



Recreational water quality

Annual Monitoring Summary

2006-2007

Key Points

- Open water marine sites generally comply with guidelines.
- Freshwater sites complied with guideline values in 76% of all samples.

How do you know if it's safe to swim?

Before heading out, check the Otago Regional Council website www.orc.govt.nz. This will tell you if the water was suitable for swimming the last time it was tested and what the typical water quality of the site is. As a general rule of thumb avoid swimming and collecting shellfish during heavy rain and for up to two days afterwards. For information on the water quality of Dunedin city beaches check out the Dunedin City Council website www.dcc.govt.nz

Why we monitor water quality

Each summer between December and March, Otago Regional Council monitors the water quality at popular marine and freshwater bathing sites. The suitability of these areas for contact recreation can be compromised through contamination of the waters by human and animal faecal matter. These may carry harmful pathogens that can cause illness. By testing the water regularly for indicator bacteria, and posting results on the Otago Regional Council website it is hoped that the public can make informed decisions about whether to enter the water.

Indicator Bacteria and Guidelines

Bathing Waters

Water quality safety is assessed and reported according to the Ministry for the Environment and Ministry of Health 'Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas revised and issued in 2003.

The guidelines recommend a three-tier (traffic-light) management framework according to single sample results of E. coli (freshwaters) and enterococci (marine waters) bacterial counts. These categories are given below:

Mode	Safe for Swimming?	Freshwater (E.coli/100ml)	Marine (Enterococci/100ml)
Surveillance/ Green	Should be very safe for swimming	No single sample greater than 260	No single sample greater than 140
Alert/Amber	Should be satisfactory for swimming	One single sample between 261 and 550	One single sample between 141 and 280
Action/Red	Could be a health-risk for swimming	One single sample greater than 550	Two consecutive single samples greater than 280

If the results from regional monitoring show levels elevated above the national guidelines, they are forwarded to the district and city councils, as well as to Public Health South for possible follow up action.

Recreational Shellfish Gathering

The guideline for water quality is that the median faecal coliform content of samples taken over the season shall not exceed 14/100ml, and not more than ten percent of samples should exceed 43/100ml.





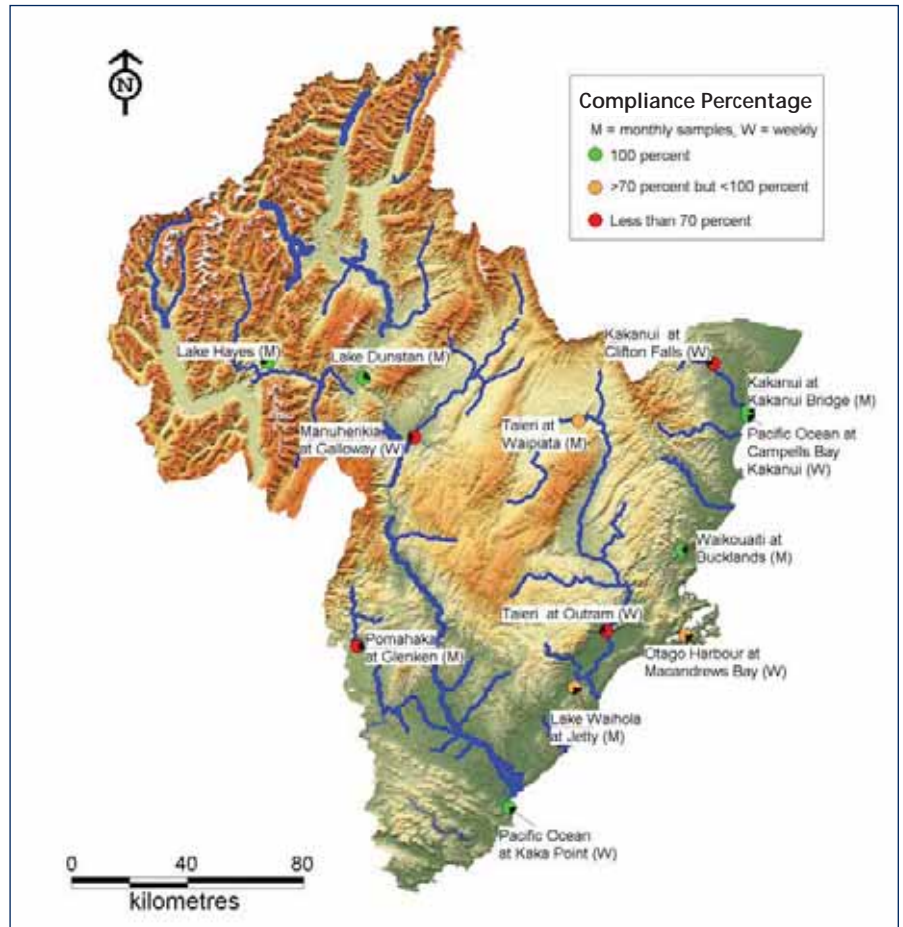
Above: Kakanui River at Clifton Falls

Below: Taieri River at Waipiata



Sites Monitored 2006/2007

Thirteen sites were sampled between the beginning of December 2006 and the end of March 2007. Seven of these were sampled on a weekly basis, the other six on a monthly basis. The sites and level of compliance with guideline values are detailed in the map below.



Water Quality Results

Marine Waters

In the summer of 2006/7 there were three times out of 53 (1.6 percent) when marine water quality did not meet guideline levels.

The open water marine sites in Otago show a high level of compliance with recreational water quality guidelines, however high bacterial numbers can occasionally occur in Macandrew Bay in Otago Harbour. These high results usually occur following rainfall and are linked to stormwater runoff conveying contaminated water. (Macandrew Bay Recreational Water Quality Survey, Public Health South, 2001).

Freshwater Bathing Sites

In freshwaters the MfE/MoH bathing guidelines were exceeded on 32 occasions (23.7 percent).

Microbiological water quality in the freshwater sites shows higher variability, and water quality appears to be compromised at a number of sites in the days following heavy rainfall. A few sites maintained a high level of water quality (Lake Hayes, Lake Dunstan, Waikouaiti River), however some sites regularly breached guideline bacteria levels.

Some of the exceedences were unrelated to high rainfall events, occurring in periods of dry weather and in the absence of any obvious external sources. For example the Kakanui at Clifton Falls had nine exceedences of which at least three are unexplained, the Manuherikia River at Galloway had five exceedences of which three occurred during periods of stable flow, and the Taieri River at Outram had five exceedences, one of which is unexplained.

Water quality for Recreational Shellfish Gathering

In addition to the recreational bathing water sampling, the marine sites were monitored to assess their suitability for shellfish gathering. Results are similar in that only Macandrew Bay was unsuitable for shellfish gathering based on seasonal medians, the Pacific Ocean open water sites (Kaka Point and Campbells Bay) had low faecal coliform numbers.

Site	Median faecal coliform result/100ml	Percent of results >43/100ml
Pacific Ocean: Kaka Point	1	5.9
Pacific Ocean: Campbells Bay	1	7.1
Otago Harbour: Macandrew Bay	25	41.7



Above: Waikouaiti River at Bucklands crossing

Recent ORC reports

- State of Environment Report, Surface Water Quality in Otago (May 2007)

Left: Lake Waihora at the Jetty.

Contact

Otago Regional Council
Ph: 0800 474 082

www.orc.govt.nz

