

Before Environment Southland

In the Matter of the Resource Management Act 1991

And an Application for a Resource Consent

**By the Fiordland Lakes Trust (APP-20191703)**

for a resource consent for a period of 25 years for the diversion of surface water, the diversion of groundwater and for wetland modification associated within the installation of a third culvert at Leg 6 of the Lake 2 Lake Te Anau to Manapouri Multi Use Trail;

to install a third culvert, diversion of surface water and groundwater and wetland modification associated with a section of the Lake 2 Lake Te Anau to Manapouri Multi Use Trail.

Location: Leg 6 of the Lake 2 Lake Trail between chainage 2200 and 2300 at about NZTM2000 1180612E, N4942051 and 1180593E and N4942084

### **Statement of Evidence by Maurice Allan Rodway**

1. I made a submission on this application which was concerned with the following issues:

- a. The proposal does not adequately remedy the adverse effects of building a cycleway over a naturally occurring wetland.
- b. The cycleway has caused a degradation of a natural wetland and this is contrary to the proposed National Policy for Freshwater Management (Sept 2019), the proposed National Environmental Standards for Freshwater (2019) and contrary to the Southland Water and Land Plan (pWALP) which is currently under appeal before the Environment Court.
- c. The proposal does not adequately remedy fish passage restrictions caused by the cycleway.
- d. The cycleway had diverted groundwater adjacent to the wetland/stream ecosystem and there are no proposals to remedy the adverse effects of this activity.

2. My expertise and qualifications relevant to this application are:

- a. I was the Manager of Fish and Game New Zealand, Southland Region since the inception of the Council in 1990 and prior to that as the manager of the Southland Acclimatisation Society, the Fish and Game Council's statutory predecessor, since 1984. I retired from that position in January 2016.

- b. I hold the qualifications of B.Sc., and M.Sc. (Hons) in Zoology, from Massey University, New Zealand.
- c. I have attained the Advanced Nutrient Management Certificate from Massey University 2014.
- d. I am also a certified Commissioner for the purposes of the RMA with the chair's endorsement which expires in 2021
- e. As an elected councillor on the Southland Regional Council, I have held the position of Chairman, Consents Committee and Chairman of the Organisational Performance and Audit Committee. I have chaired consents hearings and have been a member of the hearings panel for the Southland Water and Land Plan, Southland Regional Policy statement, Fiordland Pathways Plan (chair) and revision of the Southland Air Plan. I have attended and participated in workshops and field days on sustainable farm management practises over this period.
- f. My publications and conference presentations are:
- i. Master of Science thesis – The Movement of Trout in the Rangitikei River, New Zealand. 1985.
  - ii. Conservation and Recreation - Rodway, M.A. and Davis S.F. Paper presented to Institution of Professional Engineers New Zealand and Royal Society Water Conference 1988 Water in Society, Policy and Practise.
  - iii. Assistance with the preparation of the New Zealand Stream Periphyton Monitoring Manual by B.J. F. Biggs and Cathy Kilroy. Published by the Ministry for the Environment. 2000.
  - iv. Assistance with the preparation of the New Zealand Periphyton Guideline, Detecting, Monitoring and Managing Enrichment of Streams by B.J.F Biggs. Published by the Ministry for the Environment. 2000.
  - v. Angler use surveys, trout abundance changes and trout use of a new fish pass on the Waiau River (Southland) 1996-2000. A paper presented to a joint conference of New Zealand Hydrological Society, Meteorological Society, and New Zealand Limnological Society. Christchurch 2000.
  - vi. Changes to the condition of the waterways in New Zealand – a Fish and Game perspective. A paper presented to Just Add Water – a joint conference of the New Zealand Hydrological Society and New Zealand Limnological Society. 2001.
  - vii. Riparian management – benefits to water quality. A paper presented to the South Island Dairy Event. Invercargill. 2002.
  - viii. Determination of Southland, New Zealand, game bird hunting season opening

weekend bag from the abundance of class 5-6 duckling broods in the previous spring. Co-author of paper presented to the 3rd International Wildlife Management Conference, Christchurch 2003.

