OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Communications Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 2 August 2017, commencing at 9:00am

Membership:
Cr Michael Deaker (Chairperson)
Cr Carmen Hope (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Trevor Kempton
Cr Michael Laws
Cr Ella Lawton
Cr Sam Neill
Cr Andrew Noone
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 08:30am on Monday 31 July 2017

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 14 June 2017, having been circulated, for adoption.

ACTIONS

Status report on the resolutions of the Communications Committee.

Report No.	Meeting	Resolution	Status
2017/0848 Waiwera River Catchment Water Quality Study	14/6/17 Technical Committee	*That a stakeholder engagement proposal is brought to the next Communications round.*	CLOSED. Item 1 of the agenda.

PART A – ITEMS FOR NOTING

Item 1

2017/0906 **Stakeholder Engagement Report.** Acting DSE, 14/07/2017

Reporting on the community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff for the period 27 May to 14 July 2017

Three appendices to the report, circulated with the agenda:

1. A list of upcoming events the Stakeholder Engagement directorate are involved in, as at 14 July 2017.

2. The Otago Regional Council report *"Our Lakes – How the Communities of Queenstown and Wanaka use and value their lakes"*

3. The Otago Regional Council's *"Waiwera Water Quality Community Engagement Plan"*

Item 2

2017/0958 **Communications Committee – New Website, July 2017.** Acting DSE, 14/07/2017

The report highlights the redvelopment progress of the ORC's website to improve the user experience and allow for more self-service when engaging with ORC online.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Communications Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 14 June 2017, commencing at 5:43pm

Membership:	**Cr Michael Deaker** (Chairperson) **Cr Carmen Hope** (Deputy Chairperson) **Cr Graeme Bell** **Cr Doug Brown** **Cr Trevor Kempton** **Cr Michael Laws** **Cr Sam Neill** **Cr Andrew Noone** **Cr Gretchen Robertson** **Cr Bryan Scott** **Cr Stephen Woodhead**
Apologies:	Cr Deaker Apology accepted.
In attendance:	Peter Bodeker (CEO) Nick Donnelly (DCS) Michele Poole (acting DSHE) Gavin Palmer (DEHS) Scott MacLean (DEMO) Fraser McRae (DPPRM) Lauren McDonald (Committee Secretary)

Cr Hope chaired the meeting in the absence of Cr Deaker

CONFIRMATION OF AGENDA
No changes to the agenda.

CONFLICT OF INTEREST
No conflicts of interest advised.

PUBLIC FORUM
No public forum held.

MINUTES

The minutes of the meeting held on 3 May 2017, having been circulated, were adopted on the motion of Crs Woodhead and Noone.

Ms Poole provided an update on the community papers included in media monitoring. She advised two community papers have been added, the Clutha Leader and the Waitaki Herald. A request was made for the Cromwell News to be included in the clippings service.

ACTIONS

Status report on the resolutions of the Communications Committee.

Report No.	Meeting	Resolution	Status
2017/0664 Director's report	22/3/17	*That ORC construct a simple explanation of water issues and how they interact, for water quality and water quantity.*	CLOSED To be included in the next publication of ORC Waterlines due for release by 30 June 2017

PART A – ITEMS FOR NOTING

Item 1
2017/0814 **Stakeholder Engagement Report.** DSE, 26/05/2017

The report outlined the community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff for the period 14 April to 26 May 2017 and included a list of upcoming events the Stakeholder Engagement directorate are involved in.

The report *Otago Regional Council's Water Quality Awareness Survey – May 2017* was appended to the report.

Discussion held on the Water Quality Awareness Survey

Concerns were expressed in regard to the sample size of the survey (300 participants) and the value of the statistics gained, level of uptake for water quality testing by farmers, and progress of change of attitude/behaviour at 'grass roots' level.

Mr Bodeker confirmed the survey was undertaken as an Annual Plan target and a large survey would require additional funding.

Cr Bell left the room at 5:54pm and returned at 5:57pm.

Discussion was held on what communications would assist in affecting change of water quality behaviours and practice, i.e. reinforcing of compliance requirements.

Mr Bodeker commented that Council had the responsibility and ability to affect behaviours through an enforcement method, which will come in force in 2020. The current approach has been on education and communication rather than compliance.

Ms Poole advised for future research a review of the communications strategy could be undertaken, including the methodology, sample size and outcomes.

Mr Bodeker advised an update would be provided to Council through his CE report on monitoring and communications needed to see improvement on water quality compliance (including environmental risk assessments) to the 28 June Council meeting.

A request was made for a copy of the Pollution guidebook to be provided to councillors prior to its distribution.

Moved Cr Noone
Seconded Cr Neill

That this report be noted.

Motion carried

The meeting was declared closed at 6:15pm

Chairperson

REPORT

Document ID: A1015176
Report Number: 2017/0906
Prepared For: Communications Committee
Prepared By: Stakeholder Engagement Directorate
Date: 14 July 2017

Subject: **Communications Committee – Activity Report July 2017**

This report records stakeholder engagement activity between 27 May and 14 July 2017.

1. WATER QUALITY

Our staff have undertaken engagement activities and events under the council's rural water quality programme (W3) with a range of stakeholders. The specific objective for stakeholder engagement activity, as outlined in the 2016-17 Annual Plan, is to achieve 90 percent landholder awareness of the rules. This is measured using a stakeholder survey and was achieved at 91%.

1.1. Field days, workshops, and presentations

1.1.1. Industry-led activities

i. North Otago Dairy Working Group – 29 May

Liaison staff hosted a meeting of the North Otago Dairy Working Group along with ORC Environmental Monitoring staff, who gave an overview of the season from ORC's perspective and the group reviewed their season to date.

Over the last 12 months the NODWG has provided on-farm advice and plans to 12 dairy farmers. The discussions helped farmers understand the water plan and also helped them put solutions in place to solve any issues that they had. We have also helped at-risk farms with 20 WOF's on farm to help improve effluent management and identify their risks. The principal benefit of the NODWG is assessed as improving communication between stakeholders in North Otago, understanding the issues that farmers face, joint communications and events from the group and addressing at-risk farms in the area.

ii. Clinton School visit – 1 June

Liaison staff talked to Rooms 3 and 4 at the Clinton School about water in their local stream. Unfortunately, the weather prevented a field trip to the Kuriwao stream, but there was a good discussion on where their water comes from, what is living in it, and why it is important to protect it. Some of the students had also brought in water from their home properties which they inspected through the clarity tube.

iii. Mid Otago Farm Forestry Field day – 9 June

Liaison and Environmental Monitoring staff attended a field day at the Fulton Hogan forestry block at Henley with 12 farmers and forestry people.

The focus of the field trip was to visit an operational skid site with an opportunity to discuss the requirements and technology now available for the logging industry. There were questions around working around waterways, but the main message from Council staff was that environmental considerations need to be addressed in the planning stages of any new block being logged and at planting.

iv. Pomahaka Water Care Group – Water test summary meetings Clinton and Tapanui – 14 June

Liaison staff attended the meetings which were presented by group chairman Lloyd McCall and Landcare Trust Project Facilitator Craig Simpson. Over 25 people attended the Clinton meeting and more than 30 attended at Tapanui.

The meetings were an opportunity for people in the catchment who are involved with the project to get an overall summary of the results for the season. Council staff answered questions regarding the implementation of the Water Plan rules.

v. Clutha Development Trust Project Meeting – 19 June

Liaison staff attended a meeting of the project team including representatives from industry groups and other organisations such as Federated Farmers, DairyNZ and Fish and Game to discuss the summary of findings from the last year's testing. It was also noted that the group will need to consider its income streams as its funding from the Sustainable Farming Fund is in its last year.

vi. Beef and Lamb Land Environment Plan level 2 (LEP) workshop – 21 June

Six staff from the AgResearch team at Invermay attended this LEP workshop. The day comprised a brief rundown of the LEP1 programme, a presentation on the Water Plan for Otago rules from ORC Liaison staff, and then the staff completed the LEP level 2 workshop using the Invermay farm as an example.

This was the first opportunity that some of the staff have had a chance to discuss our Water Plan.

vii. ANZ Bank Rural Professionals Presentation – 21 June, Dunedin

ORC Liaison staff presented to fifteen ANZ Bank Rural Professional staff. The presentation gave an overview of the Water Plan rules, landowners' compliance requirements, and the various catchment initiatives occurring throughout Otago.

Discussion then moved on to how the bank can advocate and support their customers to get the best environmental results. There seemed to be a real willingness for the bank to become more involved in this area.

viii. Meeting with Primary Land Users Group (Waikato) – 27 June

Group Chairman Lloyd McCall and Landcare Trust Project Facilitator Craig Simpson joined Liaison staff in meeting with representatives from the Primary Land Users Group (PLUG) in Waikato to discuss the catchment group model and how the group was established.

PLUG was particularly interested in why the Pomahaka Water Care Group formed, what was involved in keeping it going and what results had been achieved so far. Liaison staff answered questions regarding the Water Plan and how it influenced the actions of the group and how this Council supports catchment groups.

Figure 1: Discussions about the Pomahaka Water Care Group (PWCG) Project. From left: Rebecca Begg (ORC), Lloyd McCall (PWCG), Jim Cotman (PLUG), Leanna Birch (PLUG), Craig Simpson (Landcare Trust).

ix. Beef+Lamb wintering field day Heriot – 28 June

Liaison staff attended a wintering field day held by Beef and Lamb at the Heriot Hall which attracted more than 40 people. The focus of the day was wintering stock on fodder beet, environmental management with a case study of some riparian planting at a local farm and a farm accounting segment. While ORC Liaison staff did not have a speaking role, there was significant discussion around our Water Plan rules which were able to be clarified with the group on the day.

1.1.2. Community-led activity

North Otago Sustainable Land Management Society (NOSLaM) – 6 July

The North Otago Sustainable Land Management Society recently advertised for the vacant coordinator/facilitator position for its flagship initiative in North Otago. There were a significant number of applications and interviews were held on 6 July in Oamaru. ORC Liaison staff were on the interview panel. It was pleasing to see the quality of candidates and exciting that a coordinator will soon be appointed.

Once the coordinator is appointed, further pod group meetings for other areas in the Kakanui catchment are planned over the next few months.

1.2. Media and promotion for rural water programmes

1.2.1. Irrigation NZ Magazine

The winter issue was printed in June and we are now preparing for the spring issue. Articles will include a case study of irrigation in South Otago, updates on developing a plan change for residual flows, and the Arrow River/Wakatipu Basin minimum flow consultations, and a general update on work ORC has been doing.

1.2.2. Waterlines

The winter edition of Waterlines newsletter was distributed in late June and includes write-ups about an estuary study, a wetland restoration project, 2016/17 dairy inspection results, North Otago farmers working together to improve water quality, tips for winter grazing, a day in the life of an environmental officer (lake testing), a case study about a farmer using technology to help with irrigation, a profile of Fish and Game, and information about deemed permit transitions. We are currently planning the spring issue. In response to feedback from readers, one of the articles will outline ORC's enforcement process and options.

1.2.3. 'Good Water in Otago – ORC' Facebook page

There are currently 620 'likes', and we post approximately twice a week. Total reach from 27 May to 3 July was 2832, which is a decrease on the last reporting period.

1.2.4. On-Stream

The seventh issue was emailed to 279 subscribers on 19 June. It included a feature on the results for the water quality survey, and winter grazing, as well as the regular summaries from the four liaison specialists.

2. WATER QUANTITY

We have led several engagement activities and events under the council's Water and Deemed Permit renewal project (W4) with a range of stakeholders in the last month. The objective for this activity is to support permit holders to form groups to manage water availability at a local level.

