



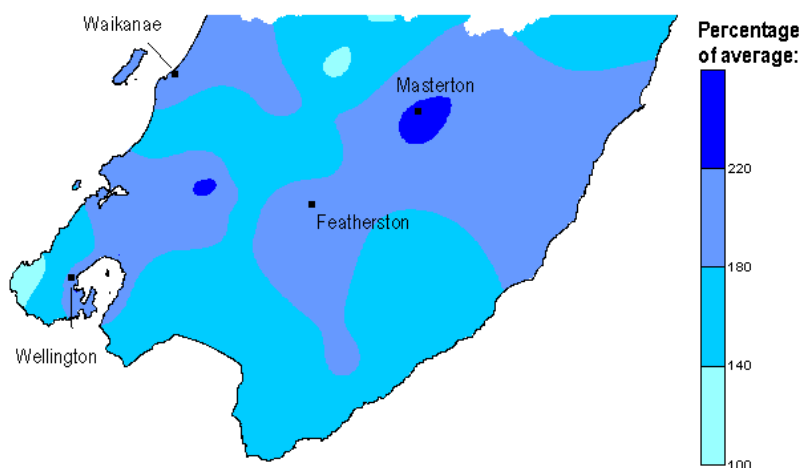
April 2011 hydrological summary

Environmental Monitoring and Investigations Department

Rainfall in April

April was a wet month across the Wellington region. All Greater Wellington monitoring sites recorded higher than average rainfall for April and many sites recorded their highest April totals since 1990. Rainfall was particularly high – around double the long term average – on the Kapiti Coast, in the Hutt Valley, Wairarapa basin and eastern hill country (see map at right).

Rain fell on between 13 and 15 days of the month at most monitoring sites, although the greatest intensity falls were associated with three discrete weather systems. The first two systems (3–5 April and 15–18 April) were southerly fronts while the third (25–27 April), and most significant with respect to daily totals, brought remnants of the northeasterly front that delivered record rainfall to parts of coastal Hawke’s Bay.