- ix. Sport fishery Management. Neil Deans, Martin Unwin and Maurice Rodway. A chapter in "Freshwaters of New Zealand" edited by Jon Harding, Paul Mosely, Charles Pearson and Brian Sorrell for the New Zealand Hydrological Society and the New Zealand Limnological Society. 2004.
- x. Investigating the effects of flushing flows on didymo blooms in the lower Waiau River, Southland. A joint presentation with Cathy Kilroy NIWA, to the NZ Freshwater Sciences Society Conference November 2009.
- xi. Long term management of an invasive alga in a controlled river. Rodway, M., Jarvie, B., Sutherland, S. and C Kilroy 2011. A poster presented to the American Fisheries Society Conference, Seattle, USA. Sept 4-8 2011.
- xii. Trout abundance changes in Southland as determined by drift diving, 1990-2014. Rodway, M. and C. Stewart. 2015. Presentation to the New Zealand Freshwater Sciences Society Conference, Upper Hutt November 2015.

### 3. My previous involvement in this matter.

I was the person who notified the Council that the cycleway had been placed over the wetland. I own a property in Manapouri and often walk along Frasers Beach and had been through this area prior to the cycleway being built. There were walking tracks there. I knew that there was a wetland in this area. When I heard the cycleway had been constructed through this area, I inspected it hoping that the wetlands had not been damaged. When I saw the cycleway over part of the wetland and because I suspected that it did not comply with the proposed Water Plan and Land Plan, which was in force at the time, I advised the compliance division of the Council. They inspected the site and consequently issued an abatement notice and required the Trust to apply for consents. This matter has been the subject of some publicity. I did not make a submission to the original application to retrospectively authorise this structure over the wetland and stream because I was a councillor at the time and the advice I got from senior staff was that I shouldn't make a submission because there could be a perception that I could influence any decision making about this, even though this is not possible due to the separation of the Governance and Management activities of the Council. I made a submission to the second application because I am not a councillor now and there can be no possibility that I could be involved in making any decision on this application.

I have inspected the site on several occasions including looking at the culverts to see if they provided unimpeded passage to fish species likely to be present, and during times of heavy rainfall to see how the stream responded and was affected by this. I concur with the view of the council that the gravel making up the base of the cycleway has smothered and destroyed approximately 105m<sup>2</sup> of the wetland which is not consistent with several

objectives and policies of the Regional Policy Statement (RPS) or the proposed Southland Water and Land Plan.

4. This consent application in relation to the original one.

While the proposal I have submitted on is only for the placement of a culvert in the existing unconsented structure and the effects of this activity I understand that the placement of the third culvert is intended to mitigate the adverse effects of the cycleway on the wetland. The two applications are dependent on each other and as a result my view is that the placement of the third culvert does not adequately avoid, remedy or mitigate the adverse effects of the placement of the cycleway over the wetland/stream ecosystem and consent for it should not be granted. Section 103 of the RMA allows related applications to be heard together. The provision for the applications to be “heard together” implies a submission to one is also relevant to the other. Other submitters are affected by this too. I have based my submission and evidence on this assumption. The Applicant has asked for the matters to be heard at the same hearing so it appears that the combining of the applications and the submissions is appropriate.

This is a matter of natural justice and good decision making. Those persons who submitted on the first application will have an interest in the second because they are closely linked. Those who made a submission on the first should be able to comment on the second and vice versa. This would ensure that all relevant views can be heard and taken into account.

Alternatively, if the Council decides to grant a consent to install a third culvert, a new application to retain the original gravel and structure with the third culvert would be required as this is different to the original application. Dealing with both of these consents together needs to take this into account but it would be more sensible to consider both together and allow all submitters to participate in both applications.

This evidence is a combination of expert scientific evidence based on my qualifications and experience in that field and planning evidence based on my knowledge and understanding of these plans although I acknowledge I do not have a planning degree or formal qualifications in this field, other than my “Making Good Decisions” commissioner’s certificate referred to above.

My comments and suggestions in relation to the replacement of the current causeway over the wetland with a bridge or boardwalk are not based on expert opinion. I am not a bridge or causeway construction expert but I am aware that in many similar situations boardwalks and or small bridges are used to span and cross wetlands and do not have significant adverse effects on these habitats.

