



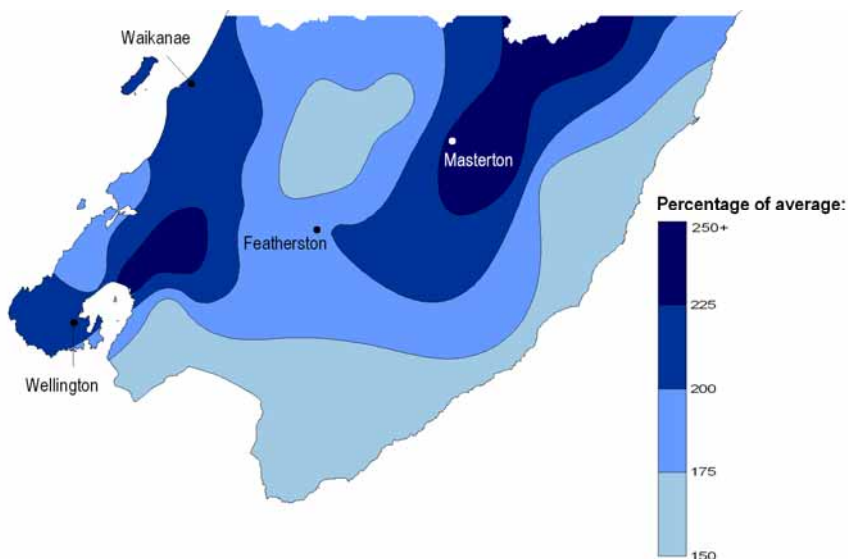
February 2009 hydrological summary

Environmental Monitoring and Investigations Department

Rainfall during February

Following a very dry January, February 2009 had higher than average rainfall throughout the Wellington region. Some places, including the Hutt Valley, Wellington City, Kapiti Coast and the Wairarapa valley, had more than twice the long-term average rainfall for the month. In general it was the wettest February in five years – since February 2004 when there were severe floods in the lower North Island.

Several storm events brought regular rain to the Wellington region during February. The first significant storm occurred on 12 February, when a strong northwesterly airflow and then a southerly change brought heavy rainfall to most parts of the region. A second storm on 20 February brought rainfall that was particularly heavy in Lower Hutt, Wellington City, and the eastern Tararua Range. Over a six hour period from 7 am, Lower Hutt received 64.4 mm of rainfall – the most rainfall over this duration since January 2005. On the last day of the month, 28 February, a low from the tropics swept down over the country from the north, causing rainfall in many parts of the North Island. In the Wellington region it was more significant in eastern Wairarapa and on the Wairarapa plains, with between 40 and 60 mm over 24 hours. The generally unsettled weather during the second half of February was due to higher than normal pressure to the southwest of the country and more depressions than normal to the east of New Zealand (see NIWA’s climate summary for February at www.niwa.co.nz/ncc/cs/monthly/mclimsum_09_02)



