

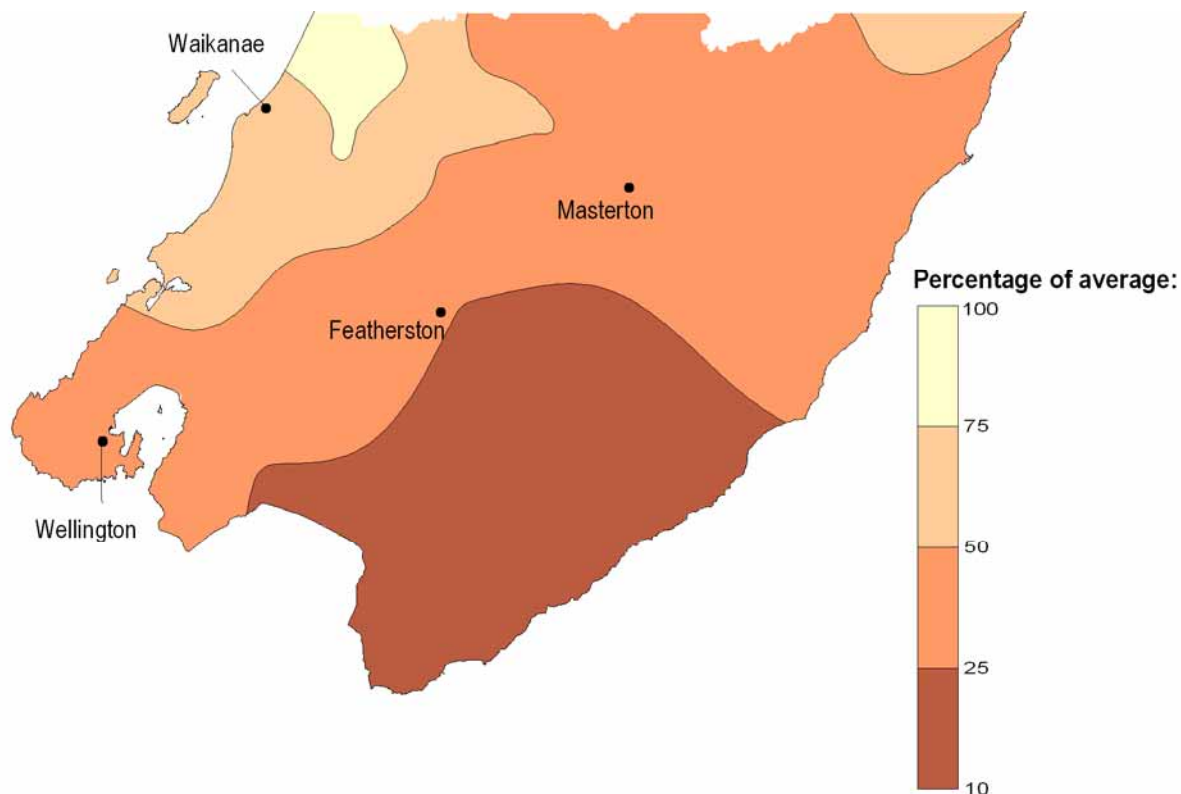
# January 2009 hydrological summary

Environmental Monitoring and Investigations Department

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## Rainfall during January

2009 got off to a dry start, with rainfall during January being below average throughout the Wellington region. Many places received less than half their long-term January average, with most of the Wairarapa having only about one-third of the usual rainfall for the month. Of note, there was only about 19 mm of rainfall in Masterton, and at MetService monitoring locations in Martinborough and Ngawi there was 4 mm and 14 mm respectively. Wellington city and the Hutt Valley were also much drier than average. The Kapiti Coast fared slightly better, but the 31 mm recorded at Paraparaumu was still only 60% of the January average.



## Rainfall during January 2009 as a percentage of the long-term average for the month

In combination with the low rainfall, temperatures were also high in the east of the region. At Masterton there were 19 days in January with peak temperatures higher than 25°C.

Although some parts of the region – such as Wainuiomata and south eastern Wairarapa – had less rainfall than in January 2008, in general this January was not as dry as last. In addition, January 2009 followed a wetter than average December.

