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South Gippsland Highway Realignment Project

Compliance Assessment Report No.4
March 2023 to March 2024
EPBC Approval No. 2017/8070

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Glossary

Table 1: Terms, abbreviations and definitions

Term/Abbreviation	Definition
CPB	CPB Contractors
DCCEEW (the Department)	Department of Climate Change, Energy, the Environment and Water (previously the Department of Agriculture, Water and the Environment (DAWE) and before that the Department of the Environment and Energy (DoEE))
DEECA	Department of Energy, Environment and Climate Action (previously the Department of Environment, Land, Water and Planning (DELWP))
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
MNES	Matters of National Environmental Significance
MRPV	Major Road Projects Victoria
OMP	Offset Management Plan
RAMP	Revised action management plan

Executive Summary

The final approval to Referral No. 2017/8070 under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) was given to Major Road Projects Victoria (MRPV) on the 18 January 2019 to realign the South Gippsland Highway south of the township of Koonwarra in South Gippsland.

Under Condition 13 of the decision notice, an annual compliance report is required to be published on MRPV's website within three months of every twelve-month anniversary of the commencement of the action. The report must address compliance with each of the conditions of the approval, including implementation of any management plans as specified in the conditions.

This compliance report addresses the current status of the construction of South Gippsland Highway Realignment Project (the Project) against the conditions of EPBC Act Approval No. 2017/8070 (the Approval). This is the fourth compliance report to be prepared for the South Gippsland Highway Realignment Project and relates to the period 30 March 2023 to 30 March 2024, or year four of the action.

MRPV has complied with all conditions of the Approval for the annual reporting period.

1 Introduction

1.1 Purpose of this document

This report details the Project's compliance with the conditions of Approval No. 2017/8070 under the EPBC Act in accordance with Condition No. 13 of the decision notice.

1.2 Background

The South Gippsland Highway Realignment Project involves realigning a stretch of the South Gippsland Highway between Koonwarra and Meeniyan. This section of highway has resulted in frequent run-off-road crashes, freight delays and safety concerns. In response the Australian and Victorian Governments have prioritised the realignment of the highway to make it safer.

CPB Contractors was awarded the contract to deliver the upgrade and construction commenced in early 2020.

The Project involves:

- building a new section of highway between Old Koonwarra-Meenian Road and Minns Road to reduce the length of highway from 3.4km to 2.3km
- building two new bridges over the Tarwin River
- building an underpass east of the new Caithness Road intersection for the Great Southern Rail Trail
- realigning the Great Southern Rail Trail under the new river bridge at Minns Road
- closing off access to the old section of highway to through traffic east of Caithness Road while retaining access for local residents
- maintaining access to Caithness Road by a new intersection and upgrades to the existing intersection at Minns Road
- installation of safety barriers.

A project map is provided in Appendix A.

1.3 EPBC Act 1999 Requirements

The EPBC Act has several objectives including the protection of matters of national environmental significance (MNES) such as nationally threatened species and ecological communities and heritage places.

1.3.1 EPBC Approval

Approval by the Commonwealth Minister for the Environment and Water is required under the EPBC Act if an 'action' will have, or is likely to have, a significant impact on a matter of national environmental significance. Due to potential impacts on protected native vegetation, the project was referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (then the Department of Environment and Energy) (the Department) on 13 October 2017.

A decision issued on 9 January 2018 determined that the Project is a controlled action requiring assessment by preliminary documentation and approval under the EPBC Act. The relevant controlling provision under the Act is the Project's impact on listed threatened species and communities (Sections 18 and 18A). In particular:

- Impacts to Strzelecki Gum (*Eucalyptus strzeleckii*) under the Project amount to the removal of 181 trees.
- Potential impacts on populations of Australian Grayling (*Prototroctes maraena*).

The Project was subsequently approved by the Department as a controlled action on 18 January 2019.

1.3.2 Change of Proponent

The Approval was granted to the Department of Economic Development, Jobs, Transport and Resources (Major Road Projects Authority) (ABN 69 981208 782) on 18 January 2019.

Due to Machinery of Government changes with the Victorian State Government the Project is now being delivered by Major Road Projects Victoria (MRPV) (formerly the Major Road Projects Authority), which is a division of the Victorian Infrastructure Delivery Authority (an administrative office of the Department of Transport and Planning (ABN 69 981 208 782)).

1.3.3 Variation of Conditions of Approval

On 8 August 2020 MRPV applied to the Department for a Variation to Condition 1 of the Approval under section 143 (1)(c) of the EPBC Act. This Variation sought to allow the Project to undertake ground-disturbing works on the floodplain (including earthworks, construction of haul roads and hard stand areas and installation of the temporary bridge structures) during the period between April to November of each year provided additional mitigation strategies were implemented.

On 12 August 2020, this Variation of Conditions was granted by the Department. This resulted in an amendment to Condition 1 of the approval that now details mitigation strategies to be implemented and requirements for monitoring and reporting of Australian Grayling in the Tarwin River as outlined in Approval Conditions 1b and 1c.

On 8 June 2021 MRPV applied to the Department for a further Variation of Conditions to facilitate works in the vicinity of the Tarwin River to remediate a bank slip in that location following a significant rainfall event.

On 17 June 2021, this Variation of Conditions was granted by the Department. This resulted in an amendment to Condition 1 of the approval to include a revised construction methodology and remediation works to be implemented to remediate the Tarwin Riverbank under Condition 1A – Remediation Works.

On 14 April 2022, MRPV applied to the Department for a further Variation to amend the approved construction methodology. The amendment was to include additional rock beaching along the Tarwin River in preparation for a forecast rain event.

On 16 May 2022, this Variation of Conditions was granted by the Department. This resulted in an amendment to the definition of Remediation Works in the Approval to reflect the documents prepared and discussed with the Department in relation to the intended remediation.

On 26 May 2022, MRPV provided the Department with an updated construction methodology for the Minister's approval. On 27 May 2022, this methodology was approved, with MRPV receiving a signed letter from the delegate. The revised management plan was implemented effective immediately.

2 Project Status and Compliance

2.1 Construction

The action commenced on 30 March 2020 and reached Practical Completion on 1 August 2022 with all major works now completed. MRPV will continue to manage the Project until Final Completion is reached and it is handed over to the Department of Transport and Planning as the asset owner and operator. At that stage the action will be deemed complete.

Project work areas are outlined on the Project Map in Appendix A.

2.2 Current Project Activities

2.2.1 Environmental Management

A Project Environmental Management Plan has been developed to manage the environmental actions, mitigation measures and commitments for the Project.

Contractor Environmental Management Plans and other procedures have been developed in conjunction with South Gippsland Shire Council (SGSC), DEECA (previously DELWP) and MRPV.

2.2.2 Native Vegetation Removal

As outlined under Condition 2 of the EPBC approval, a total of 181 individual Strzelecki Gums were approved to be either removed or translocated by the Project.

With the full extent of vegetation removal works now complete, MRPV was able to limit the total number of impacted Strzelecki Gums removed to 73 with an additional 64 translocated, meaning a total of 137 trees were impacted by the Project.

This was achieved by MRPV collaborating with CPB Contractors to identify and protect additional areas of native vegetation within the Project area where possible. This resulted in several additional areas of vegetation being protected as no-go zones.

One additional Strzelecki Gum was recorded to have fallen over within the Project area during an inclement weather event.

2.2.3 Management Plans

Two management plans sit under the EPBC approval and have been developed and implemented for the Project these include:

- South Gippsland Hwy Realignment Environmental Management Plan
- Strzelecki Gum - Offset Management Plan (OMP).

These plans were endorsed by DEECA and either approved by or provided to the Department for information as required for each plan.

2.2.4 Project Compliance

Major Road Projects Victoria has complied with all conditions of EPBC Act approval 2017/8070 for the annual reporting period. Details of compliance against each of the twenty-five conditions of the approval are provided in Section 3 below.