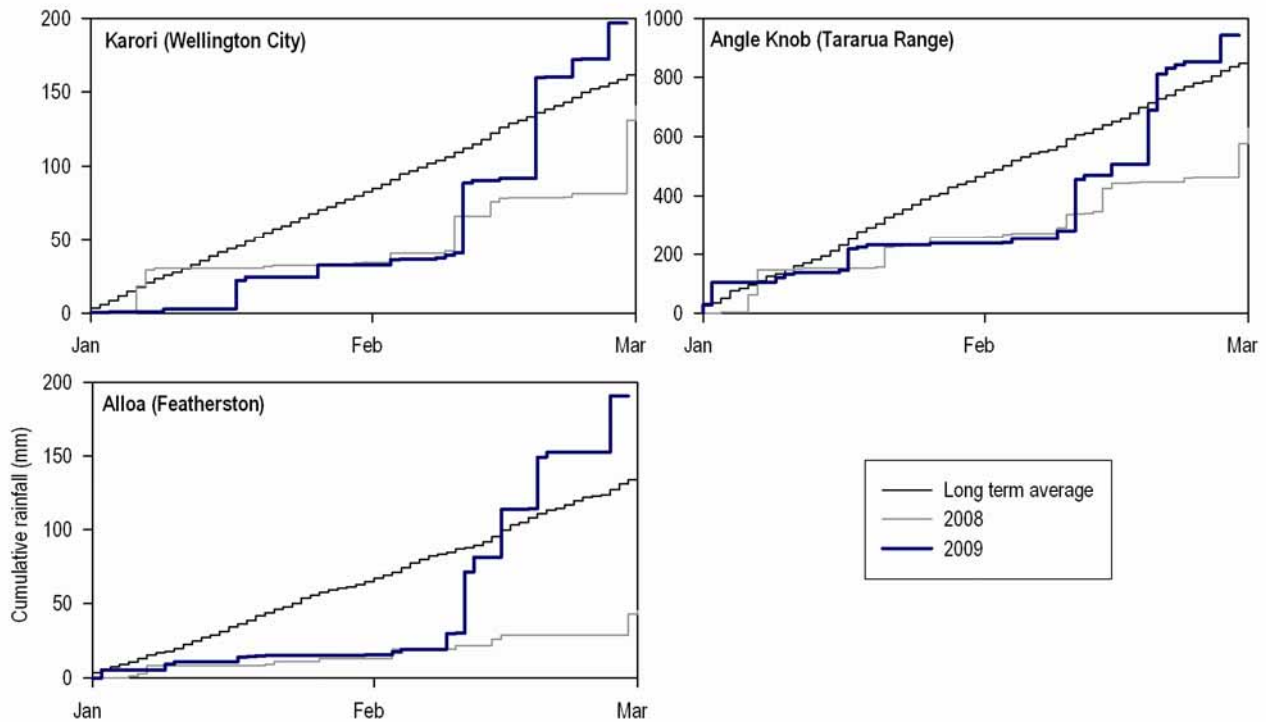
Rainfall during February 2009 as a percentage of the long-term average for the month

Rainfall in the year to date

Throughout the region we generally received about, or more than, average rainfall for the first two months of the year combined (see table and graphs below). Most parts of the region had significantly more rainfall than at the same time last year, when we were in the grip of a drought caused by La Nina conditions.

Year-to-date rainfall statistics for selected monitoring sites in the Wellington region

	Rainfall for February at monitoring site (mm)	Rainfall for 2009 to end of February (mm)	Percentage of long-term average for year to date
Waikanae	180	232.5	147%
Karori	164	197	124%
Kaitoke	235.5	304	110%
Wainuiomata	149.5	178	80%
Featherston ('Alloa')	175	190	150%
NE Wairarapa ('Tanawa Hut')	152	190	138%
Tararua Range ('Angle Knob')	704	943	113%



