

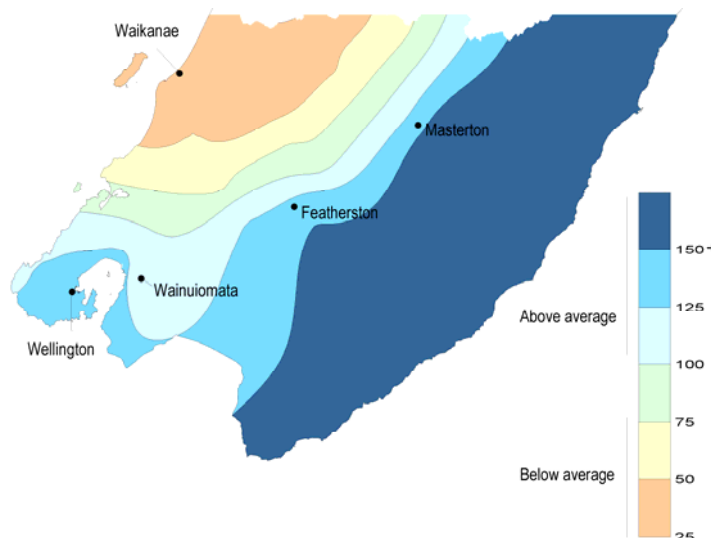


May 2008 hydrological summary

Environmental Monitoring and Investigations Department

Rainfall during May

May 2008 was dominated by southerly and south easterly airflows over the Wellington region, and this was reflected in the rainfall pattern for the month (see map). Rainfall was significantly higher than average during May in the eastern Wairarapa, and above average in the Wairarapa valley, Wellington City, Porirua and Lower Hutt. Of note, unusually heavy rainfall occurred in Wellington City and Porirua on the night of 30 April / 1 May, as a result of a southerly front stalling over the area. Nearly 80 mm of rain fell over a 6-hour period (about half of the rainfall for the month), causing surface flooding in urban areas.



Rainfall during May 2008 as a percentage of the long-term average for the month

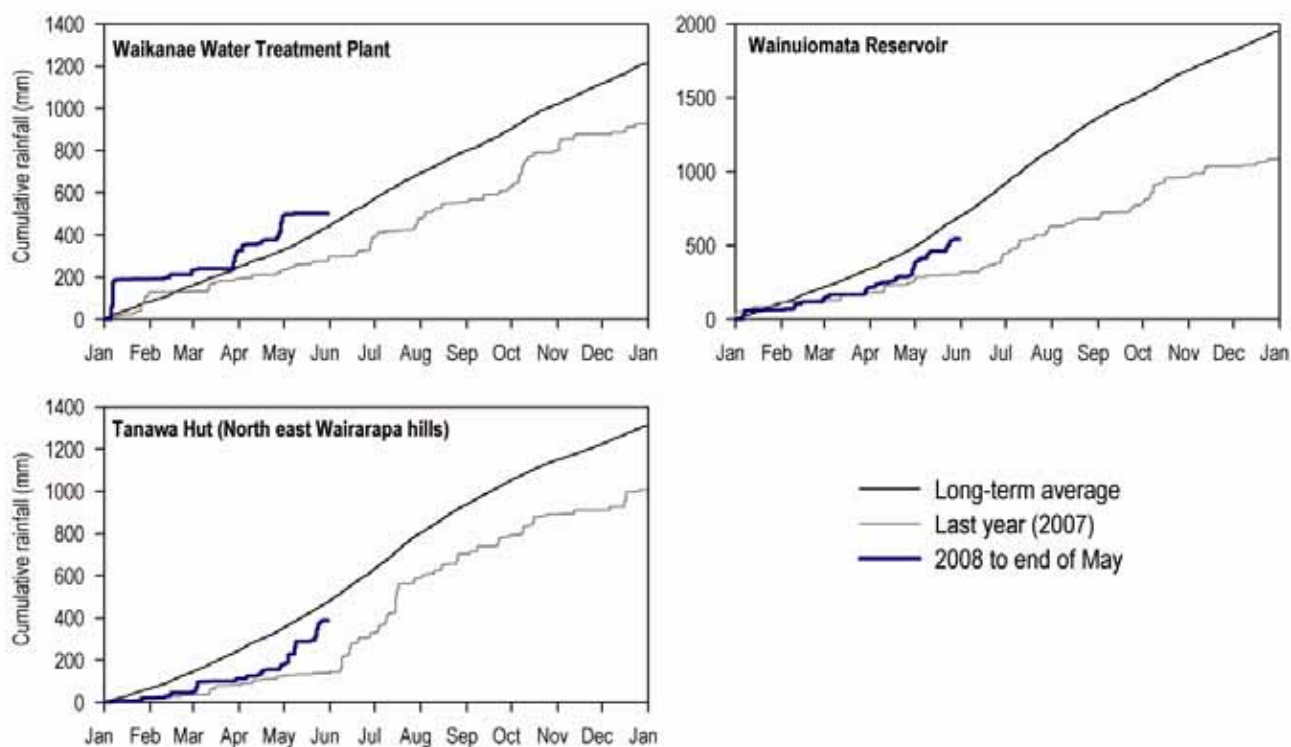
In contrast, due to the lack of westerly airflows, the Kapiti Coast and Tararua Range had significantly lower than average rainfall for May. Paraparaumu, Waikanae and Otaki received less than one-third of their long-term average rainfall for the month and it was the driest May in the western Tararua ranges since records began in 1991. NIWA have reported it was the driest May since monitoring began at Paraparaumu Aerodrome in 1945 (see NIWA's climate summary for May: Salinger & Renwick 2008).