3 Performance and compliance (EPBC 2017/8070)

Table 2: EPBC Act Approval Notice 2017/8070 compliance results Year 4 (2023-24)

Condition	Subject	Conditions	Compliance Status	Response / Evidence
1	For the protection of Australian Grayling (<i>Prototroctes maraena</i>):	<p>The approval holder must:</p> <ul style="list-style-type: none"> a. not undertake in-stream works, except to implement the remediation works in accordance with condition 1A below; b. implement the mitigation measures described in Attachment A, and c. only undertake ground-disturbing works on the floodplain, including earthworks, construction of haul roads and hard stand areas and installation of the temporary bridge structure, during December to March (inclusive) unless: <ul style="list-style-type: none"> i. mitigation strategies are implemented in accordance with Attachment B; and ii. monitoring and reporting of Australian Grayling in the Tarwin River within 1 km of the action is undertaken in accordance with Attachment C. 	Compliant	<p>Remediation works implemented in-stream during the reporting period were undertaken in accordance with the requirements of Condition 1A (see below).</p> <p>Mitigation measures have been implemented in accordance with Attachment A Conditions where required.</p> <p>All ground-disturbing works carried out on the floodplain have been conducted during December to March or been conducted in accordance with Attachment B Conditions.</p> <p>In accordance with the Conditions in Attachment C post-construction targeted species monitoring for Australian Grayling occurred during April and is included in Appendix D.</p>
1A	For the protection of Australian Grayling (<i>Prototroctes maraena</i>):	To remediate the Tarwin Riverbank slip event, the approval holder must implement the remediation works.	Compliant	<p>Remediation works have been completed. Remediation works implemented in-stream during the reporting period were undertaken in accordance with the requirements of the approved remediation plans.</p> <p>An inspection of works by the West Gippsland Catchment Management Authority on 21 July 2022 followed up by email on 22 July 2022 confirmed their satisfaction with remediation works undertaken and the close out of relevant Works on Waterways Permit conditions.</p>

Condition	Subject	Conditions	Compliance Status	Response / Evidence
2	For the protection of Strzelecki Gum (<i>Eucalyptus strzeleckii</i>):	The approval holder must ensure that no more than 181 Strzelecki Gum individuals are removed as a result of the action.	Compliant	<p>137 Strzelecki Gums have been removed to-date with all clearing works now complete.</p> <p>One additional Strzelecki Gum fell over within the Project area during inclement weather.</p> <p>The final impact on Strzelecki Gum is below the 181 individual trees permitted to be removed.</p>
3	For the protection of Strzelecki Gum (<i>Eucalyptus strzeleckii</i>):	The approval holder must ensure that lopping or root disturbance impacts to remaining Strzelecki Gum are minimised in accordance with directions from an on-site, suitably qualified person.	Compliant	<p>No-go zone fencing was installed around all vegetation to be retained in consultation with arborists.</p> <p>All vegetation was inspected in pre-clearing site assessments and Tree Protection Zones were established where it was identified that there was any potential for works to impact vegetation, including Strzelecki Gum individuals.</p>
4	For the protection of Strzelecki Gum (<i>Eucalyptus strzeleckii</i>):	Prior to commencement of the action, the approval holder must provide written evidence to the Department of a licence agreement placed on the offset area and provide a shapefile of the offset area to the Department.	Compliant	<p>The signed licence agreement and shapefile of the Strzelecki Gum offset site was provided to the Department by MRPV on 4 March 2020.</p> <p>Receipt of this information was acknowledged by the Department Compliance Monitoring Team on 5 March 2020.</p>
5	For the protection of Strzelecki Gum (<i>Eucalyptus strzeleckii</i>):	The approval holder must implement the Offset Management Plan.	Compliant	<p>The Offset Management Plan is being implemented with Year 5 of works completed.</p> <p>Actions in Table 4 of the OMP are currently on track.</p> <p>Annual reports for 2020-2024 (inclusive) have been completed.</p> <p>The report for Year 5 of works is included in Appendix B.</p>
6	For the protection of Strzelecki Gum (<i>Eucalyptus strzeleckii</i>):	If the management action standards specified at Table 4 of the Offset Management Plan are not achieved by the end of the ten-year offset	Compliant	<p>Actions in Table 4 of the OMP are currently on track.</p>

Condition	Subject	Conditions	Compliance Status	Response / Evidence
		implementation period, the approval holder must submit an alternative Strzelecki Gum Offset Plan to the Minister for approval within twelve months of the end of the ten-year offset implementation period.		
7	Notification of date of commencement of the action	The approval holder must notify the Department in writing of the date of commencement of the action within 10 business days after the date of commencement of the action.	Compliant	Notification was sent to the Department on 3 April 2020 advising that the activity commenced on 30 March 2020. The Department acknowledged receipt of the notification on 8 April 2020.
8	Notification of date of commencement of the action	If the commencement of the action does not occur within 5 years from the date of this approval, then the approval holder must not commence the action without the prior written approval of the Minister.	Compliant	The action has commenced.
9	Compliance records	The approval holder must maintain accurate and complete compliance records.	Compliant	Records of the implementation of management plans/programs are being maintained along with ongoing monitoring data.
10	Compliance records	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	Compliant	Compliance records to be provided to the Department upon request.

Condition	Subject	Conditions	Compliance Status	Response / Evidence
11	Preparation and publication of plans	<p>The approval holder must:</p> <ul style="list-style-type: none"> a. submit plans electronically to the Department for approval by the Minister; b. publish each plan on the website within 20 business days of the date the plan is approved by the Minister or of the date a revised action management plan is submitted to the Minister, unless otherwise agreed to in writing by the Minister; c. exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public; and d. keep plans published on the website until the end date of this approval. 	Compliant	Plans have been submitted and approved and are currently published on MRPV's website.
12	Preparation and publication of plans	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required by the Offset Management Plan is prepared in accordance with the Department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the Department in accordance with the requirements of the Plan.	Compliant	<p>Monitoring data and reporting has been undertaken to date as defined in the Offset Management Plan (OMP).</p> <p>Relevant data has been submitted electronically to the Department in accordance with the OMP.</p>
13	Annual compliance reporting	<p>The approval holder must prepare a compliance report for each 12-month period following the date of commencement of the action, or as otherwise agreed to in writing by the Minister. The approval holder must:</p> <ul style="list-style-type: none"> a. publish each compliance report on the website within 60 business days following the relevant 12-month period; b. notify the Department by email that a compliance report has been published on the website within five business days of the date of publication; c. keep all compliance reports publicly available on the website until this approval expires; 	Compliant	This is the fourth compliance report completed for the project and will be published on MRPV's website in accordance with Condition 13.

Condition	Subject	Conditions	Compliance Status	Response / Evidence
		<ul style="list-style-type: none"> d. exclude or redact sensitive ecological data from compliance reports published on the website; and e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication. 		
14	Reporting non-compliance	<p>The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable, and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify:</p> <ul style="list-style-type: none"> a. the condition which is or may be in breach; and b. a short description of the incident and/or non-compliance. 	Compliant	There have been no incidents during the current reporting period.
15	Reporting non-compliance	<p>The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying:</p> <ul style="list-style-type: none"> a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b. the potential impacts of the incident or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the approval holder. 	Compliant	There have been no incidents during the current reporting period.
16	Independent audit	The approval holder must ensure that independent audits of compliance with the conditions are conducted for the 12 month period from commencement of the action and for every	Not applicable	On 2 March 2021 MRPV contacted the Department to request clarification of the intent of Condition 16.

Condition	Subject	Conditions	Compliance Status	Response / Evidence
		subsequent 12 month period until completion of the action, or as otherwise requested in writing by the Minister.		<p>On 29 March 2021 MRPV received a letter from the Department advising that an independent audit of the Approval need only be conducted if an audit is specifically requested in writing by the Minister.</p> <p>This letter is attached as Appendix C.</p> <p>To date MRPV have not received a request from the Minister to submit an annual independent audit report.</p>
17	Independent audit	<p>For each independent audit, the approval holder must:</p> <ol style="list-style-type: none"> provide the name and qualifications of the independent auditor and the draft audit criteria to the Department; only commence the independent audit once the audit criteria have been approved in writing by the Department; and submit an audit report to the Department within the timeframe specified in the approved audit criteria. 	Not applicable	No audit requested to be conducted to date.
18	Independent audit	The approval holder must publish the audit report on the website within 10 business days of receiving the Department's approval of the audit report and keep the audit report published on the website until the end date of this approval.	Not applicable	No audit requested to be conducted to date.
19	Revision of action management plans	The approval holder may, at any time, apply to the Minister for a variation to an action management plan approved by the Minister under condition 5, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the EPBC Act. If the Minister approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement	Not applicable	No variation to action management plans has been required to date.

Condition	Subject	Conditions	Compliance Status	Response / Evidence
		the RAMP in place of the previous action management plan.		
20	Revision of action management plans	The approval holder may choose to revise an action management plan approved by the Minister under condition 5, or as subsequently revised in accordance with these conditions, without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the RAMP would not be likely to have a new or increased impact.	Not applicable	No variation to action management plans has been required to date.
21	Revision of action management plans (RAMP)	<p>If the approval holder makes the choice under condition 20 to revise an action management plan without submitting it for approval, the approval holder must:</p> <ol style="list-style-type: none"> a. notify the Department in writing that the approved action management plan has been revised and provide the Department with: <ol style="list-style-type: none"> i. an electronic copy of the RAMP; ii. an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan and the RAMP; iii. an explanation of the differences between the approved action management plan and the RAMP; iv. the reasons the approval holder considers that taking the action in accordance with the RAMP would not be likely to have a new or increased impact; and v. written notice of the date on which the approval holder will implement the RAMP (RAMP implementation date), being at least 20 business days after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the Department. 	Not applicable	No variation to action management plans has been required to date.

