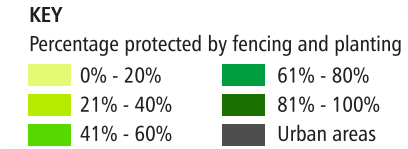


How improvements happen

- The region's communities, industries and farmers continue to invest significantly in measures that protect and enhance the environment – principally rivers and streams. A report by Business and Economic Research Ltd in 2008 conservatively estimated this investment at \$85 million a year.
- Most recently, completion of a \$10.4 million project by the South Taranaki District Council to divert Eltham wastewater to the Hawera treatment station has removed the last point-source discharge causing substantial freshwater pollution in Taranaki. Monitoring shows a positive impact on the health of the Waingongoro River.
- 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 Riparian Management Programme will be completed within the decade, with an estimated \$80 million spent on plants, fencing and contractors since the project began. This programme has no equal in New Zealand and is transforming the region's landscape as well as protecting and enhancing waterway quality. To date, farmers have completed 2,882km of new fencing and 1,463km of new riparian planting. In total, 76% of stream banks are fenced and 63% of streambanks are vegetated.

Riparian plans and percentage of protection



- 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.

Where to from here?

- The Taranaki Regional Council is now fully engaged in a review of its Regional Fresh Water Plan for Taranaki – the region's freshwater management rulebook.
- The Council has signalled that in future, re-using treated dairy effluent on pastures may normally be the required option, rather than discharge into waterways, as is sometimes allowed now. The costs and benefits are currently being discussed with interested parties.
- Also up for discussion are options to ensure the timely completion of the Riparian Management Programme.
- The review of the Regional Fresh Water Plan will continue into 2014, when formal public consultation will take place.

Quality systems and more information

- The Taranaki Regional Council's environmental monitoring programmes are carried out and overseen by well-qualified, experienced scientific and technical staff.
- The Taranaki Regional Council has its own laboratory with International Accreditation New Zealand (IANZ) accreditation.
- Identification and analysis of stream life to gauge the ecological health of rivers is subject to both internal and external Quality Assurance checks.
- The designs of the Taranaki Regional Council's environmental monitoring programmes conform with accepted protocols and they have been 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.
- 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



How does Taranaki compare?

- For almost all measures, Taranaki's waterways are as good as or better than comparable waterways in other regions. The Council's aim is for the region to achieve further improvement.
- As noted by the Ministry for the Environment and others, freshwater in New Zealand is both abundant and clean by international standards.
- In general, the poorest water quality in New Zealand is found in lowland urban catchments. Quality is better in lowland rural catchments, and the best quality is found in upland forested catchments. Taranaki waterways are consistent with the national pattern.

How healthy are our rivers and streams?



We're pleased to bring you an update on the quality of Taranaki's waterways.

Our rivers and streams are vital to the well-being, livelihood and lifestyle of everyone in the region. As the manager of the freshwater resource, the Taranaki Regional Council closely monitors waterway quality to ensure that fact and science can feed into public discussion as well as into the Council's own decision making.

