



# RECREATIONAL BATHING SURVEY

*Summary of Results – 2015*



# Recreational Bathing Survey 2015

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## Summary of results

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Community summary: This report is to feed back the findings from a survey conducted across Southland over the summer of 2015. The survey was to try and find where people recreate, what activities are being carried out, what kai is being collected, what problems are being experienced and whether the recreational bathing programme is delivering to the public needs.

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## 1. What we monitor?

Environment Southland regularly monitors a number of recreational water sites across Southland for bacterial indicators which reflect a health risk to people. The indicator used for measuring water quality depends on whether the site is freshwater or marine. In freshwater we measure levels of bacteria known as *Escherichia coli* (more commonly known as *E. coli*), whereas we measure *Enterococci* bacteria at marine sites.

There are 13 marine bathing sites (figure 1) in Southland which are currently monitored during the summer months (December through March inclusive).



**Figure 1: Southland's marine recreational monitoring sites. Note there are sites near Oban.**

Water quality is also monitored at 11 freshwater bathing sites (figure 2) over the same period. Seven of these sites are located on rivers and these sites are sampled weekly. The remaining sites (located at two lakes and two high country rivers) have been deemed lower risk to bathers, and are therefore sampled monthly.





**Figure 2: Southland’s freshwater recreational monitoring sites**

In addition to this monitoring, water quality is monitored at eight popular shellfish gathering sites. This monitoring occurs on a monthly basis over the entire year (figure 3).



**Figure 3: Southland’s shellfish gathering monitoring sites**

## **2. Why we monitor?**

Water contaminated by faecal matter can contain a range of disease-causing microorganisms, such as viruses, bacteria and protozoa. These organisms pose a health risk when the water is used for recreational activities such as contact water sports, swimming and shellfish gathering.

Regional and local councils have responsibilities under the Resource Management Act (RMA 1991) and the Health Act 1956 to monitor and assess the human health risk from recreational bathing and shellfish gathering. This involves routine monitoring of bacterial concentrations at popular bathing sites around the country. As outlined in the RMA, regional councils and the Ministry for the Environment also have obligations to report on the State of the Environment at bathing sites.

Environment Southland displays results as soon as they are known. This allows water users to assess when it is safe for them to go in the water. This information is posted on the Environment Southland website, but can also be found on display at a number of locations and shops in Southland. This is achieved by a volunteer system across Southland which utilises maps to let the public know what the most recent sample indicates.

Ultimately, we are trying to show whether places are safe to swim or not from a biological risk point of view. More detail on the monitoring programme can be found in appendix 1.

## **3. Why undertake a survey?**

Environment Southland, alongside Te Ao Marama Inc., Southland District Council<sup>1</sup>, Invercargill City Council and Southland District Health Board, are all members of the Southland Recreational Water Group. Members have a responsibility to improve the health and wellbeing of the local Southland community and visitors to the region. The purpose of undertaking a survey was to determine whether the current recreational sites that are monitored are appropriate to meet the needs of our resident population, and also to determine whether existing communication needs to be modified. The group believed the survey results would help to inform whether changes were required in order to provide a monitoring programme which caters to the needs of the community.

## **4. The survey**

An online survey was developed and the survey link was widely circulated through known networks identified by members of the Southland Recreational Water Group. This link was also placed on a number of Facebook pages and hard copies of the survey were promoted and made available to the public through a variety of agencies across Southland, including the offices of Environment Southland, Invercargill City Council, Gore District Council, Southland District Council and Public Health South. The survey was advertised through regular newspaper columns and social media.

