



Manuherikia: working together for a minimum river flow

It was great to see the community actively sharing recently what they value about the Manuherikia catchment in Central Otago.

A series of drop-in sessions, held in August, was the first step in a consultative process which will lead to a new minimum flow for the Manuherikia catchment.

We hope that by successfully working with the community towards this outcome, the end result will be a healthy balance being struck between the amount of water coming out of the river to sustain farming activity, and

the amount staying in the river to support recreational uses, such as swimming and angling, as well as protecting the aquatic life that call the river home.

The drop-in sessions held in Omakau, Oturehua, and Alexandra, were attended by around 200 people, showing how precious the Manuherikia catchment is to locals and visitors alike.

This first series of drop-in sessions allowed us to hear what people value about the river. Once we have collated the community values we will bring our science team in to identify how much water needs to safely stay in the river to maintain

these values, and to understand what this means for river flow levels.

ORC director policy, planning, and resource management Fraser McRae, who attended the sessions, said he was impressed with the diverse range of people who came along, the variety of views expressed, and people's willingness to debate and discuss what they value.

We talked with people whose lives are sustained from working the land, those who work or live in smaller communities in the catchment, through to retirees, and school children.

Getting to the bottom of the lake snow problem

One of the Otago region's pristine lakes, Lake Wanaka, has seen a gradual shift in the structure of its algal community.

Algae are a vital component of a healthy lake ecosystem and form the base of the food chain for zooplankton, fish and other aquatic organisms.

Lake snow is a term given to the clumping together of microscopic bacteria and algae, from which a large sticky 'aggregate' (of up to 10 mm) is produced that floats mid-water and can collect on fishing lines, in water intakes of boats, and also cause problems with domestic water supplies.

Lake snow does not pose a threat to public health but it is a nuisance and an annoyance to residents and recreational users of the lakes. This has been borne out by the problems it has caused in Lake Wanaka over summer months.

ORC has just embarked on its five-yearly trophic (feeding and nutrition) sampling round of Lakes Wanaka, Wakatipu and Hawea.

Fouling of fishing gear and blocking of boat water intake filters are just two problems associated with lake snow. Blocking of household domestic devices attached to the reticulated water supply drawn from the lake, such as drinking water filters, washing machines and sprinklers is another.

Earlier this year ORC received the first confirmed sample of lake snow and the associated *Cyclotella* diatom collected from Lake Wakatipu.

The Southern Lakes have excellent water quality despite the presence of lake snow. Our Otago Water Plan rules are designed to maintain or enhance water quality where appropriate.

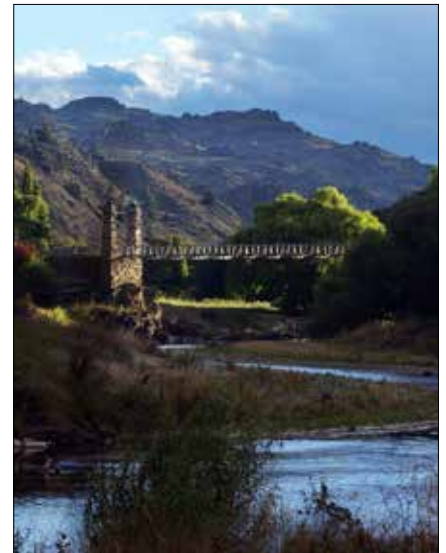
ORC has just embarked on its five-yearly trophic (feeding and nutrition) sampling round of Lakes Wanaka, Wakatipu and Hawea. This provides an opportunity to better understand lake processes, the structure of algal communities, and the overall trophic status of the Otago Southern Lakes.

DNA samples taken from lake snow will be compared with similar samples from overseas, and analysis done of how long lake snow has been in New Zealand – the results of these comparisons will be shared with Queenstown Lakes District Council and the Ministry for Primary Industries.

We have also been working closely with the University of Otago both in funding PhD research and, more recently, through the Catchments Otago project on lake research.

It is too early to quantify how the lake snow issue might be managed – our first step is to get a better understanding of its history and that will help shape the next steps.

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The Shaky Bridge at Alexandra

People talked about water for irrigation through to swimming at the Shaky Bridge.

There's a richness in their stories and anecdotes that underline that their connections to the river go back generations, and how closely it features in their way of life.

"We are currently reviewing all the feedback from the sessions, and will have a summary of it, and a scientific assessment of how the community values would affect river flows ready by the end of February," he said.

While this summary was being prepared, ORC would work with iwi to identify their cultural values for the catchment, and also look at landscape and natural values. Once we have established a preferred option for a minimum flow level for the Manuherikia River, this will be publicly notified and the public can again make submissions.

All submissions are heard by a panel of regional councillors and independent commissioners may also be appointed to the panel. The panel makes a recommendation to the council, which then makes a decision on the minimum flows and notifies that decision.



Support for dairy farmers as season kicks off

The dairy season is underway, and ORC has started monitoring farms as part of the annual dairy inspection programme.