I have read the Code of Conduct for Expert Witnesses set out in the current Environment Court Practice Note (2014) set out at paragraph 7.3 and believe I comply with it.

## 5. Wetland Significance

It is agreed by the applicant's ecologist (Simon Beale) and the Environment Southland ecologist (Wildland Consultants Kelvin Lloyd) that this ecosystem is a naturally occurring wetland. Indeed, as it is on Department of Conservation administered land it should be expected to be protected and preserved as the draft National Policy Statement on Freshwater Management and the draft NPS on Biodiversity, the proposed Water and Land Plan and the Regional Policy Statement expects it to be. The preservation of the natural character of wetlands, and the protection of areas of significant indigenous habitats of indigenous fauna are matters of National Significance in the Resource Management Act 1991 (RMA) (s6a).

## 6. Draft proposed National Policy Statements

The draft NPS on Indigenous Biodiversity (2019) states (amongst other things) that *the maintenance of indigenous biodiversity is a matter of national importance* and:

The 3<sup>rd</sup> Fundamental concept is: *The maintenance of indigenous biodiversity requires at least no reduction, as from the commencement date, in the following:*

- a) the size of populations of indigenous species:*
- b) indigenous species occupancy across their natural range:*
- c) the properties and function of ecosystems and habitats:*
- d) the full range and extent of ecosystems and habitats:*
- e) connectivity between and buffering around, ecosystems:*
- f) the resilience and adaptability of ecosystems*

The draft NPS on Freshwater Management (2019) states:

*Every regional council must include in its regional policy statement the following policy (or words to the same effect):*

*"The loss or degradation of all or any part of a natural inland wetland is avoided".*

These national instruments provide direction to achieve the purpose of the RMA on matters of national significance. They are not enforceable at this stage. They do give an important indication of the Government's priorities. They do relate to the protection of wetlands which is a matter of national importance under the RMA. These policy statements are already reflected in the proposed Southland Water and Land Plan and the Southland RPS. These parts of the draft national policy statements are found in the plan as explained below.

## 7. Area of wetland affected

The cycleway has smothered and destroyed the wetland and its indigenous biodiversity - vegetation, fish and invertebrate habitats - over an area of about 105m<sup>2</sup> (approx. 35m long and 3m wide). Some submitters have argued that because this is a small area in relation to the whole area of the wetland the adverse effects are less than minor. The full extent of the wetland in this vicinity has not been determined but it is likely to be several ha. It is true that this is probably a small area in relation to the whole area of the wetland but the policies and plans relevant to this application do not provide exemptions for the destruction of small areas of wetlands. And it could be argued that 105m<sup>2</sup> is not a small area.

8. Contrary to my submission the applicant submits that this activity is consistent with the Regional Policy Statement and the proposed Southland Water and Land Plan. I dispute these assertions, in particular:

a. The applicant asserts that this cycleway is an item of regionally significant infrastructure but provides no evidence to support this claim.

b. In relation to the Regional Policy Statement *Policy WQUAL.3 Identify and protect the significant values of wetlands and outstanding water bodies*. The proposed activity does not protect the significant values of this wetland as it does not propose to remove the gravel and fill under the cycleway from where it has destroyed the wetland.

c. In relation to the Regional Policy Statement *Objective Bio.2. Maintain indigenous biodiversity in Southland and protect areas of significant indigenous vegetation and significant habitats of indigenous fauna for present and future generations*. The proposed activity does not protect the significant indigenous vegetation and significant habitats of indigenous fauna for present and future generations as it does not propose to remove the gravel and fill under the cycleway where it has destroyed the wetland.

d. In relation to Regional Policy Statement *Policy Bio 2 Areas of significant indigenous vegetation and significant habitats of indigenous fauna in the Southland region will be protected ... particular regard shall be had to... fragmentation of, or reduction in the extent of, indigenous vegetation or habitats of indigenous fauna... fragmentation or disruption of connections and linkages between ecosystems or habitats of indigenous fauna;... loss or reduction of rare or threatened indigenous species populations or habitats*. The installation of a new culvert does not avoid remedy or mitigate the loss of wetland habitat which is habitat for long finned eels, which are a threatened species and a range of macroinvertebrates, such as mayflies, stoneflies and caddisflies, that have a reduced range since much of their habitat on private land has been degraded so that they are not able to live there anymore.

e. In relation to the proposed Southland Water and Land Plan.

