Report 99.114
24 October 2000
File: K/5/5/4
[Report 1999-114.AB:ajw]

Report to the Environment Committee
from Alison Berry, Resource Scientist

Hulls Creek Water Quality Investigation

1. Purpose

To advice the Committee of the results of a targeted investigation of water quality in Hulls Creek.

2. Background

Hulls Creek is located in Upper Hutt and is a tributary of the Hutt River. It drains a catchment including the Trentham and Heretaunga areas.

The 1996/97 Annual Freshwater Quality Report: Western Wellington Region recommended that Hulls Creek be the subject of an investigation to identify sources of faecal contamination and turbidity.

High turbidity levels in this stream made it a poor aquatic ecosystem. High faecal coliform levels made both Hulls Creek and parts of the Hutt River unsuitable for bathing.

This report provides a summary of the targeted water quality investigation that was carried out in Hulls Creek and part of the Hutt River in November and December 1998.

The objectives of the Hulls Creek investigation were to:

- identify the extent of poor water clarity and microbial contamination in Hulls Creek;
- investigate sources of faecal contamination and turbidity in Hulls Creek; and
- determine the effects of the Hulls Creek discharge on water quality in the Hutt River at the confluence.

3. Methods

Water samples were taken from nine sites in and around Hulls Creek on eight occasions between 19 November and 3 December 1998. These were analysed for faecal coliforms and turbidity.

4. Results

The results are presented in detail in the report *Hulls Creek Water Quality and Impacts on the Hutt River*. The key findings are:

- Water at most sites in Hulls Creek was unsuitable for bathing because of high bacteria levels. Water in the Hutt River below the confluence with Hulls Creek failed to meet the contact recreation (bathing) guideline specified in the Proposed Regional Freshwater Plan. However, this guideline is very conservative and a risk assessment would be required to determine the actual risk to bathers in this area. The area of contamination is likely to be localised due to the effects of dilution in the Hutt River. Likely sources of bacteria within the catchment include stock, birds, rats, and sewage.

- Turbidity levels at some sites in Hulls Creek and in the Hutt River just below Hulls Creek failed to meet the visual clarity and aquatic life requirements of the Proposed Regional Freshwater Plan specified under section 107. Resuspension of creek bed sediments and bank and paddock erosion are believed to be the main causes of the elevated turbidity levels.

- The faecal coliform problems in Hulls Creek could be remedied by restricting stock access to the creek and implementing riparian planting. Planting should also reduce sediment run-off. However, sediment traps may be required to further reduce the problem.

5. Further Action

This investigation has focussed on just two contaminants; faecal coliforms and turbidity. Before deciding on appropriate remedial action we need to develop a better understanding of the whole stream environment so that the most effective solution can be implemented. To this end further investigation of the toxic, habitat and aquatic ecosystem status of Hulls Creek is recommended. An additional benefit of adopting this approach is that it provides a useful basis for assessing the performance of any remedial action that is undertaken. These further investigations will be considered when the Department's 1999/2000 work programme is finalised.

Hulls Creek is just one of many streams in the Region that could benefit from the implementation of riparian management initiatives. Staff currently propose to prepare a riparian management strategy that will assess a range of environmental information and prioritise streams for action. Work on priority areas will then be considered in the development of annual work programmes.

In the meantime, farmers in the catchment will be contacted requesting that stock access to Hulls Creek be restricted. However, this may require them to find alternative sources of stock drinking water.

6. **Recommendation**

That the report be received and its contents noted.

Report prepared by:

ALISON BERRY
Resource Scientist

Approved for submission:

JOHN SHERRIFF
Manager, Resource Investigations

JANE BRADBURY
Divisional Manager, Environment