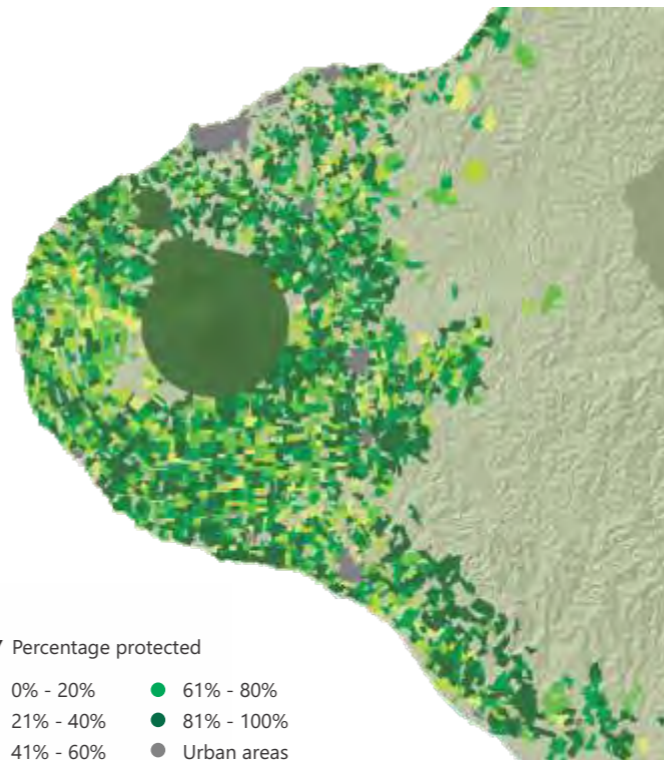


Huge investment in improvements

- The region's communities, industries and farmers make major investments in measures that protect and enhance the environment – principally our rivers and streams.
- Farmers are voluntarily investing an enormous amount of money and time to ensure waterways on the Taranaki ring plain are protected with fences and vegetation. The target is to complete the Riparian Management Programme by 2020, with an estimated \$80 million spent on plants, fencing and contractors since the project began.
- The riparian programme has no equal in New Zealand and is transforming the region's landscape as well as protecting and enhancing waterway quality. The programme covers almost 14,500 km of streambank mainly on the ring plain with 12,209 km (84.4%) now fenced, 7,691 km (69.5%) protected with riparian vegetation and includes 99.5% of Taranaki's dairy farmers. Over 4.3m plants have been supplied over the life of the programme.
- The Taranaki Regional Council has a comprehensive programme to monitor all resource consent holders, which consistently reveals a generally high rate of compliance with consent conditions across all sectors.
- Non-compliance with consent conditions, and pollution complaints are thoroughly investigated by Council and appropriate enforcement action is taken.



(which is naturally high in Taranaki). The ecological health of our rivers sits in the middle of the range for equivalent sites elsewhere.

- No lowland pastoral sites in Taranaki were showing significant deterioration in any of the measures. Nationwide, between 5% and 31% (depending on the measure) of equivalent sites were showing deterioration.

Progress continues on freshwater management

The Taranaki Regional Council is continually adapting and refining its approach to freshwater management to ensure further protection and enhancement of Taranaki's waterways.

Good progress is being made through the Council's current programmes, policies, strategies and rules to achieve these objectives — regional initiatives such as the switch to land-based treatment and disposal of dairy effluent, and completion of Taranaki's Riparian Management Programme. A new Regional Freshwater and Land Management Plan for Taranaki, however, is a number of years away, as the Council awaits future Government decisions and initiatives.

A national comparison

The Ministry for the Environment and others note that freshwater in New Zealand is both abundant and clean by international standards.

A recent NIWA study provides a picture of water quality in rivers across New Zealand up to 2013. The study puts the Council's knowledge of water quality in Taranaki into a national context. The report found:

- Across New Zealand, water quality is related to land use. Generally, water quality is best in natural catchments and the worst in urban catchments.
- Nationwide, trends in the levels of nutrients, bacteria and stream health in rivers in pastoral areas were showing marked improvement overall for most measures at a large proportion of sites, and were greater than trends showing deterioration.
- We can note that overall, water quality at pastoral sites in Taranaki was better than at equivalent national sites on measures of clarity and forms of nitrogen, and relatively poorer only for dissolved phosphorus

Quality systems and more information

- Well-qualified, experienced scientific and technical staff deliver the Council's environmental monitoring programmes.
- The Council carries out water quality analysis in its own laboratory with International Accreditation New Zealand (IANZ) accreditation.
- The Council's ecological health monitoring of rivers is subject to both internal and external Quality Assurance checks.
- The Council's environmental monitoring programmes are designed to accepted protocols and are subjected to external peer review and audit, to check that the right things are being measured in the right places and in the right ways at the right time.
- The full reports are available on the Council's website www.trc.govt.nz or can be requested from:

Taranaki Regional Council
47 Cloten Rd, Private Bag 713,
Stratford 4352
Ph: 06 765 7127 Email: info@trc.govt.nz



The mauri and health of our rivers and streams is highly valued and is vital to the well-being, livelihood and lifestyle of everyone in the Taranaki region.