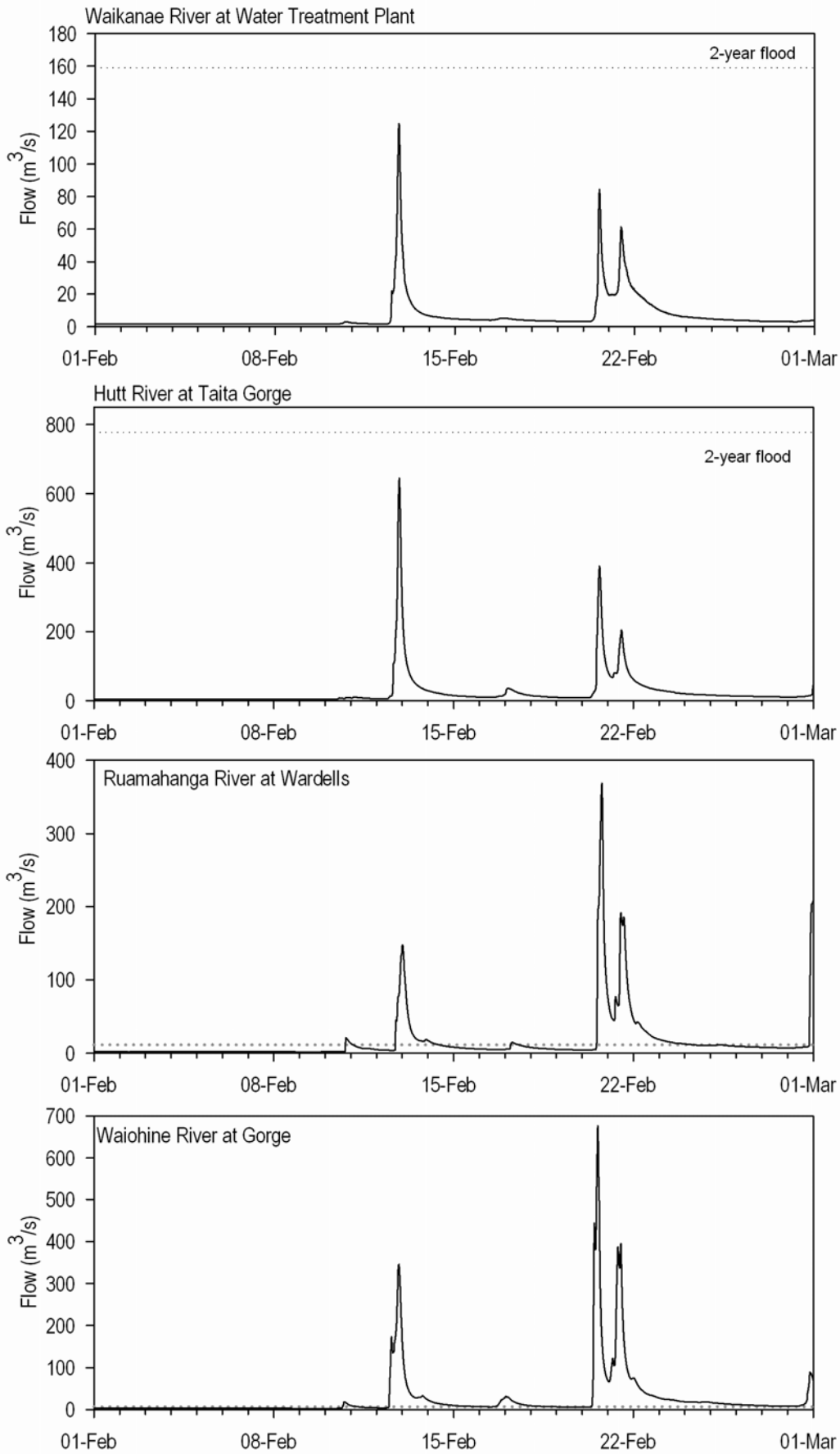
Cumulative annual rainfall at selected sites in the Wellington region

River flows during February

At the start of February, river flows were becoming low – particularly in the Wairarapa where restrictions on water takes from rivers and streams were imposed. However, the high rainfall of February increased river flows significantly and overall for the month river flows were well above average. The highest river flows of the month occurred during the storms of 12 February and 20 February. The Hutt River had its highest flow (on 12 February) since November 2006, and the Waikanae River its highest flow since the flood of 8 January 2008. However, although there was some surface flooding in Lower Hutt and Wellington City, there was no significant flooding due to high rivers.

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

	Average river flow for February 2009	Percentage of long-term average	Highest flow during February (raw data)
Waikanae River at Water Treatment Plant	6.4 m ³ /s	189%	125 m ³ /s on 12 Feb
Akatarawa River at Cemetery	5.8 m ³ /s	167%	213 m ³ /s on 12 Feb
Mangaroa River at Te Marua	2.4 m ³ /s	151%	52 m ³ /s on 12 Feb
Hutt River at Taita Gorge	24.4 m ³ /s	169%	645 m ³ /s on 12 Feb
Wainuiomata River at Manuka Track	0.68 m ³ /s	190%	20 m ³ /s on 20 Feb
Waingawa River at Kaituna	8.8 m ³ /s	130%	190 m ³ /s on 20 Feb
Waiohine River at Gorge	26 m ³ /s	151%	677 m ³ /s on 20 Feb
Ruamahanga River at Wardells	15.7 m ³ /s	121%	368 m ³ /s on 20 Feb
Ruamahanga River at Waihenga	50 m ³ /s	109%	633 m ³ /s on 20 Feb



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

Groundwater levels

Increases in water levels were recorded at groundwater level monitoring sites across the region in response to the wetter than average conditions during February. At the start of the month some of our monitoring sites had record-low groundwater levels, but this situation changed with the rainfall over the course of the month.

