

Our Ref: A1736203

6 December 2022

Simon Upton  
Parliamentary Commissioner for the Environment  
PO Box 10 241  
**Wellington 6140**

Dear Simon,

**Re: Health of Otago's deep-water alpine lakes**

I would like to start by thanking you for your letter regarding Health of Otago's deep water alpine lakes (1 December 2022) and displaying your interest and concern. We share your concern.

I also acknowledge your comment around perceived lack of leadership in protecting and enhancing the water quality of these lakes. That may have been partially accurate in the past, but it is not so today.

Otago Regional Council (ORC) takes its role in leadership for the quality of fresh water across Otago seriously. We agree that it is a leadership role. We accept the critical need to continue to invest in the science and monitoring of water quality. Equally, we accept our reliance to some extent on working in partnership with our iwi partners, central government, territorial authorities, crown research institutes, statutory bodies/agencies (e.g., Guardians of Lake Wanaka) and community environmental groups such as Wai Wanaka.

None of us can do this on our own. As you have noted, science and monitoring data is very important to ensure water quality of our iconic lakes remains very high and is protected (not least because we are unsure of the impact of climate change). Monitoring our extensive network of diverse lakes is challenging. An example is our deep-water lakes which are large and may require high replicates over long timeframes to pick up on small changes or trends. These lakes are international icons, and it is in all of our interests to fully understand their health and any changes over time.

*For our future*

Otago has over 7000 lakes. They are diverse in limnology and state. We have some locally significant lakes requiring action for enhancement and we believe a conversation on monitoring and mitigation, collaboration and support is warranted with central government. We recognise the value of investment in the North Island (e.g., Lake Rotorua, Lake Taupo). While not a deep lake, we have a significant investment occurring in Lake Hayes, in the vicinity of \$3.5million over 10 years.

In stepping up to the mark and accepting our pivotal role, ORC has almost doubled our rates take across Otago over the past three years. This level of ongoing rates increase would be problematic politically. We are looking for assistance from central government to help us facilitate exactly the type of work you are asking about.

Before I answer your specific questions, I would like to list some of our more recent activities.

1. As a result of the Minister for the Environment's 2019 review into ORC's freshwater functions, ORC committed to a review of its Regional Policy Statement, and to the development of a Land and Water Regional Plan (LWRP). The proposed RPS is significantly progressed, with hearings due to commence in January 2023, and the LWRP is on track to be publicly notified by December 2023, in line with the Minister's recommendations.
2. Significantly improved monitoring, and data collection, of fresh water across Otago (state of the environment monitoring sites increased from 63 to 106 since 2018).
3. Introduction of deep-water testing through lake buoys as recently highlighted through the media at an installation cost of \$90,000 per buoy.
4. Partnering with MfE and community groups such as Wai Wanaka to enable additional water testing through combined funding with Jobs for Nature funding. Wai Wanaka shares our workspace with our own staff in Wanaka.
5. Mitigation project in Lake Hayes at an initial cost of \$3.5M over 10 Years.
6. ORC increased FTE - staffing numbers almost doubled across Otago (180 to 330 FTEs) over past three years and equivalent growth within Central Otago. This is best highlighted in the latest report to the Minister for the Environment from August this year (attached in email).
7. Consenting requirements increased through Plan Change 7 and 8. Plan Change 8 in particular is acknowledged as a significant but interim step to improve the existing planning framework until the LWRP is developed. The evidence for PC8 is located at [Hearings | Environment Court of New Zealand](#), and a useful summary of the water quality evidence from ORC is set out at [2022-02-11-Statement-of-Evidence-of-Rachel-Ozanne-dated-11-February-2022-incl-appendices.pdf \(environmentcourt.govt.nz\)](#).
8. Local and national leadership in the introduction of intensive winter grazing rules and in implementing the NPSFM 2020 more generally.
9. Increased resourcing of compliance monitoring including increased investigations into illegal discharges, increased fines, helicopter and drone flyovers.
10. Ongoing investigation and research into lake snow in Lake Wanaka.

## WAI Wanaka (2021) Report

ORC has reviewed the Robertson report<sup>1</sup> referenced in your letter. Broadly, the report argues that there is sufficient evidence to move from a low input monitoring focused work programme to a multi-agency co-ordinated active management approach. It also argues additional finer scale monitoring and modelling of key parameters should be invested in, and in time, used to develop management options.

ORC agrees with this assessment. The Upper Lakes are in good health when considered on a national scale (meeting the 'A' band set out in the NPSFM), but factors such as the recent chlorophyll-a trend [discussed as part of the lake snow paper at the Data and Information Committee meeting on 30 June ([Data and Information Committee - 30 June - YouTube](#)), 49<sup>th</sup> minute] support additional research and intervention being required.