Condition	Subject	Conditions	Compliance Status	Response / Evidence
		b. subject to condition 23, implement the RAMP from the RAMP implementation date.		
22	Revision of action management plans	The approval holder may revoke their choice to implement a RAMP under condition 20 at any time by giving written notice to the Department. If the approval holder revokes the choice under condition 20, the approval holder must implement the previous action management plan approved by the Minister.	Compliant	No variation to action management plans has been required to date.
23	Revision of action management plans	If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the RAMP would be likely to have a new or increased impact, then: <ul style="list-style-type: none"> a. condition 20 does not apply, or ceases to apply, in relation to the RAMP; and b. the approval holder must implement the action management plan specified by the Minister in the notice. 	Compliant	No variation to action management plans has been required to date.
24	Revision of action management plans	At the time of giving the notice under condition 23, the Minister may also notify that for a specified period of time, condition 20 does not apply for one or more specified action management plans. Note: conditions 20, 21, 22 and 23 are not intended to limit the operation of section 143A of the EPBC Act which allows the approval holder to submit a revised action management plan, at any time, to the Minister for approval.	Compliant	No variation to action management plans has been required to date.
25	Completion of the action	Within 30 days after the completion of the action, the approval holder must notify the Department in writing and provide completion data.	Compliant	Activity is yet to be completed.

4 References

Bowler, T., Brooker, T., & Imbery, B., (2018), South Gippsland Highway Realignment, Koonwarra (Black Spur) - EPBC 2017/8070. Strzelecki Gum Offset Management Plan. Indigenous Design Environmental Management, Research, Victoria.

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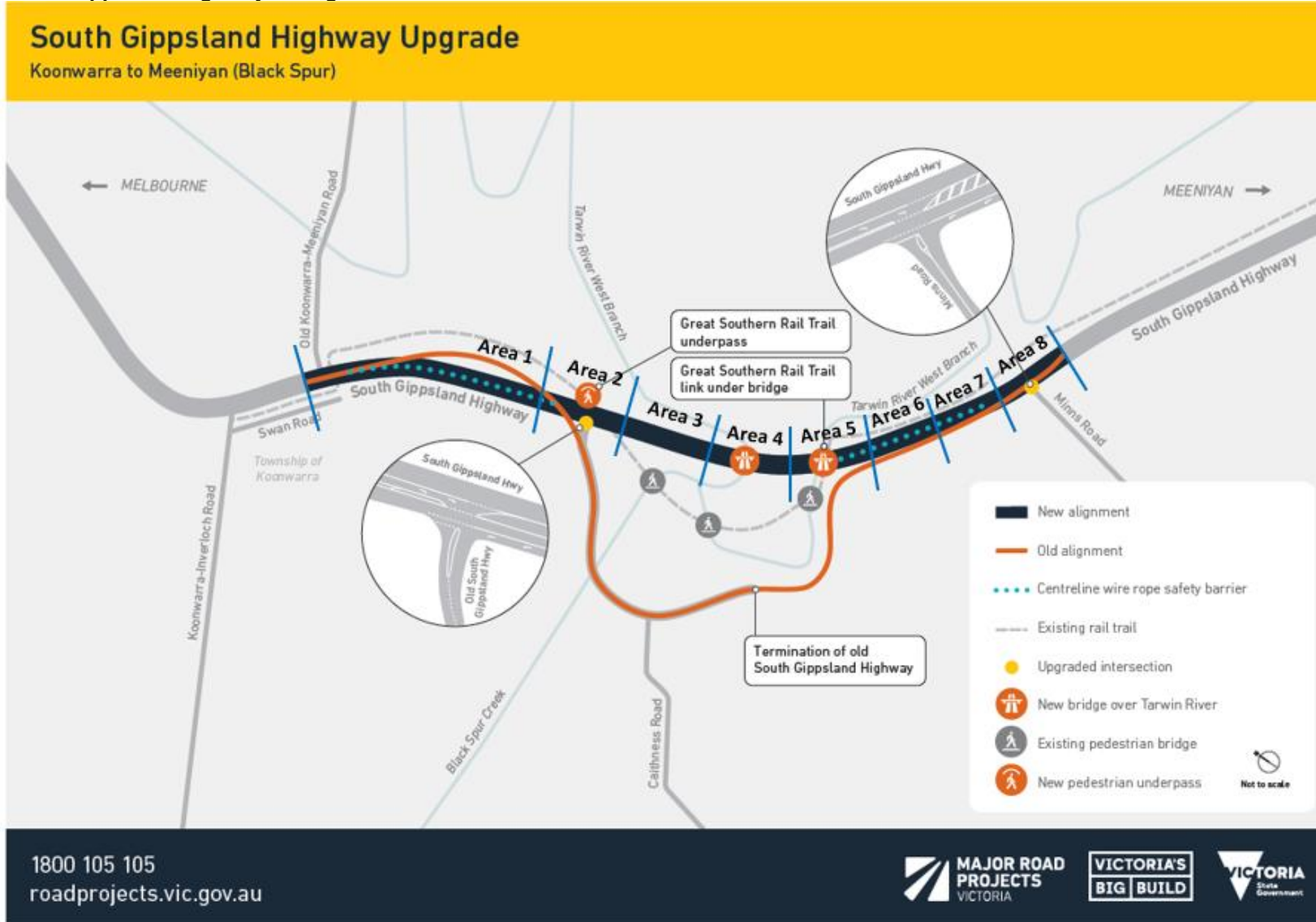
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Appendix A – Project Map

South Gippsland Highway Realignment – Koonwarra



Appendix B – South Gippsland Highway Realignment, Koonwarra, Strzelecki Gum Offset Site Annual Report 2023-2024

Report for Major Road Projects Victoria

South Gippsland Highway Realignment, Koonwarra
(Black Spur) - EPBC Act 1999 (2017/8070) Strzelecki
Gum Offset Site

Annual Report 2023-2024

April 2024



Citation

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Disclaimer

ID Ecological Management and any associated contractors engaged for this project have endeavoured to provide an accurate and current document. However, this document is not guaranteed to be without flaw or omissions. The information and recommendations provided are current at the time of writing but do not account for any changes in circumstances after the time of publication. ID Ecological Management accepts no liability for any error, loss or other consequence caused or arising from using the information provided within this report.

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1 Introduction

1.1 Project Background

This annual report for Major Road Projects Victoria (MRPV), aims to provide an update on the progress of native vegetation conservation and improvement works at the Black Spur Offset site, relating to the South Gippsland Highway Realignment. Condition 5 of the approval for EPBC 2017/8070 requires the approval holder to implement the Offset Management Plan and Condition 13 requires a compliance report for each 12-month period following the date of the commencement of the action (DoEE, 2019), being 30th March each year.

The Offset Management Plan specifies a range of management actions including revegetation, weed management, pest animal control and protection of the site from stock and unauthorised access (Bowler, Brooker, & Imbery, 2018).

This annual report provides the following:

- Summary of management actions required to be undertaken on the site;
- Summary of works undertaken at the site between April 2022 and March 2023;
- Photographic evidence of works undertaken;
- Comparisons of photo points between 2019 and 2023;
- Comments on issues or threats to the site identified during the current period; and
- Recommended actions to be undertaken as a result of observations.

This report is the 5th year since works commenced on site.

1.2 Site Details

The offset site is located on either side of the South Gippsland Highway Realignment, on Crown Land alongside the Tarwin River West Branch and Black Spur Creek, approximately 500 metres east of the township of Koonwarra in South Gippsland (*Figure 1*).

The site is approximately 8.7 hectares in size and includes a remnant patch of native vegetation within a degraded area, 1.2 hectares in size, which is to be used as a Strzelecki Gum revegetation site (*Map 1*). The remnant patch areas host a total of 238 Strzelecki Gums of varying sizes from very small recruits to very large mature trees recorded (Bowler, Brooker, & Imbery, 2018), along with an additional 235 planted, recruited or translocated Strzelecki Gums (*Section 2.6*).

1.3 Management Requirements

From the commencement of the agreement, MRPV agreed to undertake the following management commitments for the 10-year implementation period:

- Eliminate all woody weeds to less than 1% cover;
- Eliminate high threat herbaceous and grassy weeds to less than 1% cover;
- Ensure other herbaceous and grassy weed cover does not increase beyond current levels;

- Monitor for any new and emerging woody and herbaceous weeds and eliminate to <1% cover;
- Control rabbits and deer or their impacts if they pose a threat to the offset site;
- Retain all standing trees, dead or alive;
- Retain all fallen logs and fallen timber;
- Exclude stock; and
- Successfully establish 235 Strzelecki Gum trees.

(Bowler, Doherty, & Brooker, 2017)

These management actions were summarised in *Table 4* of the Offset Management Plan and included in *Appendix 1*, and this report provides specific detail on the progression of works to achieve these.

As required by the Offset Management Plan, monitoring of the success of management activities within the offset site must be undertaken by a suitably qualified and experienced ecologist annually for the term of the Plan. Monitoring was completed in April 2024 by Mr Tim Bowler- B.A.Sc. (Env. Sc.), a Department of Energy, Environment and Climate Action (DEECA) accredited native vegetation assessor, with 10 years of experience in environmental consultancy and flora and fauna assessments in South Gippsland.

2 Summary of Management Works

The following sections provide a description of works undertaken on site during the 2023/2024 works period and the site's progress towards vegetation improvements and management obligations. This summary is based on site observations and description of works undertaken by environmental work crews across the year, as well as a site audit to determine success, or otherwise, of weed control activities and the results of a weed audit which was completed in April 2024.

