



ORC resource manager Marian Weaver (foreground, left) makes a point to Allison Sutton and James Russell of the Last Chance Irrigation Company, during an ORC drop-in information session in Alexandra on the updated Otago Water Plan.

Targeted rates fund water quality work

ORC chairman Stephen Woodhead has praised people for their thoughtful contributions to the council's Long Term Plan process.

"Public participation in this process was strong and we listened carefully to the feedback we received," Mr Woodhead said.

The Long Term Plan for 2015-2025 recently adopted by councillors features a programme of work focusing on improving water quality in our rivers, lakes, and aquifers. The cost of this work is estimated to be around \$1.9 million each year for the next three years.

A water quality rate has been introduced to fund part of this work programme, specifically additional water quality science and monitoring work.

Investments in related technology will be funded from reserves. Education and liaison, and some environmental monitoring work will be funded from general rates.

This work will help ensure that ORC obtains accurate data about the state of water quality in the Otago region and allow trend analysis.

This new targeted rate will be phased in over three years, with 60 percent of the monitoring and science work to be funded by it in 2015-16, 67.5 percent in 2016-17, and 75 percent in 2017-18.

In the 2015-16 year, the contribution from targeted ratepayers to funding of this work will be \$506,000. The median water rate will be \$36.41.

Another new targeted rate is being introduced to fund ORC's annual programme of monitoring dairy farms to ensure these landholders are compliant with the permitted activity water quality conditions.

An earlier proposal to establish three classes of targeted rates for dairy farm water quality monitoring would have seen each of the 450 dairy farms in Otago receive at least one visit (and some up



Bank erosion in the Kauru River (June 2013).

ORC keen to collaborate with community on river management

When issues such as gravel buildup and erosion dominate the form and function of river channels, the effects can be major, and reduce their ability to safely transport floodwaters during heavy rainfall periods.

ORC recognises that this is a serious problem. Our Long Term Plan for 2015-2025 includes a programme to work with communities to devise management options for specific rivers, with a focus on river channel and riparian management plans.

These will be developed as follows:

2015-16
Pomahaka and Strath Taieri;

2016-17
Cardrona, Waianakarua, Shag;

2017-18
Manuherikia, Big Kuri Creek, Kyeburn, Silver Stream.

The first of these programmes is already under way in North Otago to develop a management strategy for the Kakanui and Kauru rivers.

This process started after our natural hazards team published updated information highlighting changes in the shape of the river channels in the Kakanui-Kauru.

These changes were caused by high flows and issues such as gravel buildup and erosion.

Two community meetings and a series of drop-in information sessions have been held in the area to talk to locals about the strategy development and get their feedback on possible management options.

The public has also had an opportunity to make submissions on the proposed strategy.

Submissions closed on June 24 and 15 were received.

The key principles we have applied to the strategy development include:

- incorporating the values the community has told us are important to them
- monitoring the natural tendencies of the river channel to move within the floodplain
- identifying the methods available to reduce the effects of bank erosion and flooding
- identifying practical methods for enhancing the river environment and its recreational opportunities, and
- implementing land use activities most suited to the river margins.

We currently carry out work in rivers, streams, and creeks throughout the region to maintain channel capacity, and prevent this capacity being lost during flooding.

This work includes willow maintenance, vegetation control, the removal of obstructions and blockages, and consenting gravel extraction.

We also undertake a programme of regular river monitoring through

which the stability and alignment of particular rivers, and evidence of changes in river form, and erosion, are surveyed.

ORC chief executive Peter Bodeker said the council was likely to play a greater role in river management issues over the next few years.

The goal was to ensure that river form and function was maintained as much as possible, and that riparian margins provided a protective buffer between land and waterways.

In doing so, the council was responding to growing community expectations that rivers should not only have good water quality, but should also be managed so that their potential to cause flooding and erosion was tackled.

Mr Bodeker said the council was keen to reach understandings with communities about the degree to which ORC should intervene to help landowners protect land bounding a river, as part of ongoing collaboration about river management.



Bank erosion, overtopping, and sedimentation in the Kakanui River (May 2014).



Balclutha-based ORC environmental officer Rebecca Begg shows farmer Jeff Moss a water quality information pack at the Clinton drop-in session.

Water quality information packs still available

Landholders who have not received one of our fact packs on the new water quality provisions in the Otago Water Plan are encouraged to go to the water quality page on our website www.orc.govt.nz to request one.