Snapshot of rainfall in the year to date

Despite the relatively dry conditions of May, the Kapiti Coast has had above-average rainfall for the year to date, in general due to the heavy rainfall events of early January, late March and the end of April. Similarly, despite a dry summer, rainfall for the year has been above average in Wellington, Porirua and Lower Hutt cities as a result of the wet autumn. The rainfall of May has boosted the year-to-date totals considerably in the Wairarapa. The eastern Wairarapa hills and Wairarapa plains are now at 80-90% of rainfall usually received by the end of May, up from 50-60% at the end of March. As shown by the table below and the graphs overleaf, at our monitoring site 'Tanawa Hut' in north-east Wairarapa the rainfall during May more than doubled the rainfall total for the year to date. In general, rainfall to date has been higher than at the same time last year.

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

	Rainfall for May at monitoring site (mm)	Rainfall for 2008 to end of May (mm)	Percentage of long-term average for year to date
Waikanae	40	502	115%
Karori	153	544	118%
Kaitoke	163.5	571	69%
Wainuiomata	205	544	78%
Featherston ('Alloa')	139	363	93%
NE Wairarapa ('Tanawa Hut')	210.5	389	81%
Tararua Range ('Angle Knob')	293.5	1543	65%



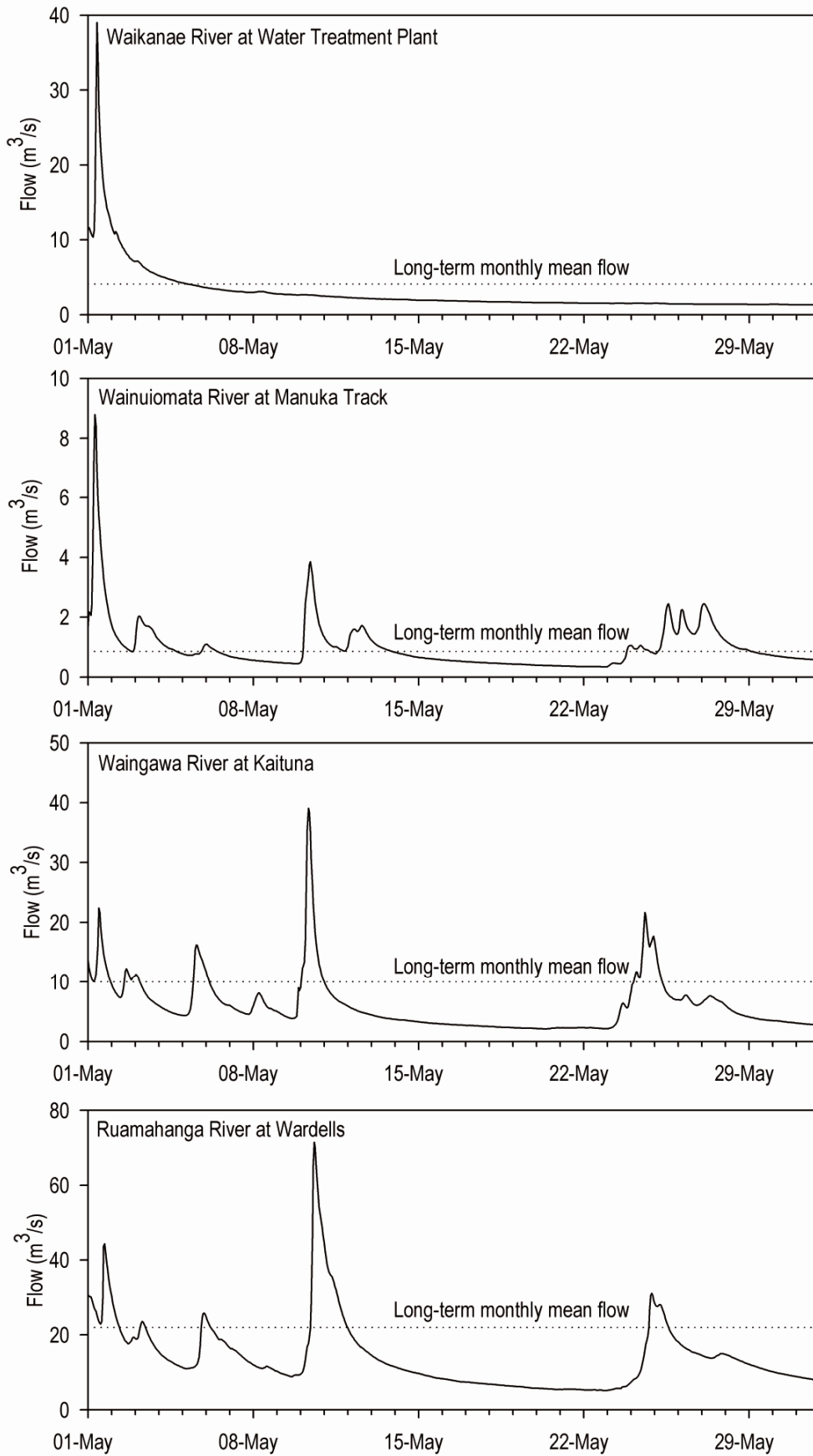
Cumulative annual rainfall at selected sites in the Wellington region

River flows during May

In general the rivers of the Wellington region had frequent freshes during May. The exceptions were the rivers and streams of the Kapiti Coast, where very low rainfall led to stable river flows (following a fresh on the first day of the month). Rivers fed from the Tararua Range (including the