

HAWKE'S BAY REGIONAL COUNCIL

ENVIRONMENTAL MANAGEMENT COMMITTEE

Wednesday 14 July 2010

SUBJECT: RECREATIONAL WATER QUALITY IN HAWKE'S BAY: A REVIEW OF THE 2009-2010 RECREATIONAL WATER QUALITY MONITORING PROGRAMME

REASON FOR REPORT

1. This paper is to provide an update to the Committee on recreational water quality in Hawke's Bay.
2. The executive summary from the report "*Recreational Water Quality in Hawke's Bay: Review of the 2009-2010 Recreational Water Quality Monitoring Programme*" is appended to this paper.

Background

3. Microbiological water quality monitoring has been undertaken annually since 1993 under Councils State of the Environment: Recreational Water Quality Monitoring Programme. This is an established, long-term programme run in partnership with Territorial Local Authorities (TLAs) and the Public Health Unit of the Hawke's Bay District Health Board (PHU). Monitoring is carried out at a number of sites throughout the region to assess the microbiological water quality of areas commonly used for contact recreation in relation to current Ministry for the Environment (MfE) and Ministry of Health (MoH) guidelines.
4. This programme contributes to Council's ability to assess the effectiveness of policies and rules for maintaining coastal water quality; assess the effectiveness of non-regulatory processes such as riparian planting in enhancing environmental quality to mitigate the adverse effects of diffuse runoff; identify problem areas that may require mitigation and track the success of those mitigation methods; and identify regional issues and assist in developing policy/methods to address these.
5. This programme measures the water quality at key recreation sites, makes the results available to the public (Level of Service Statement, LTCCP 2009-2019), and provides a platform for engagement with the community.

The Recreational Water Quality Monitoring Programme

6. The Recreational Water Quality Monitoring Programme runs for twenty weeks between November and March each year. Council staff visit thirty contact recreation sites and five shellfish gathering sites weekly (excepting Clive River and Puhokio Stream which are visited fortnightly) between Mahanga and Porangahau and monitor levels of indicator bacteria (*Escherichia coli* in freshwater; enterococci in saline waters and faecal coliforms at shellfish gathering sites).
7. Results are compared to the Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas (MfE and MoH, 2003). The risk of illness is considered unacceptable (i.e. a site fails to comply) if the level of indicator bacteria exceeds 550 *E. coli* coliform forming units (cfu)/100 ml or two consecutive samples 24 hours apart exceed 280 enterococci cfu/100 ml. Compliance for shellfish gathering areas is determined at the conclusion of the season based on seasonal medians.

Reporting

8. Standard results are reported:
 - Weekly on the Hawke's Bay Regional Council 'B4U Swim' website page at www.hbrc.govt.nz

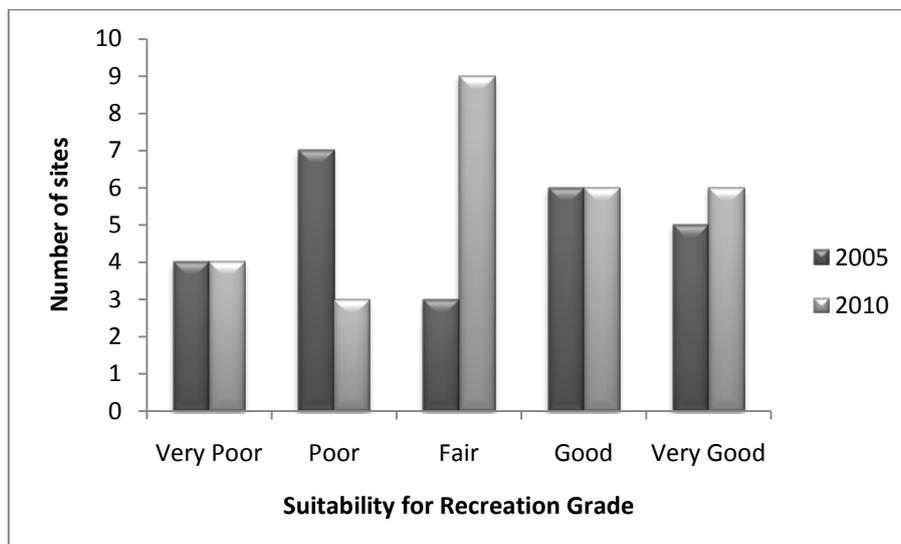
- Weekly on the 'B4U Swim' Line (06) 878 1368 managed by the Public Health Unit
 - Annually in an HBRC technical report
 - Annually to the Ministry for the Environment.
9. Exceedance results are also reported through joint media releases from Council and the Public Health Unit, and via site signage erected by the TLAs.

Results from the 2009-2010 Season

10. Marine sites achieved between 95-100% compliance with national guidelines. The lower compliance level (95%) can be attributed to the 1 February 2010 flood event. Staff were unable to resample due to unsafe conditions on both roads and water access so compliance was assessed on a more stringent single sample exceedance. All marine exceedances were related to this event.
11. Freshwater sites achieved 90-95% compliance with national guidelines. All exceedances were related to heavy rainfall.
12. Lagoon sites (tidal or brackish influence) achieved between 85-95% compliance. The lower compliance level was observed at Maraetotara Lagoon and Porangahau Estuary. Exceedances at Porangahau Estuary were rainfall related; only one of the three exceedances at Maraetotara Lagoon was rainfall related.
13. Statistical analysis of the last ten years worth of data indicated that:
- 13.1. Water quality at Clive River, Kairakau Lagoon, Puhokio Stream, Tutaekuri River, Waipatiki Lagoon and Wairoa River has improved over this time
 - 13.2. Water quality at Porangahau Estuary has declined over this time.
14. Three of the five shellfish gathering sites (Ahuriri Estuary, Te Awanga Beach, Kairakau Beach) exceeded guideline values.

