

FRESHWATER MANAGEMENT

THE ONE PLAN

The One Plan is our 'one stop shop' resource management planning document for the Horizons Region. It defines how the natural and physical resources of the Region, including freshwater, air, productive land and natural ecosystems, will be cared for and managed by Horizons in partnership with territorial authorities and the community.

The values framework that underpins the One Plan is based on extensive community and stakeholder consultation. Community values for streams and rivers have been translated into numerical water quality targets.

The One Plan approach to managing different sources of nutrients aims to reduce the impact of nutrient loads reaching rivers and on water quality. The One Plan also addresses sediment loads, point source discharges and water allocation to improve the health of our waterways. This is achieved through a range of regulatory and non-regulatory work programmes that Horizons undertakes in partnership with iwi, community and environmental groups, industry, government agencies and research institutes.

NATIONAL POLICY

In 2016, the Ministry for the Environment proposed amendments to the National Policy Statement for Freshwater Management (NPS-FM). The intention is to maintain water quality or enhance water quality where it is currently degraded. While the NPS-FM sets a minimum standard, or bottom line, for some parameters, this does not prevent communities from setting their own targets or limits – as long as they are not set below the national bottom line. In the Horizons Region we already have targets set for a range of water quality indicators that are more stringent than those set out in the National Objectives Framework (NOF).

WHAT WE DO

- Fence and plant streams and bush/wetland areas, and control pests;
- Remove fish barriers (unless there are likely to be negative effects on native fish populations); and
- Support consent holders to meet resource consent conditions, compliance monitoring and enforcement.

NON-REGULATORY INITIATIVES

Horizons has a number of non-regulatory initiatives that work to improve water quality across the Region. This includes Horizons' Sustainable Land Use Initiative (SLUI), and community-led projects such as the Manawatū River Leaders' Accord and the Lake Horowhenua Accord. SLUI has been recognised in a Landcare Research report which assessed the impact of the programme on sediment levels in the Region's rivers in 2013. The closest scenario to how SLUI currently operates predicted the annual sediment load in rivers will reduce by 27 per cent by 2043. Under the Manawatū River Leaders' Accord, planting of 110,900 native plants along waterways, erecting 474km of extra stream fencing, completing 98 environmental farm plans, 12 fish passage enhancements, 19 community-led projects, and the upgrade of six wastewater

treatment plants have contributed to moving 600 kilometres of the Manawatū catchment into a more swimmable category.

For the Lake Horowhenua Accord, actions underway include the implementation of improved water quality monitoring, including monitoring of fish populations and lake weed distribution. A major sediment trap has been completed, as well as a fish pass to enable fish to travel between the lake and the sea. Stock exclusion and stream fencing is also a key part of water quality improvement and a considerable amount has been done on a voluntary basis in Manawatū-Whanganui. Horizons also has grants for fencing available and has helped a number of farmers fence off water ways across the Region.

WHY SHOULD I CARE?

- Fair and equitable water management is critical to ensuring everyone has the water they need for health, well-being and recreation, as well as allowing the environment and economy to prosper.
- Over-abstraction at low flow times contributes to poor water quality, proliferation of algae on the river bed and can impact on river depth. This makes rivers visually unappealing, unpleasant or even potentially unsuitable or unsafe for swimming.
- Levels of allocation can also impact on how often and how long town water supplies are on restriction over summer.

HOW YOU CAN HELP

- To help reduce the impact of abstraction for water supplies, you can reduce the amount of water your community needs by taking small steps to save water at home. Taking shorter showers, turning off the tap while cleaning your teeth and using a watering-can instead of a hose when watering your garden all contribute to water conservation.
- If you have a resource consent to abstract water for your home, farm or industry, consider installing water saving devices, and adopting water efficiency measures to make sure you don't take more than you really need. Being efficient with your water take can have flow on effects in reducing pumping and storage costs, and can reduce the size of your waste-water discharge if you have one.

Freshwater in the Horizons Region

Over the last few years there has been a lot of public commentary around New Zealand's freshwater. Unfortunately this information can often be contradictory or blame-gaming, making the complex issues and costly solutions regarding freshwater management sometimes hard to understand. That being said, the issues and solutions are not insurmountable.