The dry, settled weather of January 2009 was a result of more anticyclones than usual to the east of New Zealand, which caused more northerlies than usual over the country (see NIWA's climate summary for January at [http://www.niwa.co.nz/ncc/cs/monthly/mclimsum\\_09\\_01](http://www.niwa.co.nz/ncc/cs/monthly/mclimsum_09_01)).

## River flows

River flows in January were below average for the month throughout the Wellington region. As stable weather set in, the rivers began a long flow recession following a 'fresh' on 3 January. The flow recession was interrupted only by one small fresh following rainfall in the Tararua Range on 18-19 January, but the effects of this event on river flows was short-lived.

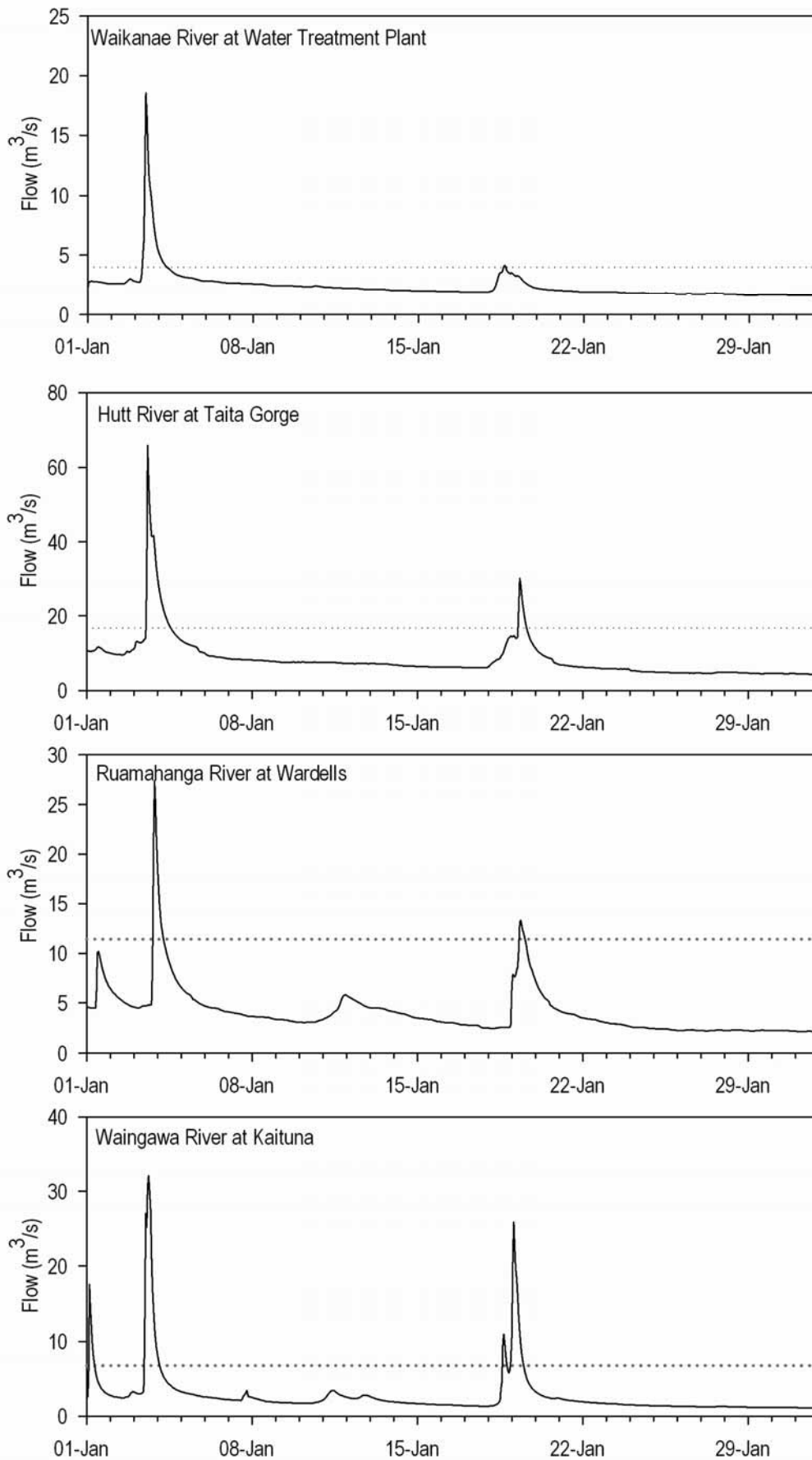
The lowest flows for January occurred right at the end of the month. Although flows were below average overall for the month, the lowest flows were still above the 'mean annual low flow' (the lowest flow that can be expected, on average, once per year). The exception is the Ruamahanga River, which at the end of January was experiencing low flows in the order of a 3 year return period. This was due to a combination of the lack of rainfall during January in the Tararua Range, low flows in the eastern tributary rivers, very low groundwater levels, and abstraction for irrigation and water supply.