2.1. Water and deemed permit renewal project

i. Water user group meetings

The following meetings with priority groups have been held or are scheduled:

Meetings held	
Crown Terrace	10 May
Coal Creek (Teviot)	10 May
Upper Manorburn	13 June

Upcoming meetings	
Statutory bodies	Early August
Planning consultants	Mid-August
Manuherikia tributaries	4 meetings TBC

ii. Round 1 and 2 meetings

Round 1 (overview of the deemed permit replacement programme) and round 2 where the statutory bodies (iwi, DoC, and the Otago Fish and Game Council) meet with catchment groups have been completed for priority groups. The statutory bodies group are referred to as affected parties with respect to permit applications.

The two rounds of meetings pave the way for consultants to lead groups through an important step of facilitating discussions between deemed permit holders and the affected parties regarding residuals flows, leading to written approvals to accompany the application to replace their deemed permits. Fish and flow data is required to assist with discussions. In particular, the fish data must be of an appropriate and consistent standard.

Following meetings and discussion with the three statutory bodies, a protocol for fish survey data has been completed which will ensure there is consistency amongst the professional group involved in fish surveys. In addition to the quality of fish survey, certainty is required for the number of surveys required per tributary. The numbers per tributary were being compiled at time of writing and were to be available by the end of July.

With regard to flow data, the Council can provide this information for tributaries where flow recorders are installed. Alternatively, modelled flows can be provided.

Once the information has been collated it provides the basis for discussing and setting a suitable residual flow to maintain existing instream values and or the natural character of that particular waterway and is a key part of the Environmental Assessment section for replacing a deemed permit.

iii. Round 3 meetings

Topics for a series of round three group catchment meetings is being prepared and will include the following topics:

- Outlining fish survey requirements per tributary (number of sites per tributary, quality of surveys, and potential Council involvement and assistance)
- Flows per tributary, availability and method
- Group sharing of water within tributaries during lower flows
- The need to apply for section 417 easements where water is conveyed across neighbouring properties from the point of take

2.2. Media and promotion for water quantity programmes

2.2.1. Retiring deemed permits forum follow-up survey

In follow-up to March's Retiring Deemed Permits Forum, attendees and others are being invited to complete an online survey to find out more about their experience at the forum and what ORC can do to help them with their transition to a new RMA water permit.

A letter outlining where to find information from the Forum, as well as inviting participation of the survey was to be sent in late July so not to conflict with information about the Clarifying Residual Flows consultation, which is taking place in early August. The schedule of community meetings for the latter consultation is included as Annex 1 to this report.

2.2.2. Waterlines

The winter edition of the Waterlines newsletter has been distributed. It included articles on

- Otago Fish and Game
- National interest in the expiring deemed permits
- ORC advice on how to get the information you need to replace your deemed permit
- A diagram showing the water quantity and quality projects being undertaken at present

2.2.3. Arrow River and Wakatipu Basin Aquifer minimum flows

ORC communications staff provided all the promotion and materials for the drop-in sessions held in Arrowtown and Frankton in June. Around 70 people attended the sessions, and our liaison specialists supported policy and science ORC staff at those sessions.

3. ENVIROSCHOOLS

As set out in the Annual Plan 2016-17, ORC provides the regional coordination of the Enviroschools programme in Otago.

3.1 Year 7-10 Hui

In all, 24 students from six Dunedin schools attended the Enviroschools Puaka Matariki hui held at the Otago Museum. The Museum made the planetarium available free of charge and gave a show featuring the Matariki stars. Students learned how to make Manu Aute (Kites) from flax and raupo. Students and teachers spent some time in the afternoon planning their school garden plantings for spring.

3.2 Otago Girls now a Green/Gold school

Enviroschools are encouraged to undertake a holistic reflection every three years. They celebrate their achievements and plan the next steps in their sustainability journey. A Green/Gold school has a sustainability lens across the whole school, including policies, in the curriculum and everyday practices. Otago Girls is the first secondary school to reflect at Green/Gold in Otago. Congratulations to students and staff at Otago Girls on their achievements.

Figure 2: Otago Girls' students with their Green/Gold certificate

3.3 Sustainable heating in Otago Schools project

Toimata Foundation, the Enviroschools' National body, is leading a collaborative project in Otago exploring how school communities can move away from coal fired boilers. Potential partners in this project are Otago Enviroschools, ORC, DCC, the Ministry of Education and the Ministry for the Environment. The aim is to develop practical solutions for sustainable school heating and teaching resources to support this work.

3.4 Carisbrook Students present their petition on plastic bags

Last year Carisbrook School investigated waste and a group of students launched a petition to ban the single use plastic bags. They presented this petition to MP Claire Curran on the steps of Parliament on the 28 June. Students learned by participating in the political process and are very motivated to continue working on the waste issue.

3.5 Otago and Southland Enviroschools facilitator workshop

Sandy Bell-Jameson from Toimata Foundation led a workshop for Otago and Southland facilitators in Dunedin on 26 June. This provided valuable professional development and also a great opportunity to build relationships across the two regions. We aim to make this an annual event.

4. GENERAL PUBLIC AWARENESS ACTIVITY

As set out in the 2016/17 annual plan, we are committed to promoting community knowledge and awareness of the council's activities, and encouraging community participation in both decision-making processes and projects that promote sustainable use of resources. The following outlines a range of activities that have been undertaken to support this target.

4.1 General media

Ten media releases were distributed during the reporting period. ORC featured in 236 print media articles, and ten broadcast media stories. Many of the stories related to the Annual Plan, public transport, and the Dunstan by-election.

4.2 Websites

i. www.orc.govt.nz

There have been 49,137 visits to the ORC website since the last committee report, up 6.6% on the same time last year

ii. www.lawa.org.nz

There have been 699 visits to the Otago section of the LAWA website, up 7.2% on the same time last year.

iii. www.otagocdem.govt.nz

There have been 1,394 visits to the Otago CDEM website, up 265% on the same time last year.

4.3 Social media

We had 2095 followers on our ORC Facebook account at the end of this reporting period. The reach during February was 49,949 people for the Otago Regional Council Facebook page. An Otago CDEM Facebook account has recently been set up, with 278 followers at time of writing.

4.4 Public transport changes – communication strategy

With changes to the Dunedin network coming on 18 September, the bus hub becoming operational, the launch of the new service in Queenstown later this year, and changes to ticketing coming for both services in early 2018, it is a period of relatively complex, though ultimately positive change in Otago public transport. A communication strategy and plan for this phase of change is in place and being implemented.

Key principles for communication in Dunedin include ensuring users and stakeholders understand the changes and their broader context, engaging potential future bus users, and visibility for ORC as the service provider. The intention is to communicate the context and principles behind the changes and to be transparent about the complexities of implementation. We have also discussed with DCC staff the likely impact that the bus hub and additional buses on the road may have on motorists. We will be factoring this audience into our communication plan.

Key communication channels regarding the Dunedin service will include the Star (weekly advertorial column), social media (including video content), direct engagement with stakeholder groups and targeted localised context to community groups for dissemination via their newsletters and other channels.

In Queenstown, key strategic principles include positioning the bus as the first-choice transport option for locals and visitors and high awareness around the new subsidised service.

We are intending to engage a local communications agency and to leverage their local knowledge to ensure comprehensive reach in the area.

Alongside core communications around the service launches, a new visual identity and name for the service is being established, to be used in both Queenstown and Dunedin. Review of how we structure printed timetable and route information is also underway, with a user groups session held in June. This session was attended by representatives from Age Concern Otago, Bus Go, Disabled Persons' Assembly, NZTA, Dunedin and VICTA (Visual Impairment Charitable Trust), with apologies received from DCC, Blind Foundation, OUSA, OPSA and Dunedin Youth Council. Follow up sessions were held with Dunedin Youth Council and People First.

Factoring feedback received, the role of printed information alongside online information (including our website and the real time bus tracking capacity soon to be available), and the staged changes occurring across the Dunedin and Queentown services, a plan to move towards representing route information on larger (fold out) maps is in place. The current intention is to move to this approach first for the Queenstown service launch later this year and to implement it subsequently in Dunedin alongside the new ticketing system early in 2018.

4.5 Air quality

In June our staff supported a dual approach to promoting clean burning techniques and the Clean Heat Clean Air subsidy. 13,000 flyers about air quality, clean burning techniques and the subsidy were delivered to households in AirZone 1 (Arrowtown, Cromwell, Clyde and Alexandra) and Milton. Clean burning also promoted via a two week radio campaign in Central Otago and Dunedin; another two-week period will follow in the second half of June. A media release about the relocated air quality monitoring station in Alexandra was published on 1 June. Another media release about the home heating survey was sent out on 14 June.

The Clean Heat Clean Air subsidy was also promoted via:

- A Facebook slideshow, geotargeted to the towns eligible for the subsidy had a reach of 5,800 and generated nearly 200 click-throughs to more information on our website.
- Web advertising, with over 22,000 impressions.
- Three weeks of print advertising in the Clutha Leader and the Central Otago News.

4.6 Science, Hazards and Engineering

i. 'What lies beneath' project

Bayfield and Kings High School students have completed their investigations of groundwater in South Dunedin. Six students presented the results of their five-week project to the community in a public session at the Kings and Queens Performing Arts Centre on 5 July.

The joint project with the International Science Festival, GNS and the University saw pupils engaging with issues around climate change, sea level rise and natural hazards. Members of the natural hazards team led fieldwork and classroom sessions with the students. The project has driven significant community engagement and resulted in positive media profile across several stories.

Figure 3: Natural Hazards Analyst Hugo Bloor working with Year 10 students (left); Dr Gavin Palmer congratulating prize-winning students (right)

4.7 Environmental Operations

i. Pollution guidebook

A guidebook to promote 'Only drain rain' and give information for households and businesses has been written and is in the design phase. It outlines common urban activities (both household and workplace) that can pollute waterways if they enable contaminants to go into stormwater drains. This will be used Otago-wide.

ii. Mooving Day promotion

Stakeholder engagement staff promoted messages around keeping muck off the roads and cattle away from waterways in the ODT, Otago Southland Farmer, Oamaru Mail, Clutha Mail and on the ORC and Good Water in Otago Facebook pages. We also provided editorial for The Clutha Leader.

4.8 Biosecurity

i. Wallaby meeting – 25 July

Further to the success of the two wallaby meetings held in May, an additional meeting is being held in Duntroon in July, in conjunction with Environment Canterbury. The purpose is to educate landowners about what the signs of wallaby are, and what to do if they see them (identify, report and destroy). ORC is currently requesting access to local Facebook pages such as Oamaru Today and Queenstown Trading so we can give immediate updates to local communities if wallabies are seen in these areas. The wallaby guidebook has been reprinted due to its success.

Liaison staff are continuing to promote ORC's wallaby biosecurity response at appropriate opportunities and asking for members of the public to report sightings.

iii. Starters and Strategies teachers' magazine

This magazine featured biosecurity month in the July issue and ORC, along with the majority of councils throughout NZ, placed an advertisement about wallaby control to increase awareness of this pest animal and the work we do in our region.

iv. Otago University Science Communications students project

Stakeholder engagement staff are working with two students from Otago University to develop a communications plan on rabbits. The objective of the plan is to educate peri-rural audiences about their rabbit control responsibilities. The plan has been completed and we are due to receive it within weeks.

5. CATCHMENTS OTAGO REPORT FOR NOTING

Catchments Otago has provided a copy of a recent report evaluating community attitudes to Lakes Wanaka and Wakatipu. The report is appended for your information and hard copies will be distributed at the meeting.

