

Friends of Lake Hayes (Wai Whakaata) Society Inc.
Chair's Annual Report for year ending 2023.

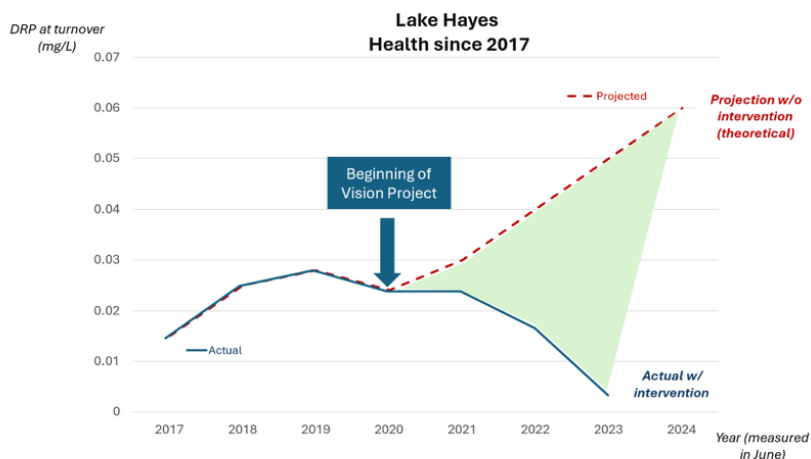
FOLH continue to make progress on the Lake and Catchment Strategy initially presented at 2020 AGM. The strategy implementation continues to be led by the Lake Hayes strategy group run by ORC, including stakeholders from QLDC, DOC, Iwi and FOLH. This group is working very collaboratively and the remediation action plan is happening!

We are beginning to see signs of lake health improvement. Since FOLH / ORC began more monitoring of both Mill Creek and in lake in 2019, significant reduction in Phosphorous loads (algae food) have been made by focussing on reducing sediment loads which Phosphorous is attached to. Hence our drive to remove / reduce stormwater which carries sediment.

Dr Marc Schallenberg completed a study identifying scientifically baseline pollution indicators. FOLH are using graph d. Figure 28 on page 38 as one of the indicators of Lake health improvement. [Schallenberg/O'Connell-Milne report link below.](#)

https://www.savelakehayes.org.nz/_files/ugd/742908_003ee998c0b246fea6ba61fe32d202b8.pdf

The graph below uses data from the lake turnover period (mid-year) of dissolved P evenly mixed throughout the lake which correlates to total dissolved load in the lake. The lower the number the less food available for algae in the spring.



This year it was very low and we saw algae bloom early in the spring and then their population dropped right off until recycling of more food kicked in from the bottom of the lake.

This recycled food is released from the sediment from historic floods which is why sediment from flood events needs to be stopped. Even 1:100 **year** events could set the lake health back 20 years. Hence our passionate Ladies Mile submission to QLDC about moving stormwater under SH6 and out of the Lake Hayes catchment. This would prevent the stormwater from running off into the lake, taking sediment with it that would take many years to eliminate.

Our focus on sediment is paying off. The Strategy of building sediment traps is working. It does however rely on our catchment landowner/ partners to empty out these traps regularly in late summer when creek flows are low. FOLH has gained support from these key landowners to achieve this.

Mana Tahuna holds ORC consent (subject to conditions) to perform sediment extraction and disposal from these traps. Supported by the Dagg Family, Mana Tahuna has built 2 new sediment traps in Mill creek on their property. NZ Ski, Coronet Peak is supporting the project and agreed to empty these traps. The first empty is currently being planned. Below the Dagg Property and above Millbrook, the Roberts family also have a trap which they have agreed to maintain.

Millbrook also have a series of ponds which they will maintain. Below Millbrook, **Ayrburn** Farm and retirement village as part of their consent offered up comprehensive sediment trapping and removal. Finally, still on the drawing board with ORC/FOLH is the reinstatement of old ponds on QLDC reserve which we plan to recommission as traps for high-flow events. Also, the reinstatement of wetlands at the Mill Creek Delta will see high-flow events flood the delta and deposit sediment into the wetland rather than allowing it to flow into the Lake. A visual survey suggests that today 2,000-3,000 tonnes of sediment lie in these existing traps. This sediment with attached Phosphorous is not in the lake yet and is the main reason the lake health is improving. Getting our Landowners/partners to empty these traps is key as if we have a flood event before they are emptied, nature will strip these ponds out for us and deposit the sediment in the lake again.

QLDC

With the new DP Policy 24.2.4.2 in place, FOLH continue to work with QLDC to find effective ways of delivering the new District Plan Policy 24.2.4.2.

We have had some positive outcomes through consent hearing process. The policy has created good discussion / education of the issues around land use change impacting lake health and led to very positive outcomes at both Waterfall Park

retirement village and **Ayrburn** precinct.

We were very disappointed that QLDC chose to try and avoid their own policy around Ladies Mile rather than embrace it and show some environmental leadership. Instead, they chose not to understand potential cost to the Lake and community by avoiding employing limnology expertise.

ORC

ORC are currently working through the Regional Land and Water plan. To ensure pollution loads into lake Hayes reduce going forward, it is essential that the Land and Water plan provides 'teeth' to support QLDC in enforcing the District Plan policy. To do this, we are asking ORC to provide a basis for measuring total pollution loads, set annual targets for pollution load reduction, and enforce a consent process which mandates improvement and monitoring after completion.

