted surveys (Biosis 2021a) have also been included in those appendices.

Species recorded or predicted to occur in the broader local area are also listed in those appendices, along with an assessment of the likelihood of them occurring within the study area.

3.1 Vegetation & fauna habitat

The vegetation and fauna habitat throughout the majority of the study area have been highly modified by past disturbances which have included clearing, agricultural development, and pasture improvement. Most of the study area has been significantly modified and supports predominantly introduced vegetation that is of limited value for native fauna. However, some roadsides in and around the study area have potential to support significant fauna habitat and will be avoided where practicable.

The study area supports the presence of ten EVCs in addition to scattered trees (all River Red-gums *Eucalyptus camaldulensis* and occasional Drooping She-oak *Allocasuarina verticillata*) and an additional eight fauna habitat types. All EVCs present are classified as Endangered within the Victorian Volcanic Bioregion, with the exception of Plains Sedgy Wetland which is Vulnerable. These features are described further in Table 2 and mapped in Figure 2.

Photos are provided in Appendix 3.

Table 2 Summary of vegetation and habitat types within the study area

Vegetation or habitat type	Description	Location	Significant values
***Heavier-soils* Plains Grassland EVC 132_6**	The ground layer of *Heavier-soils* Plains Grassland within the study area consists of a mixture of native and introduced grasses and herbs. Common native ground species present include Wallaby-grasses *Rytidosperma* spp., Kangaroo Grass *Themeda triandra*, Small Vanilla-lily *Arthropodium minus* and Pink Bindweed *Convolvulus erubescens* spp. *agg*. (Plate1). The cover of introduced species varies between patches of this EVC. Native grasslands provide habitat for a range of fauna, particularly ground foraging and nesting birds such as Stubble Quail *Coturnix pectoralis*, Brown Songlark *Cincloramphus cruralis* and Australasian Pipit *Anthus novaeseelandiae*. Common, open country birds will also forage within and over grasslands, including Australian Magpie *Cracticus tibicen*, ravens *Corvus* spp. and a range of raptors including Brown Falcon *Falco berigora*, Nankeen Kestrel *Falco cenchroides* and Black-shouldered Kite *Elanus axillaris*.	This community has been mapped along Castle Carey Rd, South Road and on some stony rises within the study area. However, it is most commonly present along roadsides surrounding the study area which include the high quality grassland patches along Woorndoo-Dundonnell Road.	Some patches of Heavier-soils Plains Grassland EVC also meet the definition of the EPBC Act listed ecological community (Natural Temperate Grasslands of the Victorian Volcanic Plain – NTGVVP). These areas provide suitable habitat for seven species of national significance (Matted Flax-lily *Dianella amoena*, Small Golden Moths *Diuris basaltica*, Clover Glycine *Glycine latrobeana*, Spiny Rice Flower *Pimelea spinescens* subsp. *spinescens*, White Sunray *Leucochrysum albicans* var. *tricolor*, Fragrant Leek-orchid *Prasophyllum suaveolens* and Basalt Rustyhood *Pterostylis basaltica*) and 10 species of state significance (Wimmera Woodruff *Asperula wimmerana*, Arching Flax-lily *Dianella* sp. aff. *longifolia* (Benambra), Small Milkwort *Comesperma polygaloides*, Golden Cowslips *Diuris chryseopsis*, Clumping Golden Moths *Diuris gregaria*, Pale-flower Crane's-bill *Geranium* sp. 3, Leprechaun Greenhood *Pterostylis conferta*, Dense Greenhood *Pterostylis agrestis*, Derrinallum Billy-buttons *Craspedia* sp. 2 and Basalt Sun-orchid *Thelymitra gregaria*). Plains Grassland provides habitat for Tussock Skink *Pseudemoia pagenstecheri* and potentially for the EPBC Act listed Striped Legless Lizard *Delma impar*. Some grassland areas also have potential to support populations of the EPBC Act listed Golden Sun Moth *Synemon plana*. Areas with extensive surface rock may provide habitat for Fat-tailed Dunnart *Sminthopsis crassicaudata*.
Plains Grassy Wetland EVC 125	Plains Grassy Wetland within the study area occurs in low-lying areas and its presence is characterised by either a high cover of Common Tussock-grass *Poa labillardierei* and little else or alternatively a mixture of species including Australian Sweet-grass *Glyceria australis*, Slender Knotweed *Persicaria decipiens*, Buttercup	The majority of patches of Plains Grassy Wetland present within the study area are north of Woorndoo-Darlington Road.	Plains Grassy Wetland EVC potentially includes the presence of one nationally and one state listed ecological community. This EVC also provides suitable habitat for four nationally significant species (River Swamp Wallaby-grass *Amphibromus fluitans*, Adamson's Blown-grass *Lachnagrostis adamsonii*, Spiny Peppercress *Lepidium aschersonii* and Swamp Fireweed *Senecio psilocarpus*) and ten state significant species (Wavy Swamp Wallaby-grass *Amphibromus sinuatus*,

Vegetation or habitat type	Description	Location	Significant values
	Ranunculus spp. and Grey Willow-herb *Epilobium billardierianum* subsp. *cinereum* (Plate 2). All areas of Plains Grassy Wetland have a long history of grazing and, as a consequence, lack the native species diversity that would have once been present, especially in patches dominated by Common Tussock-grass. Introduced plants are common, especially on the margins of the wetlands, and include Common Water-starwort *Callitriche stagnalis*, Sweet Vernal-grass *Anthoxanthum odoratum*, Fox-tail *Alopecurus* spp., Water Buttons *Cotula coronopifolia* and White Clover *Trifolium repens* var. *repens*.		Pale Swamp Everlasting (recorded) C*oronidium scorpioides* 'rutidolepis' variant, Derrinallum Billy-buttons, two subspecies of Purple Blown-grass *Lachnagrostis punicea* subsp. *punicea* and subsp. *filifolia*, Plains Yam-daisy *Microseris scapigera*, Yawning Leek-orchid *Prasophyllum chasmogamum* and Brackish Plains Buttercup *Ranunculus diminutus*.
Stony Knoll Shrubland EVC 649	Stony Knoll Shrubland within the study area is generally dominated by grasses and other ground-storey flora species with scattered occurrences of Tree Violet *Melicytus dentatus* and Sweet Bursaria *Bursaria spinosa* to 2 m in height (Plate 3). Other indigenous plants present include Austral Bracken *Pteridium esculentum*, Wallaby-grass *Rytidosperma* spp., Weeping Grass *Microlaena stipoides* var. *stipoides*, Small Vanilla-lily *Arthropodium minus,* Kidney-weed *Dichondra repens,* Australian Sheep's Burr *Acaena ovina* and Crassula *Crassula* spp. Introduced plants are common within this EVC and include Onion Grass *Romulea rosea,*	Stony Knoll Shrubland occurs in isolated patches of low quality throughout the study area, particularly north and immediately south of Woorndoo-Chatsworth Road.	Many patches of Stony Knoll Shrubland include a sufficient cover of perennial native grasses and low cover of woody vegetation to meet the definition of the EPBC Act listed community Natural Temperate Grasslands of the Victorian Volcanic Plain (DSEWPaC 2011). This EVC provides suitable habitat for five nationally listed species (Small Golden Moths, Clover Glycine, White Sunray, Fragrant Leek-orchid, Basalt Rustyhood) and seven state listed species (Wimmera Woodruff, Derrinallum Billy-buttons, Clumping Golden Moths, Pale-flower Crane's-bill, Leprechaun Greenhood, Dense Greenhood and Basalt Sun-orchid). Stony rises provides potential habitat for Fat-tailed Dunnart and a range of common reptile species. Surface rock close to water also provide habitat for a range of common frog species and the EPBC Act listed Corangamite Water Skink *Eulamprus tympanum marieae*.

Vegetation or habitat type	Description	Location	Significant values
	Capeweed *Arctotheca calendula,* Sheep Sorrel *Acetosella vulgaris* and Sweet Vernal-grass.		
Plains Grassy Woodland EVC 55_61	Plains Grassy Woodland EVC within the study area supports an overstorey of River Red-gum with an understorey dominated by the introduced Toowoomba Canary-grass *Phalaris aquatica* (Plate 4). Small woodland remnants within a largely cleared landscape provide important nesting habitat for common woodland birds, and potentially roosting and foraging habitat for microbats.	This EVC is present in one patch adjoining Castle Carey Road, along the proposed transmission line route and along some roadsides.	The Plains Grassy Woodland EVC corresponds with the FFG Act listed community Western Basalt Plains (River Red Gum) Grassy Woodland and the EPBC Act listed community Grassy Eucalypt Woodland of the Victorian Volcanic Plain (DSEWPaC 2011).
Aquatic Herbland EVC 653	These areas are dominated by grass and herb species such as Australian Sweet-grass, Common Swamp Wallaby-grass *Amphibromus nervosus*, Water Milfoil *Myriophyllum* spp. and Buttercup *Ranunculus* spp. The cover of introduced species is low except on the drier margins of the herbland, where they dominate the ground layer. They include Clustered Dock *Rumex conglomeratus*, Onion Grass and Sweet Vernal-grass (Plate 5).	Patches of Aquatic Herbland EVC are scattered throughout the study area.	Aquatic Herbland EVC potentially includes the presence of a nationally significant ecological community – Seasonal Herbaceous Wetlands of the Temperate Lowland Plains (DSEWPaC 2012). It provides suitable habitat for three flora species of national significance (Adamson's Blown-grass, Swamp Everlasting, River Swamp Wallaby-grass) and six of state significance (Brackish Plains Buttercup, Spreading Panic-grass, two subspecies of Purple Blown-grass, Pale Swamp Everlasting, Wavy Swamp Wallaby-grass).
Tall Marsh EVC 821	Tall Marsh EVC is characterised by the high cover of Common Reed *Phragmites australis* and/or Narrow-leaf Cumbungi *Typha domingensis*. Introduced species, such as Toowoomba Canary-grass, are uncommon except on the margins of the marsh.	This EVC is typically present in and along creeklines and, within the study area, is common within Salt Creek.	Tall Marsh EVC does not include any significant ecological communities.

Vegetation or habitat type	Description	Location	Significant values
Brackish Wetland EVC 656	Brackish Wetland EVC is dominated by sedges and herbs including Clammy Goosefoot *Dysphania pumilio*, Sharp Club-sedge *Schoenoplectus pungens*, Flat Sedge *Cyperus* spp. and Club-sedge *Isolepis* sp. The cover of introduced species varies but is predominantly low. There is little organic matter present but there are relatively large areas of rock or bare ground.	This EVC is present on the shoreline of saline lakes within the northern portion of the study area.	Provides suitable habitat for three flora species of national significance (Adamson's Blown-grass, Spiny Peppercress, Salt-lake Tussock-grass *Poa sallacustris*) and an additional four species of state significance (Curly Sedge, Creeping Rush *Juncus revolutus* and two subspecies of Purple Blown-grass).
Scoria Cone Woodland EVC 894	This area is lacking an indigenous overstorey however there are some scattered planted shrubs and trees. The ground-layer is dominated by Wallaby-grasses and Austral Bracken. The cover of introduced species is high.	There is one occurrence of Scoria Cone Woodland on Mondilibi Hill in the western extension of the proposed wind farm.	No significant ecological communities are present within this EVC.
Escarpment Shrubland EVC 895	Escarpment Shrubland EVC within the study area supports indigenous shrubs including Sweet Bursaria and Tree Violet as well as other flora species including Austral Bracken, Wallaby Grass, Spear Grass *Austrostipa* spp. and Weeping Grass. Common opportunistic forbs such as Kidney-weed and Pink Bindweed were also recorded. Introduced species are abundant and there is a relatively high cover of bryophytes and lichens on the embedded and loose surface rock. Stony rises within this EVC provide habitat for a similar assemblage of species to native grasslands, however the added structural	This EVC is present along the Salt Creek rocky escarpment.	No significant ecological communities are present within this EVC. Provides potential habitat for Fat-tailed Dunnart and surface rock close to water also provides habitat for the EPBC Act listed Corangamite Water Skink.

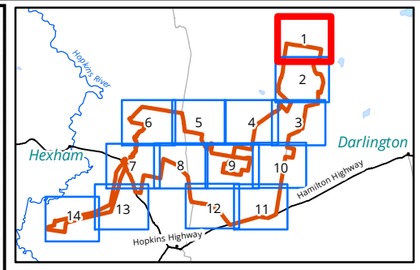
Vegetation or habitat type	Description	Location	Significant values
	complexity of the habitat also provides habitat for shrub dependent species, such as Striated Fieldwren *Calamanthus fuliginosus,* and species requiring surface rock including Fat-tailed Dunnart and a range of common reptile species. Surface rock close to water also provide habitat for a range of common frog species.		
Plains Sedgy Wetland EVC 647	Plains Sedgy Wetland EVC within the study area is highly degraded and supports one or few indigenous species including *Juncus subsecundus* and Gold Rush *Juncus flavidus*. Introduced plants are abundant and include Toowoomba Canary-grass, Onion Grass and Capeweed.	This EVC occurs throughout the study area but patches are predominantly of low quality and are potentially referrable to Degraded/Modified Treeless Vegetation.	Plains Sedgy Wetland is vulnerable within the Victorian Volcanic Plain Bioregion. Some occurrences of Plains Sedgy Wetland may match the definition of the nationally significant ecological community – Seasonal Herbaceous Wetlands of the Temperate Lowland Plains (DSEWPaC 2012).
Scattered remnant trees	Scattered remnant trees within the study area include only River Red-gums (Plate 6) and provide habitat for a range of common woodland birds, including Yellow-rumped Thornbill *Acanthiza chrysorrhoa*, Grey Shrike-thrush *Colluricincla harmonica*, White-plumed Honeyeater *Lichenostomus penicillatus*, Restless Flycatcher *Myiagra inquieta*, Striated Pardalote *Pardalotus striatus*, Tree Martin *Petrochelidon nigricans*, Eastern Rosella *Platycercus eximius* and Red-rumped Parrot *Psephotus haematonotus*. Scattered trees and small woodland remnants within a largely cleared landscape provide important nesting habitat for common	Present on roadsides and within private land, particularly along the proposed transmission line route.	Flowering River Red-gums may provide foraging habitat for Grey-headed Flying-fox *Pteropus poliocephalus.*

Vegetation or habitat type	Description	Location	Significant values
	woodland birds, and potentially roosting and foraging habitat for microbats.		
Planted vegetation	Cypress *Cupressus* spp., Sugar Gum *Eucalyptus cladocalyx* and Pines *Pinus* spp. occurs within the wind farm study area as wind breaks and amenity plantings around old house sites.	Present throughout study area.	Sugar Gum plantations may provide foraging habitat for Grey-headed Flying-fox during late summer and autumn.
Exotic Grassland	Remaining areas which do not meet the definition of a 'patch' of native vegetation are classified as exotic grassland. These areas consist of predominantly introduced vegetation, typically dominated by pasture grasses, with occasional planted introduced trees. Introduced species commonly present include Yorkshire Fog *Holcus lanatus*, Flatweed *Hypochaeris radicata*, Onion-grass, Rye Grasses *Lolium* spp. and Sheep Sorrel *Acetosella vulgaris*. Few opportunistic indigenous flora species are present such as wallaby grasses, Small Loosestrife *Lythrum hyssopifolia* and Common Blown-grass *Lachnagrostis filiformis*. Exotic grasslands support a range of open country generalist fauna species, similar to those potentially inhabiting native grasslands.	Widespread throughout the study area within disturbed roadsides and farmland areas with a long history of grazing and/or cropping.	Exotic grasslands are less likely to provide habitat for the Striped Legless Lizard or Golden Sun Moth. Areas of exotic grassland located near native grasslands may provide habitat for Striped Legless Lizards, particularly on roadsides with a mosaic of native/exotic vegetation.

