
Under the Resource Management Act 1991

In the matter of applications:

- LR-2026-113441-00
- LV-2026-113442-00
- LL-2026-113443-00
- WS-2026-113444-00
- DW-2026-113686-00
- DL-2026-113687-00

And **Gisborne District Council (Rivers and Land Drainage)**

Applicant

And **Gisborne District Council**

Consent Authority

Statement of evidence of Jarred Bradley Arthur

Date: 22/09/2026

Statement of evidence of Jarred Bradley Arthur

Introduction

- 1 My full name is Jarred Bradley Arthur.
- 2 I am employed as a Principal Ecologist/Team Leader, Ecology at Stantec New Zealand Limited (**Stantec**) and have been in that role since August 2026. Prior to this, I worked as a Technical Director in Ecology for nearly three years at Pattle Delamore Partners (**PDP**). I was previously a Senior Water Quality and Ecology Scientist at Canterbury Regional Council (**CRC**; 2016-2023) and a Freshwater Ecologist at Ryder Consulting Limited (2011-2016).
- 3 I hold the qualifications of Master of Science (Hons) in Ecology and Bachelor of Science in Biology from the University of Canterbury. I am a member of the New Zealand Freshwater Sciences Society. I have over 15 years of experience working as a freshwater scientist specialising in aquatic ecology.
- 4 In my consulting and public sector roles, I have reviewed and written technical assessments on the impacts of land and water use activities on rivers and lakes. These include assessments related to agricultural and urban land use practises, including water takes, stream diversions and infrastructure instalments. I have analysed and interpreted datasets relating to water quality, flow and habitat effects on stream communities. My Masters thesis researched longitudinal patterns in freshwater macroinvertebrate communities between forests and pastoral grasslands.
- 5 I have advised planning, consents and compliance staff on technical matters relating to water quality and freshwater ecosystems. This has involved working on projects across different regions of New Zealand including the east coast of the North Island. I have extensive experience working on braided river ecosystems and considering the potential impacts of flood defence works and infrastructure, primarily in Canterbury. I've also investigated the potential impacts of instream structures on fish passage.

Code of conduct

- 6 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

Scope of evidence

- 7 My evidence provides supplementary ecological advice regarding the proposed construction of the Te Karaka Flood Scheme Upgrade. It addresses potential impacts on freshwater ecosystems, but not terrestrial ecosystems. It primarily considers the following:
- (a) fish values in potentially affected river reaches;
 - (b) implications of culvert design and management on future fish passage;
 - (c) potential impacts of works in waterways; and
 - (d) proposed conditions for managing impacts on aquatic fauna.
- 8 In general, this evidence does not focus on information or advice already supplied as part of the Section 42a report. I was not involved in the initial ecological reviews of the consent application, however, was engaged by Gisborne District Council (**GDC**) to provide technical advice on their behalf after a Section 92 Request for Further Information (**RFI**) was issued as part of the consenting process. It is my understanding that another ecologist, formerly employed by GDC, provided initial technical advice on the proposed activity.
- 9 At the time of writing this evidence, I had not undertaken a site visit of the proposed flood infrastructure works site. I have instead relied on a review of desktop information and aerial imagery, supporting information supplied as part of the consent application, and any subsequent information included as part of this hearing process (e.g., statements of evidence and submissions).

Background

- 10 GDC is proposing the construction of a 4.2 km long stopbank within the floodplain of the Waipaoa River. The purpose of this infrastructure is to provide flood protection to the township of Karaka and other land nearby. Further details of the proposal are contained in documents supplied by the Applicant as part of the consent application, and within the Section 42a Officer's report.
- 11 Generally, I consider that the increased setback of the proposed stopbank design could provide benefits to the natural form and function of the Waipaoa River. This is because the river naturally braids with multiple meandering channels across a broader gravel braid plain. River braiding is dynamic and ever-changing, and allowing more room for river braids to

move and meander increases opportunities for the formation of habitats for aquatic fauna and for nesting and foraging birds.