The report was prepared by Dr Fabien Medvecky and Dr Vicki Macknight (Centre for Science Communication, Otago University) on behalf of Catchments Otago. It is based on a survey undertaken during two community events on the lakefronts earlier this year, with follow-up telephone interviews.

6. RECOMMENDATION

It is recommended that this report is noted.

Michele Poole
Acting Director Stakeholder Engagement

Annex: **Stakeholder Engagement Events Calendar (as at 14 July 2017)**
Annex: **Our Lakes – How the Communities of Queenstown and Wanaka Use and Value their Lakes**
Annex: **Waiwera Water Quality Community Engagement Plan**

ORC Event Calendar

July

14 **Southern Dairy Hub Opening, 10 30 – 3pm**
Wallacetown Community Centre, 57 Dunlop Street, Waikiwi, Wallacetown

25 **Wallaby meeting**
Duntroon Hall, 11:00 am-1:00 pm

August

4 **Clarifying Residual Flows discussion session: Tapanui**
2:00 pm West Otago Community Centre, 3 Suffolk St, Tapanui

7 **Clarifying Residual Flows discussion session: Roxburgh**
10:00 am Roxburgh Memorial Hall, 120 Scotland Street, Roxburgh

7 **Clarifying Residual Flows discussion session: Wanaka**
3:30 pm Wanaka St John, 4 Link Way, Wanaka

8 **Clarifying Residual Flows discussion session: Omakau**
10:00 am Matakanui Rugby Clubrooms, Omakau Domain

8 **Clarifying Residual Flows discussion session: Ranfurly**
2:00 pm Maniototo Rugby Clubrooms, 1 Dungannon Street, Ranfurly

9 **Clarifying Residual Flows discussion session: Middlemarch**
10:00 am Strath-Taieri Community Centre, Cnr Swansea St and Browns Road Middlemarch

9 **Clarifying Residual Flows discussion session: Outram**
2:00 pm West Taieri Memorial Hall, Holyhead St, Outram

10 **Clarifying Residual Flows discussion session: Maheno**
2:00 pm Maheno Hall, 6 Maheno Kakanui Road, Maheno

TBC **Deemed Permit replacement: Statutory bodies meeting**

TBC **Deemed Permit replacement: Planning consultants meeting**

23 **Urban Water Quality Strategy Workshop (invite only)**
Cellar Door, Alexandra

Our Lakes:

How the communities of Queenstown and Wanaka use and value their lakes.

Catchments Otago

Report prepared by:

Dr Fabien Medvecky
Centre for Science Communication
University of Otago

Dr Vicki Macknight
Centre for Science Communication
University of Otago

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Executive summary

This report summarises survey and interview data on local beliefs, attitudes and concerns towards lakes Wanaka and Wakatipu, with an emphasis on lake Wanaka. While there are some differences between these communities, they also share much in common.

The main findings are:

- The local community shouldn't be thought of as simply those permanently residing in the area but also includes those living further afield who have a strong and regular connection to the lake through holiday-home ownership or through regular visits to the area.
- There is consistency in environmental values, with most viewing the environment as valuable in-and-of-itself. The is a marked preference for active management of the environment.
- The main uses of the lakes are walking, biking, sitting and picnicking besides them.
- Work and business accounted for very little of the community's use of the lakes.
- Both lakes are primarily valued for their aesthetic value, both for itself and for what it brings to the area.
- Most community members are confident that their lake is healthy.
- A substantial component of the Wanaka community are pessimistic about the current health of their lake.
- There is a very strong and consistent view that the water should be maintained to a high drinking-quality standard; there is less consistency on water clarity.
- Rubbish in the lake or lakeside, lake snow/snot, and water cleanliness are the primary concerns.
- Two-thirds of the local community have concerns about the well-being of the lake over the next 20 years.
- Cleaner water and fewer invasive species are the community's main aspirations.
- Interviewees express a fear that the quality of lake water is deteriorating, or will in the near future.
- Some people who are very engaged with the lake don't want to talk about it.

Table of Contents

Introduction.

Lakes Wanaka and Wakatipu are jewels in Otago's natural environment. Not only are they valuable for their own sakes, but they are special to residents and memorable for tourists. They are a central part of the cultural, social, recreational and economic life of the region.

However, along with other fresh water bodies in New Zealand, there are increasing concerns about the health of the Lakes. Due to dairying and other farming, and urban development, many New Zealand rivers and lakes are experiencing rising levels of nitrogen, with some experiencing problems with phosphorus and E. Coli. This is made evident by significant declines in native fresh water flora and fauna. Many waterways are also suffering from infestations of invasive fresh water plants, such as lagarosiphon and lake snow/snot. (Ministry for the Environment and Stats NZ, 2017)

Lakes Wanaka and Wakatipu are administered and monitored by the Otago Regional Council. The Council recognises that for this environmental work to be successful, more engagement with the local community is needed. The local governing bodies rightly have an interest in knowing and understanding local the community's concerns and aspirations for their lakes, and this understanding will enable better communication and engagement.

For communication and engagement to be successful it has to be a cooperative effort involving scientists, decision makers, and members of the local community. This report serves two joint purposes then: one, it gives scientist and decision makers a better understanding of how the local communities (broadly construed) use, value and worry about their lakes; two, it provides an opportunity for the voices of local people to speak to scientists and decision makers.

How do members of the community use their lake? What concerns them? How do the community feel about their lakes now and into the future?

This report summarises survey and interview data on local beliefs, attitudes and concerns towards lakes Wanaka and Wakatipu, with an emphasis on lake Wanaka.

Methodology

This study took a two-step approach: a general quantitative survey and some follow-up phone interviews.

Survey data was gathered from the 31st of March to the 2nd of April. Wakatipu data was collected in paper surveys during an evening event jointly run by the ORC and Catchment Otago to inform engage the community about lake health, monitoring and management.

Wanaka data was collected as part of a day-time event, again jointly run by the ORC and Catchment Otago. This event was meant to attract families and the local community more broadly, by including child friendly activities such as face-painting, dress ups and Lab-in-a-Box, as well as informative displays aimed toward adults. These surveys were collected by iPad. Despite differences in collection method and lake named, the survey questions were identical. (See appendix A) We had 67 respondents to the Lake Wanaka survey, and 32 respondents to the Lake Wakatipu survey, giving us a total of 99 responses. This sample size, while too small to be comprehensively representative of the local community, is sufficient, especially when combined with the interview data, to provide a core understanding of the community's values, concerns and aspirations.

To supplement the quantitative data gathered in the survey, we also gathered more in-depth qualitative information through interviews and open-ended questions (see appendix B) with local residents. These questions covered much of the same ground as the survey, but gave community members a chance to enlarge upon their answers. Qualitative data fleshes out the numerical information we present, giving residents a voice to speak of how they use, value and worry about their lake. (Gomm, 2008)

How to use this report

To present the information in the most accessible and meaningful way, this report provides data from both the broad survey and the in-depth interviews for each topic.

The report is divided into 4 topics:

- ⇨ Who is the community
- ⇨ The use and value of the Lake
- ⇨ Lake health and water quality
- ⇨ The Lake and its future

In each section, the general survey data is presented first, and a box (like this one) entitled "Voices from the Community" follows to add more details and to paint a fuller picture of the views expressed. In these "Voices from the Community" boxes, you'll find both quotes that show views and values expressed during the interviews and answers to open-ended survey questions.

Neither the survey data nor the interview data alone should be taken to provide a complete understanding. These should be read together and taken as complementary.

Who is the community?

Our survey population was representative of the target population and largely comparable to the general Otago populations and the population surveyed by the ORC for their Waterways Research (2016). The one distinction is that this report's population is slightly older as we primarily targeted Wanaka. **Wanaka has a median age of 41.1 years of age** compared to 36.4 for the Queenstown-Lakes District (QLD) (Stats NZ), and 33.6 for Otago more broadly.

Age	This report	Otago Pop	ORC (Otago-wide) survey
18-35	11%	31%	22%
35-59	68%	41%	44%
60+	22%	28%	33%
Gender			
M	47%	48%	42%
F	53%	52%	58%

Our population was 90% from the Otago region, with 75% of our population coming from the QLD. In particular, 42% came from Wanaka and 23% from Queenstown. Of the 10% that came from beyond the Otago region, 7% came from other parts of NZ, including a number from Canterbury, and 3% from overseas. **The non-QLD population is an important part of the Wanaka and Queenstown communities as a number of them are holiday-home owners who regular visit and contribute to these places.**

From Wanaka	42%
From Queenstown	23%
From elsewhere in the QLD	10%
From elsewhere in Otago	15%
From elsewhere in NZ	7%
From Overseas	3%

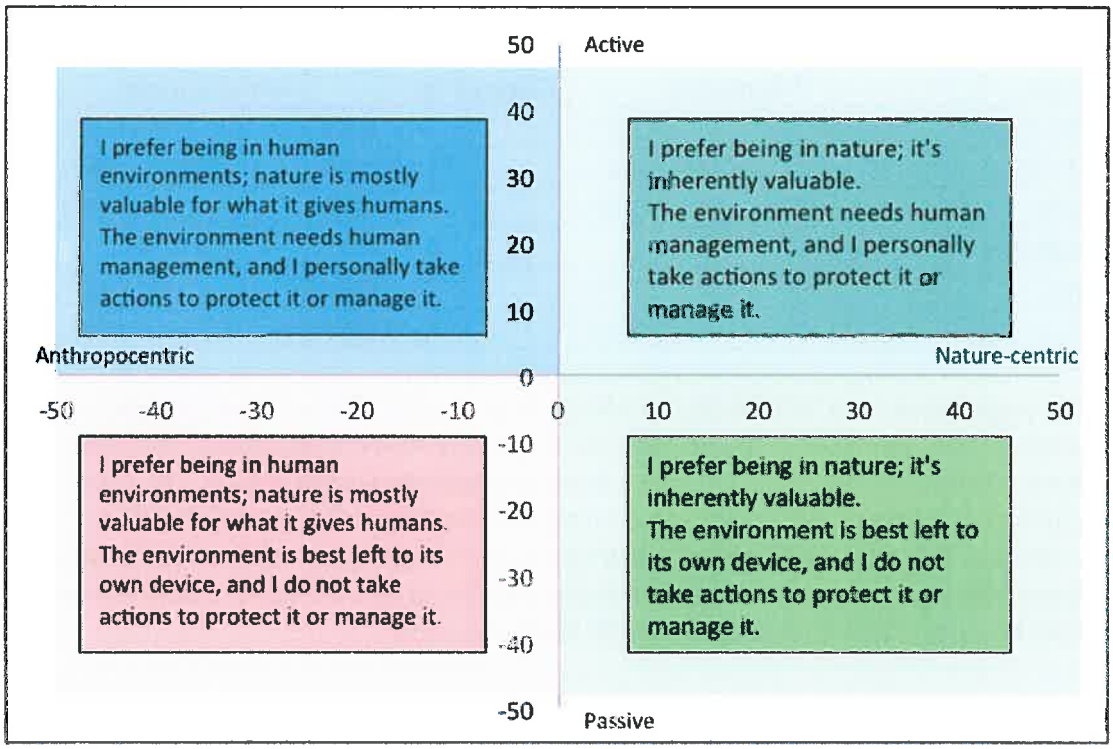
The surveyed population worked in a wide variety of industries including the arts and entertainment, business and financial, information technology, construction, education, farming, healthcare, management, office and administrative, sales and retail, tourism, and retired.