Physical Works Progress

Vision Project

Mana Tahuna are making good progress with the catchment remediation work. They will meet their 150,000 plants in the ground **target** throughout the catchment by the end of June 2024. No doubt, you will have seen them at work throughout the catchment.

As mentioned above, Mana Tahuna built 2 new sediment traps at the base of Coronet peak and these are proving very effective and already need emptying. They continue to work with Wakatipu High School and Shotover Primary, and many businesses throughout the community. Together planting thousands of plants in the wetland reconstruction project, and sharing in a learning experience around this amazing catchment.

Arrow Augmentation

ORC have made good progress with the Arrow Augmentation project. Consents completed, Agreements with operator Arrow Irrigation in place and all hardware installed. Ready to commission this autumn after sediment extraction from the Millbrook pond where the water arrives into Mill Creek is complete.

Culvert Project

Consenting was completed last week. Contract has been let and work is to commence in March. Once this is completed, we are measuring lake height reaction speed and will be able

to assess the performance of this work.

Monitoring

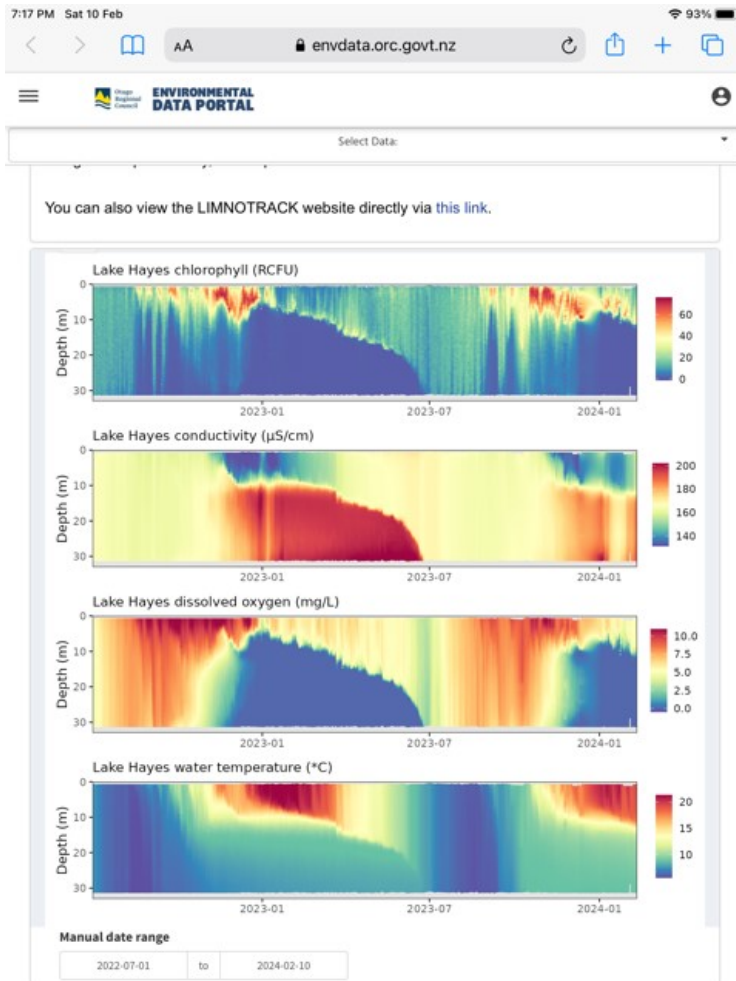
Monitoring within the lake and throughout the catchment is key to measuring how we are progressing towards our goals and enable confirmation of improvements identified as part of DP policy 24.2.4.2.

With the generous support of the Sargood Bequest, FOLH has commissioned Marc Schallenberg to update all catchment pollution load data and lake health data. This will allow us with to create nutrient budget, setting a baseline to measure improvement from. (The link to this report is at beginning of my report above.)

ORC and FOLH have documented the testing regime for both catchment and the lake. ORC will provide Lake information from the lake buoy and monthly lake testing. This equipment is in place and now providing regular data which will be used for annual sediment /nutrient budgets for sediment, Phosphorous and Nitrogen. FOLH and Mana Tahuna continue to provide event-sampling logged turbidity and creek gauging in 3 other locations across the catchment and when possible extra spot turbidity sampling to identify pollution load migration throughout the catchment.

ORC have now generated an environmental portal which allows you to see most of the data they collect. This includes the lake Hayes Buoy data. Link below.

<https://envdata.orc.govt.nz/AQWebPortal/Data/Dashboard/1676>



Thank you

I would like to thank the many people who helped make this year a success. FOLH has an executive of 10 people, all of whom contributed many hours of their own time. Also, a big thank you to all our members who continue to support the journey both financially and in kind.

Sargood Bequest continue to support our project. This year they contributed 40K towards sediment trapping and extraction. Sargood Bequest have now supported us for years, totalling 130k on this part of our Journey.

A big thanks to Rod Drury for his continued financial support and belief in FOLH which underpinned all the Strategy implementation.

Sarah Mukai, project Manager for Mana Tahuna for project delivery. Her leadership, enthusiasm and knowledge has given confidence on project delivery to all parties she deals with.

Thanks to our Technical advisors Dr. Marc Schallenberg, Prof. Brian McGlynn who have given us many hours of their time mostly pro bono. Also, Glen Davis and his Team at E3 for their commitment to making this project happen.

Thank you, Robyn La Roche, for managing our very professional website FOC.

Mike Hanff
10/02/2023