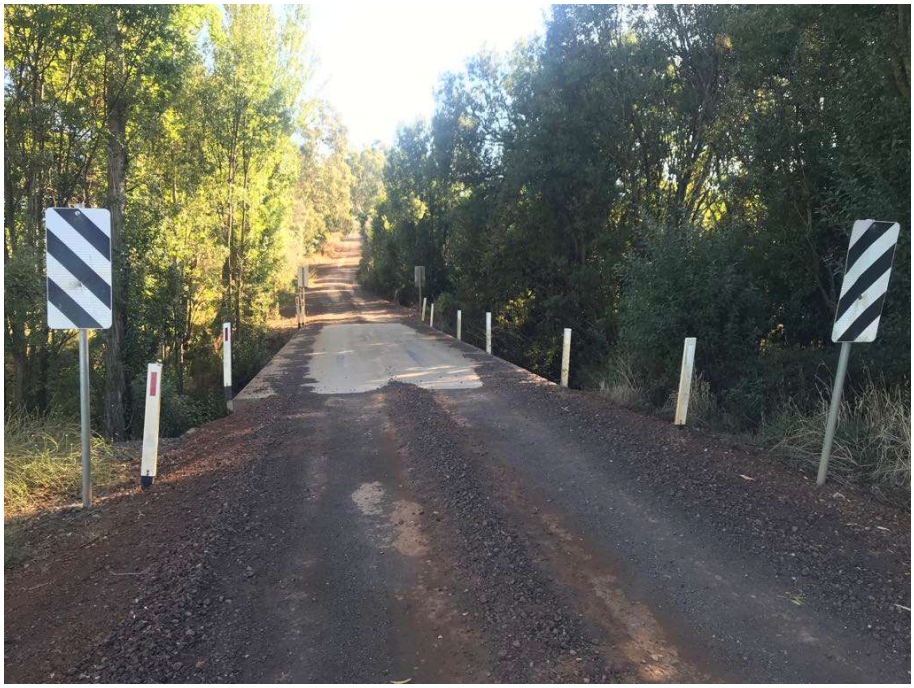
Biodiversity Assessment Report

Native vegetation, threatened flora and fauna & ecological communities.



Mahoneys Ford Road – Brucknell Creek Bridge, Naringal

Report prepared by: Plume Ecology Pty Ltd, March 2025

Report prepared for: Moyne Shire Council

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Plume Ecology Pty Ltd
Lauren Eddy - 0427 290 379
plume.ecology@bigpond.com
820 Timboon-Curdievale Road, Timboon Victoria 3268

1. Background

Plume Ecology Pty Ltd has been engaged by Moyne Shire Council to undertake an assessment of the biodiversity (flora and fauna) values at the Mahoneys Ford Road - Brucknell Creek bridge crossing at Naringal.

Flooding events of Winter 2022 impacted the bridge and infrastructure at Mahoneys Ford Road Brucknell Creek. Following flood events at this location, debris from dead trees is trapped under the bridge which can negatively impact the integrity of the bridge. The rationale in removing the trees is to open this section to increase water flow, with a view that low grade flooding will not impact the bridge or close the road.

Council seeks approval to coppice the trees on both sides of the bridge, and along both sides of the bank for 10-15m. All fallen trees across the same area of the waterway will be removed allowing for the creek to flow more freely. This will assist with restoring more 'natural' flows, to protect the infrastructure and attempt to keep the road open and usable during times of flood. Works are scheduled to occur between the end of April and June (which also aligns with the most appropriate time for minimising disturbance to Platypus which are known to inhabit Brucknell Creek). Works will be carried out over two days, by qualified arborists, using a truck mounted crane, excavator, truck and climbing equipment.

The biodiversity assessment will determine the presence (and type and extent) of native vegetation, any known and potential threatened flora and fauna species and threatened ecological communities. Potential impacts that the proposed works may have on those values will be identified. Recommended measures to avoid, minimise or mitigate impacts on all flora and fauna (aquatic and terrestrial) values will be provided.

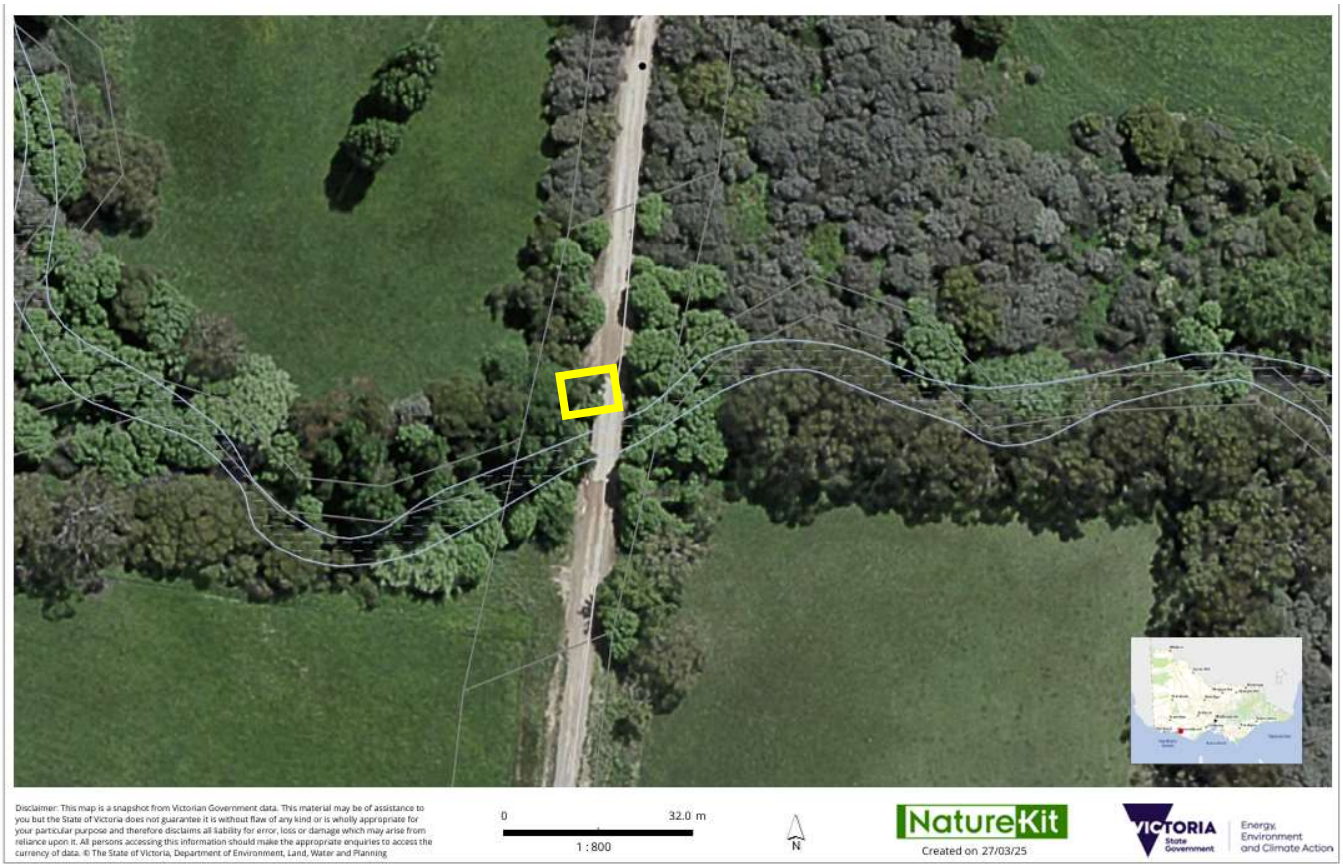

Figure 1: Location of proposed vegetation and debris removal works, Naringal (Brucknell Creek bridge crossing along Mahoneys Ford Road).

2. Assessment Methodology

A desktop assessment was undertaken to determine the potential presence, extent and quality of native vegetation on the subject land and to identify early opportunities to avoid the removal of native vegetation, minimise impacts on retained vegetation and to consider potential impacts on any threatened flora, fauna and ecological communities. The desktop review included an analysis of flora and fauna species officially recorded within and adjacent to the subject site. Records within 5km of the subject site were extracted from the both the (State) Victorian Biodiversity Atlas (VBA) database and the (Commonwealth) Protected Matters Search Tool (PMST).

A field visit was undertaken on 10th March 2025, by ecologist Lauren Eddy (Plume Ecology Pty Ltd) to assess native vegetation, habitat types, features and values. Photographs of vegetation to be removed from the waterway were also taken and are provided in Appendix 2.