Water level recoveries were observed in both rainfall and river recharged aquifers. Monitoring data suggests that further extreme or record-low groundwater levels will not be experienced in region this season.

Hutt

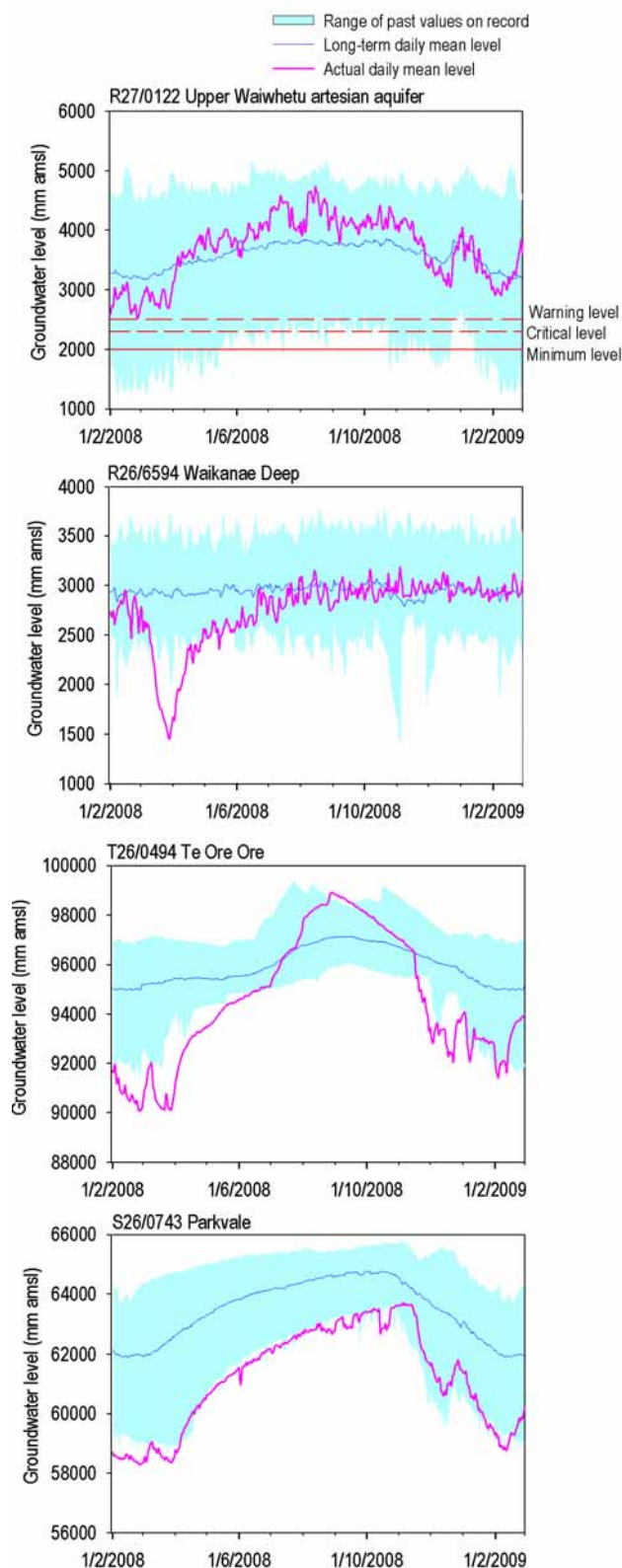
Groundwater levels in the artesian Waiwhetu aquifer increased through the month. Levels at the McEwan Park (R27/0122) monitoring site were above average for February.

Waikanae

Groundwater levels in Kapiti Coast aquifers remained at average or above average conditions during February. Levels recorded at the Te Harakeke wetland monitoring site in Waikanae were at record high levels for this time of year.