The Plan identifies a number of Issues relevant to this application, including: *Out-of-stream uses, such as the abstraction, damming and diversion of surface water, can reduce water quantity and alter flow regimes in waterbodies, which can have a number of adverse effects on instream values, including reducing water quality and aquatic habitat, diminishing*

*natural character, amenity, aesthetic and landscape values and impacting on recreational and cultural values and fisheries and harvesting.*

And

*River beds (including beds of streams and modified watercourses) and lake beds have a wide variety of values, including natural, ecological, cultural and spiritual values, with rivers and lakes used for a range of recreational and cultural activities, including walking, fishing, game bird hunting, boating, and food gathering.*

And

*activities in the beds of rivers and lakes can also have adverse effects on the environment, including generating sediment, disturbing habitat and preventing fish passage.*

And

*Southland contains a variety of ecosystems and habitats, including indigenous vegetation, wetlands, lakes, and rivers. Indigenous plants and animals are an integral part of the natural character values of the region, and in addition to their intrinsic value, plants and animals are significant for cultural, economic, scientific and educational reasons, biological diversity and provision of ecosystem services.*

And

*There continues to be substantial impacts on ecosystems and losses of significant indigenous biodiversity for a variety of reasons.*

And

*Wetlands are a vital link between land and water and include permanently and intermittently wet areas, shallow water, and margins that support a natural ecosystem of plants and animals adapted to wet conditions. They provide important hydrological functions and ecosystem services such as filtering contaminants from water and soils. They are also an important natural and cultural resource, rich in biodiversity and important sources of mahinga kai.*

And

*Wetlands were once more prevalent, with Southland having lost approximately 90% of its wetlands in developed areas, including from hill and high country. Many remaining wetlands are on publicly held land and afforded some level of protection. Other wetlands are on private land and little is known about their health, values and use. Land use change leads to conflict between productive use of land, including wet areas, and protecting habitats and biodiversity.*

These Issues have led to the need for the plan to be highly protective of wetlands in particular and of freshwater resources generally. This need is reflected in the Objectives and Policies of the Plan. The following are relevant for this application.

Objective 14 *The range and diversity of indigenous ecosystem types and habitats within rivers, estuaries, wetlands and lakes, including their margins, and their life supporting capacity are maintained and enhanced.* The installation of a culvert will not achieve this objective because it does not remove the gravel and fill of the cycleway from the wetland so the range and diversity of habitats here will continue to be reduced compared to what it was.

Objective 16: *Public access to and along rivers...is maintained and enhanced...except in circumstances where...significant indigenous biodiversity values are at risk.* It could be argued that this cycleway enhances access to the stream and wetland although there were walking tracks to this area in the past. The purpose of the cycleway is not to enhance access to this stream/wetland but to provide a recreational and tourism asset. In addition the proposal is not consistent with this objective because significant indigenous biodiversity values are at risk. It does not avoid remedy or mitigate the adverse effects of the gravel and fill of the cycleway which have smothered and destroyed about 105m<sup>2</sup> of the wetland which contains significant indigenous biodiversity values.

Objective 17: *The natural character values of wetlands, rivers and lakes and their margins, including channel and bed form, rapids, seasonably variable flows and natural habitats, are protected from inappropriate use and development.* The proposal does not protect this wetland from inappropriate use and development because it does not remove the gravel and fill of the cycleway, which adversely affects the natural character of the wetland/stream ecosystem.

Policy 20. This proposal is to divert groundwater through a culvert to mitigate the adverse effects of placing a gravel and fill causeway across a wetland which had destroyed about 105m<sup>2</sup> of that wetland and dammed and diverted the water in the stream and wetland. This activity is not consistent with Policy 20 because it does not avoid, remedy or sufficiently mitigate the adverse effects that this has caused.

