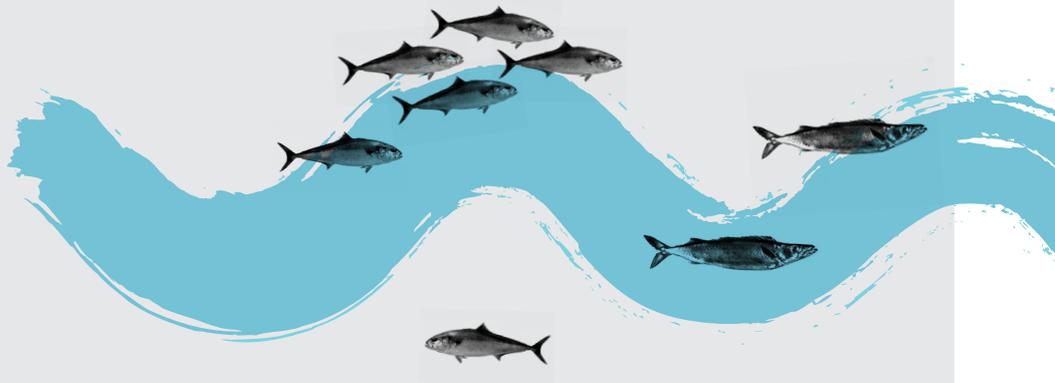




WELLINGTON HARBOUR AND HUTT VALLEY

GREATER WELLINGTON
REGIONAL COUNCIL
ENVIRONMENT REPORT CARDS
2016/17



GROUNDWATER QUALITY



Why do we monitor groundwater quality?

Groundwater in the Wellington Region is highly valued, especially for drinking water supply and irrigation.

In many areas, groundwater is linked to surface water bodies including rivers, lakes and wetlands. The successful protection of these waterbodies also requires careful management of our groundwater resources.

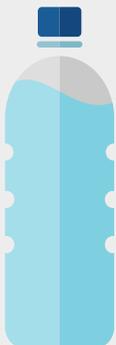
What did the 2016/17 results show?

2016/17 groundwater quality results

This year we monitored nine bores in Wellington and the Hutt Valley. Groundwater quality in this area is generally very good, particularly from a drinking water perspective.

The key indicators of groundwater contamination are Nitrate and *E. coli*.

NITRATE



All nine bores have low nitrate concentrations

E. COLI



Three of four bores (75%) tested positive for *E. coli*

Nitrate concentrations are low (<3mg/L) in all nine of the monitored bores. This is not surprising as elevated groundwater nitrate concentrations only tend to occur in areas of intensive agriculture or horticulture.

Three bores tested positive for *E. coli*. One of these bores (R27/6418 in Wainuiomata) has had problems with *E. coli* contamination for a number of years. The reason for repeated contamination is unclear however the bore is only used for irrigation so it's not much of a concern.

The other two bores (R27/1137 and R27/1183) tested positive on only one occasion in November, which is likely a result of the samples being collected soon after a significant rainfall event. Subsequent samples collected from both bores have come back clear.

Bore R27/1137 in the Hutt Valley is used for emergency drinking water supply. Whenever *E. coli* is detected in a bore that is used for drinking water supply, the residents are informed so they can take precautionary measures such as boiling the water.



Excessive levels of nitrate in drinking water is bad because it interferes with the transport of oxygen in your blood

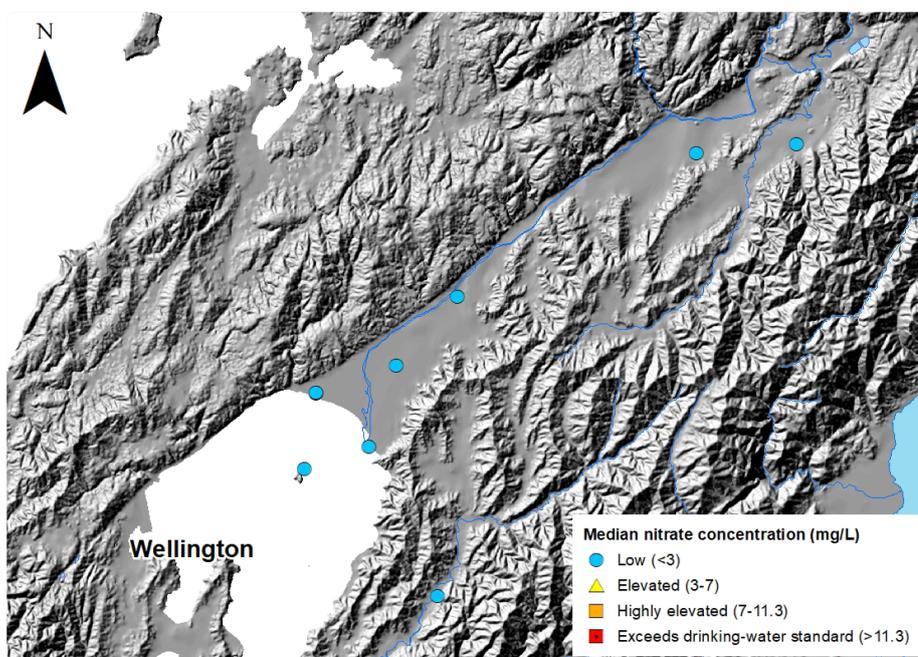
Did you know...

Rainwater can wash nitrates from fertilisers and animal manure into streams and rivers or seep into the groundwater. It can also seep into groundwater from leaky sewage pipes or septic tanks

2016/17 groundwater quality monitoring results

Bore	Groundwater zone	Bore use	<i>E. coli</i> detected	Median nitrate	Nitrate trend*
R27/0320	Hutt Valley	Fire	NA	0.001	NA
R27/1137	Hutt Valley	Emergency Water Supply	YES	1.930	▲
R27/1171	Lower Hutt	Water level monitoring	NA	0.001	NA
R27/1180	Lower Hutt	Public Water Supply	NA	1.000	None
R27/1182	Lower Hutt	Water quality monitoring	NA	0.700	None
R27/1183	Lower Hutt	Air conditioning	YES	0.330	None
R27/1265	Lower Hutt	Fire	NA	0.123	▼
R27/6418	Wainuiomata	Irrigation	YES	1.410	None
R27/6833	Mangaroa	Drinking water and domestic	NO	0.815	None

*From 2017 analysis of 2003-2016 data



Nitrate concentrations are low in all nine of the bores monitored in 2016/17

KEY

For *E. coli*:

YES = Counts ≥ 1 cfu/100mL

NO = Counts < 1 cfu/100mL

NA = Not assessed

For median nitrate:

Low = < 3 mg/L

Elevated = 3-7 mg/L

Highly elevated = 7-11.3 mg/L

For nitrate trends:

▼ = Meaningful decrease in nitrate concentration

▲ = Meaningful increase in nitrate concentration

None = No meaningful trend

NA = Not assessed

Did you know nitrate is toxic to aquatic life at much lower levels than for humans?



Toxic to aquatic life



NZ drinking water standard

For further information:

Full details of the 2016/17 monitoring results can be found in our Groundwater Quality Annual Data Report published online at www.gw.govt.nz/Annual-monitoring-reports

To view or download environmental monitoring data go to <http://graphs.gw.govt.nz>