

# **RESOURCE MANAGEMENT COMMITTEE**



# Resource Management Committee Meeting

## *(Te Huinga Tu)*

### A G E N D A

#### *(Rarangi Take)*

1. Welcome (*Haere mai*)
2. Apologies (*Ngā Pa Pouri*)
3. Declarations of Interest
4. Public Forum, Petitions and Deputations (*He Huinga tuku korero*)
5. Confirmation of Minutes (*Whakau korero*)
  - Committee Meeting 14 December 2021
  - **Matters Arising**
6. Chairman's Report
7. **Planning and Science Group**
  - 7.1 Planning and Resource Science Group Report
  - 7.2 Te Tai o Poutini Plan Update
8. **Consents and Compliance Group**
  - 8.1 Consents Report
  - 8.2 Compliance Report
  - 8.3 Freshwater Farm Plans Update
9. **Regional Transport**
  - 9.1 Regional Public Transport Plan
10. **General Business**

H Mabin  
Chief Executive



## THE WEST COAST REGIONAL COUNCIL

### **MINUTES OF THE MEETING OF THE RESOURCE MANAGEMENT COMMITTEE HELD ON 14 DECEMBER 2021, AT THE OFFICES OF THE WEST COAST REGIONAL COUNCIL, 388 MAIN SOUTH ROAD, GREYMOUTH, COMMENCING AT 12.50PM.**

#### **PRESENT:**

S Challenger (Chairman), A. Birchfield, P. Ewen, D. Magner, B. Cummings, J. Hill, L. Coll McLaughlin.

#### **IN ATTENDANCE:**

H. Mabin (Acting Chief Executive), C. Helem (Acting Consents & Compliance Manager) via Zoom, N. Costley (Strategy & Communications Manager) via Zoom, R. Beal (Operations Director) via Zoom, J. Armstrong (Te Tai o Poutini Project Manager) via Zoom, F Tumahai (Ngāti Waewae), A. Reihana (Minutes Clerk)

#### **1. WELCOME**

Cr Challenger opened the meeting.

#### **2. APOLOGIES**

**Moved** (Coll McLaughlin / Birchfield)

*That the apology from J Douglas is received.*

*Carried*

#### **3. DECLARATIONS OF INTEREST**

Cr Coll McLaughlin – member of the Northern South Island Stewardship Land Review Panel.  
F Tumahai – Chairman of Mana Whenua Stewardship Land Review Panel.

#### **4. PUBLIC FORUM, PETITIONS AND DEPUTATIONS**

There was no public forum.

#### **PRESENTATION**

There was no presentation.

#### **5. MINUTES**

The Chairman asked the meeting if there were any changes to the minutes of the previous meeting.

**Moved:** (Cummings / Coll McLaughlin) *that the minutes of the previous Resource Management Committee meeting dated 9<sup>th</sup> November 2021, be confirmed as correct.*

*Carried*

#### **Matters Arising**

H Mabin referred to Enviro schools and said that R Beal will include this initiative in the shovel ready projects.

## **6. CHAIRMAN'S REPORT**

Cr Challenger reported that Environment Canterbury want two Ngai Tahu representatives on Council, noting WCRC would like local Iwi instead. F Tumahai said that WCRC is leading the way on this, and other districts are looking to do similar. Māori Wards do not work for the West Coast. He spoke to the leadership by WCRC on this. Cr Coll McLaughlin asked how the Council could ensure local Iwi rather than Māori Wards and F Tumahai advised that a council resolution is required.

## **7. REPORTS**

### **7.1 PLANNING AND RESOURCE SCIENCE GROUP**

#### **7.1.1 PLANNING AND RESOURCE SCIENCE REPORT**

R. Vaughan spoke to this report and took it as read. RM implementation approved changes to South Westland. Council's submission on the Emissions Reduction Plan discussion document was lodged on 26<sup>th</sup> November. Resource Science staff had a busy month with weather events. New hydrology data links are available, links to it are in the report. Central government is issuing new documents regarding marine pollution and freshwater implementation. The Indigenous Biodiversity draft NPS is due early 2022, Climate Change Act is due 2023. Taken over LiDAR and looking at how to best use data. Looking to attract more funding through Jobs for Nature in 2022. Resource Management reforms due 28th February 2022 will require changes to functions of regional councils and could be a further financial burden.

Cr Ewen said people need to realise how big the West Coast is and recommended an extra page in submissions to show this.

**Moved** (Coll McLaughlin / Hill) *That the report is received.*

*Carried*

#### **7.1.2 UPDATE ON FRESHWATER IMPLEMENTATION**

R. Vaughan spoke to this report. Work has commenced on work streams, and the Freshwater Management group has been set up. They are waiting on consultation with community to see what locals value most. Cr Birchfield noted negative feedback, which R Vaughan will respond to. R Vaughan said that the Council needs to implement this with West Coast values in mind as people are cautious and insecure regarding the freshwater initiatives. The long term vision is to work with planning staff, an inventory to be kept on natural wetlands, working with consultant around threatened species, the regional land and water plan to be done in 2022, and a fish passage role funded through Jobs for Nature. R Vaughan noted that Water Quality and Planning Team is currently under extra pressure to complete the freshwater implementation programme.

**Moved** (Magner / Cummings) *That this report is received.*

*Carried*

#### **7.1.3 TE TAI O POUTINI PLAN UPDATE**

J Armstrong spoke to this report, with a brief update. The natural hazard work undertaking held up due to COVID and contractors. Workshops have been held with councils and Iwi but more research is required before community involvement. The Companion draft document is due for release on 26<sup>th</sup> January 2022, with feedback due 11<sup>th</sup> March 2022. Cr Ewen asked about setbacks still being 200m from sea. J Armstrong said there are no changes to current setbacks, different by district. Cr A Birchfield said the plan is becoming

a nightmare with coastline, faultline and wetland issues to consider. Cr S Challenger said coastal hazards don't stop development but it adds cost.

**Moved** (Ewen / Birchfield) *That this report is received.*

*Carried*

#### **7.1.4 UPDATE ON RMA REFORM**

R Vaughan spoke to this report. There is an opportunity to workshop this and notes will be circulated to council when available. Cr Coll McLaughlin recommended the answer be 'no' to the request to become 'model council' for the new plan. Cr B Cummings said Megan Woods is making a list of vital resources, R Vaughan advised that this may result in a plan change but not a rule change.

**Moved** (Birchfield / Magner) *That this report is received.*

*Carried*

#### **7.1.5 REVIEW OF STEWARDSHIP LAND**

H Mabin and R Vaughan spoke to this report. H Mabin said that WCRC received an e-mail to be part of a joint West Coast Council submission on the legislative review. This will be prepared by Mark Christiansen with all four West Coast Councils contributing. This is a great opportunity for us to express views.

R Vaughan was involved in the regional resource management sector group presentation from the Department of Conservation. Ms Vaughan advised that it appears from the presentation that there are two parallel processes happening: discussion of the legislative process for reviewing of stewardship land and the review of current stewardship land on the West Coast. Stewardship land is conservation land for which the conservation values haven't been assessed therefore it hasn't been classified into a land classification under the Reserves Act. Like all conservation land, no rates can be received on this land. The classification process is assessing land for conservation value and will not be assessing the community value, economic value or historic use of the land. There is a need to realise economic value whether it is productive and whether or not it does produce jobs. Ms Vaughan recommended that WCTC engage with the community. Cr Cummings said that it was not a well rounded panel, R Vaughan acknowledged that the panel is made up of people with expertise on the land classification values outlined under the Reserves Act. F Tumahai said that the Mana Whenua acts for the community as well as Iwi. He advised the committee that there was a very tight timeframe on this work and all submissions needed to be reviewed by end of January 2022.

**Moved:** (Hill / Cummings)

*That the Committee receive and note this report, and*

*That staff are directed to engage with the Community and DoC to ensure the historic and community value of stewardship land is known to the review panel and included in the recommendations to the Minister for the reclassification of individual land parcels.*

*Carried*

#### **7.1.6 TAI POUTINI WEST COAST 2050 STRATEGY**

H Mabin spoke to this report. The Strategy is the culmination of workshops and a consultation process. The draft has been provided to Councils and Destination West Coast is seeking endorsement or feedback. Council requires more time to consult on this. Cr Challenger said this is a future vision.

**Moved:** (Ewen / Magner) *That this report is endorsed by the West Coast Regional Council.*

*Carried*

## **8. CONSENTS & COMPLIANCE MONTHLY REPORT**

### **8.1 COMPLIANCE**

C. Helem spoke to this report and took it as read. He noted 142 site visits, 22 complaints reports, and 1 non compliance but no action taken as yet. He outlined various consenting matters and offered to answer questions.

C. Helem advised that Waimea complaints continue to feature but by the time the team is notified it is too late. Cr Birchfield said that the Team had been to Stafford/Waimea 7 times this month which is a joke. Cr Challenger said the operators there need to get better. Cr Birchfield said there was a serial complainer that was wasting ratepayers' money. Cr Cummings suggested photos be taken of issues, C Helem said we could if needed. Cr Coll McLaughlin suggested the policy is amended to allow photos. Cr Cummings said ECAN advises photos.

**Moved** (Ewen / Magner) *That this report is received.*

*Carried*

### **8.2 CONSENTS**

C. Helem spoke to this report and outlined various compliance matters. Cr Challenger asked what the variation of consent was for from Gloriavale. C Helem advised that they want to use used oil as a multifuel.

**Moved:** (Tumahai / Cummings) *That this report is received.*

*Carried*

## **GENERAL BUSINESS**

R Vaughan advised the meeting that there is a FMU visit scheduled for 18<sup>th</sup> January 2022. R Vaughan will circulate an itinerary among the committee and request attendance. The FMU want to visit the stopbanks in Hokitika and inspect a lake infestation. R Vaughan is currently reviewing costs and details.

Cr Ewen spoke of attending a SI Regional Transport committee meeting in Christchurch. Concerns were raised regarding funding as Auckland is receiving the bulk of this. The committee agreed to apply for funds as the South Island and not by region, to have more of a chance of gaining funds. Speed limit reductions in numerous areas were discussed. Cr Ewen said there was a good representation from other councils, including some of the smaller ones.

The meeting closed at 13.50 p.m.

.....  
Chairman

.....  
Date



<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item:</b> Planning and Resource Science Report	
<b>Report by:</b> Lillie Sadler, Planning Team Leader	
<b>Reviewed by:</b> Rachel Vaughan, Acting Planning and Science Manager	
<b>Public excluded?</b> No	

## Report Purpose

To update the Committee on planning developments over the last month and seek their agreement on the updated staff advice in Appendix 1.

## Draft Recommendations

It is recommended that Council resolve to:

1. *Receive the report.*
2. *Agree with the updated staff advice in Appendix 1 about which national documents to submit on.*

## Issues and Discussion

### Freshwater Implementation

*Freshwater Management Unit (FMU) Groups' update:*

Grey and Hokitika: The majority of Group members in both these FMU Groups accepted some proposed changes to the Māori terms in their Long-term Visions (LTV), and some other minor changes to the Grey Group's LTV. The changes will ensure that the terms make sense in Te Reo, and do not change the substantive content of the Long-term Visions.

South Westland: The field trip to South Westland received some great feedback from the FMU Group. The Group's Recommendations Report is being finalised and will be included in the March Resource Management Committee report.

### Anticipated documents to be notified for submissions

The Table in Appendix 1 is updated based on recent updates from the Ministry for the Environment. Updated information is shown with underline. Submissions due soon are:

- Shaping future Research, Science and Innovation - Green Paper
- RMA reforms implementation
- Proposed changes to the National Environmental Standard (NES) for Sources of Human Drinking Water

### Update on national direction on industrial process heat

In April and May 2021, the Ministry for the Environment consulted on plans to phase out fossil fuels in process heat. A summary of the submissions will be available on the Ministry for the Environment's website in early 2022.

Following consultation, Cabinet agreed to a National Environment Standard (NES) and National Policy Statement (NPS) to set out nationally consistent policies, rules, and requirements. These will guide regional councils in making decisions on greenhouse gas emissions from industrial process heat.

National policies and rules are in development that will achieve emission reductions by:

- Prohibiting discharges from new low and medium temperature coal boilers;
- Phasing out already installed low and medium temperature coal boilers by prohibiting discharges after 2037;
- Requiring resource consent for new and already installed fossil fuel boilers that emit above a specified tonnage of CO<sub>2</sub>-e per year;
- Requiring consent holders to prepare Greenhouse Gas Emission Plans and to apply the best practicable option to their discharging activities.

Final decisions will be made by Cabinet on the NPS and NES in 2022. The Ministry will release guidance on Greenhouse Gas Emission Plans and applying the best practicable option as well as links to available technical standards, and best practice. The guidance will support the implementation of the NES and NPS on industrial process heat.

#### Climate Change provisions in RMA

Cabinet has delayed the enactment of climate change amendments to the Resource Management Act 1991 by an Order in Council, until 30 November 2022. The climate change amendments were due to be enacted from 31 December 2021.

These amendments include sections 17 to 21, 35 and 36 of the Resource Management Amendment Act 2020, which will repeal sections 70A, 70B, 104E and 104F of the RMA that limit the circumstances in which:

- Regional councils may have regard to the effects of discharges into air of greenhouse gases on climate change, in making rules to control the discharge of greenhouse gases;
- Consent authorities may have regard to the effects of discharges into air of greenhouse gases on climate change, in considering an application for a discharge permit or coastal permit.

The delay of these amendments allows time to develop options for managing other greenhouse gas emissions (other than greenhouse gases emissions from industrial process heat) in the short term before the Natural and Built Environments Act and National Planning Framework are in place as part of the reform of the Resource Management System.

#### Proposed changes to NES Drinking Water

An outcome of the Havelock North Inquiry into groundwater contamination of drinking water supplies is that the Government proposes to make changes to the National Environmental Standard for Sources of Human Drinking Water (NES). The three types of changes proposed are:

1. Regional councils to identify and map Source Water Risk Management Areas (SWRMAs) 1-3 around rivers, lakes and aquifers, 1 being a protection area in the immediate vicinity of the drinking water intake where there is a risk of the supply being contaminated by land use activities; Areas 2 and 3 are larger and wider where there is a lower, but still potential, risk of contamination of a downstream drinking water source;
2. Amend New Zealand Standards and the NES to regulate land use activities within SWRMAs which present a risk of contaminating a drinking water supply; and
3. Apply the NES-DW source water protection provisions to cover all supplies registered under the Water Services Act (WSA), being all water suppliers who supply one or more other users. This excludes domestic self-suppliers.