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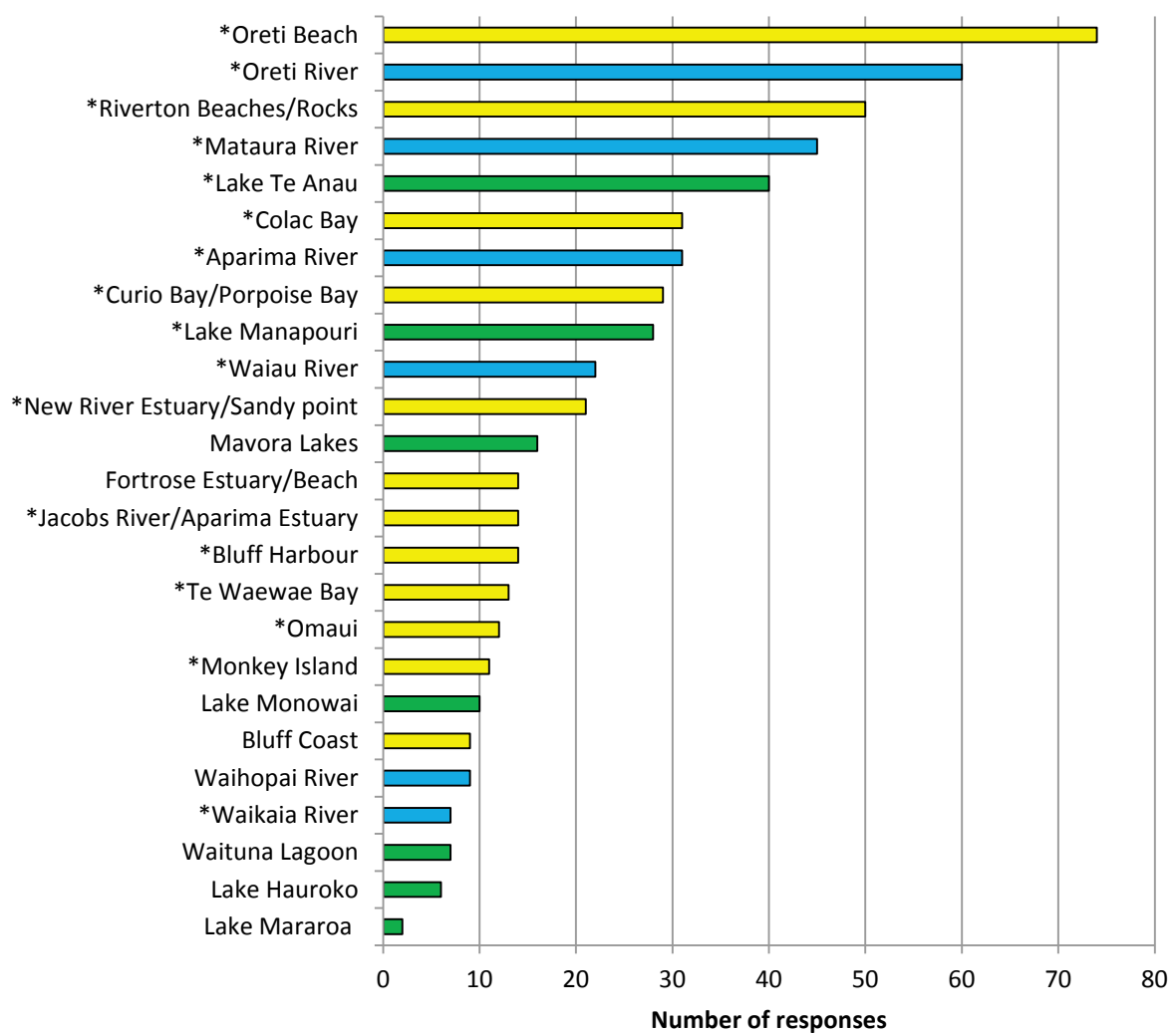
<sup>1</sup> Southland DC is contracted to deliver on Environmental Health Services for the Gore District Council

## 5. Results

There were 197 surveys completed. The results are shown below.

People were asked to list the top five sites across Southland which they visit for recreational purposes (figure 4).

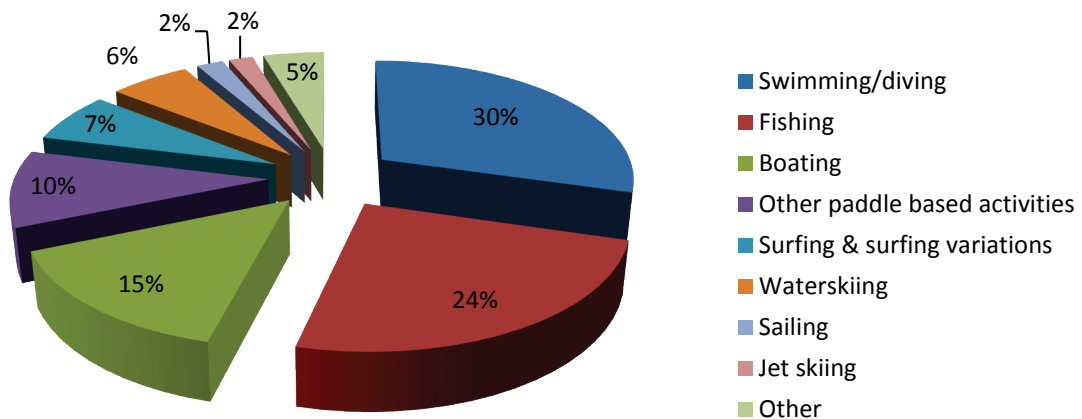
**Figure 4: Most popular recreational sites in Southland according to survey. Yellow bars indicate coastal; green are lakes and blue are freshwater areas. Asterisk before name indicates areas with existing monitoring locations. There can be more than 1 answer per respondent.**