As part of this, ORC is working closely with the Otago Dairy Stakeholder Group, which was set up to support dairy farmers with general issues, including what the Water Plan rules mean to them, with the ultimate goal of achieving Good Water in Otago.

The Otago Dairy Stakeholder Group works in conjunction with the North Otago Dairy Working Group and South/Central Otago Dairy Working Group, which are hands-on groups that include representatives from Dairy NZ, Federated Farmers, North Otago Irrigation Company, Lower Waitaki Irrigation Company, and milk supply companies Fonterra, Open Country Dairies, Oceania Dairy, and Danone.

The groups were set up to help dairy farm owners, share-milkers, and managers with practical advice, support, and farm plans tailored to individual farm situations, and any interaction is strictly confidential.

ORC is also involved with the working groups and, with permission from the dairy farmer, can offer farmers a referral to the group after the annual dairy inspection. Farmers can also participate voluntarily through their milk supply company, which will put them in contact with the group.

The groups focus on effluent management, which can have a negative impact on water quality if it isn't managed correctly. They can also give advice and information about infrastructure, farm management, and land-use activities that can affect water quality, such as sediment in water, and silage leachate management.

The role of the dairy working groups is to provide expert help to local farmers from local industry representatives who have a wealth of knowledge and experience, and who will focus on giving them the support and advice they need to get back on track and comply with the Water Plan rules.



The wood and the trees

ORC held a forum for forestry contractors in July, where we talked about the impact their work can have on our waterways and the fish that live in them.

ORC staff from communications and engagement, science, and environmental monitoring teams talked about how the Water Plan rules relate to forestry. They explained to contractors why waterways are important and the values associated with them, even though they might not be obvious. The types of rare fish and invertebrate species that live in the little waterways in forestry blocks were also on display.

ORC has carried out a number of forestry inspections recently, and has been impressed with the good sediment control observed, including willow pole planting to stabilise land and prevent subsidence.



Farm flyover reveals soaring compliance

During the winter flyover of South Otago, it was obvious to ORC staff that many farmers are proactively undertaking best practice winter cropping management, such as creating buffer zones, and strip-grazing across instead of down.

These measures can prevent leaching to waterways and help avoid contaminants such as nitrogen, phosphorus, sediment and *E. coli* entering fresh water. There was a decrease of over 70% in the number of cases needing follow-up compared with last year, down to five from 19. Well done!



Water metering: a measured installation

Otago water users are actively installing meters on their water takes, enabling them to better manage their take.

Often, particularly with old water permits, people may only use a portion of the water allocated to them, which means water may be available in a river, but can't be used by others.

Measuring the amount of water taken also assists ORC in its management of Otago's water resources. This ensures that water is available to maintain essential values.

ORC director environmental monitoring and operations Scott MacLean said the only way ORC can manage water resources is by knowing how much water people are taking.

Many permit holders have telemetry installed with their meter. Telemetry enables the data to be sent to ORC electronically, which is less demanding on water users. There are also significant benefits in times of water shortage.

"When water is short, working together to ration is much easier and less stressful as you can see how much water each person is taking. This makes it easier to roster water use.

Percentage of water takes with installed water meters as at September 2016		
<i>Rate of take</i>	<i>Those with water meters</i>	<i>Installation deadline</i>
More than 20 litres per second	83%	10 Nov 2012
10 to 20 litres per second	75%	10 Nov 2014
Five to 10 litres per second	33%	10 Nov 2016

"This enables users to get water in a way that is fair when the water resource is stressed," Mr MacLean said.

In 2010, the RMA regulations came into effect and require that any permitted water take being used that is at a rate of more than five litres a second must be measured, and recorded electronically, from 10 November 2016.

The table above shows that there has been a strong trend towards the installation of water meters and electronic data loggers for takes of over 10 litres per second, but there is still a majority of water takes needing to be metered in the five to 10 litres per second range.

ORC has supported a transition programme under the regulations for water users to install metering.

"We know that there are good reasons in some cases for not having meters installed, including some takes not being in use, or being surrendered. As for those with smaller takes time is running out fast for them to ensure that water meters are installed," Mr MacLean said.

ORC is currently asking those yet to install a meter to provide the council with an action plan of when it will be in place.



ORC Liaison specialists from left are: Nicole Foote, James White and Bruce Monaghan

Liaison specialists

ORC has three liaison specialist team members who are knowledgeable about the Water Plan rules and are happy to give support to landholders and users by providing information, answering queries, and pointing people in the right direction for further support or guidance.

If you want them to present at your next meeting, or have a question, give them a call on 0800 474 082.

Nicole Foote *South Otago*

I was raised on a farm in East Otago and still enjoy being hands-on as often as I can. My role at ORC combines my interest and knowledge of farming practices, my prior environmentally-focused study, and recently acquired knowledge of council.

I love being able to help landowners look after Otago's unique environment.