Vegetation or habitat type	Description	Location	Significant values
Waterbodies and waterways	A number of waterbodies and waterways exist within the study area including ephemeral creeks and drainage lines and associated low lying areas that are subject to flooding. Other waterbodies within the study area include Lake Myrngong and farm dams. Many waterways/waterbodies within the northern portion of the study area were dry at the time of assessment.	Present throughout study area.	Ephemeral habitats and floodplains may provide permanent habitat for crayfish *Engaeus sericatus* and when inundated can provide important breeding and foraging habitat for fish, including Little Galaxias *Galaxiella toourtkoourt* (listed under the EPBC Act listed as Dwarf Galaxias *Galaxiella pusilla*), which may reside in permanent pools within or downstream of the study area.
Salt Creek and Blind Creek	The verge and bank vegetation of Salt Creek is dominated by Common Reed with Tassel *Ruppia* spp. contributing to the instream submerged vegetation. Blind Creek and its tributaries are ephemeral waterways that were predominantly dry at the time of survey, with some isolated pools remaining.	Salt Creek adjoins the western perimeter of the study area and varies in form beginning with deeper spring fed pools in the northern extent shifting to an ephemeral stream for 3 km and returning to a series of disconnected pools before flowing under the Hamilton Highway. Blind Creek and its tributaries flow from the northern extent of the study area to the Hamilton Highway to the south.	These creeks also provide a diverse range of habitats for wetland dependent birds and frogs, including reed beds, flooded grass, shallow well-vegetated water and open pools. Seasonally inundated floodplains adjacent to Blind Creek presented favourable habitat for Hairy Burrowing Crayfish *Engaeus sericatus* with numerous burrows observed and one individual successfully collected. The highest abundance of Crayfish burrows occurred adjacent to Blind Creek west of Mortlake-Ararat Road.

Vegetation or habitat type	Description	Location	Significant values
Lakes and wetlands	Lakes and wetlands are represented in the study area by several EVCs including Plains Grassy Wetland EVC 125, Aquatic Herbland EVC 653, Brackish Wetland EVC 565, Plains Sedgy Wetland EVC 647 and Tall Marsh EVC 821. The lake systems in the north of the study area are almost permanently isolated, terminal waterbodies and are highly saline. During periods of high rainfall lakes and wetlands will be connected to Blind and Salt Creeks.	Numerous small unnamed wetlands occur throughout the study area. Larger wetlands include the salt lakes in the northern section of the study area (labelled as Wetlands 1-5 on Figure 2), Lake Sheepwash and Wetlands 6-9 in the western section of the study area.	Plains Grassy Wetlands and Plains Sedgy Wetlands provide foraging and nesting habitat for a range of fauna species when inundated, including Eastern Great Egret *Ardea modesta*, White-necked Heron *Ardea pacifica*, Cattle Egret *Bubulcus ibis*, Black Swan *Cygnus atratus*, White-faced Heron *Egretta novaehollandiae*, Brolga *Antigonerubicunda*, Yellow-billed Spoonbill *Platalea flavipes*, Royal Spoonbill *Platalea regia*, Australian White Ibis *Threskiornis molucca* and Straw-necked Ibis *Threskiornis spinicollis.* Flooded grass around wetland margins also provides habitat for Latham's Snipe *Gallinago hardwickii*, which is protected as a migratory species under the EPBC Act. Areas of open water within these larger lakes provide habitat for a diverse range of ducks, grebes, cormorants and other waterfowl. The bare, muddy shorelines of the saline lakes are utilised by a range of wader species, including Common Sandpiper *Actitis hypoleucos*, Sharp-tailed Sandpiper *Calidris acuminata*, Red-capped Plover *Charadrius ruficapillus,* Red-kneed Dotterel *Erythrogonys cinctus*, Black-winged Stilt *Himantopus himantopus* and Masked Lapwing *Vanellus miles*. Wetlands are also likely to provide important foraging habitat for Whiskered Tern *Chlidonias hybrid*, Gull-billed Tern *Sterna nilotica macrotarsa* and Swamp Harrier *Circus approximans*.
Rock walls	Historically extensive lengths of dry stone walls have been constructed throughout the study area from surrounding surface rocks.	Present throughout the study area, particularly in the northern section.	These walls potentially provide shelter sites for reptiles and frogs, and perching sites for birds in an otherwise low-relief landscape. Where the walls are located close to permanent water in the northern section of the study area, they potentially provide shelter habitat for Corangamite Water Skink.

Vegetation or habitat type	Description	Location	Significant values
Aerial habitats	Airspace throughout the study area, including areas above all land cover types including farmland, remnant vegetation and wetlands.	Entire study area.	Airspace throughout the study area provides habitat for a range of highly mobile species, including aerial dependent species such as White-throated Needletail *Hirundapus caudacutus* and a range of other bird and bat species that use the airspace for dispersal, aerial foraging or movement between habitats.



Legend

Study Area

Flora

- Basalt Rustyhood record
- Spiny Rice Flower record

EPBC Act Listed

Ecological Communities

- Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 649 Stony Knoll Shrubland
- 653 Aquatic Herbland
- 656 Brackish Wetland
- 821 Tall Marsh

Fauna

- Corangamite Water Skink record

Threatened Fauna Habitat

- Corangamite Water Skink

Victorian Wetland Inventory (Current)

- Freshwater meadow
- Shallow freshwater marsh
- Deep freshwater marsh
- Permanent saline
- No Category
- Watercourse
- Channel or drain

Woorndoo - Dundonnell Road

Wetland 1

Wetland 2

Figure 2.1 Ecological features of the study area

0 140 280 420 560 700

Metres
Scale: 1:15,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

biosis

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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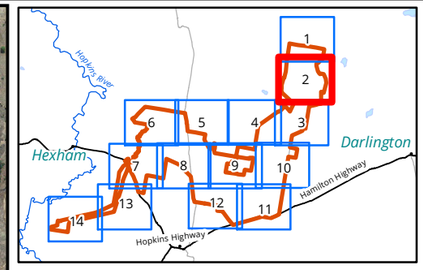
Wetland 2

Wetland 3

Wetland 5

Mt Fyans Lane



Legend

Study Area

Flora

Basalt Rustyhood record

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

649 Stony Knoll Shrubland

653 Aquatic Herbland

656 Brackish Wetland

Fauna

Corangamite Water Skink record

Threatened Fauna Habitat

Corangamite Water Skink

Victorian Wetland Inventory (Current)

Freshwater meadow

Shallow freshwater marsh

Deep freshwater marsh

Semi-permanent saline

Permanent saline

No Category

Watercourse

Channel or drain

Acknowledgements: Vicmap ©State of Victoria, Imagery - Hydro Tasmania, 2012

Figure 2.2 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

biosis

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Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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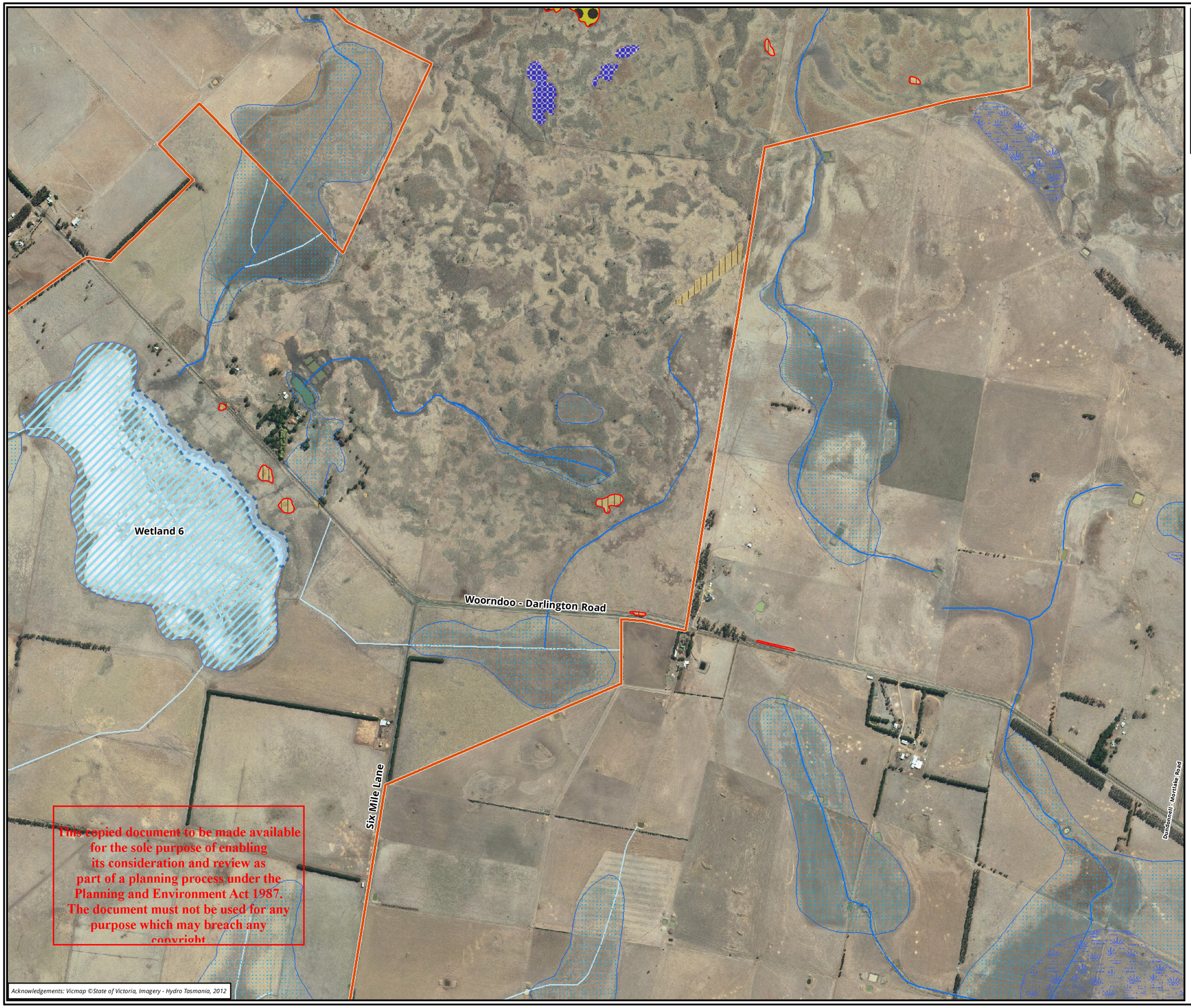

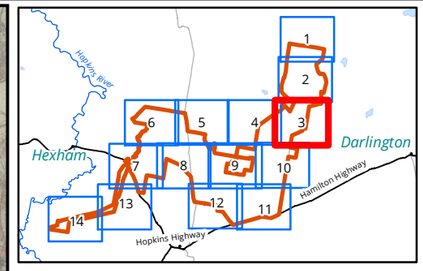

Legend

Study Area

Flora

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

649 Stony Knoll Shrubland

Salt Lake

Fauna

Victorian Wetland Inventory (Current)

Freshwater meadow

Semi-permanent saline

No Category

Watercourse

Channel or drain

Figure 2.3 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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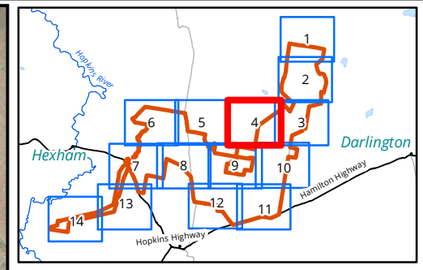

Legend

Study Area

Flora

Ecological Vegetation Class

Salt Lake

ADVERTISED PLAN

Fauna

Victorian Wetland Inventory (Current)

Permanent open freshwater

Semi-permanent saline

No Category

Watercourse

Channel or drain

Figure 2.4 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

N

Matter: 35163,
Date: 11 November 2022,
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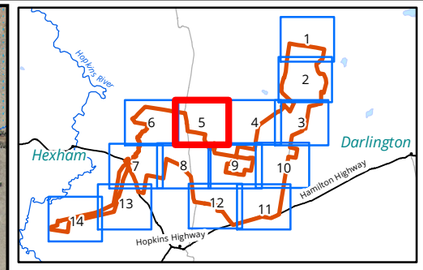

Legend

Study Area

Flora

Fauna

Victorian Wetland Inventory (Current)

- Freshwater meadow
- Permanent open freshwater
- Semi-permanent saline
- No Category
- Watercourse
- Channel or drain

Figure 2.5 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

N

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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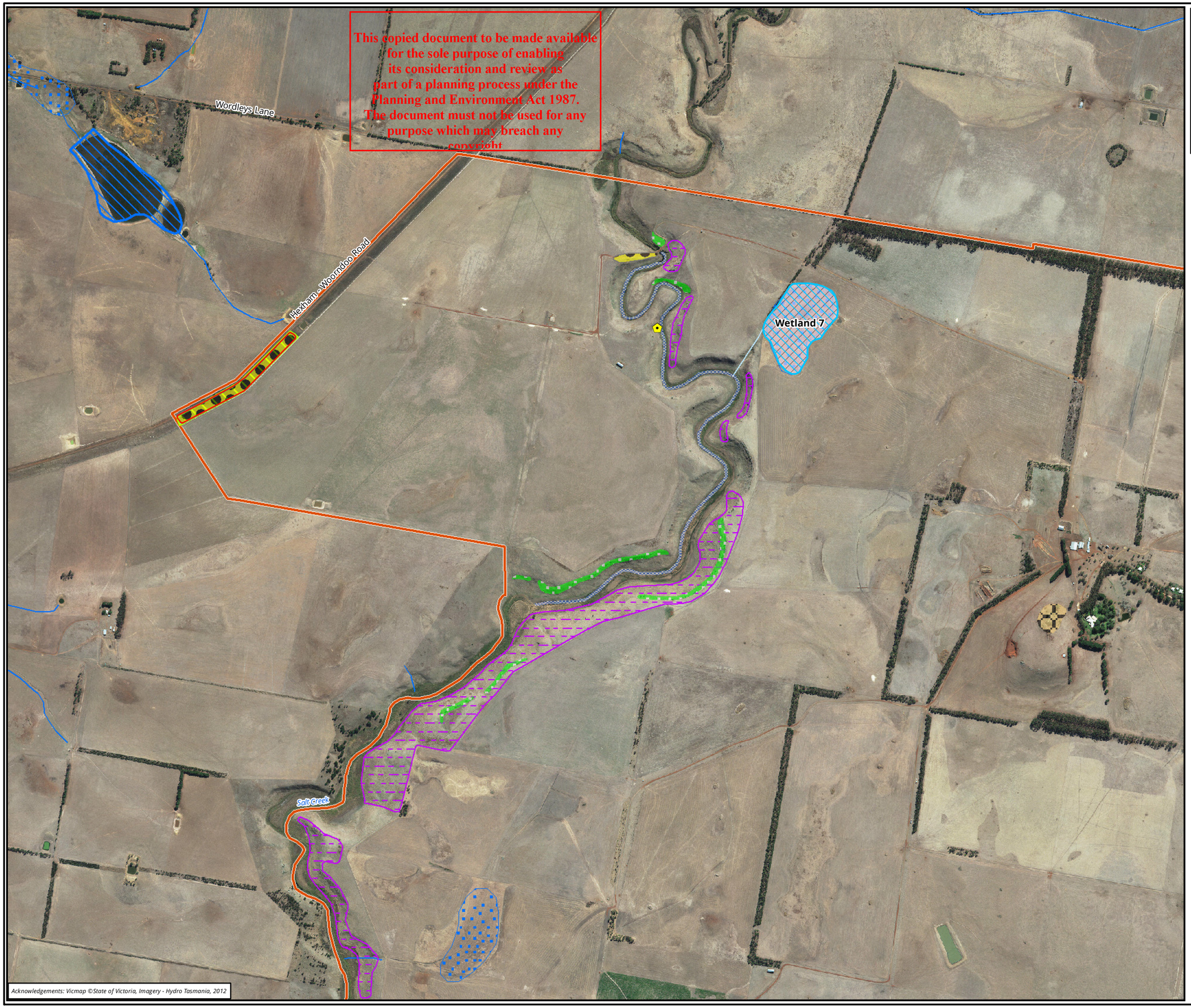

