



RECREATIONAL BATHING WATER QUALITY

Annual Monitoring Summary 2014/15

Why we monitor recreational bathing water quality

Nelson's swimming holes and beaches are regularly used by locals and visitors over summer. Bacteria levels are monitored at our recreational bathing water sites over summer to minimise the risk of illness from harmful water borne bacteria and viruses that may be present.

Bathing water quality in Nelson is generally very good. However, higher bacteria levels can occur from various sources such as wild birds, animals, sewerage and farm livestock. An increase in bacteria often occurs after periods of rainfall, when river flow increases from land run-off and stormwater. The 2014/15 sampling season included sampling on wet weather days to align with national monitoring protocols. In previous years, sampling has not occurred when the water has been discoloured from rain leading to land run-off.

Nelson City Council reports weekly bacteria results to the Nelson Marlborough District Health Board (NMDHB). Sites with elevated Red Action bacteria counts that have unexplained sources are re-sampled within 24 hours. The NMDHB is consulted on the potential sources of bacteria, the risk to public health and the appropriate action required, which may include public health warnings.

The number of Red Action bacteria counts for the summer monitoring programme and overall long term trend in Suitability for Recreation Grade is shown in Table 1. These grades indicate the level of risk of getting sick from harmful bugs when swimming, surfing or otherwise exposed to freshwater or seawater at each site. Five years of data is used as it gives a better indication of risk than year to year data. The comparison between sites for 2014/15 Green, Amber Alert and Red Action bacteria counts is also provided in Figure 1.

Table 1. Recreational Bathing Water Grades 2014/15.

Site Name	Number of Red Action Exceedances in 2014/15	Bacteria Grade Assessment	Overall trend in Suitability for Recreation Grade
Collingwood St Bridge	6	D	Very Poor
Girlies Hole	0	C	Fair
Sunday Hole	1	C	Fair
Maitai Camp	0	B	Good
Paremata Flats Reserve	3	D	Poor
Hira Reserve	0	C	Fair
Nelson Haven (Atawhai)	3	C	Fair
Cable Bay	0	B	Good
Monaco Beach	1	C	Fair
Tahunanui Beach	0	B	Good

All sites had 20 water samples taken over the 2014/15 summer.

Good – satisfactory for swimming most of the time.

Fair – generally satisfactory for swimming, though there are many potential sources of faecal material.

Poor – generally unsuitable for swimming, as indicated by historical water quality results.

Very Poor – should be avoided for swimming.

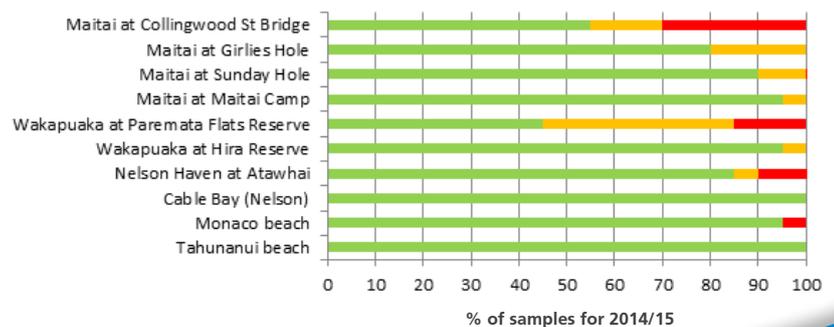
In all cases caution should be taken during or following periods of rainfall, and swimming avoided if water is discoloured.

Red alert action exceedances occur when samples exceed 550 E coli /100ml for freshwater and 280 Enterococci /100ml for marine sites.

Green, Amber and Red Alert levels for bacteria counts per 100ml.

	< 260	260 – 550	> 550
Freshwater			
Marine	< 140	140 – 280	> 280

Figure 1. The percentage of samples for each site with Green, Amber Alert and Red Action exceedances in 2014/15.



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Key Results

Five of the ten recreation bathing monitoring sites had at least one red alert bacteria exceedance for the 2014/15 summer. Most exceedances were explained by wet-weather effects, due to sampling when bathing sites were contaminated by storm water run off. Choppy seas driven by strong onshore winds re-mobilised sediment with bacteria on the same day at Nelson Haven and Monaco.

Nelson's marine recreation sites at Tahunanui Beach and Cable Bay have retained Good recreation grades, with Nelson Haven (Atawhai) and Monaco (Wharf) attaining Fair grades.

