

Guardians of Lake Wanaka

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Guardians of Lake Wanaka Report to the Minister of Conservation for the period June 2017 – June 2018

Executive Summary

- Continued accelerating urban and rural growth in catchments of Lake Wanaka (and other Otago deepwater lakes) continues to place lake water quality including ecosystem function at risk, with potential for serious economic consequences.
- Ongoing absence of a lake and catchments management plan, of research and monitoring, of a formal process to integrate management plans, research and evidence-based decisions, continues to place the future well-being of Lake Wanaka (and other Otago deepwater alpine lakes) at considerable risk of decline.
- As included in the previous Guardians report, we note deficiencies in the Overseas Investment Office processes for assessing potential environmental impacts of conditions of sale of land in iconic lake catchments, and again we recommend that these should be reviewed.
- Over the last several years there has been continuing significant growth of community concern and action in relation to growing risks for Lake Wanaka, resulting in the merger of the Lake Wanaka Trust (a Guardians initiative) and the Upper Clutha Water Group to form the Upper Clutha Lakes Trust Board (this includes around 16 key groups/stakeholders).
- To help address the growth generated risks, Guardians members have helped with this merger and with the successful bid by these groups to the MfE Freshwater Improvement Fund for the Wanaka Water Project.
- The Guardians continue to work closely with community groups to raise awareness of water management issues and to gain more traction towards better water management decision making. Funding for lake management is seriously lacking.
- The Guardians welcome the growing community engagement of Otago Regional Council (ORC) and Queenstown Lakes District Council (QLDC) in expanding their awareness and roles in managing the Otago deepwater lakes and their catchments, particularly for Lakes Wanaka and Hawea, as active members of the Freshwater Improvement Fund Wanaka Water Project.

Guardians Membership

Members of the Guardians of Lake Wanaka, appointed by the Minister in 2013 were: Alan Cone, Barrie Wills, Helen Tait (Chair until January 2015), John Darby, Don Robertson (Chair from February 2015) and Taare Bradshaw who

represents Ngai Tahu. Guardian's members John Darby and Alan Cone stepped down from their roles in June 2018. (Some new members are pending your decision). The Guardians are supported by meeting attendances by Councillor (and Deputy Mayor) Calum McLeod representing the Queenstown Lakes District Council and Jeff Donaldson representing the Upper Clutha Lakes Trust Board. The members appreciate the Minister's decision to extend their term of appointment through to 30 June 2018. Administrative support services have been ably provided by Kimberley Parlane (of DOC, Wanaka) with support from Mike Tubbs, DOC Operations Manager Central Otago District.

Meetings

Meetings of the Guardians between June 2017 and June 2018 were held in: August and October 2017, January, February, April, and June 2018.

Strategic Directions

The Guardians through July 2017-June 2018 have continued to monitor use of Lake Wanaka and catchment activities against their responsibilities as defined in the Lake Wanaka Preservation Act:

- “Preventing the lake from being impounded, controlled or obstructed”: The Guardians keep a watching brief on development adjacent to the lake. This awareness can at times be made less efficient by ORC and QLDC not routinely contacting the Guardians when resource consent applications are received which may have an impact on lake and catchment water quality.
- “Preventing the natural flow from being varied or controlled”: There were no events of this nature.
- “Preserving the lake level and shoreline in their natural states”: The Guardians have focused on urban and rural development activity, and noted changes in land use and land tenure. Resource consent applications which might have an effect on the lake are expected to be referred (for Guardians' comment and to recommend conditions), by Otago Regional Council (ORC) and Queenstown Lakes District Council (QLDC).
- “Maintaining and improving water quality”: Water quality continues to be a prime focus. As for our previous report, major public concern continues to be expressed at issues caused by the growing presence in Lake Wanaka (and now 19 other South Island lakes) of lake snow – the results of the proliferation since 2004 of a microscopic planktonic algal species. This continues to form large blooms, clogging domestic and commercial water filters throughout the Wanaka township reticulation system, clogging fishing lines, boat engine cooling filters, and coating swimmers, etc. The Guardians concerns about this serious issue have been raised with ORC a number of times and we are pleased to see an improved response since our last report.
- The Guardians continue to be concerned about the lack of adequate monitoring and assessment of the nature and extent of chemicals, nutrients and pathogens in urban stormwater run-off and agricultural run-off into the Lake Wanaka.
- The Guardians continue to work closely with QLDC, ORC and community groups in providing informed comment on aspects relating to the management of Lake Wanaka and its catchment water bodies, in

- ORC regional planning workshops and documents, and QLDC district planning documents.
- The Guardians also provide regular input into the management decisions for control of the highly invasive African oxygen weed, *Lagarosiphon major* in Lake Wanaka.