There is plenty of interest and public discussion around the water quality in our rivers and streams. And so, as the manager of the freshwater resource, the Taranaki Regional Council closely monitors waterway quality to

ensure that the discussion, as well as the Council's own decision making, is well informed by fact and science.

The Taranaki Regional Council has been closely monitoring water quality across Taranaki for two decades. The overall picture that has emerged in recent years is that Taranaki's freshwater quality is generally very good by national and international standards and comparisons. And the quality of Taranaki's waterways compares well with other catchments of a similar nature around New Zealand.

The latest trends for 20 years of monitoring ecological health and the physical and chemical state of our rivers and streams show most measures are improving or not changing significantly, and are again the best since our measurements began.

This is no accident. The Taranaki community continues to invest heavily in measures that protect and enhance the region's waterways. The benefits are now becoming more apparent and the Council remains firmly focused on working with the Taranaki community to continue improvement in the region.

I invite you to read this report on the most recent findings of Council's extensive water quality monitoring programmes. The programmes are designed to accepted protocols and subjected to external review and audit to ensure their scientific integrity.

This report card is based on detailed scientific reports available on the Council website, www.trc.govt.nz.

David MacLeod
Chairman, Taranaki Regional Council

Working with people | caring for Taranaki

Across the region, ecological health of waterways in more and more rivers is the best ever recorded since monitoring began.

Excluding the two sites contaminated mainly by birds, 94% of all samples from freshwater recreational sites met the Ministry for the Environment bathing guidelines.

Monitoring shows that, in general, water quality across the region is either improving or not showing any significant change.

Water quality in the region is 'fit for purpose' by almost all measures within the compulsory national criteria at almost all sites most of the time.

In 2015/16, 99% of samples were within the Ministry for the Environment bathing guidelines for coastal beaches.

Of the 14,500 km of ringplain streambank, 12,209 km (84.4%) is fenced and 7,691 km (69.5%) protected with riparian vegetation.

When people are likely to be swimming, the Waitara River almost always meets the health guidelines for safe swimming.

The state and trends of our rivers compare well with equivalent catchments elsewhere.

No sites in Taranaki were showing significant increases in any forms of nitrogen.

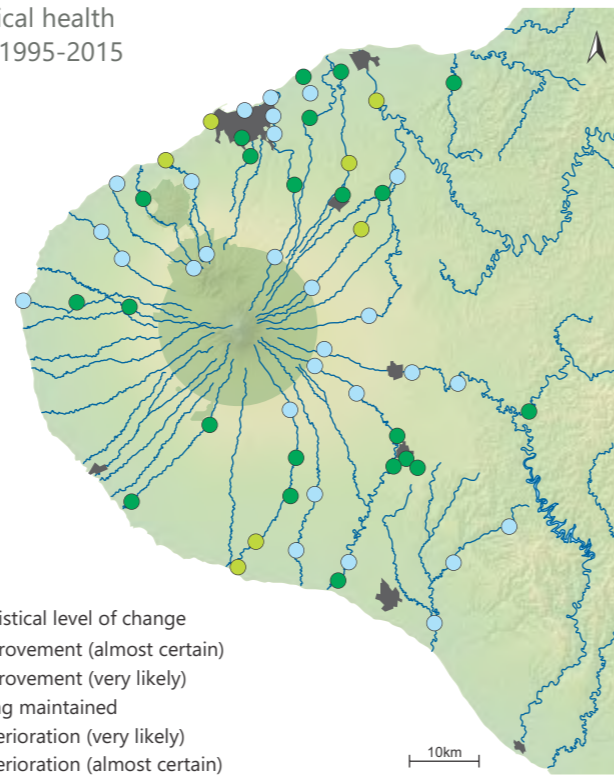


River ecology

Across the region, ecological health of waterways is improving or not showing any significant change, and in more and more rivers is the best ever recorded (since monitoring began in 1995).