ORC staff have been delivering hundreds of the packs during farm visits throughout the region. For those who don't yet have one, they include a guide to the new provisions and a series of fact sheets which explain how these apply to all types of farming and forestry activities.

We've also run a series of drop-in sessions around the Otago region for landholders to find out more about how they can achieve or maintain the good water quality standards set in the water plan, and have any questions answered.

About 200 people attended the series of nine meetings. We appreciate the time and effort these people made to become better acquainted with the responsibilities they have for ensuring good water in the region's waterways and aquifers.

All landholders are encouraged to start thinking now (if they haven't already) about how they might adjust their land management practices (where necessary) to reduce waterway contamination.

Motivated couple win ORC water quality award



South Otago farming couple Wilson (Wick) and Angela Wylie (pictured) have a proven commitment to improving water quality.

Their approach to land management is that what's good for the environment will inevitably be good for their financial bottom line.

Wick and Angela farm a 270ha sheep and beef property Glenelgin at Tahatika, northwest of Owaka.

In April, they won the ORC Water Quality Award at the Otago Ballance Farm Environment Awards (BFEA). They also picked up the Beef and Lamb New Zealand Livestock Award.

Their approach and their success is something ORC hopes many other farmers throughout Otago will emulate as they work towards achieving good water quality in all of the region's waterways.

The new provisions put landholders in the driver's seat, giving them the choice to apply whichever land management practices they like to do this.

ORC chairman Stephen Woodhead said council supported the innovative thinking behind the

land practices developed by the Wylies.

All farmers were encouraged to apply practices which best suited the characteristics of each property, and which would also support good water quality.

"The Wylies' approach to land management is a practical demonstration of this philosophy in action," Mr Woodhead said.

Their commitment to enhancing water quality included fencing almost all of their Owaka River boundaries and some tributaries, and taking advice from Otago University and the Working Rivers Trust about how best to undertake extensive riparian planting.

The Wylies have ORC water quality monitoring sites on their property, and their efficient nutrient management has featured carrying out soil testing throughout the farm, strategic application of fertiliser, and direct drilling to minimise soil loss.

They have thought carefully about how to manage stock around

Type of property Sheep/beef
District Tahatika, Owaka
Total area 270ha 240ha effective area
Stock units 3,250 mostly sheep
Annual rainfall 1,500mm
Elevation 100m-360m above sea level



The Wylies are focused on having high-quality soils (above) and make good use of riparian planting (below).

waterways and have applied best practice approaches to winter management of soils and crops.

No winter supplements are made, with lambs getting first call on grass. Ewes are wintered on swedes but hoggets are on grass all winter.

The award judges commended the Wylies for their focus on having efficient crop and pasture systems with minimal need to use supplements, describing this approach as "testament to their management skills."

The judges said they also had an "excellent understanding" of soil and nutrient management, incorporating whole-of-farm soil testing, strategic application, and a nutrient budget/management plan.

The Wylies have reaped the economic rewards of a sustainable approach to land management, and their focus on finishing lambs to the highest possible standard – their sheep and beef operation consistently performs in the top five percent of its class.

The judges described them as "a motivated and driven couple" with a "strong desire to succeed" and running an "efficient, and well-executed sustainable operation."

They had "an inherent understanding of the environment; wise use and consideration of natural resources; and early adoption of exemplary riparian management," the judges said.



Continued from cover to two or three visits) from ORC compliance staff. The estimated expenditure for this activity was about \$192,000.

However, this proposal has been amended and all dairy farms will be charged for one visit only, costing \$235 each, reducing the overall cost of the monitoring project by about \$90,000.

Mr Woodhead said the inspection criteria for visits will be based on effluent management and any potential risk of water contamination each farm presented, rather than the sensitivity of the receiving environment, which some submitters to the LTP had said was unfair.

"We listened carefully to the feedback we received"

Stephen Woodhead

Mr Woodhead said the council had listened carefully to expressions of landholder concern about some of the proposed targeted rate increases, and the subsequent revisions were a reflection of this.

However, the council's ongoing commitment to achieve good water quality in Otago waterways was undiminished, he said.

ORC will ensure that landholders understand what is required of them to improve or maintain good water in Otago waterways, and that they are on track to make any changes needed to achieve this.

Council staff will continue to liaise closely with other agencies and with landholders to ensure they become aware of their responsibilities for achieving good water quality as set out in the water plan.