Policy 20 states (in part):

*Manage the taking, abstraction, use, damming or diversion of surface water and groundwater so as to: ...*

*1. avoid, remedy or mitigate adverse effects from the use and development of surface water resources on:*

*(a) the quality and quantity of aquatic habitat, including the life supporting capacity and ecosystem health and processes of waterbodies;*

*(b) natural character values, natural features, and amenity, aesthetic and landscape values;*



*(c) areas of significant indigenous vegetation and significant habitats of indigenous fauna;*

*2. avoid, remedy or mitigate significant adverse effects from the use and development of groundwater resources on:*

*(c) surface water flows and levels, particularly in spring-fed streams, natural wetlands, lakes, aquatic ecosystems and habitats (including life supporting capacity and ecosystem health and processes of waterbodies) and their natural character;...*

Policy 26 Infrastructure. If this cycleway is an item of regionally significant infrastructure it is arguable as to whether it complies with policy 26A because the policy says “Recognise and provide for the effective development, operation, maintenance and upgrading of regionally significant, nationally significant and critical infrastructure in a way that avoids where practicable, or otherwise remedies or mitigates, adverse effects on the environment.”

The Policy anticipates that adverse effects be avoided where practical. It would be practical to remove the fill and gravel of the existing cycleway and replace this with a small bridge or boardwalk as this would avoid the adverse effects that have been caused and will remain if only another culvert is installed as proposed.

Policy 28 *Structures and bed disturbance activities of rivers (including modified watercourses) and lakes*

*Manage structures, bed disturbance activities and associated discharges in the beds and margins of lakes, rivers and modified watercourses, to avoid, remedy or mitigate adverse effects on:*

- 1. water quality and quantity;*
- 2. habitats, ecosystems and fish passage;*
- 3. indigenous biological diversity;*

and

- 8. natural character values and outstanding natural features;*
- 9. river morphology and dynamics, including erosion and sedimentation;*

Again the proposal does not avoid, or remedy adverse effects and the mitigation proposed does not reduce (mitigate) the effects of placing gravel and fill over 105m<sup>2</sup> of naturally occurring wetland.

Policies 32 and 33 are particularly relevant.

Policy 32 – Protect significant indigenous vegetation and habitat

*Protect significant indigenous vegetation and significant habitats of indigenous fauna associated with natural wetlands, lakes and rivers and their margins.*

## Policy 33 – Adverse effects on natural wetlands

*Prevent the reduction in area, function and quality of natural wetlands, including through drainage, discharges and vegetation removal.*

These policies are intended to protect natural wetlands and prevent the reduction in their area and function. This proposal does not comply with these policies because the installation of a culvert to mitigate for the loss of 105m<sup>2</sup> of naturally occurring wetland does not protect the wetland or prevent the reduction in area, function or quality that has been caused by the placement of gravel and fill on the wetland to create the cycleway.

### 9. Fish passage issues.

The application to add another culvert under the cycleway does not restore fish passage to a natural state so fish passage will continue to be adversely affected since fish have to pass through plastic pipes rather than natural stream and wetland habitat. Culverts reduce fish passage by increasing water velocities and reducing the area of gravel and macrophytes that small indigenous fish require to move up and down streams.

The NZ National Fish Passage Guidelines (2018) <https://niwa.co.nz/freshwater-and-estuaries/research-projects/new-zealand-fish-passage-guidelines> (Accessed 9 March 2020) prepared by NIWA state: *In general, structures that preserve the continuity of stream habitats, geomorphology and stream processes (e.g. sediment transport) will have the lowest impact on aquatic ecosystems.*

Bridges, that completely span a stream, are the best option to protect fish passage but if culverts are to be used the culvert should have a base of gravel. A half pipe is ideal for this with the upper curved part of the structure supporting the road above and the base being flat and part of the stream bed. The culverts under the cycleway are round pipes and do not simulate a stream bed and do not preserve the continuity of stream habitats, geomorphology and stream processes.

The placement of a new small diameter culvert does not comply with the policies of the proposed Southland Water and Land Plan referred to above in relation to the protection of indigenous biodiversity because these culverts are an impediment to fish passage and interfere with natural stream processes. I understand some system of “stop logs” will be incorporated into the proposed new culvert to maintain water levels in the wetland. Such artificial structures will adversely affect fish passage and require ongoing maintenance to achieve the desired effect. This maintenance is unlikely to be done when required and is much less desirable than allowing a natural wetland/stream bed to exist which would be the case if the causeway was removed and replaced with a bridge or boardwalk.