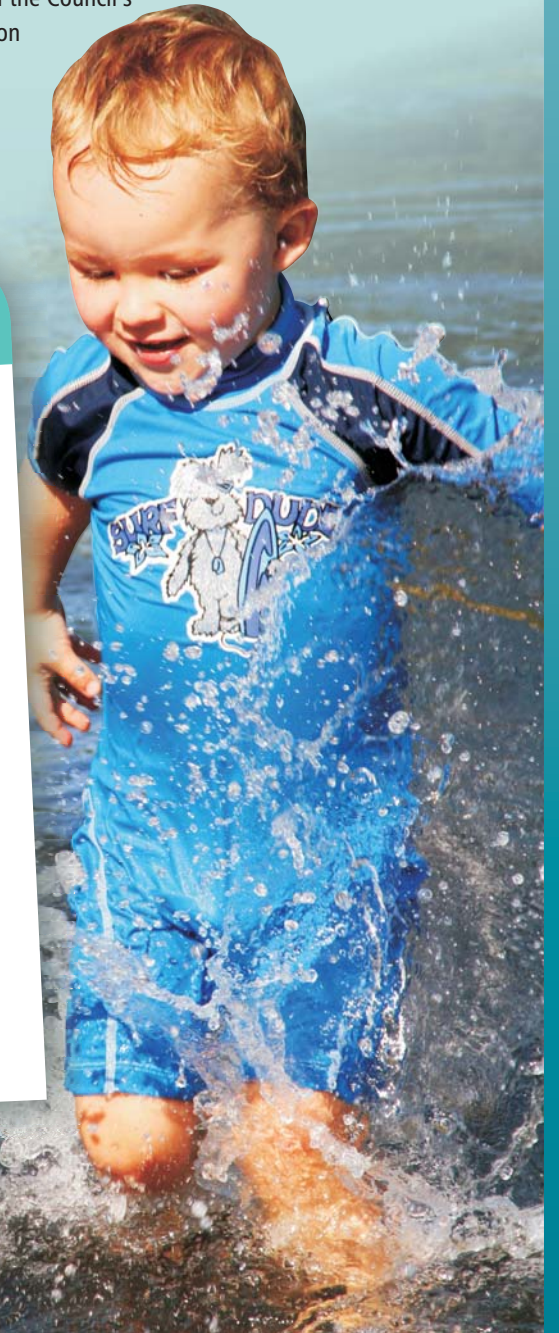


This update follows a report card issued last year and is part of our process of reviewing the *Regional Fresh Water Plan for Taranaki*. It sets out the most recent findings of the Council's extensive freshwater monitoring programmes. The information here is based on detailed scientific reports available on the Council website, www.trc.govt.nz.

Basil Chamberlain
Chief Executive, Taranaki Regional Council

Taranaki waterways – update 2013

- As we've found and reported previously, scientific monitoring by the Taranaki Regional Council shows that in overview, the region's rivers and streams are continuing to do relatively well. Water quality measures are either stable or improving.
- Our monitoring record spans 17 years and the most recent results have been the best yet in terms of trends in the ecological health and physical and chemical state of our rivers and streams.
- NIWA has provided Taranaki guideline limits for different water uses. Water quality is suitable for most purposes almost all of the time.
- 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 apparent.
- There is still room for improvement though. The best ways to achieve this are now firmly in focus with a review of the region's freshwater management rulebook in full swing.

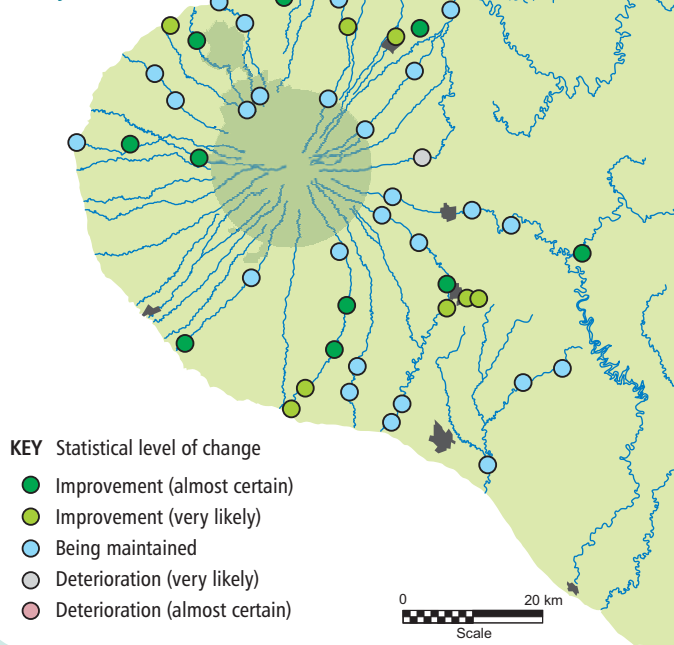


River ecology

- Ecological health is regarded as the primary measure of freshwater quality, using an index based on macroinvertebrate communities (tiny animals including insects, crustaceans, molluscs, worms and leeches) found in waterways.
- To monitor the state of the environment, the Council has analysed thousands of samples from 57 key sites, on 25 rivers and streams, since 1995, so it has a clear picture of trends across the whole region.
- The trends in the latest results (for the 17 years to 2011-2012) were the best ever recorded. They showed improving stream health at 42 sites – an increase from 38 three years earlier. There were indications of decline at 10 sites – four fewer than three years ago.
- A more detailed statistical analysis reveals an ‘almost certain’ positive trend at 15 sites, and a ‘very likely’ positive trend at 10 sites. Only one site was found to still show a decline after this analysis.