Environmental values

The local community showed a remarkably consistent set of environmental values when assessed on the following two dimensions:

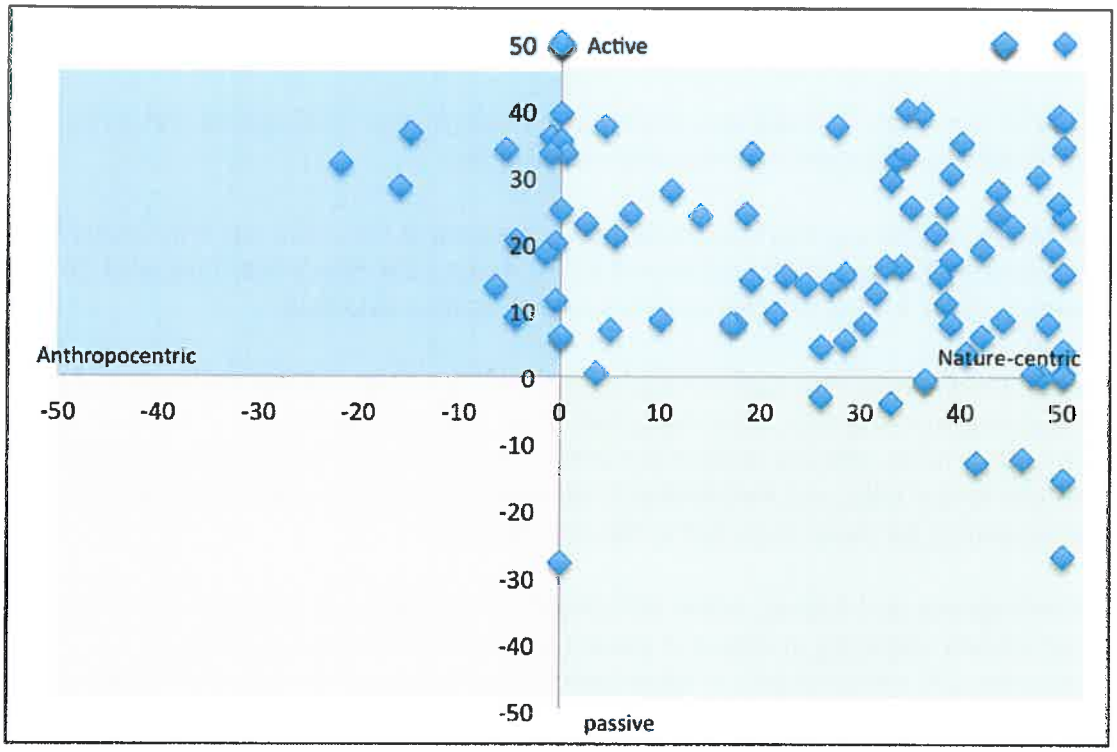
a) Anthropocentric values (that the environment is valuable first and foremost for what it brings to humans) vs nature-centric values (that the environment is valuable in and of itself, and
b) Active management (that humans should actively participate in the management of the environment) vs passive management (that the environment should be left to its own devices)

These two dimensions give the 4-field matrix below:



The local community is remarkably consistent, with the vast majority sitting in the top-right Active/Nature-centric quadrant. Although scattered throughout that quadrant, there are two dominant clusters: the largest cluster expresses strong preferences active management and hold the environment to be inherently valuable, and the second, smaller cluster, expresses ambivalence towards human interaction and management, while still holding the environment to be inherently valuable.

About a quarter of the respondents (26.3%) did not share the majority nature-centric view, but did all express a preference for active management. Just under 15% expressed a preference for passive management, alongside heavily nature-centric values (except for one outlier). No respondent expressed the view of the bottom left, 'anthropocentric values' × 'passive management'.



Summary

The local community is slightly older than Otago more generally, and comes from a diverse background in terms of employment. Importantly, the local community shouldn't be thought of as simply those permanently residing there. The local community also includes those living further afield who have a strong and regular connection to the lakes through holiday-home ownership or through regular visits to the area.

The local community has a consistent take on environmental values, mostly viewing the environment as valuable in-and-of-itself, though its value to humans is not negligible, and there is a marked (and quite strong) preference for active management of the environment.

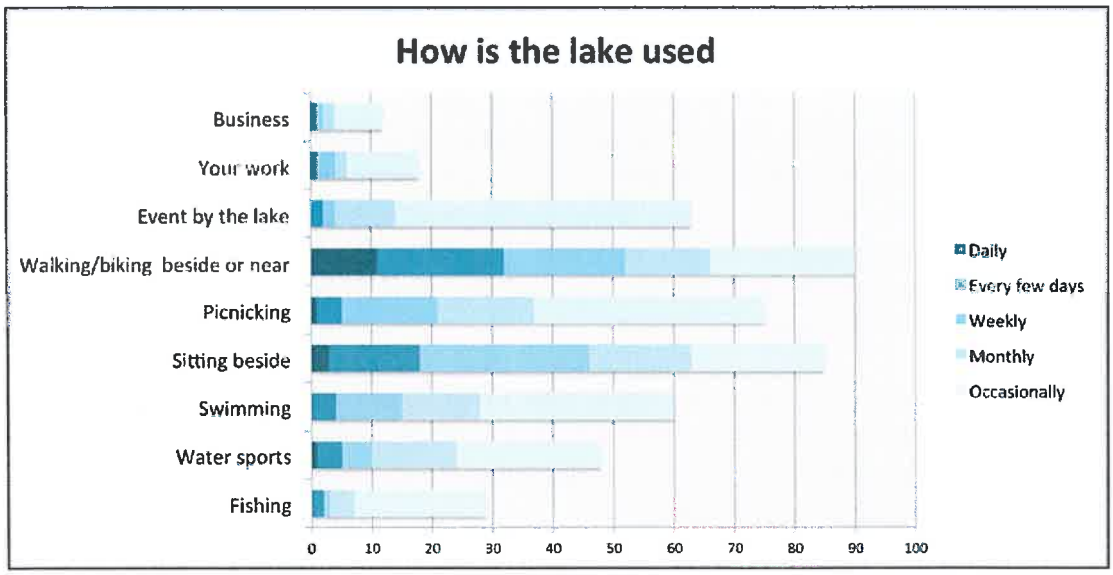
The Use and Value of the Lake

People use lakes Wanaka and Wakatipu in many ways, both active and passive, for business, pleasure, exercise and community.

Of the surveyed population, we found that the most common use was lakeside walking or biking. 11% said they did this daily, 21% every few days, and 20 weekly. Only 4 % of the respondents said they never do this.

Many people also reported sitting beside the lake as one of the main uses, with 3% doing so every day, 15% every few days, and 28% weekly.
The other most popular uses of the lake were picnicking by the lake, attending events by the lake, and swimming in the lake, all of which were done at least occasionally by more than half of the community.

Water sports and fishing, while still popular, were less so, with less than half the population engaging in either of these (48% and 29% respectively).
Interestingly, respondents predominantly had not used the lake for business (12%) or work (18%).



Some respondents also told us other ways they use, or would like to use, the lakes. For Lake Wanaka a number of respondents said they especially enjoyed looking at it, the view, and taking photos; the aesthetics of the lake. Another reoccurring use was as drinking water. The lake is also used for educational activities (with local primary schools), and to gather as a social meeting place, with family and friends.

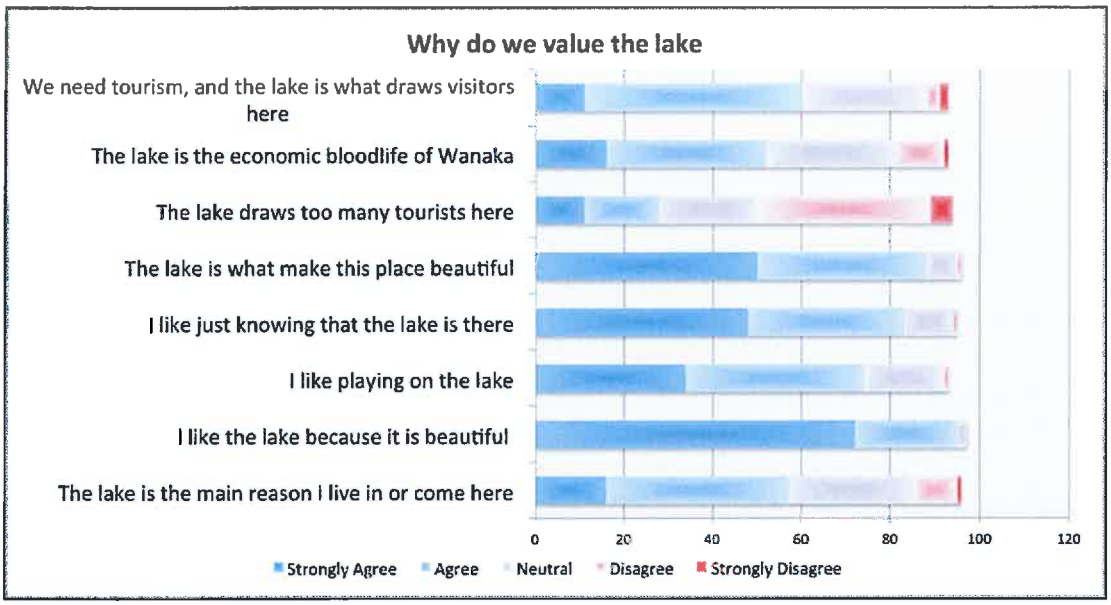
For Lake Wakatipu other uses include access for hunting/fishing, the peace, quiet and communing with nature it provides.

Voices from the Community
When asked about what they want from their lake, some responses explicitly focused on the health of the lake – 'just to keep it clean', 'drinkable water', and 'lagarosiphon free!'. One respondent wished for 'mahinga kai', and one cheeky respondent called for 'slushies (or smoothies)'. 'I sail at least once a week during the day light saving season. I coach sailing too ... I'm probably on the lake sailing 2-3 days a week'. (Male, 35-59, Wanaka) 'Our usage is just an everyday part of our lives ... [the lake] is very present in our lives on a daily or weekly basis'. (Male, 60+, Wanaka)

People's reported values of the lake were again both active and passive, with aesthetics clearly very important to people. 72% of respondents strongly agreed with the statement 'I like the lake because it is beautiful', and 50% of respondents strongly agreed that 'the lake is what makes Queenstown/Wanaka beautiful'.

Active enjoyment was also important to respondents, but the Wanaka and Queenstown communities saw this quite differently. 47% of Wanaka respondents strongly agree that 'I like playing on the lake' and 44% agree. Wakatipu respondents, however, were slightly less agreeable, with only 14% strongly agreeing and 41% agreeing, while 41% remained neutral.

Perspectives on the value of the lakes for the economy and tourism were more complex. While 49% of respondents agreed (and 11% strongly agreed) that their community 'needs tourism and the lake is what draws visitors here', nearly 30% of respondents agreed or strongly agreed with the statement 'the lake draws too many tourists here'.



