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Report to Environment Committee
from Gary Stephenson, Surface Water Quality Scientist

Annual Coastal Water Quality Report 2000/2001

1. Purpose

To present the results of the coastal water quality monitoring undertaken by the Wellington Regional Council and several of the territorial authorities in the Wellington Region during the period 1 March 2000 to 30 June 2001.

2. Background

To address their legislative responsibilities, the Wellington Regional Council and the Region's territorial authorities undertake three coastal water quality monitoring programmes. The results of these programmes are assessed against the national recreational water quality guidelines published by the Ministry for the Environment and the Ministry of Health. These guidelines use bacteriological indicators to indicate the risk of faecal contamination with the potential for the presence of pathogens. Compliance with the guidelines in respect of the concentration of the indicator bacteria should ensure that people using coastal water for contact recreation, or the collection of shellfish for eating, are not exposed to significant health risks.

3. Methods

Baseline Coastal Water Quality Monitoring Programme

The Wellington Regional Council monitored enterococci concentrations at 66 sites around the Region's coast during the period 1 March 2000 to 30 June 2001 in a programme primarily designed for state of the environment reporting.

Recreational Shellfish Gathering Coastal Water Quality Monitoring Programme

The Wellington Regional Council monitored faecal coliform concentrations at 13 sites in areas around the Region's coast which have been designated for shellfish gathering during the period 1 March 2000 to 30 June 2001.

Contact Recreation Coastal Water Quality Monitoring Programme

Contact recreation coastal water quality monitoring in the western Wellington Region was carried out by four territorial authorities, and in the Wairarapa by the Wellington Regional Council.

4. Results

The results are presented in detail in the "Annual Coastal Water Quality Report for the Wellington Region, 2000 to 2001". The main findings were:

Baseline enterococci monitoring identified a number of sites in the Region with reduced coastal water quality. The sites were:

- Te Horo Beach at the mouth of the Mangaone Stream
- Waikanae Beach at Tutere Street
- Paraparaumu Beach at MacLean Park
- Paraparaumu Beach at Wharemauku Road
- Taupo Stream mouth
- Porirua Harbour at Te Hiko Street
- Hataitai Beach
- Petone Wharf
- Motuwaireka (Riversdale) Lagoon

Changes in median enterococci concentrations from the 1999–00 to the 2000–01 period were small at most monitoring sites in the Region, with some sites showing increases and others decreases in concentrations.

Eight of the 13 sites monitored in designated shellfish gathering areas recorded faecal coliform concentrations above the water quality guideline for recreational shellfish gathering. The sites were:

- Peka Peka Beach
- Pukerua Bay at Corner
- Pukerua Bay at Sealed Road
- Mahanga Bay
- Princess Bay
- East Sirens Rocks
- Burdans Gate
- Inconstant Point

Two of the 53 sites monitored in areas designated for contact recreation recorded seasonal median enterococci concentrations above the water quality guideline for contact recreation. The sites were:

- Plimmerton Beach at the Taupo Stream mouth
- Plimmerton Beach 25 m south of Taupo Stream

5. Review

Monitoring

A review of the Wellington Regional Council's coastal water quality monitoring programmes has identified a number of issues relating to the baseline programme, including:

- the duplication of monitoring effort between the Wellington Regional Council and the territorial authorities
- inadequacies in the design of the programme
- failure to address other risk factors influencing coastal water quality.

To improve Council's ability to deliver the environmental outcomes stated in the Regional Policy Statement and Regional Coastal Plan a more holistic and integrated monitoring programme has been developed based on the "Annapolis Protocol". This is essentially a site classification system based on bacteriological history *and* catchment characteristics. The resulting "suitability for recreation" classes could provide a basis for state of the environment reporting.

The recreational shellfish gathering programme has similar design inadequacies to the baseline programme. In addition, it lacks the support of shellfish collection and analysis to establish if or how the bacterial concentrations recorded in the water column relate to bacterial concentrations in shellfish tissue. The programme also does not address the risks to the public from toxins, heavy metals and harmful organic substances accumulating in shellfish tissues. All of this information is essential to determine the *actual* risks associated with consuming shellfish.

Reporting

In its present form the Annual Coastal Water Quality Report contains both material of immediate public interest (in the form of the contact recreation coastal water quality monitoring results) and material directed at state of the environment, policy, planning, and consent issues for the regulatory authorities. This produces conflicts with respect to the format and level of detail that are difficult to reconcile. Separation of the material into two reports is a practical solution, with the contact recreation coastal water quality monitoring results published as soon as possible after the end of the bathing season.

The contact recreation coastal water quality report should be in a format suitable for dissemination to the territorial authorities and public libraries as a paper-based document, and in electronic form on the Wellington Regional Council's internet site.

Results of both the freshwater and coastal water quality monitoring programmes for contact recreation could be reported together, as was done for 2000–2001 in the Wairarapa.

Other results related to coastal water quality could then be reported at the end of the financial year in a format designed for use by the monitoring agencies and water managers.

6. **Future Action**

The following actions will/could be taken to address the issues raised in the 2000–2001 Annual Coastal Water Quality Report for the Wellington Region.

The contact recreation coastal water quality monitoring programme carried out by the territorial authorities and the Wellington Regional Council will be continued.

The Wellington Regional Council will work with the territorial authorities in the Region to improve, standardise, and where necessary augment, the contact recreation coastal water quality monitoring programme to meet the requirements of the national guidelines for such programmes issued by the Ministry for the Environment and the Ministry of Health.

The Wellington Regional Council will assist the territorial authorities in the Region to publicise the contact recreation coastal water quality monitoring programme at the monitored sites, through the media, and on the internet.

The current "baseline" coastal water quality monitoring programme carried out by the Wellington Regional Council could be replaced by a new "ambient" coastal water quality monitoring programme, incorporating:

- bacteriological data from the contact recreation coastal water quality monitoring programme
- weather-related time-series sampling of coastal water and discharges to coastal water at selected monitoring sites, and analysis of these samples for enterococci
- targeted investigations of the nature and concentrations of heavy metals and harmful organic substances entering coastal water from rivers, streams, wastewater discharges, and urban stormwater drains
- catchment-based risk assessment of all contact recreation coastal water quality monitoring programme sites, and classification of the sites according to their "suitability for recreation" (Annapolis Protocol)
- the adoption of the "suitability for recreation" classes as the Wellington Regional Council's measure of coastal water quality for state of the environment reporting

The current recreational shellfish gathering coastal water quality monitoring programme carried out by the Wellington Regional Council could be replaced by a new monitoring programme targeting the accumulation of hazardous substances and human pathogens in marine food chains, including:

- routine collection of bivalve (shellfish) tissue samples from recreational shellfish gathering areas, and analysis of these samples for faecal coliforms, heavy metals, and harmful organic substances

The results of the contact recreation coastal water quality monitoring programme could be reported annually to Council in May in a format suitable for dissemination to the territorial authorities and public libraries as a paper-based document, and in electronic form on the Wellington Regional Council internet site.

The results of the "ambient" coastal water quality monitoring programme and the programme targeting the accumulation of hazardous substances and human pathogens in marine food chains could be reported annually to Council in September, in a format primarily intended for use by the monitoring agencies and water managers.

7. **Communications**

Copies of the "Annual Coastal Water Quality Report for the Wellington Region 2000 to 2001" will be made available to all the territorial authorities in the Region and to the Region's Medical Officer of Health. The report will also be made available to the public on the Wellington Regional Council's website.

8. **Recommendation**

That the report be received and the Committee endorse the future action.

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