Over the past 10 years we have seen measurable improvement in many of the Horizons Region's waterways. Sure, there are areas where we need to do more and we have those in sight, however we recognise that we cannot do it alone.

With thousands of kilometres of waterways winding across our 2.2 million hectare Manawatū-Whanganui Region, the challenge to improve our waterways is everyone's responsibility. We have created this information sheet to explain some of our regulatory and non-regulatory work, and the science that leads it, along with detail on just some of the community-led projects we are engaged with and what you can do to add to efforts.

OUR ROLE IN FRESHWATER

As your regional council our role differs from that of the city and district councils. When it comes to water, Horizons collects a wide range of environmental data, including its quantity and use, and its quality and health. We have a statutory duty to monitor

compliance of the consents we have issued, and to ensure that the provisions of both the Resource Management Act and our regional plans are enforced.

Where possible we seek to work with individuals, organisations or communities to effect long-term behaviour change. We also oversee resource consents that the city and district councils have for managing infrastructure such as wastewater treatment plants, bore water, and stormwater. Should you wish for more detail on these systems your local council is the best place to start.

WHAT THE DATA SAYS

In the Horizons Region we see encouraging signs of improvement in key water quality indicators. Scientists generally report two key measures for water quality: state and trend. State tells us about the current condition of a waterway; trend tells us how things are changing over time.

Trends from January 2007 to December 2016 show efforts being made by many landowners, organisations, iwi, and councils are making a marked improvement in water quality throughout the Region.

This has been achieved through regulatory and non-regulatory means such as the Sustainable Land Use Initiative, the Manawatū River Leaders' Accord and the Lake Horowhenua Accord. Improving trends are particularly notable in the Manawatū River catchment, where significant effort has been made to improve the health and mana of the awa.

10 YEARS OF WATER QUALITY TRENDS JANUARY 2007 - DECEMBER 2016

	MANAWATŪ - 32 SITES		REGIONAL - 59 SITES (including Manawatū)	
	IMPROVING	DECLINING	IMPROVING	DECLINING
E-coli ¹	19%	0%	17%	0%
Total oxidised nitrogen ²	34%	0%	35%	2%
Dissolved reactive phosphorus ²	34%	0%	22%	7%
Turbidity ³	28%	0%	17%	2%

¹ E. coli is a swimmability indicator ² TON and DRP are both nutrient indicators ³ Turbidity is a sediment indicator



Private Bag 11025
Manawatū Mail Centre
Palmerston North 4442

T 0508 800 800
E help@horizons.govt.nz
W www.horizons.govt.nz

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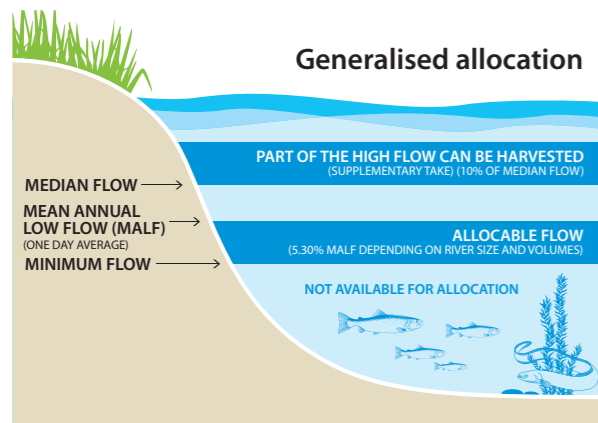
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WATER QUANTITY SCIENCE

KEY ISSUES

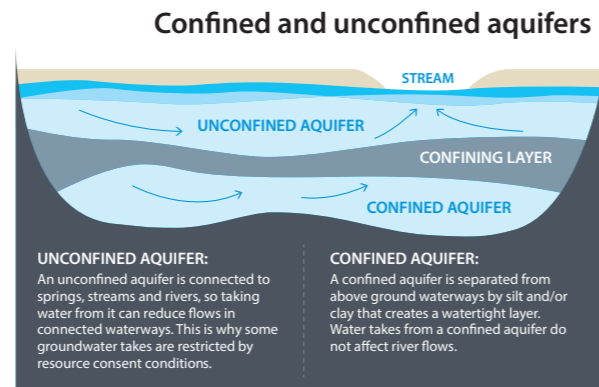
1. Demand for water is high and the amount of available water is limited