3. Assessment Results

3.1 Site Description

Mahoneys Ford Road is a gravel road running north-south that crosses Brucknell Creek running east-west. An existing bridge structure (crossing) with culverts allows water to flow through under the road. The DEECA web-based 'NatureKit' tool indicates that the subject site would have once supported remnant vegetation belonging to Ecological Vegetation Classes (EVCs) 53: Swamp Scrub in the Warrnambool Plain bioregion (Figure 2 below). There are no previous records for rare or threatened flora or fauna species in the Victorian Biodiversity Atlas database within the proposed works site, however there are close and recent (2021) records of platypus (VBA 2025) and also records for a number of threatened fish species in the wider area.

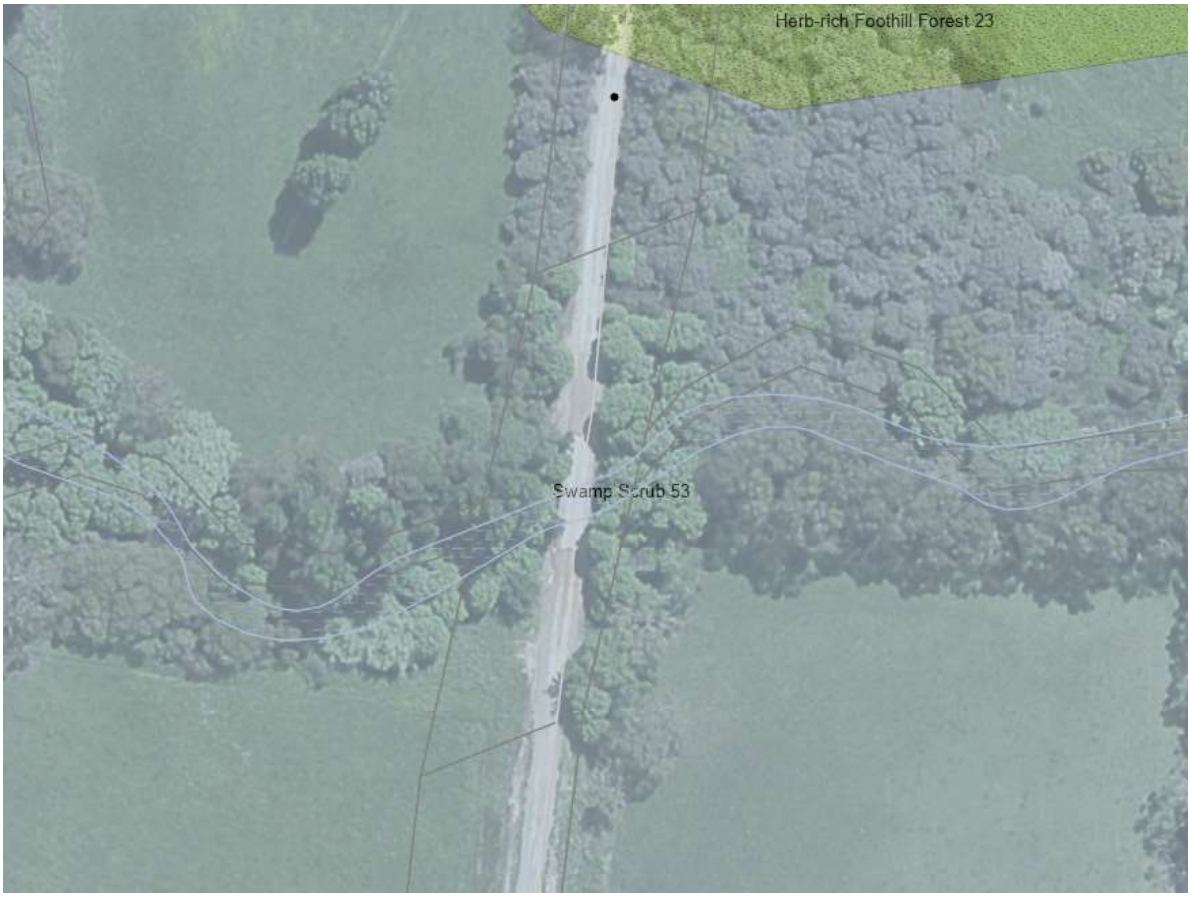

Figure 2: DEECA EVC Mapping - Modelled Data (Source: NatureKit 2025).

3.2 Native Vegetation

The vegetation at this location is highly disturbed and supports many very large woody weeds - mainly Poplars and other European exotic woody species, which are blocking the waterway on both sides of the crossing. There are a few remnant native trees and shrubs on the banks of the waterway including blackwood and woolly tea-tree, as well as understorey plants including native stinging nettle, saw-sedge, forest wire-grass, bracken, native hemp, sedges and fireweeds – species typical of damp, riparian habitat. Beyond the disturbed area, intact riparian vegetation comprising canopy trees (manna gums) and swamp scrub habitat. The works will not impact any native vegetation on the river banks or edges, however scattered native plants in the waterway may be impacted during instream debris removal. These scattered native plants are classified as 'other vegetation' as per the native vegetation definitions in the local planning scheme (i.e. not a remnant patch or scattered tree). A planning permit is required to remove this native vegetation but the biodiversity considerations are not applied and no offset is required. The removal or disturbance of any other native vegetation beyond the works footprint is likely to be considered 'remnant patch' vegetation and would require further assessment, potentially triggering native vegetation offset requirements.

For the proposed new crossing, the loss of native trees and intact remnant patch vegetation has been avoided by selecting an area of road reserve with minimal native species presence and cover. This assessment accounts for any native vegetation (scattered native plants) within the proposed works area –that is, 10-15 metres either side of the bridge crossing, and only woody vegetation (exotic trees and logs/debris) across the full width waterway on each side of the crossing. There is no proposal to disturb or impact the creek banks, and there will be no tree stump or soil removal from the site.

3.3 Threatened Species & Ecological Communities

Following the field assessment, State (FFG Act 1988) and Commonwealth (EPBC Act 1999) conservation-listed species and ecological communities identified in the desktop study (records within 5km of the subject site) were considered in more detail, in conjunction with the specific habitat features identified on site. A species habitat assessment was undertaken to determine whether the subject site provides suitable habitat for the species (particular ecological requirements, habitat preferences and specialist resources) and whether the species is likely to be impacted. An assessment of the presence of any threatened ecological communities was also undertaken (none present).

3.3.1 Victorian Biodiversity Atlas (VBA):

There are no previous records for rare or threatened flora or fauna species in the Victorian Biodiversity Atlas database within the proposed works site (VBA 2025), although there are close and recent records for the threatened Platypus. The VBA will only display records for species officially entered into the database – there may be species records or additional species that have been observed on or near the subject site, but not captured in the database. A further limitation relating to desktop data review can be an absence of targeted fauna or flora surveys, therefore some species may be present but never observed, nor recorded.

A total of 193 species have been recorded (comprising native and exotic flora and fauna) in the VBA database inside a 5km point buffer around the subject site. Of the 193 species recorded, eleven (11) native fauna species are conservation-listed at the State level (FFG Act 1988), and potential impacts on these species were considered in detail (following a site inspection and habitat assessment to verify ecological features present on site) as outlined in Table 1. Comments about the habitat suitability, likelihood or impacts and measure to avoid or mitigate impacts are provided. The presence of FFG-listed threatened ecological communities within the proposed works site was also considered (none present).