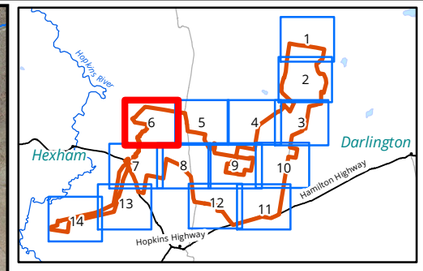

Legend

Study Area

Flora

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains

Ecological Vegetation Class

132_61 Heavier-soils Plains Grassland

653 Aquatic Herbland

821 Tall Marsh

894 Scoria Cone Woodland

895 Escarpment Shrubland

Fauna

Dwarf Galaxias record

Threatened Fauna Habitat

Corangamite Water Skink

Striped Legless Lizard

Victorian Wetland Inventory (Current)

Shallow freshwater marsh

Permanent open freshwater

Watercourse

Channel or drain

Figure 2.6 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

biosis

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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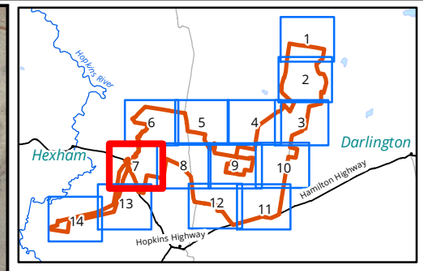

Legend

Study Area

Flora

Spiny Rice Flower record

Scattered trees

River Red Gum

EPBC Act Listed Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

Farm Dam (Artificial Wetland)

Fauna

Striped Legless Lizard record

Dwarf Galaxias record

Threatened Fauna Habitat

Corangamite Water Skink

Striped Legless Lizard

Victorian Wetland Inventory (Current)

Freshwater meadow

Shallow freshwater marsh

Permanent open freshwater

No Category

Watercourse

Channel or drain

Figure 2.7 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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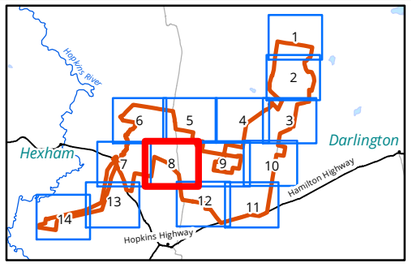

Legend

Study Area

Flora

Scattered trees

River Red Gum

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

Fauna

Hairy Burrowing Crayfish record

Threatened Fauna Habitat

Hairy Burrowing Crayfish

Striped Legless Lizard

Victorian Wetland Inventory (Current)

Freshwater meadow

Permanent open freshwater

Semi-permanent saline

No Category

Watercourse

Channel or drain

Figure 2.8 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

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Date: 11 November 2022,
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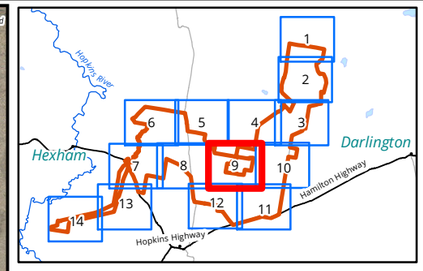

Legend

Study Area

Flora

Scattered trees

River Red Gum

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

132_61 Heavier-soils Plains Grassland

Fauna

Striped Legless Lizard record

Threatened Fauna Habitat

Striped Legless Lizard

Victorian Wetland Inventory (Current)

Semi-permanent saline

No Category

Watercourse

Channel or drain

Figure 2.9 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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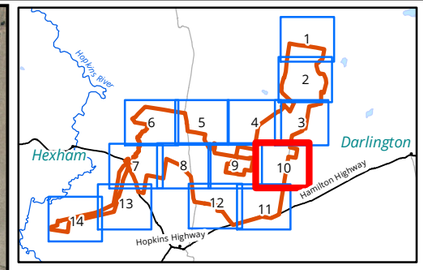
South Road

North Road

Six Mile Lane

Prices Lane



Legend

Study Area

Flora

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

Fauna

Victorian Wetland Inventory (Current)

Freshwater meadow

No Category

Watercourse

Channel or drain

Acknowledgements: Vicmap ©State of Victoria, Imagery - Hydro Tasmania, 2012

Figure 2.10 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

biosis

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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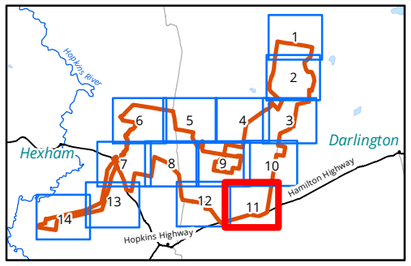

Legend

Study Area

Flora

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

Fauna

Victorian Wetland Inventory (Current)

Permanent open freshwater

No Category

Watercourse

Channel or drain

Figure 2.11 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

N

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
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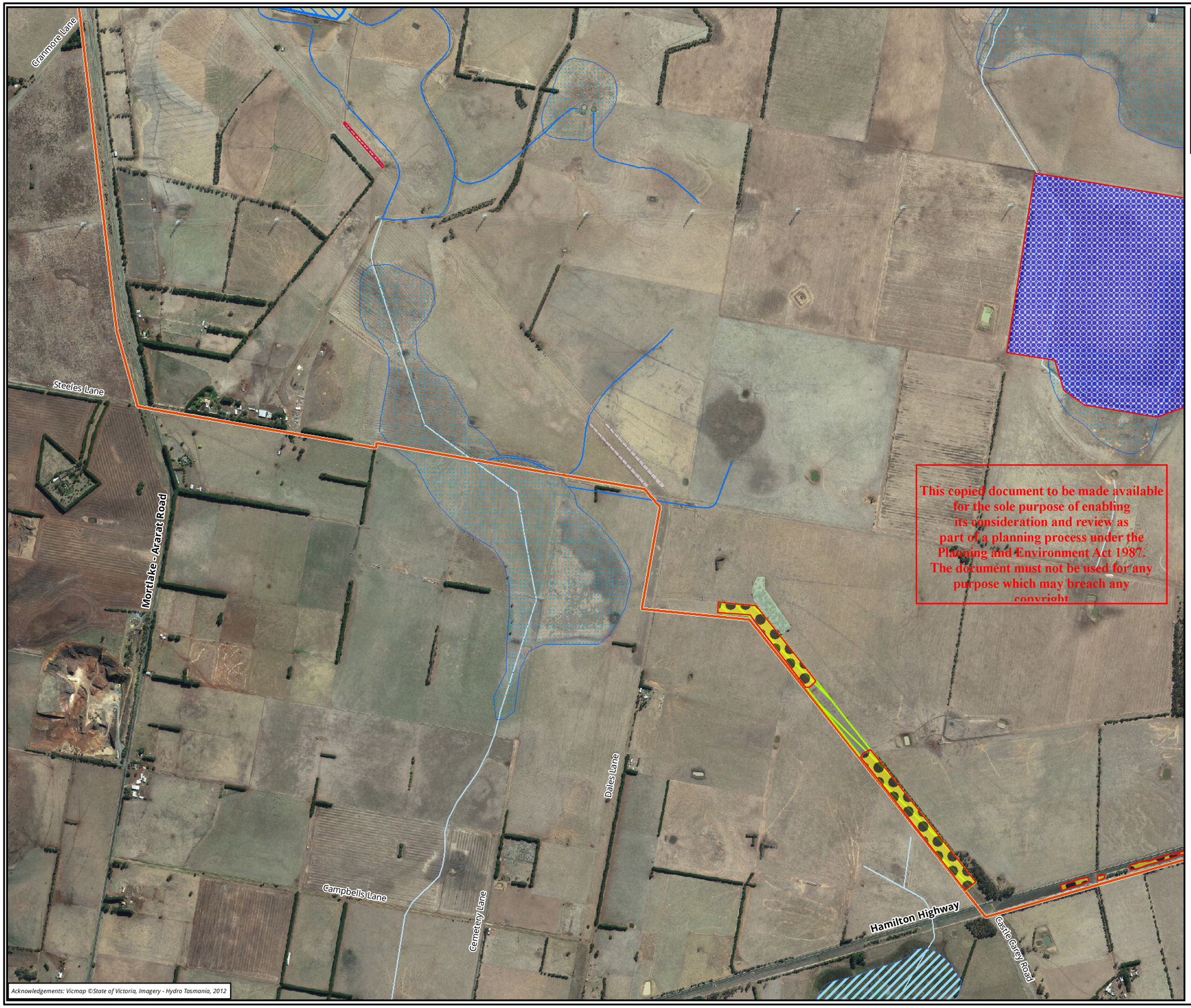

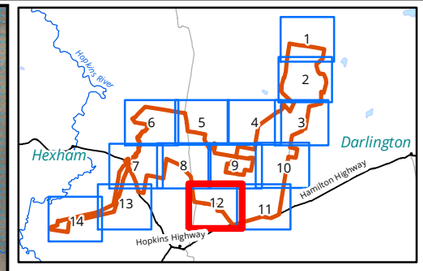

Legend

Study Area

Flora

EPBC Act Listed

Ecological Communities

Natural Temperate Grassland of the Victorian Volcanic Plain

Ecological Vegetation Class

125 Plains Grassy Wetland

132_61 Heavier-soils Plains Grassland

55_61 Plains Grassy Woodland

653 Aquatic Herbland

Fauna

Threatened Fauna Habitat

Striped Legless Lizard

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Victorian Wetland Inventory (Current)

Permanent open freshwater

Semi-permanent saline

No Category

Watercourse

Channel or drain

Figure 2.12 Ecological features of the study area

0 140 280 420 560 700

Metres

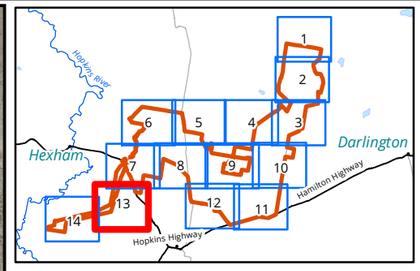
Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

N

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\35163_21630_F2_EcoFeatures.mxd



Legend

Study Area

Flora

Scattered trees

River Red Gum

Ecological Vegetation Class

55_61 Plains Grassy Woodland

Farm Dam (Artificial Wetland)

Fauna

Threatened Fauna Habitat

Toadlet

Victorian Wetland Inventory (Current)

Freshwater meadow

No Category

Watercourse

Channel or drain

Figure 2.13 Ecological features of the study area

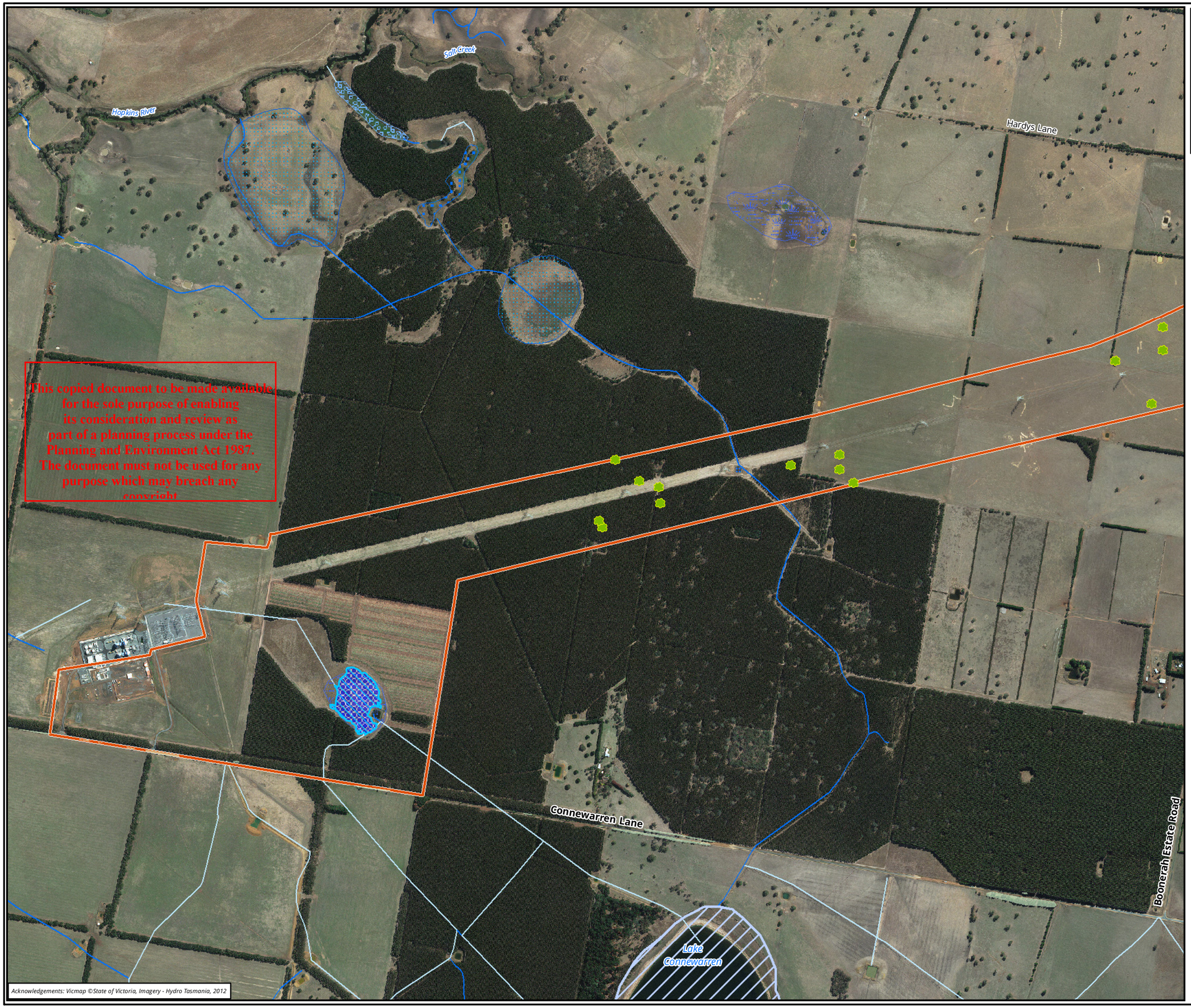
0 140 280 420 560 700

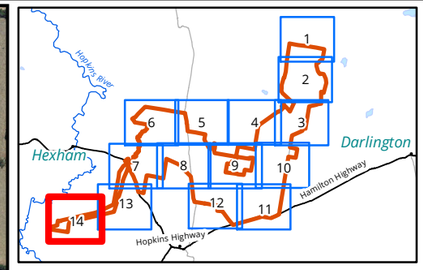
Metres
Scale: 1:15,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MWKS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\35163_21630_F2_EcoFeatures.mxd

Acknowledgements: Vicmap ©State of Victoria, Imagery - Hydro Tasmania, 2012





Legend

Study Area

Flora

Scattered trees

River Red Gum

EPBC Act Listed

Ecological Communities

Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains

Ecological Vegetation Class

125 Plains Grassy Wetland

55_61 Plains Grassy Woodland

Farm Dam (Artificial Wetland)

Fauna

Victorian Wetland Inventory (Current)

Freshwater meadow

Shallow freshwater marsh

Deep freshwater marsh

Permanent saline

No Category

Watercourse

Channel or drain

Figure 2.14 Ecological features of the study area

0 140 280 420 560 700

Metres

Scale: 1:15,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

biosis

Matter: 35163,
Date: 11 November 2022,
Checked by: MSG/MV/KS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\35163_21630_F2_EcoFeatures.mxd

3.2 Significant species and ecological communities

3.2.1 EPBC Act and FFG Act listed species

Lists of EPBC Act and FFG Act listed species recorded or predicted to occur within 10 kilometres of the study area or from the relevant catchment (aquatic species) are provided in Appendix 1 (flora) and Appendix 2 (fauna). Locations of database records are provided in Figure 3 (flora) and Figure 4 (fauna). An assessment of the likelihood of these species occurring in the study area and an indication of where within the site (i.e. which habitats or features of relevance to the species) is included. A summary of the species recorded or with a medium or higher likelihood of occurring in the study area is provided in Table 3.