Compliance an important part of land management

Prohibited activities	Conditional permitted activities	Water quality limits
<ul style="list-style-type: none"> Gross discharges to water Discharge to waterways from effluent, silage or composting Observable sediment from disturbed land to waterways 	<ul style="list-style-type: none"> Sediment to surface water Bridges and crossings Bed disturbance Stock access to waterways 	<ul style="list-style-type: none"> Schedule 16 Contaminant discharge thresholds Overseer – Nitrogen groundwater leaching
Effective now	Effective now	Effective 2020

As a farmer, there are some key steps you can take that will go a long way towards helping you achieve good water quality as set out in the Otago Water Plan.

These include eliminating or controlling activities that can cause gross contamination of waterways such as from effluent, silage, or composting, and nipping in the bud any sediment release from disturbed land.

Otherwise, these breaches of the water plan will cause you some headaches.

Checking regularly that other land management activities are not adversely affecting waterways can just involve having a good look around your property to check for any sources of contamination. If water coming off your property looks and smells bad, it probably is and action to fix the problem will likely be needed.

Many activities that potentially affect waterways are permitted under the water plan. They don't require a resource consent, but they will invariably have a range of conditions which you will have to follow, to minimise any possible negative environmental effects.

Since 2004, ORC compliance staff have visited every dairy farm once a year to check that these operations comply with the permitted activity conditions attached to dairying.

While the vast majority of farmers do comply, every year there are some in the minority who are detected because they don't. In most of these cases, some form of enforcement action, including prosecution, has been taken.

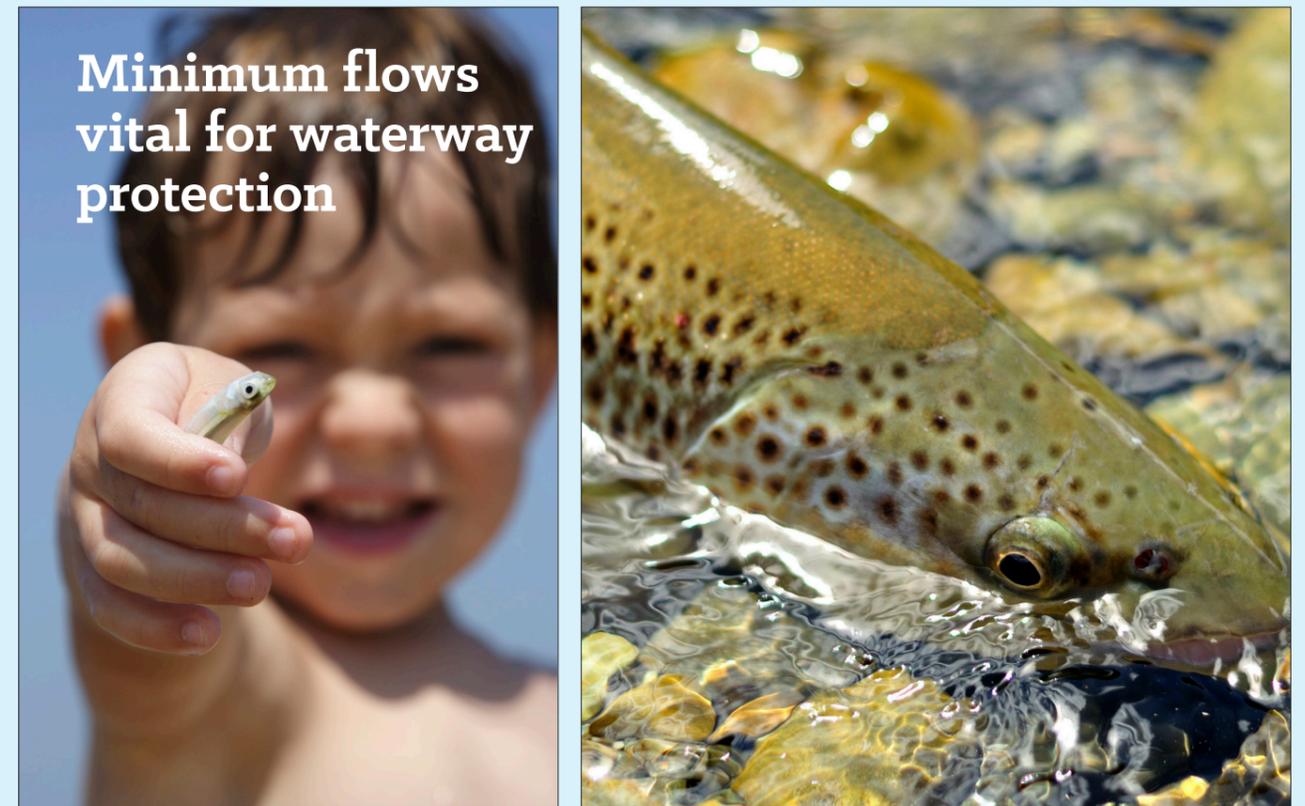
Our compliance focus is on activities which can do the greatest harm to water quality. This includes mechanical disturbance of a river occurring that doesn't meet the permitted activity conditions, or resource consent conditions. Pugging, and contamination caused by stock grazing alongside or standing in waterways, are other examples of such activities.