- It is very important that our rivers and streams support good ecological health. We use an ecological index based on the macroinvertebrate communities (tiny animals including insects, crustaceans, molluscs, worms and leeches) found in waterways to measure ecological health.
- The Council has a clear picture of ecological health across the whole region. Since 1995, it has analysed thousands of samples from 57 key sites on 25 rivers and streams. The surveys are done during spells of settled low flows and fine weather, in spring and again in summer, when stream communities would be under the greatest stress.
- The trends in the latest results (for the 20 years to June 2015) are the best ever recorded. They show improving stream health at 44 (77% of total) sites – an increase from 38 six years earlier. There are indications of decline at eight sites – the lowest since 2009. So we have more than five times as many sites with indications of improvement as there are deteriorating.
- A more rigorous statistical analysis reveals an ‘almost certain’ trend of a significant ecological improvement at 22 sites (up from 15 three years earlier); a ‘very likely’ positive trend at seven sites; and no sites showed a significant decline.

Ecological health trends 1995-2015



KEY Statistical level of change

- Improvement (almost certain)
- Improvement (very likely)
- Being maintained
- Deterioration (very likely)
- Deterioration (almost certain)



Swimming in Taranaki

In Taranaki most people swim at the beach rather than in rivers. The Council monitors the quality of seawater at popular coastal beaches every summer. Results are consistently better than the national average. In 2015/16, 99% of samples were within MfE guidelines. Opunake beach had the best quality. Ohawe beach showed the highest level of bacteria, but the median was still well within the guidelines.

Monitoring shows that water quality at popular river bathing spots continues to be better than a decade ago. Undeniably, it is far better than in the 1960s and 1970s, when waterways were routinely contaminated with partially treated municipal sewage and/or raw, untreated dairy effluent. Today, wildfowl and gulls are the major source of contamination at the few sites that exceed health risk guidelines.

- The Council monitors freshwater quality at popular recreational spots every summer (where and when people are likely to swim), with slight variations in locations over a three-year cycle. Bacteria levels are measured at most sites, and cyanobacteria (blue-green algae) levels at a few sites.
- In summer 2015/16, 72% of all samples met the Ministry for the Environment recreational water quality guidelines for bathing water.
- Wildfowl and gulls are the major source of contamination at the two sites found to routinely exceed the guidelines, near the mouths of the Waiwhakaiho River and Te Henui Stream. Excluding the two sites contaminated by birds, 94% of all samples met the MfE bathing guidelines. Further upstream, on the outskirts of New Plymouth, the Waiwhakaiho River met the swimming guidelines in 100% of the samples.

People expect to be able to swim safely in our lakes, rivers and coast and the Taranaki Regional Council monitors popular swimming spots each summer. Monitoring shows that overall the health risk from swimming in most places, most of the time, is very low and well within national guidelines.

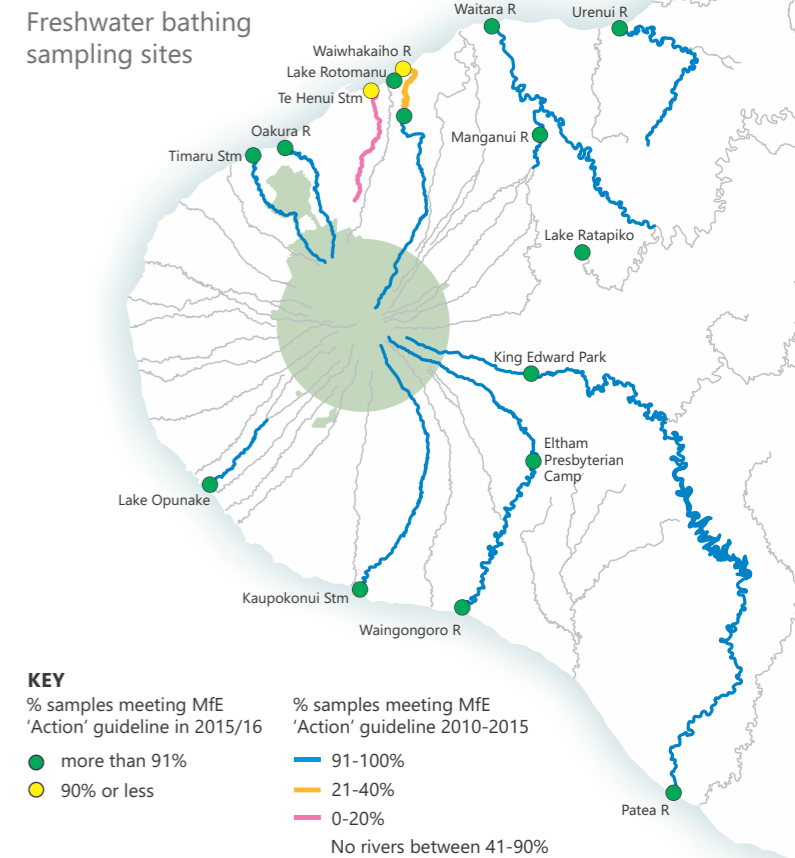
The map shows how often our favourite freshwater swimming spots meet the guidelines. While the map shows water quality in catchments monitored for recreational guidelines, other Council investigations indicate water quality is similar in waterways across the region.