By the end of January, water take restrictions were in force for the Ruamahanga, Tauherenikau, Taueru, Waingawa, Whangaehu and Waipoua rivers and the Mangatarere, Otakura and Parkvale streams. Flows in the Waikanae and Hutt rivers were still well above levels at which water takes are restricted.

### River flow statistics for January 2009 at some of Greater Wellington's flow monitoring locations

	Average river flow for January 2009	Percentage of long-term average	Lowest flow during January (raw data, 1-day duration)	Mean annual low flow (1-day duration)
Waikanae River at Water Treatment Plant	2.4 m <sup>3</sup> /s	60%	1.62 m <sup>3</sup> /s on 30 Jan	0.98 m <sup>3</sup> /s
Otaki River at Pukehinau*	13.6 m <sup>3</sup> /s	59%	7.0 m <sup>3</sup> /s on 30 Jan	5.0 m <sup>3</sup> /s
Hutt River at Taita Gorge	8.3 m <sup>3</sup> /s	49%	4.4 m <sup>3</sup> /s on 30 Jan	3.5 m <sup>3</sup> /s
Wainuiomata River at Manuka Track	0.31 m <sup>3</sup> /s	56%	0.22 m <sup>3</sup> /s on 30 Jan	0.18 m <sup>3</sup> /s
Waingawa River at Kaituna	2.7 m <sup>3</sup> /s	40%	1.1 m <sup>3</sup> /s on 30 Jan	1.3 m <sup>3</sup> /s
Waiohine River at Gorge	8.6 m <sup>3</sup> /s	51%	3.8 m <sup>3</sup> /s on 30 Jan	3.1 m <sup>3</sup> /s
Ruamahanga River at Wardells	4.1 m <sup>3</sup> /s	35%	2.1 m <sup>3</sup> /s on 30 Jan	2.8 m <sup>3</sup> /s
Ruamahanga River at Waihenga	16.3 m <sup>3</sup> /s	37%	7.4 m <sup>3</sup> /s on 30 Jan	9.2 m <sup>3</sup> /s

\* NIWA site, co-funded by Greater Wellington



River flows recorded during January 2009 at selected Greater Wellington monitoring locations

## Groundwater levels

Groundwater levels across the region reflected the rainfall and river flow patterns during January. Declines towards summer “low” groundwater levels were most severe in the Wairarapa with levels in Kapiti Coast aquifers faring the best in the region.

### Hutt

Groundwater levels in the artesian Waiwhetu aquifer were below average for January. However, levels at most monitoring sites in the aquifer were still above those recorded at the same time last year. Water levels were also well above the saline intrusion warning level set at the Petone foreshore.

### Kapiti Coast

Groundwater levels in most Kapiti Coast aquifers were above average for January. Rainfall during December sustained groundwater levels into January with record-high water levels for the time of the year recorded in Te Harakeke and Te Hapua wetlands in Waikanae and Te Horo.

