

Water quality in our monitored rivers and streams

Date: 01 July 2017

Reporting Frequency: Annually

Goal

The water quality in monitored rivers and streams is graded good or very good.

Progress

For 2016/17 the water quality in 60 out of 101 monitored sites is graded good or very good.

About this goal

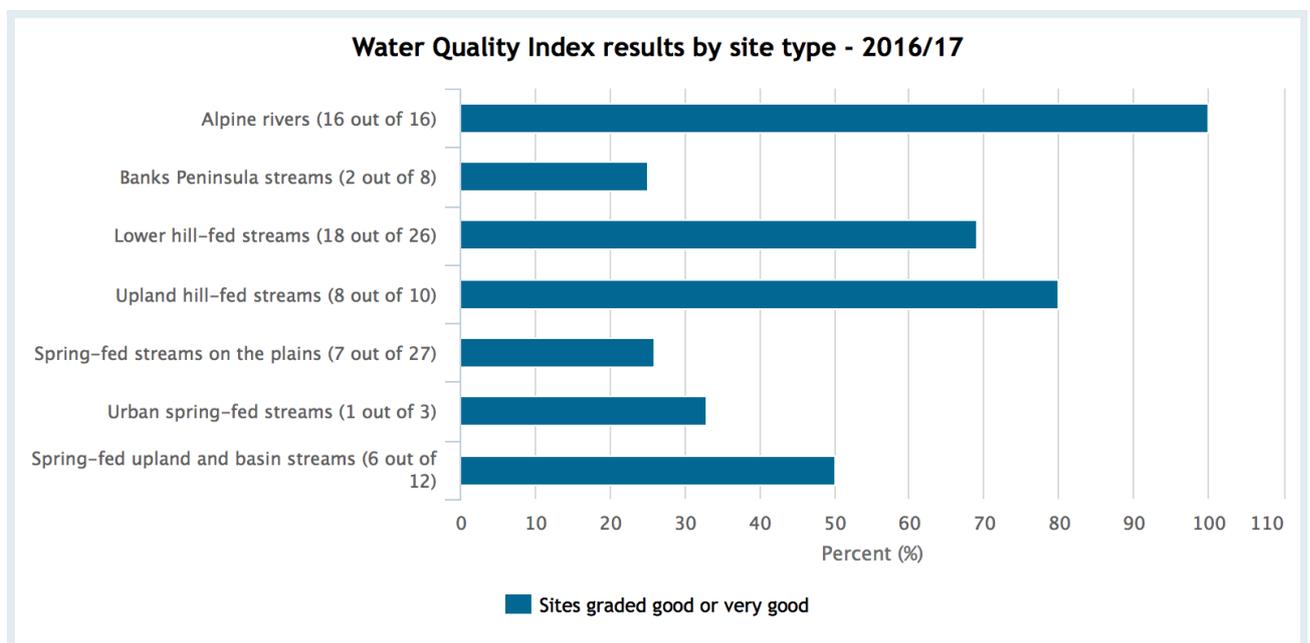
The quality of fresh water in Canterbury's rivers and streams contributes to the health and vitality of our environment, and that of our communities. Environment Canterbury regularly monitors water quality across the region at sites on different types of rivers and streams.

These measurements are combined into a Water Quality Index (WQI) which takes individual measures of water quality (e.g. nitrate, phosphate, *E. coli*) and combines them into a single number based on how close the measures are to objectives set out in the Canterbury Land and Water Regional Plan. The resultant number is then put into one of five classes from very poor to very good.

Lowland and urban rivers and streams tend to have poorer water quality due to the intensity of surrounding land use. Changing weather patterns and climate can also influence Water Quality Index results.

Overall, the WQI results for the 2016/17 year show that more of the monitored sites were graded good or very good, than fair, poor or very poor.

Percent (%) Water Quality Index results by site type - 2016/17
Sites graded good or very good
Alpine rivers (16 out of 16)
Banks Peninsula streams (2 out of 8)
Lower hill-fed streams (18 out of 26)
Upland hill-fed streams (8 out of 10)
Spring-fed streams on the plains (7 out of 27)
Urban spring-fed streams (1 out of 3)
Spring-fed upland and basin streams (6 out of 12)



Why does it matter?

Over time, urban settlement and rural development have impacted Canterbury's waterways. As a result of long-term changes in land use, the quality of fresh water in many of our rivers and streams has declined.

Poor water quality can affect human health, impact native plants and animals and the places they live, and mean long term land and water management solutions are needed. It's all about using innovative solutions to manage our freshwater sustainably.

