

Before the Fast-track Panel

Under: The Fast-track Approvals Act 2024
In the matter of: FTAA-2507-1089 – Bendigo-Ophir Gold Project

Statement of advice Dr Marine Richarson
Freshwater
Senior Science Advisor
20 March 2026



Department of
Conservation
Te Papa Atawhai

**Te Kāwanatanga
o Aotearoa**
New Zealand Government

Executive Summary

1. My advice addresses issues related to Complex Freshwater Fisheries approval for the installation of a culvert in the Rise and Shine Creek and the dispensation for fish passage facilities in the clean water diversions proposed in Rise and Shine and Shepherds Creeks.
2. There are physical barriers downstream that prevent fish movement except for climbing species like kōaro (which are present in Bendigo Creek only) and there are no fish species present within the project footprint.
3. There is no available record of Threatened or At-Risk aquatic invertebrates present within the project footprint, including from the survey data gathered by the applicant.
4. I am satisfied that the proposed culvert would have less than minor effects on freshwater values within the project footprint, and that alignment with best practice outlined in the New Zealand Fish Passage Guidelines would provide no further benefit to those values.
5. I consider that there would be no benefit to freshwater values in providing fish passage facilities in the clean water diversions within the Rise and Shine and Shepherds Creek catchments.

Introduction

6. My full name is Dr Marine Raphaële Amélie Richarson.

Instruction

7. I am providing expert advice on behalf of the Department of Conservation (DOC) on the Bendigo-Ophir Gold Project (BOGP) Fast-track application.
8. My advice specifically relates to the application for Complex Freshwater Fisheries approval and/or dispensation and may also be used to inform DOC's Section 53 FTAA comments.

Qualification and Experience

9. I am currently employed as a Senior Science Advisor by the Department of Conservation Te Papa Atawhai (DOC). I have been in this position since April 2020.
10. I have worked as a freshwater ecologist since August 2007. My principal area of expertise concerns diadromous fish species, i.e. species with a life cycle featuring both marine and freshwater phases, and their ecological requirements. My experience relevant to the assessment of this application includes:
 - i. conducting applied and fundamental research in the ecology of aquatic organisms,
 - ii. providing technical and scientific advice in freshwater ecology, in matters such as environmental impact assessments, ecological surveys and monitoring in freshwater systems, and fish passage provisions,
 - iii. managing research and delivery of operational programmes.
11. In my current role, I lead the Department's scientific research strategy and implementation on threatened diadromous species and lead the longfin eel *Anguilla*

dieffenbachii programme. I also provide technical support and advice for DOC's work on freshwater species and ecosystems.

12. I currently am a member of the Eel Fishery Working Group (led by the Ministry of Primary Industries) and a member of the New Zealand Fish Passage Management Group (which promotes, supports and develops resources for fish passage and waterway connectivity).
13. From 2020 to 2025, I was a trustee of Te Nohoaka o Tukiauau Sinclair Wetlands Trust, which administers a 315ha portion of the Lakes Waihola-Waipori wetlands complex, south of Dunedin. In this capacity I contributed to the Trust's operational programme development and administration.
14. I hold a Diplome d'Ingenieur (Engineering Diploma) in Water Sciences and Technologies from Institut des Sciences de l'Ingenieur de Montpellier (Institute of Engineering Sciences), Universite Montpellier II, which I received in 2006. I undertook an Honours programme in ecology at the Queensland University of Technology as an additional part to this curriculum. During that time, I completed a thesis on the reproduction patterns of green turtle (*Chelonia mydas*), and a thesis on the dietary ecology of sand whiting (*Sillago cilliata*).
15. I completed my Doctorate in Zoology at the University of Otago in 2020. My PhD research focused on the effects of interspecific and intraspecific interactions on ecological niches. I studied the effects of antagonistic interactions, particularly competition, predation, and their combination, on the dietary and habitat preferences of common bully *Gobiomorphus cotidianus*.