Outside of work I volunteer for several community groups, including a lagoon habitat enhancement group, and a group that provides meals for new mums or families in need. When time permits I also enjoy trying my luck at propagating native plants.

James White *North Otago*

I have been with ORC for two years and love the variety of challenges my role throws at me. My background includes a number of outdoor-related jobs, such as farmhand, landscaper and market gardener. I have also worked at Waitaki District Council as a planner, resource management consultant, biodiversity officer and an engineering officer.

I live on the coast near Kakanui with my wife Lucianne and three children. As a family we take pride in getting outside as much as possible. I enjoy mucking around in the outdoors working, hunting, fishing, surfing, whitebaiting, growing things, playing sport etc. My favourite haunt is up in the mountains around Ohau.

Bruce Monaghan *Central Otago*

I'm from Canterbury but have just chalked up 35 years in Central Otago, which now qualifies me as a 'local'. I love the rural Central Otago environment with its mountainous backdrop, and have a healthy emphasis on exercise, including running, mountain and road biking.

Being raised in a horticultural enterprise, I take pride in tittivating our larger-sized, landscaped urban section - a focus that lies somewhere between passion and obsession! Getting to all parts of NZ has been a lifetime aspiration, and only a few nooks and crannies are left to explore. With part of the next generation now based in Australia, periodic trips remain on the wish list.

ORC's liaison specialists can help you with:

Water quality - next steps

Overseer – what do I need to do?

Industry contact information

Water sampling - how to?

Forestry harvesting queries

Mining privileges – consenting

Catchment groups near you

Feedback to ORC



Hopping mad

The number of wallaby sightings around Otago has increased, and ORC has had additional funding of \$273,000 approved by councillors for a search-and-destroy programme in order to reduce the wallaby numbers in our region before a feral population can become established.

The wallaby population is growing faster than anticipated, and the spread of recent sightings suggests a mixture of natural migration and intentional release.

We need your help to rid our region of this pest. Wallabies compete with stock for pasture and can damage crops and young trees. The Otago Pest Plan (2009) requires all wallaby to be destroyed by land occupiers, and those that are killed or seen to be reported to ORC within two days on 0800 474 082.

A day in the life of...

In a new feature for Waterlines, we profile the work of ORC staff as they go about their daily activities. LISA MINHINNICK tagged along with two of our environmental staff on a farm forestry inspection to see what this involves.

You spend a lot of time on the road – and off it – when you're an environmental monitoring officer (EMO) at ORC. This is a necessary element of daily life when you have a large region like Otago to cover.

I wasn't sure what to expect when I joined EMOs Mark Byrnes and Neville Pearce on a routine forestry inspection an hour's drive south of Dunedin. In steel cap boots and a fluoro vest instead of my usual office attire, I was looking forward to seeing what their job entails.

The car trip south was productive – no down time here. The discussion was about each other's work-loads, as well as talking about making sure the EMOs are consistent in their approach, which is important when they are working in a region with such varied landscapes and activities.

Before long we were heading up a forestry road to have a look at a farm forestry block that had been planted with saplings the week before. Mark and Neville were there to check that land preparation had been done correctly; that any culverts were in good state of repair, or that their removal was in line with Water Plan rules. They also checked to see what sediment controls had been put in place to protect waterways from sediment runoff during rain events that could happen while the land settled. I was learning a lot already!

While the forestry block was privately owned, it was being managed by a commercial forestry company. Mark and Neville chatted with the company reps and asked questions as we made our way through the block and got mud on our boots, being careful not to trample on any of the young trees.

Mark and Neville know their stuff and while taking in the surroundings, they highlighted areas that could become waterways during heavy rainfall. They commented that trees should be planted away from gullies to avoid debris and sediment entering waterways come harvesting time in about 25-30 years' time.

Their approach was relaxed but professional, with some good banter along the way. They would write up their findings back in the office and include photo examples, with copies of their report going to the forestry block owner and commercial company.

We took the back roads on the way back, not so I could see the scenery, but to show me examples of the great things individuals and companies are doing to look after the land and water quality when planting and harvesting forestry blocks. It was heartening to see that simple measures can make such a difference, but more on that another day. For now, I've got boots to clean.

In Brief



Cubs learn about water quality

Cubs from the Millers Flat Ettrick Scout Group learned about riparian planting from ORC liaison specialist Nicole Foote recently.

They then put their new knowledge into practice by planting around 40 native plants on the margin of a waterway to help protect the water quality. Well done guys!



Protect future whitebait

Whitebait season runs until the end of November, and we remind whitebaiters to protect the riverbanks by picking one track to the river and sticking to it. The riverbanks are the spawning ground for the whitebait, and their habitat needs to be looked after.

Pride in the Kakanui

The Kakanui Community Catchment Project (KCCP) have installed four signs around the catchment to promote the environmental and recreational values in the area.

Local school children were involved in the unveilings, and also helped with a community planting day at Enfield, where close to 70 people turned up to help. ORC's North Otago liaison specialist James White has been involved with this project and loved seeing the pride shown by the local community.