The main concerns identified are the costs to, and impacts on, resource users and ratepayers, and the need for alternative bespoke water source protection mechanisms that are appropriate for small, rural communal

drinking water supplies where there is relatively less development upstream and therefore a lower risk of contamination; or exemptions.

As the NES will work in tandem with the new Water Services Act, our concerns remain about the extra costs and roles given to regional councils for monitoring and reporting on drinking water sources, and costs and workload given to water suppliers.

A draft submission will be circulated to RMC for their feedback.

### Resource Science

#### *Water Quality*

Council has increased the amount of routine water quality monitoring, with new sites and new measures added, including habitat and algal cover assessments. A wider survey of West Coast lakes was undertaken, helping us better understand how they function. A number of research studies were completed, including studies on groundwater hydrochemistry, Reefton air quality, Lake Brunner health, and wider West Coast environmental water quality indicators.

Contact recreation sites are being monitored throughout the summer. All monitoring information is available on the national Land Air Water Aotearoa (LAWA) database: <https://www.lawa.org.nz/explore-data/west-coast-region/>

Water quality suitability for swimming is at: <https://www.lawa.org.nz/explore-data/swimming/>

#### *Lake Brunner*

The latest Water Quality report for Lake Brunner is attached (refer Appendix 2). Water quality monitoring in Lake Brunner began in the early 1990s. Trends in some water quality attributes, when evaluating the whole data record, have suggested a decline in Lake Brunner water quality. Nitrogen continues to increase, but contemporary trends in other water quality attributes are more positive. Despite these changes over time, water quality in the Lake continues to be relatively pristine.

### Hydrology

New sites have been added to the monitoring network, these include:

- Hokitika River at Kaniere Bridge - water level monitoring  
A fantastic addition to the Hokitika Catchment monitoring network.
- Ohikanui River at Buckland Peaks - rainfall monitoring  
This was installed on Monday 17th January. The site is to help inform the Westport flood warning forecasting system.



Figure 1: Buckland Peak monitoring site

### Low River flows

The warm period of Christmas has resulted in river levels tending down for a couple of weeks. Rainfall fell on 19<sup>th</sup> January, before dry conditions continued.

In comparison with 2013 and 2014 river levels, 2013 experienced the lowest flows, as well as going for the longest period of time (6 weeks) without any significant rainfall to top up the rivers. In 2014, low flow conditions persisted for 2.5 months, though this was interspersed with small amounts of rainfall that did create small peaks in the river levels.

Table 1: Comparison of River flows January 2022, March 2013, April 2014

River\Year	7-day moving MALF	2013	2014	Current (15 <sup>th</sup> Jan 2022)
Buller	105 m <sup>3</sup> /s	79.2 m <sup>3</sup> /s 15 <sup>th</sup> March	83.1 m <sup>3</sup> /s 7 <sup>th</sup> April	146 m <sup>3</sup> /s
Grey	91 m <sup>3</sup> /s	56.1 m <sup>3</sup> /s 14 <sup>th</sup> March	71.0 m <sup>3</sup> /s 4 <sup>th</sup> April	114 m <sup>3</sup> /s
Haast	44 m <sup>3</sup> /s	42.8 m <sup>3</sup> /s 16 <sup>th</sup> March	47.9 m <sup>3</sup> /s 13 <sup>th</sup> April	98 m <sup>3</sup> /s
Hokitika	24 m <sup>3</sup> /s	19.3 m <sup>3</sup> /s 16 <sup>th</sup> March	22.7 m <sup>3</sup> /s 14 <sup>th</sup> April	40 m <sup>3</sup> /s
Karamea	25 m <sup>3</sup> /s	18.5 m <sup>3</sup> /s 16 <sup>th</sup> March	22.6 m <sup>3</sup> /s 16 <sup>th</sup> March	30 m <sup>3</sup> /s
Mokihinui	15 m <sup>3</sup> /s	16.4 m <sup>3</sup> /s 17 <sup>th</sup> March	21.8 m <sup>3</sup> /s 7 <sup>th</sup> April	23 m <sup>3</sup> /s

## Flood response Log

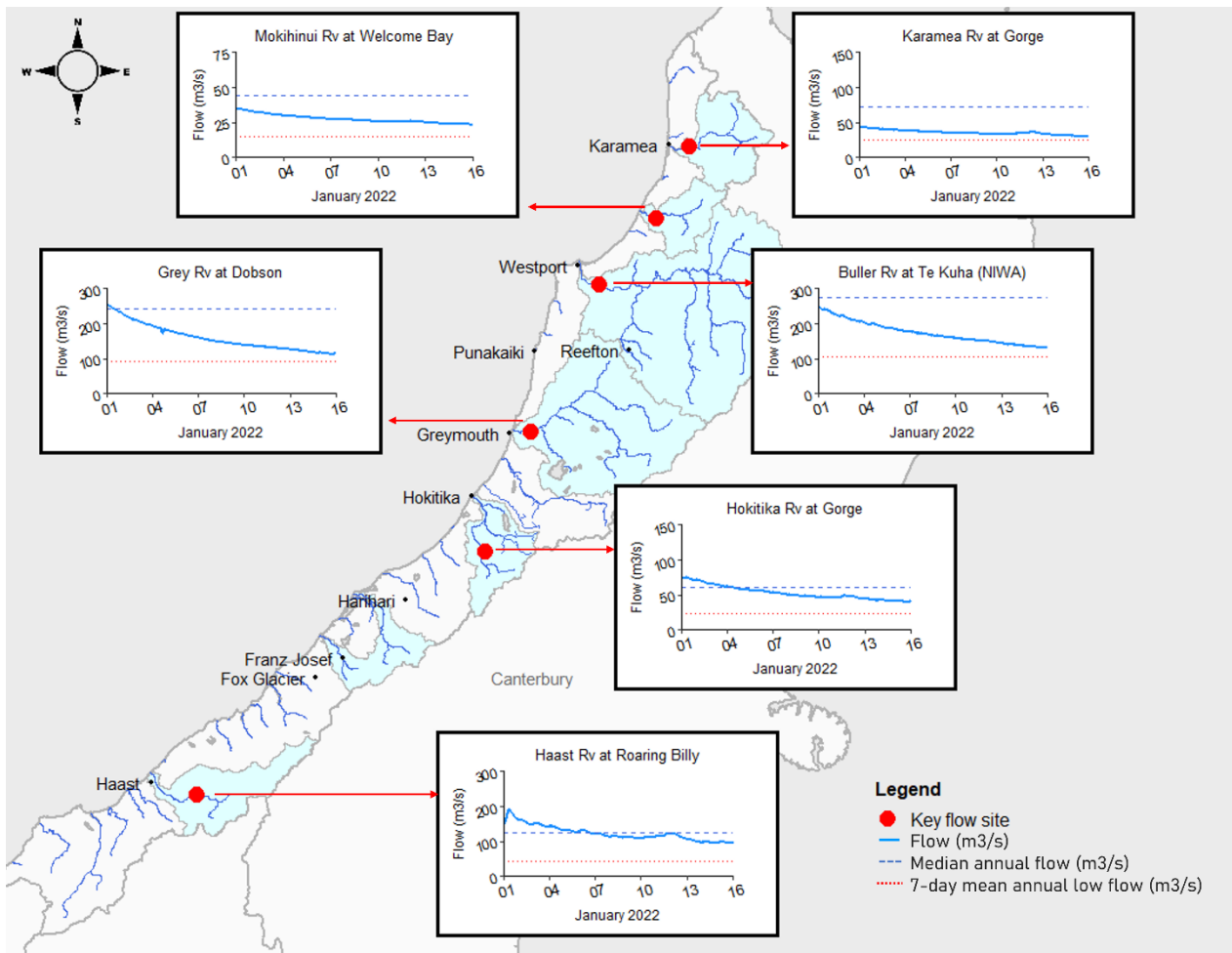
November 2021

Site	Alarm threshold (mm)	Warning issued	Peak level (mm)	Time of peak
Grey Rv at Dobson	3400	28/11/2021 09:15	3940	28/11/2021 15:05
Mokihinui Rv at Welcome Bay	4500	28/11/2021 13:23	4970	28/11/2021 15:55

December 2021

Site	Alarm threshold (mm)	Warning issued	Peak level (mm)	Time of peak
Hokitika Rv at Gorge	3750	05/12/2021 03:10	5322	05/12/2021 17:40
Grey Rv at Dobson	3400	06/12/2021 06:43	3502	06/12/2021 07:45
Hokitika Rv at Gorge	3750	20/12/2021 21:11	4376	20/12/2021 22:25

Figure 2: Low flows in six of the region rivers



The rivers are being monitored against the mean annual low flow levels.

The other highlight is:

- New and improved hydrology data webpages:  
<https://www.wcrc.govt.nz/environment/water/river-levels-rainfall>

## **Attachments**

**Appendix 1: Anticipated documents to be notified for submissions in 2022**

**Appendix 2: Lake Brunner Water Quality Update: December 2021**

**Appendix 1: Anticipated documents to be notified for submissions in 2022**

Document	Main points	Closing date, or approximate period, for submissions	Recommendation to submit or not
“Our future resource management system – Materials for discussion”	The document sets out the main components of the future resource management system and roles and responsibilities within it. It includes the Government’s thinking on parts of the system that were not included in the earlier Exposure Draft of the Natural and Built Environments Bill, and initial decisions made on reform detail since the Exposure Draft was prepared.	28 February 2022	A presentation by MfE was made to Councillors on 2 December 2021. The comments from this session will form the basis for a submission, <u>along with input from staff and other councils.</u>
<u>“Te Ara Paerangi future pathways Green Paper” – on research, science and innovation priorities and funding</u>	<u>This consultation document reviews New Zealand’s current research, science and innovation (RSI) sector, and considers how we best position New Zealand’s research system for the future, including by identifying priorities for RSI and funding.</u>	<u>2 March 2022</u>	<u>Staff recommend to submit on the Green Paper as an opportunity to advocate for priority RSI funding for the West Coast, to assist the Region to transition to a low-carbon future.</u>
Proposed changes to the National Environmental Standard (NES) for Sources of Human Drinking Water	MfE proposes amendments to the NES for Sources of Human Drinking Water, to strengthen how risks to source waters are considered in RMA decision making, and provide better protection of sources. These amendments are intended to work in tandem with provisions in the new Water Services Act to provide a proactive and preventative approach for managing risks to drinking water sources.	<u>6 March 2022</u>	<u>A submission is recommended as the proposed changes will mean costs to ratepayers and resource users to identify source protection areas around drinking water sources, and apply regulation to reduce risks of contamination.</u>
<u>Aquaculture reform as part of resource management reform – MfE and MPI</u>	<u>Fisheries NZ will be consulting on reforms to the aquaculture management system, as part of the resource management reforms. It will include consideration of Open Ocean Aquaculture.</u>	<u>To be advised</u>	<u>To be advised</u>

Climate Change Adaptation Bill	<p>This is the third new piece of legislation as part of the Resource Management Reform suite. It will focus on the necessary steps to address effects of climate change and natural hazards.</p> <p>Will deal with complex legal and technical issues (e.g. liability and compensation) around managed retreat.</p>	Consultation in early 2022, alongside consultation on the National Adaptation Plan under the Climate Change Response Act 2002.	To be advised in due course.
National Adaptation Plan	The NAP will be an all of government strategy and action plan. The plan will guide action on climate change adaptation between 2022 and 2026 and will respond to and prepare for the risks in New Zealand's first climate change risk assessment.	Consultation in early 2022, alongside consultation on the Climate Change Adaptation Bill.	To be advised in due course.
Natural and Built Environments Bill	<p>First of two Bills giving effect to RMA reform, and replacing the RMA. This focuses on the setting of environmental limits and outcomes, environmental and land use planning and the governance of those activities.</p> <p>The Bill was originally intended to be consulted on in late 2021, then early 2022. The timeframe has been further pushed out.</p>	Expected to be introduced to Parliament in the third quarter of 2022.	To be advised in due course.
Strategic Planning Bill	<p>Provides for the development of long-term (30 yrs minimum) regional spatial strategies that integrate land-use planning, environmental regulation, infrastructure provision and climate change response. Mandates use of spatial planning.</p> <p>Requires central govt, local govt, and mana whenua to work together to prepare a strategy.</p> <p>The Bill was originally intended to be consulted on in late 2021, then early 2022. The timeframe has been further pushed out.</p>	Expected to be introduced to Parliament in the third quarter of 2022.	To be advised in due course.



## Appendix 2

# Lake Brunner water quality update: December 2021

### 1. Introduction

Lake Brunner is a large (41 km<sup>2</sup>), deep lake (max. depth 109 m), inland from Greymouth on the West Coast. It has high water quality and is a popular recreational destination for people within and beyond the region. It is likely that intensive agriculture in the catchment has contributed to nutrient increases, which have been observed following the initiation of monitoring in the early 1990's.

Central lake monitoring supports a long and comprehensive data record. Data collected at Cashmere Bay and the tributaries has also been presented. This Lake Brunner water quality update is produced annually and is intended to replace earlier updates, although earlier reports may contain more detail on specific research projects conducted at the time.

The National Policy Statement for Freshwater Management (NPS-FM) 2014, (amended 2017), contains a National Objectives Framework (NOF) with a set of national bottom lines aimed at achieving healthy waterways. The NOF attribute states range from A to D. An attribute with a category (or state) of D is below the national bottom line (C for ammonia). For Lake Brunner, we can apply the NOF to total nitrogen (TN), total phosphorus (TP), ammonia, and chlorophyll *a* data. We can also apply it to *E. coli* bacterial data. The most recent five-year block of data is used to determine these attribute states.

It should be noted that sampling frequencies have varied over time, with quarterly or bi-monthly sampling the norm prior to 2009. Therefore, certain analyses have varying record lengths used depending of what historic data is available.