All natural water bodies contain bugs (pathogens) that can make us sick. And the more bugs, the greater the health risk. There is no particular level of pathogens where a ‘swimmable’ river becomes ‘unswimmable’, or ‘safe’ becomes ‘unsafe’. The health risk is a sliding scale. Water bodies in any setting anywhere will also get occasional spikes.

Regional and district councils use national (Health and Environment Ministries) guidelines to inform the public of the health risk to swimmers. The guidelines are highly precautionary and based on the health risks for the most vulnerable in the community. Some rivers described as ‘unacceptable for bathing’ in NZ would be ‘good – acceptable for bathing’ under European standards.

It is not possible to maintain micro-organisms at very low levels all of the time in all water bodies, but the investment by local communities in

Freshwater bathing sampling sites



KEY

- % samples meeting MfE ‘Action’ guideline in 2015/16
- % samples meeting MfE ‘Action’ guideline 2010-2015
- more than 91%
- 90% or less
- 91-100%
- 21-40%
- 0-20%
- No rivers between 41-90%

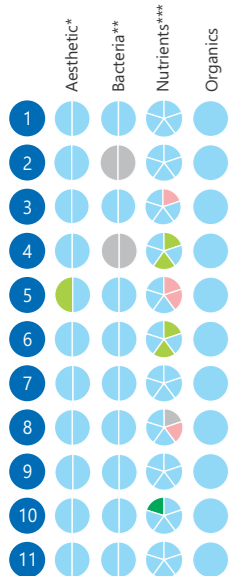
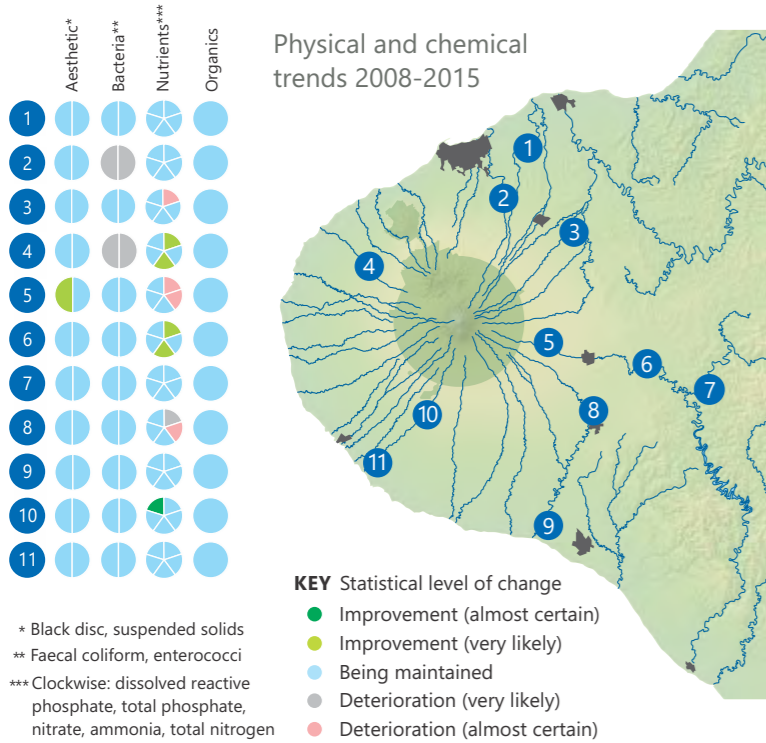
upgraded sewage collection and treatment systems, and by farmers fencing and planting streambanks to control stock access and reduce pasture runoff go a long way to improving water quality in Taranaki.

During heavy rain and high flows many rivers can be dangerous and may contain debris, sediment and pathogens in runoff from homes, streets and farms or overflows from town and residential sewerage systems. To decide where and when it’s safe to swim, you should check the Taranaki Regional Council website (www.trc.govt.nz) and use common sense based on what you can see from the riverbank. As a precautionary approach, people should generally avoid swimming in rivers and lakes for three days after heavy rainfall.