Voices from the Community
'The fact that you can dive off your boat in the middle and swim in it and drink it, and I know how rare that is internationally' (Male, 35-59, Wanaka) 'Some people have become negative because of the people it draws, and feel that is detracting from Wanaka. But I think because it draws so many diverse people that's what makes it so pleasant'. (Male, 35-59, Christchurch) 'It's quite a clean lake, really. It is swimmable. If your child accidently swallows a bit of water you're not worried they're going to come down with something.' (Male, 35-59, Wanaka)

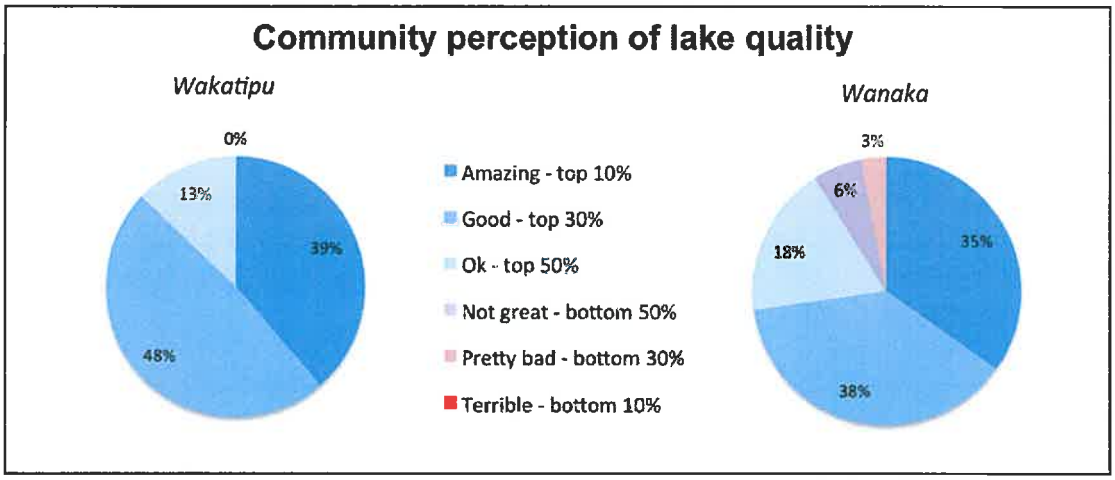
Summary

The main uses of the lakes are walking, biking, sitting and picnicking besides them, while work and business accounted for very little of the community's use of the lake.

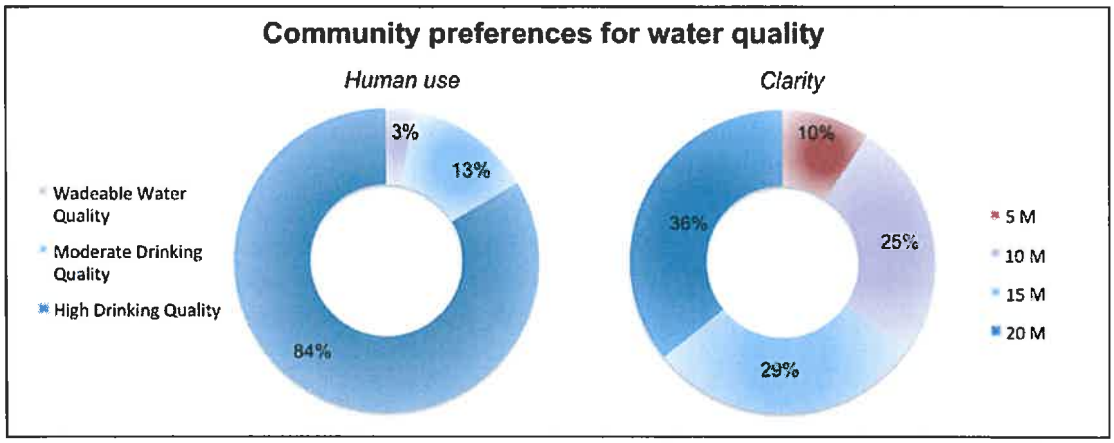
The lake is primarily valued for its aesthetic qualities, both for itself and for what it brings to the area. Playing on the lake is also valued highly by the local community, and more so in Wanaka than in Queenstown.

Lake health and Water Quality

In general, people felt very confident that their lake is healthy and has high water quality compared to other lakes in New Zealand. About a third of respondents thought both lake Wakatipu and lake Wanaka were in the top 10% of New Zealand lakes. Both lakes are indeed very healthy in terms of water quality, and both lakes rate in the *'Very good'* category for water quality based on *LAWA*'s trophic level index (LAWA). But while, lake Wakatipu was believed to be in the top 50% by all respondents, lake Wanaka got more mixed reviews, with about 10% believing Lake Wanaka to be in the bottom 50% of New Zealand lakes, including 3% believing it to be in the bottom 30%.



When asked 'what do you think a "healthy lake" means', over 80% of respondents agreed that it should meet a strict drinking water standard. There was a greater range of responses around the water clarity of a healthy lake. When asked about how clear the water should be (clarity to 5; 10; 15; or 20 metres), just over a third responded that a healthy lake should have clarity to 20 metres, with more lenient options deemed acceptable by most respondents.



People reported to finding out about lake health from a variety of sources. The most common source was through the media (60%), followed by organisations

such as the Otago Regional Council, University of Otago, and Guardians of the Lake (57%). Surprisingly, less than half relied on people they knew such as friends (41%). Many people also reported finding out about the lake's health through personal experience and interaction with the lake. A few also mentioned social media, and about 5% said they didn't know or hear much about lake health.

Voices from the Community
I know about the lake ... 'by looking at it & swimming in it'; 'I'm in the lake weekly, so self-monitor'; 'can see it has deteriorated since I was a kid'. 'It is easy to lose quality, and very hard to regain it. ... If we do not put money now into assessing the quality of our lakes, not just Wanaka, but Wakatipu, Hawea, we could very quickly reach a tipping point where it's too late . ... Prevention is much more cost-effective than cure'. (Male, 60+, Wanaka) 'We're always very impressed how proactive all the administrators in the area are about the lake ... we're impressed how all the groups work together, and the communication with all the different groups. I think it's outstanding actually'. (Male, 35-59, Christchurch) 'I think the most important is water quality. I think that's the one that's most endangered, and I think that's the one that we can possibly make some difference on. ... It's just a bit more soupy than it used to be.' (Female, 60+, Wanaka)

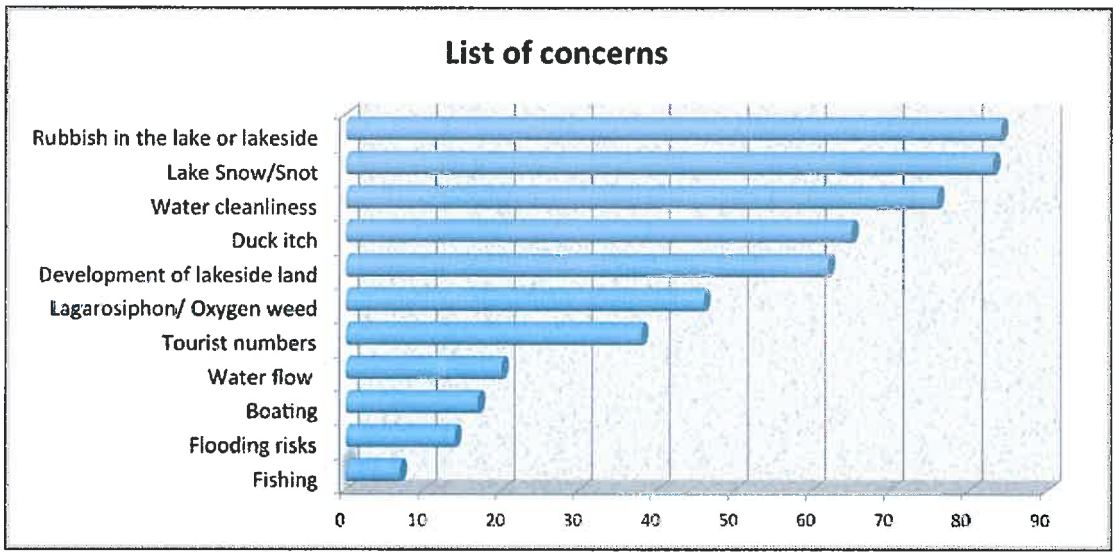
Summary

The local community is largely confident that their lake is healthy (as indeed they both are), though a substantial component of the Wanaka community are pessimistic about the health of their lake with just under a third believing it to be in the bottom 70% of NZ lakes.

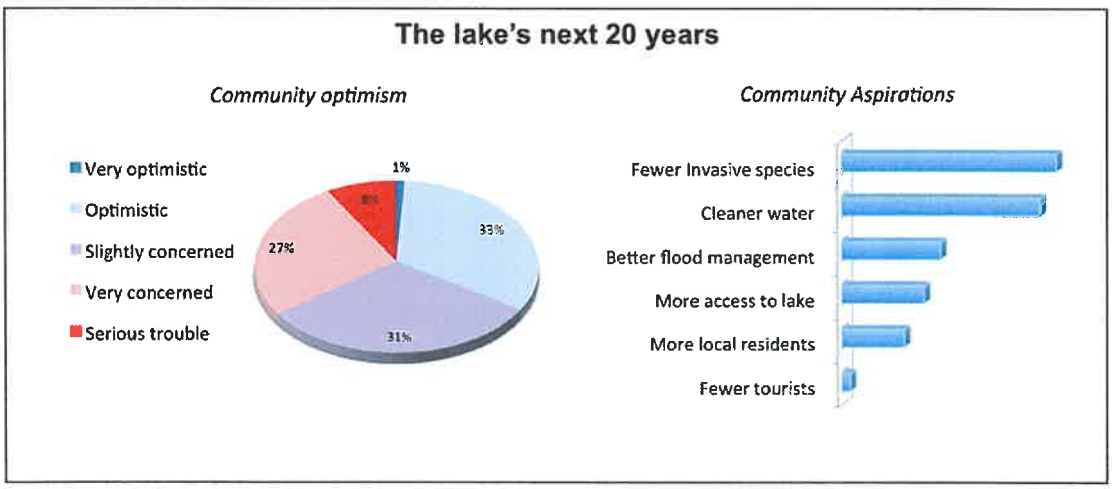
There is a very strong and consistent view that the water should be maintained to a high drinking quality, and, while views on water clarity is less consistent, there is a marked preference for clarity to 10 metres or beyond.

The Lake and its Future

Though people tended to claim Lakes Wanaka and Wakatipu are in reasonable health, they are worried about many things they fear will lead to declines in quality and lake health. Leading the charge are concerns over rubbish in the lake or lakeside, lake snow/snot, and water cleanliness. Lake snow/snot was clearly much more of an issue for the Wanaka community (95%, compared to 65% for the Wakatipu community), while tourist numbers (52%) and flood risks (32%) were a greater concern for the Wakatipu community compared to the Wanaka community (33% and 6% respectively).



These concerns were reflected in the community's dulled optimism about their lake's future over the coming 20 years, and many ranked cleaner water and fewer invasive species as their primary aspirations. The local community also expressed an aspiration for some increase in the local population, while holding the tourist numbers reasonably steady.



Voices from the Community
My concerns are that it deteriorates to a stage we can't drink in it and play in it. Or to a point that we can't recover it. It would be nice to have grandchildren who are able to drink it and play in it too'. (Male, 35-59, Wanaka) 'My husband's interesting. He's been a very good fisherman, a very keen fisherman, but when he's getting old and depressed, he sighs 'the lake is not what it used to be', he's very grumpy about that. You probably wouldn't get him talking about it.' (Female, 60+, Wanaka) 'Growth needs to be managed better to mitigate further storm-water run-off into the lake'. (Male, 35-59, Wanaka) 'The main thing is the spin-off from tourism, getting the tourism revenue back into conservation ... I think that's somewhere tourism falls short on in New Zealand, putting funding from tourism back into conservation'. (Male, 35-59, Queenstown)

Summary

Rubbish in the lake or lakeside, lake snow/snot, and water cleanliness are the primary concerns and two-thirds of the local community have concerns about the well-being of the lake over the next 20 years.

Cleaner water and fewer invasive species are their main aspirations.

Closing words from the community

The community also spoke about issues that were not directly addressed in the questions, but came out during the interview and which are of concern.
We close the report with these as final thoughts.