Table 1: Assessment of FFG-Act conservation-listed fauna species records within 5km point buffer:

Scientific Name	Common Name	FFG Status	Count of Sightings	Last Record	Comments
Engaeus sericatus	Hairy Burrowing Crayfish	Vulnerable	1	1/01/2008	Potentially suitable habitat exists along the waterway & adjacent riparian habitat. Impacts avoided through zero disturbance to creek bank habitat or soil. Only lopping/coppicing of woody plants (no root disturbance). Machinery anchoring point located to avoid sensitive areas (SW corner of works site or bridge). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Prototroctes maraena	Australian Grayling	Endangered	2	8/10/1990	Suitable habitat exists within the waterway for this species. The removal of wood debris and snags has a detrimental impact on grayling, but also migrating juveniles congregate below barriers when their upstream passage is blocked and are much more vulnerable to predation by larger fish and birds (so may benefit from exotic woody debris removal at this fish barrier). Potential impacts (if species is present) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Nannoperca obscura	Yarra Pygmy Perch	Vulnerable	1	1/01/1985	Prefers slow-moving or still waters (such as pools in rivers and streams or in lakes) which have abundant submerged and emergent aquatic vegetation, sometimes with wood debris. Some suitable habitat features are present here (not abundant submerged and emergent aquatic vegetation though). Potential impacts (if species is present) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Ornithorhynchus anatinus	Platypus	Vulnerable	3	4/08/2022	The presence of logs, large branches and other woody debris in the water is a very positive habitat feature for platypus populations, contributing to foraging success. Sizable debris piles sometimes also provide these animals with sheltered places to sleep (Serena 1994). Suitable habitat is present on both sides of the bridge – in-stream woody debris/logs and branches, submerged tree roots, open swimming areas,

					shallow areas for feeding - riffles and pools, riverbank featuring both undercut sections and areas consolidated by plant roots. Ideal water depths and occurrence of sizable pool habitat. Potential nesting and camping burrow construction habitat along river edges (banks). Impacts avoided through timing of works, the retention and protection of creek bank habitat and minimal removal of woody debris from waterway (only what is required for reducing flow blockage, there will still be plenty of instream logs and large branches in the vicinity). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Works to occur outside of nesting/breeding season for this species. Also refer to recommendations including protocols to minimise impacts, contingency plans and recommendations relating to improving habitat conditions post-works.
Accipiter novaehollandiae	Grey Goshawk	Endangered	14	22/09/2018	Unlikely to be impacted by works.
Ninox strenua	Powerful Owl	Vulnerable	7	3/04/2011	Unlikely to be impacted by works.
Callocephalon fimbriatum	Gang-gang Cockatoo	Endangered	1	19/07/1986	Unlikely to be impacted by works.
Potorous tridactylus trisulcatus	Long-nosed Potoroo	Vulnerable	6	17/03/1982	Unlikely to be impacted by works.
Dasyornis broadbenti caryochrous	Rufous Bristlebird (Otway)	Vulnerable	2	19/07/1986	Unlikely to be impacted by works.
Isoodon obesulus	Southern Brown Bandicoot	Endangered	1	18/05/1976	Unlikely to be impacted by works.
Miniopterus orianae bassanii	Southern Bent-winged Bat	Critically Endangered	1	28/04/1963	Unlikely to be impacted by works.

Data Source (excluding species habitat assessment column): 'Victorian Biodiversity Atlas', © The State of Victoria, Department of Energy, Environment and Climate Action (published March 2025).

3.3.2 (EPBC) Act 1999 Protected Matters Search Tool:

Using the EPBC Act Protected Matters Search Tool (PMST) inside a 5km point buffer search, a total of forty-eight (48) threatened species were identified for consideration. Potential impacts on these species were considered in detail (following a site inspection and habitat assessment to verify ecological features present on site) as outlined in Table 2. Comments about the habitat suitability, likelihood or impacts and measure to avoid or mitigate impacts are provided. The presence of EPBC-listed threatened ecological communities within the proposed works site was also considered (none present).

Table 2: Assessment of EPBC Act conservation-listed fauna and flora species records within 5km point buffer:

Scientific Name	Common Name	Class	Presence Text	Threatened Category	Habitat assessment, likelihood of Impact and mitigation/management strategies
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	Bird	Species or species habitat may occur within area	Critically Endangered	Unlikely to be present or impacted by works.
Lathamus discolor	Swift Parrot	Bird	Species or species habitat may occur within area	Critically Endangered	Unlikely to be present or impacted by works.
Miniopterus orianae bassanii	Southern Bent-wing Bat	Mammal	Roosting known to occur within area	Critically Endangered	Unlikely to be impacted by works.
Calidris ferruginea	Curlew Sandpiper	Bird	Species or species habitat may occur within area	Critically Endangered	Unlikely to be present or impacted by works.

Thelymitra orientalis	Hoary Sun-orchid	Plant	Species or species habitat may occur within area	Critically Endangered	Unlikely to be present or impacted by works.
Rostratula australis	Australian Painted Snipe	Bird	Species or species habitat likely to occur within area	Endangered	Unlikely to be present or impacted by works.
Thelymitra epipactoides	Metallic Sun-orchid	Plant	Species or species habitat may occur within area	Endangered	Unlikely to be present or impacted by works.
Mastacomys fuscus mordicus	Broad-toothed Rat (mainland), Tooarrana	Mammal	Species or species habitat may occur within area	Endangered	Unlikely to be present or impacted by works.
Dianella amoena	Matted Flax-lily	Plant	Species or species habitat likely to occur within area	Endangered	Unlikely to be present or impacted by works.
Gadopsis sp. SWV	Western Victorian Blackfish	Fish	Species or species habitat known to occur within area	Endangered	No records for this species in the VBA database review, but is known from Brucknell Creek and potentially suitable habitat exists within the waterway. Inhabits clear gently flowing streams and still pools, with abundant instream habitat such as log snags, aquatic vegetation or rock. Potential impacts (if species is present here) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Lissolepis coventryi	Swamp Skink, Eastern Mourning Skink	Reptile	Species or species habitat likely to occur within area	Endangered	Unlikely to be impacted by works. Potential impacts (if species is present) avoided through the retention of creek bank habitat and no bank/soil disturbance.
Nannoperca obscura	Yarra Pygmy Perch	Fish	Species or species habitat known to occur within area	Endangered	Prefers slow-moving or still waters (such as pools in rivers and streams or in lakes) which have abundant submerged and emergent aquatic vegetation, sometimes with wood debris. Some suitable habitat features are present here (not abundant submerged and emergent aquatic vegetation though). Potential impacts (if species is present) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Prasophyllum suaveolens	Fragrant Leek-orchid	Plant	Species or species habitat may occur within area	Endangered	Unlikely to be impacted by works.
Callocephalon fimbriatum	Gang-gang Cockatoo	Bird	Species or species habitat likely to occur within area	Endangered	Known to be present in the general area, but unlikely to be impacted by works.
Dasyurus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Mammal	Species or species habitat may occur within area	Endangered	Unlikely to be present or impacted by works.
Isoodon obesulus	Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern)	Mammal	Species or species habitat likely to occur within area	Endangered	Unlikely to be impacted by works. No native vegetation/patches of suitable cover being removed.

Lepidium hyssopifolium	Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed	Plant	Species or species habitat likely to occur within area	Endangered	Unlikely to be present or impacted by works.
Botaurus poiciloptilus	Australasian Bittern	Bird	Species or species habitat likely to occur within area	Endangered	Unlikely to be present or impacted by works.
Thelymitra matthewsii	Spiral Sun-orchid	Plant	Species or species habitat may occur within area	Endangered	Unlikely to be present or impacted by works.
Tringa nebularia	Common Greenshank, Greenshank	Bird	Species or species habitat likely to occur within area	Endangered	Unlikely to be present or impacted by works.
Antechinus minimus maritimus	Swamp Antechinus (mainland)	Mammal	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be impacted by works. No native vegetation - trees or patches of suitable cover being removed.
Stagonopleura guttata	Diamond Firetail	Bird	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Synemon plana	Golden Sun Moth	Insect	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Pseudomys novaehollandiae	New Holland Mouse, Pookila	Mammal	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Amphibromus fluitans	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass	Plant	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Pteropus poliocephalus	Grey-headed Flying-fox	Mammal	Foraging, feeding or related behaviour likely to occur within area	Vulnerable	Unlikely to be impacted by works.
Xerochrysum palustre	Swamp Everlasting, Swamp Paper Daisy	Plant	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Petaurus australis	Yellow-bellied Glider (south-eastern)	Mammal	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be impacted by works – suitable habitat nearby, no native trees all to be impacted.
Potorous tridactylus trisulcatus	Long-nosed Potoroo (southern mainland)	Mammal	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be impacted by works. No native vegetation - patches of suitable cover being removed.
Pterostylis cucullata	Leafy Greenhood	Plant	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Sternula nereis	Australian Fairy Tern	Bird	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Senecio psilocarpus	Swamp Fireweed, Smooth-fruited Groundsel	Plant	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Hirundapus caudacutus	White-throated Needletail	Bird	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Pterostylis tenuissima	Swamp Greenhood, Dainty Swamp Orchid	Plant	Species or species habitat may occur within area	Vulnerable	Unlikely to be impacted by works – may be present in nearby swamp scrub vegetation, not present at work site.
Prasophyllum spicatum	Dense Leek-orchid	Plant	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Calidris acuminata	Sharp-tailed Sandpiper	Bird	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Lepidium aschersonii	Spiny Peppercress	Plant	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Glycine latrobeana	Clover Glycine, Purple Clover	Plant	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.

