

**BEFORE INDEPENDENT HEARING COMMISSIONERS
APPOINTED BY THE TASMAN DISTRICT COUNCIL**

UNDER: the Resource Management Act 1991

IN THE MATTER OF: Resource consent applications
RM190877, RM190876, RM190878,
RM190879, RM190881 and RM190880
associated with the Pōhara drainage
improvement project, Pōhara Village,
Golden Bay–Mohua.

**STATEMENT OF EVIDENCE IN CHIEF OF PATRICK LEES ON BEHALF OF
TASMAN DISTRICT COUNCIL**

Dated: **23 April 2021**

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1. INTRODUCTION

1.1 My full name is Patrick Lees. I am a Freshwater Ecologist with Tonkin & Taylor Limited (T+T) having previously been employed by Pattle Delamore Partners Ltd. I have been a consultant ecologist for six years. Prior to consulting I was employed by Environment Canterbury for four years as an Aquatic Ecology Officer. I have 10 years' experience in the field of freshwater science and have worked at T+T since February 2019.

Qualifications and experience

1.2 I have the following qualifications and experience relevant to this assessment:

- (a) I hold the qualification of Bachelor of Science (Biology, 2010);
- (b) I am a one of the key group members of the New Zealand Fish Passage Advisory Group, and I am member of the New Zealand Freshwater Science Society;
- (c) I have worked throughout the South Island undertaking surface water and ecological monitoring and investigation projects, and preparing Assessment of Ecological Effects reports, aquatic ecology restoration and management plans. I have assisted both private and public sector clients including Waka Kotahi the NZ Transport Agency, KiwiRail, Environment Canterbury, Nelson City Council, Christchurch City Council, and Auckland Council;
- (d) I have recently prepared the "Stormwater receiving environment survey methodology" for the Nelson City Council. Which developed a tool for the collection of relevant data to assess the impacts on stormwater inputs on the ecology of the receiving environment;
- (e) I have recently been the lead ecologist on a multifaceted ecological investigation into the removal of a closed landfill located on Banks Peninsula. In this project I led freshwater, terrestrial, wetland and coastal assessments for the Christchurch City Council to assess effects from removing this landfill to avoid ongoing erosion into the surrounding environment;

- (f) I have assisted in providing specialist ecological input relating to the impact on fish passage from culvert design for Waka Kotahi. Where I provided input into the design, implementation, and technical specification of culvert impacts on indigenous fish communities within specific catchments of the project area.

Background

1.3 While I was not involved in the preparation of the assessment of effects for this project, I have reviewed the content, and I have conducted my own site visit on 8 April 2021. I therefore consider that I am familiar with the resource consent applications to which these proceedings relate. In preparing my evidence, I have reviewed:

- (a) The resource consent application and assessment of effects on the environment (AEE);
- (b) other key technical documents; statements of evidence of other Tasman District Council (TDC) witnesses, including:
 - (i) The evidence of **Mr Tim Ensor** who addresses planning matters;
 - (ii) The evidence of **Mr Damian Velluppillai** who addresses stormwater and flooding matters;
 - (iii) The evidence of **Mr David Stephenson** who addresses project context;
 - (iv) The s42A Officers Report.

2. CODE OF CONDUCT

2.1 I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court's Practice Note as updated in 2014. My evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence 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.

3. SCOPE OF EVIDENCE

- 3.1 My assessment is limited to freshwater ecology aspects resulting from the proposed Pōhara Drainage Improvements project (the proposal) and associated measures proposed to address these effects.
- 3.2 Specifically, my evidence addresses:
- (a) A summary and review of the proposal sites freshwater ecological value in respect of stream habitat and freshwater fauna¹;
 - (b) An assessment of ecological effects² on the freshwater environment provided in the Assessment of Effects on the Environment (**the AEE**);
 - (c) Proposed management provisions to manage these effects;
 - (d) Matters raised in submissions relevant to my area of expertise;
 - (e) Matters in the Section 42A Report that relate to my area of expertise.