### 2. Lake processes and nutrient limitation

Lake Brunner is an oligotrophic (low nutrient) lake. The Redfield ratio of 16 parts nitrogen to one-part phosphorus is considered the approximate ratio required by lake phytoplankton and plants. If the ratio is higher, then growth will be limited by a lack of phosphorus. Algal productivity is considered to be limited by the availability of phosphorus, throughout the year, based on molar ratios of TN to TP, and NO<sub>3</sub><sup>-</sup> (nitrate) to dissolved reactive phosphorus (DRP). These ratios were 81 and 68, respectively, for a 10 year average. The ratio of particulate nitrogen to particulate phosphorus was 15, suggesting that phosphorus limitation may not be as substantial as otherwise suggested by TN:TP or NO<sub>3</sub><sup>-</sup>:DRP.

Of the various forms of total nitrogen in the lake, 2% was ammonia, and 53% was nitrate, thus 55% was dissolved inorganic nitrogen (DIN, ammonia plus nitrate). Dissolved organic nitrogen (DON) accounted for 36% of all dissolved nitrogen. This leaves 9% of particulate nitrogen. DON is the dominant form of dissolved nitrogen coming from forested catchments whereas nitrate is the dominant form leaving Lake Brunner's pasture catchments (Rutherford et al. 2008; Verburg 2009; Wilcock et al. 2013).

When a warm surface layer forms a barrier to mixing the lake is said to be stratified. The bottom section of the lake during stratification is called the hypolimnion and oxygen can't reach the hypolimnion from the epilimnion (surface layer) once the lake is stratified. The rate at which oxygen is depleted is strongest nearest the lake bottom as this is where aerobic decomposition of organic matter is occurring.

The lake has a long residence time (1.14 years), which enhances the retention of nutrients by the lake. The lake retains 50 to 55% of phosphorus transported in from the catchment by burial in the sediment, with 20% of nitrogen retained by burial or removed by denitrification (Verburg et al. 2013). Because of an enhanced capacity for storage of nutrients, especially of phosphorus, by burial in the sediment, lakes with long residence times are less sensitive to phosphorus loading and are more resilient than lakes that are flushed faster. But this is on the condition that primary productivity does not exceed a level that could result in anoxia (no oxygen) at the sediment/water interface on the bottom of the lake. This happens when enough organic matter decomposes on the lakebed, using up all available oxygen. With no oxygen, different chemical and biological processes occur, and phosphorus stored in the sediment can be released. This new phosphorus adds to the phosphorus already coming from tributaries. More phosphorus increases algal growth, leading to more decomposing organic matter, causing less oxygen etc. Thus begins a cycle which is very hard to stop, and lake water quality deteriorates.

Seasonality drives annual variation for many of the parameters measured in the lake. This is why we use statistical tests that accommodate for seasonal patterns within the data. Additional information on the processes occurring in Lake Brunner can be found in previous West Coast Surface Water Quality reports, which can be found on the Council website [www.wcrc.govt.nz](http://www.wcrc.govt.nz).

### **3. Water quality in the main lake**

#### **3.1. Dissolved oxygen depletion rates and minima in the central lake**

Council monitor's vertical oxygen and temperature profiles monthly at the center of the lake. It has been assumed so far that oxygen levels at the bottom of the lake remain high enough to avoid significant release of phosphorus from the lakebed. Historically, when phosphorus inputs are contrasted against anticipated outputs, no obvious phosphorus recycling is apparent – we will look at this in more detail further on in this document.

Trends in oxygen depletion rates are calculated annually (Figure 1). If rates are increasing it could indicate increasing eutrophication. Depletion rates have varied over the last 10 years, which may be the result of variable climatic regimes. The data to date does not indicate that depletion rates are increasing - if anything they are decreasing, but there is no obvious trend (Figure 1).

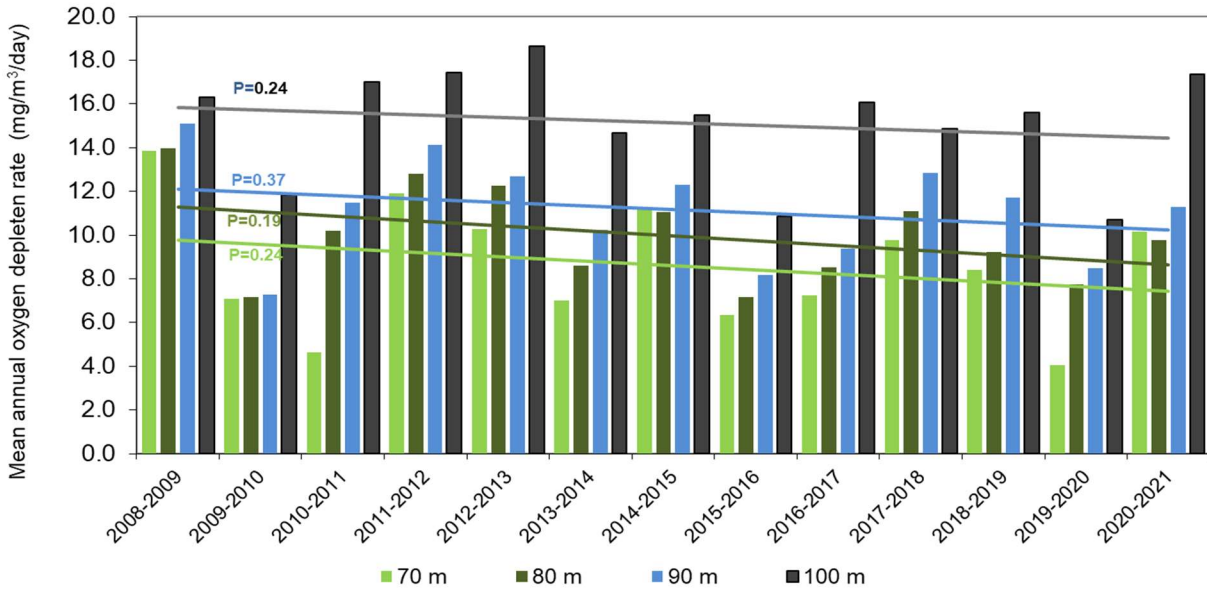


Figure 1 Hypolimnetic oxygen depletion rates in Lake Brunner 2008 to 2021. The P values represent the level of significance of the trend in depletion rates over time, as determined by the Mann-Kendall trend test. The '100 m' depth measurements are those measured from the very bottom of the lake, with the actual distance from the surface typically varying by +/- 1 m, and occasionally by +/- 2 m. Other readings are measured consistently from the surface.

Higher algal productivity is considered to increase oxygen depletion rates, as dead phytoplankton sinks to the lake bottom, consuming oxygen as it decomposes. Water temperature, nutrient availability, and sunlight have a role in driving algal growth – the first two are measured by the Council.

There was no obvious relationship between oxygen depletion rates and chlorophyll *a*, therefore algal abundance may not be an important driver of oxygen consumption rates (Figure 2).

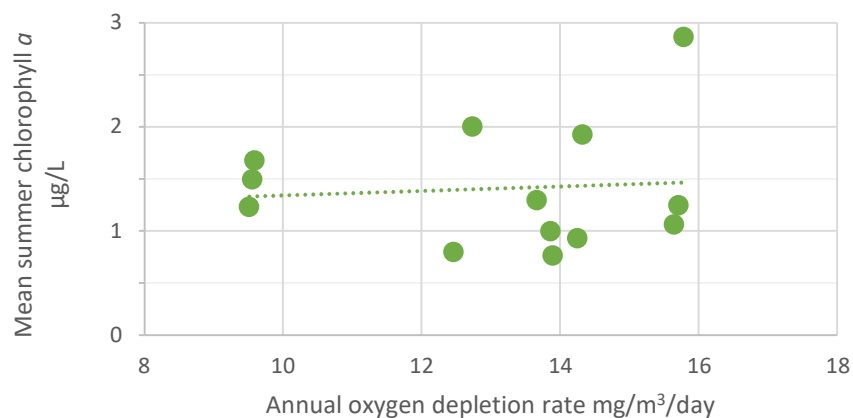


Figure 2 Mean summer chlorophyll *a*, measured at the surface (1-25 m tube sample) vs. annual lakebed (95 m) depletion rate of the following year.

While no increase in the oxygen depletion rate is reassuring, oxygen minima, measured at the lakebed, have in recent years been lower (Figure 3) The lowest oxygen reading on record occurred in 2021 (4.18 mg/L), with the second lowest recorded in 2019 (4.2 mg/L). This was consistent in shallower layers of the hypolimnion (Figure 3), which largely mimicked patterns observed at the lakebed. While not exceptional these years had higher than average depletion rates, particularly in 2021 (Figure 1). These were 15.6 mg/m<sup>3</sup>/day in 2019 and 17.4 mg/m<sup>3</sup>/day in 2021 - the average for 2009-2021 was 15.1 mg/m<sup>3</sup>/day.

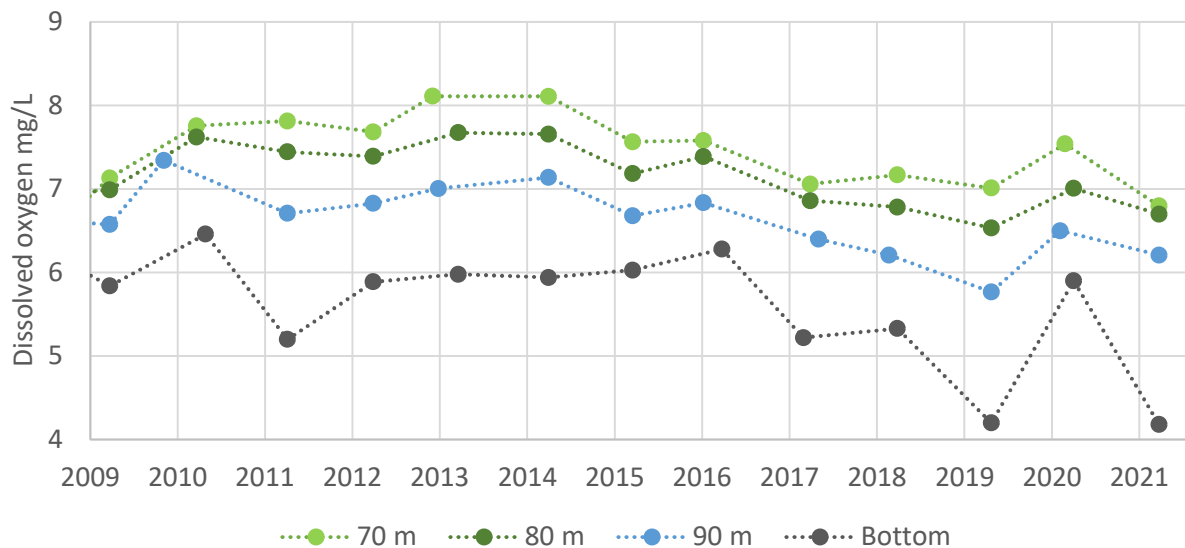


Figure 3 Minimum dissolved oxygen levels measured in autumn/winter prior to mixing, from 2009 to 2021. Measurements for 70 m, 80 m, 90 m depths are taken from the same time as those selected for the lake bottom (~ 100 m depth). Sampling is conducted at the central lake site.

Traditionally our focus has been on oxygen minima and depletion rates to indicate the risk of lakebed anoxia, but it is worth examining patterns in temperature and oxygen from other angles. We can examine durations of temperature stratification to see whether they are influencing oxygen minima. Destratification normally occurs between June and July, and very occasionally later (July-August). There was no evidence to indicate that destratification is occurring later (Figure 4). But the number of days per annum that oxygen declined increased, albeit with a degree of variability among years (Figure 5). There was also a loose negative relationship with these durations and annual DO minima ( $R=0.36$ , linear regression) (Figure 5).

We examined the relationship between mean summer and annual (July to June) surface temperature versus end of year (July) dissolved oxygen minima (Figure 6). Annual and summer mean temperatures were reasonably close among years ( $R=0.8$ , linear regression). Warm surface temperatures were more likely to coincide with lower hypolimnetic oxygen, but this relationship was inconsistent ( $R=0.1$ , linear regression).

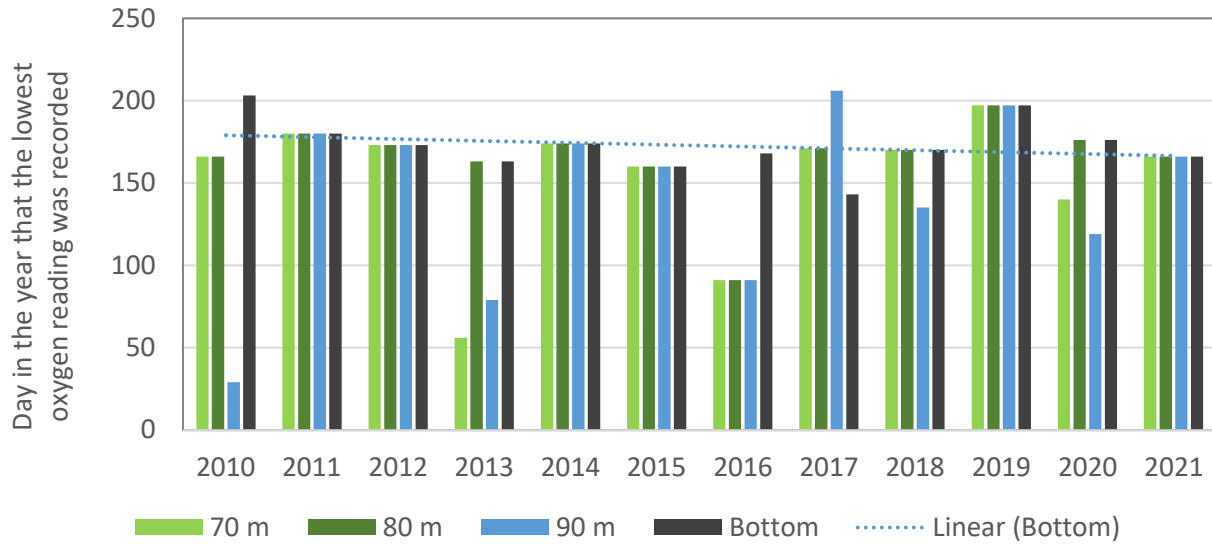


Figure 4 The day (Julian) in which the lowest dissolved oxygen levels were measured prior to mixing, each year, from 2009 to 2021. Measurements for 70 m, 80 m, 90 m, and ~ 100 m depths are taken from the point of lowest dissolved oxygen for each depth. Sampling is conducted at the central lake site.