Calidris canutus	Red Knot, Knot	Bird	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Prototroctes maraena	Australian Grayling	Fish	Species or species habitat may occur within area	Vulnerable	Suitable habitat exists within the waterway for this species. The removal of wood debris and snags has a detrimental impact on grayling, but also migrating juveniles congregate below barriers when their upstream passage is blocked and are much more vulnerable to predation by larger fish and birds (so may benefit from exotic woody debris removal at this fish barrier). Potential impacts (if species is present) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Delma impar	Striped Legless Lizard, Striped Snake-lizard	Reptile	Species or species habitat may occur within area	Vulnerable	Unlikely to be present or impacted by works.
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	Bird	Species or species habitat may occur within area	Vulnerable	Unlikely to be impacted by works. No native trees impacted.
Pterostylis chlorogramma	Green-striped Greenhood	Plant	Species or species habitat may occur within area	Vulnerable	Unlikely to be impacted by works.
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Bird	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be present or impacted by works.
Falco hypoleucos	Grey Falcon	Bird	Species or species habitat likely to occur within area	Vulnerable	Unlikely to be impacted by works.
Grantiella picta	Painted Honeyeater	Bird	Species or species habitat may occur within area	Vulnerable	Unlikely to be impacted by works.
Litoria raniformis	Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog	Frog	Species or species habitat likely to occur within area	Vulnerable	Some suitable habitat features exist within and adjacent to the waterway. Potential impacts (if species is present) largely avoided through the retention of creek bank habitat and the small area of removal of woody debris from the creek (only what is required for reducing flow blockage). Possible short-term disturbance to water quality when lifting logs and debris out of waterway, but species unlikely to be impacted upon on longer-term by the works. Restoration of more natural flows (unobstructed culvert flows and increased stability of structure during flooding events) will be beneficial to fauna. Also refer to recommendations relating to improving habitat conditions post-works.
Neophema chrysostoma	Blue-winged Parrot	Bird	Species or species habitat known to occur within area	Vulnerable	Unlikely to be impacted by works.

Data Source (excluding species habitat assessment column): Department of Climate Change, Energy, the Environment and Water - EPBC Protected Matters search tool (published March 2025).

4. Discussion and Recommendations

The proposed works will have minimal impact on native vegetation and threatened fauna, however there are some important measures to put in place to ensure that works do not inadvertently cause damage to biodiversity, specifically Platypus, Burrowing Cray and a number of native freshwater fish species, and other fauna (frogs, lizards and small mammals) that may use the riparian and streamside habitat.

Large wood and instream, bank and riparian native vegetation is important to the health of waterways. A number of Victorian native fish species are reliant on instream native vegetation. The **loss** or **substantial modification** of instream vegetation structure is likely to impact on these species (Drew et. al. 2008). Platypus also rely on suitable amounts of in-stream woody habitat. In this instance, the instream vegetation structure is already substantially modified (i.e. waterway is heavily infested with exotic trees on the banks with non-native instream debris). The proposal involves the removal of exotic instream and overhanging wood/vegetation.

Although the removal of woody debris and vegetation from the bed and banks of waterways generally can lead to poorer water quality, eroded riverbanks and degraded ecosystems, this proposal seeks to remove exotic woody debris for a positive outcome (restoring flows for both bridge/asset protection and water health/biodiversity). Whilst the complete removal of exotic woody plants (and site restoration by putting back native riparian habitat) would be ideal at this location, this goal is outside of the scope of the proposed works.

A number of potentially threatening processes have been listed under the *FFG Act 1988* which can directly or indirectly impact on the health of native fish populations and other aquatic fauna, including 'the removal of wood debris from streams'. However, in this instance, the works will also contribute to addressing other potentially threatening processes including:

- alteration to the natural flow regimes of rivers and streams;
- degradation of native riparian vegetation along rivers and streams;
- invasion of native vegetation by environmental weeds; and
- the prevention of passage of aquatic biota as a result of the presence of instream structures (by removing the build-up of debris blocking the access).

The proposed works involve the removal of exotic woody vegetation from above the buttress (lopping/coppicing) and the removal of dead woody debris from Brucknell Creek within the immediate vicinity (10-15m upstream and downstream) of the existing bridge structure. The only native vegetation to be removed comprises scattered and isolated native plants growing in the waterway (amongst heavily modified/exotic vegetation).

A planning permit is required to remove the scattered native plants within the woody debris removal footprint, however biodiversity considerations are not applied and no offset is required. There are other native vegetation and biodiversity (fauna habitat and water quality) protection measures to consider (see below).

In order to progress the works, the following recommendations are provided:

Native vegetation and soil protection considerations:

4.1 Prior to and during works, the access to the creek/machinery and truck siting/excavator anchor point location should be distinctly and clearly marked on the ground by installing hi-visibility line-of-site marker posts and/or bunting.

4.2 Hygiene protocols must be implemented to avoid the introduction and spread of weeds and pathogens to and from the site. All machinery, attachments, vehicles, equipment, footwear, tools and materials must be clean and free of any seeds, plant material, mud/soil before entering the work site.

4.3 Within the works area, the exotic woody plants to be lopped should be clearly marked or mapped.

4.4 Any areas of native vegetation to be protected during works should be highlighted using temporary hi-visibility fencing or tape/bunting and marked as no-go zones (native riparian vegetation adjacent to the work zone should be demarcated and protected during works – especially the Blackwood trees).

Platypus protection considerations:

4.5 Ideally, ensure works occur outside of the months when juveniles are confined to nesting burrows. The critical period extends roughly from September to February in Victoria. Works are scheduled to occur between April – June. Also see contingency plans in case of accidental disturbance - Appendix 2.

4.6 To avoid/minimise potential damage to platypus burrows, activities which involve excavating or driving heavy machinery across banks should be minimised throughout the year, particularly within about 15 metres of the water's edge. Consider using the bridge/road as the excavator anchor point during works See recommendation 4.1.

4.7 A visual check for active platypus presence in the water or on water's edge at the beginning of each work day (during works) could be undertaken (even in the days prior to works commencing) - contact an ecologist if detected/observed for advice (or to undertake survey).

4.8 Ensure that the contingency plans for displaced platypus are understood by all personnel prior to works commencing. If platypus specimens are accidentally dug up or inadvertently disturbed during machinery operation or tree lopping works, follow the contingency plans for displaced platypus (Appendix 2).

Site restoration:

4.9 Ensure all exotic woody materials/debris are taken off-site and appropriately disposed of.

4.10 To minimise the risk of bank or channel erosion occurring at work sites, consider using the bridge/road as the excavator anchor point during works (see recommendation 4.1). Areas of bare or disturbed soil should be revegetated as soon as possible once works are completed, and the soil surface stabilised effectively using appropriate matting or netting until plants are well established – also refer to recommendation 4.11.

4.11 Post-works restoration of certain areas through weed removal and revegetation (to improve habitat conditions and for soil protection/stabilisation) may be beneficial (ground covers and shrubs and potentially trees). Avoid the planting of large shrubs and trees close to bridge structure (i.e. within 10-15 metres). Plants may be staked and guarded, guards to be removed once the plant is established. Suitable species for post-works revegetation (soil protection and habitat enhancement) are provided:

Common Name	*Species*	Comments
Common Tussock-grass	*Poa labillardierei*	low-growing; no mowing required
Blackwood	*Acacia melanoxylon*	food resources; excellent riparian shade tree
Prickly Moses	*Acacia verticillata*	excellent riparian shade tree
Native Hemp	*Gynatrix pulchella*	bank stabilising
Black-anther Flax-lily	*Dianella revoluta s.s.*	low-growing; bank stabilising; food plant for insects, in-turn providing food sources for birds, fish, frogs, platypus

Mat-rush	*Lomandra spp.*	low-growing; bank-stabilising; food plant for insects, in-turn providing food sources for birds, fish, frogs, platypus
Hop Goodenia	*Goodenia ovata*	excellent riparian shade tree; food plant for insects, in-turn providing food sources for birds, fish, frogs, platypus
Woolly Tea-tree	*Leptospermum lanigerum*	excellent riparian shade tree
Scented Paperbark	*Melaleuca squarrosa*	excellent riparian shade tree
Saw-sedges	*Gahnia spp.*	low growing; bank-stabilising; food plant for insects, in-turn providing food sources for birds, fish, frogs, platypus

5. References:

DCCEEW (2025) EPBC Act Protected Matters Search Tool (accessed March 2025). Department of Climate Change, Energy, the Environment and Water.

DEECA (2025) NatureKit online tool: https://www.environment.vic.gov.au/biodiversity/naturekit (accessed March 2025). The State of Victoria, Department of Energy, Environment and Climate Action.