Waitara River

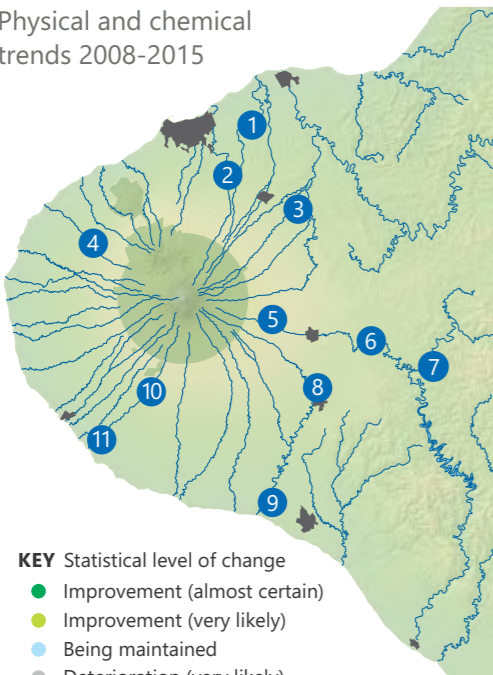
The Waitara River is a popular spot for locals wanting to cool down during the hot summer months. The Council’s water quality monitoring at the popular town wharf showed:

- Over the past six summers (2010/11 to 2015/16) 95% of samples met the MfE recreational guidelines.
- This indicates that when conditions are appealing and people are likely to be swimming, the Waitara River almost always meets the health guidelines for safe swimming – a big improvement from a couple of generations ago.



* Black disc, suspended solids
** Faecal coliform, enterococci
*** Clockwise: dissolved reactive phosphate, total phosphate, nitrate, ammonia, total nitrogen

Physical and chemical trends 2008-2015



KEY Statistical level of change

- Improvement (almost certain)
- Improvement (very likely)
- Being maintained
- Deterioration (very likely)
- Deterioration (almost certain)

Physical and chemical trends

Monitoring shows that, in general, water quality across the region is improving or not showing any significant change. Recent improvement is strengthening, with scope for further improvement.

- Physical and chemical measurements are used to assess pressures on the health of rivers. Samples are collected year round, regardless of flow and weather conditions, and analysed for a wide range of parameters.
- Latest results are for the 2014/15 year, when 11 sites were sampled monthly for up to 22 parameters.
- Measurements of organic contamination and aesthetic quality show either improvement or no change.
- Over the 20-year period, across all three nitrogen types (nitrate, ammonia, and total nitrogen), none is showing a current increase at any of the 11 monitored sites.
- There has been a very pronounced turn-around for phosphate levels. 77% of the indicators of phosphate levels are now steady (68%) or improving (9%), reversing a previous trend of deterioration (40% deteriorating in 2003-2009).

Does our water meet national standards?

The Government has imposed compulsory measures and grades which apply to various uses of water, through the National Policy Statement (NPS) for Fresh Water Management. Grades ‘A’, ‘B’ and ‘C’ indicate quality from best to acceptable; ‘D’ is unacceptable and improvement in water quality is required.

Comparison of the region’s water quality data with the national standards across the 11 separate monitoring sites, shows that for 55 measures: 39 (71%) are in the ‘A’ category, 13 (24%) are ‘B’ and 2 are ‘C’. Only one is below the national bottom line for acceptable water quality (‘D’). By these standards, water quality in the region is ‘fit for purpose’ by almost all measures within the compulsory national criteria at almost all sites most of the time.

Comparison with Ministry for the Environment’s gradings for water uses (2012-2015)

Use	Ecosystem health				Secondary recreation
	Nitrate-N Limit on toxicity		Ammoniacal-N Limit on toxicity		E.coli Public health
Measure and purpose	Typical state (median)	Worst state (95th percentile)	Typical state (median)	Worst state (maximum)	Typical state (median)
1 Mangaoraka Stream	A	A	A	A	D
2 Waiwhakaiho River	A	A	A	A	A
3 Maketawa Stream	A	A	A	A	B
4 Stony River	A	A	A	A	A
5 Patea River u/s	A	A	A	A	A
6 Patea River d/s	A	A	B	B	B
7 Mangaehu Stream	A	A	A	A	A
8 Waingongoro River u/s	B	A	A	C	B
9 Waingongoro River d/s	B	B	B	B	A
10 Ponehu Stream u/s	A	A	A	A	A
11 Ponehu Stream d/s	B	B	A	B	C

KEY NPS grade A B C D