Wairarapa

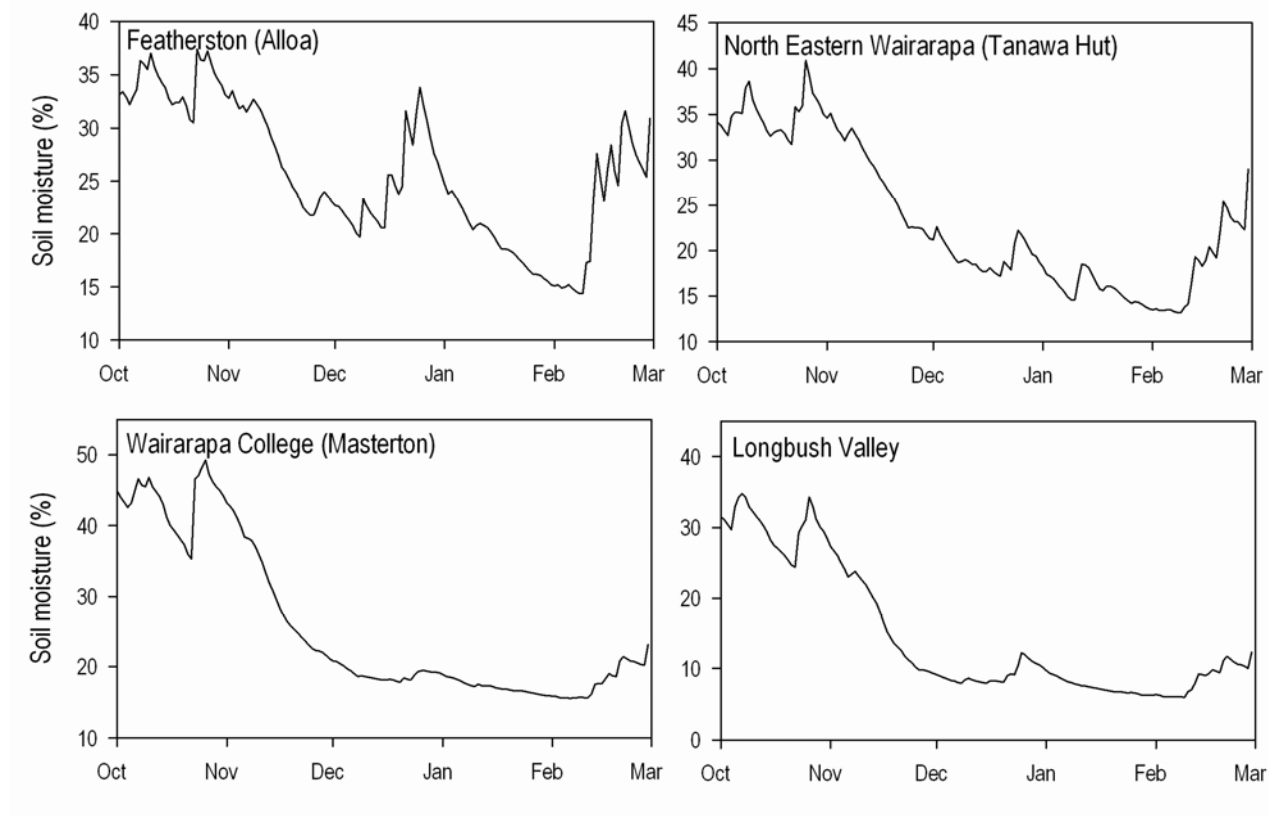
The rapid declines in water level recorded during January at many of our Wairarapa aquifer monitoring sites reversed during mid February, with groundwater level recoveries seen at most sites. While many sites were still below average some sites recorded above average conditions. It is not expected that further severe low levels will be experienced in Wairarapa aquifers this irrigation season.



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

Soil moisture

Soil moisture in the Wairarapa increased during February due to the high rainfall. The increase was significant on the southern Wairarapa plains (indicated by 'Alloa' below) and in north eastern Wairarapa, but was more subdued in Masterton and at Longbush. By the end of the month soil moisture was considerably higher than at the same time last year.



Soil moisture content at two Greater Wellington monitoring locations over the last year

Climate outlook

NIWA's climate outlook for March to May 2009 favours normal rainfall and temperatures in Wellington and Wairarapa (see http://www.niwa.co.nz/ncc/seasonal_climate_outlook). A moderate La Nina in the tropical Pacific is expected to continue through autumn.

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.

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.