DEECA (2024) Flora and Fauna Guarantee Act 1988 Threatened List June 2024. © The State of Victoria Department of Energy, Environment and Climate Action June 2024.

Victorian Biodiversity Atlas (2025) 'Victorian Biodiversity Atlas', © The State of Victoria, Department of Energy, Environment and Climate Action.

Drew, M.M., Koehn, J., Clunie, P., and McCristal, N., (2008) A guide to the management of native fish: Victorian coastal rivers, estuaries and wetlands. Arthur Rylah Institute for Environmental Research and Corangamite Catchment Management Authority, Victoria.

Serena M. (1994) Use of time and space by platypus (Ornithorhynchus anatinus: Monotremata) along a Victorian stream. Journal of Zoology 232, 117-131.

Appendix 1: Site Photographs

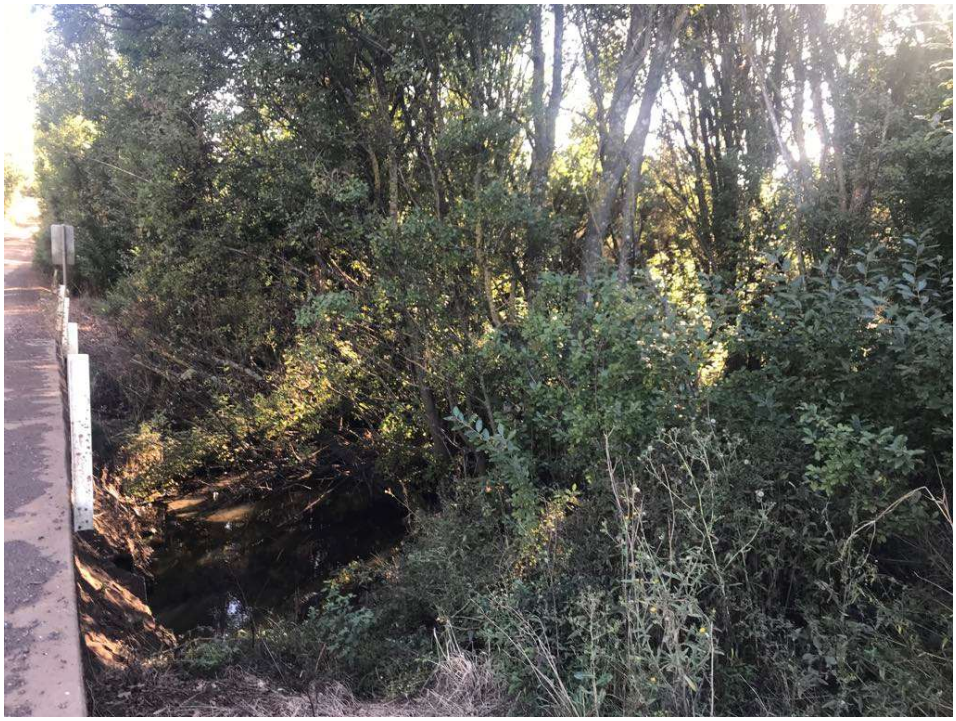

Image 1: Vegetation on the eastern (upstream) side of bridge, choked with exotic woody weeds. Looking north.

Image 2: Instream vegetation on the eastern (upstream) side of bridge, choked with exotic woody weeds. Looking into waterway.

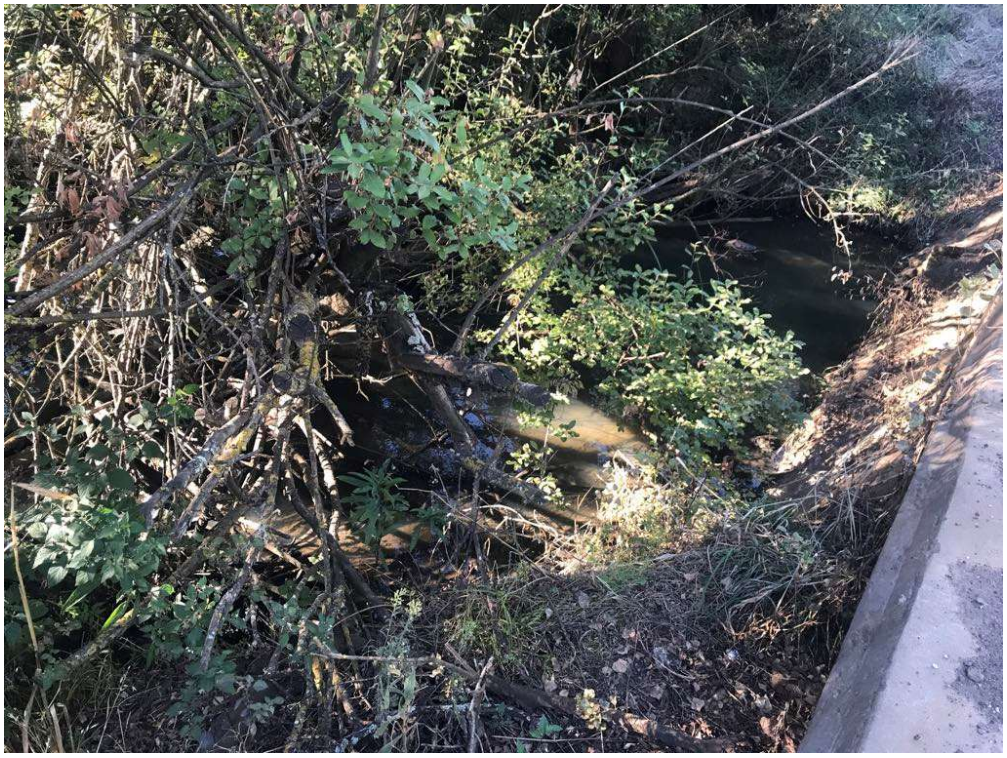

Image 3: Instream and bank vegetation on the eastern (upstream) side of bridge, choked with exotic woody weeds. Looking south.

Image 4: Scattered native sedge plants growing in the waterway vegetation (eastern/upstream side of bridge) that may be removed during debris removal works, requiring planning permit).

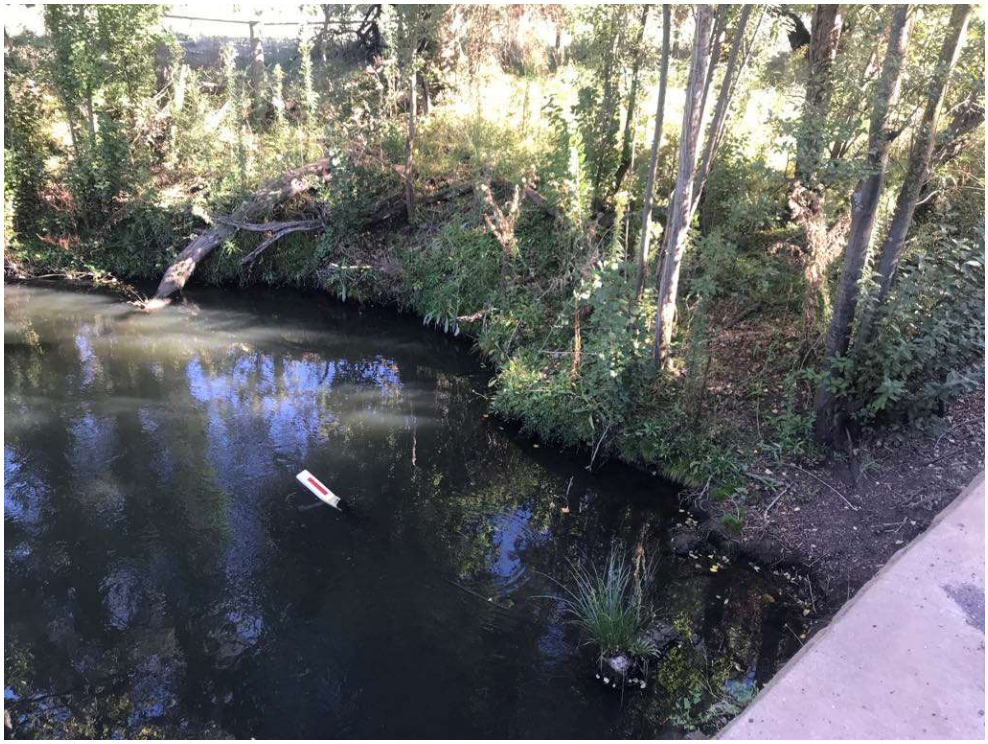

Image 5: Vegetation on the western (downstream) side of bridge, more open water, exotic woody weeds especially on the banks. Isolated sedge plant growing in creek may be removed, or could be retained. Looking north-west.