Voices from the Community
'The lake is one of Wanaka's best natural features, we do just need to look after it, and be aware of what might go down the drain.' (Male, 35-59, Wanaka) I just think there should be more roading access, and pull over points. There should be better walking access. (Male, 35-59, Queenstown) Some of our little creeks seem to be brushed aside. The ORC has just given consent for a fish farm to be built, just 2 or 3 k out of Wanaka ... I think that was a really dumb idea. You're not allowed to put cows in the water so why fish? (Male, 35-59, Wanaka) I think the water is very valuable and I'd hate to think we're going to sell the water or anything. (Female, 60+, Wanaka)

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Stats NZ, *2013 Census QuickStats about a place: Wanaka*, http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-a-place.aspx?request_value=15004&tabname=Ageandsex, accessed 15 May 2017.

Appendices

Appendix A – Lake Survey

(Lake Wakatipu survey was identical except Wakatipu named instead of Wanaka)

1. In the last six months have you used Lake Wanaka for (and how often):

	I haven't	Daily	Every few days	Weekly	Monthly	Occasionally
Fishing	○	○	○	○	○	○
Water sports	○	○	○	○	○	○
Swimming	○	○	○	○	○	○
Sitting beside	○	○	○	○	○	○
Picnicing	○	○	○	○	○	○
Walking/biking beside or near	○	○	○	○	○	○
Event by the lake	○	○	○	○	○	○
Your work	○	○	○	○	○	○
Business	○	○	○	○	○	○

Other (please specify)

2. Is there anything else you'd like to use the lake for or get from the lake?

3. Do you agree or disagree with the following statements?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The lake is the main reason I live in or come to Wanaka	○	○	○	○	○
I like the lake because it is beautiful	○	○	○	○	○
I like playing on the lake	○	○	○	○	○
I like just knowing that the lake is there	○	○	○	○	○
The lake is what make Wanaka beautiful	○	○	○	○	○
The lake draws too many tourists to Wanaka	○	○	○	○	○
The lake is the economic bloodlife of Wanaka	○	○	○	○	○
Wanaka needs tourism, and the lake is what draws visitors here	○	○	○	○	○

4. Where do you think the quality of Lake Wanaka is compared to other lakes in NZ?

- ○ Amazing - top 10%
- ○ Good - top 30%
- ○ Ok - top 50%
- ○ Not great - bottom 50%
- ○ Pretty bad - bottom 30%
- ○ Terrible - bottom 10%

5. What do you think a "healthy lake" means (part 1: water quality)?

- ○ A lake with that meets only a wadeable standard of water quality
- ○ A lake that meets only a moderate drinking water standard
- ○ A lake that meets a strict or high drinking water standard

6. What do you think a "healthy lake" means (part 2: water clarity)?

- ○ A lake with a water clarity of 5m
- ○ A lake with a water clarity of 10m
- ○ A lake with a water clarity of 15m
- ○ A lake with a water clarity of 20m

7. How do you know about the health of the lake?

- ☐ Media (newpapers, TV, radio, internet news and info sites, etc)
- ☐ Friends and people I know
- ☐ Organisations like Uni Otago, Guardian of the lake, ORC, etc
- ☐ Other (please specify)

8. Do any of these issues worry you?

- ☐ Oxygen weed
- ☐ Lake Snow/Snot
- ☐ Duck itch
- ☐ Boating
- ☐ Fishing
- ☐ Flooding risks
- ☐ Development of lakeside land
- ☐ Water flow
- ☐ Tourist numbers
- ☐ Water cleanliness
- ☐ Rubbish in the lake or lakeside

9. How optimistic are you about the future well-being of the lake over the next 20 years?

- ◯ I'm very optimistic. I think the lake will be fine
- ◯ I'm quite optimistic, though we need to remain vigilant
- ◯ I'm a little concerned we're not taking good enough care of the lake
- ◯ I'm very concerned that unless we take some serious steps to manage our lake, we'll be in serious trouble before too long
- ◯ I think we're already in serious trouble. It's not a matter of managing the lake, it's a matter of saving it
- ◯ I don't think about what the lake will be like in 20 years

10. If you think of the lake 20 years from now, what would like to see?

	More/better		Same		Less/fewer
Access to and ability to enjoy the lake	◯	◯	◯	◯	◯
Clean water	◯	◯	◯	◯	◯
Invasive species	◯	◯	◯	◯	◯
Local residents	◯	◯	◯	◯	◯
Tourists	◯	◯	◯	◯	◯
Flood management	◯	◯	◯	◯	◯

11. Could you place your beliefs on these lines #1

Nature is valuable for what it gives humans — Nature is valuable for its own sake

◯

12. Could you place your beliefs on these lines #2

I feel good when I'm in natural environments — I feel good when I'm in human-made environments

◯

13. Could you place your beliefs on these lines #3

I take actions to protect and improve the environment — I don't take actions to protect improve the environment

◯

14. Could you place your beliefs on these lines #4

I believe humans are best at deciding what to do

I think nature should be left to look after itself

15. What is your age?

- 18 to 34
- 35 to 59
- 60 or older
- Prefer not to answer

16. What is your gender?

- Female
- Male
- Prefer not to answer

17. Where do you live?

- Wanaka
- Queenstown
- Elsewhere in the Queenstown Lakes District
- Elsewhere in Otago
- Elsewhere in NZ
- Not in NZ

18. Which, if any, of the following industries do you work in?

- ◯ Arts, design, entertainment, sports and media
- ◯ Business and financial
- ◯ Community and Social Service
- ◯ Computer and mathematical
- ◯ Construction and extraction
- ◯ Education and training
- ◯ Farming
- ◯ Fishing
- ◯ Food preparation and serving
- ◯ Forestry
- ◯ Healthcare
- ◯ Installation, maintenance and repair
- ◯ Legal
- ◯ Management
- ◯ Office and administrative
- ◯ Production
- ◯ Protective services
- ◯ Sales
- ◯ Not currently in paid employment
- ◯ Retired
- ◯ Prefer not to answer
- ◯ Other (please specify)

19. In the next two weeks, we would like to interview members of the local community about this topic to find out as much as possible about community views as we can. If you would be willing to take part in a phone interview (approx 30 minutes), please provide us with your email address.
Thanks!

Appendix B

Lake Interviews

1. What are some of your favourite ways to use the lake?
2. What makes the lake valuable to you and to your community?
3. What concerns you about the lake?
4. If there was one thing you would like to have changed or improved about the lake, what would it be?
5. Do you have any other comments you would like to share?

Central Otago lakes science weekend

31st March - 2nd April 2017

Catchments Otago

Report prepared by:

Dr Cynthia Lawrence
Catchments Otago
University of Otago

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Catchments Otago and Otago Regional Council joint Central Otago alpine lakes science weekend

Discussions between Executive Members of Otago Regional Council and Catchments Otago* in 2016 focussed in on identifying the perceptions, goals and aspirations of Central Otago Lakes communities for their lake systems.

Two unique, jointly-hosted Central Otago events were developed to:

1) enable residents an opportunity to learn more about their lakes and the people that use them;

2) facilitate the collection of survey and interview data on local beliefs, attitudes and concerns towards the alpine lakes.

The surveys conducted at both events by *Catchments Otago* researchers specifically explored three key themes from people attending:

1) How is your lake doing;
2) What are we currently doing with your lake (monitoring and management);
3) Taking your lake into the future: what do you want and what could we do.

A separate, companion report has been prepared detailing the survey results from the Community's voice about their lakes for Otago Regional Council.

* Established in 2016, the University of Otago Research Theme Catchments Otago brings together researchers from across the University to help develop land and water management strategies to address some of the challenges the region currently faces, as well as those that might arise in future.

Further information can be found at www.catchmentsotago.org

PechaKucha Night™ QUEENSTOWN

On Friday 31st March, a PechaKucha Night™ themed 'The Lakes and I' was held at Queenstown Primary School, comprising a wide range of speakers discussing their perspectives of the Central Otago alpine lakes. Using the PechaKucha 20 pictures for 20 seconds format, six speakers treated the audience to a visual journey through the local landscape, its history, visitors over the years and even its physical transformation into jewelry.

Randall Aspinall 4th Generation Farmer from Mt Aspiring Station
'Farming in the Lakes Catchment'

Anna Claire Thompson Arrowtown Jewelry Artist
'I love Lake Hayes'

Leah Kissick Wakatipu School Student
'Local History through the eyes of Lake Wakatipu'

Pascal Sirguey School of Surveying, University of Otago
'How much snow and ice is there?'

Peter Langlands Amisfield Winery Restaurant Forager
'Foraging in Central Otago's waterways'

Chris Hankin Queenstown Department of Conservation Ranger
'The natural world of Queenstown's Lakes, large and small'

Randall Aspinall
'Farming in the Lakes Catchment'

Anna Claire Thompson
'I love Lake Hayes'

Lab at the Lake WANAKA

On Sunday 2nd April Pembroke Park in Wanaka was transformed into the 'Lab at the Lake', a family fun day, specifically showcasing what we do and don't know about Lake Wanaka, work currently done, and possible future work. The Lab in a Box, an Otago Museum mobile science laboratory funded by MBIE Curious Minds, housed fish, invertebrate and zooplankton hands-on displays, with live critters captured earlier that morning from Bullock Creek and Lake Wanaka itself.

The marquee housed *Catchments Otago* displays on the Mahu Whenua covenants, snow melt research using drones and a fun freshwater scientist/angler dress up booth. Otago Regional Council displays comprised Good Water Otago, Check Clean Dry, and LAWA. The hands-on displays were hugely popular and consistently busy, with children and adults alike jostling to look down microscopes at the live critters, see the drone, peer along clarity tubes and have their photo taken in the dress up booth.

A local face painter delighted children with her free stunning fish and invertebrate creations, while the Wanaka Branch of the Lions filled tummies with a free sausage sizzle, courtesy of *Catchments Otago*.

The community really embraced having the opportunity to chat with scientists from both Catchments Otago and Otago Regional Council and see critters from Lake Wanaka up close. The atmosphere was overwhelmingly positive, with estimates of over 450 people attending the three hour event. Following the Lab at the Lake event, digital copies of the *Catchments Otago* Lake Wanaka display posters were sent to Wanaka Schools for use in their science curriculums. Teachers from primary and secondary schools have uniformly been extremely positive with feedback about the Lab at the Lake event and the subsequently supplied material.

ORC and Catchments Otago staff at Lab at the Lake

Lab in a Box arrives in Wanaka

Setting up the Lab

Lab at the Lake

Stereo microscopes for hunting invertebrates, algae & zooplankton

Constantly busy with budding freshwater ecologists

Waiting their turn to see the live critters

Nostoc cyanobacteria lake ball bought in by a local youngster

ORC water monitoring & Good Water Otago

Snow melt drone & video flyovers

Mahu Whenua covenants

'Catch of the Day'
Dress up booth

Fishy face painting - rainbow & brown trout

University of Otago staff present

Gerry Closs - Catchments Otago Co-Director
Kath Dickinson - Catchments Otago Co-Director
Phil Seddon - Catchments Otago Co-Director
Fabien Medvecky - Catchments Otago member
Mara Wolkenhauer - Catchments Otago member
Vicki MacKnight - Centre for Science Communication
Cynthia Lawrence - Catchments Otago member
Jason Augspurger - Department of Zoology
Sophie Fern - Department of Botany
Todd Redpath - School of Surveying
Pascal Sirguey - School of Surveying
Rosemarie Neuninger - Department of Food Science

Otago Museum staff present

Craig Grant

Otago Regional Council staff present

Adam Uytendaal
Charlotte Panton
Nicole Foote
Elenanor Ross
Richard Lord

Catchments Otago Lab at the Lake posters

Mahu Whenua Covenants
Zooplankton and Algae in Lake Wanaka
Fish Species in Lake Wanaka
Seasonal snow: seen from above

Advertising material

Seasonal snow: seen from above

Todd Redpath[1,2], Pascal Sirguey[1], Nicolas Cullen[2], Sean Fitzsimons[2]
[1]School of Surveying, [2]Department of Geography

The Clutha Catchment

With an area of approximately 21,000 km^2, the Clutha Catchment is the largest in New Zealand. The Clutha River itself is the largest river in New Zealand by volume, with a mean discharge of around 600 m^{3}s^{-1}. From tributaries rising on the main divide of the Southern Alps, the Clutha traverses a range of landscapes and climatic zones before reaching the Pacific Ocean on the South Eastern coast of the South Island. With an average elevation of ~700 m, seasonal snow plays an important role in the mountainous Clutha Catchment, contributing 13, 11 and 13% of annual in-flow to lakes Wakatipu, Wanaka, and Hawea respectively (Kerr, 2013). Seasonal snow in the Clutha Catchment serves important environmental and economic functions.