- 12 Despite these potential benefits, the consent application contained some gaps in information, particularly regarding the protection and improvement of ecosystem values in smaller stream systems within the footprint of the proposed stopbank design. Specifically, initial reviews found that the application lacked information on:
 - (a) potential fish values in smaller streams;
 - (b) culvert designs and approaches to improve fish passage; and
 - (c) management approaches to minimise the effects of instream works on resident or migrating fish populations.
- 13 The Applicant's ecologist, Dr. Andrew Hicks, has subsequently provided supplementary information in his Statement of Evidence. This is discussed further below.

Review of supplementary information

- 14 In his Statement of Evidence, Dr. Hicks provides further information on potential fish communities in the small waterways likely to be influenced by stopbank and culvert works. This is based on modelled information that is only a coarse indication of potential fish populations in these streams due to existing fish passage barriers. Dr. Hicks acknowledges the limitations of the information provided and consequently concludes that the "*waterways could support a diverse native fish assemblage where suitable habitat conditions and effective fish passage are available*" (paragraph 7.9). I agree with this statement.
- 15 Limited information is provided on the design of culvert installations, extensions or alterations (e.g., floodgate structures). Instead, clarity on how construction and operational (e.g., fish passage) effects on freshwater fauna will be managed is to be provided after consent is granted via the implementation of consent conditions. Dr. Hicks concludes that effects on fish communities in smaller streams can be appropriately managed through the proposed design approach and consent conditions (paragraph 8.2).
- 16 I agree, in principle, that management measures as required by well-considered and implemented consent conditions can be an effective tool in minimising the potential ecological impacts of the proposed works. However, I disagree that the conditions of consent, as proposed by the

applicant in their current form, are robust enough to provide effective effects management.

17 In paragraphs 7.12 to 7.14 of his evidence, Dr. Hicks highlights several requirements that he considers will ensure effective effects management. These are:

- (a) The submission and certification of detailed culvert and fish passage designs including:
 - (i) provisions for an opening floodgate;
 - (ii) culvert inverts installed below streambeds;
 - (iii) incorporation of fish ramps or other suitable measures; and
 - (iv) design reviews by a suitably qualified ecologist.
- (b) Pre-construction fish salvage by a suitably qualified and experienced freshwater ecologist in areas of stream that are isolated or dewatered during instream works.

18 In my opinion, the conditions proposed by the applicant have several limitations relating to the management actions highlighted above:

- (a) It is uncertain whether culvert and fish passage management actions proposed under Conditions 13 and 14 will apply to all streams likely to be impacted by works.
- (b) Culvert inverts are only required to be installed at least 0.1 m below the streambed. National guidance suggests that at least 25% of the culvert's diameter is below the level of the streambed¹.
- (c) There is uncertainty whether any culvert monitoring and maintenance requirements are for the intent to promote fish passage.
- (d) There are no requirements in the suite of conditions for fish salvage and relocation, or any other means for managing the potential impacts of instream works such as stream diversions or isolation.

¹ Franklin, P., Baker, C., Gee, E., Bowie, S., Melchior, M., Egan, E., Aghazadegan, L., & Vodjansky, E. (2024). New Zealand fish passage guidelines Version 2.0. NIWA client report no. 2024157HN prepared for Ministry for the Environment, July 2024.

- 19 Based on these limitations, the conditions of consent could be improved to better manage the potential ecological effects of the proposed stopbank works.

Conclusions

- 20 The proposed works to construct stopbank infrastructure for flood protection purposes has the potential to benefit the ecology of the Waipaoa River. In contrast, construction works could negatively impact smaller tributary streams if works are not managed appropriately.
- 21 Smaller tributary streams have the potential to support diverse communities of freshwater fish. Facilitating improved fish passage to these streams through improvements in existing culvert designs has the potential to improve both the number and diversity of fish species that live in the streams. Culvert designs and construction works require well-considered management approaches to ensure passage is improved in actuality and to appropriately mitigate adverse effects of construction on fauna.
- 22 The application for the proposed stopbank lacks detailed information on the culvert designs and ecological management methods to be employed during construction. Consent conditions that require fish passage “friendly” culvert designs and ecologically appropriate construction methodologies will likely minimise potential ecological effects from the proposed activity. However, the current suite of proposed conditions contain some fundamental gaps, or at least uncertainty, for whether this will be achieved.

Dated 22 September 2026



Jarred Bradley Arthur