Appendix 1 provides a summation of current condition and actions taken as per *Table 4* in the Offset Management Plan.

2.1 Strzelecki Gum Condition

The condition of the remnant Strzelecki Gums is good across the site, although many have suffered some damage due to the severe weather conditions in early 2024, including many lost limbs and three observed with the entire top of the tree removed following high winds. *Section 3.2* shows evidence of these events. No removal or loss of Strzelecki Gums has been recorded at the site.

Weed control of grassy and herbaceous exotic species has continued beneath mature Strzelecki Gums to aid in the chances of recruitment by reducing competition.

The offset target requires the recruitment of 235 Strzelecki Gums within the site. The site audit in April 2024 recorded 131 Strzelecki Gum recruits and planted individuals within the offset set and 181 recruits immediately adjacent to the offset site, shown in *Map 2*.

The following works are required in Year 6 of the implementation of the offset plan to meet management commitments:

- Install guards on those new recruits currently un-protected, particularly those adjacent to the road construction zone.

2.2 Fencing

Fencing is present along the Rail Trail boundary in the south-west offset area, along the edge of the Rail Trail, and the adjoining farmland. All fencing remains in good condition. No fencing is currently installed along the boundary of the eastern offset area, with no-go fencing erected during the construction of the realignment having now been removed.

No evidence of firewood collection, stock intrusion or damage to existing fencing was observed or has been reported by environmental work crews.

2.3 Woody Weeds

Table 1 displays the nine woody weed species recorded within the offset site, along with their current and target covers. Five of these species are listed under the *Catchment and Land Protection (CaLP) Act*

1994 (Agriculture Victoria, 2017). All woody species are subject to the target of elimination, with emerging woody weeds also being monitored and removed by environmental work crews when found.

Weed control has been undertaken in this period (since March 2023) targeting *Rubus fruticosus* spp. agg. (Blackberry), *Solanum pseudocapsicum* (Madeira Winter Cherry) and *Salix* sp. (Willow).

During the site audit in April 2024, woody weed locations were recorded, particularly in areas of past infestations, with weed cover estimates taken. Where species coverage was negligible, the cover was noted as less than 1%. Where areas contained a mixture of species, the proportion of each species was estimated. Weed coverages have remained steady since the previous annual report.

One species remains above its target % cover of <1%, being *Salix* sp. (Willow), with control undertaken by environmental work crews in early March 2024.

No new woody weed species have been recorded at the site.

Table 1: Woody weeds recorded, targets to achieve and current status

Scientific name	Common name	Control Method	Timing of Control	Target % Cover	Current % Cover
<i>Crataegus monogyna</i>	Hawthorn	Cut & Paint	Spring to Autumn	<1%	<1%
<i>Fraxinus</i> sp.*	Ash Tree	Cut & Paint	Spring to Autumn	<1%	<1%
<i>Genista monspessulana</i> *	Cape Broom	Cut & Paint, spray with appropriate herbicide	Summer	<1%	<1%
<i>Pittosporum undulatum</i> *	Sweet Pittosporum	Cut & Paint	Spring to Autumn	<1%	<1%
<i>Prunus</i> sp.*	Prunus	Cut & Paint	Spring to Autumn	<1%	<1%
<i>Rosa rubiginosa</i> *	Sweet Briar	Cut & Paint, spray with appropriate herbicide	Summer	<1%	<1%
<i>Rubus fruticosus</i> spp. agg.	Blackberry	Cut & Paint, spray with appropriate herbicide	Summer	<1%	<1%
<i>Solanum pseudocapsicum</i>	Madeira Winter Cherry	Dig out or Cut & Paint	All Year	<1%	<1%
<i>Salix</i> spp.	Willow	Cut & Paint	Spring to Autumn	<1%	3%

* Newly recorded in 2020

Appendix 1 provides additional detail and comments in relation to woody weed control in Year 5.

The following works are required in Year 6 of the implementation of the offset plan to meet management commitments:

- Maintain low Blackberry cover in previously areas of infestations, including at the southern end of both the western and eastern offset areas, particularly adjacent to the new bridge;
- Reduce Willow cover to < 1% from its currently estimated 3%, where safe to do so along steep, tall banks, by drilling and filling, or cut and paint; and

- Control scattered *Crataegus monogyna* (Hawthorn), *Fraxinus* sp. (Ash Tree) and *Prunus* sp. (Plum Trees), particularly in the eastern offset area.

2.4 Herbaceous and Grass Weeds

Table 2 displays the herbaceous and grass weeds recorded within the offset site, along with their current and target covers. Three of these species are listed under the *CaLP Act 1994* (Agriculture Victoria, 2017), with four species requiring elimination within the Offset site. All other species must be controlled so as not to increase in cover from levels recorded in the Offset Management Plan (shown in Table 2 below).

Herbaceous weed control was undertaken across the offset site throughout the reporting period, targeting *Aster subulatus* (Aster), *Brassica* sp. (Brassica), *Cirsium arvense* (Californian Thistle), *Cirsium vulgare* (Spear Thistle), *Erigeron* sp. (Fleabane), *Phalaris arundinaceae* (Reed Canary-grass), *Ranunculus repens* (Creeping Buttercup), *Senecio jacobaea* (Ragwort) and *Tradescantia fluminensis* (Wandering Trad).

During the site audit in April 2024, herbaceous and grassy weed locations were recorded, particularly in areas of past infestations, with weed cover estimates taken. Where species coverage was negligible, the cover was noted as less than 1%. Where areas contained a mixture of species, the proportion of each species was estimated. Weed coverages have remained steady since the previous annual report.

Wandering Creeper coverage is estimated to be approximately 1.5% across the site, down from 4% in the previous monitoring.

Four new and emerging herbaceous weeds have also been recorded at the site within this 2023-2024 period.

Table 2: Herbaceous and grassy weeds recorded and targets to achieve.

Scientific name	Common name	Standard to Achieve	Method	Timing	Target % Cover	Current % Cover
<i>Anthoxanthum odoratum</i> *	Sweet Vernal Grass	No increase beyond existing cover	Spray with appropriate herbicide	Summer	2%	1%
<i>Aster subulatus</i> %	Aster	Eliminate to <1% cover	Spray with appropriate herbicide	All Year	<1%	<1%
<i>Brassica</i> sp. %	Brassica	Eliminate to <1% cover	Spray with appropriate herbicide	All Year	<1%	<1%
<i>Cirsium arvense</i> *	Californian Thistle	Eliminate to <1% cover	Dig out or spot spray with an appropriate herbicide	Spring	<1%	<1%
<i>Cirsium vulgare</i>	Spear Thistle	Eliminate to <1% cover	Dig out or spot spray with an appropriate herbicide	Spring	<1%	<1%
<i>Cenchrus clandestinus</i>	Kikuyu	No increase beyond existing cover	Spray with appropriate herbicide	Spring and Summer	10%	10%

Scientific name	Common name	Standard to Achieve	Method	Timing	Target % Cover	Current % Cover
<i>Dactylis glomerata</i>	Cocksfoot	No increase beyond existing cover	Hand weed or spray with appropriate herbicide	Winter and Spring	1%	2%
<i>Ehrharta erecta</i> *	Panic Veldt-grass	No increase beyond existing cover	Spray with appropriate herbicide	All Year	1%	1%
<i>Galium aparine</i> *	Cleavers	No increase beyond existing cover	Spray with appropriate herbicide	All Year	1%	<1%
<i>Holcus lanatus</i>	Yorkshire Fog	No increase beyond existing cover	Spray with appropriate herbicide	Summer	2%	2%
<i>Myosotis sylvatica</i> *	Forget-me-not	No increase beyond existing cover	Spray with appropriate herbicide	All Year	1%	<1%
<i>Phalaris arundinacea</i>	Reed Canary Grass	No increase beyond existing cover	Spray with appropriate herbicide	Spring and Summer	2%	12%
<i>Ranunculus repens</i>	Creeping Buttercup	No increase beyond existing cover	Spray with appropriate herbicide	Spring	2%	2%
<i>Rumex sp.</i> **	Dock	No increase beyond existing cover	Spray with appropriate herbicide	All Year	<1%	<1%
<i>Senecio jacobaea</i>	Ragwort	Eliminate to <1% cover	Dig out or spot spray with an appropriate herbicide	Spring and Summer	<1%	<1%
<i>Tradescantia fluminensis</i>	Wandering Trad	Eliminate to <1% cover	Hand weed or spray with appropriate herbicide	All Year	<1%	1.5%
<i>Viola odorata</i> +	Scented Violet	Eliminate to <1% cover	Spray with appropriate herbicide	All Year	<1%	<1%
<i>Zantedeschia aethiopicum</i> +	Arum Lily	Eliminate to <1% cover	Spray with appropriate herbicide	All Year	<1%	<1%

* Newly recorded 2020

** Newly recorded 2023

+ Newly recorded 2024

Appendix 1 provides additional detail and comments in relation to herbaceous weed control in Year 6.

