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Committee Ara Tahī
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Will I get sick if I swim? Suitability for recreation grades for bathing sites in the Wellington region

1. Purpose

To present Suitability for Recreation Grades for freshwater and marine bathing sites in the Wellington region, based on a report entitled *Will I get Sick if I Swim?* This report was prepared by Greater Wellington in association with the territorial authorities.

2. Background

Greater Wellington produces annual *On the Beaches* reports summarising the results of recreational water quality monitoring conducted during the summer bathing season. *Will I get Sick if I Swim?* focuses on the water quality monitoring results from the last five summer bathing seasons, together with the major microbiological risks present at bathing sites in the region, to determine the suitability of selected freshwater and marine sites for contact recreation.

A Suitability for Recreation Grade (SFRG) describes the general condition of the water at a bathing site at any given time during the summer months and helps determine whether on-going monitoring is required. Moreover, it provides the basis for advising people whether or not the water at a site is suitable for recreational use from a public health perspective.

The determination of a SFRG is made following protocol outlined in the Ministry for the Environment/Ministry of Health (MfE/MoH 2003) *Microbiological Water Quality Guidelines for Marine and Fresh Water Recreational Areas*. It is a risk-based process that involves combining a qualitative assessment of the susceptibility of a bathing site to faecal contamination, and actual indicator bacteria counts determined from routine summer recreational water quality monitoring at the site (Figure 1).

The risk of becoming sick from contact with the water at a site increases as the grading shifts from “very good” to “very poor”. Conditions affecting water quality will vary the most for the middle range of grades (“good”, “fair”, and “poor”). For example, the water at “good” sites will usually comply with

recreational water quality guidelines, but events such as high rainfall can increase the risk of microbiological contamination from urban or agricultural run-off. Consequently, weekly water quality monitoring at these middle-range sites is recommended during the bathing season.

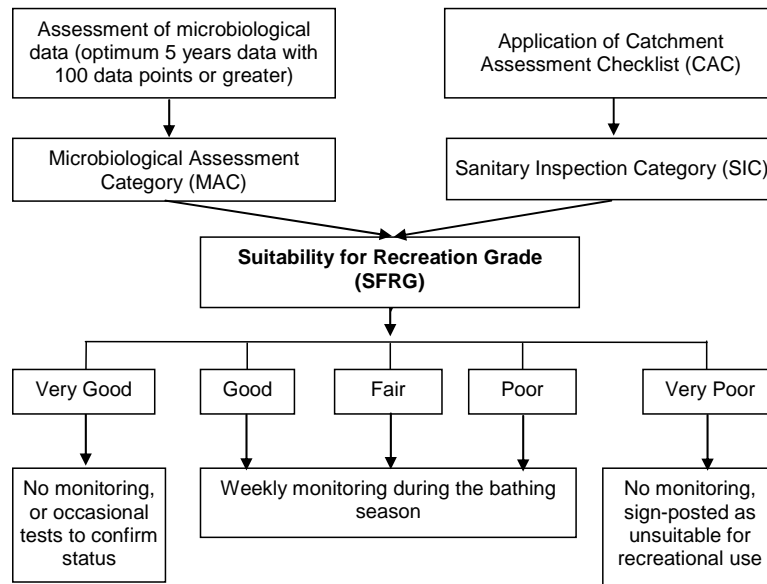


Figure 1: Overview of the bathing site grading process and monitoring requirements.

(Source: after MfE/MoH (2003), p. C3)

3. Findings

Only four of the 23 freshwater sites received a SFRG of “very good” or “good” (Table 1, Figure 2). The majority of the sites (74%) received a grade of “poor” or “very poor”, reflecting moderate to high risks of microbiological contamination at these sites due to the likely influence of either urban stormwater or agricultural run-off. In most cases, the SFRGs improve if *E. coli* results coinciding with significant rain events are removed from the data set. This suggests that for the majority of sites, the SFRGs better reflect the condition of water during wet weather than dry weather when contact recreation would be greatest. The key exceptions are the Hutt River at Silverstream, the Ruamahanga River at Double Bridges and Riversdale Lagoon. These sites have regularly exceeded the alert and action level of the recreational water quality guidelines in the absence of any significant rainfall prior to sampling. Some other factor(s) influence water quality at these sites, such as stock access upstream, wildlife or poor water quality in tributary streams.

Of the 76 marine sites, four have a SFRG of “very good”. The majority (87%) of sites have a SFRG of “good” or “fair” (Table 1, Figure 2), reflecting low to moderate risks of microbiological contamination due to the direct or indirect (i.e., via tributary streams) influence of either urban stormwater or agricultural practices. Just six sites received a grade of “poor”, a result of a moderate risk of microbiological contamination combined with a history of elevated indicator bacteria counts. No sites received a grade of “very poor.”

Table 1: Distribution of SFRGs at freshwater and marine bathing sites across the Wellington region.