Database records for significant species have been interrogated several times during the planning and assessment phase of this project. Information presented in this report has been updated based on a database search conducted on 30 April 2021.

Table 3 Summary of EPBC Act and FFG Act listed species most likely to occur in the study area.

Species name	Listing status	Area of value within the study area
Flora species		
Spiny Rice-flower ***Pimelea spinescens* subsp. *spinescens***	Critically Endangered under EPBC Act Critically endangered under FFG Act	Recorded within road reserves supporting Plains Grassland EVC (Figure 2).
River Swamp Wallaby-grass ***Amphibromus fluitans***	Vulnerable under EPBC Act	Potentially present in aquatic herbland.
Matted Flax-lily ***Dianella amoena***	Endangered under EPBC Act Critically endangered under FFG Act	Plains Grassland on roadsides.
Small Golden Moths ***Diuris basaltica***	Endangered under EPBC Act Critically endangered under FFG Act	Stony Knoll Shrubland and Plains Grassland.
Clover Glycine ***Glycine lotrobeana***	Vulnerable under EPBC Act Vulnerable under FFG Act	Plains Grassland and Stony Knoll Shrubland.
Adamson's Blown-grass ***Lachnagrostis adamsonii***	Endangered under EPBC Act Endangered under FFG Act	Brackish Wetland, Plains Grassy Wetland and Aquatic Herbland.
Spiny Peppercress ***Lepidium aschersonii***	Vulnerable under EPBC Act Vulnerable under FFG Act	Brackish Wetland, Plains Grassy Wetland and Aquatic Herbland.
White Sunray ***Leucochrysum albicans* subsp. *tricolor***	Endangered under EPBC Act Endangered under FFG Act	Plains Grassland and Stony Knoll Shrubland.
Salt-lake Tussock-grass ***Poa sallacustris***	Vulnerable under EPBC Act Critically endangered under FFG Act	Brackish Wetland.

Species name	Listing status	Area of value within the study area
Fragrant Leek-orchid ***Prasophyllum suaveolens***	Endangered under EPBC Act Critically endangered under FFG Act	Plains Grassland and Stony Knoll Shrubland.
Basalt Rustyhood ***Pterostylis basaltica***	Endangered under EPBC Act Critically endangered under FFG Act	Stony Knoll Shrubland. Known to occur within the study area in a road reserve.
Swamp Fireweed ***Senecio psilocarpus***	Vulnerable under EPBC Act	Plains Grassy Wetland.
Swamp Everlasting ***Xerochrysum palustre***	Vulnerable under EPBC Act Critically endangered under FFG Act	Aquatic Herbland.
Cut-leaf Burr-daisy ***Calotis anthemoides***	Critically endangered under FFG Act	Plains Grassland and Plains Grassy Wetland.
Small Milkwort ***Comesperma polygaloides***	Critically endangered under FFG Act	Plains Grassland.
Clumping Golden Moths ***Diuris gregaria***	Critically endangered under FFG Act	Plains Grassland and Stony Knoll Shrubland.
Purple Diuris ***Diuris punctata***	Endangered under FFG Act	Plains Grassland and Stony Knoll Shrubland.
Purple Blown-grass ***Lachnagrosis semibarbata*** **var. *filifolia***	Endangered under FFG Act	Brackish Wetland, Plains Grassy Wetland and Aquatic Herbland.
Wind-blown Tussock-grass ***Poa physoclina***	Endangered under FFG Act	Margins of Brackish Wetlands.
Basalt Leek-orchid ***Prasophyllum viretrum***	Critically endangered under FFG Act	Stony Knoll Shrubland and Plains Grassland.
Leprechaun Greenhood ***Pterostylis conferta***	Critically endangered under FFG Act	Stony Knoll Shrubland and Plains Grassland.
Dense Greenhood ***Pterostylis agrestis***	Critically endangered under FFG Act	Plains Grassland.
Cygnet Greenhood ***Pterostylis spissa***	Critically endangered under FFG Act	Plains Grassland.
Basalt Sun-orchid ***Thelymitra gregaria***	Critically endangered under FFG Act	Stony Knoll Shrubland and Plains Grassland.
Hairy Tails ***Ptilotus erubescens***	Critically endangered under FFG Act	Stony Knoll Shrubland and Plains Grassland.

Species name	Listing status	Area of value within the study area
Fauna species		
Southern Bent-wing Bat ***Miniopterus orianae bassanii***	Critically Endangered under EPBC Act Critically endangered under FFG Act	May forage and fly through open habitat within the study area. Prefers to forage within woodland and requires caves for roosting (as well as some manmade structures such as mine shafts and adits).
Curlew Sandpiper ***Calidris ferruginea***	Critically Endangered under EPBC Act Critically endangered under FFG Act	Suitable wetland habitat present, particularly in north of study area.
Grey-headed Flying- fox ***Pteropus poliocephalus***	Vulnerable under EPBC Act Vulnerable under FFG Act	Since 2018 a seasonal temporary colony has been detected near Hexham approximately 7 km south-west of the study area. There have also been mortalities recorded at the nearby Salt Creek wind farm at Woorndoo. Flowering planted eucalypts within the study area would likely provide foraging resources for the species.
Striped Legless Lizard ***Delma impar***	Vulnerable under EPBC Act Endangered under FFG Act	Native grasslands and exotic grasslands close to native grasslands. Recorded with western extent of Castle-Carey Road reserve. Assumed to be present within Plains Grassland and adjacent exotic grassland within the South Road road reserve.
Growling Grass Frog ***Litoria raniformis***	Vulnerable under EPBC Act Vulnerable under FFG Act	Potential to occur in wetlands, however, targeted surveys did not detect this species (Biosis 2021a).
White-throated Needletail ***Hirundapus caudacutus***	Vulnerable under EPBC Act Vulnerable under FFG Act	May fly and forage throughout the airspace during summer migration to Australia. This species may be present in Australia between spring and early autumn, but are most commonly observed in summer.
Yarra Pygmy Perch ***Nannoperca obscura***	Vulnerable under EPBC Act Vulnerable under FFG Act	Suitable habitat in some waterways. Recorded from the catchment.
Little Galaxias ***Galaxiella toourtkoourt***	Vulnerable under EPBC Act Endangered under FFG Act	Recorded from two locations within Salt Creek on western boundary of the study area.
Corangamite Water Skink ***Eulamprus tympanum marnieae***	Endangered under EPBC Act Endangered under FFG Act	Recorded within the northern section of the study area in rocky habitats associated with wetlands.
Yellow-bellied Sheathtail Bat ***Saccolaimus flaviventris***	Vulnerable under FFG Act	Recorded as present by the bat call automated identification software (Anascheme), however, these calls have not been confirmed by a manual review and may be the calls of White-striped Freetail Bat. Considered to be a vagrant species that may occasionally use the study area.
Freckled Duck ***Stictonetta naevosa***	Endangered under FFG Act	Recorded within wetlands.

Species name	Listing status	Area of value within the study area
Gull-billed Tern ***Gelochelidon macrotarsa***	Endangered under FFG Act	Recorded within wetlands.
Eastern Great Egret ***Ardea alba modesta***	Vulnerable under FFG Act	Recorded within wetlands.
Brolga ***Antigone rubicunda***	Endangered under FFG Act	Recorded within wetlands and pasture
Blue-billed Duck ***Oxyura australis***	Vulnerable under FFG Act	Suitable wetland habitat present, particularly larger permanent wetlands.
Black Falcon ***Falco subniger***	Critically endangered under FFG Act	Wide ranging species. May forage throughout open areas.
Little Egret ***Egretta garzetta***	Endangered under FFG Act	Suitable wetland habitat present throughout study area.
Little Eagle ***Hieraaetus morphnoides***	Vulnerable under FFG Act	Wide ranging species. May forage throughout open areas.
Brown Toadlet ***Pseudophryne bibronii***	Endangered under FFG Act	Potential habitat identified along Boonerah Estate Road in the western extension of the study area.

3.2.2 Significant ecological communities

The following listed threatened ecological communities are present within the study area.

Natural Temperate Grassland of the Victorian Volcanic Plain (Critically Endangered under EPBC Act)

The EPBC Act Protected Matters Search Tool (PMST) predicts that Natural Temperate Grassland of the Victorian Volcanic Plain (NTG VVP) is likely to occur within the local area. The field assessment confirms that this community is present within sections of *Heavier-soils* Plains Grassland EVC; Plains Grassy Wetland and Stony Knoll Shrubland within the wind farm study area and along roadsides (Figure 2).

Advice from the DAWE indicates that Plains Grassy Wetland dominated by Common Tussock-grass was not intended to be included within the EPBC Act listed NTGVVP. However where the cover of Common Tussock-grass accounts for at least 50% of the perennial tussock cover, the community meets the definition of the NTGVVP provided in the policy statement for this community (DEWHA 2008). Therefore, we consider the community present where it meets the policy definition until formal written advice can be provided.

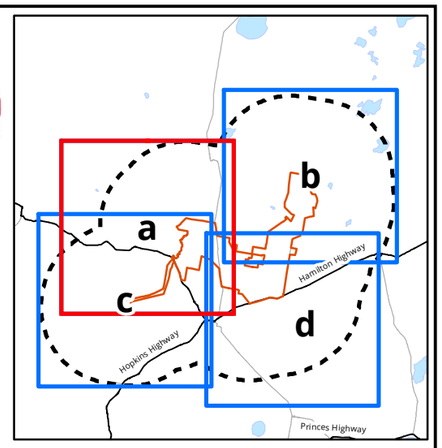
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (Critically Endangered under EPBC Act)

The EPBC Act PMST predicts that this community occurs within the study area.

Areas of Aquatic Herbland and Plains Grassy Wetland EVCs correspond with the definition of this critically endangered community (DSEWPaC 2012).

Western (Basalt) Plains Grassland (Listed under FFG Act)

Vegetation within all patches of *Heavier-soils* Plains Grassland EVC and some patches of Stony Knoll Shrubland and Plains Grassy Wetland EVCs are considered to belong to this listed community. However, as the vast majority of the study area is private land, a Protected Flora Permit under the FFG Act will not be required. A permit would be required for any impacts to this community on public land (roadside reserves).



Legend

- Study Area
- Search Area

Nationally significant flora

- Clover Glycine, VU, L, v
- Fragrant Leek-orchid, EN, L, e
- Spiny Peppercress, VU, L, e
- White Sunray, EN, L, e

State significant flora

- Basalt Leek-orchid, L, e
- Basalt Sun-orchid, L, e
- Clumping Golden Moths, L, e
- Creeping Rush, r
- Golden Cowslips, v
- Hairy Tails, L, v
- Lofty Sun-orchid, e
- Pale Swamp Everlasting, v
- Plains Yam-daisy, v
- Purple Blown-grass, r
- Purple Blown-grass, L, r
- Small Milkwort, L, v
- Western Gaping Leek-orchid, e
- Yawning Leek-orchid, e

Key

EPBC Act List

CR – critically endangered
EN - endangered
VU - vulnerable

FFG Act List

L - listed

Vic Advisory List

e - endangered
v - vulnerable
r - rare

Figure 3a Threatened flora records within 10 km of the study area

0 1 2 3 4
Kilometers
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

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Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
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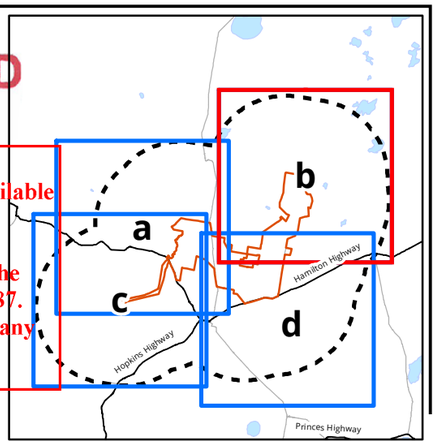

Legend

Study Area

Search Area

Nationally significant flora

- Basalt Rustyhood, EN, L, e
- Clover Glycine, VU, L, v
- Fragrant Leek-orchid, EN, L, e
- Matted Flax-lily, EN, L, e
- Salt-lake Tussock-grass, VU, L, v
- Small Golden Moths, EN, L, e
- Spiny Rice-flower, CR, L, e

State significant flora

- Basalt Sun-orchid, L, e
- Brackish Plains Buttercup, <Null>, r
- Clumping Golden Moths, L, e
- Creeping Rush, r
- Cygnet Greenhood, L, e
- Dense Greenhood, L, e
- Derrinallum Billy-buttons, e
- Flax-lily, v
- Forked Rice-flower, r
- Giant Honey-myrtle, r
- Golden Cowslips, v
- King Greenhood, L, v
- Large-fruit Yellow-gum, L, e
- Leprechaun Greenhood, L, e
- Pale Swamp Everlasting, v
- Pale-flower Crane's-bill, r
- Plains Yam-daisy, v
- Purple Blown-grass, L, r
- Purple Diuris, L, v
- Salt Blown-grass, r
- Small Milkwort, L, v
- Wavy Swamp Wallaby-grass, v
- Wimmera Woodruff, r
- Wind-blown Tussock-grass, L, e

Key

EPBC Act List

CR – critically endangered

EN - endangered

VU - vulnerable

FFG Act List

L - listed

Vic Advisory List

e - endangered

v - vulnerable

r - rare

Figure 3b Threatened flora records within 10 km of the study area

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N

0 1 2 3 4

Kilometers

Scale: 1:80,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
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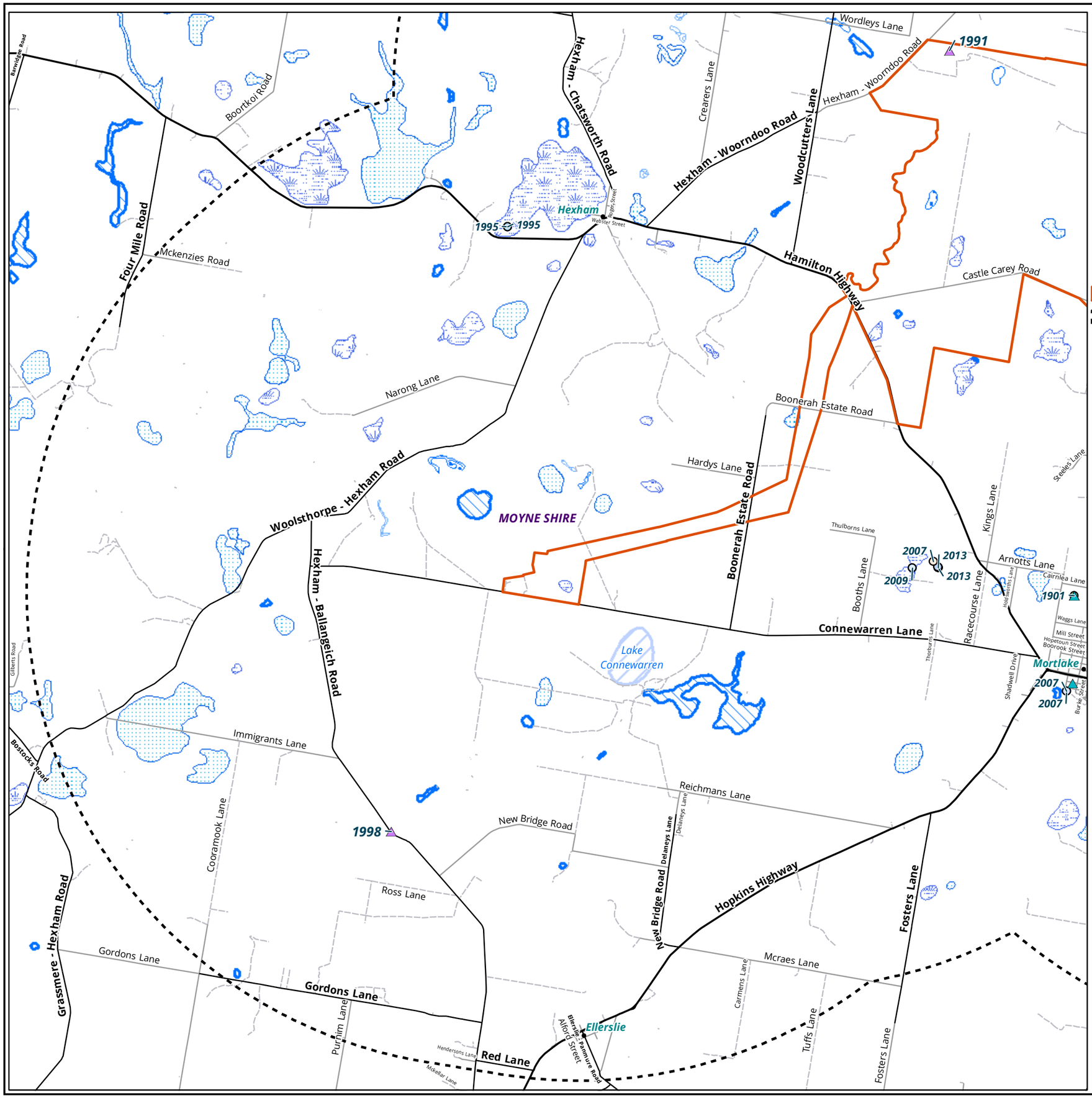