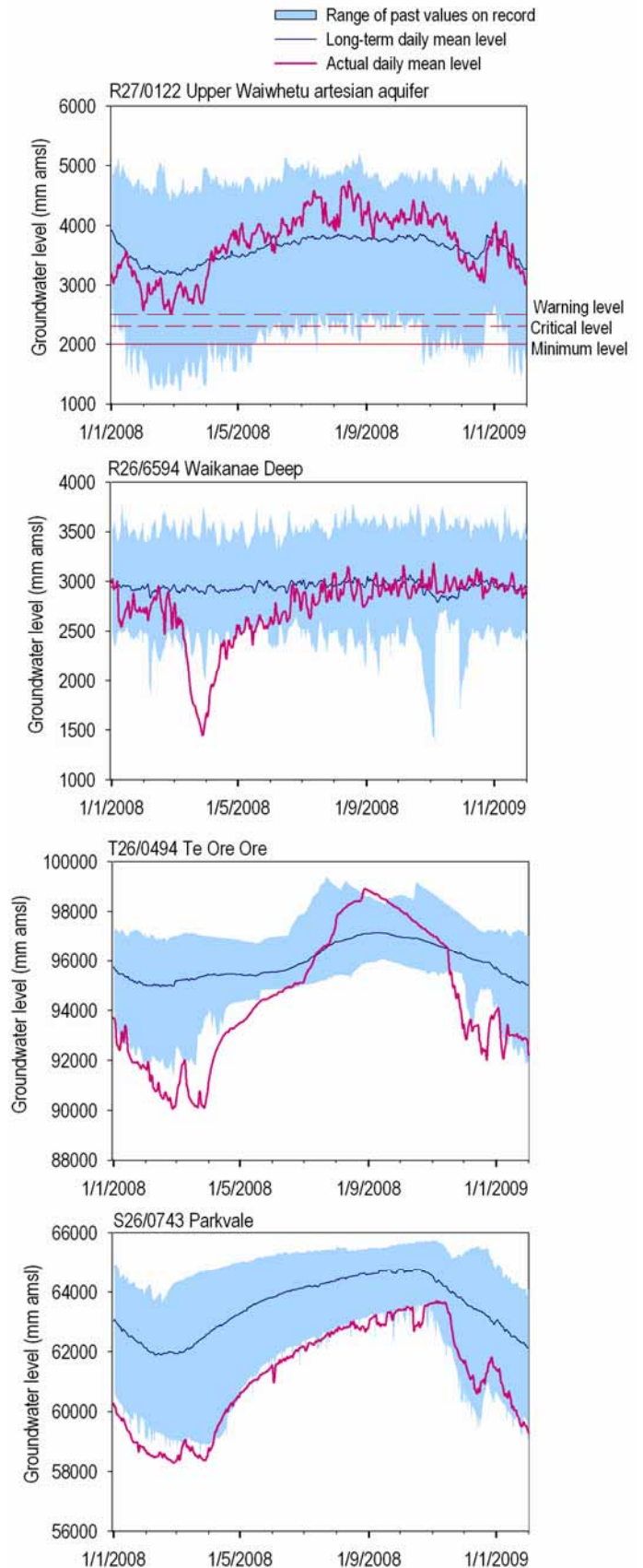
Groundwater levels in the deep Waikanae aquifer remained around average throughout most of January. These levels reflect no significant pumping from the Waikanae bore field yet this summer.

Groundwater declines during January were not as extreme on the Kapiti Coast as in the Wairarapa and the Hutt Valley.

### Wairarapa

Rapid water level declines were recorded in a large number of monitoring sites across the Wairarapa during December and January. This can be seen in both the Te Ore Ore and Parkvale graphs to the right. The drops in water level were a result of the drier than average January conditions combined with groundwater abstraction, particularly for irrigation. By the end of January, many rainfall and river fed unconfined (shallow) aquifers were tracking at record low levels for the time of year.