Waikanae, Otaki, Hutt and Ruamahanga rivers and their tributaries) had below-average flows for May. Although the Porirua Stream flood warning alarm was triggered on 1 May after sustained heavy rainfall around Wellington and Porirua cities, there were no significant floods during the month.

River flow statistics for May 2008 at some of Greater Wellington's flow monitoring locations

	Average river flow for May	Percentage of long-term average	Lowest 1-day flow during May (raw data)	Highest flow during May (raw data)
Waikanae River at Water Treatment Plant	3.0 m ³ /s	73%	1.3 m ³ /s on 30/5	41 m ³ /s on 1/5
Akatarawa River at Cemetery	3.4 m ³ /s	69%	1.5 m ³ /s on 30/5	97 m ³ /s on 1/5
Mangaroa River at Te Marua	2.3 m ³ /s	67%	0.84 m ³ /s on 22/5	21 m ³ /s on 1/5
Hutt River at Taita Gorge	20.0 m ³ /s	91%	6.5 m ³ /s on 22/5	245 m ³ /s on 1/5
Wainuiomata River at Manuka Track	1.0 m ³ /s	117%	0.34 m ³ /s on 21/5	9 m ³ /s on 1/5
Waingawa River at Kaituna	6.0 m ³ /s	60%	2.2 m ³ /s on 19/5	40 m ³ /s on 10/5
Waiohine River at Gorge	16.0 m ³ /s	68%	5.5 m ³ /s on 22/5	132 m ³ /s on 10/5
Ruamahanga River at Wardells	14.0 m ³ /s	64%	5.2 m ³ /s on 22/5	72 m ³ /s on 10/5
Ruamahanga River at Waihenga	52.7 m ³ /s	67%	18.9 m ³ /s on 22/5	256 m ³ /s on 10/5



River flows recorded during May 2008 at selected Greater Wellington monitoring locations

Groundwater levels

Groundwater levels across the region are recovering due to the onset of winter recharge conditions and a reduction in major abstractions in many areas. However, levels in of the many aquifers are still tracking around the long-term minima, reflecting the lack of summer / early autumn recharge and higher than normal rates of groundwater abstraction during the summer.