ORC also broadly supports the proposal to establish a multi-agency panel of experts to develop and oversee a study work programme over 5-6 years with a budget in the order of \$15 million. Having the key players brought into that process early would set everyone up for success if we were to determine that an active management stage was required.

Below are responses to your specific questions:

- 1 Can you please identify which provisions in your current regional plans are most relevant to the health of Otago's deep-water alpine lakes?*

We have identified the most relevant provisions in the Regional Plan: Water in Attachment 1.

- 2 Do you consider the decline in health currently being observed is a result of inadequacies in the rules set out in these plans and if so, which ones?*

As a result of the Minister's review in 2019, ORC accepted that its planning framework was no longer fit for purpose and committed to a work programme including the RPS review and the development of the LWRP. Part of ORC's response to the Minister's 2019 review was the introduction of Plan Change 8 which, among other things, introduced rules to manage residential earthworks and strengthen the objectives and policies to manage Three Waters. As part of Plan

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<sup>1</sup> Robertson, D., 2021. Understanding and protecting Otago's deepwater lakes. A Jobs For Nature Strategy for WAI Wanaka

Change 8, ORC acknowledged, and continues to acknowledge, that it was an interim step until the proposed Land and Water Regional Plan is developed.

There are obvious gaps in the planning framework and implementing the National Policy Statement for Freshwater Management (NPSFM) will ensure those gaps are addressed. For example, the requirement to set levels and limits for water quality and quantity will result in a more robust framework for the Alpine Lakes.

In addition, the LWRP will have region wide provisions that will apply across Otago, and specific provisions for each Freshwater Management Unit. That means there will be a tailored approach to managing the alpine lakes that recognises their unique characteristics and manages them accordingly.

ORC is committed to research on the alpine lakes within a wider science programme to support the entire region. Additional funding and a partnership model would greatly assist with management of the alpine lakes.

*3 How much of the problem concerns the adequacy of monitoring and enforcement? What is being done to improve monitoring and enforcement?*

ORC has significantly increased its monitoring and enforcement resources over the last three-year period. With further national legislation and a new Land and Water Regional Plan it is highly likely these services will continue to grow.

The additional resourcing invested by ORC has enabled improved response times for pollution complaints along with any subsequent investigations and enforcement action. The number of formal enforcement actions taken by ORC has increased from 84 in 2020/21 to 120 in 2021/22. ORC also maintains a 24/7 pollution hotline roster 365 days a year. This is the highest level of service and recognises the importance we place on the Otago environment.

The increase in resources has also resulted in an increase in our proactive monitoring of resource consents issued for activities that occur in the alpine lakes area and more broadly across Otago. Proactive monitoring of these consents ensures that potential risks to the environment can be identified and plans put in place to mitigate these risks. A Compliance Policy and Compliance Operational Plan have been developed and these ensure that compliance activity is focussed on the activities that pose the highest risk to the Otago environment. The number one priority within the plan is freshwater, which includes our alpine lakes.

*4 Are there any other plans, projects or strategies you are planning to address this issue? What other actions do you intend to take to reverse the decline in lake health?*

There are a number of additional plans, projects and strategies that ORC has underway, or is planning, that will make ongoing improvements to the management

framework for alpine lakes. The activities identified below are in addition to those on page 2 of this letter. Specifically, the activities underway or planned are:

- An overarching Lakes Strategy that brings together multi agency work programmes and sets an overall direction for the alpine lakes
- Integrated catchment plans, working with existing community and catchment groups to ensure on the ground actions and benefits
- Work to determine the contribution that freshwater contributes to the economy in Otago (as part of the economic programme supporting the LWRP)
- Region wide rules that control activities such as earthworks, farming, forestry, and Three Waters infrastructure and discharges
- Specific provisions in the Upper Lakes rohe chapter of the LWRP that have additional requirements that relate specifically to the area where the alpine lakes are located
- Expanded monitoring programme including more monitoring sites and new techniques such as Lake SPI (Lake Submerged Plant Indicators) to assess and report on the ecological condition of lakes
- Review of our State of the Environment monitoring, targeting information to measure the effectiveness of the LWRP
- Freshwater accounting including regional scale nutrient budgeting, and if necessary, finer scale nutrient budgets for the lakes in future years.

I look forward to continuing working with you in your role to continue to show you our progress on the issue you raise, which has been timely. Notwithstanding the range of new work which we have ramped up in recent years, we can do more.

Our Chair Gretchen Robertson and I would also be very happy to meet in person if that would be helpful.

Kind regards,

A handwritten signature in black ink, appearing to read 'P. Borren', with a long, wavy horizontal line extending to the right from the end of the signature.