Surface water is all the water we can see, including: rivers, streams, lakes, drains, ponds, and wetlands. In some parts of the Horizons Region, the demand for surface water is greater than the amount available. Much of the water allocated in high demand areas was consented before there was comprehensive knowledge about the Region's water resources. This has resulted in the surface water resource in some areas becoming over-allocated.



2. Taking water at some times causes issues

Groundwater is all the water contained below the earth's surface. It comes from rainfall and river water that makes its way through the ground and accumulates in underground aquifers. An aquifer is like a sponge, where water moves slowly through layers of gravel, sand and hard rock. Generally there is more groundwater available than is currently being used in the Region. However, abstracting groundwater can impact wetlands, rivers, lakes. It can also affect other users' ability to get groundwater, or in extreme cases, has potential to draw salt water from the sea into freshwater aquifers.



WHAT WE DO

Dealing with the competing demands for water and balancing them with the needs of the environment is a high priority for Horizons. We have put a detailed water allocation framework in place, setting out core allocation limits for the surface and groundwater resources, and minimum flows for surface water takes. The framework is implemented through the consenting process.

We also work with consent holders to reduce the impact of water use in over-allocated catchments by promoting water use efficiency, compliance with consent conditions and monitoring actual water use through a water metering programme.

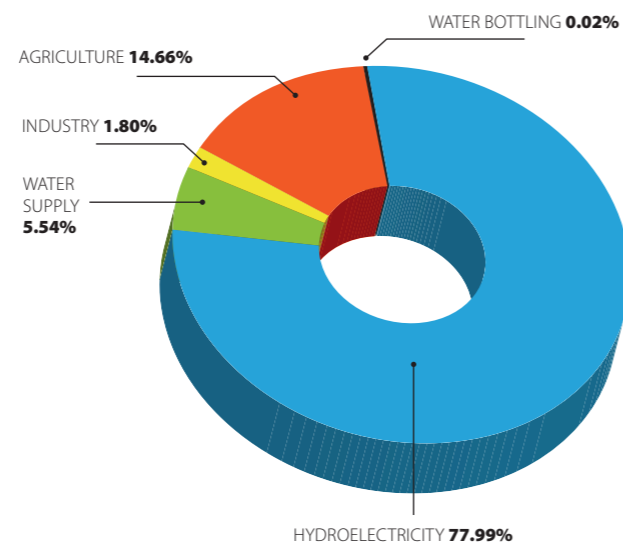
WATER TAKES AND WATER BOTTLING

Water take consents exist for a number of reasons in our Region. One of these is for bottling and Horizons has eight of this type granted currently. Five come from surface water and three from ground water supply. Of total water allocation in the Region, water bottling claims 0.02 per cent at 1,478.4m³ a day, which is the equivalent to one small irrigation take. Other uses include hydroelectricity and agriculture.

Like any other resource consent, there are a number of conditions which control the way in which the consent can operate including minimum flow conditions where appropriate, limits on daily rates and volumes, and water use measurement.

This is to ensure there are no adverse environmental affects on the relevant waterway and aquatic life. These consents are assessed in relation to our water allocation framework prior to granting and are subject to the same test as any other application to take water for any other purpose. They are also regularly re-visited to ensure the conditions remain relevant.

Water allocation for the Region is as follows:



WATER QUALITY SCIENCE

The main way river health can be measured is through monitoring ecosystem health and the recreational suitability of the rivers. To better understand and manage our freshwater systems, Horizons collects information about climate such as air temperature, rainfall, river flows and groundwater levels to understand the effects of changing climatic conditions and the impacts of water use on our freshwater systems.

We monitor water both above and below ground to better understand the changes that water undergoes as part of its natural cycle and the impacts that people have on it. Horizons is also mindful of considering cultural values of our waterways, and as much as possibly, maintaining or restoring their mana.