The following works are required in Year 6 of the implementation of the offset plan to meet management commitments:

- Continued weed control to target Ragwort and Spear Thistle is required to maintain coverages at <1%, particularly furthest to access areas to prevent weed re-establishment;
- Control of Creeping Buttercup in the north-east of the site beneath the mature Strzelecki Gums to maintain low coverage;
- A concerted effort is required to reduce coverage of Reed Canary-grass to its required 2% target coverage, predominantly in and surrounding the Black Spur wetland, which should

encourage the indigenous *Persicaria* species (Knotweed) to re-colonise the areas of high weed cover. Work in this area has been restricted by the fluctuating inundation regime, along with difficulties with access for high-volume weed control. Note - An additional control run was undertaken following the April site audit to commence this recommendation whilst weather conditions were amenable. Approximately 50% of the Black Spur wetland area was included in this control run, however the effects on the Reed Canary-grass will not be visible for some months; and

- Maintain low levels of Wandering Creeper, particularly in areas previously controlled (south-west, adjacent to the rail trail) and along the bank of the Tarwin River in the north-east of the site.

2.5 Pest Animals

Pest animal cameras were installed for eight (8) days in August 2023, with three (3) foxes and one (1) rabbit being recorded.

No evidence of pest animals was observed during the inspection in April 2024, or by crews throughout the year.

No damage to Strzelecki Gum from deer activity was or has been observed. No active rabbit warrens have been identified, or any rabbits recorded, and no rubbish or artificial piles of logs and rocks within the offset site. Some browsing of the planted Strzelecki Gums by wallabies was observed, with the tops of the plants being eaten as they grew above the established tree guards in a number of individuals.

Continued monitoring of pest animals within the site should continue to be completed annually to determine if any control is required.

2.6 Revegetation Planting

The offset target requires the recruitment of 235 Strzelecki Gums within the site.

During the 2022-2023 management period, 255 Strzelecki Gums were planted in revegetation areas. Supplementary planting of 430 indigenous shrub species was also undertaken in June and July 2023 (during the 2023-2024 management period), including *Acacia melanoxylon* (Blackwood), *Bursaria spinosa* (Sweet Bursaria), *Acacia stricta* (Hop Wattle) amongst the planted Strzelecki Gums.

During the inspection in April 2024, a total of 367 Strzelecki Gums were recorded, increasing from 215 in 2023. This is comprised of 177 individuals within the offset site (a mixture of planted and naturally germinated) and 190 recruits beyond the boundary of the offset site.

This compares to 172 individuals within the offset area and 42 beyond the offset area, recorded in March 2023.

The following works are required in Year 6 of the implementation of the offset plan to meet management commitments:

- Undertake preparatory work for the installation of remaining plantings of 58 Strzelecki Gums; and
- Install plants with wallaby guards within the identified revegetation planting areas of the offset site.

3 Photos

3.1 General



Photo 1 – Bursaria spinosa (Sweet Bursaria) planted in the eastern portion of the offset site



Photo 2 – Native ferns along the Tarwin River bank



Photo 3 – Two Swamp Wallabies on trail camera 2 in the western portion of the offset site



Photo 4 – An Echidna on trail camera 3 in the south-western portion of the offset site

3.2 Strzelecki Gum Condition



Photo 5 – Mature Strzelecki Gum in the eastern section of the site, with the top snapped off in wild weather, Grid Reference G12



Photo 6 – Mature Strzelecki Gums' recently dropped limbs, G12

3.3 Recruitment and Translocation



Photo 6 – High number of Strzelecki Gum seedlings in bluestone adjacent to new roadway. These are beyond the boundary of the offset site



Photo 8 – Natural Strzelecki Gum recruit adjacent to mature Strzelecki Gum in the north-west of the eastern half of the offset site



Photo 9 – Strzelecki Gum recruits along edge of Highway



Photo 10 – Guarded Strzelecki Gum with recent predation, most likely from Wallabies

3.4 Weed Control



Photo 11 – Spear Thistle control, Grid reference G2



Photo 12 – Willow control in the eastern area of the Offset site, Grid Reference I4



Photo 13 – Area controlled for Wandering Creeper, that was previously dominated by the species, showing dramatic decrease in coverage.



Photo 14 – Controlled Sweet Pittosporum in the south-west of the Offset Site

3.5 Pest Animals



Photo 15 – Rabbit recorded on trail camera 3 in the western offset area (August 2023)



Photo 16 – Fox recorded on trail camera 4 in the eastern offset area (August 2023)

3.6 Photo Points

Photo point comparisons begin on the following page. Refer to *Figure 1* for photo point locations.

Photo Point 1 – East



March 2021



March 2023



April 2024

Photo Point 2 – North



May 2019



March 2023



April 2024

Photo Point 2 – West



May 2019



March 2023



April 2024

Photo Point 2 – South



July 2019



March 2023



April 2024

Photo Point 2 – East



July 2019



March 2023



April 2024

Photo Point 3 – South



May 2020



March 2023



April 2024

Photo Point 4 – North



March 2022



March 2023



April 2024

Photo Point 4 – West



July 2019



March 2023



April 2024

Photo Point 4 – South



July 2019



May 2023



April 2024

Photo Point 4 – East



May 2020



March 2023



April 2024

Photo Point 5 – West



July 2019



March 2023



April 2024

Photo Point 5 – East



July 2019



March 2023



April 2024

Photo Point 6 – North



March 2021



March 2023



April 2024

Photo Point 6 – West



May 2019



March 2023



April 2024

Photo Point 6 – South



May 2019



March 2023



April 2024

Photo Point 6 - East



May 2019



March 2023



April 2024

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Appendices

Appendix 1: Year 5 Works Summary

Action #	Management Action	Standard to be achieved	Year 5 Notes
1	Monitor health of and threats to remnant Strzelecki Gum on site.	<p>Retain all remnant Strzelecki Gums on site.</p> <p>Encourage recruitment events of Strzelecki Gum from remnant mature trees through management actions.</p> <p>Record new Strzelecki Gum recruits.</p>	<p>Mature trees remain healthy, and all have been currently retained, with many limbs falling due to high winds, and retained as logs.</p> <p>Weed control works completed around mature Strzelecki Gums to promote recruitment.</p> <p>During the inspection in April 2024, a total of 367 Strzelecki Gums were recorded increased from 215 in 2023. This is comprised of 177 individuals (a mixture of planted and naturally germinated) and 190 recruits beyond the boundary of the offset site.</p>
2	Maintain fencing in good condition around entire boundary of all sites where fencing exists or is required.	<p>Maintain current fencing to exclude stock.</p> <p>No firewood collection within the offset site.</p> <p>Repair fence immediately upon identification of damage.</p>	<p>Monitoring of fencing undertaken during site visits by environmental work crews.</p> <p>Fencing is in good order where present.</p> <p>No evidence of firewood collection or stock intrusion into site or fence repairs required.</p>
3	Eliminate all woody weeds. Monitor for any re-sprouting or seedlings and eradicate.	<p>Aim to eliminate all listed woody weeds by end of Year 5.</p> <p><1% cover of all listed woody weeds at the end of Year 10.</p> <p>Minimise off-target damage from control activities (avoid all native plants).</p>	<p>Weed control works, particularly controlling Blackberry and Willows, were completed throughout the year, with more willow control required in Year 5.</p> <p>One woody species remains above its target cover of <1%, being Willow at 3% cover.</p>
4	Monitor for and eliminate all new and emerging woody weeds.	<1% cover of all woody weeds at the end of Year 10.	No new woody weed species were recorded for Year 5.

Action #	Management Action	Standard to be achieved	Year 5 Notes
5	Eliminate all high threat herbaceous and grassy weeds.	<p>Aim to eliminate all listed high threat herbaceous weeds by end of Year 5.</p> <p><1% cover of all high threat herbaceous and weeds at the end of Year 10.</p> <p>Minimise off-target damage from control activities (avoid all native plants).</p>	<p>Spear Thistle, Ragwort and Wandering Trad are to be controlled to <1%.</p> <p>Wandering Trad was recorded at approximately 1.5%, controlled throughout this reporting period is down in cover from 4% in the previous year.</p> <p>Scattered Spear Thistle rosettes were observed during the site inspection, although treatment of herbaceous weeds has taken place, particularly targeting Ragwort in March 2024.</p> <p>Reed Canary Grass, being the dominant high threat grassy weed particularly in the Black Spur swamp area, requires control in Year 6 to decrease its cover across the offset site, with alternate strategies to be looked at to overcome access and inundation issues.</p> <p>Control of high threat herbaceous and grassy weeds required to continue to maintain coverages achieved.</p>
6	Ensure all other herbaceous and grassy weeds do not increase in cover across the site.	<p>No increase beyond existing cover for all herbaceous weeds.</p> <p>Minimise off-target damage from control activities (avoid all native plants).</p>	<p>Control of Creeping Buttercup was undertaken by Conservation work crews, particularly beneath drip-lines of mature Strzelecki Gums.</p> <p>Continued weed control targeting herbaceous species is still required.</p>
7	Monitor for and eliminate all new & emerging herbaceous weeds	<p><1% cover of all new and emerging herbaceous weeds at the end of Year 10.</p>	<p>No new weed species were recorded for Year 5.</p> <p>New and emerging weeds were treated by environmental work crews as part of herbaceous and grassy weed control activities.</p>
8	Monitor for and control impacts from rabbits and deer.	<p>No surface disturbance within the site.</p> <p>No active rabbit warrens to be present.</p> <p>No damage to Strzelecki Gum plantings from deer activity.</p> <p>No rubbish.</p> <p>Minimal artificial piles of logs and rocks.</p>	<p>No evidence of pest animals was recorded on site.</p> <p>Pest Animal cameras were placed in the site in August 2023, with 3 red foxes and 1 rabbit being observed.</p> <p>Continued monitoring required to determine the number of pest animals present and if control is required.</p>

