

Recreational water quality Annual monitoring summary

December 2014 to March 2015



Key points

Of the swimming spots monitored weekly during the 2014/15 bathing season, river water quality was suitable for swimming on all sampling occasions at Lake Hawea, Lake Wakatipu, Lake Hayes, Lake Waiholo, Clutha Lagoon at Balclutha and the Manuherikia River at Shaky Bridge.

Of the coastal sites monitored weekly the Waikouaiti Estuary, Kaka Point, Otokia Creek and Hampden beach were suitable for swimming on all sampling occasions. Water quality was mostly unsuitable for swimming during and shortly after rain.

How can you tell whether or not it's safe to swim?

ORC uses the national microbiological water quality guidelines to let people know whether water is suitable for swimming, surfing, and other recreational activities.

Table 1

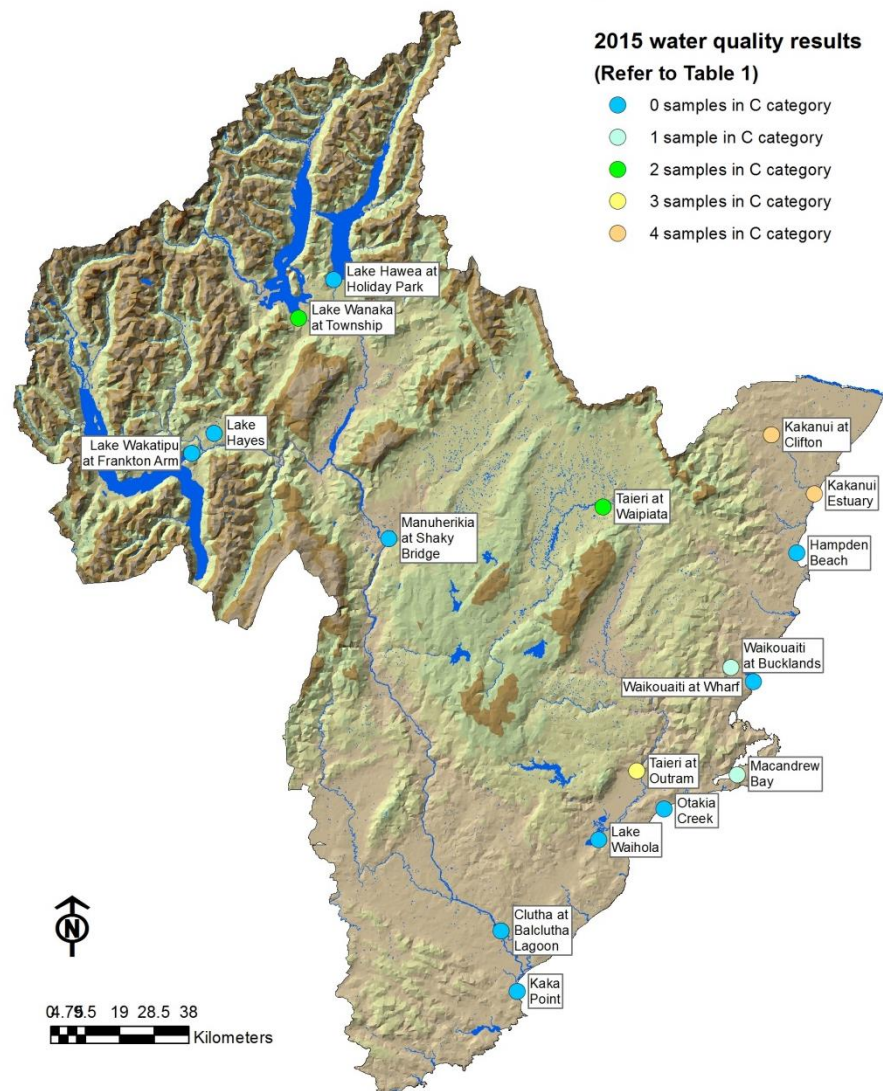
	Freshwater (E.coli /100ml)	Marine water (Enterococci /100ml)
A	Result less than 260	Result less than 140
B	Result between 261 and 550	Result between 141 and 280
C	Result more than 550	Two consecutive samples more than 280

- **Green** for go – sampling indicates a low health risk.
- **Amber** for caution – sampling indicates the health risk has increased, but is still within an acceptable range.
- **Red** for stop – sampling indicates that the water poses an unacceptable health risk.

What happened in 2014/15

ORC monitors the water quality at popular marine and freshwater bathing sites each summer between December and March.