Legend

Study Area

Search Area

Nationally significant flora

- Clover Glycine, VU, L, v
- Spiny Peppercress, VU, L, e

State significant flora

- Basalt Leek-orchid, L, e
- Grassland Sun-orchid, e
- Pale Swamp Everlasting, v
- Plains Yam-daisy, v
- Purple Blown-grass, r
- Purple Blown-grass, L, r
- Small Milkwort, L, v
- Western Gaping Leek-orchid, e

ADVERTISED PLAN

Key

EPBC Act List

CR – critically endangered

EN - endangered

VU - vulnerable

FFG Act List

L - listed

Vic Advisory List

e - endangered

v - vulnerable

r - rare

Figure 3c Threatened flora records within 10 km of the study area

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N

0 1 2 3 4

Kilometers

Scale: 1:80,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
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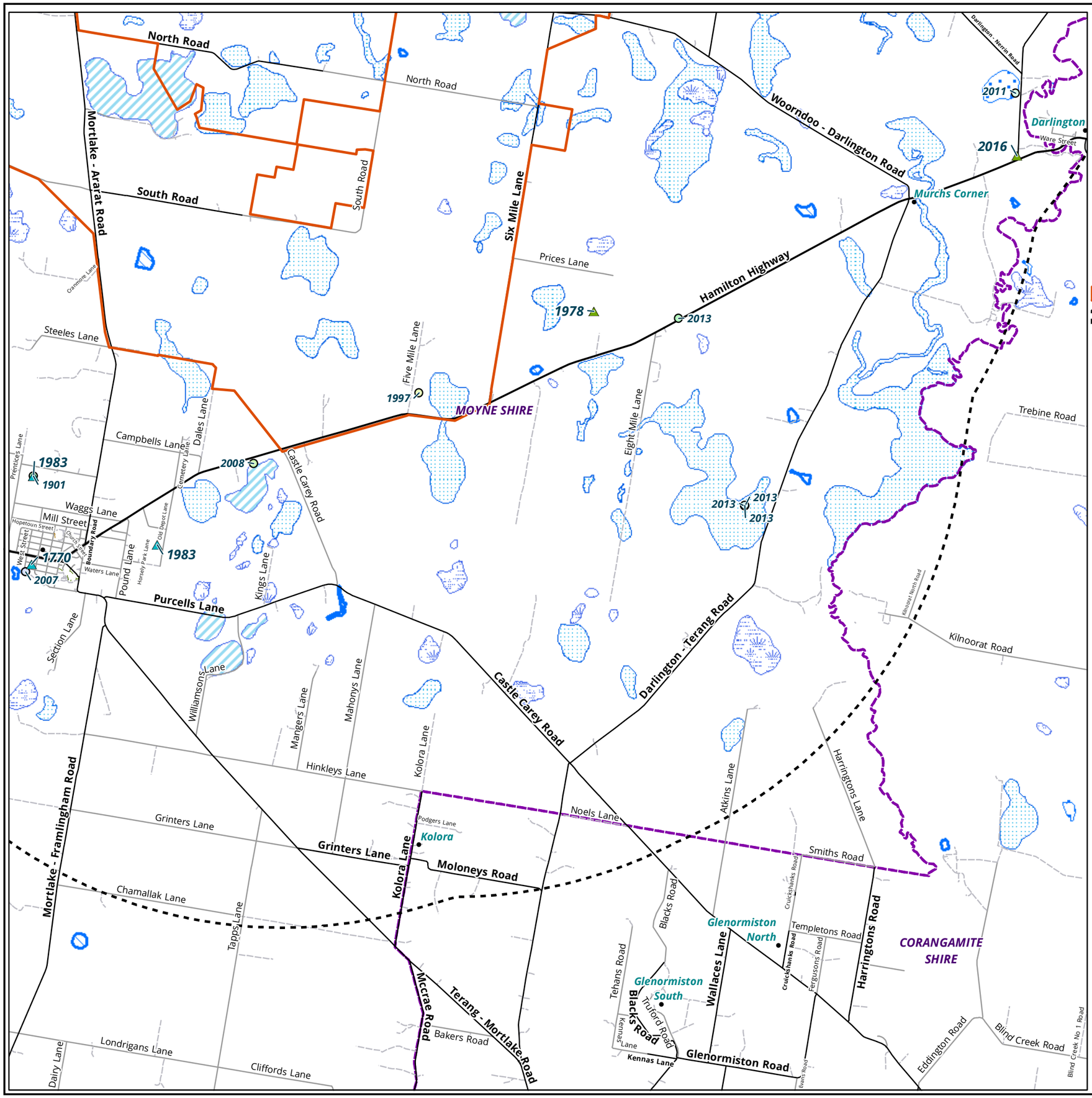

Legend

Study Area

Search Area

Nationally significant flora

- Matted Flax-lily, EN, L, e
- Spiny Peppercress, VU, L, e

State significant flora

- Grassland Sun-orchid, e
- Pale Swamp Everlasting, v
- Purple Blown-grass, r
- Salt Blown-grass, r
- Small Milkwort, L, v
- Wavy Swamp Wallaby-grass, v
- Wind-blown Tussock-grass, L, e

Key

EPBC Act List

CR – critically endangered

EN - endangered

VU - vulnerable

FFG Act List

L - listed

Vic Advisory List

e - endangered

v - vulnerable

r - rare

Figure 3d Threatened flora records within 10 km of the study area

0 1 2 3 4

Kilometers

Scale: 1:80,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
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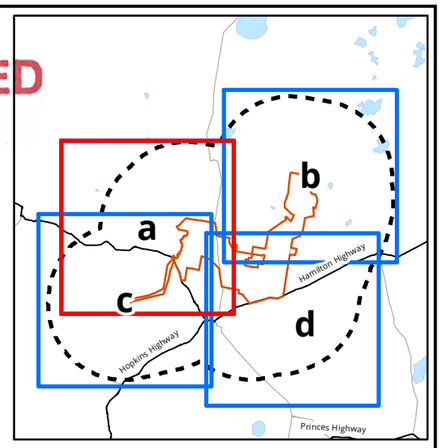
ADVERTISED PLAN



Legend

- Study Area
- Search Area

Nationally significant fauna

- Eastern Barred Bandicoot, VU, ew
- Grey-headed Flying-fox, VU, vu
- Growling Grass Frog, VU, en
- Southern Bent-winged Bat (southern ssp.), CR, cr
- Striped Legless Lizard, VU, en

State significant fauna

- Black Falcon, L, vu
- Blue-billed Duck, L, en
- Brolga, L, vu
- Brown Toadlet, L, en
- Fat-tailed Dunnart, , nt
- Great Egret, L, vu
- Grey Goshawk, L, vu
- Hardhead, , vu
- Latham's Snipe, , nt
- Little Eagle, L, vu
- Pied Cormorant, , nt
- Royal Spoonbill, , nt
- Spotted Harrier, , nt
- Whiskered Tern, , nt

Key

EPBC Act List
CR – critically endangered
EN - endangered
VU - vulnerable
FFG Act List
L - listed
Vic Advisory List
e - endangered
v - vulnerable
r - rare
nt - near threatened
ew - extinct in the wild
rx - regionally extinct

Figure 4a Threatened fauna records within 10 km of the study area

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N

0 1 2 3 4

Kilometers
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

Matter: 21630
Date: 07 May 2021,
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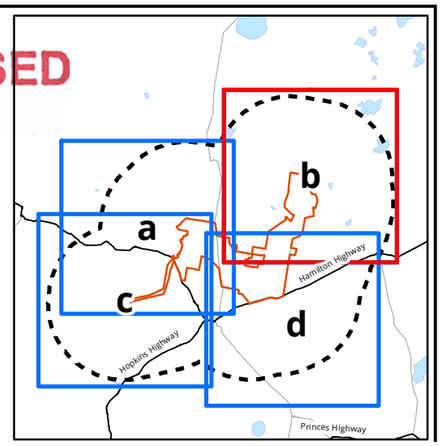
ADVERTISED PLAN



Legend

- Study Area
- Search Area

Nationally significant fauna

- Corangamite Water Skink, EN, cr
- Curlew Sandpiper, CR, en
- Eastern Quoll, EN, rx
- Golden Sun Moth, CR, cr
- Growling Grass Frog, VU, en
- Southern Bent-winged Bat (southern ssp.), CR, cr
- White-throated Needletail, VU, vu

State significant fauna

- Australian Gull-billed Tern, L, en
- Australian Pratincole, , nt
- Black Falcon, L, vu
- Blue-billed Duck, L, en
- Brolga, L, vu
- Brown Toadlet, L, en
- Emu, , nt
- Freckled Duck, L, en
- Glossy Ibis, , nt
- Great Egret, L, vu
- Latham's Snipe, , nt
- Little Egret, L, en
- Magpie Goose, L, nt
- Musk Duck, , vu
- Pied Cormorant, , nt
- Royal Spoonbill, , nt
- Spotted Harrier, , nt
- Whiskered Tern, , nt

Key

EPBC Act List
CR – critically endangered
EN - endangered
VU - vulnerable
FFG Act List
L - listed
Vic Advisory List
e - endangered
v - vulnerable
r - rare
nt - near threatened
ew - extinct in the wild
rx - regionally extinct

Figure 4b Threatened fauna records within 10 km of the study area

0 1 2 3 4
Kilometers
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

Biosis Pty Ltd
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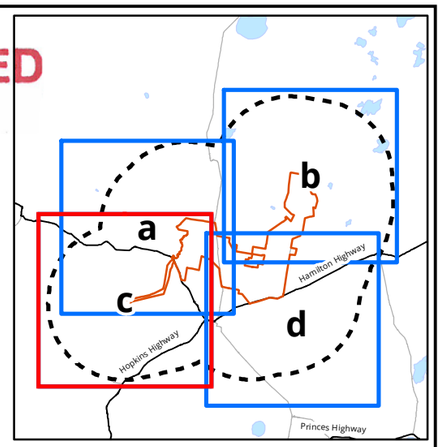
Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
Location:P:\35100s\35163\Mapping\35163_21630_F4_ThreatenedFauna

ADVERTISED PLAN



Legend

- Study Area
- Search Area

Nationally significant fauna

- Curlew Sandpiper, CR, en
- Eastern Barred Bandicoot, VU, ew
- Growling Grass Frog, VU, en
- Macquarie Perch, EN, en
- Southern Bent-winged Bat (southern ssp.), CR, cr
- Striped Legless Lizard, VU, en

State significant fauna

- Australian Bustard, L, cr
- Black Falcon, L, vu
- Blue-billed Duck, L, en
- Brolga, L, vu
- Brown Toadlet, L, en
- Fat-tailed Dunnart, , nt
- Great Egret, L, vu
- Little Eagle, L, vu
- Little Egret, L, en
- Nankeen Night-Heron, , nt
- Royal Spoonbill, , nt
- Spotted Harrier, , nt
- Whiskered Tern, , nt

Key

EPBC Act List
CR – critically endangered
EN - endangered
VU - vulnerable
FFG Act List
L - listed
Vic Advisory List
e - endangered
v - vulnerable
r - rare
nt - near threatened
ew - extinct in the wild
rx - regionally extinct

Figure 4c Threatened fauna records within 10 km of the study area

0 1 2 3 4
Kilometers
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

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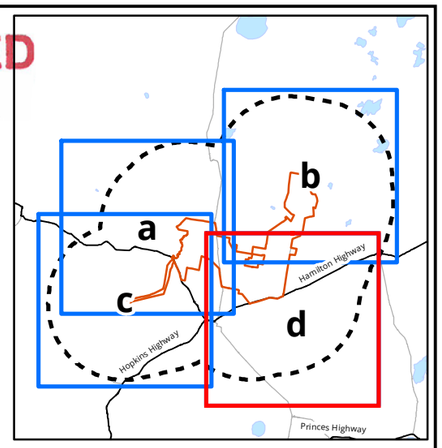
Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
Location:P:\35100s\35163\Mapping\35163_21630_F4_ThreatenedFauna



Legend

- Study Area
- Search Area

Nationally significant fauna

- Eastern Barred Bandicoot, VU, ew
- Eastern Quoll, EN, rx
- Growling Grass Frog, VU, en
- Macquarie Perch, EN, en
- Striped Legless Lizard, VU, en
- White-throated Needletail, VU, vu

State significant fauna

- Australian Gull-billed Tern, L, en
- Australian Pratincole, , nt
- Black Falcon, L, vu
- Blue-billed Duck, L, en
- Brolga, L, vu
- Freckled Duck, L, en
- Glossy Ibis, , nt
- Great Egret, L, vu
- Latham's Snipe, , nt
- Magpie Goose, L, nt
- Nankeen Night-Heron, , nt
- Platypus, L, vu
- Spotted Harrier, , nt
- Whiskered Tern, , nt

Key

EPBC Act List
CR – critically endangered
EN - endangered
VU - vulnerable
FFG Act List
L - listed
Vic Advisory List
e - endangered
v - vulnerable
r - rare
nt - near threatened
ew - extinct in the wild
rx - regionally extinct

Figure 4d Threatened fauna records within 10 km of the study area

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N

0 1 2 3 4

Kilometers
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

Matter: 21630
Date: 07 May 2021,
Checked by: KS, Drawn by: LDM, Last edited by: smitchell
Location:P:\35100s\35163\Mapping
35163_21630_F4_ThreatenedFauna

3.3 Victorian strategic biodiversity values

As part of the Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017), DELWP provide a series of state-wide information tools. These tools are modelled GIS map layers, derived from existing site-based flora and fauna data and expert opinion. A summary of the composition of these layers within the study area is provided below.

3.3.1 Native vegetation location risk

Throughout Victoria location risk is mapped in three categories: 1, 2 and 3. In conjunction with the extent of native vegetation removal, location risk can modify the assessment pathway for applications to remove native vegetation under Clause 52.17 of local planning schemes.

The study area contains areas of all three location categories (Figure 5). Most of the study area, particularly to the south of Woorndoo-Darlington Road, is mapped as location 1. To the north of Woorndoo-Darlington Road, the study area contains extensive areas of location 2 and to a lesser extent location 3.