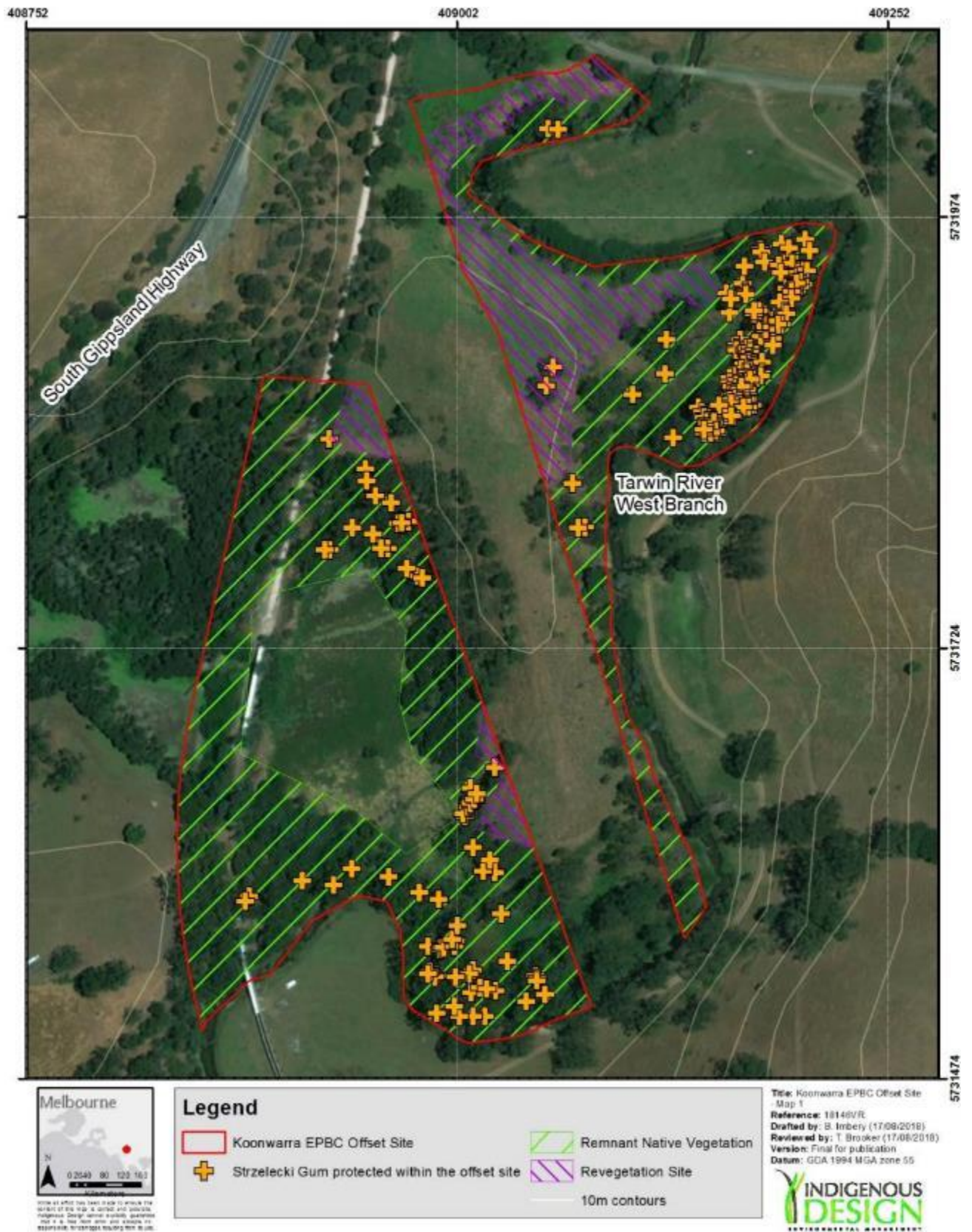
Action #	Management Action	Standard to be achieved	Year 5 Notes
9	Monitor and control all new and emerging pest animals.	Control numbers of any new and emerging pest animals.	Whilst foxes were recorded on the pest animal cameras, they are not considered a new and emerging pest animal for the protection and enhancement of Strzelecki Gum.
10	Collect indigenous seed on site and / or place order with local indigenous nursery.	Collect seed / propagate tube stock (seedlings) for species listed in Table 3 from seed sourced on site or as locally as possible and from the same soil type. Provenance principles should be followed of seed collected on or adjacent to the offset site.	Branches bearing seed from fallen Strzelecki Gum branches should be collected for propagation in Year 6. Revegetation planned for Year 6 for Strzelecki Gums.
11	Prepare the site to ensure optimal establishment of the vegetation. For areas where planting will occur complete at least 2 cycles of weed elimination.	To ensure plants have greatest chance of survival, planting circles should be weed free with no high threat weed cover at time of planting. Undertake revegetation activities outside of the canopy drip-line of all indigenous trees and avoid disturbing any existing native vegetation.	Revegetation activities were undertaken in Year 5, with installation of 430 supplementary species. Preparation works to be undertaken in May 2024 for revegetation of remaining Strzelecki Gums.
12	Sow seeds / plant seedlings with species specified and guard seedlings with core flute or wallaby guards.	By the end of Year 4 – all plantings have been completed within the revegetation area.	Planting works to commence in June/July 2024 if possible, to complete installation of all revegetation requirements.
13	Replace unsuccessful seedlings if losses observed.	100% survival of Strzelecki Gum plantings and 85% of all other planting numbers as specified in <i>Table 3</i> by the end of Year 10. Replace lost plantings if required to ensure numbers are maintained.	An additional 58 Strzelecki Gums (at least) are required to be planted within the offset site in Year 6 due to recorded losses from previous plantings.
14	Undertake plant maintenance post-planting, including weed control and guard re-establishment/removal	Control all high threat weeds to plants survival. Minimise off-target damage from control activities (avoid all native plants). Removal of guards once plantings are self-sufficient and risk reduced to survival.	To be undertaken in Year 6 to ensure revegetation plants are not out-competed.

Action #	Management Action	Standard to be achieved	Year 5 Notes
15	Prepare and submit an annual report	Report provides enough detail in the form of written comments and supporting evidence that an assessor can easily determine the completion of / progress against the management commitments	Completed.

Maps

Maps commence on the next page

Map 1 – Offset Site and location of Strzelecki Gums ((Bowler, Brooker, & Imbery, 2018)





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IMS-QT-02-V1.1

Appendix C – Letter from DAWE 29 March 2021 Ref: 2017/8070



Australian Government

Department of Agriculture, Water and the Environment

Ref: 2017/8070

[REDACTED]
Senior Manager Planning and Environment
Major Road Projects Victoria
L26, 180 Lonsdale St,
MELBOURNE VIC 3000

**SOUTH GIPPSLAND HIGHWAY REALIGNMENT, KOONWARRA, VICTORIA
(EPBC 2017/8070) - Independent audit requirement**

Dear [REDACTED]

Thank you for your correspondence dated 2 March 2021 to the department requesting clarification of the intent of condition 16 attached to the EPBC Act approval dated 18 January 2019.

Officers of this department have reviewed the request and briefed me regarding condition 16.

As a delegate of the Minister, I advise that an independent audit of EPBC Act approved action 2017/8070 need only be conducted if such an audit is specifically requested in writing by the Minister. Unless so requested, you do not need to submit an annual independent audit report.

As you are aware, the Department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the Department on request.

Should you require any further information please contact [REDACTED] Assessment Officer, Post Approvals Section, on [REDACTED] or by email:

Yours sincerely

Kim Farrant
Assistant Secretary
Assessments (Vic and Tas) and Post Approvals Branch
Environment Approvals Division

29 March 2021

Att.

Appendix D – South Gippsland Highway Realignment Project – Post Construction Monitoring for Australian Grayling 2024

Aquatica Environmental
 220 Old Eltham Road
 Lower Plenty VIC 3093

info@AquaticaEnvironmental.com.au
www.AquaticaEnvironmental.com.au

Our Ref: 000131.3

13 May 2024

Environment Manager
 Major Roads Projects Victoria

Dear

REPORT: South Gippsland Highway Realignment Project – 2023 Post Construction Monitoring for Australian Grayling

1. INTRODUCTION AND BACKGROUND

Aquatica Environmental and Indigenous Design Ecological Management (ID Ecological) were contracted by Major Roads Projects Victoria (MRPV) to conduct post-construction monitoring for Australian Grayling (*Prototroctes maraena*) in relation to the South Gippsland Highway Realignment Project at Koonwarra, Victoria (the project).