The evidence is consistently clear that across the region as a whole, the ecological health of waterways is stable or improving.

Ecological health 2011/12 (17-year trend)



- KEY Statistical level of change
- Improvement (almost certain)
 - Improvement (very likely)
 - Being maintained
 - Deterioration (very likely)
 - Deterioration (almost certain)



Waiwhakaito River

Algae

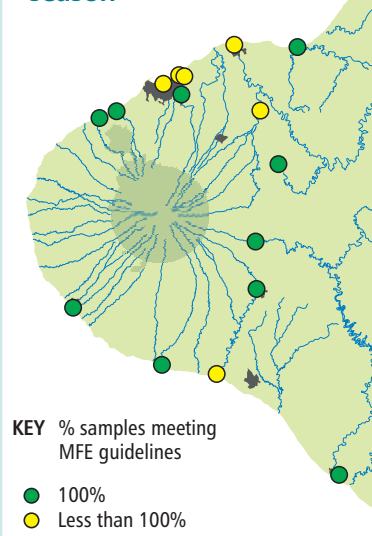
- Excessive algae (periphyton) has adverse effects on aquatic habitats and aesthetics. Council monitoring of long strands (filaments) and mats of periphyton at eight sites is reported annually, and a more detailed four-yearly report covers 21 sites.
- The latest annual results, from the 2011-2012 year, show the extent of algae mats was stable at five sites and while they increased at the other three, they were still mostly within Ministry for the Environment guidelines. The extent of algae strands has remained stable at all sites.
- Last year's report card noted that most of the catchments met national guidelines on most of the surveys, and more frequently than in the past.

The Council's monitoring over 17 years shows no obvious connection between nutrient levels and the extent of algae growth.

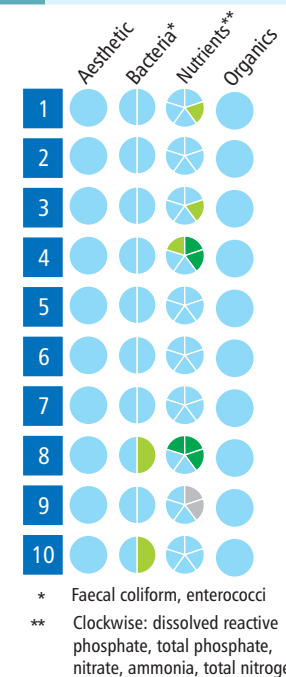
Popular swimming spots

- The Council continues to monitor freshwater quality at popular recreational spots every summer, 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 small number of sites.
- In summer 2012-2013, 86% of all samples (207) were below the Ministry for the Environment 'action' guideline for bathing water.
- Most (24) of the 29 samples that exceeded the guideline were from just two sites – Waiwhakaito River near Lake Rotomanu and Te Henui Stream mouth – where wildfowl and gulls are the major source of contamination and contamination levels upstream are much lower.
- Compliance at the other 14 sites sampled was above 97%, with samples at 10 sites meeting the guidelines 100% of the time.

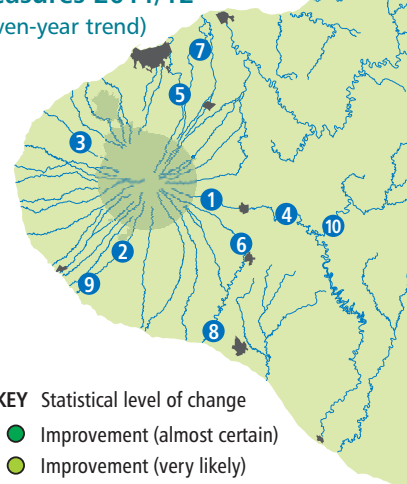
Freshwater bathing sites 2012/13 summer bathing season