4. PROJECT SITE

- 4.1 The project site is described in Section 2 of the Pōhara drainage improvements - Resource consent application and the AEE³. The site encompasses a number of private properties adjoining Bartlett Creek (both upstream and downstream of the Ellis Creek confluence), and land adjacent to Abel Tasman Drive and Lansdown Street (a paper road intersecting Able Tasman Drive).
- 4.2 The project site is located within the Ellis Creek catchment, with the specific implementation of the Proposals flood and drainage management measures located at or adjacent to the lower Ellis, Bartlett and Clifton Creeks. The creeks are small, low gradient, with permanent water flow, albeit generally slow shallow

¹ Wetlands, as a freshwater ecosystem type under the National Policy Statement for Freshwater Management 2020 and the National Environmental Standard for Freshwater, are not within the scope of this evidence.

² The ecological values and effects assessment has followed the standard protocols developed by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

³ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 4 - 9.

run and pool habitat. Flow inputs from the wider Ellis Creek catchment to these creeks are described in the evidence of Mr Stephenson.

- 4.3 Immediate catchment land use of the lower Ellis, Bartlett and Clifton Creeks is predominantly pasture grassland for livestock grazing. Due to the historical and current land use surrounding the project site, all of the above creeks have limited or no riparian vegetation and stock access was apparent at some locations (especially Bartlett Creek).

5. THE PROPOSED ACTIVITIES

- 5.1 The proposal involves upgrading several culverts and to widen the confluence of Ellis and Clifton Creeks. The measures that are incorporated into the proposal are described in detail in Section 3 of the AEE.⁴, and the evidence of Mr Ensor and Mr Velluppillai. I provide a brief summary of these below as they relate to freshwater ecology.
- 5.2 The proposed activities include construction of structures both within and outside of a stream bed, earthworks, the damming and diversion of flood water, and the potential discharge of sediments to water. The ongoing maintenance and repair of the structures once lawfully established is also included in the proposal.
- 5.3 There will be no loss of river extent as a result of the proposal and where culverts are installed, culvert installation will occur in accordance with the permitted activity standards for culverts (which includes fish passage requirements) in the NESF⁵.
- 5.4 Where channel disturbance does occur, minimising the area of channel disturbance will reduce the potential release of sediment into the rivers. Post construction habitat restoration will be implemented and will focus on achieving the habitat restoration objectives discussed below. These will include avoiding the loss of habitat values where practicable, including habitat for native freshwater species.

⁴ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 10 - 17.

⁵ Clause 70 of the NESF details permitted activity conditions for culverts.

6. EXISTING FRESHWATER ECOLOGICAL VALUE

6.1 The freshwater ecology of the Ellis Creek catchment is described in Section 2.3 of the AEE⁶. In the following sections I provide a review of the freshwater habitat and fauna values (as described in the AEE) and include additional comment on observations made during my site walkover.

Freshwater habitat

6.2 I provide above [paragraph [4.2 and 4.3] a brief description of the site. I consider the following observations to also be relevant to describing the freshwater habitat within the Ellis, Bartlett, and Clifton Creeks:

- a) Favourable instream habitat and cover for freshwater fauna is sparse and would provide limited cover for fish and macroinvertebrate species;
- b) The substrate of the creeks is dominated by fine sediment cover (< 2 mm in size) with isolated areas of larger cobbles and gravels;
- c) The riparian vegetation that is present provides limited shading to the creeks and filtering of overland flows;
- d) Stock access is impacting the stream banks (particularly at Bartlett Creek) and increasing the likelihood of erosion of the lower banks;
- e) Water flow is homogeneous through the extent of the creeks, and was primarily slow flowing, shallow runs.

6.3 Consequently, I am of the opinion that the current ecological value of the freshwater habitat within the area of the proposal is low⁷ due to the highly modified and degraded nature of the creeks.

Fish spawning habitat

6.4 Fish spawning habitat has been identified in the AEE. I consider that the spawning habitat identified in the AEE will only provide potential spawning

⁶ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 5 - 7.

⁷ In accordance with ecological value detailed in the Ecological Impact Assessment Guidelines (EclAG) by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

habitat for īnanga, as both banded kokopu and giant kokopu are unlikely to spawn in this habitat. The potential īnanga spawning habitat is of high value⁷ on the basis of it being a habitat type for a 'At-risk' declining species.