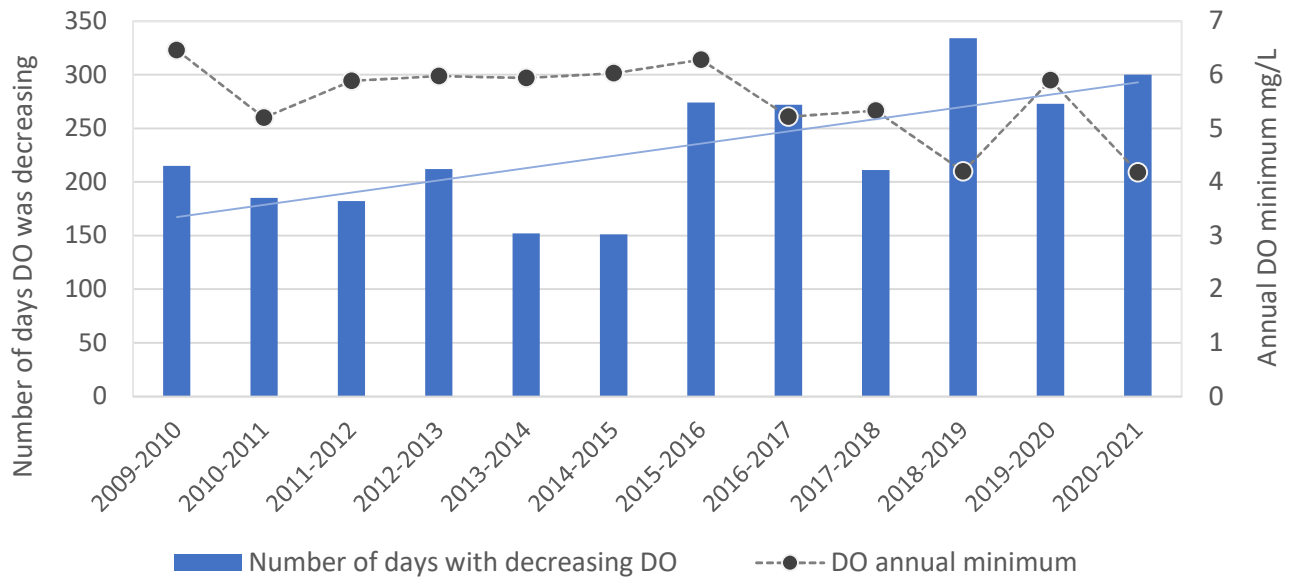


Figure 5 The number of days for which dissolved oxygen was decreasing each year, from 2009 to 2021. Measurements were made at the lakebed at the lake centre. The year has been taken from August to July to encompass one stratification cycle.

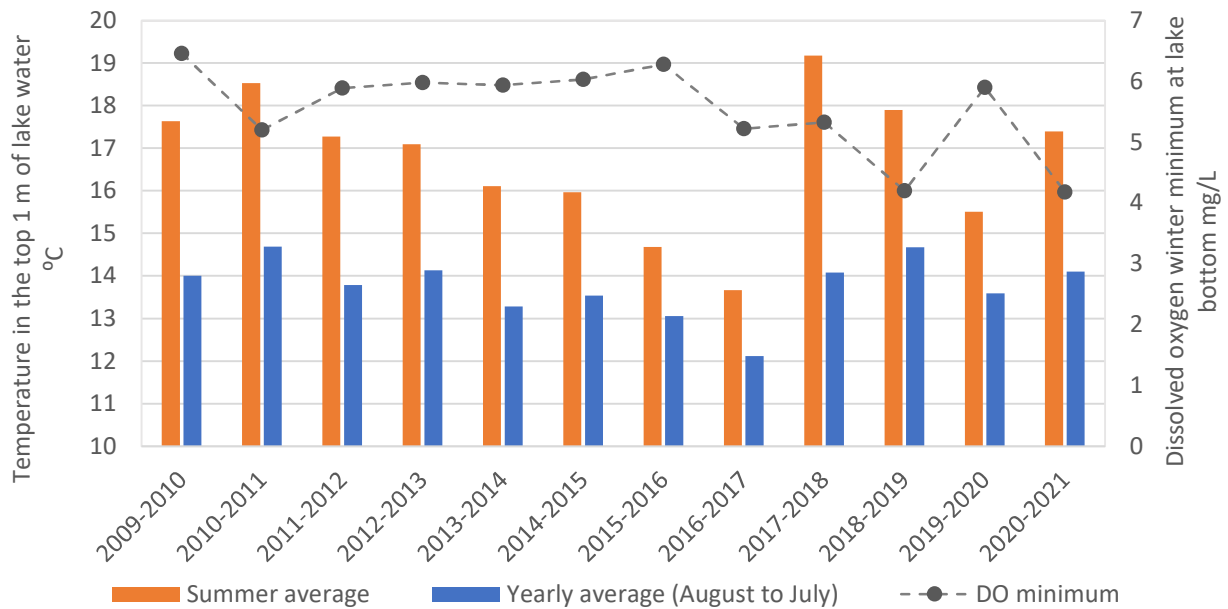


Figure 6 The number of days for which dissolved oxygen was decreasing each year, from 2009 to 2021. Measurements were made at the lakebed at the lake centre. The year has been taken from August to July to encompass one stratification cycle.

### 3.2. Season specific patterns in nutrients - central lake

Various forms of phosphorus are assessed in the center of the lake including total, dissolved reactive, dissolved organic, and particulate forms. Samples have been collected monthly via the 0-25 m deep composite sample, while deeper samples are collected at a range of depths in June, April, and October. The deepest sample was collected at 95 m, which is close to the bottom of the lake. We have looked to see if phosphorus has increased over time as a result of sediment release, resulting from lower lakebed oxygen.

Samples collected at a depth of 95 m are closest to the sediment/water interface. The months of April and October have the longest 95 m sampling record. Both of which showed weak increasing trends for dissolved reactive phosphorus (Figure 7). Similar patterns might have been expected in June, when oxygen depletion will have occurred for the longest period, but this was not evident, and not helped by the shorter sampling record. It should be acknowledged that these are relatively small, variable datasets, and these trends have not been validated statistically.

Surface composite samples (0-25 m) at the lake center are collected on a monthly basis. De-stratification can occur in July or August, so August (shortly after mixing) is the most reliable period to evaluate uniform phosphorus levels. Total and dissolved reactive phosphorus, in the month of August only, increased over the sampling period (

Figure 8). The strength of this August trend has not been evaluated statistically, but analysis of the full dataset, that includes every month from 2001-2019, indicated conflicting phosphorus trends, with increasing DRP, but decreasing particulate phosphorus (PP) and TP (Table 1). While statistically significant, the magnitude of change was small for DRP and TP, which may be a result of the low concentrations, which were close to lab detection limits.

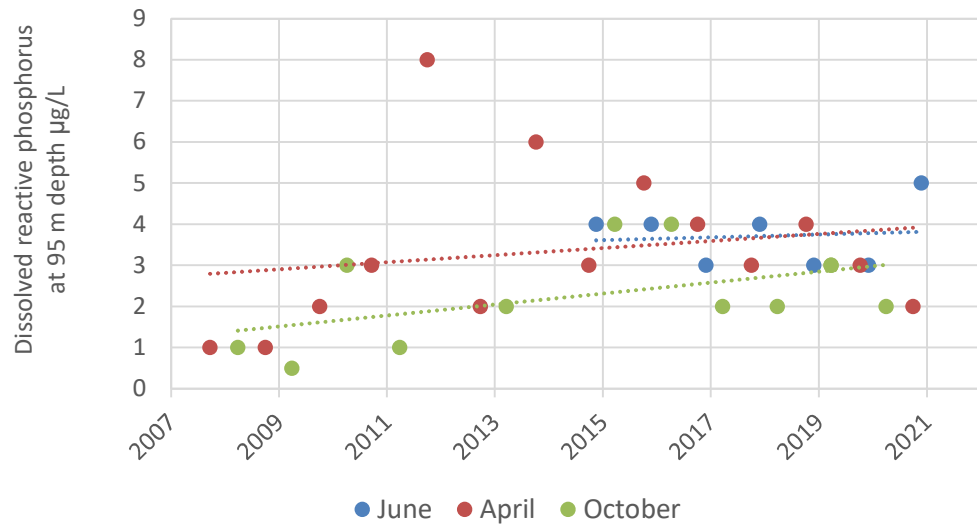


Figure 7 Dissolved reactive phosphorus concentrations measured in June, April, and October at a depth of 95 m, located at the central lake site. There is no data for June pre-2015.

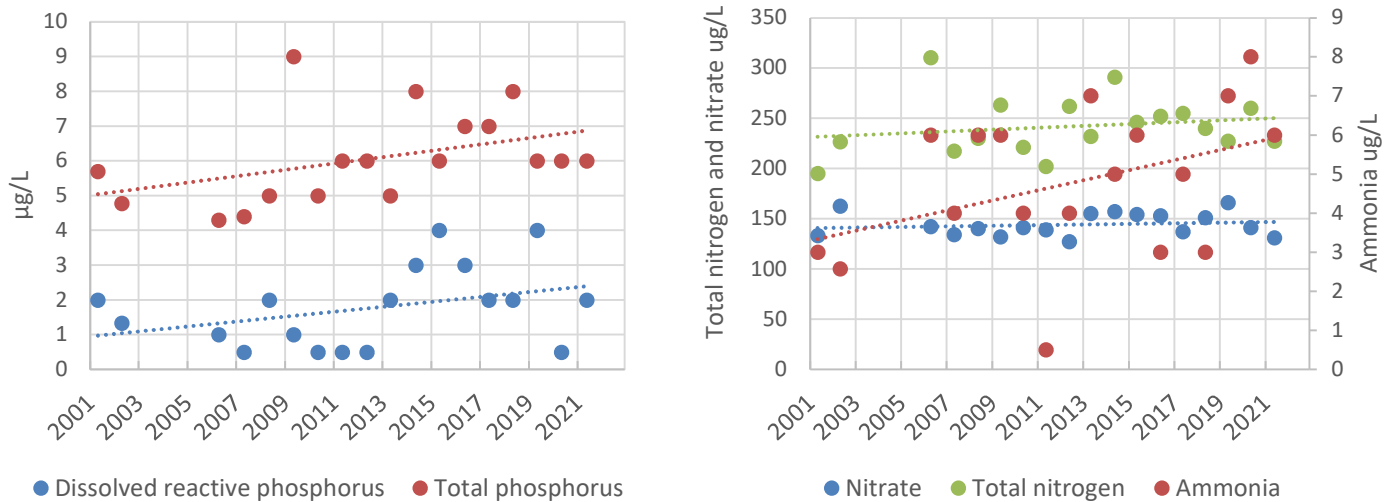


Figure 8 Dissolved reactive phosphorus, total phosphorus, nitrate, ammonia and total nitrogen concentrations measured every August at the central lake site using the 0-25 m composite sampling method.

### 3.3. General lake and tributary trends

A number of attributes are assessed monthly at the lake center in the 0-25 m zone. Analyses incorporating this data record, from 2001-2019, indicated that there were significant increasing trends for a number of nitrogen species (Table 1). Mention has already been made of the significant but small changes in phosphorus forms over time.

It is likely that agricultural intensification has contributed to an increase in nitrogen over this period. Nitrate is easily leached, particularly in wet places such as the Lake Brunner catchment. Among the tributaries of the lake, TN deteriorated at two sites (Poerua River and Hohonu River), nitrate also deteriorated at Poerua River and improved at one site (Pigeon Ck) (Table 2). Total phosphorus improved at three sites suggesting a reduction in phosphorus inputs from agriculture. Agricultural intensification was evident in the lower reaches of the Hohonu River catchment, based on deterioration observed in a number of water quality attributes (Table 2).

Despite increases in nitrogen and dissolved reactive phosphorus there were no increases in trophic indicators (TLI and chlorophyll *a*, Table 1). The TLI incorporates total nitrogen, total phosphorus, clarity (vertical Secchi), and chlorophyll *a* levels to form one score indicative of a lake's overall nutrient status (Burns et al. 2000), with the most favourable levels for many of them peaking in 2015 (Figure 9).

Clarity (vertical secchi) has significantly improved. Algal abundance, driven by nutrient concentrations, can contribute to changes in clarity. Chlorophyll *a*, our indicator of algal abundance, has improved but not significantly. Phosphorus, being the limiting nutrient, is likely to be more influential than nitrogen, with significant but small improvements observed for both TP and PP. Interestingly, particulate nitrogen (PN) as well as PP has improved despite increases in other nitrogen forms, suggesting a reduction in particulate nutrient sources overall.

### 3.4. National objectives framework categories

The National objectives framework (NOF) attribute states for the central lake site were "A" for total phosphorus and chlorophyll *a*. An "A" indicates 'ecological communities that are healthy and resilient, similar to natural reference conditions' (Table 3). Total nitrogen, ammonia, and lakebed oxygen levels were a "B", which indicates that 'ecological communities are slightly impacted by additional algal and plant growth arising from nutrient levels that are elevated above natural reference conditions' (New Zealand Government 2020). A wet climate will promote leaching of dissolved nitrogen. Higher nitrogen in Brunner (primarily in dissolved forms), relative to phosphorus and chlorophyll *a* levels, could be due to increased leaching associated with the cool, wet climate.



**Table 1** Seasonal Kendall trend analysis for water quality data collected at central Lake Brunner. Trends in red are undesirable and trends in blue are desirable. Trends that are considered ‘extremely likely’ are those with a rate of change (percent annual change, PAC) larger than  $\pm 1\%$  of the median per year, a P value of  $<0.05$ , and a probability of occurring at  $>0.95$ . Paler colouration demarcates trends that meet the same criteria but with a smaller PAC of  $< 1\%$  per annum.