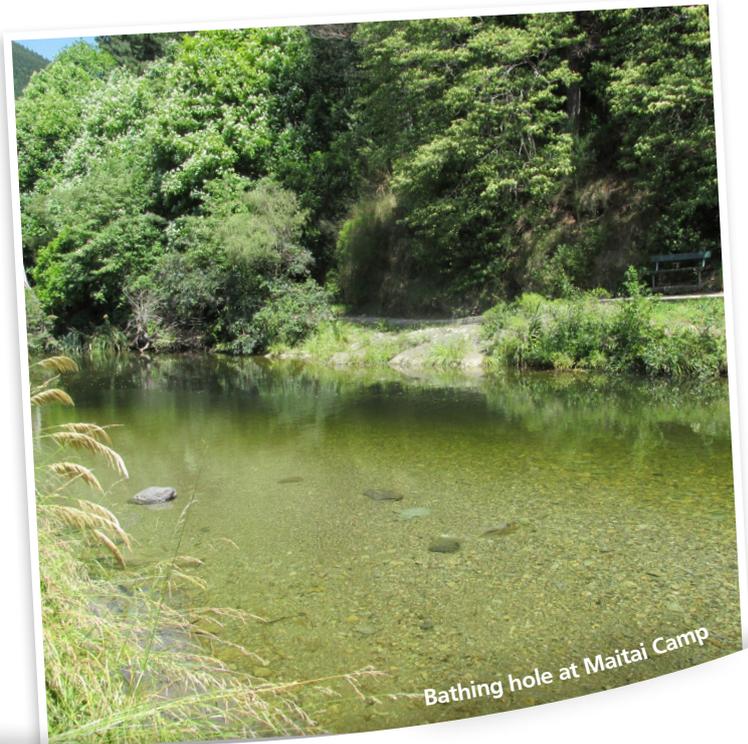
The Maitai River bathing holes continue to show improved bacteria counts with fewer exceedances over the last three years. The Maitai camp maintained the Good recreation grade. Sunday Hole had one exceedance and Girlies Hole had none but both remain with the Fair recreation grade due to the long term trend of elevated bacteria counts over five years. Collingwood Street Bridge had one less exceedance than last year, but the overall grade remains at Very Poor due to the long term trend of exceedances and contamination from sewerage and other sources such as dogs and wildfowl.

The Wakapuaka River at Hira Reserve had no exceedances over the summer, and only two exceedances in the last three years. The Fair grade was assigned to Hira Reserve due to two exceedances in 2013/14, from stormwater runoff and the long term trend of elevated bacteria counts.

There were three exceedances at Paremata Flats Reserve on the Wakapuaka River, two less than in 2013/14. The elevated bacteria counts occurred during both dry and wet conditions, indicating

various sources of bacteria, such as that associated with livestock, feral animals and wildfowl upstream of the sampling site.

A health warning remains in place for the lower Maitai below Collingwood Street Bridge and for the Wakapuaka River at Paremata Flats Reserve warning people not to swim at these sites.



Initiatives for improving recreational bathing water quality

Working with land owners

The Nelson City Council Land Management Adviser provides free advice for land owners and financial assistance towards fencing and native plants for riparian planting and biodiversity enhancement. Improving water quality in Nelson's streams and rivers is a key focus. Further advice is also available on best practice land management and related issues, including maintenance of septic tanks. If you are interested in receiving advice please contact Lynne Hall, Environmental Programmes Officer 546 0308.

Council is currently working with Nelson landowners to fence off livestock from accessing waterways. This will prevent livestock standing and defecating in waterways used for domestic drinking water supplies and recreation. It will also reduce disturbance to the stream bed and bank erosion from movement of livestock.

Nelson City Council work in progress

Council has launched Project Maitai/Mahitahi with the goal of improving the water quality of the Maitai River. A team including Cawthron scientists, Council and NELMAC staff is undertaking investigations to find the sources of bacteria in the Maitai River, including microbial source tracking to test for the presence of human faeces, dye testing waste water mains to identify leaks, and undertaking continuous bacteria sampling to understand the bacteria transport pathway in the lower Maitai River, Brook Stream and Saltwater Creek.

Three leaks have been identified in the waste water system between Riverside Pool and Saltwater Creek and fixed. Further investigations are ongoing including sampling of the Grove Street storm water system.

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