Hutt

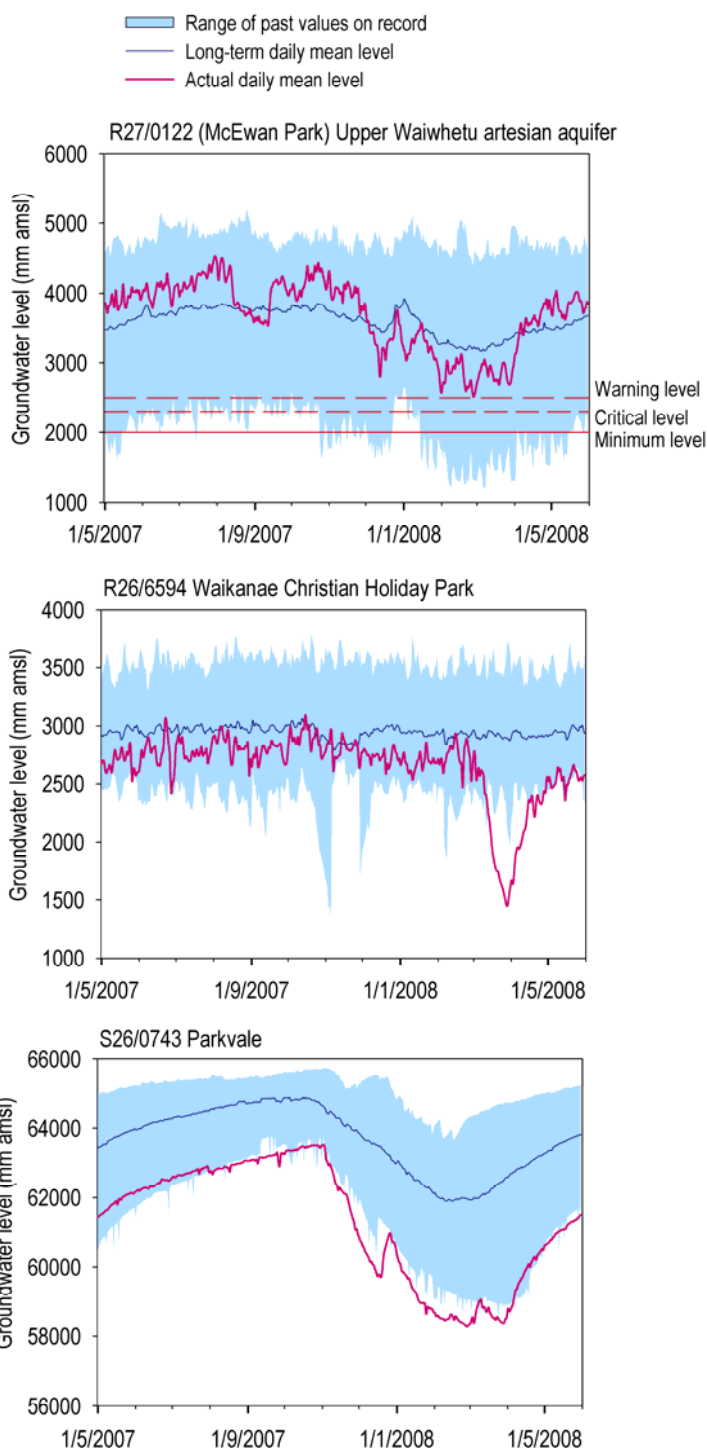
Groundwater levels in the artesian Waiwhetu Aquifer in Lower Hutt during May were slightly above average for the time of the year. The recovery in water level since January / February is due to lower abstraction from the Waterloo borefield.

Waikanae

Groundwater levels in the Waikanae aquifer are tracking around the long-term minimum for this time of year. The low groundwater levels during May are a result of the dry conditions on the Kapiti Coast and lower than average flows in the Waikanae River during the month (see above). The Waikanae aquifer may also still be recovering from use of the Waikanae borefield during March.