Water samples were taken once a week during the 2014-15 summer. A total of 191 samples were taken from the freshwater sites and 108 from coastal sites. The samples were tested for the concentration of indicator bacteria (*Escherichia coli* in freshwater and *Enterococci* in salty water). These bacteria, while generally not harmful in themselves, indicate the presence of faecal material and disease-causing organisms.



Otago recreational water quality monitoring 2014/2013. The map shows how many times each bathing site exceeded the 'action' (red) level of the national microbiological water quality guidelines for coastal and freshwater recreational areas.

Coastal waters

Waikouaiti Estuary, Kaka Point, Otokia Creek and Hampden beach did not exceed the 'action' guideline of the national recreational water quality guidelines for indicator bacteria (280 enterococci/100 mL). Otago Harbour (Macandrew Bay) had one exceedance and Kakanui estuary had four.

Of the five occasions on which marine sites exceeded the 'action' level, only one result coincided with at least 10 mm of rainfall in the three days before sampling. Elevated bacteria concentrations unrelated to rainfall were found at Kakanui Estuary (three times) and Macandrew Bay (once). Compared to last summer all the coastal monitoring sites were more compliant other than Kakanui Estuary.

Rivers

Lakes Hawea, Wakatipu, Hayes and Waiholo as well as the Clutha at Balclutha Lagoon and the Manuherikia at Shaky Bridge did not exceed the 'action' level of the national recreational water quality guidelines for indicator bacteria (550 *E. coli*/100 mL). Of the other sites the following exceedences occurred: The Waikouaiti at Bucklands Crossing (once), the Taieri at Waipiata and Lake Wanaka (twice), the Taieri at Outram (three times) and the Kakanui at Clifton (four times).

Of the 13 occasions that freshwater sites exceeded the 'action' level, 5 samples were taken when at least 10 mm of rainfall had fallen in the three days before sampling, a further four samples were taken when over 7mm of rainfall had fallen in the three days before sampling. Rainfall causes bacteria to be washed into rivers and streams via urban and agricultural runoff, and also stirs up bacteria attached to streambed sediment. There were five sites where less than 5mm of rain had fallen in the three days prior to sampling. Three of these were taken from the Kakanui at Clifton (where upstream gull colonies are known to cause elevated bacteria concentrations) and Lake Wanaka had one unexplained elevated result. Compared to last summer, all sites were more compliant other than the Taieri at Outram (in 2014 it achieved 94% compliance, in 2015 it achieved 82% compliance). Of special mention is the improvement in compliance for the Taieri at Waipiata site, in 2014 it achieved 42% compliance, but this year it achieved 88% compliance. Lake Wanaka (at township), Lake Hawea and Lake Wakatipu were not sampled in 2013.

Why we monitor water quality

Micro-organisms such as viruses, bacteria, and protozoa, are present in all natural water bodies. Water contaminated by faecal micro-organisms may pose a human health hazard, particularly if swallowed. Anybody can be affected, but small children, the elderly, and people already weakened by illness or fatigue are more likely to become ill from exposure to contaminated water.

The most common illnesses arising from exposure to contaminated water occur in the gastric-intestinal system, leading to symptoms like diarrhoea or vomiting, and infections of the eye, ear, nose, and throat. However, there are other potentially more harmful diseases such as giardiasis, cryptosporidiosis, campylobacteriosis, and salmonellosis. Hepatitis A can be contracted from contaminants in the water and can lead to long-term health problems. Testing the water regularly for indicator bacteria and posting results on the ORC website helps the public make informed decisions about where it is safe to go swimming.

Toxic algae

Although swimming spots in rivers were mostly safe from high levels of bacteria, some Otago rivers are affected during summer by widespread toxic algae (cyanobacteria) growth. Signs warning of the potential presence of cyanobacteria were put up along the Silver Stream, Kakanui River, Shag River, Waianakarua River and Manuherikia River.

What is Otago Regional Council doing?

Together with the city and public health agencies, Otago Regional Council reports or advises on the suitability of water quality for recreation at eight freshwater sites and five coastal sites around the region.

Water is sampled weekly during the 'Otago bathing season' (from 1 December to the end of March) and the results are assessed against the national recreational water quality guidelines.

This helps the public make informed decisions about where it is safe to go swimming or participate in other forms of contact recreation (from a public health perspective).

What can you do?

- Avoid swimming during and shortly after rain
- Don't let your dog foul near rivers or beaches
- Keep stock, especially cattle and deer, out of rivers and streams to prevent them fouling the water.

More Information

If you would like to know more about recreational water quality, monitoring visit our website at www.orc.govt.nz



Hampden Beach. This site was suitable for swimming on all sampling occasions last summer.