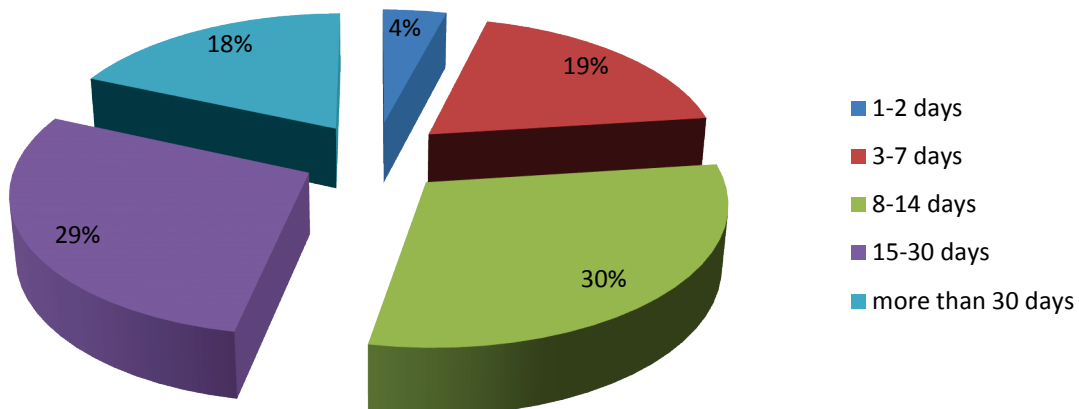
When asked what water-based activities were undertaken, Southlanders reported that the most popular activities were swimming, diving, fishing and boating when in and on the water (figure 5).

**Figure 5: Most popular water sports participated in.**



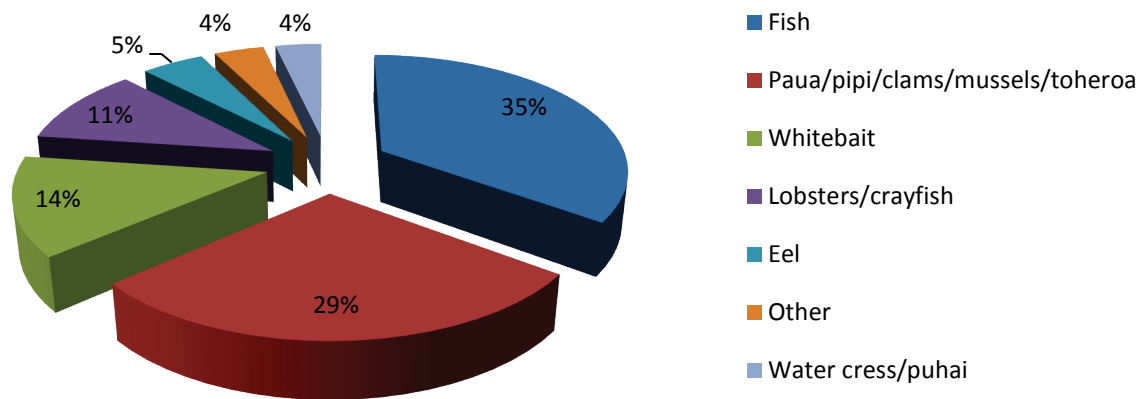
A large proportion (77%) of Southlanders reported that they spend eight or more days participating in water sports from December to March (figure 6).