Variable	Samples used	Sampling period	Median	Units	P	PAC <sup>6</sup>	Likelihood
Ammonia*	186	19/7/01-20/4/21	5.00	µg/L	0.28	0.28	0.85
Nitrate	194	5/1/01-20/4/21	111.00	µg/L	0.00	0.88	0.99
Dissolved Inorganic Nitrogen	187	19/7/01-20/4/21	119.00	µg/L	0.00	1.01	0.99
Dissolved organic nitrogen	171	19/7/01-20/4/21	76.00	µg/L	0.01	0.97	0.99
Total dissolved nitrogen	171	19/7/01-20/4/21	194.00	µg/L	0.00	1.07	1.00
Total particulate nitrogen	171	19/7/01-20/4/21	20.60	µg/L	0.00	-1.42	1.00
Total nitrogen	187	19/7/01-20/4/21	212.00	µg/L	0.00	0.59	0.99
Dissolved reactive phosphorus	194	5/1/01-20/4/21	0.55	µg/L	0.00	0.00	0.99
Dissolved organic phosphorus	171	19/7/01-20/4/21	2.00	µg/L	0.12	0.00	0.94
Total dissolved phosphorus	171	19/7/01-20/4/21	3.00	µg/L	0.02	0.00	0.99
Total particulate phosphorus	171	19/7/01-20/4/21	3.00	µg/L	0.00	-1.40	0.99
Total phosphorus	187	19/7/01-20/4/21	6.00	µg/L	0.00	-0.66	0.99
Clarity (vertical)	186	19/7/01-20/4/21	6.09	m	0.00	1.10	0.99
Total suspended solids	166	29/9/03-20/4/21	950.00	µg/L	0.63	0.00	0.61
CDOM (Absorbance g340)	165	29/9/03-20/4/21	5.92	g340	0.12	0.33	0.90
CDOM (Absorbance g440)	165	29/9/03-20/4/21	1.20	g440	0.11	-0.60	0.90
Chlorophyll a	186	19/7/01-20/4/21	1.00	µg/L	0.24	-0.89	0.88
Trophic level index (TLI)	185	19/7/01-20/4/21	2.79	TLI score	0.52	-0.13	0.75

\* Ammonia represents ‘total ammonia’, hence the sum of ammonia and ammonium ions.

<sup>6</sup> Percent annual change (PAC) of the median for that variable.

**Table 2** Seasonal Kendall trend test and percentage change for data collected at Lake Brunner tributary water quality sites, from 2008 to 2021. Only trend confidences that are ‘extremely likely’ are reported in the table below. For a trend to be ‘extremely likely’ a P value of <0.05 and a >0.95 probability of occurring is required. The percent annual change (PAC) reflects the percentage change of the median per year. The PAC scale goes out to +/- 28%, with a yellow bar indicating deterioration, and a blue bar indicating improvement. Flow measurements have been used to adjust this analysis should flow be a biasing factor affecting the attributes measured. The NPSFM 2020 attribute states are added where applicable.

Water quality	Site	PAC		Median	Units	State
Ammonia	Pigeon Ck @ NIWA stage	-8.659	-8.659	0.012	mg/L	C
Ammonia	Crooked Rv @ Te Kinga	-2.715	-2.715	0.006	mg/L	A
Ammonia	Poerua Rv @ Station Rd end	-1.194	-1.194	0.006	mg/L	A
Ammonia	Hohonu Rv @ Mouth	1.363	1.363	0.006	mg/L	A
Clarity	Hohonu Rv @ Mitchells-Kumara Rd Br	-4.695	-4.695	10.46	m	A
Clarity	Hohonu Rv @ Mouth	-3.18	-3.18	4.165	m	A
Conductivity	Hohonu Rv @ Mitchells-Kumara Rd Br	-2.338	-2.338	47	uScm	N/A
Conductivity	Hohonu Rv @ Mouth	-2.412	-2.412	46.2	uScm	N/A
DRP	Crooked Rv @ Te Kinga	-2.568	-2.568	0.003	mg/L	A
E.coli	Hohonu Rv @ Mouth	5.487	5.487	90	E. coli/100	C
Nitrate	Poerua Rv @ Station Rd end	2.477	2.477	0.045	mg/L	A
Total nitrogen	Hohonu Rv @ Mouth	2.562	2.562	0.14	mg/L	N/A
Total nitrogen	Pigeon Ck @ NIWA stage	-4.057	-4.057	0.361	mg/L	N/A
Total nitrogen	Poerua Rv @ Station Rd end	1.037	1.037	0.27	mg/L	N/A
Total phosphorus	Crooked Rv @ Te Kinga	-3.034	-3.034	0.01	mg/L	N/A
Total phosphorus	Pigeon Ck @ NIWA stage	-4.713	-4.713	0.027	mg/L	N/A
Total phosphorus	Poerua Rv @ Station Rd end	-3.22	-3.22	0.017	mg/L	N/A
Turbidity	Hohonu Rv @ Mouth	28.13	28.13	0.1	FNU	N/A

**Table 3** NPSFM 2020 attribute states for Lake Brunner at the middle lake site, composite 1-25 m depth sample. States are calculated using both maximum and medians for ammonia and chlorophyll a. A five-year block of preceding data is used to calculate states for each year represented below.

Mid Lake - 0-25 m tube	2016		2017		2018		2019		2020	
	Median	Max	Median	Max	Median	Max	Median	Max	Median	Max
Ammonia	A	A	A	A	A	A	A	A	A	B
Chlorophyll a	A	A	A	A	A	A	A	A	A	A
Total nitrogen	B		B		B		B		B	
Lake bottom DO	B		B		B		B		B	
Total phosphorus	A		A		A		A		A	

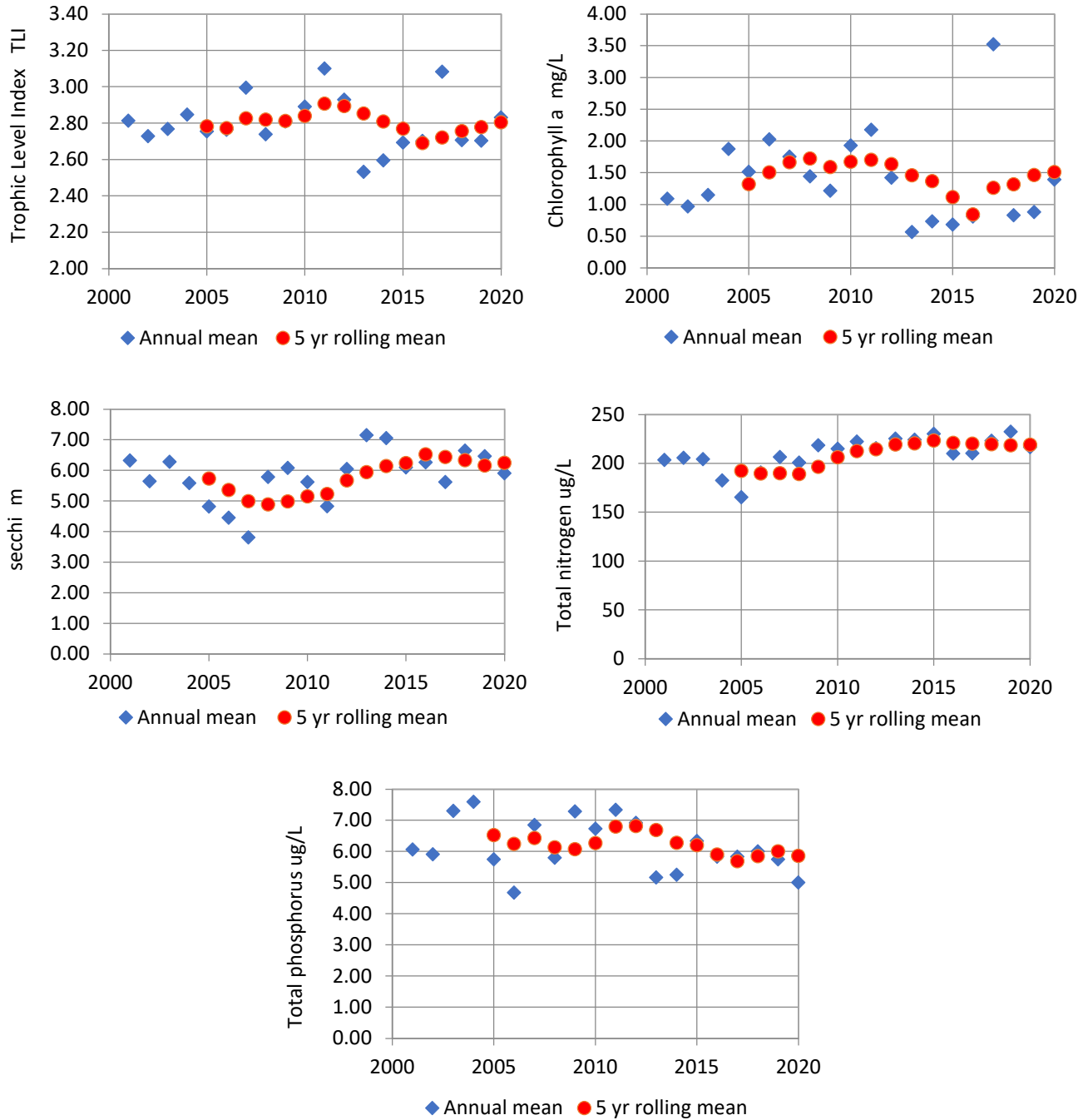


Figure 9 Annual means, and five yearly rolling means, for Trophic Level Index, chlorophyll a, clarity (vertical Secchi), TN, and TP, measured at the central lake site (GYBS).

#### 4. Cashmere Bay water quality

Cashmere Bay is a small bay in the far eastern corner of Lake Brunner. Its size is small compared to the rest of the lake and mixing of its waters with the rest of the lake is confined by a narrow channel that links it to the larger Iveagh Bay. Changes in Cashmere Bay water quality won't significantly affect the main lake.

Cashmere Bay is not deep (12 m), but its depth is sufficient for annual thermal stratification to occur. Vertical mixing of water ceases once stratification has occurred and oxygen is progressively used up at the bottom until it's gone. At this point, different biological and chemical processes occur.

From 2009 to 2020 the annual duration of low oxygen conditions at the bottom of Cashmere Bay increased (Table 4, Figure 6). Lower oxygen levels will have caused increases in ammonia, and dissolved forms of phosphorus (Table 4). On average, ammonia was three times higher at the bottom compared with the surface, and 30-40 times higher during peak stratification.

Nutrient increases at the bed of Cashmere Bay have not led to any significant increases in phytoplankton (as indicated by chlorophyll *a*), with clarity significantly improving (Table 5).

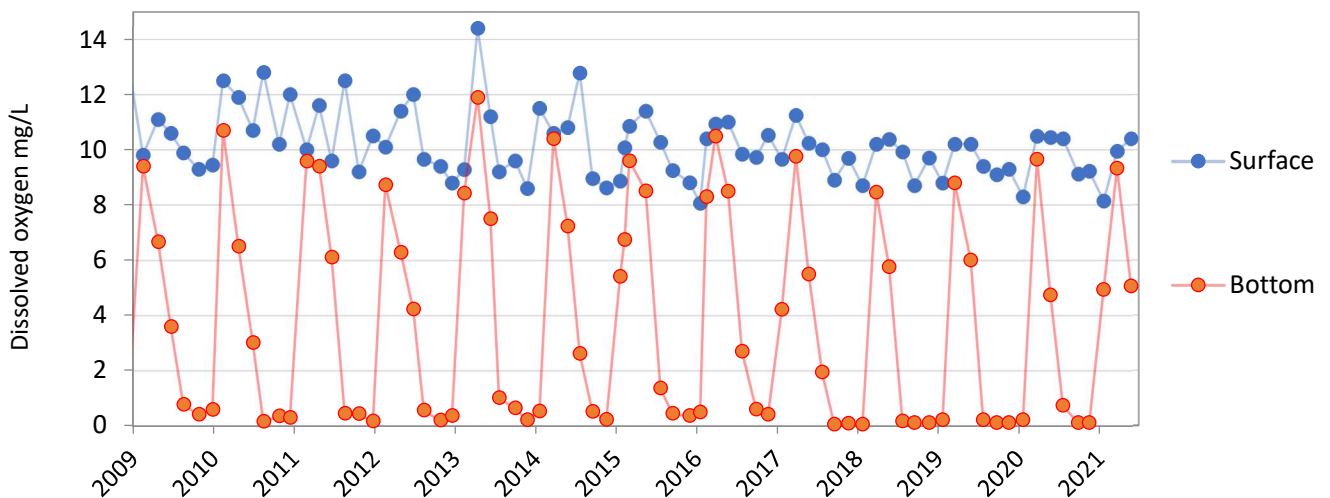


Figure 10 Dissolved oxygen levels at the surface and the bottom of Cashmere Bay, Lake Brunner.

In Cashmere Bay the NOF attribute states for surface water, based on median concentrations, were “A” for ammonia and total phosphorus. Total nitrogen was consistently “B” at all depths. Chlorophyll *a* levels were “A” at both the top and bottom of the bay in 2019.

Table 4 Seasonal Kendall trend analysis for water quality data collected at the deepest point of Cashmere Bay, Lake Brunner. Statistically significant trends ( $P$  value  $<0.05$ ) where the rate of change is larger than  $\pm 1\%$  per year, and the probability of occurring is  $>0.95$ , are described as being “extremely likely” (red).

Site	Variable	Samples used	Sampling period	Median	Units	P	PAC <sup>δ</sup>	Likelihood
Bottom	<b>Dissolved oxygen</b>	86	2/3/05-16/3/21	3.3	mg/L	0.00	-4.9	1.00
10	<b>Ammonia</b>	103	29/9/03-16/3/21	33	ug/L	0.01	4.5	1.00
10	Nitrate	103	29/9/03-16/3/21	89	ug/L	0.98	0.0	0.53
10	Total dissolved nitrogen	89	29/9/03-16/3/21	249	ug/L	0.21	0.6	0.89
10	<b>Total dissolved phosphorus</b>	89	29/9/03-16/3/21	6	ug/L	0.00	3.6	1.00
10	Dissolved organic nitrogen	64	24/2/11-16/3/21	8.7	ug/L	0.39	0.8	0.81
10	<b>Dissolved organic phosphorus</b>	64	24/2/11-16/3/21	5	ug/L	0.00	7.4	0.99
10	Chlorophyll a	100	29/9/03-16/3/21	0.7	ug/L	0.59	-0.4	0.73
10	Total nitrogen	103	29/9/03-16/3/21	284	ug/L	0.93	0.0	0.54
10	Total phosphorus	103	29/9/03-16/3/21	11.7	ug/L	0.24	0.6	0.88
10	Total organic nitrogen	55	29/9/03-14/9/15	96.7	ug/L	0.20	-1.1	0.92
10	<b>Dissolved inorganic nitrogen</b>	102	29/9/03-16/3/21	158	ug/L	0.00	1.5	1.00
10	<b>Dissolved reactive phosphorus</b>	102	29/9/03-16/3/21	1	ug/L	0.01	2.6	1.00

\* Ammonia represents ‘total ammonia’, hence the sum of ammonia and ammonium.