Code of conduct

16. Whilst it is acknowledged this is not an Environment Court Proceeding, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in the preparation of this advice. Unless I state otherwise, this advice is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Material considered

In preparing this advice I have reviewed:

17. Doheny, B. 2023. Bendigo-Ophir Gold Project Freshwater Ecological Assessment (Document ID: 22065). Prepared by e3 Scientific for Matakanui Gold. 82 p. Rekker, J. 2025. Bendigo – Ophir Gold Mine Project – Surface Water & Catchment Existing Environment & Effects Assessment (Report Series No. Z24002BOG-2). Prepared by Kōmanawa Solutions Limited for Matakanui Gold Limited. Christchurch, New Zealand. 90 p.
 - i. Allibone, R.M. 2025: Bendigo Ophir Gold Project: Assessment of Effects on Aquatic Habitat. Report Number: 38-2024A. Prepared for Santana Minerals Limited by Water Ways Consulting. Dunedin, New Zealand. 89 p.
 - ii. A.10 - Section 3 - Project Description

18. The Memorandum dated 10 March 2026 providing the summary of amendments to the Bendigo-Ophir Gold Project Fast-track Application

I have not visited the project site and rely in my advice on public databases and the information provided by the applicant, and by peers in my team familiar with the catchment and broader area, including Dr Nicholas Dunn.

Scope of advice and expert opinion

19. My expert advice pertains to complex freshwater fisheries activities related to in-stream barriers and the provision of fish passage:
- i. The installation of a culvert in Rise and Shine Creek
 - ii. The dispensation from providing fish facilities in Shepherds Creek clean water diversion channel and various other clean water diversions within the Shepherds Creek and Rise and Shine Creek catchments, and
 - iii. Whether dispensation is appropriate.
20. I rely on Dr Nicholas Dunn's advice in relation to the following matters:
- i. The adequacy of the applicant's assessment of freshwater values,
 - ii. The adequacy of the applicant's assessment of effects.

Rise and Shine Creek culvert

21. From the Supplementary information provided in the applicant's Memorandum dated 10 March 2026, it is my understanding that the applicant proposes the installation of a single culvert in Rise and Shine Creek, as part of a haul road. The applicant does not propose any fish salvage activity nor any other freshwater fisheries activities.
22. Based on his observations during his site visit, Dr Dunn considers that the proposed culvert would be located in an area where the creek is intermittent, confirming Dr Allibone's assessment in his report on effects on freshwater habitats.
23. The applicant has not provided the full information relevant to Schedule 9, clause 3, of the FTAA including the design characteristics and dimensions of the culvert, leaving it to a later stage. Overall, the missing information highlighted in the DOC completeness assessment pertaining to complex freshwater fisheries approval remains mostly unchanged.
24. However, given the following:
- i. The intermittent nature of the stream at the proposed structure's location,
 - ii. The absence of fish in Rise and Shine Creek,
25. The absence of At-Risk or Threatened macroinvertebrate species that might warrant the provision of fish passage in the absence of fish,
- iii. The habitat typology in the creek upstream and downstream of the structure,
- I consider that providing for fish passage at this location would provide no significant advantage for freshwater values, and that alignment with best practice outlined in the New Zealand Fish Passage Guidelines is therefore not required.

26. Future conditions should ensure resource management best practice is followed with regard to the design and placement of a structure in the stream bed.

Clean water diversions at Rise and Shine and Shepherds Creeks

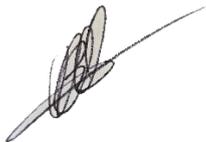
27. In order to avoid impacting surface flows with mine contaminants, the applicant proposes the establishment of several “clean water” diversion channels in the Shepherds and Rise and Shine catchments (see a summary table of the impacted lengths of stream p.75 in Allibone, 2025).

Streams in the area tend to be intermittent or ephemeral, and characterised by prolonged periods of low or no flow periods. Permanent streams range from ‘Good’ to ‘Poor’ in water quality, and vary in faunal community health and diversity depending on local conditions such as stock access, substrate and flow (Doheny, 2023).

28. No fish species, nor Threatened or At-Risk macroinvertebrate taxon has been found in the streams that would be impacted by those diversions.
29. As a result, in my view, the provision of fish passage facilities in those proposed clean water diversions would not provide any further benefit to freshwater values.

Conclusion

I am satisfied there are no fish species nor At-Risk or Threatened freshwater values present that require provision of fish passage. Consequently, I consider that there is no need to equip the proposed culvert in Rise and Shine Creek and in-stream structures set in the proposed clean water diversions with fish passage facilities.



Dr Marine Raphaële Amélie Richarson

20/03/2026