



## State of the Environment Report Card 2018

# Measuring groundwater quality for good health

### We monitor 82 groundwater wells every 3 months, taking samples of groundwater for analysis.

These sites are mainly on the Heretaunga and Ruataniwha Plains. The results tell us whether water quality is changing over time: improving, staying the same, or becoming worse.

We most regularly see two main contaminants present in water quality samples. They are so small, we refer to them as micro-organisms: *Escherichia coli* (*E.coli*) and nutrients: Nitrate (NO3).

*E. coli* are common germs normally present in the faeces of animals and humans. If these germs get into a groundwater source used for drinking water it can cause illness. Likewise Nitrate has been linked with illness in infants.



### QUICK FACTS

Measuring groundwater quality in Hawke's Bay since 1968.

About **70%** of all water that can be taken for use in Hawke's Bay will come from underground

The main groundwater use is for irrigation, which uses about **75%** of the weekly allocated volume

We use equipment like this to sample groundwater quality from a bore: a portable pump, field water quality probes and sample bottles - to send to the lab for analysis.

### Groundwater quality and arsenic

Hawke's Bay Regional Council has carried out localised investigations of groundwater and identified elevated arsenic levels in some locations due to natural groundwater conditions and the source material of the aquifer. This happens when minerals from sediment get released into the water, though this occurrence is not consistently found throughout our aquifers and is localised.

Owners of bores used for drinking water supply must maintain, monitor and treat their own supply. We advise self-supply bore owners to sample and test drinking water for the presence of arsenic. The maximum acceptable level for arsenic in drinking water is 0.01 milligram per litre (mg/L).

### Safeguard your bore from contamination

Groundwater moves around. Any release onto land not taken up by the soil layer or by plant roots can interact with a groundwater system, which can be accessed by a bore for drinking water and other uses.

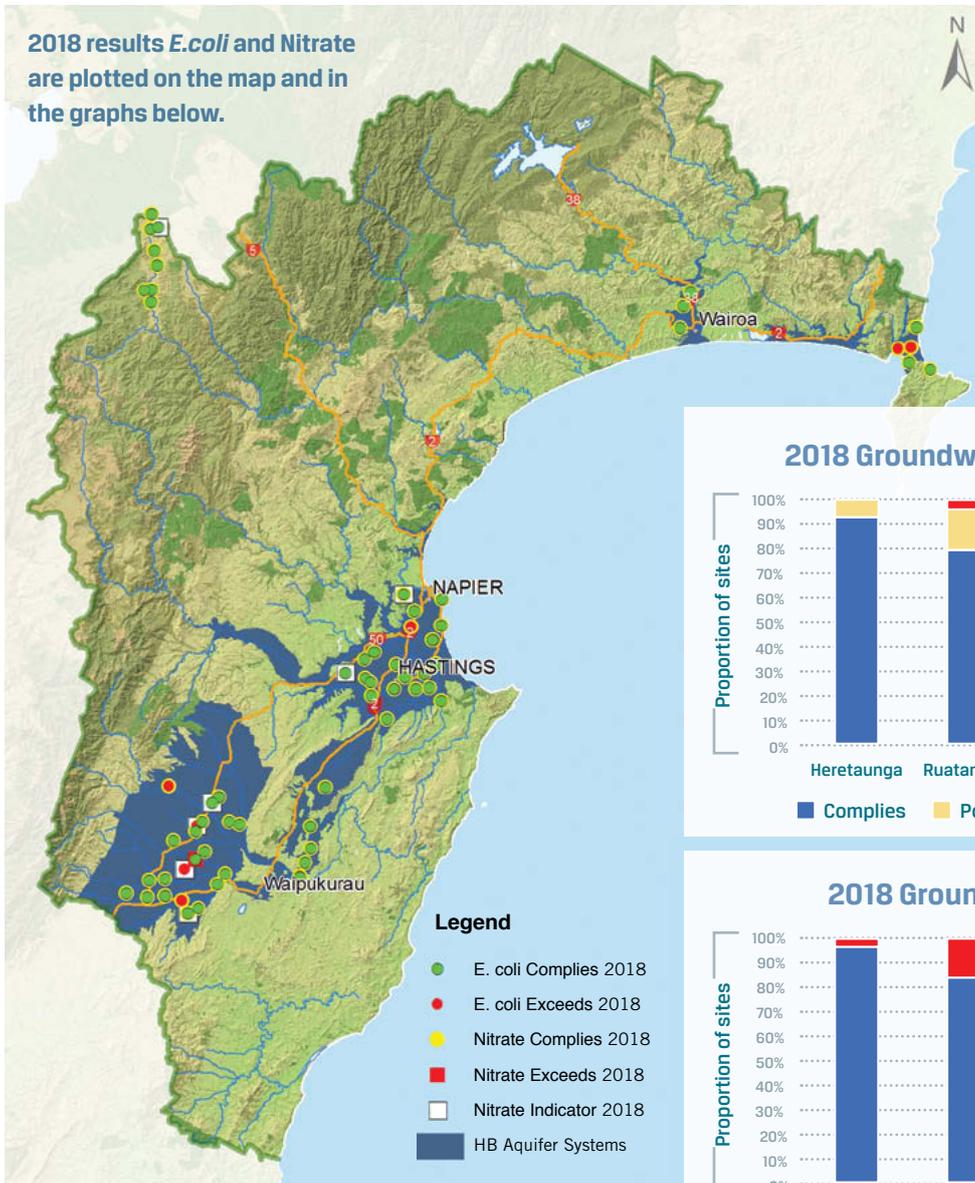
Make sure that your bore casing is above ground and potential floods. The headworks and casing must be secure so that nothing can get in or down the bore.