Pisa snow study basin

Snow is highly variable in time and space, even at small scales. This variability leads to uncertainty in our understanding of snow processes. To address this, a study basin has been established in the Pisa Range (near Snow Farm NZ) where a drone is being used to measure snow depth using a technique called photogrammetry. Over small areas, the drone can provide a map of snow depth at a level of detail that could never be achieved using traditional techniques such as snow probing. Using measurements of snow density, maps of snow depth can be turned into maps of the amount of water stored in the snowpack (snow water equivalent). Carrying out repeat drone flights throughout the snow season allows changes in snowpack to be understood in terms of weather and climate

Preparing the drone for launch

NASA's TERRA satellite, which carries the MODIS sensor

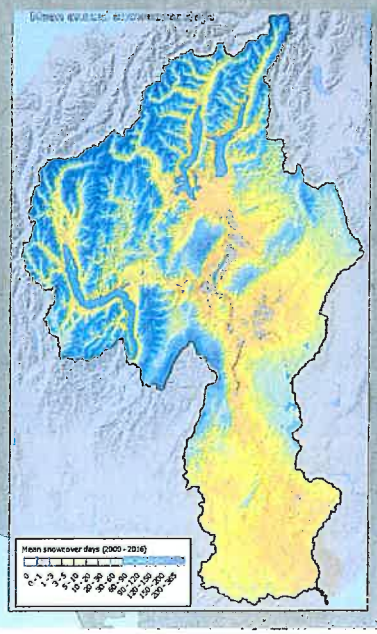
The Trimble UX-5 fixed wing drone

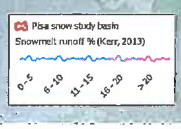
Weather station in the Pisa Snow Study Basin

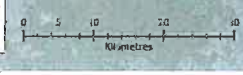
Snow pit for density measurements

Whole-catchment snowcover from space

At very large scales, snowcover (but not depth) can be mapped from imagery captured by sensors aboard satellites in space. One such sensor, MODIS, operated by NASA, has been capturing daily imagery since the year 2000. Processing this imagery to map snow and build a time series of snow cover helps us to better understand how seasonal snow varies in time and space at large scales, how this is controlled by climate processes, and implications for water resources.







University of Otago
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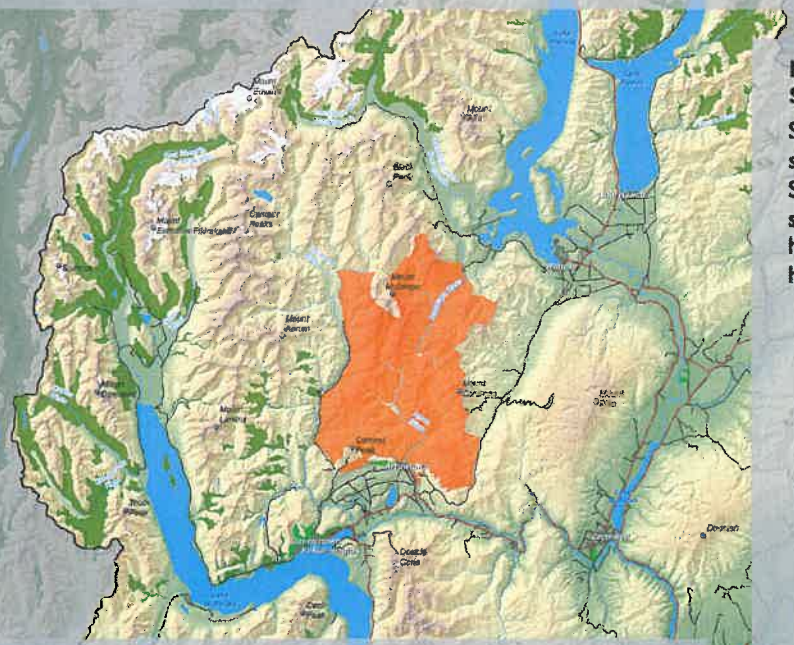
New Zealand
School of Surveying
Department of Geography
Catchments Otago

Mahu Whenua covenants

In 2015, the Queen Elizabeth II National Trust celebrated the formal opening of the largest private land covenant agreement ever initiated in New Zealand with the Mahu Whenua covenants. Protecting 53,000ha of contiguous landscape over most of Motatapu, Mount Soho, Glencoe, and Coronet Peak stations, they cover a large part of the country between Lake Wanaka and Arrowtown, and are bordered by the Shotover River and the Cardrona Valley. The covenants protect iconic high country landscapes, the habitat of unique native plants and animals, public access, and important historic, cultural and recreation values.



Plant species

Snowbank plant communities occur where snow lies for extended periods. Slim snow tussock (*Chionochloa macra*) is found above 1500m, narrow-leaved snow tussock (*Chionochloa rigida*) dominates below 1500m. Between 900–1000m, hard tussock dominate (*Festuca novae-zelandiae*).

Grey shrublands are dominated by tree daisies (*Olearia* species) and mingimingi (*Coprosma propinqua*). Mountain ribbonwood (*Hoheria lyallii*) is largely confined to gullies below 1000m. Mountain beech forest remnants with occasional silver and red beech are common in the Motatapu Valley.

Freshwater Invertebrate Species

Several charismatic, yet ecologically sensitive, species (including Mayflies, Stoneflies, and Dobsonflies) inhabit streams within Mahu Whenua, indicating high water quality and good fish habitats.

Swimming mayfly; *Nesameletus* *

Green Stonefly; *Stenoperla* *

Dobsonfly; *Archichauliodes* *

Animal species

Grey warblers, silvereye (waxeye), riflemen, fantails, bellbirds, tomtits, South Island oystercatcher, spur-winged plover, harrier hawk, paradise shelduck and the Eastern falcon inhabit the covenant's shrublands and forests. Kea frequent the mountain tops and New Zealand Pipit are widespread in the grasslands.

Skinks live in amongst the tussocks and rocks, as do insects including Hamilton's Mountain Black butterfly, the giant ghost moth, the rare butterfly *Erebiola butleri*, colourful grasshoppers, flightless stoneflies, and giant dragonflies.

Eastern Falcon [1]

Mountain Black butterfly [2]

Kea [3]

* © Steve Moore (deceased); [1] © Craig MacKenzie
[2] © Te Papa; [3] © Mark Fraser;

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Zooplankton and Algae in Lake Wanaka

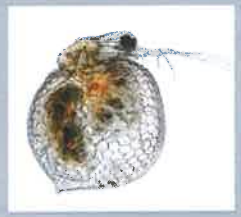
Zooplankton

Zooplankton come in a huge range of sizes; some are visible to the naked eye and others are microscopic. They are mostly grazers that eat algae and are a vital part of freshwater food chains.

Water Fleas - Cladocerans

Some of the largest zooplankton found in Lake Wanaka, cladocerans reproduce asexually (clones) and range in size: *Daphnia pulex* 3mm, *Ceriodaphnia dubia* 1mm, *Bosmina meridionalis* 0.5mm.

Daphnia



Ceriodaphnia

Bosmina

Copepods

Reproducing sexually, *Boeckella dilatata* range in size: females 1.3mm and males 0.9mm

Boeckella

Rotifers

Often termed 'wheel animals', they show bilateral symmetry and range in size from 0.1-0.5mm.

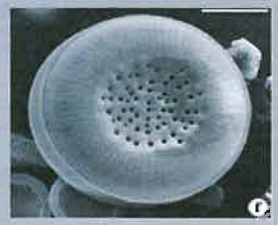
Rotifer

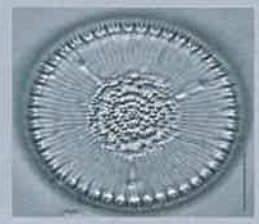
Algae (Phytoplankton)

Phytoplantkon are usually only visible under a microscope, unless individual cells clump together. They can live as single cells or as long strings. Phytoplankton convert sunlight and carbon dioxide into food, with oxygen as the by-product.

Lindavia or Lake Snow

Lake snow is an aggregation of *Lindavia intermedia*, a single celled diatom that is joined into clumps by mucous. The mucous makes Lake Snow very sticky, but it is non-toxic, both to humans and pets. It can spread fast as only one cell can start a new bloom.





Other Diatoms

Diatoms have distinctive transparent cell walls made of silica, like glass, and are often termed 'algae in glass houses'. Consisting of two halves called valves, they have elaborate perforation patterns on the surface.

Aulacoseira

Navicula

Cyclotella

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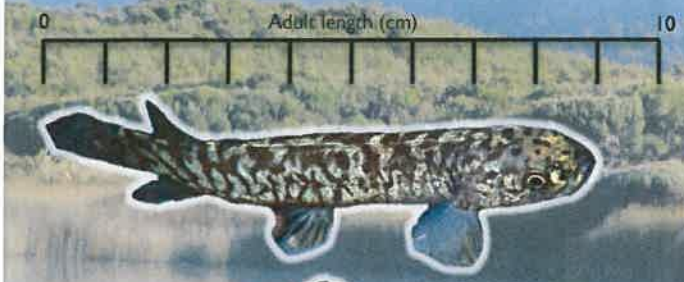
Background photo courtesy of Marc Schallenberg

Fish species in Lake Wanaka

The deep glacial lake of Lake Wanaka is New Zealand's fourth largest lake and the source of the Clutha River, the second longest river in the country and longest in the South Island. The lake has two main inflowing tributaries, the Matukituki and Makarora Rivers, and is home to three New Zealand native fish species (Koaro, Common Bully and Long Fin Eel) and three self-sustaining introduced fish species (Land-locked Chinook Salmon, Rainbow Trout and Brown Trout).



Koaro *

Juveniles are one of the five whitebait species, identifiable from the other four species as long, tube-shaped and surprisingly good at climbing up rocks and waterfalls. They are classified as being "at risk" for extinction, with their population declining.

Average adult size shown: 8-10 cm; 5-10 g

Common bully *

Present throughout New Zealand, adult males make a nest, attract females to it and guard the hatchlings. They are well camouflaged fish who feed on small insects.

Average adult size shown: 5-7cm; 4-6 g

Long fin eel or Tuna

Before the introduction of trout and salmon, long fin eels were the biggest predators in Lake Wanaka. They can live up to 100 years in freshwater and head out to sea to spawn before dying. Due to habitat modification, their numbers are declining.

Average size caught: 100 cm; over 20 kg

Chinook or Quinnat Salmon *

First introduced to Lake Wanaka in 1918 from California, Chinook Salmon spend their entire life in the lake, rather than going out to sea soon after they hatch. Adults only spawn (lay eggs) once in their lives, then die.