We want to make sure our region achieves the freshwater outcomes set in the [National Policy Statement for Freshwater Management](#) and the targets and limits set for Canterbury's rivers and streams in our [regional plans](#).

Generally, this means we need to reduce contaminants entering waterways and, where water quality is poor, work to change land use practices to improve water quality and aquatic ecosystem health.

What's being done?

Environment Canterbury works with the community to help ensure we have clean and plentiful fresh water now and for generations to come – but the impact of human activity will take many years to repair. People from across our region are working together to protect and improve our water resources.

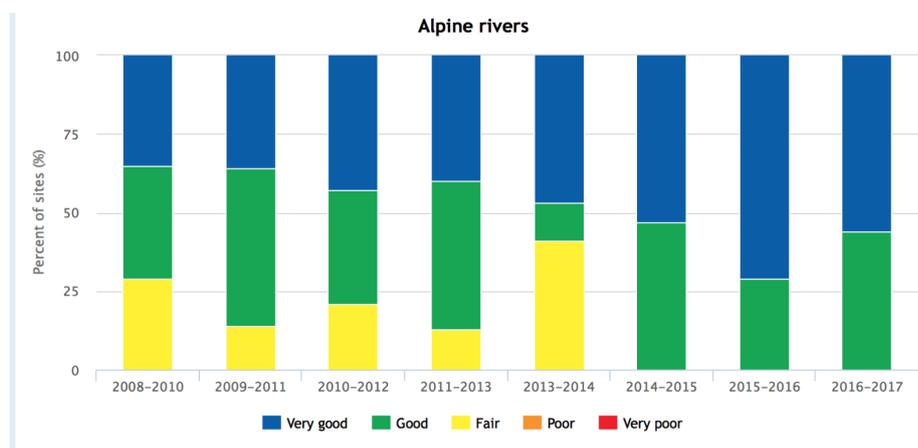
Find out about [what's happening in your local water zone](#).

Actions are in place to lessen impacts on waterways. Priorities are to:

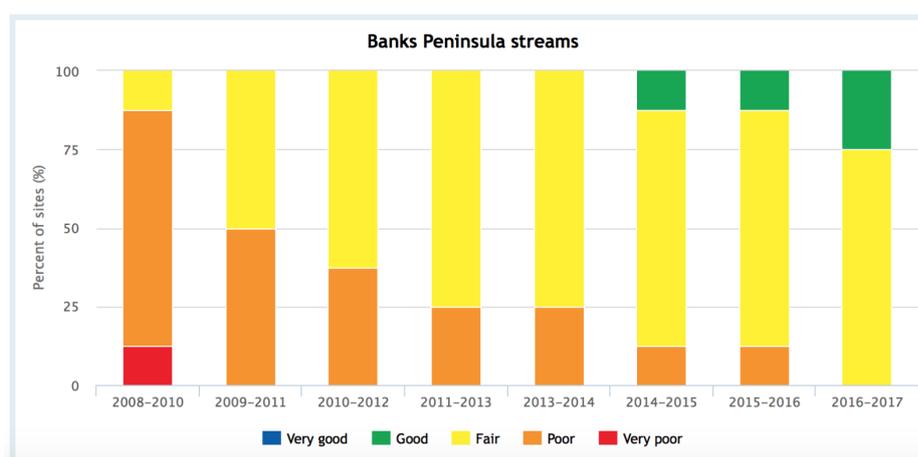
- reduce contaminant loads that cause poor freshwater quality (nitrogen, phosphorus, sediment, and microbes such as *Escherichia coli* (*E. coli*)).
- improve how we manage riparian margins.

How we are tracking?