3.3.2 Native vegetation site condition

Native vegetation site condition has also been modelled throughout the entire State of Victoria. Site condition represents the predicted Habitat Hectare (DSE 2004) score (ranging from 0.0 to 1.0), and has been modelled where native vegetation is predicted to occur within the Native Vegetation Extent layer.

Within the study area, site condition ranges from 0 (non-native vegetation) to over 0.8 (Figure 6). Where native vegetation is predicted to be present, most areas are assigned condition scores of between 0.4 and 0.8. Small areas of higher quality vegetation are predicted to occur along high value roadsides, particularly Woorndoo-Dundonnell Road towards the northern boundary of the study area.

3.3.3 Strategic biodiversity score

Strategic biodiversity value has been modelled for the entire State of Victoria. The layer represents a strategic assessment of the value of land for the conservation of Victoria's biodiversity. Scores range between 0.0 and 1.0. Clearance of native vegetation from high value areas will result in greater offset requirements, compared with clearance of native vegetation from lower value areas. The strategic biodiversity score model for the study area is shown in Figure 7. As with native vegetation site condition, areas to the north of Woorndoo-Darlington road are generally predicted to be of higher strategic importance than areas to the south.

3.4 Other ecological values

The nearby Mt Fyans quarry site is a significant site for Peregrine Falcon *Falco peregrinus* in Victoria's volcanic plains bioregion having had almost continuous breeding occupation for at least 38 years (Hurley 2015). This species has no conservation status in Victoria.

Woorndoo - Chatsworth Road
Woorndoo
Woorndoo - Dundonnell Road
Hexham - Woorndoo Road
Boswell Swamp
Lyne Creek
Hexham - Chatsworth Road
Cobra Killuc Wildlife Reserve (no hunting)
Woodcutters Lane
Woorndoo - Darlington Road
Dundonnell - Mortlake Road
Boortkoi Estate Lane
River
Creek
Hexham - Woorndoo Road
Stoyadon
North Road
MOYNE SHIRE
Hexham School Historic Reserve
Tips Creek
Woolsthorpe - Hexham Road
Mortlake - Ararat Road
South Road
Six Mile Lane
Creek
Hamilton Highway
Nuston's Creek
Boonerah Estate Road
Mortlake Common Flora Reserve
Connewarren Lane
Billird
Lake Connewarren
Mortlake
Dunlop Street
Shaw Street
Boundary Road
Hopkins Highway
Purcells Lane

Legend

- Study area

Native Vegetation Regulation (2017)

Location category

- Location 1
- Location 2
- Location 3
- Highway
- Major road
- Lake
- Wetland or swamp
- River or creek

Figure 5 Native vegetation location category (NVR 2017)

0 1 2 3 4

Kilometres
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

Matter: 35163,
Date: 07 May 2021,
Checked by: KS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\
35163_21630_F5_LocationCategory.mxd

Woorndoo - Chatsworth Road
Woorndoo
Woorndoo - Dundonnell Road
Hexham - Woorndoo Road
Boswell Swamp
Lyne Creek
Hexham - Chatsworth Road
Cobra Killuc Wildlife Reserve (no hunting)
Woodcutters Lane
River
Boortkoi Estate Lane
Woorndoo - Darlington Road
Dundonnell - Mortlake Road
Creek
Hexham - Woorndoo Road
Stuydoh
MOYNE SHIRE
North Road
Hexham School Historical Reserve
Woolsthorpe - Hexham Road
Mortlake - Ararat Road
South Road
Six Mile Lane
Creek
Hamilton Highway
Nuston's Creek
Boonerah Estate Road
Mortlake Common Flora Reserve
Blind
Connewarren Lane
Lake Connewarren
Mortlake
Dunlop Street
Shaw Street
Boundary Road
Hopkins Highway
Purcells Lane

Legend

- Study area

Native Vegetation Regulation (2017)

Site condition score

- 0.00 - 0.20
- 0.21 - 0.40
- 0.41 - 0.60
- 0.61 - 0.80
- 0.81 - 1.00
- Highway
- Major road
- Lake
- Wetland or swamp
- River or creek

Figure 6 Native vegetation Site condition score (NVR 2017)

0 1 2 3 4

Kilometres
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

biosis

N

Matter: 35163,
Date: 07 May 2021,
Checked by: KS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\
35163_21630_F6_SiteCondition.mxd

Legend

- Study area

Native Vegetation Regulation (2017)

Strategic Biodiversity Value

- 1 - 15
- >15 - 25
- >25 - 40
- >40 - 50
- >50 - 65
- >65 - 80
- >80 - 90
- >90 - 100
- Highway
- Major road
- Lake
- Wetland or swamp
- River or creek

Figure 7 Native vegetation Strategic Biodiversity Value (NVR 2017)

0 1 2 3 4

Kilometres
Scale: 1:80,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

Matter: 35163,
Date: 07 May 2021,
Checked by: KS, Drawn by: SKM, Last edited by: smitchell
Location: P:\35100s\35163\Mapping\
35163_21630_F7_SBS.mxd

Key ecological values

Although much of the study area has been highly modified and degraded, the preliminary flora and fauna assessments undertaken within the broader study area for the proposed Mount Fyans Wind Farm identified patches of native vegetation and habitat for threatened species. A summary of these key ecological values includes:

- Nine Endangered EVCs and one Vulnerable EVC.
- Scattered remnant trees.
- Eight fauna habitat types, including creeks, wetlands, grasslands and rock walls.
- Habitat or potential habitat for EPBC Act and FFG Act listed species.
- Endangered communities, including Natural Temperate Grasslands of the Victorian Volcanic Plain and Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains.

To complete a more detailed assessment of the presence of threatened species and investigate the potential for impacts, additional targeted surveys were recommended and subsequently undertaken within the study area. The results of these targeted surveys and an assessment of potential impacts associated with the proposed development plan and relevant government legislation is provided in the *Mount Fyans Wind Farm: Targeted Surveys and Impact Assessment* report (Biosis 2021a).

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Appendices

Appendix 1: Flora

Notes to tables:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
PMST	Protected Matters Search Tool	
State listings (FFG Act and DELWP Advisory List)		
x	Extinct	Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
P	Protected (public land only)	
Weed status (CaLP Act, DAWE Weeds of National Significance and DELWP Advisory List[1])		
SP	State prohibited species	Victorian *Catchment and Land Protection Act 1994* (CaLP Act)
RP	Regionally prohibited species	
RC	Regionally controlled species	

[1] The DELWP Advisory List for Rare or Threatened Plants was revoked in 2021 and are superseded by the current list of threatened species under the FFG Act 1988.

A1.1 Flora species recorded from the study area

Table A1.1. Flora species recorded from the study area.

Status	Scientific Name	Common Name	Biosis	Other
Indigenous species				
	Acacia dealbata	Silver Wattle	+	
	Acacia implexa	Lightwood	+	
P	*Acacia mearnsii*	Black Wattle	+	
	Acacia melanoxylon	Blackwood	+	
	Acacia paradoxa	Hedge Wattle	+	+
P	*Acacia pycnantha*	Golden Wattle	+	
	Acaena echinata	Sheep's Burr	+	+
	Acaena ovina	Australian Sheep's Burr	+	
	Arthropodium minus	Small Vanilla-lily	+	+
	Asperula conferta	Common Woodruff	+	
	Austrostipa scabra	Rough Spear-grass		+
	Austrostipa spp.	Spear Grass	+	
P	*Azolla* spp.	Azolla	+	
	Brachychiton spp.	Kurrajong	+	
	Bursaria spinosa	Sweet Bursaria	+	+
	Bursaria spinosa subsp. *spinosa*	Sweet Bursaria	+	
P	*Calocephalus citreus*	Lemon Beauty-heads	+	
	Carex tereticaulis	Poong'ort	+	
P	*Chrysocephalum apiculatum* s.s.	Common Everlasting		+
	Convolvulus erubescens spp. *agg.*	Pink Bindweed	+	
v, P	*Coronidium scorpioides* 'aff. *rutidolepis* (Lowland Swamp)	Pale Swamp Everlasting	+	
P	*Craspedia* spp.	Billy Buttons	+	
	Crassula decumbens var. *decumbens*	Spreading Crassula	+	
	Crassula helmsii	Swamp Crassula	+	
	Crassula sieberiana s.s.	Sieber Crassula	+	
	Cyperus spp.	Flat Sedge	+	
	Dichelachne spp.	Plume Grass	+	
	Dichondra repens	Kidney-weed	+	+
	Drosera peltata s.s.	Pale Sundew	+	
	Dysphania pumilio	Clammy Goosefoot	+	
	Eleocharis acuta	Common Spike-sedge	+	
	Epilobium hirtigerum	Hairy Willow-herb	+	
	Epilobium spp.	Willow Herb	+	
	Eryngium ovinum	Blue Devil	+	
	Eryngium vesiculosum	Prickfoot	+	

Status	Scientific Name	Common Name	Biosis	Other
	Eucalyptus camaldulensis	River Red-gum	+	
#	*Eucalyptus globulus*	Southern Blue-gum	+	
	Geranium spp.	Crane's Bill	+	+
	Glyceria australis	Australian Sweet-grass	+	
	Glycine spp.	Glycine		+
	Haloragis spp.	Raspwort	+	
P	*Helichrysum luteoalbum*	Jersey Cudweed	+	
	Hypericum gramineum spp. agg.	Small St John's Wort	+	
	Juncus bufonius	Toad Rush	+	
	Juncus holoschoenus	Joint-leaf Rush	+	
	Juncus pallidus	Pale Rush	+	
	Juncus spp.	Rush	+	
	Juncus subsecundus	Finger Rush	+	
	Lachnagrostis filiformis s.s.	Common Blown-grass	+	
P	*Leptorhynchos squamatus*	Scaly Buttons	+	
	Lobelia spp.	Lobelia	+	
	Lythrum hyssopifolia	Small Loosestrife	+	
	Melicytus dentatus s.s.	Tree Violet	+	+
	Mentha spp.	Mint	+	
	Montia australasica	White Purslane	+	
	Myriophyllum spp.	Water Milfoil	+	
	Oxalis corniculata s.l.	Yellow Wood-sorrel	+	
	Oxalis perennans	Grassland Wood-sorrel		+
	Persicaria decipiens	Slender Knotweed	+	
	Phragmites australis	Common Reed	+	
	Plantago spp.	Plantain	+	
	Poa labillardierei	Common Tussock-grass	+	+
	Ranunculus spp.	Buttercup	+	
	Rumex brownii	Slender Dock	+	
	Rumex dumosus	Wiry Dock	+	
	Rytidosperma caespitosum	Common Wallaby-grass		+
	Rytidosperma spp.	Wallaby Grass	+	
	Schoenoplectus pungens	Sharp Club-sedge	+	
	Schoenus apogon	Common Bog-sedge	+	
P	*Senecio glomeratus*	Annual Fireweed	+	
P	*Senecio* spp.	Groundsel	+	
	Solanum laciniatum	Large Kangaroo Apple	+	
P	*Solenogyne* spp.	Solenogyne	+	
	Stellaria caespitosa	Matted Starwort	+	

Status	Scientific Name	Common Name	Biosis	Other
P	*Thelymitra* spp.	Sun Orchid	+	
	Themeda triandra	Kangaroo Grass	+	+
	Triglochin striata	Streaked Arrowgrass	+	
	Typha spp.	Bulrush	+	
	Urtica spp.	Nettle	+	
	Wurmbea dioica	Common Early Nancy	+	
Introduced species				
	Acetosella vulgaris	Sheep Sorrel	+	+
	Agrostis capillaris	Brown-top Bent	+	
	Alopecurus geniculatus	Marsh Fox-tail	+	
	Alopecurus pratensis	Meadow Fox-tail	+	
	Arctotheca calendula	Cape Weed	+	+
	Aster subulatus	Aster-weed	+	
	Avena fatua	Wild Oat	+	
	Bromus diandrus	Great Brome	+	
	Callitriche stagnalis	Common Water-starwort	+	
RR	*Carduus tenuiflorus*	Winged Slender-thistle	+	
RR	*Carthamus lanatus*	Saffron Thistle	+	
	Cerastium glomeratum s.s.	Sticky Mouse-ear Chickweed	+	
	Chamaecytisus palmensis	Tree Lucerne	+	
	Cicendia spp.	Cicendia	+	
RR	*Cirsium vulgare*	Spear Thistle	+	
	Conyza bonariensis	Flaxleaf Fleabane	+	
	Cotula coronopifolia	Water Buttons	+	
	Cynosurus echinatus	Rough Dog's-tail	+	+
	Cyperus eragrostis	Drain Flat-sedge	+	
RR	*Cytisus scoparius*	English Broom	+	
	Dactylis glomerata	Cocksfoot	+	
	Erodium botrys	Big Heron's-bill	+	+
	Erodium cicutarium	Common Heron's-bill	+	
	Eucalyptus cladocalyx	Sugar Gum	+	
	Helminthotheca echioides	Ox-tongue	+	
	Holcus lanatus	Yorkshire Fog	+	+
	Hordeum spp.	Barley Grass	+	
	Hypochaeris glabra	Smooth Cat's-ear		+
	Hypochaeris radicata	Flatweed	+	+
	Isolepis levynsiana	Tiny Flat-sedge	+	
	Lactuca saligna	Willow-leaf Lettuce	+	

Status	Scientific Name	Common Name	Biosis	Other
	Lepidium africanum	Common Peppercress	+	
	Lolium spp.	Rye Grass	+	
RC	*Lycium ferocissimum*	African Box-thorn	+	
	Malus pumila	Apple	+	
	Malva nicaeensis	Mallow of Nice	+	
RC	*Marrubium vulgare*	Horehound	+	
	Medicago polymorpha	Burr Medic		+
	Parentucellia latifolia	Red Bartsia	+	
	Paspalum dilatatum	Paspalum	+	
	Phalaris aquatica	Toowoomba Canary-grass	+	
	Plantago lanceolata	Ribwort	+	
	Polycarpon tetraphyllum	Four-leaved Allseed	+	
	Polypogon monspeliensis	Annual Beard-grass	+	
	Romulea rosea	Onion Grass	+	
	Rumex crispus	Curled Dock	+	
	Salvia verbenaca	Wild Sage	+	
	Schinus molle	Pepper Tree	+	
RR	*Silybum marianum*	Variegated Thistle	+	+
	Sisymbrium spp.	Mustard	+	
	Sonchus asper s.s.	Rough Sow-thistle	+	
	Sonchus oleraceus	Common Sow-thistle	+	
	Trifolium repens var. *repens*	White Clover	+	
	Urtica urens	Small Nettle	+	

Appendix 1.2 Listed flora species

The following table includes the listed flora species that have potential to occur within the study area. The list of species is sourced from the Victorian Flora Information System and the Protected Matters Search Tool (DAWE; accessed on 30.05.2021).