In 2018, Aquatica Environmental and ID Ecological conducted a pre-construction survey for Australian Grayling for the project. The survey identified that the Tarwin River West Branch, located at and near the project area, provided permanent/resident and transient/migration habitat for Australian Grayling. The project was referred for approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and was approved with a condition relevant to Australian Grayling:

Date of decision	Attachment C: Program for monitoring and reporting Australian Grayling in the Tarwin River
Variation dated 12/8/2020	<p>Targeted species monitoring for Australian Grayling will be undertaken during construction, both upstream and downstream of the Project site, should a major incident occur which impacts water quality in the Tarwin River West Branch, such as a significant flood event, land slip or spill.</p> <p>Targeted species monitoring for Australian Grayling will be undertaken, both upstream and downstream of the Project site within the Tarwin River West Branch, during April, for two consecutive years after construction has been completed.</p> <p>Targeted species monitoring will be undertaken in accordance with the Australian Grayling Survey Protocols as specified in the <i>Survey Guidelines for Australia's Threatened Fish</i> (DSEWPac 2004) and include boat, bank and backpack electrofishers.</p> <p>Results from the above targeted species monitoring for Australian Grayling will be provided in the Compliance Reports required under condition 13 following the undertaking of the monitoring.</p>

With completion of the project in 2022, MRPV required Australian Grayling monitoring to be conducted for two years post-construction, in accordance with the EPBC Act approval condition. This involved targeted surveys being carried out in April 2023 and April 2024 at monitoring sites upstream and downstream of the project area.

This report summarizes the findings of the second and final survey, which was conducted between 22nd and 24th April 2024, and also serves as a compliance report in accordance with the EPBC Act approval condition.

2. METHODOLOGY

The April 2024 targeted Australian Grayling survey was undertaken at sites broadly at and upstream of the project area, where access to the river is available, and in alignment with the 2023 targeted survey sites. The sites were determined by a combination of the location of the pre-works 2018 survey sites and post-works accessibility to the river (noting not all of the 2018 survey sites were able to be accessed in 2023/24).

The targeted survey was undertaken using the Australian Grayling-specific methods detailed in the Survey Guidelines for Australia's Threatened Fish (the Guidelines, DSEWPac 2004), which include:

- Hand-held dip-netting - This method involves using a handheld net to capture fish or other aquatic animals by scooping them out of the water.
- One or a combination of backpack, bank or boat electrofishing¹ - This method involves using an electrical current to temporarily stun fish and other aquatic animals, making them easier to catch. The fish are then collected using nets or other tools. Same as the 2018 survey bank² and backpack electrofishing was used. Boat electrofishing is not usable due to extensive reaches containing logs and log jams and the steep and muddy river banks.
- Fyke nets - Fyke nets are long, cylindrical nets that are anchored to the riverbed and have a funnel-shaped entrance that leads into a holding area. Fish swim into the funnel and become trapped in the holding area, where they can be easily collected. The guidelines do not recommend the use of mesh netting, however, fine soft-mesh (<5mm) fyke nets were only used as stop-nets at the upstream and downstream extent of sampling in order to prevent the escape a fish from the survey area.
- Visual observation - This method involves watching for fish and other aquatic animals in the water. It can be done from the shore or other in-water sampling. This method is often used to supplement other survey methods, such as electrofishing or dip-netting.

The actual method/s deployed were determined by the type and structure of available habitat, stream conditions, and access at the time of the surveys.

All Australian Grayling caught were enumerated, measured, photographed, and released as soon and as close to the point of capture as was practicable. Any other aquatic fauna caught or observed was noted.

Similarly to the previous survey, details of the waterway type and habitat was noted, including the type and structure of aquatic emergence and riparian habitat, the flow type of the waterway (e.g. permanent, ephemeral, etc.), and any relevant fauna observed during the inspection. Reference photographs were also collected.

The targeted survey was undertaken in accordance with the following approvals and permits held by Aquatica Environmental:

- Department of Economic Development, Jobs, Transport and Resources Wildlife and Small Institutions Animal Ethics Committee approval (No. 30.21);
- Scientific Fieldwork Procedures Licence (No. SPFL20394);
- Fisheries Act General Research permit (No. RP1213);
- *Wildlife 1975 Act* (Wildlife Act) Research permit (No. 10010203); and
- FFG Act permit to "take protected fish" (No. 10010202).

3. RESULTS

3.1. River Conditions and Survey Sites

The river conditions during the three-day survey were again not ideal and similar to the 2023 targeted survey, which made the survey challenging. Given the similar conditions occurring during the 2023 and 2024 surveys it appears the conditions are not so much relating to weather, but rather the very deep and steep sided structure of the river in the vicinity of the project area. This makes much of the river too deep/steep to wade, and therefore impossible or difficult to effectively deploy nets, traps and electrofishers.

¹ Backpack and bank electrofisher were the primary methods used for the 2018 survey. The boat was only used at one very downstream site that is considered not required for survey for this post construction monitoring (i.e. that site is not directly related to the project area or its possible impacts).

² An electric fishing boat was included during the original 2018 survey; however, due to the high number of logjams and obstacles in the river, as well as the steep banks that made it difficult to launch the boat, it was only used as a bank unit..

Comparing 2023/24 surveys to the 2018 survey, the river level was higher, making physical access to the river, such as wading, difficult. Only a limited number of river reaches had shallow enough water to enable wading. Additionally, the turbidity was very high, which made it difficult to visually sight fish, both in terms of identifying the location of schools of Australian grayling for targeting and catching stunned fish during electrofishing³.

3.2. Survey Sites

A total of broad four survey sites were identified as suitable for survey due to having safe ingress and egress from the waterway and depths shallow enough to allow wading and therefore Electro fishing (Figure 1, Table 1 and Attachment A). The sites represented downstream (Sites 1), upper extent (Site 2) and upstream (Sites 3 and 4) of the project area.

2018 survey Site TRWB6 was unable to be surveyed due to steep muddy banks and deep water and Sites TRWB1 to TRWB3 not surveyed to due not having permission to access the private land by the landowner. However, the sites that were surveyed are considered sufficient in terms of meeting the EPBC Act condition and assessing the presence or absence of Australian Grayling.

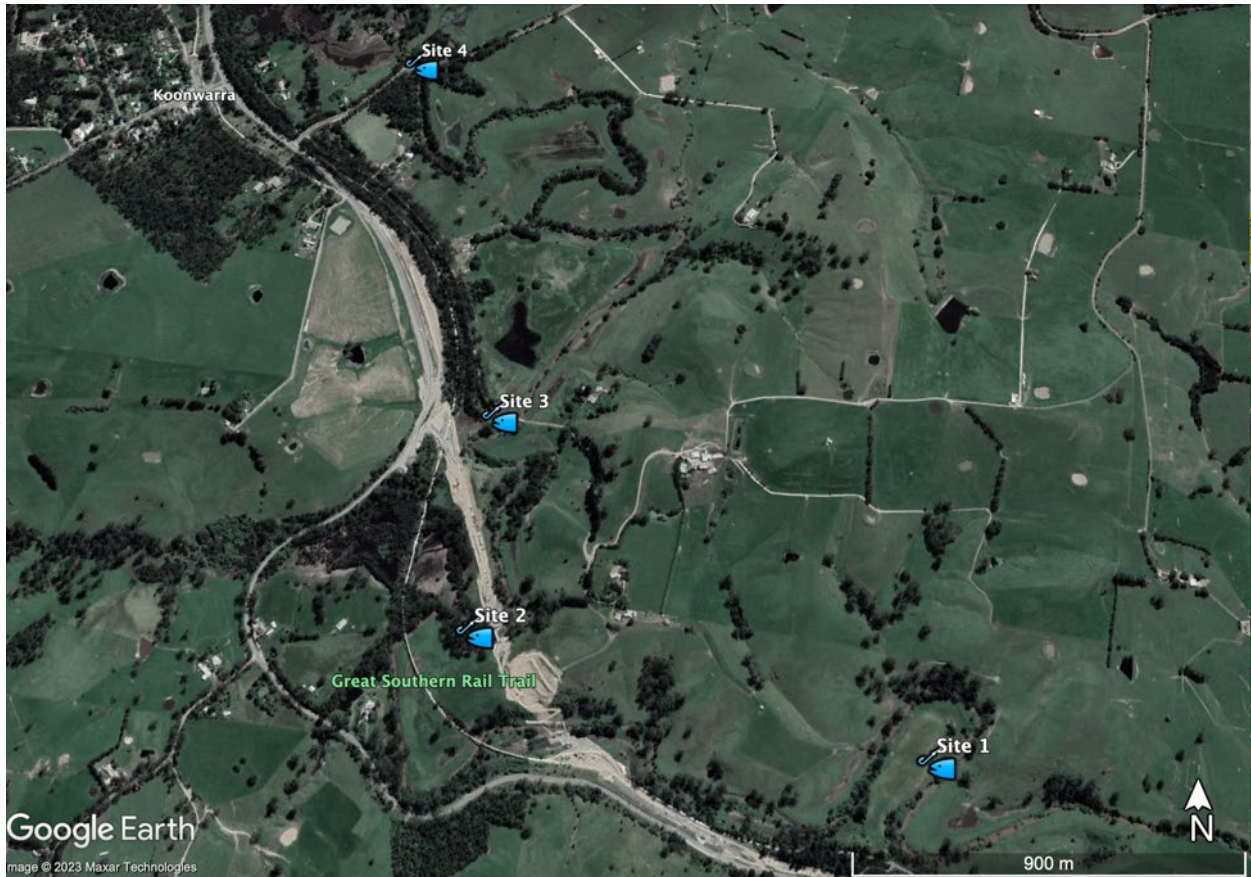


Figure 1 Survey sites

Table 1 Survey site details

Site (2023 / 2018)		Site Details / Description
Site 1	TRWB7	<p>Located approximately 1.3 kilometres downstream of the project area.</p> <p>The site contains a range of pools and riffles, interspersed by logjams.</p> <p>There was no aquatic vegetation and the riparian zone is dominated by Willows (<i>Salix spp.</i>) and heavily grazed pasture with stock access.</p>