Pim Borren, PhD  
Interim Chief Executive

## **Attachment 1 – Provisions from the Regional Plan: Water for Otago that relate to the alpine lakes**

### **General Provisions**

The most relevant general provisions relating to Alpine Lakes from the Regional Plan: Water are:

*Objective 5.3.1 To maintain or enhance the natural and human use values, identified in Schedules 1A, 1B and 1C, that are supported by Otago's lakes and rivers.*

*Objective 5.3.2 To maintain or enhance the spiritual and cultural beliefs, values and uses of significance to Kai Tahu, identified in Schedule 1D, as these relate to Otago's lakes and rivers.*

*Objective 5.3.3 To protect the natural character of Otago's lakes and rivers and their margins from inappropriate subdivision, use or development.*

*Objective 5.3.4 To maintain or enhance the amenity values associated with Otago's lakes and rivers and their margins.*

*Objective 5.3.6 To provide for the sustainable use and development of Otago's water bodies, and the beds and margins of Otago's lakes and rivers.*

Policy 5.4.2 In the management of any activity involving surface water, groundwater or the bed or margin of any lake or river, to give priority to avoiding, in preference to remedying or mitigating:

- (1) Adverse effects on:
  - (a) Natural values identified in Schedule 1A;
  - (b) Water supply values identified in Schedule 1B;
  - (c) Registered historic places identified in Schedule 1C, or archaeological sites in, on, under or over the bed or margin of a lake or river;
  - (d) Spiritual and cultural beliefs, values and uses of significance to Kai Tahu identified in Schedule 1D;
  - (e) The natural character of any lake or river, or its margins;
  - (f) Amenity values supported by any water body; and
- (2) Causing or exacerbating flooding, erosion, land instability, sedimentation or property damage.

Policy 5.4.4 To recognise Kai Tahu's interests in Otago's lakes and rivers by promoting opportunities for their involvement in resource consent processing.

Policy 5.4.5 To recognise the Water Conservation (Kawarau) Order 1997 by:

- (a) Preserving, as far as possible, the waters set out in Schedule 1 of the Water Conservation Order in their natural state;
- (b) Protecting the outstanding characteristics of waters set out in Schedule 2 of the Water Conservation Order; and
- (c) Sustaining the outstanding amenity and intrinsic values set out in Schedules 1 and 2 of the Water Conservation Order.

Schedule 1A, 1B and 1C: Schedules of natural and human use values of Otago's surface water bodies.

Policy 5.4.8 To have particular regard to the following features of lakes and rivers, and their margins, when considering adverse effects on their natural character:

- (a) The topography, including the setting and bed form of the lake or river;
- (b) The natural flow characteristics of the river;
- (c) The natural water level of the lake and its fluctuation;
- (d) The natural water colour and clarity in the lake or river;
- (e) The ecology of the lake or river and its margins; and
- (f) The extent of use or development within the catchment, including the extent to which that use and development has influenced matters (a) to (e) above.

## **Water Quality Provisions**

The most relevant water quality provisions relating to alpine lakes from the Regional Plan: Water are:

*Objective 7.A.1 To maintain water quality in Otago lakes, rivers, wetlands, and groundwater, but enhance water quality where it is degraded.*

*Objective 7.A.2 To enable the discharge of water or contaminants to water or land, in a way that maintains water quality and supports natural and human use values, including Kāi Tahu values.*

Policy 7.B.1: Manage the quality of water in Otago lakes, rivers, wetlands and groundwater by:

- (a) Describing, in Table 15.1 of Schedule 15, characteristics indicative of Good Quality Water; and

- (b) Setting, in Table 15.2 of Schedule 15, receiving water numerical limits and targets for achieving Good Quality Water; and
- (c) Maintaining, from the dates specified in Schedule 15, Good Quality Water; and
- (d) Enhancing water quality where it does not meet Schedule 15 limits, to meet those limits by the date specified in the Schedule; and
- (e) Recognising the differences in the effects and management of point and non-point source discharges; and
- (f) Recognising discharge effects on groundwater; and
- (g) Promoting the discharge of contaminants to land in preference to water.

Policy 7.B.2: Avoid objectionable discharges of water or contaminants to maintain the natural and human use values, including Kāi Tahu values, of Otago lakes, rivers, wetlands, groundwater and open drains and water races that join them.

Policy 7.B.3: Allow discharges of water or contaminants to Otago lakes, rivers, wetlands and groundwater that have minor effects or that are short-term discharges with short-term adverse effects.

Policy 7.D.3 Prohibit objectionable discharges of water or contaminants that degrade the natural and human use values, including Kāi Tahu values, of Otago lakes, rivers, wetlands and groundwater.