Suitability for Recreation Grades

15. At the end of the season the Suitability for Recreation Grade (SFRG) was generated for each site using the most current data combined with a sanitary inspection.
16. Compared to grading undertaken and presented to the Environmental Management Committee in 2005, four sites (Esk River, Maungawhio Lagoon, Opoutama Beach and Wairoa River) have had an improvement in grade; one site (Ngaruroro River at Chesterhope Bridge) had a decline in grade.
17. The total number of sites in each grade is shown below.



Conclusion

18. With the exception of the results from one flood event, marine and freshwater recreational sites in Hawke's Bay had high compliance with national guidelines. Non-compliance events (exceedances) tended to be related to periods of heavy rain.
19. Lagoon sites had lower levels of compliance compared to marine and freshwater sites, and exceedances were not as strongly related to rainfall.
20. Six sites have shown an improvement in water quality, one site, Porangahau Estuary, has shown a reduction in water quality. This site receives wastewater from the Porangahau township which has recently obtained a new discharge consent. Higher discharge quality should see water quality at this site improve over time, and follow-up faecal source testing will enable further tailored management options.
21. At four sites the Suitability for Recreation Grade has improved since 2005, at one site the Suitability for Recreation Grade has declined.
22. A wetter than average season has contributed to exceedances of national guidelines for contact recreation at many sites.
23. The number of sites reporting a decrease in bacterial concentration, and the number of sites moving from 'Poor' to 'Good' indicate that water quality at many sites is improving.

DECISION MAKING PROCESS

24. Council is required to make a decision in accordance with Part 6 Sub-Part 1, of the Local Government Act 2002 (the Act). Staff have assessed the requirements contained within this section of the Act in relation to this item and have concluded that, as this report is for information only and no decision is to be made, the decision making provisions of the Local Government Act 2002 do not apply.

RECOMMENDATION

1. That the Committee receives the report titled "*Recreational Water Quality in Hawke's Bay: Review of the 2009-2010 Recreational Water Quality Monitoring Programme*".

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**RECREATIONAL WATER QUALITY IN HAWKE'S BAY: REVIEW OF THE 2009-2010
RECREATIONAL WATER QUALITY MONITORING PROGRAMME****EXECUTIVE SUMMARY**

Thirty sites were monitored as part of the 2009/10 Recreational Water Quality Monitoring Programme undertaken by Hawke's Bay Regional Council. The sites were sampled and analysed on a weekly basis for faecal indicator bacteria counts. This annual summer programme enables Council to assess the microbiological water quality of popular bathing areas, and elucidate trends in water quality throughout the region. The selected sites include both marine and freshwater popular bathing locations – including one lake, and in addition five sites were monitored to determine the suitability of areas for shellfish gathering.

The sites can be distinguished as follows:

- fourteen marine sites (*Enterococci* bacteria)
- four freshwater rivers (*Escherichia coli* bacteria)
- eleven estuarine/lagoon/tidal freshwater sites (*Enterococci* / *Escherichia coli* bacteria)
- one freshwater lake (*Escherichia coli* bacteria)
- five marine sites for shellfish gathering (Faecal coliforms).

The sites were monitored on a weekly basis (except for Clive River and Puhokio Stream which were monitored fortnightly) to assess their suitability for contact recreation and shellfish gathering. Results were compared with the Ministry for the Environment and Ministry of Health Microbiological Water Quality Guidelines (2003).

Thirteen marine sites in Hawke's Bay attained a 95% level of compliance with the Ministry two-consecutive exceedance guideline during the 2009/10 season. With a single event of heavy rainfall and flood water on 1 February been the reason for 5% non-compliance. Pourerere Beach achieved a 100% compliance with the single-sample criteria. These results indicate that while heavy and sustained rainfall can affect water quality at marine sites, these areas generally have high water quality.

Of the five freshwater (including one lake) sites sampled, four achieved 95% compliance with Ministry guidelines, while Lake Tutira achieved 90% compliance with Ministry guidelines suitability for bathing.

This season of the eleven estuarine and/or freshwater sites (where a tidal influence may render them brackish), seven sites were also tested for Enterococci levels. This was undertaken to ensure the parameter tested was giving a true indication of the state of that particular site. Of the ten (freshwater or brackish water sites) four sites achieved 95% compliance with the guideline for *E. coli*. Four of the eleven sites achieved 90% compliance and the remaining two sites Porangahau Estuary and Maraetotara Lagoon achieved 85% compliance. With regard to the Enterococci results this year, four of seven sites tested for both parameters were recorded as saline or brackish water based on seasons conductivity results. All four sites achieved 95% compliance with the guideline.

In addition to the recreational water quality sites, five sites were monitored to assess the quality of waters at shellfish gathering sites. Two out of the five of the shellfish gathering sites monitored in Hawke's Bay were 100% compliant with Ministry guidelines for microbiological water quality, in 2008/09 all five sites were 100% compliant. Ahuriri Estuary, Te Awanga Beach and Kairakau Lagoon failed to meet compliance with MfE and MoH Guidelines with 10% of samples above 43/100 ml and median levels above 14 faecal coliforms/100 ml.

The lower levels of compliance with Ministry guidelines compared to previous seasons reflect the extensive wet weather experienced through January and February.