Table A1.2. Listed flora species recorded / predicted to occur within 10 km of the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
National significance							
Amphibromus fluitans	River Swamp Wallaby-grass	VU			PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.	**Medium** Aquatic Herbland.
Dianella amoena	Matted Flax-lily	EN	cr	2016	PMST	Lowland grassland and grassy woodland, on well-drained to seasonally waterlogged fertile sandy loam soils to heavy cracking clays.	**Medium** Plains Grassland (roadsides).
Diuris basaltica	Small Golden Moths	EN	cr	1991	PMST	Plains Grassland dominated by tussock-forming perennial grasses (including Kangaroo Grass); often with embedded surface basalt.	**High** Stony Knoll Shrubland/Plains Grassland.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Dodonaea procumbens	Trailing Hop-bush	VU			PMST	Sandy or clay soils in low-lying, winter-wet areas in grasslands, woodlands, and low-open forest.	**Low** Plains Grassy Woodland.
Glycine latrobeana	Clover Glycine	VU	v	2019	PMST	Grasslands and grassy woodlands, particularly those dominated by Kangaroo Grass.	**High** Plains Grassland; Stony Knoll Shrubland.
Lachnagrostis adamsonii	Adamson's Blown-grass	EN	en		PMST	Low-lying, seasonally wet or swampy areas of plains communities, often in slightly saline conditions.	**Medium** Brackish Wetland; Plains Grassy Wetland; Aquatic Herbland.
Lepidium aschersonii	Spiny Peppercress	VU	en	1983	PMST	Heavy clay soils near salt lakes on the volcanic plains; disjunct records near Lake Omeo.	**Medium** Brackish Wetland; Aquatic Herbland; Plains Grassy Wetland.
Lepidium hyssopifolium	Basalt Pepper-cress	EN	en		PMST	Basalt plains grassland and woodland communities.	**Low** Not recorded within 10 km of the site, and not recorded during surveys.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Leucochrysum albicans subsp. *tricolor*	White Sunray	EN	en	2019	PMST	Grasslands of the Victorian Volcanic Plains, primarily on acidic clay soils derived from basalt, with occasional occurrences on adjacent sedimentary, sandy-clay soils.	**Medium** Plains Grassland; Stony Knoll Shrubland.
Pimelea spinescens subsp. *spinescens*	Spiny Rice-flower	CR	cr	2019	PMST	Primarily grasslands featuring a moderate diversity of other native species and inter-tussock spaces, although also recorded in grassland dominated by introduced perennial grasses.	**Recorded** Stony Knoll Shrubland; Plains Grassland.
Poa sallacustris	Salt-lake Tussock-grass	VU	cr	2012	PMST	Grasslands and herblands on the sloping verges of saline lakes.	**Medium** Brackish Wetland.
Prasophyllum frenchii	Maroon Leek-orchid	EN	en		PMST	Grassland and grassy woodland environments on sandy or black clay loam soils that are generally damp but well drained.	**Low** Sandy soils habitat.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Prasophyllum spicatum	Dense Leek-orchid	VU	cr		PMST	Heath and heathy woodlands on sandy soils.	**Low** No suitable habitat, usually found near the coast.
Prasophyllum suaveolens	Fragrant Leek-orchid	EN	cr	2019	PMST	Open, species rich grasslands dominated by Kangaroo Grass on poorly draining red-brown soils in western Victoria.	**Medium** Plains Grassland; Stony Knoll Shrubland.
Pterostylis basaltica	Basalt Rustyhood	EN	cr	2019	PMST	Native grasslands among basalt rocks in stony rises of south west Victoria; known from only one location.	**High** Stony Knoll Shrubland; Plains Grassland.
Rutidosis leptorhynchoides	Button Wrinklewort	EN	en		PMST	Higher quality Plains Grassland and Grassy Woodland in Western Victoria, particularly those with fertile soil and light timber cover.	**Low** Not recorded within 10 km of the site, and not recorded during surveys.
Senecio macrocarpus	Large-headed Fireweed	VU	cr		PMST	Grassland, shrubland and woodland habitats on heavy soils subject to waterlogging and/or drought conditions in summer.	**Low** Not recorded within 10 km of the site, and not recorded during surveys.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Senecio psilocarpus	Swamp Fireweed	VU			Biosis	Seasonally-inundated herb-rich swamps, growing on peaty soils or volcanic clays.	**Medium** Plains Grassy Wetland.
Taraxacum cygnorum	Coast Dandelion	VU	cr		PMST	Confined to woodlands and scrub on calcareous soils.	**Negligible** Calcareous soils not present within the study area.
Thelymitra epipactoides	Metallic Sun-orchid	EN	en		PMST	Moist or dry sandy loams or loamy sands, primarily in coastal heaths, grasslands and woodlands, but also in similar communities at drier inland sites.	**Low** Usually near coast.
Thelymitra matthewsii	Spiral Sun-orchid	VU	en		PMST	Typically on well-drained soils on slightly elevated sites, but also on coastal sandy flats. Often in open situations following disturbance.	**Low** Usually near coast.
Xerochrysum palustre	Swamp Everlasting	VU	cr		PMST	Sedge-swamps and shallow freshwater marshes and swamps in lowlands, on black cracking clay soils.	**Medium** Aquatic Herbland.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
State significance							
Amphibromus sinuatus	Wavy Swamp Wallaby-grass		en	2013		Confined to permanent swamps in cool sites.	**High** Plains Grassy Wetland; Aquatic Herbland.
Asperula wimmerana	Wimmera Woodruff		en	2012		Woodlands on heavy, water-retentive soils in the north and north west of the State; grasslands in outer eastern Melbourne.	**Medium** Recorded in grassland habitat to the north of the study area in 2012.
Calotis anthemoides	Cut-leaf Burr-daisy		cr	2015		Heavy soils prone to waterlogging.	**Medium** Plains Grassland, Plains Grassy Wetland.
Comesperma polygaloides	Small Milkwort		cr	2013		Grasslands on the western basalt plains; less commonly in grassy woodlands between Bendigo and the Wimmera.	**Medium** Plains Grassland.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Coronidium gunnianum	Pale Swamp Everlasting		cr	2019		Widespread and sometimes locally common, particularly in high-rainfall areas of Victoria; often in moist sites in open forests and woodlands.	**Recorded** Plains Grassy Wetland; Aquatic Herbland.
Craspedia sp. 2	Derrinallum Billy-buttons			2019		Drier grasslands of the volcanic plains.	**Medium** Plains Grassland; Stony Knoll Shrubland Plains Grassy Wetland.
Diuris behrii	Golden Cowslips		en	2019		Grasslands, open grassy woodlands and Box Ironbark Forests.	**Medium** Plains Grassland.
Diuris gregaria	Clumping Golden Moths		cr	2019		Herb-rich grasslands dominated by Kangaroo Grass on heavy basalt soils.	**Medium** Plains Grassland; Stony Knoll Shrubland.
Diuris punctata	Purple Diuris		en	2010		Fertile, loamy soils and periodically wet areas in lowland grasslands, grassy woodlands, heathy woodlands and open heathlands.	**Medium** Potentially present in remnant grasslands within road reserves.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Geranium sp. 3	Pale-flower Crane's-bill		en	2012		Grasslands and dry woodlands.	**Medium** Plains Grassland; Stony Knoll Shrubland.
Juncus revolutus	Creeping Rush		en	2012		Saltmarshes and other similarly saline inland habitats.	**Medium** Brackish Wetland.
Lachnagrostis semibarbata var. *filifolia*	Purple Blown-grass		en	1995		Wet marshes and slightly saline swamps and depressions, on heavy soils away from the coast.	**Medium** Brackish Wetland; Plains Grassy Wetland; Aquatic Herbland.
Lachnagrostis semibarbata var. *semibarbata*	Purple Blown-grass		en	1997		Wet marshes and slightly saline swamps and depressions in plains communities.	**Medium** Brackish Wetland; Plains Grassy Wetland; Aquatic Herbland.
Lachnagrostis robusta	Salt Blown-grass		en	2008		Confined to saline swamps and lake edges but widespread across the Victorian Volcanic Plain and occasionally in the southern Wimmera.	**Medium** Brackish Wetland.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Microseris scapigera s.s.	Plains Yam-daisy		cr	2016		Damp depressions in grasslands, woodlands, stream banks, alpine herbfields and around the margins of saline lakes and flats.	**High** Plains Grassy Wetland.
Pimelea hewardiana	Forked Rice-flower		en	2011		Rocky ground in gullies and mallee shrubland; only recorded in the western half of the State.	**Low** Habitat generally unsuitable. Not recorded during surveys.
Poa physoclina	Wind-blown Tussock-grass		en	2011		Occurs in heavy textured soils on the margins of salt lakes, although not in highly saline environments; also in basalt outcrops on the edges of seasonal swamps.	**Medium** Recorded near Lake Barnie Bolac to the east of the study area. Has potential to occur near salt lakes in the north of the study area.
Prasophyllum chasmogamum	Yawning Leek-orchid		cr	1992		Seasonally wet sites on heavy clay soils of plains grassland; may be limited to the Sale plains in south-eastern Victoria.	**Medium** Only record in western Victoria is from the Woorndoo area in 1992.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Prasophyllum viretrum	Basalt Leek-orchid		cr	2013		Remnant native grassland on heavy basalt soils.	**Medium** Recorded in Mortlake Common Flora Reserve in 2013. No records within the study area
Prasophyllum sp. aff. *correctum* (Mortlake)	Western Gaping Leek-orchid		cr	2007		Known only from grassland in the Mortlake area.	**Low** Poorly known or highly localised. Not recorded during targeted surveys.
Pterostylis baptistii	King Greenhood		cr	2010		Near coastal heathy forests.	**Low** Typically confined to coastal far east Gippsland and further north into NSW. One questionable record near Worndoo-Dundonnel Road in 2010.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Pterostylis conferta	Leprechaun Greenhood		cr	2010		Kangaroo Grass dominated grasslands on shallow, heavy clay soils on stony rises.	**High** Stony Knoll Shrubland; Plains Grassland.
Pterostylis agrestis	Dense Greenhood		cr	2010		Western (Basalt) Plains Grassland dominated by Kangaroo Grass in shallow soils on stony rises.	**Medium** Plains Grassland.
Pterostylis spissa	Cygnet Greenhood		cr	2013		Plains grassland within stony rises near Mortlake.	**Medium** Plains Grassland.
Ptilotus erubescens	Hairy Tails		cr	2004		Grasslands and woodlands on relatively fertile soils.	**Medium** Stony Knoll Shrubland; Plains Grassland.
Ranunculus diminutus	Brackish Plains Buttercup		e	2019		Seasonally wet clay soils on the fringes of lakes.	**High** Plains Grassland; Plains Grassy Wetland.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Thelymitra basaltica	Grassland Sun-orchid		cr	2007		Grasslands on sandy brown volcanic loams.	**Low** Only known extant population is near Rokewood.
Thelymitra bracteata	Lofty Sun-orchid		cr	2000		Grasslands and grassy woodlands. Known from only three sites in western Victoria.	**Low** Plains Grassy Wetland; Aquatic Herbland.
Thelymitra gregaria	Basalt Sun-orchid		cr	2019		Open, species-rich grassland dominated by Kangaroo Grass on poorly draining soils of the volcanic plains.	**Medium** Plains Grassland; Stony Knoll Shrubland.

Appendix 2: Fauna

Notes to tables:

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

Fauna species in these tables are listed in alphabetical order within their taxonomic group.

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

A2.1 Fauna species recorded from the study area

Table A2.1. Fauna species recorded from the study area.

Status	Scientific name	Common name	Wind farm	Transmission line	Road reserves	Target surveys
Mammals						
	Austronomus australis	White-striped Freetail Bat	✓			✓
	Chalinolobus gouldii	Gould's Wattled Bat	✓			✓
	Chalinolobus morio	Chocolate Wattled Bat	✓			✓
	Macropus giganteus	Eastern Grey Kangaroo		✓		
CR, cr	*Miniopterus schreibersii bassanii*	Southern Bent-wing Bat	✓			✓
	Mormopterus sp. 4	Southern Freetail Bat	✓			✓
	Mormopterus sp. 2	Eastern Freetail Bat	✓			✓
	Nyctophilus spp	Unidentified Long-eared Bat	✓			✓
	Scotorepens balstoni	Inland Broad-nosed Bat	✓			✓
dd, v	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail Bat	✓			✓
nt	*Sminthopsis crassicaudata*	Fat-tailed Dunnart			✓	✓
	Vespadelus darlingtoni	Large Forest Bat	✓			✓
	Vespadelus regulus	Southern Forest Bat	✓			✓
	Vespadelus vulturnus	Little Forest Bat	✓			✓
**	*Vulpes vulpes*	Red Fox		✓		
Birds						
	Acanthiza chrysorrhoa	Yellow-rumped Thornbill		✓		✓
	Acrocephalus australis	Australian Reed-Warbler		✓		✓
vu	*Actitis hypoleucos*	Common Sandpiper				✓
*	*Alauda arvensis*	European Skylark	✓			✓
	Anas castanea	Chestnut Teal			✓	✓
	Anas gracilis	Grey Teal			✓	✓
vu	*Anas rhynchotis*	Australasian Shoveler				✓
	Anas superciliosa	Pacific Black Duck	✓	✓	✓	✓
	Anthus novaeseelandiae	Australasian Pipit	✓	✓	✓	✓
	Aquila audax	Wedge-tailed Eagle	✓			
vu, v	*Ardea modesta*	Eastern Great Egret	✓		✓	
	Ardea pacifica	White-necked Heron		✓	✓	✓
vu	*Aythya australis*	Hardhead				✓
	Bubulcus ibis	Cattle Egret			✓	
	Cacatua tenuirostris	Long-billed Corella	✓	✓	✓	

Status	Scientific name	Common name	Wind farm	Transmission line	Road reserves	Target surveys
	Calamanthus fuliginosus	Striated Fieldwren			✓	✓
	Calidris acuminata	Sharp-tailed Sandpiper				✓
	Calidris ruficollis	Red-necked Stint				✓
*	*Carduelis carduelis*	European Goldfinch	✓	✓		✓
	Charadrius ruficapillus	Red-capped Plover				✓
	Chenonetta jubata	Australian Wood Duck	✓	✓		✓
	Chroicocephalus novaehollandiae	Silver Gull	✓			
	Cincloramphus cruralis	Brown Songlark	✓			
	Circus approximans	Swamp Harrier			✓	✓
nt	*Circus assimilis*	Spotted Harrier	✓		✓	
	Cisticola exilis	Golden-headed Cisticola	✓		✓	✓
	Colluricincla harmonica	Grey Shrike-thrush		✓		
	Corvus coronoides	Australian Raven	✓	✓		
	Corvus mellori	Little Raven	✓		✓	✓
	Coturnix pectoralis	Stubble Quail	✓		✓	✓
	Cracticus tibicen	Australian Magpie	✓	✓	✓	✓
	Cygnus atratus	Black Swan	✓		✓	✓
	Dendrocygna eytoni	Plumed Whistling-Duck	✓			
nt	*Dromaius novaehollandiae*	Emu		✓		
	Egretta novaehollandiae	White-faced Heron	✓	✓	✓	✓
	Elanus axillaris	Black-shouldered Kite	✓	✓		✓
	Elseyornis melanops	Black-fronted Dotterel	✓	✓		✓
	Eolophus roseicapillus	Galah	✓	✓	✓	
	Epthianura albifrons	White-fronted Chat	✓	✓		✓
	Erythrogonys cinctus	Red-kneed Dotterel	✓			✓
	Falco berigora	Brown Falcon	✓			✓
	Falco cenchroides	Nankeen Kestrel	✓		✓	✓
	Falco longipennis	Australian Hobby	✓		✓	
vu, cr	*Falco subniger*	Black Falcon	✓			✓
	Fulica atra	Eurasian Coot	✓		✓	✓
nt	*Gallinago hardwickii*	Latham's Snipe	✓			✓
	Gallinula tenebrosa	Dusky Moorhen			✓	
en, e	*Gelochelidon nilotica*	Gull-billed Tern	✓		✓	
	Grallina cyanoleuca	Magpie-lark	✓	✓	✓	✓
vu, e	*Antigone rubicunda*	Brolga	✓		✓	
	Haliastur sphenurus	Whistling Kite		✓		✓
	Himantopus himantopus	Black-winged Stilt	✓		✓	✓
	Hirundo neoxena	Welcome Swallow	✓	✓		✓