Average size caught: 35-40cm; 0.4-0.8kg; adult shown

Rainbow Trout %

Native to California and introduced to Lake Wanaka in the 1900's, Rainbow Trout live in the deeper waters of the lake, feeding mostly on small fish. They only live 4-5 years and inhabit warmer waters than brown trout, so are spread throughout New Zealand.

Average caught: 45-50 cm; 1.2-1.5kg; adult shown

Brown Trout %

Native to Europe and introduced to Lake Wanaka in 1885, Brown Trout eat large insects and small fish. They are very shy, hiding if they see movement on the lakeside. Adults can live for 8-10 years and spawn (lay eggs) every year.

Average caught: 45-50cm; 1.2-1.5kg, adult shown

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* Photos courtesy of Stella McQueen
# Photo courtesy of Fish and Game New Zealand
% Photos courtesy of Rachel Paterson
Background photo courtesy of Marc Schallenberg

Otago Regional Council

Catchments Otago

University of Otago New Zealand

Otago Regional Council Waiwera science study

Objective:

To communicate the results of the science study that Otago Regional Council (ORC) undertook in the Waiwera catchment, and advise what will happen next.

Audiences:

- Waiwera catchment community
- South Otago – those interested in water quality as well as the wider public
- Wider Otago – those interested in water quality as well as the wider public
- ORC staff/councillors
- Environmental extension group members (industry stakeholders)

Messages:

- What the study involved
- Why it was done
- What the results are
- What the results mean
- What happens next

Background: The goals for this study were to assess patterns in water quality in relation to land-use activities, compare water quality with State of Environment limits (Schedule 15 of the Water Plan), and assess in-stream habitat quality.

Tools/channels:

- The printed report
- A printed summary of the report (key points/findings and what they mean)

Promoted via the following channels:

- Public meeting in Clinton (advertised in local papers and a potential maildrop to people in the catchment)
- Media release to local newspapers and relevant publications
- Good Water in Otago Facebook page (and ORC Facebook page)
- On-Stream e-newsletter
- Waterlines quarterly newsletter
- Internal communications to ORC councillors and staff

People:

Rachel Ozanne – to present at the meeting
Lisa Gloag – to arrange report printing, writing of the summary, and promotion of the results via the channels mentioned above
Rebecca Begg/Nicole Foote – liaison specialists in South Otago
Councillor attendance optional

Timeframe:

- November 2017 – public meeting to be held (to allow for report printing and lambing/calving season to finish). Date and venue TBC
- Other publicity to follow directly from this meeting

REPORT

Document ID: A1021671
Report Number: 2017/0958
Prepared For: Communications Committee
Prepared By: Stakeholder Engagement Directorate
Date: 14 July 2017

Subject: **Communications Committee – New Website July 2017**

This report highlights the redevelopment progress of ORC's website.

1. DEVELOPMENT

The project to redevelop the Otago Regional Council website www.orc.govt.nz is nearing the end. We are in the process of migrating content from the current site as well as creating new content.

The new website will improve the user experience, allow for more self-service for ratepayers, residents and other users who wish to engage with ORC online, and better integrate the WaterInfo, Otago CDEM, journey planner and rate calculation tools.

Looking ahead, it provides a better platform for further enhancements, including the ability for property owners to pay their rates online and a broader range of on-line forms to enable people to apply for more services through the website.

The new site will be operational at the beginning of September, before changes to the Dunedin bus timetables come into effect. This timing has been chosen to allow users the opportunity to get used to the new layout of bus timetable information. While we believe the new website improves the ease of use of timetables, we will have both the old and new website live for a transition period to help users adapt to the new website.

The website will also be a key information source for Queenstown bus users once the new Wakatipu services are underway towards the end of the year.

2. RECOMMENDATION

It is recommended that this report is noted.

Michele Poole
Acting Director Stakeholder Engagement

Image 1: New home page design

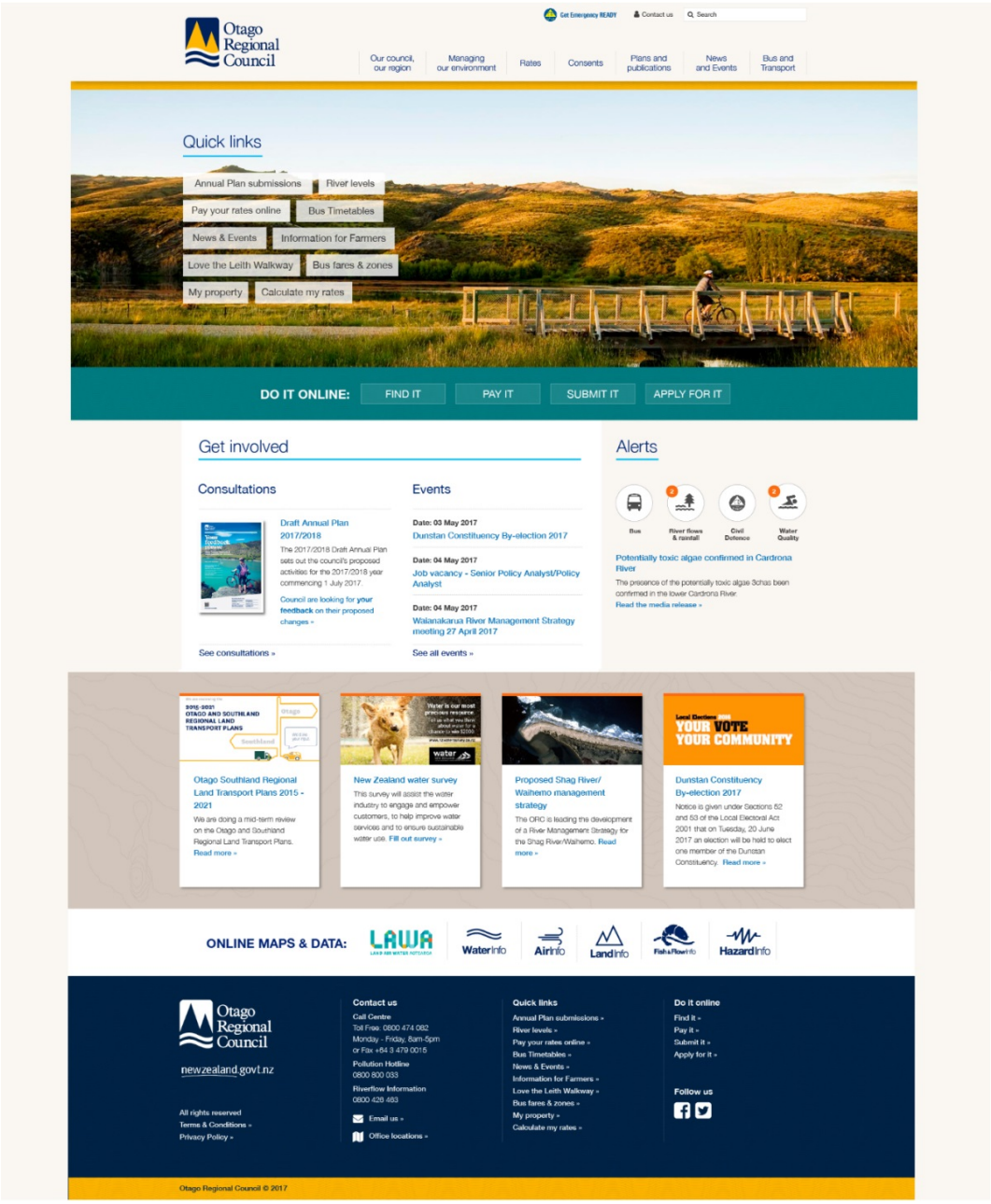

Image 2: New Public Transport page

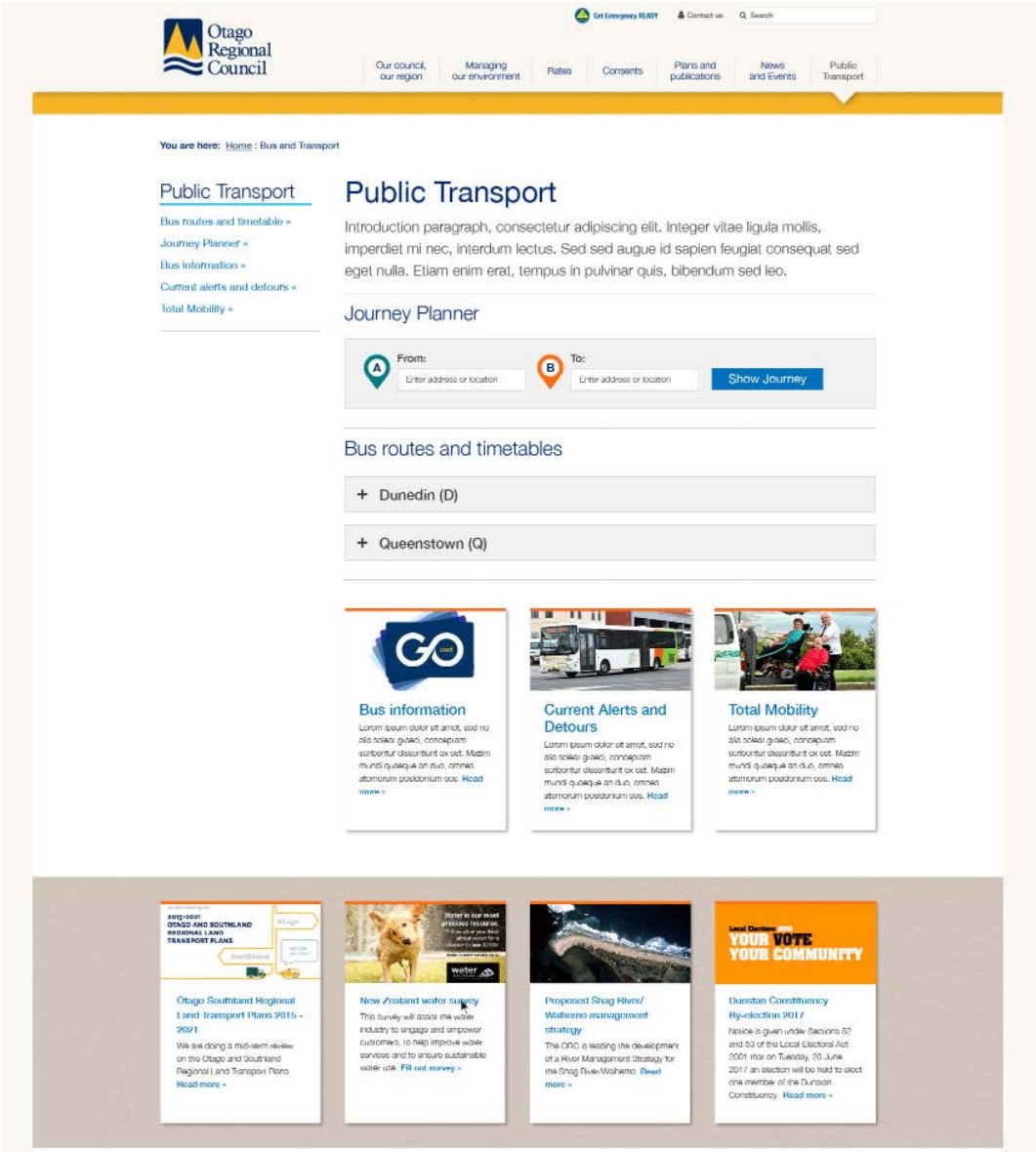

Image 3: New 'Managing our environment' page