<sup>δ</sup> Percent annual change (PAC) of the median for that variable.

**Table 5** Seasonal Kendall trend analysis for water quality data collected at the surface of Cashmere Bay, Lake Brunner. Statistically significant trends ( $P$  value  $<0.05$ ) where the rate of change is larger than  $\pm 1\%$  per year, and the probability of occurring is  $>0.95$ , are described as being “extremely likely” (blue and red). Blue trends are desirable while red are undesirable. Note that Secchi disk clarity is measured vertically.

Site	Variable	Samples used	Sampling period	Median	Units	P	PAC <sup>6</sup>	Likelihood
Surface	Dissolved oxygen	86	2/3/05-16/3/21	10.1	mg/L	0.25	-0.6	0.89
4	Ammonia *	103	29/9/03-16/3/21	14	ug/L	0.23	1.2	0.89
4	Nitrate	103	29/9/03-16/3/21	75	ug/L	0.06	1.5	0.97
4	Total dissolved nitrogen	89	29/9/03-16/3/21	188	ug/L	0.34	0.2	0.83
4	Total dissolved phosphorus	64	24/2/11-16/3/21	4	ug/L	0.76	0.0	0.62
4	Dissolved organic nitrogen	64	24/2/11-16/3/21	85	ug/L	0.17	0.6	0.91
4	Dissolved organic phosphorus	88	29/9/03-16/3/21	4	ug/L	0.75	0.0	0.63
4	Chlorophyll a	103	29/9/03-16/3/21	2.1	ug/L	0.95	0.0	0.55
4	<b>Clarity (horizontal)</b>	63	29/9/03-21/3/18	3.12	m	0.00	5.7	1.00
4	<b>Clarity (vertical)</b>	157	29/9/03-16/3/21	4.96	m	0.00	2.6	1.00
4	Total nitrogen	104	29/9/03-16/3/21	214	ug/L	0.86	0.0	0.57
4	Total phosphorus	104	29/9/03-16/3/21	8	ug/L	0.24	-0.3	0.89
4	Total organic nitrogen	55	29/9/03-14/9/15	88	ug/L	0.23	-1.1	0.91
4	<b>Dissolved inorganic nitrogen</b>	103	29/9/03-16/3/21	91	ug/L	0.05	1.2	0.98
4	Dissolved reactive phosphorus	103	29/9/03-16/3/21	1	ug/L	0.11	0.0	0.95

\* Ammonia represents ‘total ammonia’, hence the sum of ammonia and ammonium ions.

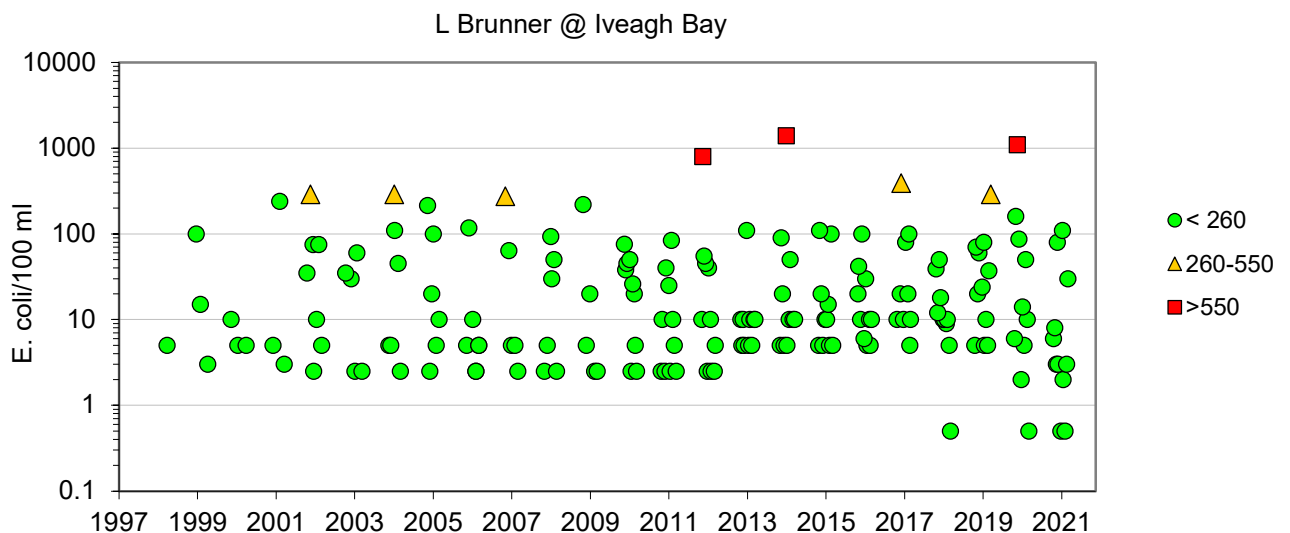
<sup>6</sup> Percent annual change (PAC) of the median for that variable.

Table 6 NPS-FM NOF attribute states for Lake Brunner at Cashmere Bay, for 4 m and 10 m depths. States are calculated for both maximum and medians for ammonia and chlorophyll a. A five year block of data is used to calculate states – the final year is the year stated.

Cashmere Bay	2016		2017		2018		2019		2020	
	Median	Max	Median	Max	Median	Max	Median	Max	Median	Max
Ammonia @ 4 m	A	A	A	A	A	B	A	B	A	B
Ammonia @ 10 m	A	B	A	B	A	B	A	B	A	B
Chlorophyll a @ 4 m	A	A	A	A	A	A	A	A	A	A
Chlorophyll a @ 10 m	A	B	A	A	A	A	A	A	A	A
Total nitrogen @ 4 m	B		B		B		B		B	
Total nitrogen @ 10 m	B		B		B		B		B	
Total phosphorus @ 4 m	A		A		A		A		A	
Total phosphorus @ 10 m	B		B		B		B		B	

### 5. Suitability for swimming

The faecal pathogen indicator bacteria, *E. coli*, is monitored annually between November and March at Iveagh Bay, Cashmere Bay, and the Moana Boat Ramp. Occasional spikes in these indicators have occurred over time (Figure 11). This can be caused by waterfowl (based on records of waterfowl numbers concurrent with each *E. coli* sample), or significant rainfall events that wash off bacteria from the surrounding land. The NPS-FM has a NOF scoring system for primary contact recreation that ranges from A (best) to E (worst) – all swimming sites were in the B category, due to occasionally elevated *E. coli* levels.



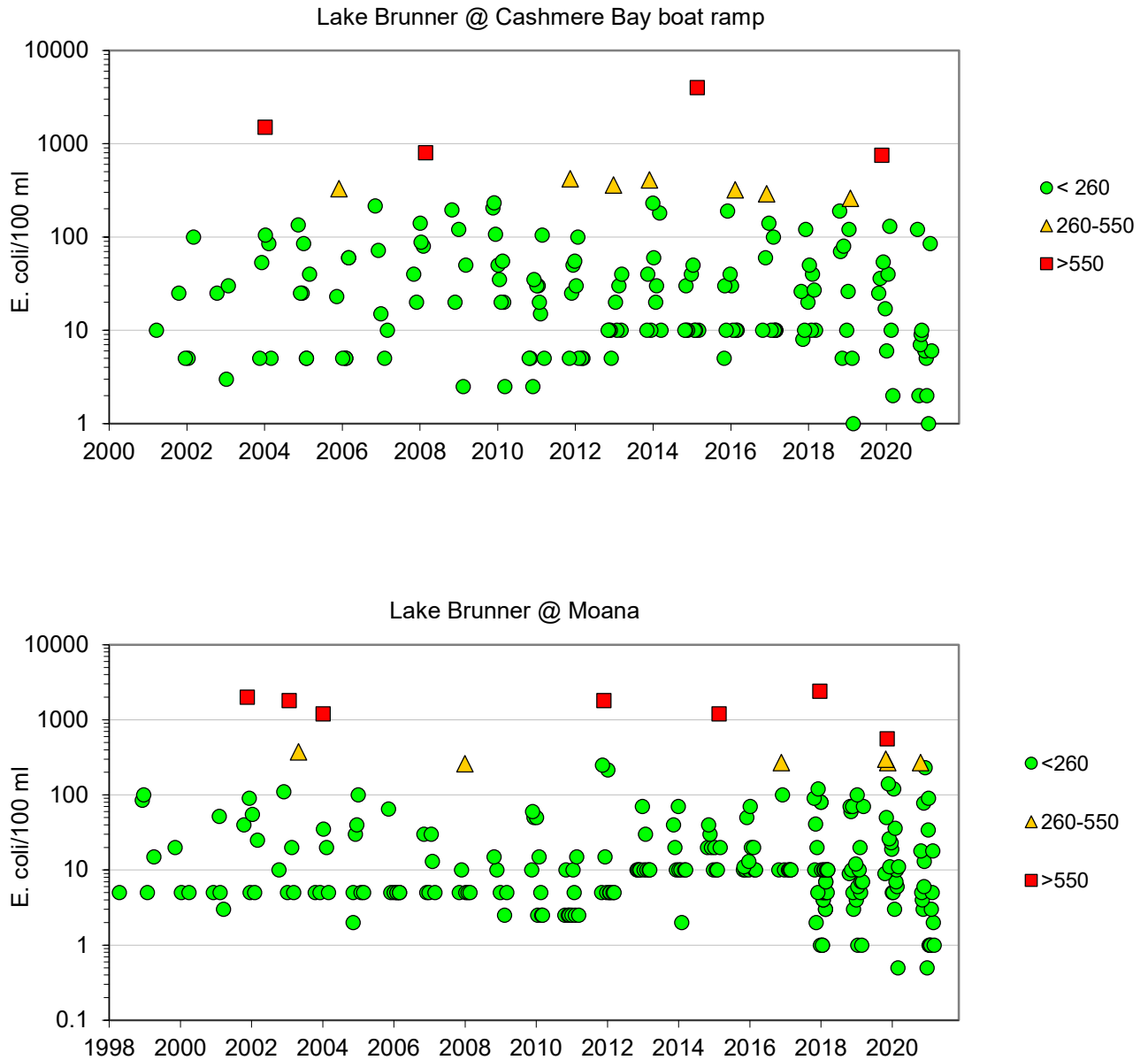


Figure 11 Individual sample results for Lake Brunner contact recreation monitoring sites. Single sample criteria are used; circles indicate acceptable pathogen levels for swimming, triangles indicate low risk, and squares indicate a moderate to high risk for bathing. Sampling is current up until the summer of 2020/2021.



## 6. Summary

Lake Brunner currently remains in an oligotrophic (low nutrient) state, generally safe for swimming and other recreational activities, as indicated by acceptable levels of pathogen indicator bacteria. The lake is phosphorus limited and there is continual interest as to both the potential inputs from the catchment and potential for recycling at the lakebed due to low oxygen levels. The two lowest lakebed oxygen readings on record were measured in 2019 and 2021, and potential drivers of oxygen depletion were investigated.

Climate change predictions predict significantly wetter winter/spring conditions, and more variable weather patterns (Ministry for the Environment 2018). The result of this may be longer periods of stratification and oxygen consumption. There was no evidence that the rate of oxygen depletion has increased, or that this rate is closely linked to phytoplankton abundance. The possibility for longer periods of thermal stratification was examined. While destratification is not necessarily occurring later, annual durations of depletion were loosely linked to winter lakebed oxygen minimums, both of which may be increasing over time. Lake temperature was not closely related to oxygen minimums.

Phosphorus sampling at the lakebed doesn't indicate obvious increases in phosphorus release over time, although limited data points were available for evaluation. More phosphorus data has been collected at the surface where no meaningful deterioration was evident over time.

Many forms of nitrogen continue to increase in the lake, but fortunately not other trophic indicators like chlorophyll *a* and the trophic level index, while clarity has improved. Tributaries of the lake were most likely to display increasing trends for nitrogen and decreasing trends for phosphorus. A number of water quality attributes deteriorated in the lower Hohonu River.

The NPSFM 2020 provides lake target attribute states for a number of lake health attributes. Of these ammonia, total phosphorus and chlorophyll *a* were in the A category, with total nitrogen and lakebed dissolved oxygen in the B category.

Increasingly low oxygen levels at the bed of Cashmere Bay have corresponded with inorganic nitrogen and phosphorus releases from the sediments. Fortunately this has not appeared to have contributed to algal growth, with clarity improving.

Small increases in mean temperature aside, climate change predictions forecast significantly wetter winter/spring conditions, and different weather patterns (NIWA 2018). The result of this may be to delay de-stratification and subsequent hypolimnetic re-oxygenation, leading to lower hypolimnetic oxygen levels. This will continue to be evaluated closely.

## 7. References

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<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item:</b> Te Tai o Poutini Plan Update	
<b>Report by:</b> Jo Armstrong, Project Manager	
<b>Reviewed by:</b> Heather Mabin, Chief Executive	
<b>Public excluded?</b> No	

## Report Purpose

To update the Resource Management Committee (RMC) on matters relating to the Te Tai o Poutini Plan Committee.

## Report Summary

The TTPP Committee met on 16 December 2021 and approved the Exposure Draft plus a Natural Hazards Companion Document for publication on 26 January 2022.

## Draft Recommendations

It is recommended that Resource Management Committee resolve to:

1. *Note the report.*

## Issues and Discussion

### Launching the TTPP Exposure Draft

The Te Tai o Poutini Plan Exposure Draft and Natural Hazards Companion Document went live on the TTPP website on 26 January 2022. Links to the Home page are available directly from all our council websites.

There has been advertising in all newspapers and bulletins throughout the districts and ongoing reminders will be placed in the four main newspapers until the feedback period closes on 11 March 2022.

Hard copies of the TTPP Exposure Draft, Natural Hazards Companion Document, Information Sheets, Feedback Forms and advertising poster were delivered to 18 venues across the districts for communities to access between 26 January and 11 March 2022.

Library and council front office and planning staff have received training on the E-Plan.

### Covid Impacts on Exposure Draft Engagement

Stakeholder engagement plans have been affected by Covid restrictions.