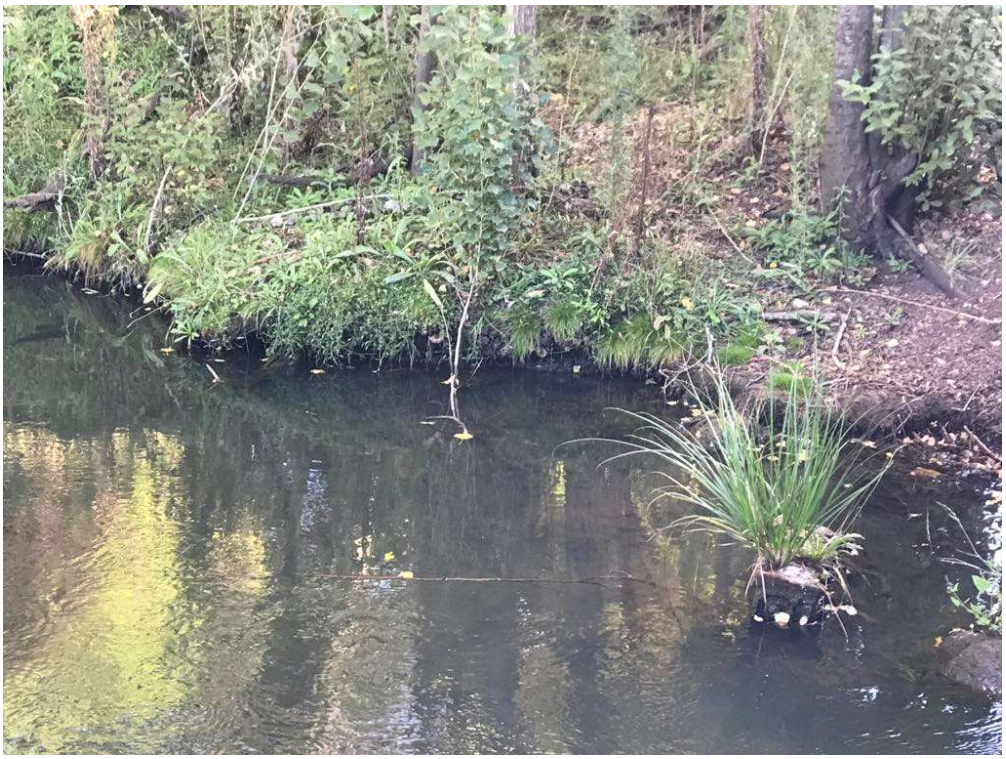

Image 6: Close-up of image 5.

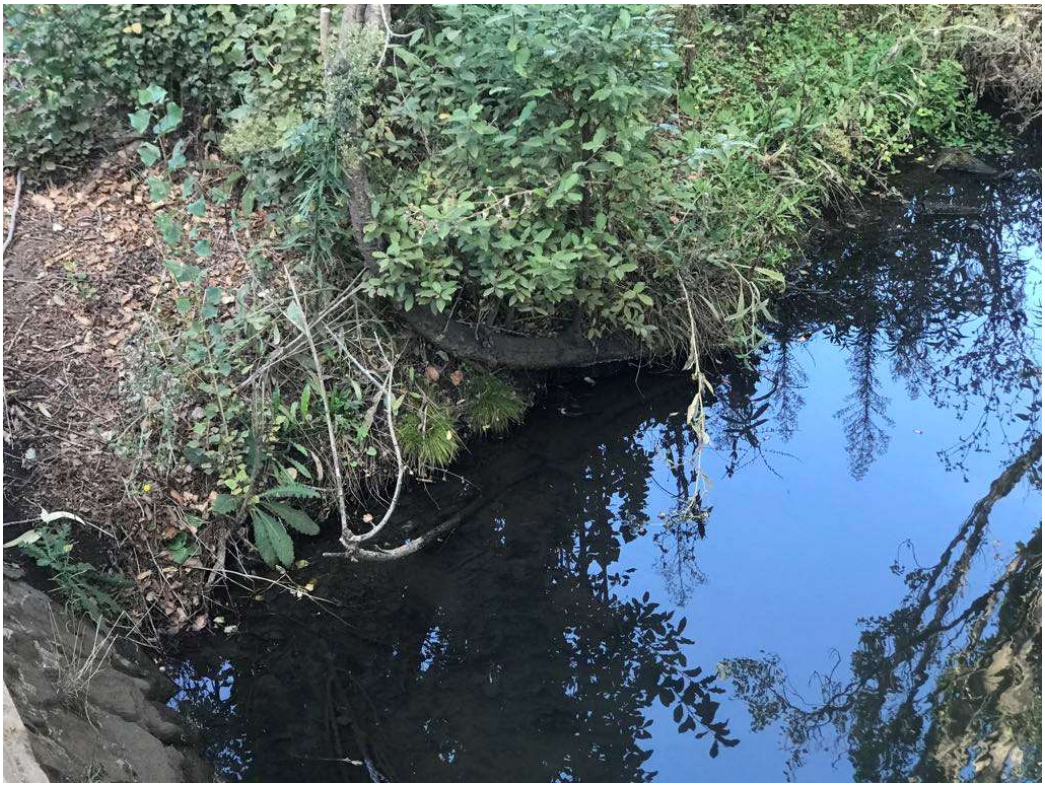

Image 7: Streamside vegetation on the western (downstream) side of bridge. Many weeds, some native plants present (sedges growing on very edge of bank will not be impacted). Looking south-west.

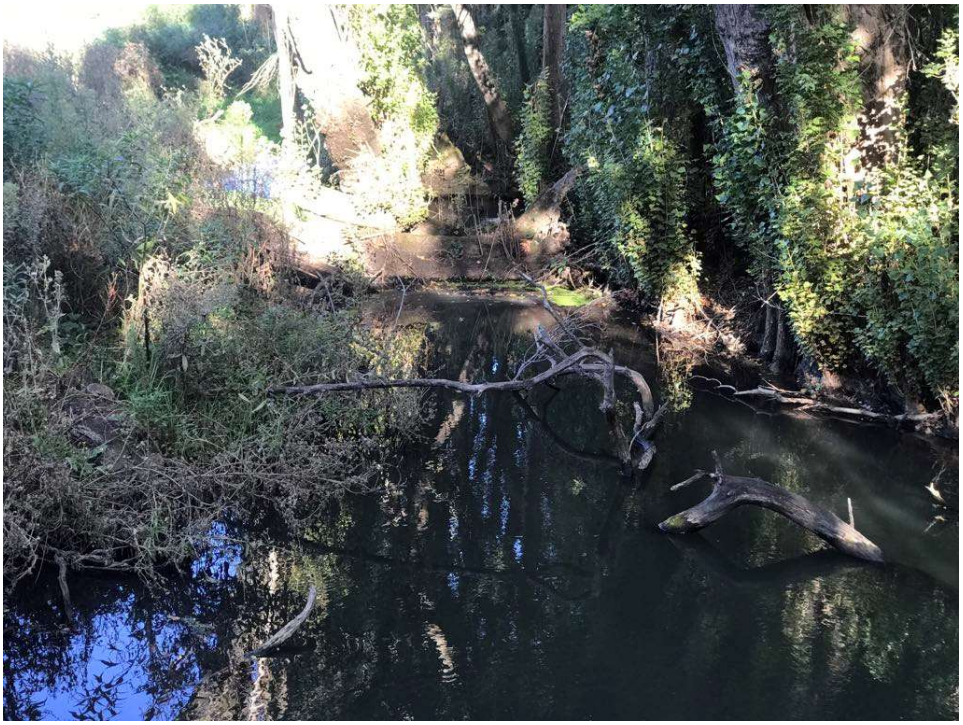

Image 8: Instream habitat (exotic) on the western (downstream) side of bridge.