Water Quality Index results from 2008 to 2017

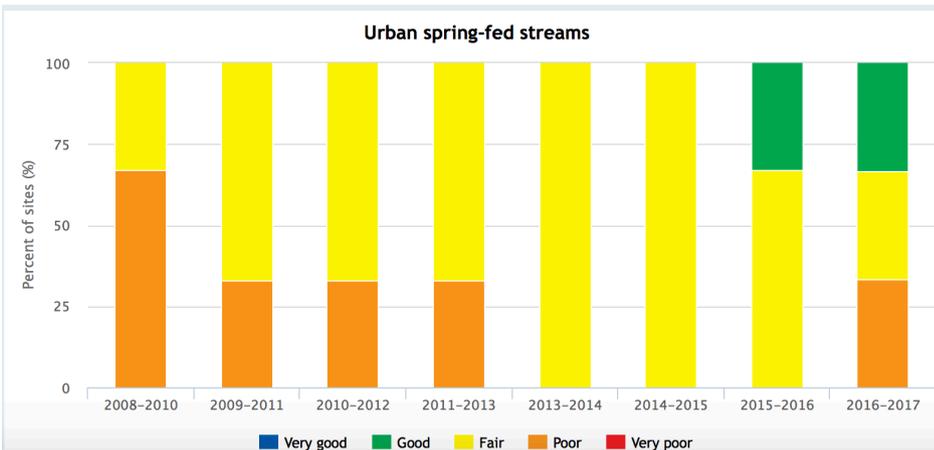
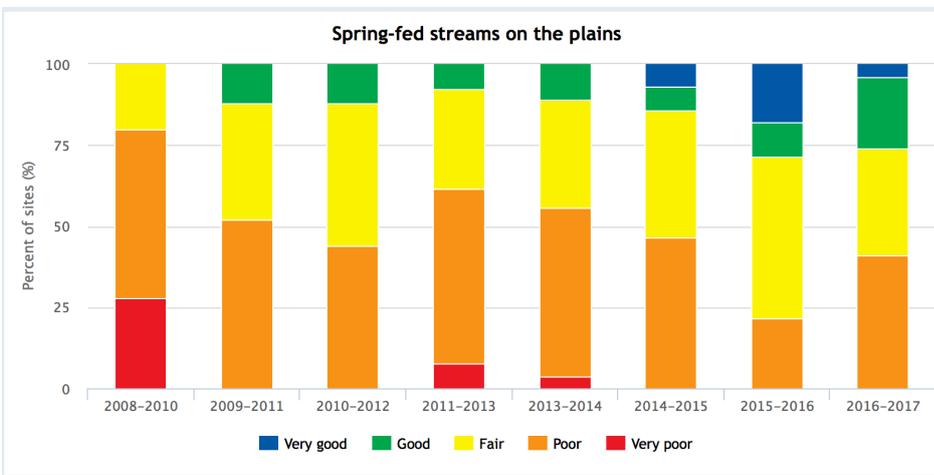
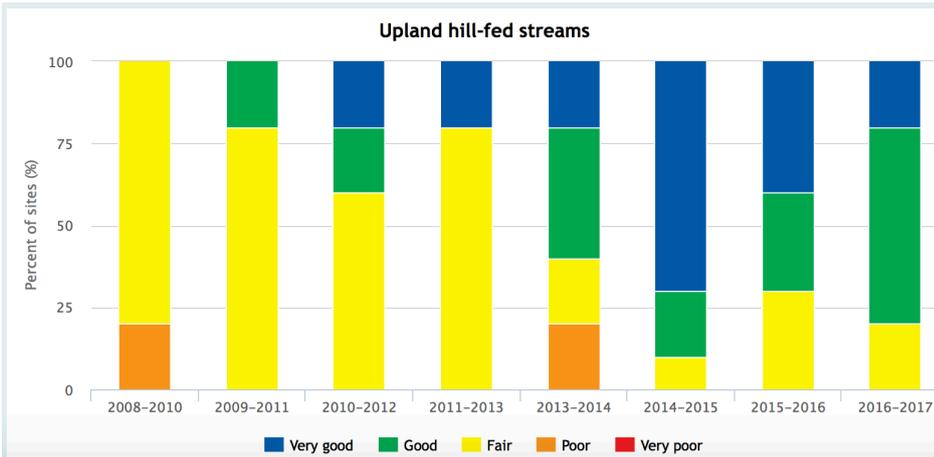
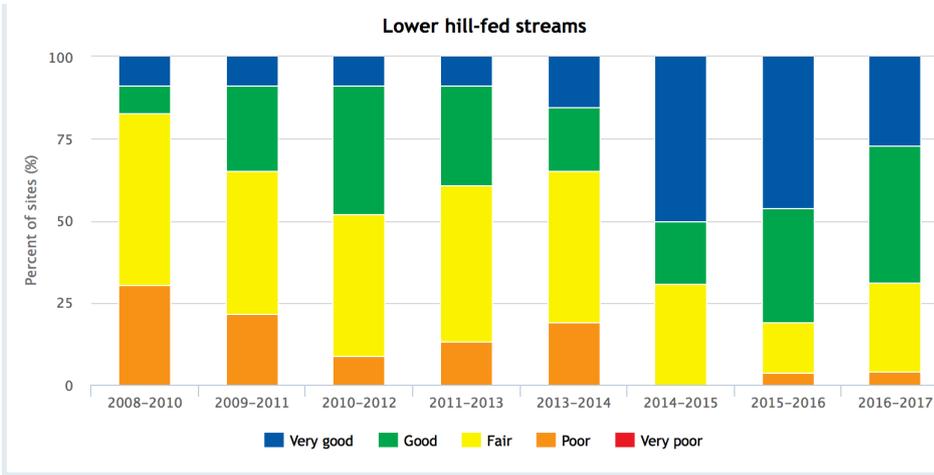