Rainfall in April 2011 as a percentage of the long-term average for this month

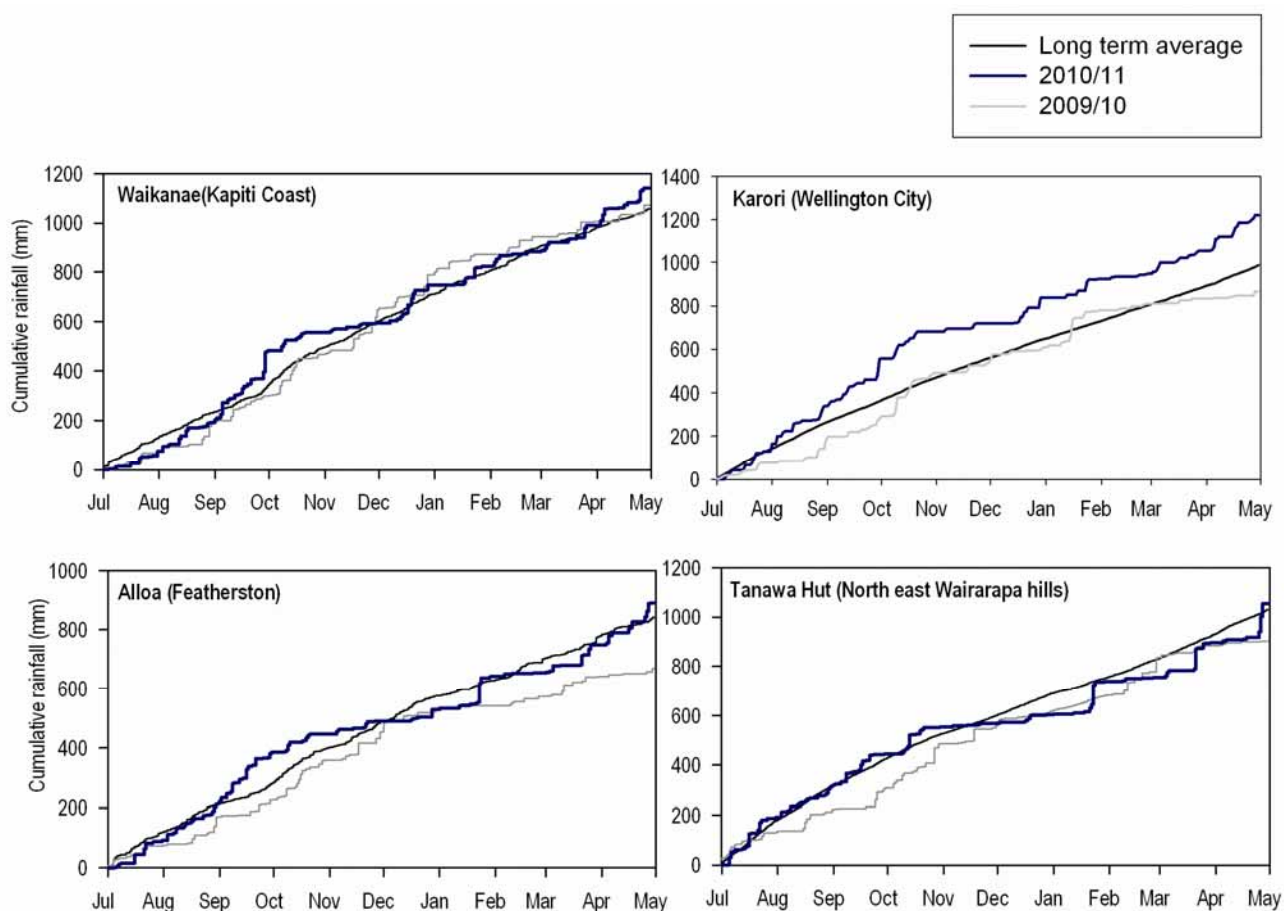
Rainfall since mid-winter 2010

Rainfall since July 2010¹ is close to, or slightly higher, than the long-term average for the same period for most monitoring sites across the region (see following table). Cumulative rainfall plots on the next page highlight in particular the wetter than average year to date in Wellington City (see ‘Karori’ plot) and the significance of intermittent heavy falls in the Wairarapa over summer for keeping overall rainfall totals close to average (see plots for ‘Tanawa Hut’ and ‘Alloa’). The Wainuiomata Valley stands out as one of the only parts of the region to have had a relatively dry year to date.

Rainfall statistics for the year since July 2010 for selected monitoring sites in the Wellington region

	Rainfall for April at monitoring site (mm)	Rainfall for period July 2010 to the end of April 2011 (mm)	Percentage of long-term average for year- to-date from July 2010
Waikanae	151.0	1,128	104%
Karori	166.0	1,213	123%
Kaitoke	281.5	1,883	102%
Wainuiomata	219.5	1,447	96%
Featherston (‘Alloa’)	142.6	890.5	105%
NE Wairarapa (‘Tanawa Hut’)	159.5	1,051	102%
Tararua Range (‘Angle Knob’)	576.0	5,870	100%

¹ The ‘water’ year runs from July to June so that it begins and ends during mid-winter when there is generally plenty of water in the hydrological system.



Cumulative rainfall for the water year-to-date since July 2010 at selected sites in the Wellington region