Status	Scientific name	Common name	Wind farm	Transmission line	Road reserves	Target surveys
	Lichenostomus leucotis	White-eared Honeyeater				✓
	Lichenostomus penicillatus	White-plumed Honeyeater		✓		
	Malacorhynchus membranaceus	Pink-eared Duck	✓		✓	✓
	Manorina melanocephala	Noisy Miner	✓	✓		✓
	Myiagra inquieta	Restless Flycatcher		✓		
	Neophema chrysostoma	Blue-winged Parrot	✓			✓
	Ocyphaps lophotes	Crested Pigeon	✓	✓		
	Pardalotus striatus	Striated Pardalote		✓		
*	*Passer domesticus*	House Sparrow	✓		✓	✓
	Petrochelidon nigricans	Tree Martin	✓			
	Phalacrocorax carbo	Great Cormorant				✓
	Phylidonyris novaehollandiae	New Holland Honeyeater		✓		
	Platalea flavipes	Yellow-billed Spoonbill	✓			
nt	*Platalea regia*	Royal Spoonbill	✓			
	Platycercus elegans	Crimson Rosella	✓			
	Platycercus eximius	Eastern Rosella	✓	✓		
	Poliocephalus poliocephalus	Hoary-headed Grebe	✓			✓
	Porzana pusilla	Baillion's Crake	✓	✓	✓	✓
	Porzana tabuensis	Spotless Crake	✓	✓	✓	✓
	Porphyrio porphyrio	Purple Swamphen	✓	✓	✓	✓
	Psephotus haematonotus	Red-rumped Parrot	✓	✓	✓	✓
	Rhipidura leucophrys	Willie Wagtail	✓	✓	✓	✓
en, e	*Stictonetta naevosa*	Freckled Duck				✓
*	*Sturnus vulgaris*	Common Starling	✓	✓		✓
	Tachybaptus novaehollandiae	Australasian Grebe				✓
	Tadorna tadornoides	Australian Shelduck	✓	✓	✓	✓
	Threskiornis molucca	Australian White Ibis			✓	
	Threskiornis spinicollis	Straw-necked Ibis			✓	
	Vanellus miles	Masked Lapwing	✓	✓	✓	✓
	Vanellus tricolor	Banded Lapwing				✓
Reptiles						
	Chelodina longicollis	Eastern Long-neck Turtle	✓			
VU, e,	*Delma impar*	Striped Legless Lizard			✓	✓
EN, cr	*Eulamprus tympanum marnieae*	Corangamite Water Skink	✓			

Status	Scientific name	Common name	Wind farm	Transmission line	Road reserves	Target surveys
vu	*Pseudemoia pagenstecheri*	Tussock Skink	✓			
	Pseudonaja textilis	Eastern Brown Snake	✓			
Frogs						
	Crinia signifera	Common Froglet		✓		
	Litoria ewingii	Southern Brown Tree Frog		✓		
	Limnodynastes peroni	Striped Marsh Frog		✓		
	Limnodynastes tasmaniensis	Spotted Marsh Frog		✓		
Fishes						
	Anguilla australis	Southern Short-finned Eel	✓			
	Galaxias sp.	Western Plains Galaxiella	✓			
	Galaxias oliros	Obscure Galaxias	✓			
	Galaxias maculatus	Common Galaxias	✓			
VU, e	*Galaxiella toourtkoourt*	Little Galaxias	✓			
*	*Gambusia holbrooki*	Eastern Gambusia	✓			
	Hypseleotris spp.	Carp Gudgeon Complex	✓			
	Nannoperca australis	Southern Pygmy Perch	✓			
	Philypnodon grandiceps	Flat-headed Gudgeon	✓			
	Retropinna Semoni	Australian Smelt	✓			
*	*Tinca tinca*	Tench	✓			
Decapod Crustacea						
	Cherax destructor	Common Yabby	✓			
	Amarinus lacustris	False Spider Crab	✓			
vu	*Engaeus sericatus*	Hairy Burrowing Crayfish	✓		✓	
	Paratya australiensis	Freshwater Shrimp	✓			

A2.2 Listed fauna species

The following table includes a list of the listed fauna species that have potential to occur within the study area. The list of species is sourced from the Victorian Biodiversity Atlas and the Protected Matters Search Tool (DAWE; accessed on 30.04.2021).

Table A2.2. Listed fauna species recorded, or predicted to occur, within 10 km of the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
National significance							
Antechinus minimus maritimus	Swamp Antechinus	VU	v		PMST	Predominantly found in near-coastal habitat characterised by dense wet heath, tussock grassland or sedgeland with relatively open ground vegetation and dense cover.	**Negligible** No suitable habitat for this species.
Dasyurus maculatus maculatus	Spot-tailed Quoll	EN	e		PMST	Rainforest and wet and dry sclerophyll forests and woodlands.	**Negligible** No suitable forest/woodland habitat present.
Dasyurus viverrinus	Eastern Quoll	EN	e	1930		Once occupied a broad range of forest, woodland and grassland habitats in Victoria. The species is now restricted to Tasmania and is considered to be extinct from mainland Australia.	**Negligible** Extinct on the mainland.
Potorous tridactylus tridactylus	Long-nosed Potoroo	VU	v		PMST	Forest, heathy woodlands and heathlands.	**Negligible** No suitable habitat.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Isoodon obesulus obesulus	Southern Brown Bandicoot	EN	e		PMST	Heathland, shrubland, sedgeland, heathy open forest and woodland; also exotic vegetation, such as blackberry thickets and rank grasses where native vegetation has been removed.	**Negligible** No suitable habitat.
Perameles gunnii unnamed subsp.	Eastern Barred Bandicoot (mainland form)	EN	e	1911		Natural temperate grasslands and grassy woodlands.	**Negligible** Low quality habitat available, however, no known free-ranging populations on mainland.
Pteropus poliocephalus	Grey-headed Flying-fox	VU	v	2019	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas. Recently recorded in several locations within western Victoria, roosting in exotic tree plantations (including Pine) and foraging on flowering planted eucalypts including Sugar Gum.	**High** May fly through the study area or forage on flowering/fruiting trees including Sugar Gum. Colony known to be roosting seasonally (late summer to autumn) in Pine plantation within 7 km of the western section of the study area.
Miniopterus orianae bassanii	Southern Bent-wing Bat (southern ssp.)	CR	cr	2011	PMST	Woodlands, grasslands, pasture especially near wetlands. Roosts in caves, crevices in cliff faces and in mines.	**Recorded** Suitable foraging and potential roosting habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Falco hypoleucos	Grey Falcon	VU	v		PMST	Lightly timbered plains and Acacia scrub.	**Low** Very few records within Victoria
Calidris ferruginea	Curlew Sandpiper	CR	cr	2011	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**High** Suitable wetland habitat present.
Botaurus poiciloptilus	Australasian Bittern	EN	cr		PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	**Low** Limited vegetated wetland habitat available.
Grantiella picta	Painted Honeyeater	VU	v		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	**Negligible** No suitable woodland habitat.
Hirundapus caudacutus	White-throated Needletail	VU	v	2009	PMST	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	**High** Suitable summer habitat for this migratory species. May utilise air space over study area.
Lathamus discolor	Swift Parrot	CR	cr		PMST	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	**Negligible** No suitable habitat.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Numenius madagascariensis	Eastern Curlew	CR	cr		PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Low** Wetlands within the study area do not provide suitable habitat.
Pedionomus torquatus	Plains-wanderer	CR	cr		PMST	Native grassland with a sparse, open structure.	**Low** Limited patches of sparse native grassland suitable for this species.
Rostratula australis	Australian Painted Snipe	EN	cr		PMST	Shallows of well-vegetated freshwater wetlands.	**Low** Limited suitable wetland habitat present for this species.
Delma impar	Striped Legless Lizard	VU	e	2013	PMST	Natural temperate grassland, grassy woodland and exotic grassland.	**Recorded** Suitable grassland habitat present. Species recorded within Castle-Carey Road reserve.
Eulamprus tympanum marnieae	Corangamite Water Skink	EN	e	2016	PMST	Basalt rock outcrops and stonewalls associated with remnant vegetation and adjacent to permanent or ephemeral wetlands.	**Recorded** Targeted survey recorded the species within Wetland 1, 3, and 4 in the north of the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Litoria raniformis	Growling Grass Frog	VU	v	2011	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	**Low** Suitable habitat identified, however, targeted survey did not record the species.
Synemon plana	Golden Sun Moth	CR	v	2012	PMST	Natural temperate grassland, grassy woodland and pasture supporting spear grasses and wallaby grasses and exotic grassland dominated by Chilean needle grass.	**Low** Suitable habitat in some areas. Not recorded during GSM flight season surveys.
Prototroctes maraena	Australian Grayling	VU	e		PMST	Adults inhabit cool, clear, freshwater streams.	**Negligible** Diadromous species unable to move upstream of Hopkins River Falls.
Galaxiella toourtkoourt	Little Galaxis	VU	e		PMST	Slow-flowing or still freshwater wetlands such as swamps, drains and backwaters of streams.	**Recorded** Recorded from two locations within Salt Creek. Note – this species has been recently split from Dwarf Galaxias *Galaxiella pusilla*. Conservation status, including EPBC Act listing, is assigned as per Dwarf Galaxias.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Maccullochella peelii	Murray Cod	VU	e		PMST	A diverse range of stream habitats in the Murray-Darling basin; principally the main channels of rivers and their major tributaries.	**Negligible** Study area is outside natural range for this species.
Nannoperca obscura	Yarra Pygmy Perch	VU	v	-	PMST	Yarra Pygmy Perch is a small bodied fish typically associated with slow flowing streams or floodplain wetlands with abundant aquatic vegetation.	**Medium** Suitable habitat in certain areas. Recorded from the catchment. Con-generic Southern Pygmy Perch recorded during aquatic survey**.**
Macquaria australasica	Macquarie Perch	EN	e	1920		Streams with clear water and deep, rocky holes with abundant cover.	**Low** Not locally indigenous. Records from area are the result of translocation. Old records (1920). Marginal habitat on site for this species.
Sminthopsis crassicaudata	Fat-tailed Dunnart			2010		Inhabits sparse grasslands and open shrubland habitats, usually where there is a significant component of bare ground and suitable refuge sites such as surface rocks or logs where it constructs nests of grass or other dried plant material.	**Recorded** Suitable grassland habitat present. Species recorded during tiling survey.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
State significance							
Ornithorhynchus anatinus	Platypus		v	1911		A variety of freshwater waterbodies, particularly those with stable banks suitable for burrows, and shallow waters for foraging.	**Low** Limited suitable aquatic habitat within the study area.
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat		v	2011		A variety of habitats, ranging from wet forests to desert.	**Recorded** Vagrant species that may occasionally use the study area.
Gelochelidon macrotarsa	Gull-billed Tern		e	2014		Floodplains, saltmarsh, claypans and flooded pasture.	**Recorded** Suitable wetland habitat present.
Tringa glareola	Wood Sandpiper		e	2013		Well-vegetated shallow freshwater wetlands with emergent aquatic plants and dense fringing vegetation.	**Medium** Suitable habitat present.
Tringa nebularia	Common Greenshank		e	2010	PMST	A variety of ephemeral and permanent inland wetlands and sheltered coastal wetlands.	**Medium** Suitable habitat present.
Tringa stagnatilis	Marsh Sandpiper		e	1993		Permanent or ephemeral wetlands, mudflats and saltmarshes in coastal and inland environments.	**High** Suitable habitat present.
Ardeotis australis	Australian Bustard		cr	1876		Grassland, open dry woodlands of mallee and mulga, arid heathland saltbush and bluebush.	**Negligible** Outside the excepted range of the species.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Antigone rubicunda	Brolga		e	2019		Shallow freshwater and brackish wetlands, crops, grassland and pasture.	**Recorded** Refer to Biosis (2021b).
Egretta garzetta	Little Egret		e	2009		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds in trees standing in water.	**Medium** Suitable wetland habitat present.
Ardea alba modesta	Eastern Great Egret		v	2011		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.	**Recorded** Suitable wetland habitat present.
Anseranas semipalmata	Magpie Goose		v	1911		Swamps, lakes, sewage ponds, flooded pasture, dams.	**Low** Marginal habitat for this species.
Spatula rhynchotis	Australasian Shoveler		v	2013		Prefers large, permanent lakes and swamps with deep water, stable conditions and abundant aquatic vegetation.	**Recorded** Suitable wetland habitat present. Recorded from Wetland 2.
Stictonetta naevosa	Freckled Duck		e	2019		Large freshwater wetlands, generally with dense vegetation.	**Recorded** Suitable wetland habitat for this species.
Aythya australis	Hardhead		v	2013		A mainly aquatic species preferring large, deep freshwater environments with abundant aquatic vegetation, including slow moving areas of rivers.	**Recorded** Suitable wetland habitat for this species.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Oxyura australis	Blue-billed Duck		v	2014		Open or densely vegetated wetlands.	**Medium** Limited suitable wetland habitat present.
Biziura lobata	Musk Duck		v	2011		A largely aquatic species preferring deep water on large, permanent swamps, lakes and estuaries with abundant aquatic vegetation. Often occurs in areas of dense vegetated cover within a wetland.	**High** Suitable wetland habitat present.
Accipiter novaehollandiae novaehollandiae	Grey Goshawk		e	1993		Rainforest, gallery forest, tall wet forest and woodland. Also partially cleared agricultural land.	**Low** Habitat generally unsuitable for this species.
Falco subniger	Black Falcon		cr	2011		Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.	**Recorded** Suitable foraging habitat present throughout study area.
Hieraaetus morphnoides	Little Eagle		v	2018		Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	**Medium** Wide ranging species.
Pseudemoia pagenstecheri	Tussock Skink		e	2010		On the ground in a range of grasslands or sparse grassy woodlands from alps to coast.	**Recorded** High quality habitat along Salt Creek.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area
		EPBC	FFG				
Pseudophryne bibronii	Brown Toadlet		L	1979		A wide variety of woodland, forest and grassland habitats.	**Medium** Suitable habitat in some areas.
Pseudophryne semimarmorata	Southern Toadlet			1979		A variety of habitats such as open forests, lowland woodlands and heathlands where adults shelter beneath leaf litter and other debris in moist soaks and depressions.	**Medium** Suitable habitat in some areas.
Galaxiella sp.	Western Plains Galaxiella (Corangamite Basin)			2008		Slow-flowing or still freshwater wetlands such as swamps, drains and backwaters of streams.	**Recorded** Recorded from two locations within Salt Creek.
Engaeus sericatus	Hairy Burrowing Crayfish			2008		Burrows are connected to the water table, typically adjacent to creeks or on floodplains. Although it is widespread in Victoria, most records are found in an area extending from the Otways, west to Port Fairy and north to Ballarat.	**Recorded** Burrows observed and one specimen recorded from Blind Creek near South Road.

A2.3 Migratory species (EPBC Act listed)

Table A2.3. Migratory fauna species recorded or predicted to occur within 10 km of the study area.

Scientific name	Common name	Most recent record	Recorded on site (targeted surveys)
Actitis hypoleucos	Common Sandpiper	PMST	Yes
Apus pacificus	Fork-tailed Swift	PMST	
Calidris acuminata	Sharp-tailed Sandpiper	2012	Yes
Calidris ferruginea	Curlew Sandpiper	2011	
Calidris ruficollis	Red-necked Stint	2015	Yes
Charadrius bicinctus	Double-banded Plover	2011	
Gallinago hardwickii	Latham's Snipe	2015	Yes
Gelochelidon nilotica	Asian Gull-billed Tern	2012	
Hirundapus caudacutus	White-throated Needletail	2009	
Motacilla flava	Yellow Wagtail	PMST	
Myiagra cyanoleuca	Satin Flycatcher	PMST	
Numenius madagascariensis	Eastern Curlew	PMST	
Pandion haliaetus	Osprey	PMST	
Plegadis falcinellus	Glossy Ibis	2013	
Rhipidura rufifrons	Rufous Fantail	PMST	
Tringa glareola	Wood Sandpiper	2013	
Tringa nebularia	Common Greenshank	PMST	
Tringa stagnatilis	Marsh Sandpiper	1993	

Appendix 3: Photos of the study area

Plate 1 **Heavier soils Plains Grassland**

Plate 2 **Plains Grassy Wetland**

Plate 3 Stony Knoll Shrubland

Plate 4 Plains Grassy Woodland

Plate 5 Aquatic Herbland EVC

Plate 6 Scattered River Red-gum on private property