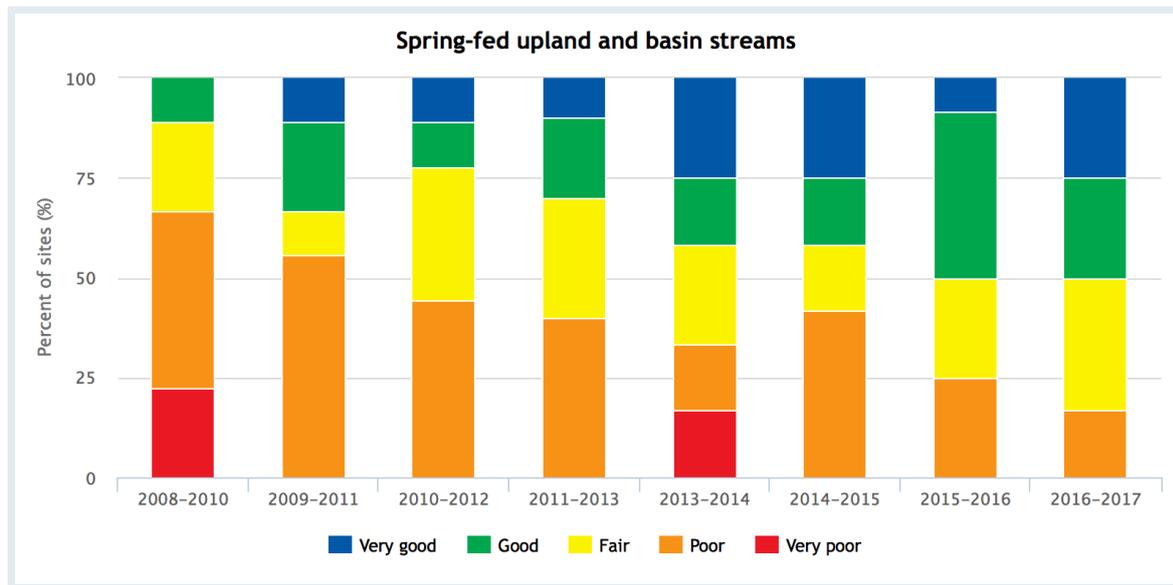
We can see how the WQI has changed with time in different types of Canterbury rivers by looking at the stacked bar graphs below. Each bar is a different year and the percentage of sites in each category during the year is shown by the different colours.



For example, if you look at the Banks Peninsula streams you can see fewer "very poor" and "poor" categories and more "fair" and "good" categories with time (from left to right). Sites monitored vary from year to year.

Christchurch City Council calculate their own [WQI for Christchurch urban streams](#).





What are the water quality parameters used in the WQI?

- Nitrate-nitrite nitrogen (NNN) for toxicity
- Dissolved inorganic nitrogen (DIN) for effects on periphyton and macrophyte growth
- Dissolved reactive phosphorus (DRP) for effects on periphyton and macrophyte growth
- Ammonia-nitrogen (NH₄-N) for toxicity
- Total suspended solids (TSS) for effects on clarity and sedimentation
- *E. coli* for effects on suitability for recreation

Sites graded good or very good 050100

60/101

Find out more

To see water quality state and trend at individual sites on rivers in Canterbury visit the [LAWA website](#).

Read about aggregated [water quality trends in Canterbury](https://www.ecan.govt.nz/get-involved/news-and-events/2018/water-quality-trends-in-canterbury-august-2018/). <https://www.ecan.govt.nz/get-involved/news-and-events/2018/water-quality-trends-in-canterbury-august-2018/>

Read about [Canterbury's water](#) and [What's happening in my water zone?](#)

Find out how ratepayer funding supports this work with our [Rates Tool](#).

<https://www.ecan.govt.nz/reporting-back/water-quality-in-our-monitored-rivers-and-streams/>