Freshwater fauna

Freshwater fish

- 6.5 The fish community present in the Ellis Creek catchment is described in the AEE⁸ and was derived from available records within the New Zealand Freshwater Fish Database (NZFFD) (accessed in April 2018).
- 6.6 I have reassessed the NZFFD⁹ to:
- a) Confirm the presence data detailed in the AEE;
 - b) Determine whether any subsequent surveys have been completed;
 - c) Determine if additional species within the Ellis Creek catchment have been recorded since April 2018.
- 6.7 Results showed that an additional fish survey was conducted in Bartlett Creek in November 2020. This most recent fish survey did not change the historic fish community described in the AEE. I have provided a species list of fish present within the Ellis Creek catchment in Table 1.
- 6.8 Therefore, as determined by the available data, I agree with the description of the fish species presented in the AEE. Namely, that there is a diverse range of freshwater fish species found within the catchment. Several of these species are described as being 'At – risk declining' by Dunn *et al.*, 2018¹⁰, of which one has been additionally described as regionally rare (i.e. giant kokopu (*Galaxias argenteus*))¹¹.
- 6.9 The AEE further describes the native freshwater fish community within the Ellis Creek catchment as being diadromous. Diadromous fish must migrate to the

⁸ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 6 – 7.

⁹ I completed this re-assessment on 6 April 2021.

¹⁰ Dunn, N.R.; Allibone, R.M.; Closs, G.P.; Crow, S.K.; David, B.O.; Goodman, J.M.; Griffiths, M.; Jack, D.C.; Ling, N.; Waters, J.M.; Rolfe, J.R. 2018: Conservation status of New Zealand freshwater fishes, 2017. New Zealand Threat Classification Series.

¹¹ Tasman District Council (2011). State of the Environment Report: The Health of Freshwater Fish Communities in Tasman District.

sea as part of their lifecycle¹². Therefore, access to downstream and upstream habitats is critical for these species so that regional populations can be maintained.

Macroinvertebrates

- 6.10 The AEE outlines that there are no available records for sampling of the aquatic macroinvertebrate community within the Ellis Creek catchment. I have confirmed that there is no macroinvertebrate community data.
- 6.11 During my site walkover I determined that sampling of aquatic macroinvertebrates could not be achieved due to lack of water depth, stream flow and available habitat. Any sampling of macroinvertebrates may not provide a representative sample of the macroinvertebrate community within the stream reaches adjacent to the proposal site. Therefore, no macroinvertebrate sampling was undertaken.
- 6.12 In my opinion the macroinvertebrate community that is likely present within the available instream habitat within the project site (as described in paragraph [6.2 and 6.3] is expected to be more tolerant to low quality instream habitat (e.g. high fine sediment cover and lack of riparian cover) and changes in land use¹³.
- 6.13 Both the AEE and my further assessment of the NZFFD have confirmed several species of larger freshwater invertebrates are present within the Ellis Creek catchment. These include the kākahi (*Echyridella menziesii*), koura (*Paranephrops planifrons*), and freshwater shrimp (*Paratya curvirostris*) (Table 1). Kākahi have been classified as being 'At-risk declining' by Grainger *et al.*, 2018¹⁴.

Table 1 - Freshwater fauna present within the Ellis Creek Catchment (per the NZFFD assessment April 2021)

Fish species	Common name	Threat class ⁺	Diadromous
<i>Anguilla australis</i>	Shortfin eel	Not Threatened	Yes

¹² Note common bully only undertake diadromous migration when populations are close to the coast.

¹³ Stark JD, Maxted JR, 2007. A user guide for the Macroinvertebrate Community Index. Prepared for the Ministry for the Environment. Cawthron Report No.1166. 58 p.

¹⁴ Grainger, N., Harding, J., Drinan, T., Collier, K., Smith, B., Death, R., Makan, T., Rolfe. 2018 Conservation status of New Zealand freshwater invertebrates, 2018. New Zealand Threat Classification Series.