10. Diversion of groundwater along about 50m of the cycleway immediately to the south of the existing culverts.

The cycleway has been constructed along the side of a hill leading down to the wetland and stream system. This has required part of the hillslope to be excavated and this has intercepted groundwater and surface water flowing down the hillslope. This water is gathered in a small ditch on the upstream side of the cycleway and diverted down the slope parallel to the cycleway to be discharged near the wetland. The water would have naturally flowed down the slope providing a damp environment for the vegetation there. The diversion takes water away from the area downslope of the cycleway and potentially dries out this area and if this happens the natural vegetation there could be adversely affected.

This situation is shown in three images below. (Photos taken on 11/12/2019) The first shows the groundwater seeping out of the bank and contributing to its collapse just above the wetland. The others are farther south showing water flowing down on the inside of the cycleway towards the wetland.





My submission in relation to this situation is that the applicant should be required to remedy this situation as part of whatever if required to do with the culverts and causeway over the wetland. Ideally pipes should be placed under the cycleway so that the water can flow under the trail and back to the land on the downstream side of the trail and re wet this area as it was before the trail was built, rather than allowing it to be diverted away and let flow down beside the cycleway. In my opinion there are no fish passage or wetland destruction issues here.

## **Summary**

The original retrospective application to modify the wetland did not comply with the proposed Southland Water and Land Plan and the council's planner recommended that the consent not be granted. This proposal does not go far enough to remedy the situation and so would still not be compliant with the plan. The s42A report for both applications concurs with this view.

Therefore, the Council must decline this application.

I suggest that, rather than installing another small diameter culvert, the applicants consider building a bridge or boardwalk over the wetland so that it either completely spans the area that is a wetland or installs a minimum number of piles to support a structure that provides for a cycleway but does not interfere with the flow of water through the wetland and stream and allows natural wetland vegetation that was smothered by the original construction of the cycleway to regenerate and so restore the wetland and stream to what it was before the cycleway was built.

There have been recommendations by Kelvin Lloyd of Wildlands that controlling weed species in or near the wetland would reduce the adverse effects of the cycleway to being less than minor. In my opinion this would not be the case. While weed control in the vicinity of the cycleway is desirable and should be a condition of the consent anyway this would not restore the loss of the wetland ecosystem that has occurred as a result of the current construction or provide unimpeded fish passage past the existing structure. It would do nothing to remedy or minimise these effects. Undertaking activities such as weed control are a type of compensation or offsetting for damage done.

The Quality Planning Website provided by the Ministry for the Environment provides guidance on offsetting which is defines as :

*"measurable conservation outcomes of actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity"*

*The definition is based on biodiversity offsets being considered last. That is, developers should first seek to avoid, then minimise (design a project to reduce harm) and then remedy (e.g. make good temporary impacts at the site) their impacts on biodiversity. Offsetting is then used to address remaining, or residual, unavoidable impacts on biodiversity."*

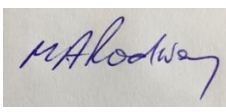
<https://www.qualityplanning.org.nz/index.php/node/767> (Accessed 11 March 2020)

Offsetting should only be considered if other measures are not possible. In this case it would be relatively easy to replace the causeway with a bridge or board walk so offsetting is not a suitable remedy.

Removal of the current gravel causeway and culverts is needed to restore the wetland to a near natural state. The individual piles of a boardwalk or complete span of the wetland areas by a bridge would be more likely to make the effects of the cycleway on the wetland less than minor so a consent may be able to be granted for the cycleway to be compliant with the proposed Southland Water and Land Plan and the relevant NPS which are planned to be operative in 2020.

The cycleway is a valuable recreational and tourism resource, but it has damaged a naturally occurring wetland further reducing indigenous biodiversity, and wetland habitats in the region. Current and future planning instruments are and will be strongly protective of wetlands so the Council must ensure that developments do not deplete them further. There is simple solution in this case that will protect this wetland in perpetuity and allow the cycleway to be maintained.

The applicant should also install multiple culverts, after seeking appropriate expert advice, in the area of the trail where groundwater is intercepted south of the wetland so that this groundwater can flow under the trail and be returned to where it was prior to the construction of the trail.

Signed 

March 20 2020