New monitoring and auditing of a range of land management activities will be introduced over the next two to three years so that by 2020, contaminant discharges from farming and forestry operations will be within the limits set in the water plan.

This will result in the maintenance of good water quality, and where necessary that poor water quality is improved.

In the meantime, pro-active monitoring of a range of land management activities has begun.

This includes forestry operations, where our compliance staff have begun doing joint inspections of potential harvesting areas, and helping foresters identify areas where water quality might be at risk from, for example, sediment release.



Brown trout are an important part of the Lindis River's ecosystem. Source: istockphoto.com/LiTN and cguadagnini

The ORC science, policy, and community liaison teams are continuing with the council programme of setting minimum flows and assisting communities with the water allocation provisions for many Otago rivers.

Minimum flows restrict when and how much water can be taken from freshwater sources during low flow conditions and also protect rivers' aquatic ecosystems and natural character.

They are also a vital mechanism for ensuring enough water remains in a waterway to maintain values and sustain multiple uses, including recreation, and stock and crop water.

ORC always works with communities at the outset of a minimum flow-setting process to determine local values for the relevant waterway, and gain a broad understanding of the local water issues.

Getting communities and other groups interested in waterways to identify specific values helps us arrive at a balanced conclusion

as to what an ideal minimum flow should be.

The Otago Water Plan includes provisions aimed at improving water allocation in time for the transition from deemed permits to resource consents, and encouraging landholders to make efficient use of water.

These provisions also enable the formation of community water management groups to co-ordinate the taking and use of water, and organise rationing when necessary, such as during last summer when dry conditions affected river levels.

In Central Otago, water for irrigation is taken under deemed permits (originally issued by the Warden's Court more than 100 years ago for gold mining), and as a result many rivers there are over-allocated.

ORC has worked with community agencies and irrigation groups to explain the water allocation provisions in the Water Plan and consider the best way to manage Otago water resources when all deemed permits expire in 2021, while still meeting the challenges of future water demand.

The latest minimum flow process to achieve a milestone is for the Lindis River.

A proposed minimum flow for the Lindis will be publicly notified on August 8. Public submissions will be invited on the proposal and hearings held for those who want to speak to their submissions.

On April 1, at a public meeting in Tarras, staff presented the findings of an economic investigation undertaken by consulting firm BERL, which looked at the



NZ Landcare Trust lower South Island regional co-ordinator Janet Gregory (second from right) speaks to ORC councillors and staff in the Pomahaka catchment about the work local farmers are doing on water quality. Listening (from left) are: Councillors Louise Croot, Trevor Kempton, and David Shepherd, director stakeholder engagement Jane Leahy, community liaison and education officer Rob Schick, Pomahaka Water Care Group chairman Lloyd McCall, and farmer Michael Morris.

Councillors learn a lot from Pomahaka farmers

Many agencies and people are involved directly or indirectly in managing water quality in Otago waterways. Because of this, ORC is striving for a balance between delivering our own water quality information and encouraging these agencies to play a part by assisting landholders as they come to terms with what they may need to do.

To this end, we've been working with Landcare Trust's co-ordination of farmer groups in southwest Otago, where landowners are modifying their farming practices so they have less impact on water quality, and are aiming to reduce their contaminant discharge from runoff, leaching and drains.

ORC councillors and senior staff recently visited these groups, and got some first-hand insight into how individual landholders are using the Schedule 16 requirements in the Otago Water Plan as their basis of measurement on farm, and are working together to improve the whole catchment.