Fish species	Common name	Threat class⁺	Diadromous
<i>Anguilla dieffenbachii</i>	Longfin eel	At risk - Declining	Yes
<i>Galaxias argenteus</i>	Giant kokopu	At risk – Declining and regionally rare ¹¹	Yes
<i>Galaxias fasciatus</i>	Banded kokopu	Not Threatened	Yes
<i>Galaxias maculatus</i>	Inanga	At risk - Declining	Yes
<i>Gobiomorphus cotidianus</i>	Common bully	Not Threatened	Yes *
<i>Gobiomorphus huttoni</i>	Redfin bully	Not Threatened	Yes
Larger invertebrate species	Common name	Threat class⁺⁺	Diadromous
<i>Echyridella menziesii</i>	Kākahi /Freshwater mussel	At risk - Declining	N/A
<i>Paranephrops planifrons</i>	Koura/ freshwater crayfish	Not threatened	N/A
<i>Paratya curvirostris</i>	Freshwater shrimp	Not threatened	N/A

+ Dunn, N.R.; Allibone, R.M.; Closs, G.P.; Crow, S.K.; David, B.O.; Goodman, J.M.; Griffiths, M.; Jack, D.C.; Ling, N.; Waters, J.M.; Rolfe, J.R. 2018: Conservation status of New Zealand freshwater fishes, 2017. New Zealand Threat Classification Series.

++ Grainger, N., Harding, J., Drinan, T., Collier, K., Smith, B., Death, R., Makan, T., Rolfe. 2018 Conservation status of New Zealand freshwater invertebrates, 2018. New Zealand Threat Classification Series.

* Due to the close proximity to the sea common bully could potentially undertake diadromous migration.

Freshwater fauna value

6.14 In my view the ecological value of the freshwater fauna that have been identified within the Ellis Creek catchment is high¹⁵ due to the presence of several 'At- risk declining' native species and one regionally rare species.

7. ACTUAL AND POTENTIAL ADVERSE EFFECTS FROM THE PROJECT ON FRESHWATER HABITAT

7.1 Section 5.5 of the AEE¹⁶ outlines potential adverse effects on the freshwater habitat within the Ellis, Bartlett, and Clifton Creeks. These potential effects relate to the:

¹⁵ In accordance with ecological value detailed in the Ecological Impact Assessment Guidelines (EclAG) by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

¹⁶ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 33.

- a) Temporary construction impacts associated with earthworks;
 - b) Temporary disturbance of the river bed and banks during culvert replacement and channel widening.
- 7.2 I consider that potential adverse effects from earthworks and disturbance of the stream bed and banks would primarily result from an uncontrolled discharge of sediment laden water during site works. The effects of excess instream sedimentation are recognised as a major impact of intensive land use on river and stream health through effects on water clarity and sediment deposition.
- 7.3 The baseline condition within the Ellis, Bartlett, and Clifton Creeks indicates that suspended and deposited sediment are existing issues, and the stream bed was dominated by fine sediments (< 2 mm). Furthermore, water velocities generally had little heterogeneity and the creeks were comprised of shallow slow run habitat that promotes fine sediment loading.
- 7.4 I consider that if an uncontrolled release of sediment to the creeks occurred during site works, deposited sediment would likely result in the baseline conditions being partially changed. This could result in the alteration of instream habitat and fauna communities. Therefore, specific measures to avoid, remedy, or mitigate these effects are required.
- 7.5 The AEE¹⁷¹⁸ outlines that the effects of sedimentation will be managed by implementing a standard CESMP measures and using best practice streamworks methodology.
- 7.6 The streamworks methodology¹⁸ outlines that works will be undertaken between October and March during low flow conditions. If earthworks are to occur in stream (when water is present), the applicant will divert the stream away from the works area to work in a dry isolated environment. Additionally, silt fences will be included downstream of any earthworks along the stream margin in riparian areas to catch sediment or debris before it enters the stream.

¹⁷ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 33.

¹⁸ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, Appendix D.