³ Australian grayling our challenge to electrofish as although they are stunned, they will quickly dart out of the electrical field, resulting in a very short window of opportunity from which to net and catch the fish.

Site (2023 / 2018)		Site Details / Description
Site 2	TRWB5	<p>Located on the upstream side of the downstream river crossing.</p> <p>The site contains a range of pools and riffles, interspersed by bedrock and logjams.</p> <p>There was no aquatic vegetation and the riparian zone is dominated by native bush, mature eucalypts and sections of grazed pasture.</p>
Site 3	TRWB4	<p>Located approximately 0.8 kilometres upstream of the project area.</p> <p>The site contains a range of pools and riffles, interspersed by logjams.</p> <p>There was no aquatic vegetation and the riparian zone is dominated by Willows and heavily grazed pasture.</p>
Site 4	New site	<p>Located approximately 3.4 kilometres upstream of the project area at Old Koonwarra-Meeniyen Road.</p> <p>The site contains a riffle under the bridge and pools up and downstream.</p> <p>There was no aquatic vegetation and the riparian zone is dominated by native bush and mature eucalypts.</p>

4. SURVEY RESULTS

Although the survey conditions were challenging for targeting Australian Grayling one individual was caught at Site 1 and several additional individuals were sighted (but not caught) at Sites 1, 3 and 4. The recording of Australian Grayling during this survey is similar to the 2023 survey where one individual was caught and several sighted, and the 2018 survey where three individuals were recorded.

The individual Australian grayling caught at Site 1 was again (re 2023) a young of year (Photo 1). Those sighted were estimated to be young of year and larger adults. This supports the difficulty of the conditions as a larger adults are stronger swimmers and more readily able to elude the electrical field compared to younger year. For comparison, the 2018 survey recorded two young of year in the project area and one approximately two-year-old downstream of the project area in Tarwin River.

One additional species of fish was recorded during this survey, compared to four during the 2023 survey (Table 2). With the exception of Brown trout but similarly to Australian Grayling, all other native fish recorded undertake season upstream and downstream migrations, further supporting that the project has not resulted in any observable impact to the resident fish population.

Two species of fish that were recorded during the 2018 survey were not recorded during the 2023 and 2024 surveys including Longfinned Eel (*Anguilla reinhardtii*) and European Carp (*Cyprinus carpio*). It is reasonable to expect these species are still present, just not recorded.

Inspection of the river and its banks where the project area directly interacted with the river (i.e. the two bridge crossings, Photo 3a and b) indicated there had been no unintended project related impacts to the river. With the exception of the short sections of riverbank under the bridges where rock beaching has been placed to prevent erosion the impacted river banks were revegetated, stable and requiring no further reinstatement works.

Table 2 Survey results

Species		2023 Catch	2024 Catch (Observed)			
Common Name	Scientific Name		Site 1	Site 2	Site 3	Site 4
Australian Grayling (Photo 1)	<i>Prototroctes maraena</i>	1 (3)	1 (1)	-	(1)	(1)
Australian Smelt (Photo 2)	<i>Retropinna semoni</i>	9				
Brown Trout	<i>Salmo trutta</i>	1 (1)	-	-	-	-
Common Galaxias	<i>Galaxias maculatus</i>	2				
Southern Shortfinned eel	<i>Anguilla australis</i>	(7)				
Tupong	<i>Pseudaphritis urvillii</i>	2				



Photo 1 Australian Grayling from Site 1



Photo 2 Australian Smelt from Site 2



Photo 3 Upstream at Site 3 (a) and downstream (b) bridges

5. CONCLUSION

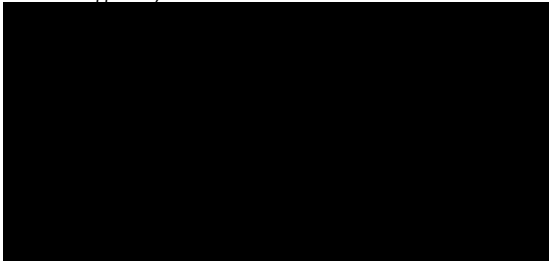
Despite challenging stream conditions once again, the survey confirmed the presence of Australian Grayling in reaches of the Tarwin River West Branch downstream, upstream, and in the project area. Only one young-of-year fish was caught, with several others being sighted but alluding capture. This result, combined with the 2023 results and the habitat type and structure in the river reach, suggests that Australian Grayling are resident in the project area, as was found during the 2018 survey.

Visual inspection of the project area during the surveys revealed no unintentional impacts to the river, its habitat, or water quality from the project. The river bed and banks appeared stable and all exposed areas revegetating. There were no indications of any detrimental impact to the river or Australian Grayling and their habitat from the project.

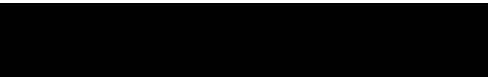
The completion of this second and final post-construction survey now fulfills the requirements of the project's EPBC Act approval condition. It is our opinion that the project has been undertaken and completed in accordance with its permits and approvals relating to Australian Grayling and the protection of the river, its habitat and water quality.

If you have any questions or would like to discuss this proposal or any other matter further, please do not hesitate to call [REDACTED]

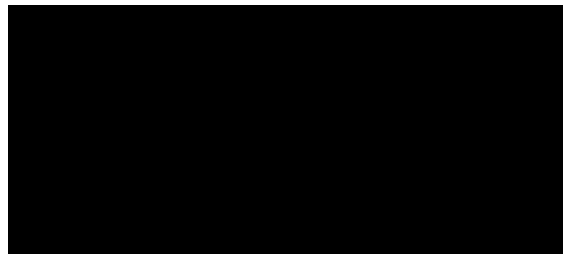
Kind Regards,



Director and Principal Aquatic Ecologist



www.aquaticaenvironmental.com.au



Consulting Manager



www.idecological.com.au

6. REFERENCES

Aquatica Environmental (2019). Australian Grayling *Prototroctes maraena* Targeted Survey. South Gippsland Highway realignment. Report prepared for VicRoads dated 28 May 2018.

DSEWPaC (2004). Survey Guidelines for Australia's threatened fish Guidelines for detecting fish listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999*.

ATTACHMENT A: Site Photographs

Site 1

2023



2024

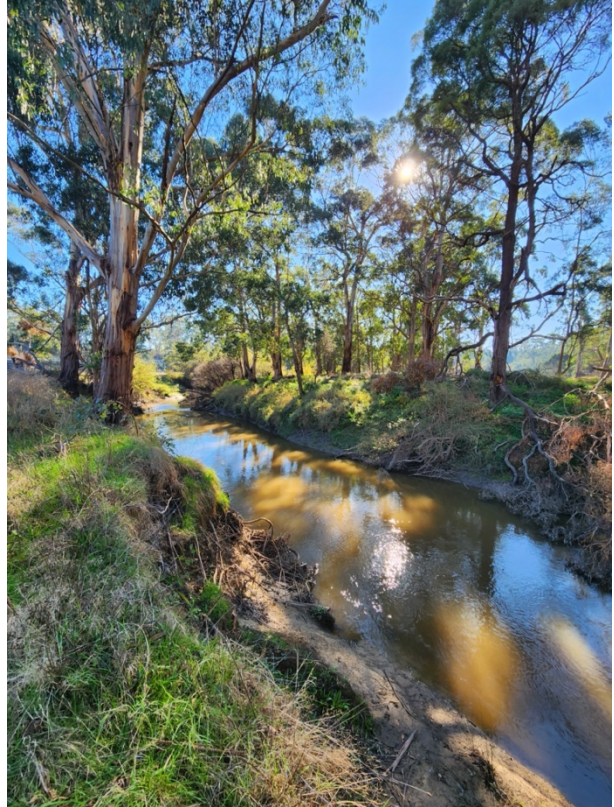


Site 2

2023



2024



Site 3

2023



2024



Site 4

2023



2024