**Figure 6: Number of days spent participating in water sports from December to March (inclusive).**



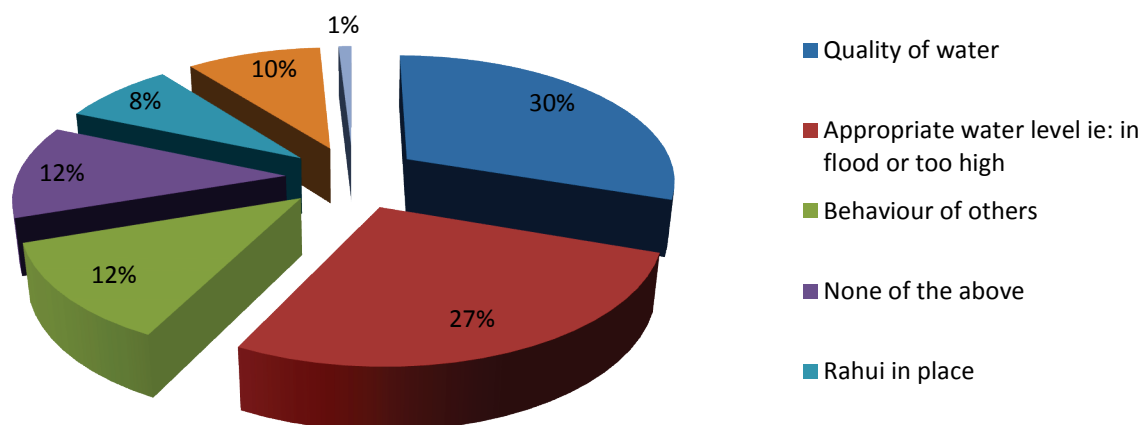
Water users were asked ‘do you collect seafood?’ with around two thirds answering yes (64%). Of these, most were gathering fish, shellfish and whitebait (figure 7). The majority of people (70%) have been doing this for 10-30 years or more.

**Figure 7: Type of kai moana gathered**



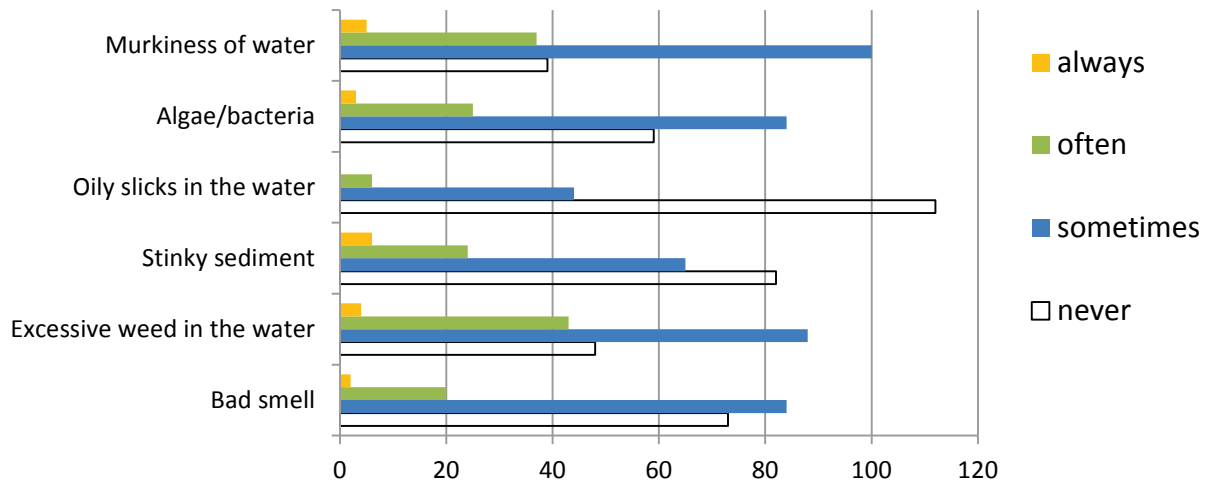
People were also asked what prevents them from participating in water sports and/or food gathering activities. People responded that water quality and water level were the two key factors which affected their behaviour (Figure 8).