Lagarosiphon Management in Lake Wanaka

An important focus of the Guardians continues to be participation as members of Lake Wanaka Lagarosiphon Management Committee. This includes a review of the annual Lagarosiphon Management Plans for the Lake Wanaka Lagarosiphon control project managed by LINZ. The Guardians attended meetings and provided comment and advice on control plans in August 2017 and March 2018.

The Guardians continue to be pleased to see the Lagarosiphon control programme making significant advances in the reduction of the extent and density of the Lake Wanaka weed beds. Successful trials laying large areas of hessian matting to smother Lagarosiphon have continued. One setback this year was the variable quality of some of the hessian supplied which enabled some Lagarosiphon growth to break through the matting. In some areas, low lake levels due to lack of rain caused some hessian matted lake bed areas to become shallow enough to be damaged by being exposed to the propellers of boats.

Also of concern is the limited removal of Lagarosiphon plants around the Wanaka marina.

Relationship with Otago Regional Council & Queenstown Lakes District Council

The Guardians continue to provide comment and recommend conditions of consent where appropriate to ORC and QLDC on matters in their planning documents and on notified resource consent applications relating to Lake Wanaka and its catchments' water management. One of the Guardians main ongoing concerns has been the apparent long term neglect of the importance of water quality issues in Lake Wanaka. (This is also an important issue in the other 2 Otago deepwater lakes).

The Guardians contributed to discussions with ORC scientists on their planned measurements for the "3 years-out-of-ten" State of the Environment Reporting sampling in Lakes Wanaka, Wakatipu and Hawea for MfE and which commenced in September 2016. We are very pleased to note that ORC has agreed to continue this programme on an ongoing basis beyond the third year of State of the Environment Reporting.

The Guardians attended and contributed to an ORC urban storm water quality strategic workshop held in April 2018. QLDC communications continue to be maintained with Deputy Mayor Calum McLeod who attends Guardians meetings. There has for some time been an absence of an ORC representative at Guardians meetings. Guardians have both met and corresponded with the new ORC CEO and raised this with her.

The Guardians have recently written to remind CEOs of both ORC and QLDC that as a part of their responsibilities under the Lake Wanaka Preservation Act they both need to remind their planners to consult with the Guardians whenever they receive a resource consent application that may have an impact on Lake Wanaka water quality or ecosystem function.

Overseas Investment Office Decision on Hunter Valley Station

Some OIO decisions will have an impact on water quality in Lake Wanaka and other Otago alpine lakes. For example, as reported last year, the recent sale to Orange Lakes Ltd of Hunter Valley Station on the shores of both Lakes Hawea and Wanaka continues to be of concern. A condition of sale is that the new owner (Matt Lauer) must increase the stock numbers by around 50%. This is being achieved by burning off vegetation, spraying, fertilising and over-sowing then increasing stocking rates, much of this on steep country. We expect that one impact of this will be increased run-off of nutrients, silt, herbicide and pathogens into Lake Hawea and into that catchment of Lake Wanaka between the Neck and Camp Creek.

The Guardians (of both lakes) are concerned about the potential impacts on water quality and ecosystem function, and concerned that the OIO was able to conclude in its assessment report that questions of environmental impacts of the proposed increased production were “irrelevant”. The Guardians again recommend that OIO processes for assessing potential environmental impacts of conditions of sale of land in iconic lake catchments be reviewed. We also recommend that the impacts of the expanding farm stocking rates on water quality in both Lakes Wanaka and Hawea should be monitored and meet zero impact standards.

Community Initiatives involving the Guardians

The following community initiatives have involved support by the Guardians as they are all initiatives that are consistent with the Guardians better achieving their requirements under the Lake Wanaka Preservation Act.

Upper Clutha Water Group (UCWG)

In July 2016 a community group (UCWG) was formed to represent the many local groups with interests in Upper Clutha water quality, use and management. The Guardians are represented along with about 15 other groups. The UCWG helps those with water interests speak with a single voice on water issues in the Upper Clutha. A successful bid for funding was submitted (with the Te Kakano Atearoa Trust and the Sustainable Business Network’s Million Metres Project) to the MfE Freshwater Improvement Fund (FIF) for support for development of a Lake Wanaka catchment management plan; for support for assessing urban run-off effects on water quality and for support for increased riparian planting in lake catchments. The total funds from MfE, ORC, QLDC and other sources (~\$820k total over 5 years) are limiting but UCWG aims to progress these 3 water projects and to seek additional funds.