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We measure groundwater quality using a metric system applied to contaminants, to tell us how safe the water is for human and animal health.

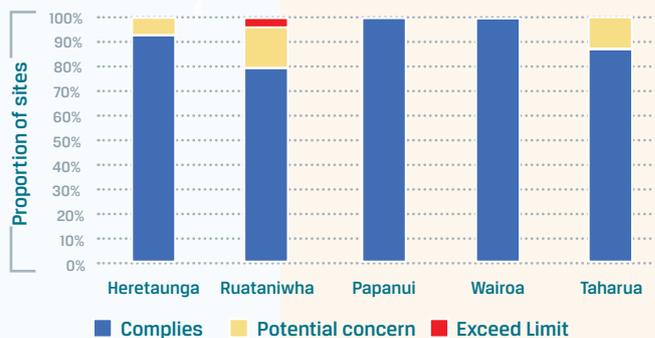
2018 results *E.coli* and Nitrate are plotted on the map and in the graphs below.



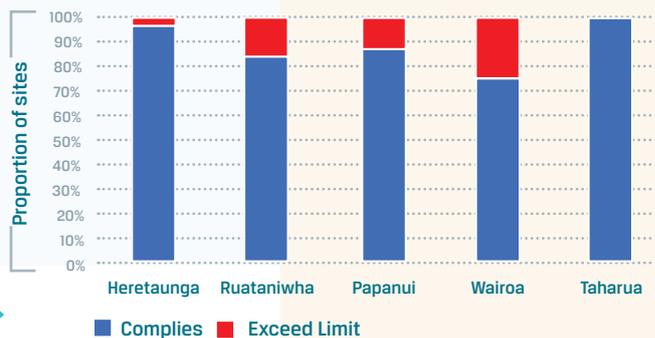
Drinking Water Standards New Zealand have set the limits. For *E.coli* the limit is less than 1 *E.coli* per 100 millilitres of water. For Nitrate the limit is 11.3 milligrams per litre Nitrate-Nitrogen.

Hawke's Bay Regional Council has an indicator concentration for Nitrate-Nitrogen of 5.65 milligrams per litre to identify groundwater of concern from Nitrate contamination.

### 2018 Groundwater Quality Nitrate-Nitrogen



### 2018 Groundwater Quality *E.coli*



For each area you can see the proportion of site results below the limit (comply), nearing the limit (potential concern) or exceeding the limit.

### The purpose of the Regional Council's State of the Environment report is to:

- Report on issues that affect our natural environment
- Help councils and communities to set priorities for environment management
- Monitor the effectiveness of this management
- Provide information that people can use in their decision-making.

This report card is part of a series prepared by Hawke's Bay Regional Council. It outlines high-level results from the Regional Council's monitoring programme.

For more details, full technical reports and up to the minute reporting results visit [hbrc.govt.nz](http://hbrc.govt.nz)