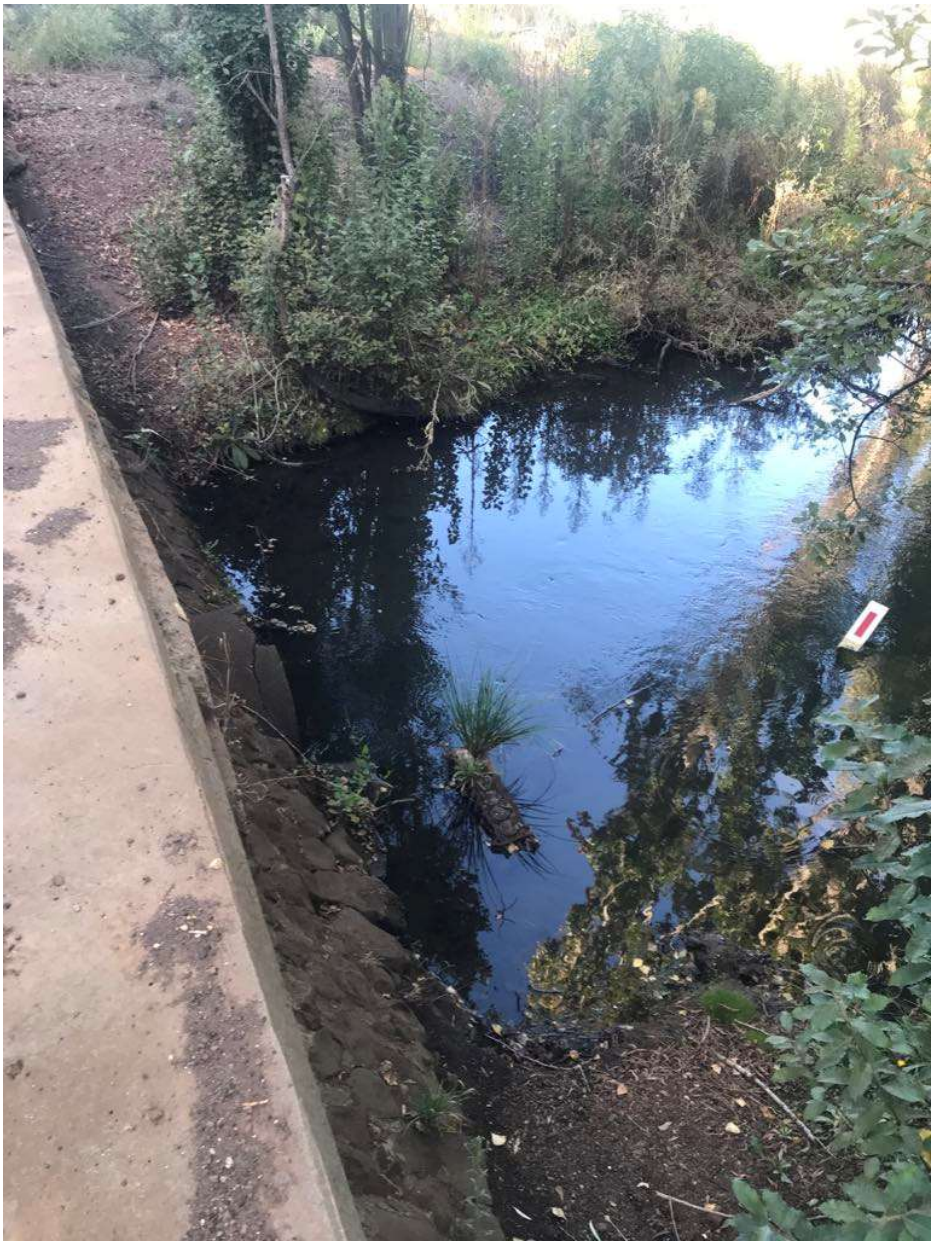

Image 9: Another view of the western (upstream) side of bridge. Note exotic poplar suckers invading the banks. Looking south.

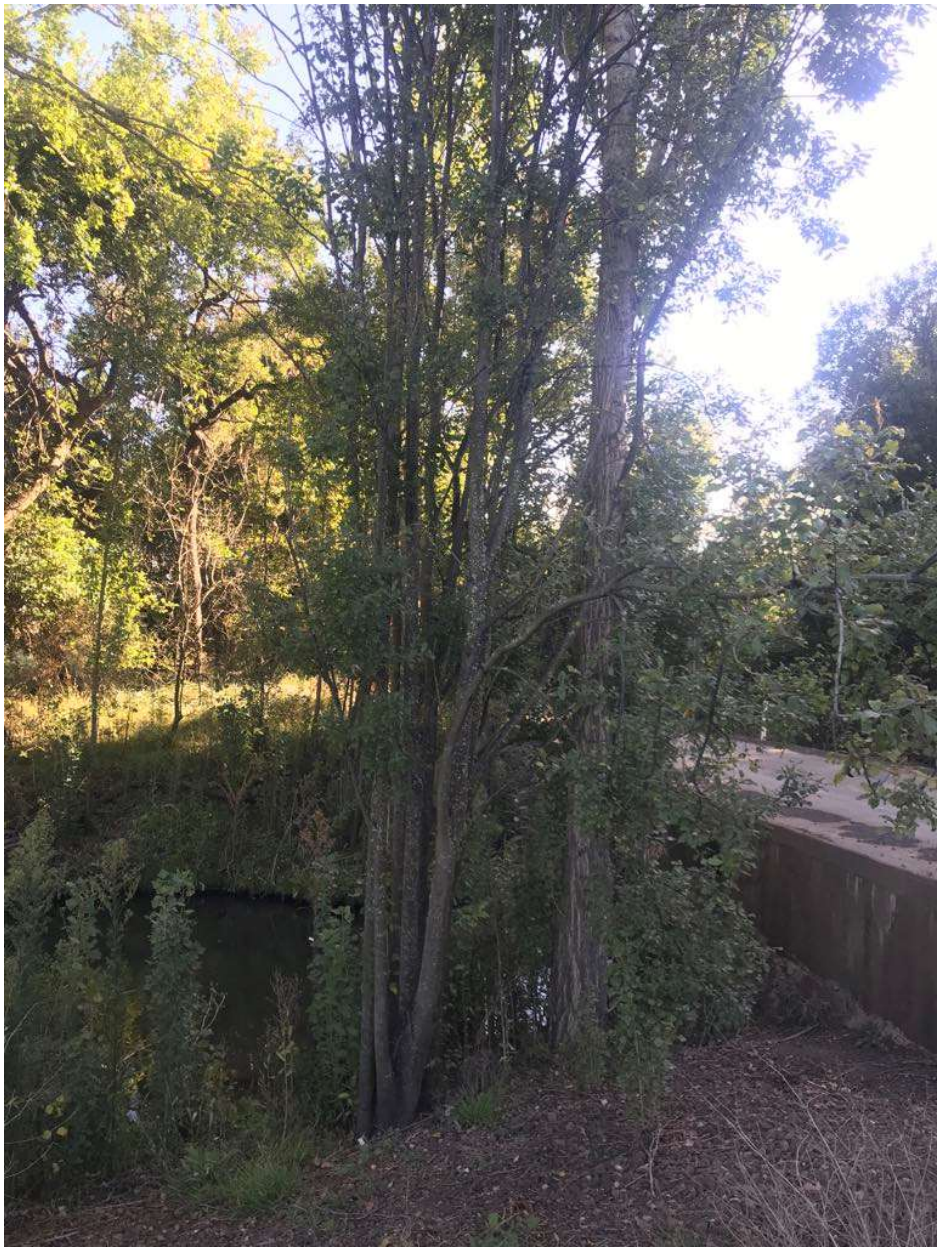

Image 10: Image 9: Another view of the western (upstream) side of bridge. Note exotic poplar suckers invading the banks. This section of the site (top bank) is very weedy. Looking north.