Upper Clutha Lakes Trust Board <https://www.uppercluthalakestrust.org/>

In 2016 Members of the Guardians of Lake Wanaka acting in their roles as private citizens established a new charitable trust called the Lake Wanaka Trust (LWT). This was in response to growing concerns from the Guardians and communities about the lake and catchments water quality, the apparent ecosystem changes, absence of evidence based lake management and the (then) indifferent approach by ORC. In forming the LWT, the Guardians considered that there was a need for an independent group to encourage, fund and progress scientific research to underpin management decisions on the lake's water quality, and the mitigation of undesirable issues such as the growth since 2004 of "Lake Snow" algal blooms in Lake Wanaka (and other nearby lakes). A "whole-of-catchment approach" is intended. As a registered charity and a legal entity, the Trust is able to meet funder's requirements to receive and manage funds granted or donated for community projects.

The LWT objectives were consistent with the aims of the Upper Clutha Water Group, so to provide a legal governance entity for managing the new FIF project and its funds, LWT merged with the UCWG to form the Upper Clutha Lakes Trust Board. The Guardians supported this merger and are very pleased with how the merged renamed Upper Clutha Lakes Trust Board is functioning and with how well ORC & QLDC have engaged with the project. As was happening with the LWT, the UCLTB in addition to governance of the FIF Wanaka Water Project, will encourage and facilitate educational projects and programmes relating to improved water management, including the involvement of schools, community education groups, and tertiary education institutions in science and society activities, and including research and monitoring.

The objectives of the Lake Wanaka Trust were included in last year's Guardians report, and remain in the UCLTB.

Alpine Lakes Research and Education Centre (ALREC)

Given the remoteness of the alpine lakes from universities and other research centres, and absence of lake and catchments management decisions informed by research, several members of the Wanaka community, including the Guardians of Lake Wanaka, proposed the development of an Alpine Lakes Research & Educational Centre (ALREC) in Wanaka with laboratory, office and seminar facilities, and separate accommodation facilities for visiting scientists and students working at the Centre.

The ALREC concept has gained wider community support and a broadly based Steering Committee was established. The existing Otago Fish & Game fish hatchery in Wanaka is seen as an ideal site, and a MOU was negotiated between Otago Fish & Game, the University of Otago and the LWT (now UCLTB) represented by a Steering Committee for the development of the ALREC facility on land to be provided at the fish hatchery. Negotiations are underway with Otago Fish & Game regarding long term access to their land and building on a former fish hatchery site in Wanaka.

In order to provide a research facility while these negotiations and fund raising take place, a paper has been submitted by the ALREC steering committee to

ORC seeking a low rental long term agreement to use an under-utilised ORC building in Wanaka. A decision on this proposal is pending.

Other Community Initiatives

As a part of the Guardians involvement in community outreach, presentations were made on the Guardians of Lake Wanaka and their role to the newly formed Mt. Aspiring U3A group, to the Canterbury Coastal Group and to the CEO of the ORC. There continues to be growing interest and support among members of the general Wanaka community, local media, U3A and the Wanaka branch of the NZ Royal Society, regarding the need to better manage Lake Wanaka and its catchments. Other initiatives include Guardians involvement with groups such as the Shaping Our Future recently formed Water Task Force, and the Guardians of Lake Hawea. The Chair of the Guardians of Lake Wanaka is also a member of the Guardians of Lake Hawea, a subcommittee of the Hawea Community Association Inc.

Resource Consents

The Guardians have been consulted on a number of resource consent applications for development on or near the shores of Lake Wanaka and in each case have provided advice on aspects of the developments which could impact on lake water quality, ecosystem impacts or the spread of invasive species. Examples include advice prior to consent application on the potential environmental impacts of a large scale lake shore infill development to extend a lake edge parking area and nearby boardwalk.

A number of residential subdivision developments in the catchments of Lake Wanaka and the Clutha River outlet appear to have been consented by QLDC (or ORC?) without adequate consulting the Guardians and without conditions required to avoid potentially harmful large scale silt laden storm water run-off into Wanaka's iconic Bullock Creek and also directly into the lake and the Clutha River outlet area. Meetings with the developer to discuss run-off mitigation measures have made little difference.

A new concern has arisen with the potential for beach and water contamination by large vessel haul-out for repairs and maintenance from oil or fuel spillage and hull sanding of anti-fouling paint due to inadequate conditions being set for site containment of toxins. This risk is expected to grow.