**Figure 8: Factors which prevent you or your whanau from participating in water based activities.**



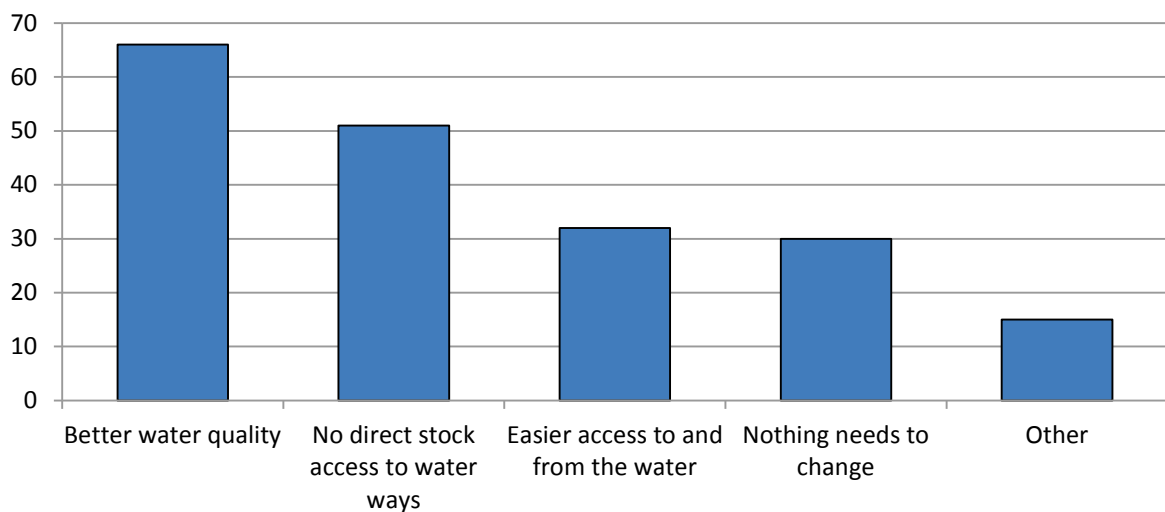
The water quality issues that are experienced by people most often are water murkiness, algae/bacteria growth, excessive weed and a bad smell (figure 9).

**Figure 9: Types and frequency of water quality issue experienced. There can be more than 1 answer per respondent.**



When people were asked what they thought would most improve their water experience, most responded better water quality and no direct stock access to waterways, followed by easier access to water or nothing needs to change (figure 10).

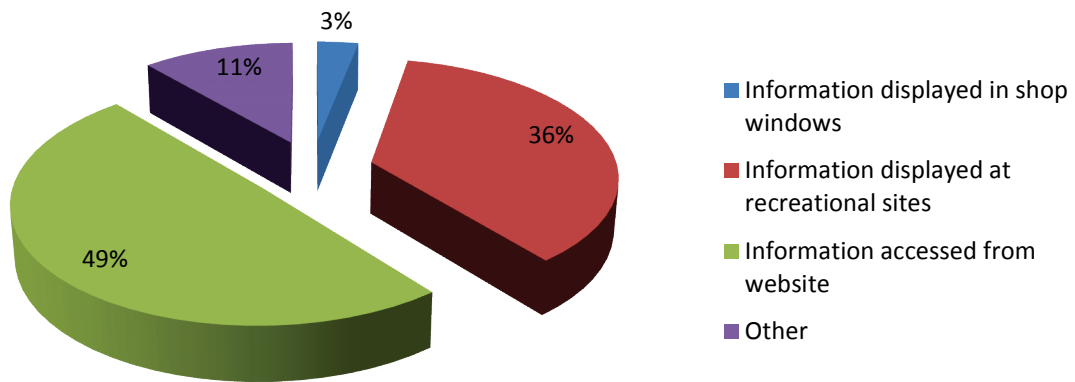
**Figure 10: Type of water quality issue and frequency of occurrence. There can be more than 1 answer per respondent.**



Of the people who completed the survey, 68% of people were familiar with the work that is conducted by Environment Southland; where regular samples are taken at recreational waters across Southland, and that the information is displayed on the Environment Southland website and other places across the region, e.g. shops.

Of these people, the preferred option for accessing the information was from a website (49%) followed by displaying the information at the recreational site (36%), (figure 11). Sixty-five percent of people said that this information influences their decision to participate in water based activities.