WHAT WE DO

Horizons collects water quality samples each month from rivers and streams around the Region and test for a wide range of parameters including sediment, nutrients and bacteria. Groundwater and coastal lakes are sampled every three months to assess seasonal changes. Increasingly, more of this information is collected on a continuous basis, with permanent sensors automatically collecting data at regular intervals and sending it via our telemetry system back to Horizons. Data is processed by our catchment data analysts and made available for both reporting and research purposes.

We also monitor ecosystem health by observing macroinvertebrates during summer. Algae (periphyton) is monitored monthly. Cyanobacteria is monitored at the same time, as well as during summer at over 80 popular swim spots across

the Region. When the results from water quality, ecosystem health and recreational suitability are combined they tell us about the overall health of our waterways from the mountains to the sea.

DRINKING WATER

In partnership with our territorial authorities and the MidCentral District Health Board (MCDHB) drinking water assessors, Horizons recently commissioned a stocktake of water supplies in the Horizons Region to prioritise actions for minimising the risk of contamination.

The recent inquiry into the contamination of Havelock North public water supply highlighted areas for improvement in the management of public water supplies throughout the country. While we are unaware of any incidents in our Region, there is no room for complacency.

It's critical that our communities have safe drinking water supplies and that is why operational and technical staff across councils are working together to ensure public drinking water supplies in the Region are secure, and that appropriate monitoring and regulation is in place to provide assurance to the public.

To ensure this, it is likely that a Memorandum of Understanding between MCDHB, Horizons and city and district councils to further define roles, responsibilities and communication pathways will be developed.



RECREATIONAL USE

Recreational suitability refers to how safe and pleasant rivers are for swimming and playing in. High sediment loads and the presence of pathogens from human or animal inputs can make us sick. This includes bacteria from sewage treatment plant discharges and stormwater, leaking septic tanks, animal effluent via run-off from farmland, and direct access of stock into waterways.

Recreational suitability can also be impacted by excessive growth of periphyton (algae) and cyanobacteria on the river bed. While algae and cyanobacteria occur naturally in our waterways, at certain times the rocks become green and slimy making swimming unpleasant. Cyanobacteria on the rocks can also sometimes release toxins that can make you and your dog sick.

WHAT WE DO

Swim spot monitoring

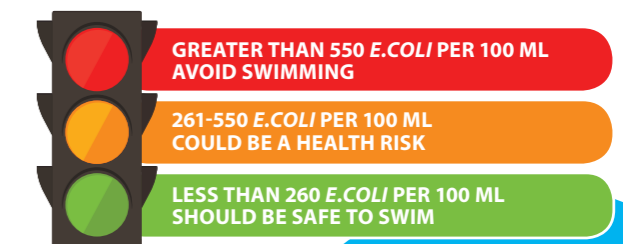
Horizons has been monitoring popular swim spots in our Region for over 10 years. We recognise the importance of our communities being well informed, and that is why every week during summer we monitor the health of over 80 swim spots to provide reliable information on the potential health risks in our waterways.

Our monitoring programme runs from 1 November and continues until the end of April every year. The results of samples tested by an independent and accredited laboratory are displayed using the traffic light system on the Safe Swim Spots

page on our website or at lawa.org.nz via their 'Can I swim here?' section.

What is the traffic light system?

Each site is graded according to a handy traffic light system that is part of the Ministry of Health and Ministry for the Environment guidelines. The system provides guidance to councils and District Health Boards on how they should act when certain levels of indicator bacteria or algae are detected. For our lakes and rivers:



If a site falls into the red category, signs may be erected and information is provided to the public that the site is considered unsuitable for recreational use.

LAWA

Ensuring everyone has access to the information Horizons and other regional councils collects is key. Land, Air, Water Aotearoa (LAWA) is New Zealand's website for environmental information, providing open access to regional council monitoring data, along with information about how this data is collected, analysed and reported.

The LAWA website www.lawa.org.nz also has information about water quantity, and a new 'Can I Swim Here?' module which reports our summer swim spot monitoring data.