Eight meetings planned for 21 to 24 February on topics of interest such as heritage, mining and the environment, will now be accessed by Zoom only.

Nine drop-in sessions planned from 17 February to 1 March will go ahead, with Covid restrictions at each venue being adhered to. These drop-in sessions enable individuals to talk to a planner about how TTPP provisions will affect them.

The Exposure Draft, Natural Hazards Companion Document and all other documentation can be found on the Home Page of the Te Tai o Poutini Plan website at: [TTPP.westcoast.govt.nz](http://TTPP.westcoast.govt.nz)

<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item:</b> Consents Monthly Report	
<b>Report by:</b> Leah Templeman, Consents & Compliance Business Support Officer	
<b>Reviewed by:</b> Colin Helem, Acting Consents & Compliance Manager	
<b>Public excluded?</b> No	

## Purpose

For the Resource Management Committee to be kept informed of activities in the Consents department, and to provide an update on current matters.

## Summary

This is the Consents report for December 2021 – January 2022 activities.

## RECOMMENDATION

*That the February 2022 report of the Consents Group be received.*

## Site Visits

One Consent site visit was undertaken 1 December 2021 to 27 January 2022

10/12/2021	RC09074	Site visit for affected party determination
	Dingo Mining Limited	
	Caroline Terrace, Buller	

## Non-notified Resource Consents Granted

Fifteen non-notified resource consent applications were granted 01 December 2021 to 27 January 2022:

RC-2021-0153	To discharge treated onsite sewage wastewater from a domestic dwelling to land at Lot 7 DP 494447, 281G Rutherglen Road.
Steve & Melissa Thompson	
281G Rutherglen Road	

RC-2021-0159	To discharge treated onsite wastewater from a domestic dwelling to land at RS 6416 BLK I HONHONU SD 204 limestone Track.
Brent Vollmer & Yvonne Parker	
204 Limestone Track, Rutherglen	

RC-2021-0163	To disturb the dry bed of the Inangahua River for the purpose of removing gravel/rock.
Garvey Creek Farms Ltd	
Inangahua River	

RC-2021-0068  
New Zealand Transport Agency  
Granity

To alter the foreshore or seabed to construct a bridge abutment protection works (Stage 1), Granity.

To construct bridge abutment protection works with the CMA (Stage 1), Granity.

To occupy space in the CMA with bridge abutment protection works (Stage 1), Granity.

To deposit rock in the CMA to construct a bridge abutment protection works (Stage 1), Granity.

To undertake earthworks within 50m of the CMA (Stage 1), Granity.

RC-2021-0146  
Robert Robinson  
Kawhaka adjacent to Fox Creek

To undertake alluvial gold mining within Mineral Permit (MP) 60629, at Kawhaka.

To undertake earthworks associated with alluvial gold mining within MP 60629, at Kawhaka.

To take and use water for alluvial gold mining activities within MP 60629, at Kawhaka.

To discharge sediment-laden water to land in circumstances where it may enter water, namely Fox Creek and its tributaries, associated with alluvial gold mining within MP 60629, at Kawhaka.

RC-2021-0140  
Logburn Farms (2005) Limited  
Unnamed tributary of Big River,  
Atarau

To undertake earthworks within the riparian margin of an unnamed tributary of Big River associated with diversion activities.

To disturb the bed of an unnamed tributary of Big River associated with the construction and maintenance of a diversion channel.

To divert water through a diversion channel, unnamed creek, Big River

RC-2021-0125  
Livadia Limited  
Jacksons Retreat Campground –  
4464C Otira Highway, Otira

To undertake earthworks associated with land development on non-erosion prone areas.

To undertake earthworks and associated vegetation disturbance in the riparian margin.

To take gravel and rock from the dry bed of Humphries Creek and its tributaries.

To undertake channelisation of Humphries Creek and its tributaries of Humphries Stream associated with flooding protection.

To undertake water diversion in Humphries Creek and its tributaries associated with flooding protection.

To discharge treated onsite sewage wastewater from a campground to land in circumstances where it may enter water at Jacksons Retreat Campground, Westland.

RC-2021-0084

Francis Mining Company Limited  
Hut Creek – Echo Mine Site, Mine  
Permit 41269

To disturb the bed of Hut Creek for the purposes of water diversions.  
To divert the water flow of Hut Creek.

RC-2022-0001

Ministry of Education  
Cobden School, 45 Fox Street,  
Cobden

To discharge contaminants to air from a wood pellet fired boiler, Cobden.

RC-2021-0167

Charleston to Westport Coastal  
Trail Trust  
State Highway 67A Terminus to  
Lighthouse Carpark

To undertake earthworks and vegetation clearance associated with the trail construction and maintenance of Sections 2b and 4b of the Coastal Cycle Trail.

To undertake earthworks associated with trail construction and maintenance within 50m of the CMA.

To disturb the bed of unnamed creeks and a dry gully to install new culverts and carry out the extension and maintenance of existing culverts, as necessary.

RCF-2021-0172

Stuart and Adrienne Coleman  
1394 Kaniere-Kowhitirangi Road,  
Kowhitirangi (DS 265)

To discharge dairy effluent to land where it may enter surface and groundwater for stockholding areas, DS265 Kowhitirangi.

RC-2021-0138

Waka Kotahi NZ Transport Agency  
Ltd  
Parker Creek, Whataroa

To undertake earthworks and vegetation disturbance associated with the upgrade and installation of scour protection works to the Parker Creek Bridge, Whataroa.

Construction of scour protection structures and the associated disturbance of Parker Creek.

The permanent diversion of Parker Creek associated with new scour protection structures.

To incidentally discharge sediment to water for the purpose of installing scour protection works, Parker Creek Bridge.

Installation of a weir within the bed of Parker Creek underneath and downstream of the Parker Creek Bridge

RC-2021-0177  
Blair Mirfin  
Atarau Road, Ikamatua (DS 444)

To discharge dairy effluent to land where it may enter water and to surface and groundwater near DS 444, Ikamatua.

RCF-2021-0033  
Dianne Baird  
Kokatahi

To discharge dairy effluent to land where it may enter groundwater from stockholding areas, DS 276, Kokatahi.

RC-2021-0154  
Westland District Council  
Ross Lake – Jones Creek

To disturb the bed of Jones Creek associated with water diversion into and out of the Ross Lake.

To divert the flow of Jones Creek into and out of the Ross Lake.

### **Changes to Consent Conditions**

Five applications to change consent conditions was granted in the period 01 December 2021 to 27 January 2022:

RC12175-V2  
Fulton Hogan Limited  
Grey River

Variation to reduce the volume of gravel being extracted.

RC-2019-0003-V1  
Department of Conservation  
Oparara Arch

To alter the location and construction methods of part of the track upgrade works.

RC-2016-0110-V3  
Roa Mining Co Ltd  
Roa Mine

A variation to allow the backfilling of the pit as part of the rehabilitation of the site and alterations to the water management system, including creek diversions.

RC10174-V3  
Desmond McGrath  
Kumara

A variation to decrease the disturbed area and therefore the bond to existing Resource Consent.

RC10194-V5  
Roa Mining Co Ltd  
Roa Mine

A variation to push back the high wall of Waterfall Pit.

### **Limited Notified and Notified Resource Consents**

No applications for Limited Notified or Notified consent applications were granted in the period 01 December 2021 to 27 January 2022.

### **Westland Mineral Sands Consent Hearing Update**

The West Coast Regional Council and the Buller District Council have appointed a joint hearing committee to hear and decide the application. The hearing commissioners are John Massen (Chairperson), Maria Bartlett and Graeme Neylon.

The hearing will be held in Westport starting at 1pm on Monday 21st of March 2022 at the NBS Theatre 105 Palmerston Street.

### **Barrytown JV Limited Consent Hearing Update**

The commissioners formally closed the hearing on Wednesday 19th of January 2022 and from that time have 15 working days to release their decision. The decision had not yet been released at the time of writing this report.



<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item: Compliance and Enforcement Monthly Report</b>	
<b>Report by:</b> Chris Barnes, Senior Compliance Officer	
<b>Reviewed by:</b> Colin Helem, Acting Consents & Compliance Manager	
<b>Public excluded:</b> No	

### Purpose

For the Resource Management Committee to be kept informed of activities in the Compliance and Enforcement department, and to provide an update on current matters.

### Summary

This is the Compliance and Enforcement report for December 2021 and January 2022 activities.

### RECOMMENDATIONS

1. That the February 2022 report of the Compliance Group be received.
2. That the Browns Gold Ltd bond of \$18,000 for RC-2016-0138 is released.

### Site Visits

A total of 107 site visits were undertaken during the reporting period, which consisted of:

Activity	Number of Visits
Resource consent monitoring	63
Mining compliance & bond release	9
Complaints	5
Dairy farm	30

This report covers the period 2 December 2021 to 27 January 2021.

- A total of 24 complaints and incidents were recorded.

### Non-Compliances

There were five non-compliances that occurred during the reporting period.

Activity	Description	Location	Action/Outcome	INC/Comp
Discharge to Water	A miner self-reported that a piece of lay flat hose used to pump water around their pond system had ruptured causing an uncontrolled discharge of sediment laden water which entered German Gully Creek.	Waimea	A site visit and investigation into the incident was carried out. The findings were that this incident was unforeseeable, and not expected on the basis that the lay flat was believed to have been appropriately connected and in adequate condition. Although the discharge was a breach of consent conditions it was minor in scale therefore no further action was taken.	Incident

Activity	Description	Location	Action/Outcome	INC/Comp
Discharge to Land	During a routine dairy farm compliance inspection, it was observed that an effluent storage pond was overflowing to land. The discharge did not enter a waterbody.	Kokatahi	The farmer advised that he would rectify the situation straight away. A follow up inspection found that the matter had been resolved and the site was compliant. The farmer had installed a further storage pond to increase capacity. A formal warning was issued.	Incident
Gold Mining	Gold Miner found to be actively mining with an expired consent due to the fact that the associated minerals permit had expired.	Blue Spur	A site visit was carried out to the site. The gold miner was unaware that the minerals permit, and resource consent had expired. The mining permit is held by another individual, whereas the consent to mine is held by the miner. The consent had an expiry date for mid-2022. The consent conditions state the consent expires upon the expiry of the minerals permit. The miner was advised that he needs to work within permitted activity rules and to start rehabilitation of the site or seek a new gold mining consent. No further action taken at this stage.	Complaint
Gold Mining	Complaint received that Waimea Creek was discoloured with sediment.	Goldsborough	The area was inspected and found that a gold mining operations pump had failed which caused sediment laden water to flow directly from the mining pit into the creek. An infringement notice has been issued.	Complaint
Discharge to Water	Self- notification relating to an exceedance of turbidity in the Ngakawau River from the consented Mangatini sump decanting operation.	Stockton	The spike in turbidity occurred following the most intense 20-minute rainfall over Stockton's 13 years of records. Notification of the exceedance was given by the miner in line with consent conditions. Considering the circumstances, the incident has been recorded and no further action taken.	Incident

## Other Complaints/Incidents

Note: These are the other complaints/incidents assessed during the reporting period whereby the activity was found to be compliant, or non-compliance is not yet established at the time of reporting.

Activity	Description	Location	Action/Outcome	INC/Comp
Stormwater	Complaint received relating to a blocked culvert causing flooding to another property	Rutherglen	The property owner advised that they were having the culvert replaced and drains cleared.	Complaint
Flooding	Complaint relating to flooding issues with a creek flowing through a roadside drain and putting a property at risk of flooding.	Fairdown, Buller	The issue has been previously reported and relates to a natural event, namely slips in the upper catchment of Lake Stream. NZTA are the dealing with the issue.	Complaint
Discharge to Land	Notification from the District Council relating to a discharge of raw sewage from domestic dwelling, sewage is seeping down a driveway.	Wallsend	District council has given order for property owner to take immediate steps to abate this nuisance under the Health Act 1956. Follow up by the regional council is required to ensure this work has been carried out. Enquiries are ongoing.	Complaint
Flooding	Complaint from a property owner stating that Granite Creek has caused flooding on her property during severe weather events and that the flooding is getting closer to their building pad location.	Barrytown	WCRC Engineer visited the site and gave advice to what flood mitigation options there are in relation to Granite Creek.	Complaint
Flooding	Two complaints received relating to the flooding of properties, they believe that a blocked culvert is not letting the flood water recede.	Kakapotahi	The site was visited and the complainants provided photos and videos showing an intense rain event that caused severe localised flooding. The supplied video showed that the flooding to the sections were a natural event that was not caused by a blocked culvert or weir.	Complaint
Stock in Riverbed	Complaint received regarding 35 cattle in the Arahura Riverbed, photos were later provided by the complainant.	Milltown	Compliance officer reviewed the provided photos and found that they were not in the riverbed of the Arahura River and at that time they were not breaching any rules.	