**Figure 11: Preferred option of accessing information provided by Environment Southland**



## 6. Conclusion

The purpose of undertaking a survey was to determine whether the current recreational sites that are monitored are appropriate to meet current the needs of our resident population and also to determine whether existing communication needs to be modified. It is clear from figure 4 that the recreational programme has a relatively good spread of sites across Southland. However, consideration should be given towards adopting further sites at Lake Mavora and Fortrose Estuary (swimming site, shellfish site already exists). The activities undertaken in and on the water are varied but swimming, fishing and boating are dominant. Of these water users, 64% collect seafood, mostly fish and shellfish.

People indicated that activities were restricted due to poor water quality and the manifestation of issues was varied; from smells and excessive weed growth through to bacteria issues, water murkiness and oily slicks. The majority of people believe that their experience would be improved by a general improvement in water quality and by restricting direct stock access.

The information on the recreational bathing programme is being used to make decisions on whether or not to participate in water activities and is most accessed through the website (49%). It was also indicated that people would like to see information displayed at the actual sites themselves; whether this is feasible or not should be further explored.

Overall the programme seems to be catering to the needs of Southlanders but further consideration should be given to the possibility of further monitoring sites and communication of the information collected.



## 7. Appendices

### Appendix 1 – Recreational monitoring programme overview

Environment Southland regularly monitors 13 marine bathing and seven freshwater bathing sites during summer (December to March); and eight shellfish collecting areas on a monthly basis throughout the year. The bathing water quality is assessed according to concentrations of indicator bacteria: these do not cause disease themselves, but signal the potential presence of disease-causing pathogens. A high concentration of the indicator bacteria indicates that it is more likely that disease-causing organisms are present, therefore a potentially higher health risk. However, it does not mean that anyone swimming in the water at that time will actually be affected. Councils do not measure the pathogens directly because the technology to do this is not cost-effective or is unreliable.

The indicator used depends if it is a freshwater or marine site. In freshwater we measure levels of bacterium known as *Escherichia coli* (*E. coli*), whereas we measure *Enterococci* bacteria at marine sites.

The results collected from this monitoring programme are displayed on the Environment Southland website <http://www.es.govt.nz/environment/coast/bathing-waters/>. In addition these results are now displayed on a national land and water website <http://www.lawa.org.nz/explore-data/southland-region/>.

It is important to note that the individual samples are categorised according to national guidelines and displayed as a traffic light system to allow ease of understanding as shown in table 1. These guidelines use a “risk of exposure” to humans from contaminated water with animal faeces. The chosen indicators represent the likely presence of harmful pathogens but are not a measurement of the pathogens themselves. It reflects a precautionary approach to managing public health risks and does not represent an accurate picture of water quality in the catchment.

**Table 1. Based on the national recreational bathing and shellfish gathering guidelines for New Zealand set out by MfE (2003) and Ministry of Health.**

	Green = Acceptable	Yellow = Increased risk	Red = Highest Risk
Marine waters (Enterococci - MPN)	<140 Enterococci / 100ml	140-280 Enterococci / 100ml	>280 Enterococci / 100ml
Shellfish waters (Faecal coliforms - cfu)	<400 Faecal coliforms / 100ml	NA	>400 Faecal coliforms / 100ml
Freshwater (E. coli - MPN)	<260 E. coli / 100ml	260-550 E. coli / 100ml	>550 E. coli / 100ml

As well as routine sampling over the bathing season, risk-based assessments for Southland's bathing sites are also undertaken. The "risk-based" approach aims to determine the bacterial risk of the water at any given time, and not just at the time of sampling. This is called the overall risk of the site or specifically the 'The Suitability for Recreation Grade (SFRG)'. It is a combination of two separate assessments. The first assessment is the Microbiological Assessment Category (MAC), which grades a bathing site on the last five years of monitoring data. The second assessment is a "Sanitary Inspection Category" (SIC), which identifies all likely bacterial sources in the catchment upstream of the bathing site. The bacterial risk factors range from feral animal populations to intensive agriculture and industrial discharges. The SFRG is not a substitute for routine monitoring but rather a general grade for a bathing site, highlighting the likely human health risk from contact recreation.

For a full explanation to the approach, water quality indicators, triggers and microbiological guidelines, please refer to the national guidelines on the Ministry of Environment website:

<http://www.mfe.govt.nz/publications/water/microbiological-quality-jun03>.

An explanation of the SFRG, SIC and MAC can be accessed at the MfE website:

<http://www.mfe.govt.nz/environmental-reporting/fresh-water/suitability-for-swimming-indicator/suitability-swimming-indicator.html>.





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