- KEY % samples meeting MFE guidelines
- 100%
 - Less than 100%



Physical and chemical measures 2011/12 (seven-year trend)



- KEY Statistical level of change
- Improvement (almost certain)
 - Improvement (very likely)
 - Being maintained
 - Deterioration (very likely)
 - Deterioration (almost certain)

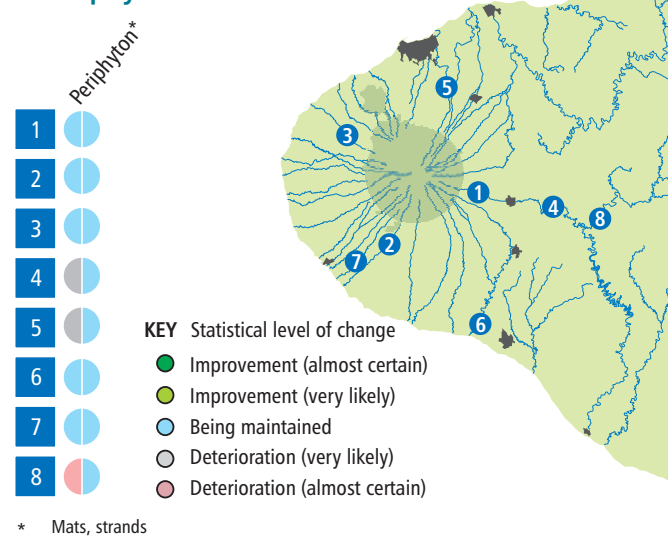
* Faecal coliform, enterococci
** Clockwise: dissolved reactive phosphate, total phosphate, nitrate, ammonia, total nitrogen

Physical and chemical state

- Physical and chemical measurements are used to assess pressures on the health of rivers. Parameters are grouped under these headings: nutrients, bacteria, organics and aesthetics.
- Latest results are for the 2011-2012 year, when 10 sites were sampled monthly for up to 22 parameters. These results, too, were among the best ever recorded.
- Over the 17-year period most of the measured parameters were stable; the other trends were either improving or deteriorating. For the more recent seven-year period (as shown) almost all were either stable or improving. In particular, nitrogen levels are now stable and phosphate levels are reducing (improving).

The evidence continues to show that, in general, water quality is stable. And when compared with NIWA-recommended guideline limits, the water is suitable for a wide range of uses, almost all of the time. There are also recent signs of improvement and scope for further improvement.

Periphyton trends 1995-2012



- KEY Statistical level of change
- Improvement (almost certain)
 - Improvement (very likely)
 - Being maintained
 - Deterioration (very likely)
 - Deterioration (almost certain)

* Mats, strands

Does our water meet the guidelines?

The table shows water quality data from each site over the past seven years compared with guideline limits for particular uses of water.

Based on careful research, the National Institute of Water and Atmospheric Research (NIWA) has provided guideline limits used in this analysis.

Details of the actual guidelines, how they are applied, and the reference documents, are available from the Council upon request.

- KEY
- All results meet usage guidelines
 - Majority of results meet usage guidelines
 - Minority of results meet usage guidelines
 - No results meet usage guidelines
 - * Dissolved reactive phosphate

Usage	Aesthetics		Avoiding excessive algae	Stock water	Aquatic ecosystems			Irrigation		Drinking water
	Clarity	Organics	DRP*	Bacteria	Oxygen saturation	Nitrate	Ammonium	Total nitrogen	Total phosphate	Nitrate
1	●	●	●	●	●	●	●	●	●	●
2	●	●	●	●	●	●	●	●	●	●
3	●	●	●	●	●	●	●	●	●	●
4	●	●	●	●	●	●	●	●	●	●
5	●	●	●	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●	●	●	●
7	●	●	●	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●	●	●	●
9	●	●	●	●	●	●	●	●	●	●
10	●	●	●	●	●	●	●	●	●	●



The Taranaki Regional Council also monitors the quality of seawater at popular coastal beaches every summer. Results are consistently better than the national average. In 2012-2013, 95% of samples were within Ministry for the Environment guidelines, up from 94% the previous year.

The monitoring data continues to show that water quality at popular river bathing spots is 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.