As well as highlighting water quality issues, farmers showed the group areas where river management strategies were needed to deal with signs of erosion or flood risk.

Councillors learnt a lot from the visit and were impressed with what they saw - an example of a community being pro-active about improving water quality and taking steps early on to bring it up to the water plan standards.

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potential impacts on agricultural production and the wider economy, of a minimum flow being set for the Lindis River.

Irrigators had formed a Lindis Catchment Group committee to represent their interests in minimum flow and consenting process discussions.

Irrigators have been accepting of the need for flow management on the Lindis, but had expressed concern about how the minimum flow process would affect their transition from deemed permits to RMA water permits.

They presented amendments to the plan change proposal – however, this was not accepted as the existing provisions in the Water Plan adequately address these concerns.

ORC has agreed to develop a guide for deemed permit and resource consent holders to help them make the transition to post-2021 when deemed permits no longer apply.



Lindis River at Ardgour Rd.

Time is of the essence for installing water measuring equipment

Time is running out for some Otago holders of resource consents for water takes to comply with regulations requiring installation of measuring and recording equipment.

The regulations, introduced by the Government in 2010, required consent holders taking 20 litres/second or more from

the region, and the extra time it has taken for those installers to get around a large number of consent holders.

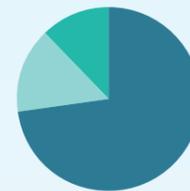
However, as the start of the next irrigation season (September 1) is approaching, the council expects consent holders in the 20 l/s and 10 l/s categories to have had the appropriate equipment installed by then and keep in touch about their progress.

abatement notices preventing them from taking water until this is complete.

In the 10-20 l/s category 111 (56 percent) of the 199 consents have the required equipment installed; and 29 (15 percent) have either advised the council of their intention to install measurement and recording equipment, or already have a meter installed and are yet to install a datalogger.

Water metering installation rates

> 20 l/s

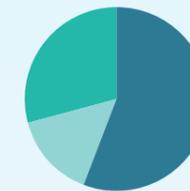


73% installed

15% in progress

12% being assessed / action required / non-consumptive

10 - 20 l/s



56% installed

15% in progress

29% being assessed / action required / non-consumptive

waterways to be compliant from 10 November 2012; 10 l/s or more, but less than 20 l/s, from 10 November 2014; and 5 l/s or more, but less than 10 l/s, from 10 November 2016.

Regional councils are responsible for monitoring and enforcing the regulations. In Otago, ORC has been lenient towards those who have not met the Government deadlines because of the large number of water takes affected, the small number of installers in

Currently around 73 percent (815) of the 1115 holders of consents in the more than 20 l/s category have completed installation.

Fifteen percent (167) have notified the council that installation is progressing. Holders of these consents (mainly irrigation companies) have until the beginning of the irrigation season to have this completed.

Holders of 19 consents who have made no progress with installation have been issued with

These consent holders also have until the beginning of the coming irrigation season to have the appropriate equipment installed.

Twenty-eight consent holders are yet to advise ORC that their measurement and recording equipment is installed. These consent holders will be issued with a final warning, and will have until the beginning of the irrigation season to have the appropriate equipment installed.

Effluent know-how aids better farming

Knowing how much farm dairy effluent to spread on pasture is vital both from an economic and environmental standpoint.

DairyNZ's farm dairy effluent spreading calculator is a handy tool which helps farmers easily calculate nutrient loadings and improve the precise application of nutrients from effluent.

Farmers are much more likely to comply with the prohibited activity provisions in the Otago Water Plan if they are spreading effluent in quantities which avoid the chances of ponding, runoff, or leaching occurring.

Download the calculator app (in iOS or Android) or the Excel spreadsheet from: <http://www.dairynz.co.nz/environment/effluent/managing-and-operating-effluent-systems>.

The 'Quick Calculator' determines nutrient loadings or application

depth based on estimates of different types of effluent. If you get your effluent tested, then this nutrient content can also be entered.

The 'Advanced Calculator' determines specific details and areas required for slurry tankers and muck spreaders.

Dairy NZ also has useful guides on its website to operating low rate and travelling irrigator effluent systems.

More information on these and the app are available at www.dairynz.co.nz

Good effluent management has additional onfarm benefits as well, including fertiliser savings, improved soil conditions, and prevention of animal health issues.