Activity	Description	Location	Action/Outcome	INC/Comp
Discharge to Water	Complaint received that a tributary of Waimea Creek was discoloured with sediment laden water from a mining operation.	Stafford	Compliance Officer attended the site and found that the discharge from the site was compliant. The miner was spoken to and informed the officer that they had carried out maintenance work on the pond wall which had scoured out briefly discoloured the receiving waters. The miner was advised to contact the Council if they are going to carry this work out. No further action required.	Complaint
Dead Eels in Waterway	Social media post showing dead eels in Sawyers Creek next to Dixon Park.	Greymouth	The site was visited. It was found that the eels had been caught and killed by unknown persons. A stocking with a small amount of meat and cheese inside was found in the water next to where the eels were found. The death of the eels was unrelated to water quality.	Complaint
Discharge to Air	Complaint received that recently a neighbouring farm property was burning plastics and the smoke at the time was causing a nuisance.	Kakapotahi	Compliance officer contacted the farmer and informed them of the complaint and the rules.	Complaint
Earthworks	Complaint received regarding earthworks on a section which may cause flooding issues to the neighbouring property.	Ngakawau	Site visit still to be carried out at the time of this report. Enquiries are ongoing.	Complaint
Discharge to Air	Complaint received that the discharge of odour from the GDC Runanga wastewater treatment ponds is offensive. The issue seems to occur when it is a hot day, and the wind is blowing in a certain direction.	Runanga	The GDC has since done remedial work on the ponds and the issue is now resolved.	Complaint
Earthworks	Complaint received that a digger was doing earthworks on a road. The complainant is concerned that it may cause a slip as the slope is quite steep.	Dunollie	The site has been inspected and ascertained that a contractor had been engaged to improve an existing road. Minimal earthworks involved.	Complaint

Activity	Description	Location	Action/Outcome	INC/Comp
Gold Mining	Complaint relating to the noise from a gold mining operations water pump outside of their consented operational hours.	Rimu	The miner was contacted and reminded of their consent conditions. No further action required at this stage.	Complaint
Earthworks	Complaint received relating to a newly constructed culvert and driveway that is causing the diversion of stormwater onto the state highway.	Kaiata	The complaint has recently been received and enquiries are ongoing.	Complaint
Illegal Dumping	Complaint received that deer carcasses and offal have been dumped on the Grey Riverbed.	Stillwater	The carcasses have since been removed by Council.	Complaint
Landfill	Complaint received alleging that demolition material has been deposited in a cleanfill site next to the Grey River	Greymouth	An inspection has been undertaken and found that the site was compliant.	Complaint
Discharge of dairy effluent	Complaint received relating to a dairy farm alleging that 1 month ago the farm had discharged agricultural effluent to a farm drain.	Whataroa	The farm owner was contacted and advised of the complaint and stated they would follow up with their staff to ensure they were managing the farms effluent disposal correctly.	Complaint
Earthworks	Complaint received that a person has excavated a road along road reserve and cleared the riparian margin of Chatterbox Creek.	Nikau	The site has been visited and enquiries are ongoing.	Complaint
Earthworks	Complaint received regarding earthworks encroaching on a small creek. Complainant has concerns that this waterway is now completely blocked off.	Ruru	A site visit has been carried out and established that the works were compliant with permitted activity rules. However, they were advised that no further earthworks can be undertaken within the margin of the creek.	Complaint

Activity	Description	Location	Action/Outcome	INC/Comp
Discharge to water	Three separate complaints were received relating to the discolouration of Granity Creek. It had been observed that when Granity Creek flows into the sea it turns an orange cloudy colour.	Granity	The area was visited and water samples obtained in four different locations. Miller Creek which flows into Granity Creek has low pH water because of historic coal mining. When the creeks are in low flow due to the extended dry weather and the low pH water from Miller Creek and Granity Creek enters the sea sometimes it causes a chemical reaction which creates the discolouration.	Complaint

#### Update on Previously Reported Ongoing Complaints/Incidents

Activity	Description	Location	Action/Outcome	INC/Comp
Gravel extraction	A compliance inspection of a gravel extraction operation at Punakaiki established that the operator had breached their consent conditions.  It was observed on site that the river had been diverted and a bund/wall constructed along the water's edge.	Punakaiki River	Enquiries have been carried out with the consent holder who has undertaken some remedial work prior to the flood event that occurred on the 27 <sup>th</sup> of November 2021. A decision on enforcement action has not yet been made. <b>Update</b> An infringement notice has now been issued for the diversion of the river.	Incident

#### Formal Enforcement Action

**Formal Warning:** There was one formal warning issued during the reporting period.

Activity	Location
Dairy Farming : Discharge of dairy effluent from an effluent pond	Kokatahi

**Infringement Notice:** There were two infringement notices issued during the reporting period.

Activity	Location
Gravel Extraction: Diversion of river channel	Punakaiki
Gold Mining: Discharge of sediment laden water	Goldsborough

## Mining Work Programmes and Bonds

The Council received 5 work programmes during the reporting period. All programmes have been approved.

Date	Mining Authorisation	Holder	Location	Approved
28/12/2021	RC-2016-0034	Amalgamated Mining	Notown	Yes
28/12/2021	RC13047	Amalgamated Mining	Notown	Yes
10/01/2022	RC11001	Phoenix Mining Limited	Nemona Forest	Yes
24/01/2022	CML37160	Birchfield Coal Mines Limited	Island Block Coal Mine	Yes
25/01/2022	RC-2019-0105	Carry Cooper	Duffers Creek, Stafford	Yes

## The following bond is recommended for release

Mining Authorisation	Holder	Location	Amount	Reason For Release
RC-2016-0138	Browns Gold Limited	Liverpool Bills, Stafford	\$18,000	The miner has completed rehabilitation and a landowner approval form has been obtained.

<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item:</b> Fresh Water Farm Plan Implementation Update	
<b>Report by:</b> Colin Helem, Acting Consents and Compliance Manager	
<b>Reviewed by:</b> Heather Mabin, Chief Executive	
<b>Public excluded?</b> No	

### Report Purpose

To provide an update to Committee as to the implementation of Farm Freshwater Plans required by section 217 of the Resource Management Act 1991.

### Report Summary

Freshwater Farm Plans are a new legal instrument that supports the governments Essential Fresh Water Reforms. The implementation of the Freshwater Farm Plan (FFP) system required under the regulations is still a work in progress. The Ministry for the Environment (MFE) have indicated that they are aiming at a phased implementation approach to commence mid-2022.

Environmental Farm Plans are already required by some Regional Councils through their regional plans and resource consents. Farm plans have not been previously required on the West Coast as a regulatory tool, so this is relatively new territory for our staff.

The Ministry of Primary Industries (MPI) have secured funding to do a pilot programme in the Whataroa area to enable 16 to 20 farm property owners to obtain Farm Plans. MPI have invited other stakeholders including the West Coast Regional Council to support and be involved in the initiative. Staff understand that MPI's stakeholder engagement will also include Te Rūnanga o Makaawhio.

This is a great opportunity to have staff involved with the pilot scheme to upskill their knowledge in the farm plan process and work towards implementation of Freshwater Farm Plans that are required by the regulations.

### Recommendations

**It is recommended that the Resource Management Committee resolve to:**

*Receive this report.*

### Background

On the 3<sup>rd</sup> September 2020 the government introduced Essential Fresh Water Reform and National Environmental Standards for Freshwater Management as a new national direction to protect and improve our rivers.

Freshwater Farm Plans are a new legal instrument established under part 9A Section 217 of the Resource Management Act 1991. This enables mandatory and enforceable freshwater farm plans.

Farmers with 20 hectares or more in arable or pastoral land use, or 5 hectares or more in horticultural use or 20 hectares or more of combined use are required by the regulations to have a certified farm plan.

An opportunity for the delivery of a freshwater farm plan pilot at Whataroa funded and organised by MPI through the P3 Trust has arisen. The pilot is based on a model that Waikato Regional Council are involved in which has delivered over 200 farm plans in the Hauraki area.

The pilot will be based out of the new MPI Whataroa hub and coordinated by a new coordinator Stacey



Straight with support from Westland Milk Products and industry partners including Dairy NZ, Beef and Lamb, Deer NZ and MPI.

This will be a 4-month project kicking off in March to take 16-20 farmers from across sectors through developing their Freshwater Farm Plans.

The intention is towards rolling delivery of this programme across other areas of the Coast. There will be no cost to farmers for the Whataroa workshops to complete their FFP plan.

A Fact Sheet is attached to provide further information.

## **Attachment**

Attachment 1: West Coast Freshwater Farm Plan Workshop Project Fact Sheet

## Attachment 1

# West Coast Freshwater Farm Plan Workshop Project

Create your own Freshwater Farm Plan through a series of guided workshops.

The workshops will be held in Whataroa from March until June 2022 and are open to all landowners including, sheep, beef, dairy, deer and horticulture.

The workshops will guide you through creating your own Freshwater Farm Plan alongside other farmers while discussing common issues and discovering new solutions.

The workshops are supported by industry partners including the West Coast Regional Council, DairyNZ, Westland Milk Products, Beef and Lamb and DeerNZ to ensure the plan you create is of a high standard and able to meet your supplier's requirements.

The programme will involve attending 5 workshops over the period of 4 months.

### What you end up with

- A Freshwater Farm Plan that is practical, personalised for your farm and business that you can use to guide current and future work.

### What you need

- Time to attend all workshops
- A willingness to share and learn from others.
- A good understanding of your farm and business.

### Programme Outline

- Workshop 1 Understanding what a risk and mitigation is. This is an on-farm session.
- Workshop 2 Starting your FFP by identifying risks. Discussion on common risks with the group and filling in the FFP template
- Workshop 3 Continue with your FFP, creating actions
- Workshop 4 Greenhouse gasses, understanding your numbers and creating a plan.
- Workshop 5 Visit on-farm to look at your plan and farm to check your progress and see if anything has been missed.

### How the programme supports you

- Expert facilitators to support and guide you through the process
- A template that can either be used on its own or uploaded into another template eg dairy company template
- Partners in this programme will be supplying some expertise to assist their farmers with information and advice.

## How do I register my interest?

Email Stacey Straight ([straight@xtra.co.nz](mailto:straight@xtra.co.nz)) or Mark Martini ([markm@westland.co.nz](mailto:markm@westland.co.nz)) with your name and phone number and they will give you a call to talk it through and answer any questions

## FAQ

### **1. Does this cost me anything?**

The cost of the programme is fully funded by the supporting organisations. Your cost will be your own time and resource to complete the work required during and between the workshops.

### **2. I'm not an expert on this. Should I still attend?**

You will probably find you know more than you think. The workshops are designed to take you through a carefully guided process to improve your knowledge. There will also be support available between workshops to help with any tricky questions.

### **3. Why include a Greenhouses gas workshop?**

The government expects that 25% of farms will have a farm greenhouse gas plan by the end of 2022. To enable this to happen we have included a greenhouse gas workshop day and plan as part of this process. This will mean you are ahead of the game.

### **4. How long does the programme take?**

The programme takes 4 months with a review session around 6 months after completion.

### **5. Will my Freshwater Farm Plan meet the West Coast Regional Council (WCRC) requirement for an audit?**

The final requirements of the new Freshwater Farm Plans and how they will be certified are still being determined by the Government. The farm plan template you will be using has been developed with guidance from WCRC. We expect the Freshwater Farm Plan created from the template should get you at least most of the way there. Once the audit process is confirmed there may be some minor tweaks that are needed to get your plan ready for an audit. This is the same position for all plans as we wait for the final advice from central government.

<b>Report to:</b> Resource Management Committee	<b>Meeting Date:</b> 8 February 2022
<b>Title of Item:</b> Regional Public Transport Plan review	
<b>Report by:</b> Toni Morrison, Policy & Projects Consultant	
<b>Reviewed by:</b> Nichola Costley, Manager Strategy and Communications	
<b>Public excluded?</b> No	

### Report Purpose

To advise the Committee of the upcoming review process for the Regional Passenger Transport Plan.

### Draft Recommendations

**It is recommended that Council resolve to:**

*Note the process for the upcoming review of the West Coast Regional Passenger Transport Plan (RPTP).*

### Issues and Discussion

#### Background

The Council has delegated the review of transport matters to the Resource Management Committee. The Terms of Reference for the Resource Management Committee provide as follows:

*(c) Delegations*

*...5. To formulate, approve and review all transport plans and policies and to manage transport issues”.*

The Council is required under the Land Transport Management Act 2003 (LTMA) to have a Regional Public Transport Plan (RPTP). The Council’s current RPTP is dated April 2015, and is now due for review.

While the Resource Management Committee has the delegation to lead the review process, the Regional Transport Committee will be consulted during the review.

#### Current situation

On 9 June 2021 the Council adopted the West Coast Regional Land Transport Plan. The LTMA requires that the Regional Passenger Transport Plan (RPTP) must be reviewed as soon as practicable after the public transport service components of a Regional Land Transport Plan are approved. The process for the review will follow that set out in the LTMA and the Local Government Act.

The West Coast does not have a comprehensive public transport network due to its small and dispersed population base. The Council does not provide subsidised public transport bus services. The current RPTP instead focusses on those services that are funded and subsidised by the Regional and District Councils, primarily the taxi companies within the region.

The current Plan provides for the Total Mobility scheme, which assists eligible people with impairments to access appropriate transport. This provides a level of independence, enhances community participation and enables access to services for those who are transport-disadvantaged.

The review of the RPTP will enable the continuation of these services as appropriate, as well as seeking public comment on potential future services for the region. Any such proposals would need to be accompanied by a strong business case supporting future change.

#### Process

At this stage the following process is proposed for the review of the RPTP:

<b>Process</b>	<b>Indicative Timeline</b>
<ul style="list-style-type: none"> <li>• Information gathering</li> <li>• Initial liaison with key/interested parties (including West Coast District Health Board, Active West Coast, Work and Income, District Councils, Waka Kotahi/NZTA, Rūnanga)</li> </ul>	January – March 2022
<ul style="list-style-type: none"> <li>• Prepare draft RPTP</li> <li>• Stakeholder consultation during drafting, including: <ul style="list-style-type: none"> <li>- Regional Transport Committee</li> <li>- Waka Kotahi/NZTA</li> <li>- Rūnanga</li> <li>- every operator of a public transport service in the region</li> <li>- every person who has notified the regional council of a proposal to operate an exempt service in the region</li> <li>- Minister of Education</li> <li>- District Councils</li> <li>- Kiwirail</li> <li>- Regional Transport Advisory Group</li> </ul> </li> <li>• Workshop with Resource Management Committee</li> <li>• Resource Management Committee to endorse draft Plan for public consultation</li> </ul>	January – May 2022
<ul style="list-style-type: none"> <li>• Public Consultation</li> </ul>	May-June 2022
<ul style="list-style-type: none"> <li>• Resource Management Committee to review submissions and make recommendations to Council</li> <li>• Council to consider recommendations and resolve to adopt RPTP</li> </ul>	June-July 2022

### **Costs and Benefits**

The review is required by the Land Transport Management Act. The project is provided for in current budgets.

### **Considerations**

#### **Implications/Risks**

The review ensures that the Council is compliant with the requirements of the LTMA.

#### **Significance and Engagement Policy Assessment**

There are no issues within this report which trigger matters in this policy. Consultation on the draft RPTP will be undertaken with stakeholders and the community, prior to the Plan being finalised and adopted by Council.

#### **Tangata whenua views**

It is proposed to notify Te Rūnanga o Ngāti Waewae and Te Rūnanga o Makaawhio of the upcoming review, and to seek any input or comments. Both Rūnanga are also members of this Committee.

#### **Views of affected parties**

These will be obtained through the consultation process for the RPTP review.

**Financial implications**

The project is provided for in current budgets.

**Legal implications**

The proposed process complies with the requirements in the LTMA and the Local Government Act.