Guardians have also provided comments to ORC on a proposed water plan change.

Raising awareness of the need for effective Lake Wanaka and catchment management

The Guardians continue to be very concerned at the lack of a management plan for Lake Wanaka and its catchments and also for other iconic South Island lakes. But things are changing. By continuing to raise this important issue in a number of contexts with UCWG, ORC, QLDC, the media, and a number of community groups, there is now very real traction towards a management plan with the pending start-up of a sub-project in the FIF Wanaka Water Project to develop (along with community involvement) an integrated catchment management plan for the Upper Clutha, including Lake Wanaka. We see this as a substantial step forward and consistent with

Guardians responsibilities. Such a plan will guide research to ensure that the chemical and biological quality of Lake Wanaka are studied, monitored and sufficiently understood to provide evidence-based management measures to avoid or mitigate undesirable changes in water quality and ecosystem functioning.

A key factor over the last year has continued to be the absence of commitment of adequate funds or staff by ORC and QLDC to ensure that a lakes and catchments management plan is developed with long term lake health objectives. However, the successful FIF project bid by groups outside the Guardians (but with Guardians support) and including ORC and QLDC, indicates a very pleasing development.

Even though we are seeing excellent traction towards better lake and catchment management, these recent successful initiatives are just the beginning. If we, the Upper Clutha community are to see the risks to our deepwater lakes and catchments diminish, then there needs to be a broad recognition that a long term substantial investment is essential.

Agricultural and urban development in the catchments of Lake Wanaka appear to be putting an increasing load on the lake's water quality including ecosystem function. Major community concern is developing over the growing impacts of "lake snow" or "lake snot" which is having a widespread influence, not just in Lake Wanaka, but now in Lakes Wakatipu and Hawea as well as up to 17 other South Island alpine lakes. Limited past research by Otago University and anecdote from lake users indicate that undesirable changes appear to be happening over the last 14 or so years but lack of research and inadequate monitoring prevents understanding of the lake processes and assessment of pending risks. To address Wanaka's "lake snow" impact on the town water supply reticulation system, QLDC successfully trialled a small scale filtration system. The business case for a town sized version has been estimated by council's engineers and water modellers to be in the tens of millions of dollars.

Delaying strong measures to understand and manage Otago's deepwater alpine lakes will make recovery more difficult. Costs over a number of years are likely to be of the same order of that necessary for managing Lake Taupo (~\$80 million) following an algal driven colour change in the late 1990s, or Rotorua Lakes (~\$140 million) to mitigate serious pollution. The level of funding associated with the evidence-based management of the Otago Lakes is likely to be in tens of millions. This does not take into consideration the loss of tourism earnings and resulting business and community stresses should water quality in these lakes decline further.

Support for research initiatives

The Guardians continue to be approached for letters of support from research providers who are bidding competitively into various national and international funding agencies for research projects which will advance our understanding and management of freshwater ecosystems in New Zealand. In every case we have agreed and provided compelling letters of support and in some cases helped with the proposals. We continue to be surprised and disappointed at the small scale of funds available for research to support informed management decisions for lakes and their catchments.

Recommendations:

The Guardians of Lake Wanaka recommend that the Minister of Conservation:

- Note that Lake Snow (algal mucous) continues to be a significant problem for Lake Wanaka town water reticulation system where frequent clogging of filters is causing widespread inconvenience. Costs of council engineering mitigation measures are substantial.
- Note that the effects of Lake Snow on the Lake Wanaka ecosystem are unknown.
- Note that substantial urban and rural agricultural growth continues in the catchments of Lake Wanaka (and other Otago deepwater lakes) and is placing lake water quality including ecosystem function at risk, with the potential for negative long term economic consequences.
- Note significant development of community concern and action in relation to growing risks for Lake Wanaka, resulting in the merger of the Lake Wanaka Trust and the Upper Clutha Water Group (which includes 16 key groups/stakeholders with water interests), to form the Upper Clutha Lakes Trust Board.
- Note the improved engagement of MfE, ORC and QLDC with the Freshwater Improvement Funding approved towards the development of an integrated catchment management plan, plus a small project on urban stormwater run-off and an extensive riparian planting programme for the Upper Clutha – including Lake Wanaka.
- Note the serious lack of funding for research to inform lakes' management.
- Encourage a level of funding for lake research and monitoring that reflects the need for understanding of lakes' processes.
- Encourage a review of the Overseas Investment Office processes for assessing potential environmental impacts of conditions of sale of land in iconic lake catchments.



Dr D A Robertson 14 September 2018

Chair, Guardians of Lake Wanaka