

Report 99.258

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Report to the Rural and Services and Wairarapa Committee
from Brett Stansfield, Water Quality Scientist

Whakawiriwiri Stream Water Quality Monitoring

1. Purpose

To inform the Committee of the improvement in water quality of the Whakawiriwiri Stream since 1995.

2. Location

The Whakawiriwiri Stream has its headwaters located in the Moiki area and follows a course adjoining a lot of intensive pastoral farming. The stream discharges into the Opoura spillway which then follows through to Lake Wairarapa (see attachment 1.)

3. Background

3.1 The Whakawiriwiri Stream was first monitored by the Council on March 1993. The monitoring survey was made in response to the concerns of the Wairarapa Committee over the water quality in the stream.

3.2 Results from previous annual water quality reports of the Whakawiriwiri Stream have indicated poor water quality particularly in the head reaches of the stream. After reviewing the water quality reports of the 1995 and 1996 years, the spatial deterioration in water quality was very apparent and it was therefore recommended in February 1997 that the sampling programme be reduced from a bi-monthly sampling programme to an annual sampling programme. The annual sampling programme is undertaken during 'no surface flow' summer periods when the stream is likely to be most stressed.

3.3 Previous reports have recommended that existing discharges to the Whakawiriwiri Stream be made to land. This has been a condition placed on the renewal of all existing consents for discharging into this stream.

3.4 There are currently three farms which have consents to discharge to the stream:

- Campbell's - have a consent to discharge directly to the Whakawiriwiri Stream
- Edwards at Pahautea has a consent to discharge to a small tributary of the Whakawiriwiri Stream and
- Owen Butcher at Pahautea has a consent to discharge to a small tributary of the Whakawiriwiri Stream.

The most recent change in discharging practice (i.e. from water to land) was made at the George's site on 1 August 1998. This has resulted in a significant improvement in water quality in this reach of the Whakawiriwiri Stream.

4. Results

4.1 The results depicted on the attachments of this report illustrate the water quality on four dates (see attachments 2, 3, 4, & 5)

4.2 Comparison of the previous four years water quality results show that there has been a significant improvement in water quality from Tuckers Culvert to Oporua in terms of dissolved inorganic nitrogen, ammoniacal nitrogen, dissolved reactive phosphorus and total phosphorus.

4.3 Although the water quality has improved dramatically since 1995, some sites show variation in concentrations of nutrients in the successive years. This is because leaching of nutrients from the stream sediments actively take place, resulting in a variation in the concentrations of these variables in the water column.

5. Discussion

This temporal comparison of the Whakawiriwiri Stream water quality has indicated that the water quality of this stream has improved over the last year. Further sampling during the worst case scenario (no surface flow) periods in summer as an annual event will help ascertain how quickly the Whakawiriwiri Stream water quality is improving.

6. Recommendation

- (1) *That the report be received.*
- (2) *That the remaining properties which discharge treated dairy effluent to the Whakawiriwiri Stream or its tributaries be encouraged to discharge their effluent to land when their resource consents are considered for renewal.*

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