Fresh Water Bathing Sites						
SFRG	Kapiti (4 sites)		Hutt (6 sites)		Wairarapa (13 sites)	Total (23 sites)
Very Good	0		0		1	1
Good	1		0		2	3
Fair	1		0		1	2
Poor	2		6		1	9
Very Poor	0		0		8	8

Marine Bathing Sites						
SFRG	Kapiti (20 sites)	Porirua (14 sites)	Hutt (15 sites)	Wellington (22 sites)	Wairarapa (5 sites)	Total (76 sites)
Very Good	0	0	1	2	1	4
Good	9	3	8	16	3	39
Fair	11	5	6	4	1	27
Poor	0	6	0	0	0	6
Very Poor	0	0	0	0	0	0

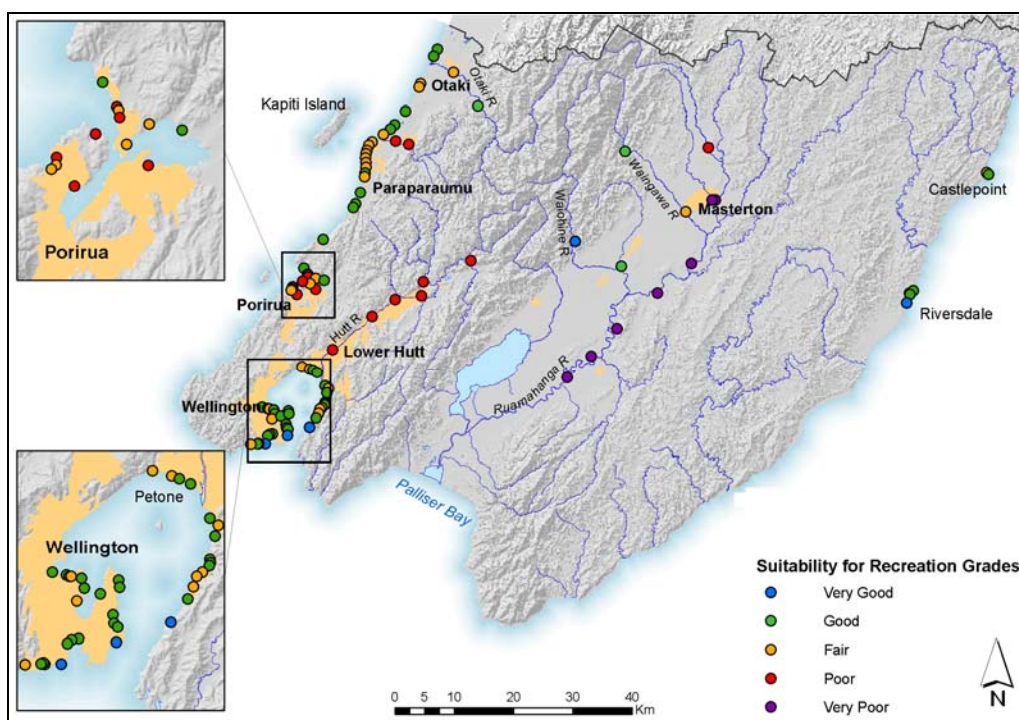


Figure 2: Suitability for recreation grades for bathing sites in the Wellington region.

Overall, there is a relatively high correlation between rainfall events and elevated indicator bacteria counts at marine sites, particularly in the Wairarapa. However, on an individual site basis many sites often exceeded the alert and action level of the recreational water quality guidelines in the absence of any significant rainfall prior to sampling. These sites include Paraparaumu Beach (especially Ngapotiki Street) on the Kapiti Coast, Plimmerton Beach, Pauatahanui Inlet (Browns Bay) and Titahi Bay (Bay Drive) in Porirua City, Petone Beach (Sydney Street) in Hutt City, and Oriental Bay (Wishing Well)

and Owhiro Bay in Wellington City. At most of these sites, elevated enterococci counts are attributed to poor water quality in tributary streams. Sediment re-suspension as a result of high wave energies and/or strong winds may also influence water quality at many sites, including the Kapiti Coast beaches, Petone Beach, Oriental Bay, Mahanga Bay and some bathing areas on the south coast of Wellington City.

The relatively high correlation between the occurrence of heavy rainfall and elevated bacteria counts at the majority of monitoring sites in both fresh and marine waters across the region supports advice from the Greater Wellington Regional Council and the Ministry of Health to avoid swimming and other contact recreation activities during, and for up to two days after, heavy rain.

4. Future monitoring requirements

According to MfE/MoH (2003) protocol sites with a SFRG of “good”, “fair” or “poor” should be monitored on a regular weekly basis during the summer bathing season, but routine monitoring is not required at sites graded “very good” or “very poor” (refer Figure 1). On this basis, monitoring would cease at 11 of the 23 freshwater sites that were graded “very poor”. However, given the grades for most of these sites largely reflect bathing conditions during wet weather, it is not considered appropriate to cease monitoring and/or recommend that territorial authorities erect permanent warning signage at these sites. One exception is Riversdale Lagoon. This site exceeds the recreational water quality guidelines on a regular basis and is not suitable for bathing. Therefore it is recommended that Riversdale Lagoon is removed from the list of freshwater bathing sites.

Subject to territorial authority approval, regular monitoring of recreational water quality should cease at freshwater and marine bathing sites with a SFRG of “very good”. These sites have a very low risk of microbiological contamination and regular monitoring is not justified given the very high level of compliance with the recreational water quality guidelines over the last five summers.

5. Recommendations

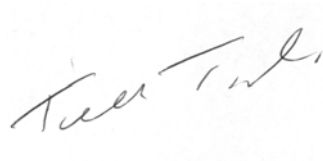
It is recommended that the Committee:

1. **Receive the report;** and
2. **Note the contents.**

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