- 7.7 The CESMP measures¹⁸ will be installed prior to any works occurring and will be in accordance with TDC Engineering Standards and the requirements outlined in Appendix D; Section 8 of the AEE.
- 7.8 The AEE¹⁷ considers that the implementation of the above management measures is “sufficient to reduce the potential magnitude of effects to a low overall effect”.
- 7.9 I agree with this assessment, that by adhering to standard CESMP measures and using best practice streamworks methodology (outlined within the AEE) the overall level of effect on the observed freshwater habitat will be low¹⁹.

8. ACTUAL AND POTENTIAL ADVERSE EFFECTS FROM THE PROJECT ON FRESHWATER FAUNA

- 8.1 Section 5.5 of the AEE²⁰ outlines potential adverse effects on fish species and spawning habitat associated with the proposal include:
- a) Instream disturbance during construction causing injury and mortality to freshwater fauna;
 - b) Fish passage through culverts in Bartlett Creek underneath Abel Tasman Drive, adjacent to Kohikiko Place, Ellis Creek and under Boyle Street;
 - c) The permanent widening of the channel and placement of rock riprap at the confluence of Ellis and Clifton Creeks affecting potential fish spawning habitat.
- 8.2 It is my opinion that the potential adverse effects to fish described in paragraph [8.1] are also relevant to kākahi and koura that have been identified within the Ellis Creek catchment. Therefore, any measures to avoid, remedy, or mitigate the described potential adverse effects should include these species in addition

¹⁹ In accordance with the overall level of ecological effects detailed in the Ecological Impact Assessment Guidelines (EclAG) by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

²⁰ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 33.

to fish species. Therefore, where I refer to 'freshwater fauna' I refer to all of these fish and invertebrate species.

Instream disturbance resulting in injury or mortality

- 8.3 Due to the diversity of species identified within the Ellis Creek catchment, fish and larger macroinvertebrates are likely to be moving throughout the catchment over the whole year or are likely to be resident within specific reaches throughout the year. Additionally, the peak diadromous migration period for fish species identified within the Ellis Creek catchment is between March and November. Therefore, during these periods, there is potential for fish to be injured or killed.
- 8.4 The streamworks measures described in Appendix D of the AEE¹⁸ outlines that:
- a) Streamworks will be undertaken between October and March;
 - b) Fish species will be captured and relocated out of the work area.
- 8.5 The AEE²¹ outlines that by implementing the measures described in paragraph [8.4] to avoid the peak migration timings for fish identified within the catchment and to relocate resident fish species will result in a very low level²² of effects.
- 8.6 I agree with this assessment. Although, it should be noted that any capture and relocation methodology should include kōura and kākahi. By restricting the period of streamworks to outside of peak fish migratory times and by relocating fish species, the overall level of effect on the observed freshwater fauna will be very low.

Fish passage at culverts

- 8.7 The AEE outlines²¹ that due to the migratory nature of fish species within the Ellis Creek catchment, fish passage through culverts is an important consideration in any culvert design within the proposal.

²¹ Tonkin & Taylor Limited, 2019, Pōhara drainage improvements - Resource consent application and Assessment of Effects on the Environment, page 34.

²² In accordance with the overall level of ecological effects detailed in the Ecological Impact Assessment Guidelines (EclAG) by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

- 8.8 Where replacement culverts are to be installed these will be designed in line with the current minimum fish passage design standards²³ and (as described in the evidence of Mr Ensor) the permitted activity standards for culverts (which includes fish passage requirements) in the NESF.
- 8.9 I agree with the AEE²¹ that by including the above culvert design features, and timing works to avoid peak fish migration periods the overall level of effect on freshwater fauna is expected to be very low.