Schedule 15: Schedule of characteristics and numerical limits and targets for Good Quality Water in Otago lakes and rivers

Schedule 16: Schedule of permitted activity discharge thresholds for water quality

Chapter 12 is relevant to the water quality of lakes because it contains rules that covers discharges. These include:

Rule 12.A.1.1: The discharge of human sewage into land from an existing long-drop toilet is a permitted activity, providing:

- (a) The discharge was lawfully carried out without resource consent prior to 28 February 1998; and
- (a) There is no direct discharge of human sewage, or effluent derived from it, to water in any water body, drain, water race, or the coastal marine area.

Rule 12.A.1.2: The discharge of human sewage into land from any long-drop toilet constructed after 28 February 1998 is a permitted activity.

Rule 12.A.1.3: The discharge of human sewage through any existing on-site waste water treatment system onto or into land is a permitted activity.



Rule 12.A.1.4: The discharge of human sewage through any on-site wastewater treatment system, installed after 28 February 1998, onto or into land is a permitted activity.

Rule 12.A.2.1: Except as provided for by Rules 12.A.1.1 to 12.A.1.4, the discharge of human sewage to water, or onto or into land in circumstances where it may enter water, is a discretionary activity.

Rule 12.B.1.1: The discharge of any herbicide to water for the control of aquatic plants is a permitted activity.

Rule 12.B.1.2: Permitted activity rule for the land-based discharge of any pesticide onto land.

Rule 12.B.1.3: Permitted activity rule for the discharge of herbicide to air or land where it will enter water.

Rule 12.B.1.4: Permitted activity rule for the aerial discharge of any pesticide onto land in circumstances where it, or any contaminant associated with its breakdown, may enter water.

Rule 12.B.1.5: Permitted activity rule for the discharge of fertiliser onto production land, in circumstances where it may enter water.

Rule 12.B.1.6: Permitted activity rule for the discharge of sullage, cooling water or water from any drinking-water supply reservoir, water supply pipeline or swimming pool to water, or onto or into land in circumstances where it may enter water.

Rule 12.B.1.7: Permitted activity rule for the discharge of water which has been used for the purpose of holding live organisms to water, or onto or into land in circumstances where it may enter water.

Rule 12.B.1.8: Permitted activity rule for the discharge of stormwater from a reticulated stormwater system to water, or onto or into land in circumstances where it may enter water.

Rule 12.B.1.9: Permitted activity rule for the discharge of stormwater from any road not connected to a reticulated stormwater system to water, or onto or into land.

Rule 12.B.1.10: Permitted activity rule for the discharge of any contaminant, excluding settled sediment, present in water impounded by a dam that is not permitted by Rule 13.2.1.3, to water in a lake or river.

Rule 12.B.1.11: Except as provided for by Rule 12.B.1.10, the discharge of a trace amount of any contaminant, originating from within a hydro-electric power structure, into water, is a permitted activity.

Rule 12.B.3.1: Except as provided for by Rules 12.B.1.8 and 12.B.1.9, the discharge of stormwater to water, or onto or into land in circumstances where it may enter water, is a restricted discretionary activity.

Rule 12.B.4.1: The discharge of water (excluding stormwater) or any contaminant from an industrial or trade premises or a consented dam to water or to land is a discretionary activity, unless it is permitted by Rule 12.B.1.6, 12.B.1.7, 12.B.1.10 or 12.B.1.11.

Rule 12.B.4.2: The discharge of any hazardous substance to water or onto or into land in circumstances which may result in that substance entering water is a discretionary activity.

Rule 12.B.4.3: The discharge of water or any contaminant covered in section 12.B.1 or 12.B.2, to water or onto or into land in circumstances which may result in that water or contaminant entering water, is a discretionary activity.

Rule 12.C.0.1: Prohibited activity rule for the discharge of any contaminant to water, that produces an objectionable odour, or a conspicuous oil or grease film, scum, or foam in any lake.

Rule 12.C.0.2: Prohibited activity rule the discharge of any contaminant from silage storage or a composting process to any lake.

Rule 12.C.0.3: Prohibited activity rule for the discharge of sediment from disturbed land to water in any: lake, river or Regionally Significant Wetland; or drain or water race that flows to a lake, river or Regional Significant Wetland, where no measure is taken to mitigate sediment runoff.

Rule 12.C.0.4: Prohibited activity rule for the discharge of liquid animal effluent from an animal effluent system to any lake.

Rule 12.C.1.1: Permitted activity rule for the discharge of water or any contaminant to water, or into land in circumstances which may result in a contaminant entering water, is permitted activity, provided conditions are met.

Rule 12.C.1.4A: Permitted activity rule for the discharge of solid animal effluent (excluding any discharge directly from an animal to land), or vegetative material containing solid or liquid animal effluent, into or onto land including in circumstances where a contaminant may enter water.

Rule 12.C.2.1: Restricted discretionary activity rule for the discharge of water or any contaminant to water or onto or into land where it may enter water for a period of up to five years, provided conditions are met.