Dairy farmers also have the option of voluntarily completing the dairy effluent 'Warrant of Fitness' programme which helps them identify and address risks associated with effluent infrastructure on farm.

The warrant of fitness costs around \$1000 depending on the size of the farm and includes a certified, independent professional completing a three to four hour on-farm assessment, who will follow up with a report incorporating recommended practical actions for improving effluent management.

More information about this is available at www.effluentwof.co.nz



Care needed when applying stored effluent

With El Nino making its presence felt in the tropical Pacific, cold wet weather east of the South Island's Divide is predicted to persist over most of Otago into summer.

Going into winter with an empty effluent pond with the appropriate storage capacity is a must to see you through this unsettled period.

Careful management of the application of stored effluent is required, particularly during spring months when there are wetter soil moisture conditions.

Applying effluent onto saturated soils, or to water, or which causes ponding, is prohibited by the Otago Water Plan.

Last spring's conditions, when the number of days effluent could be safely applied were few and far between, highlighted the importance of ensuring this is done only when there is available water capacity

in the soil profile, and to apply as low a depth as practical.

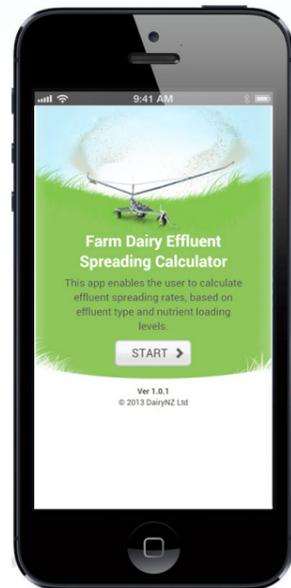
It's a fine balance to strike - the key is to apply effluent when soil conditions allow, so storage capacity within the pond is retained.

Check ORC's LandInfo website (www.land.orc.govt.nz) for guidance on local soil conditions and the optimum water capacity for effluent application.

Also, check out the DairyNZ effluent application guidance on the next page for more information.

Our routine dairy inspections in the coming months will include checks to ensure that the risk of ponds overflowing is being well-managed, and that effluent application doesn't result in the water plan being breached.

Play it safe with your effluent spreading.



Get ready, get thru

Already this year Otago has been hit by flooding and the Wanaka and Dunedin areas by earthquakes.

These events provide a timely reminder of how far the region's hazards stretch and the need for everyone to be prepared for events which can happen without warning.

New Zealand ShakeOut has been organised to help people and organisations get better prepared for major earthquakes, and practise the 'Drop, Cover and Hold' drill during an earthquake.

The Ministry of Civil Defence and Emergency Management recommends you have emergency survival items on hand to last three or more days through a crisis such as an earthquake

Why not get involved with the rest of the country and do the drill at 9.15am on October 15? You can sign up and get more information at www.shakeout.govt.nz

Figures from Statistics New Zealand's 2012 NZ General Social Survey showed that the percentage of Otago people who considered they had the basic necessities (emergency food and water for three days, and an emergency plan) was just 18 percent, compared to the national average of 22 percent.

Basic preparation

Three day supply of food and water
Household emergency plan

A rain storm can quickly cause damage to property and roads, while a strong earthquake could cause more serious and widespread damage than the Dunedin and Wanaka quakes did. People's ability to travel could be affected, communities could become isolated, and essential services like telecommunications and power could be affected.

After a major disaster, help cannot get to everyone as quickly as they might need it. It is then that individuals and families will be most vulnerable and why they need to be prepared.

Preparing a household or business emergency plan which you can discuss with your family or colleagues, and which can greatly reduce stress when disaster strikes, is recommended.

The Ministry of Civil Defence and Emergency Management recommends you have emergency survival items on hand to last three or more days through a crisis such as an earthquake. This should help you get through comfortably until help arrives.

Better preparation

Basic preparation +
Torch portable radio
Spare batteries
First aid kit & essential medicines



You're already likely to have many of the items you'll need – torches, a radio, a first aid kit and medications, batteries, food and water, and alternative cooking appliances such as a barbeque.

Just check that you have the essential items, and can find them easily (and in the dark) during a disaster, and can keep things in working order.

Having plenty of water on hand – at least three litres per person per day for three days to survive the disaster comfortably – is important in case community water supplies are disrupted.

Further information on what to do to get ready and during and after an earthquake starts, is available by going to www.getthru.govt.nz/earthquake, and from local councils.