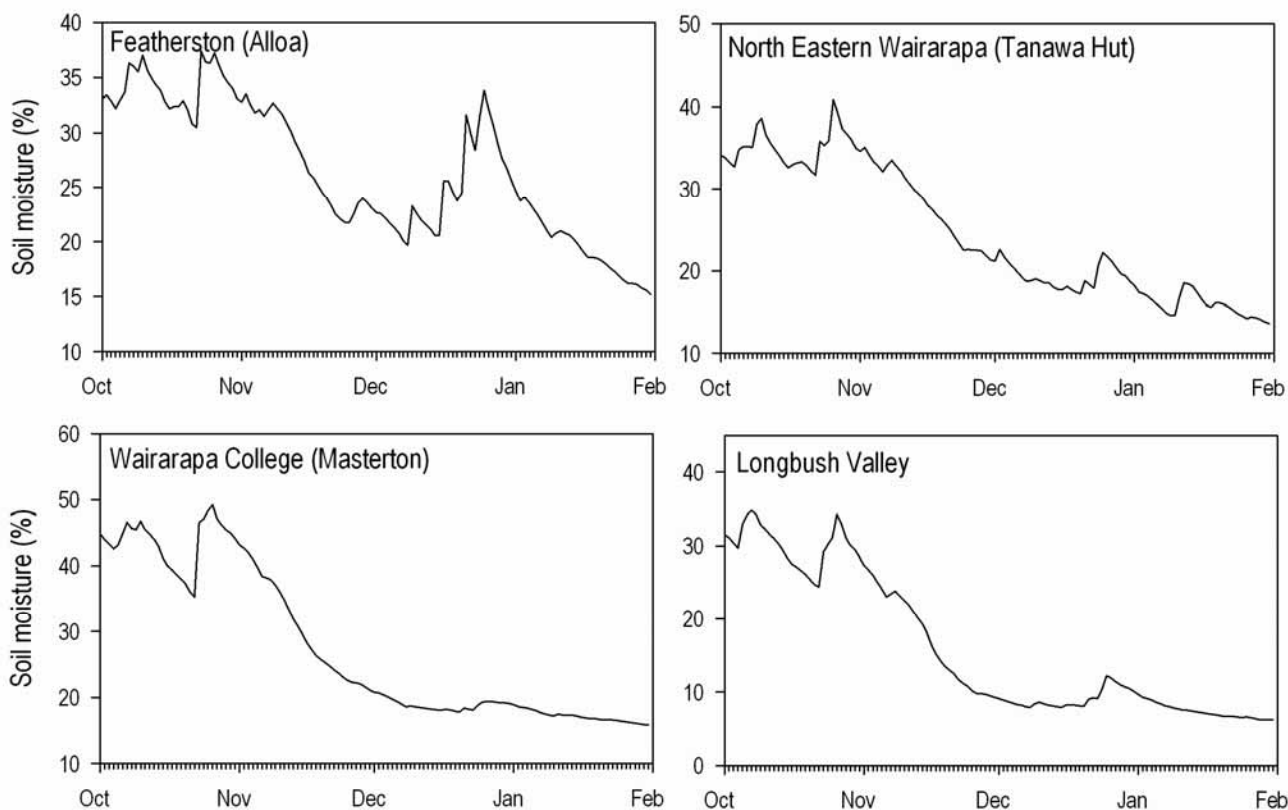
Deeper confined aquifers across the valley continued to experience water levels around long term minimum levels.



Groundwater levels over the last year recorded at selected Greater Wellington monitoring locations

## Soil moisture

During January, soil moisture levels in the Wairarapa declined following rainfall at the end of December. Although slightly higher than at the same time last year, soil moisture levels are now low throughout the Wairarapa. Very warm temperatures during January have meant evapotranspiration rates have been high.



Soil moisture content at Greater Wellington monitoring locations in the Wairarapa over the last few months

## Climate outlook

A moderate La Nina is now established and is expected to continue through autumn. NIWA's climate outlook for February to April favours above average temperatures and normal rainfall throughout the Wellington region (see [http://www.niwa.co.nz/ncc/seasonal\\_climate\\_outlook](http://www.niwa.co.nz/ncc/seasonal_climate_outlook))

## More information

This summary is based on data from selected monitoring locations in the Wellington region. Greater Wellington monitors rainfall, river flows, groundwater levels and soil moisture at many locations that may not be mentioned in this summary report. Maps of site locations and up-to-date data can be found at [www.gw.govt.nz/monitoring](http://www.gw.govt.nz/monitoring).

**Disclaimer:** This report is based on data that have not yet been quality checked. In particular, flow data may be subject to change following adjustment of rating curves. Greater Wellington accepts no responsibility for any interpretation or use of the provisional data in this report.