Wairarapa

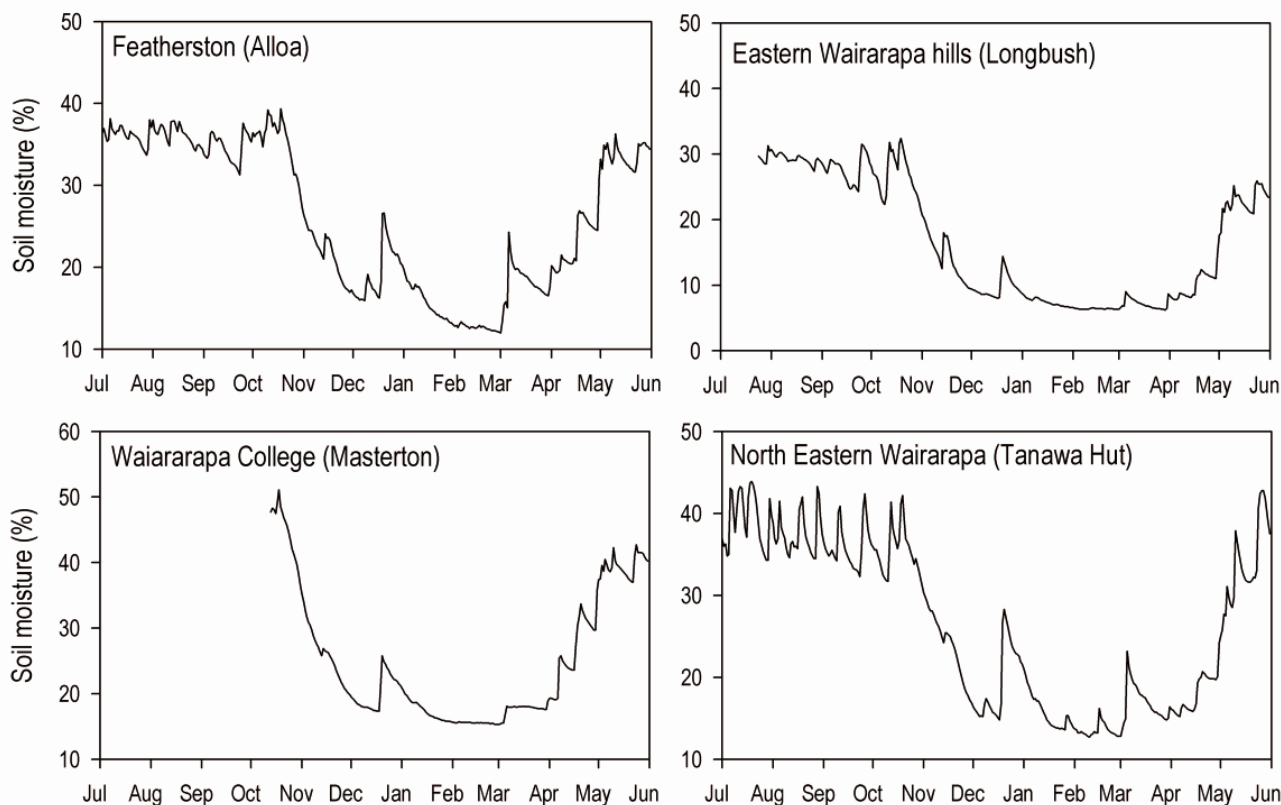
Groundwater levels in many of the Wairarapa aquifers are recovering following the cessation of major irrigation abstraction and the onset of winter recharge. Although groundwater levels are still covering from the summer lows, many aquifers continue to track at long-term minimum levels, as shown by the graph for borehole S26/0743 in the confined Parkvale aquifer.



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

Soil moisture

During May, soil moisture levels continued to recover significantly in the Wairarapa. Despite being very low from November through until March, soil moisture is now at about pre-summer levels and about normal for the time of the year at our key monitoring locations. Soil temperatures during May were generally lower than average for the time of the year.



Soil moisture content at Greater Wellington monitoring locations, over the 2007/08 growing year (from 1 July to 30 June)

Climate outlook

The La Nina weather pattern, which brought dry conditions to the Wairarapa and Wellington over summer, has now ended. Global climate models show that in the near future the El Nino Southern Oscillation is likely to remain neutral, i.e., not favouring either La Nina or El Nino. The NIWA climate outlook for June to August 2008 (Salinger & McKerchar, 2008 see http://www.niwa.co.nz/ncc/seasonal_climate_outlook) predicts normal to above normal rainfall in the Wellington region for the three-month period.

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.