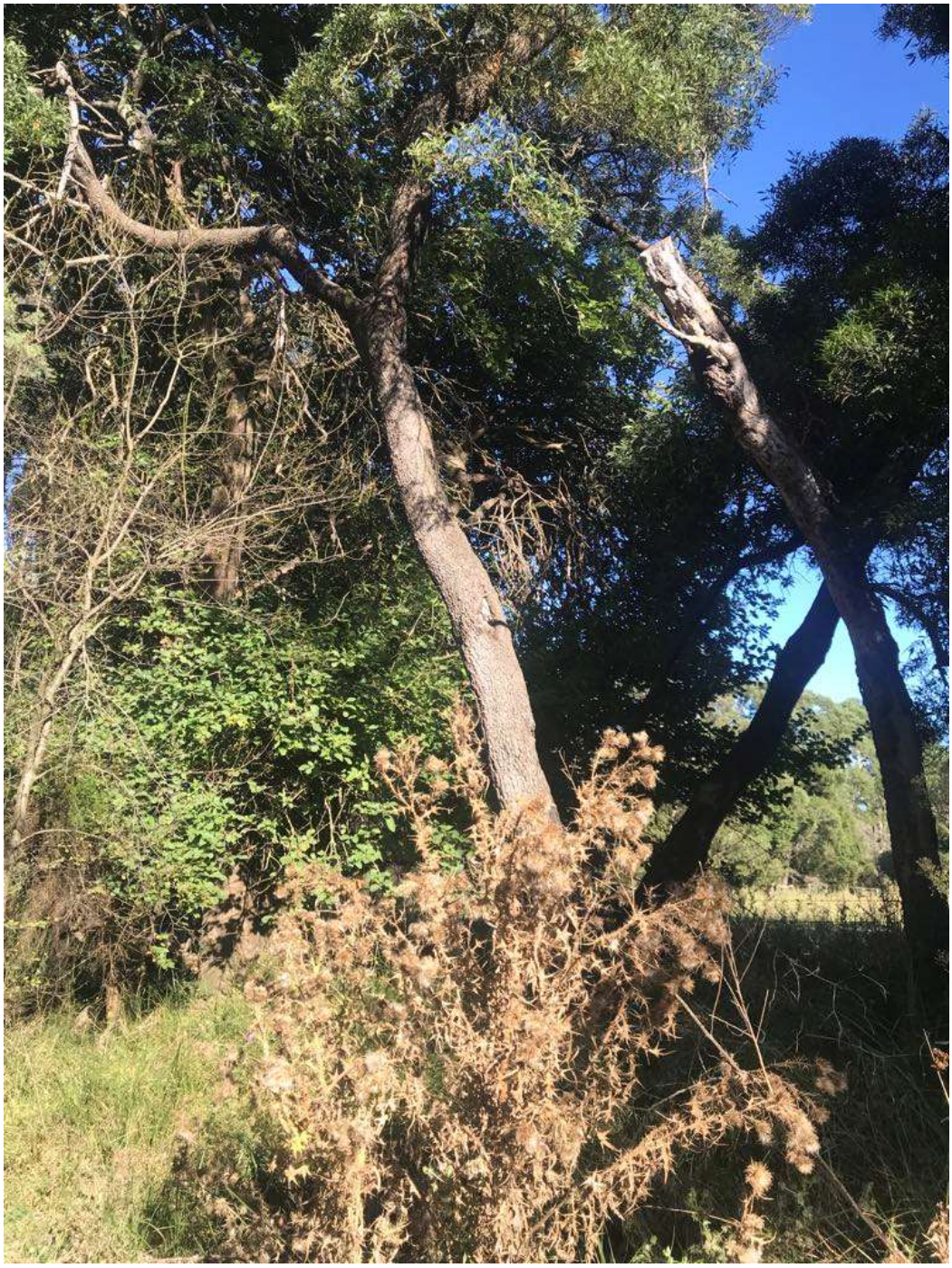

Image 11: Blackwood (Acacia melanoxylon) growing on the northern bank, western (upstream) side of bridge – to be protected during works.

Appendix 2: Platypus Contingency Guidelines for Capital Works Programs

AUSTRALIAN PLATYPUS CONSERVANCY

Platypus Contingency Plans for Capital Works Programs

A platypus's daylight hours are most typically spent resting in an underground burrow located next to a water body in a consolidated soil bank (normally rising more or less vertically for a distance of 1 metre or more above the water's surface, so the nest chamber can be located well above water level). Burrow entrances are generally oval in cross-section and just large enough to allow a platypus to enter. Some entrances are located underwater, with most of the remainder very well hidden by overhanging vegetation, undercut tree roots, etc. In consequence, it is normally not feasible to identify active platypus burrows in a section of bank habitat that is due to be excavated or otherwise substantially modified by heavy equipment.

As a workable alternative, we believe the best strategy to protect platypus in such an area is as follows:

- Limit as much as possible the amount of severe bank disturbance or compaction occurring along water bodies where substantial numbers of platypus are known to occur, particularly in the period when females are likely to be raising dependent young (from mid-spring through summer). Although some platypus burrows may be very long (up to 30 and possibly even 55 metres), the majority appear to be less than 10 metres in length, measured from the edge of the bank to the burrow chamber.

- Use caution whenever excavating the banks of natural or manmade water bodies and ensure that contingency plans are in place to deal with any platypus that may be accidentally dug up. In particular, we advise the following:

Contingency plans for displaced platypus

When picking up an injured or displaced platypus, take great care to avoid the poisonous spurs of adult males. These structures are located on the inner ankle of the hind legs and resemble the canine teeth of a medium-sized dog in terms of their length (around 15 mm), shape (slightly curved) and colour (off-white, often stained brownish at the base). Although platypus venom is not considered to be life-threatening to humans, it can cause excruciating pain and spectacular swelling. When being handled by a human, males will typically be much more focused on trying to escape than acting aggressively, but it would be extremely foolish to ever grab or hold an adult male (or an animal of unknown age/sex) from below.

Unless it is definitely known that a platypus is *not* equipped with spurs, do *not* place your hands or fingers under the animal's belly or use your legs or arms to support it from below. Instead, lift the platypus by gripping it firmly around the end half of the tail (but not the tail base, which a male can reach with his spurs) – see diagram above.

While holding a platypus in this way, it should also be easy to see if it has spurs. Note that juvenile males have non-venomous spurs that are typically around 10 mm long, more or less cone-shaped, and whiter than those of adults. Females (both adults and juveniles) lack conspicuous spurs.

Keep at least two clean cotton bags (about the size of a pillow case or a little longer) on hand in which to confine displaced animals (with only one animal at a time held in a given bag, apart from small siblings). If a bag becomes very wet or soiled, the animal inside should ideally be transferred to a fresh dry bag to try to keep it comfortable. A piece of twine or the equivalent will be needed to secure the top of a bag, unless a knot can easily be tied in the neck of the bag itself.

To avoid having the bag and its occupant walk away unexpectedly (or become lodged under the seat of a vehicle), each bag should be placed inside a sturdy but well-ventilated cardboard box or the equivalent.

Common sense needs to be applied when deciding whether or not to take a displaced platypus to a veterinarian for examination/treatment before releasing it back to the wild. Platypus are highly susceptible to both stress and overheating – for example, holding an animal in a bag in the sun for more than a few minutes when the air temperature is above 28ºC is likely to be lethal. Accordingly, the best strategy may be to release the animal immediately back to the wild after moving it approximately 150-200 metres upstream or downstream of the works site (ideally to a location providing plenty of natural cover in the form of shrubs or grasses overhanging the water, etc.). Immediate release is particularly likely to be the recommended course of action if the following conditions apply:

- The animal appears to be alert and active and seems old enough to both be familiar with the local water body and a reasonably accomplished swimmer.

- The day is forecast to be warm (over 25ºC) and/or it's likely to take more than an hour or so to convey the platypus to a veterinarian.

Alternatively, if an animal is clearly injured and/or seems abnormally sluggish (i.e. may have suffered a concussion or internal injuries) and/or appears to be so young that it should still be confined to a nursery burrow, arrangements should be made to transport it without delay to a suitably experienced veterinarian for assessment.

To minimise stress during transport, try to speak quietly, close car doors as quietly as possible and turn off the car radio. Keep the car cool and well ventilated. Make certain that the box containing the platypus is stored securely inside the vehicle, i.e. so that it doesn't tip over or rattle around.

More generally, try to respect the fact that the platypus in your care is a wild animal that may be experiencing pain and will certainly feel threatened by close contact with humans – avoid the temptation to handle the animal unnecessarily or show it off to interested bystanders.

For additional advice about what to do on the day, try contacting the following organisations:

Tasmania

- Bonorong Wildlife Rescue (0447 264 625, 24 hours)
- Tasmanian Wildlife Rescue Service (6165 4305 during business hours)

Victoria

- Australian Platypus Conservancy (0419 595 939, 24 hours)
- Healesville Sanctuary Australian Wildlife Hospital Centre (5957 2829; animals needing care can be dropped off between 9.00 am and 4.00 pm daily)
- Wildlife Victoria (8400 7300, 6.40 am to 8.30 pm daily)

New South Wales

- WIRES Wildlife Rescue Organisation (1300 094 737, 24 hours)
- Taronga Zoo Sydney, Rescue Hotline (9969 2777)
- Taronga Western Plains Zoo, Wildlife Hospital (6881 1461)

Queensland

- Australian Wildlife Hospital, Emergency Hotline (1300 369 652)
- RSPCA Queensland (1300 264 625)
- Wildcare (Brisbane, Gympie, Toowoomba & Gold Coast: 5527 2444, 24 hours)
- BARN (Brisbane Area Rescue Network: 0405 056 066)
- Tablelands Wildlife Rescue (Cairns and Atherton Tablelands: 4091 7767)