Fish spawning habitat

- 8.10 Section 5.5.2 of the AEE²¹ details that the potential adverse effects on fish spawning habitat associated with the proposal include the permanent widening of the channel and placement of rock riprap at the confluence of Ellis and Clifton Creeks.
- 8.11 The works will largely avoid the spawning periods for three species īnanga, banded kokopu, and giant kokopu. It is my opinion that only īnanga are relevant in the assessment as both banded kokopu and giant kokopu are unlikely to spawn in the habitat associated with the proposed channel widening and riprap installation due to differing preferences in spawning habitat.
- 8.12 Due to the close proximity to the sea and the occurrence of īnanga within the Ellis Creek catchment the proposed widening and riprap installation at the confluence of Ellis Creek and Clifton Creek will occur in an area which could potentially be used by īnanga for spawning. Therefore, the placement of the riprap at the confluence will result in an approximately 10 m loss of potential īnanga spawning habitat.
- 8.13 The AEE²¹ details that site works are to be undertaken between October and March¹⁸ which will largely avoid the peak spawning period for inanga (e.g. which spans March to July). Furthermore, the bankside riprap will be replanted to restore īnanga spawning habitat. The AEE concludes that by undertaking the works in line with these mitigation measures, the overall level of effect on īnanga spawning habitat is expected to be low²⁴.

²³ NIWA. 2018. New Zealand Fish Passage Guidelines – For structures up to 4 metres. Report number: 2018019HN.

²⁴ In accordance with the overall level of ecological effects detailed in the Ecological Impact Assessment Guidelines (EclAG) by Roper-Lindsay, J., Fuller, S.A., Hooson, S., Sanders, M.D., and Ussher, G.T. (2018). Ecological Impact Assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

- 8.14 I agree with the proposed measures to mitigate effects, however, it is my opinion that these measures should detail that any site works in potential īnanga spawning habitat must be completed before the peak spawning period begins. For clarity, site works in areas where potential īnanga spawning habitat has been identified should be undertaken prior to the start of spawning in March. Furthermore, any replanting of potential spawning habitat must include appropriate native species that will establish quickly and are known to occur in the surrounding area. A condition of consent should be included that addresses this.

9. SPECIFIC ISSUES IDENTIFIED IN SUBMISSIONS

- 9.1 In his submission, Mr Hans Stoffrogen has raised that access to the confluence of the Ellis and Clifton Creeks to widen the channel and undertake the placement of rock riprap “needs to be in conjunction with an agreed post construction habitat restoration plan” and “Work must be done so that the disturbance to the spawning habitat for whitebait [īnanga] is kept to a minimum”.
- 9.2 The potential effects of the proposal on īnanga spawning habitat have been addressed in the AEE, and in my evidence. I consider that the potential effects on the īnanga spawning habitat values are acceptable, subject to the implementation of management measures to avoid and mitigate the potential adverse effects discussed.
- 9.3 The applicant is proposing habitat restoration work following construction and is willing to prepare a habitat restoration plan for the freshwater habitats that have been affected by the proposal. A condition has been proposed to require TDC to engage a suitably qualified person to prepare a habitat restoration plan. The plan should include the following objectives²⁵:
- a) That restoration of any freshwater habitats affected by the proposal should be self-sustaining and not impact on the adjoining existing watercourses;
 - b) Self-sustaining habitat restoration means that it functions without features or characteristics that rely on ongoing maintenance or that

²⁵ Objectives are in accordance with TDC Natural Channel Design Guidelines (T+T. 2020. Natural Channel Design Guidelines. Prepared for Tasman District Council).

impose a financial or other burden on the proponent, government or the community.

- c) Ecological values within the habitat affected by the proposal are managed, protected and enhanced. These must include provisions to:
 - I. Restore any lost habitat for the native fish species present within the catchment (including potential īnanga spawning habitat);
 - II. Provide fish passage at all replacement culverts.

9.4 On this basis my view is the proposal will not diminish freshwater ecological values (through managing effects) and is, at least in part, actively contributing to protecting and enhancing these values through the proposed habitat restoration of affected areas.

10. MATTERS FROM THE SECTION 42A REPORT

10.1 The s42A report draws on the AEE to develop conditions to manage adverse environmental effects. I note that the conditions should include the recommendation to avoid īnanga spawning timings where potential habitat has been identified. I support the intent of these proposed conditions to manage adverse effects to freshwater habitat and fauna and I am open to discussing these conditions with the s42A officer with the aim of reaching agreement if this is of assistance.

11. CONCLUSION

11.1 I agree with the proposed management measures outlined in the AEE and the s42A report and I am comfortable that with the implementation of these measures the potential adverse effects to freshwater habitat and fauna will be appropriately managed.

Patrick Lees
23 April 2021