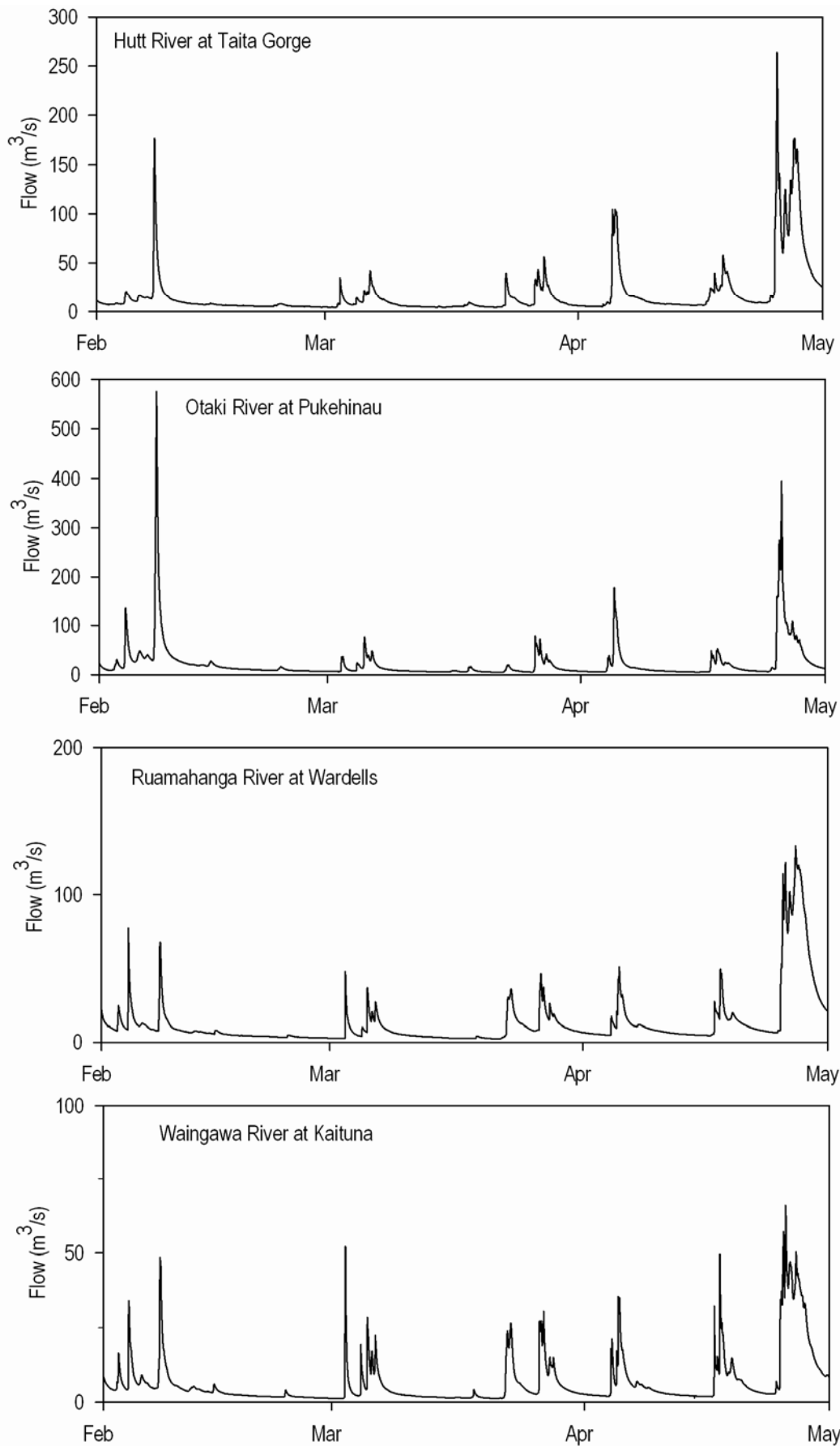
River flows during April

Mean flows in rivers and streams across the region were well above average during April as a result of the higher than normal rainfall (see table below). This contrasts markedly with April 2010 when significant low flow recessions occurred during a very dry autumn and water use restrictions were in place.

Flow responses to the three frontal systems described earlier (see ‘Rainfall in April’) can be clearly seen in the hydrographs on the following page. While the late April event was the largest fresh since early February in most rivers and streams, it remained well below significant flood levels in monitored waterways.

River flow statistics for April 2011 at selected flow monitoring locations in the Wellington region

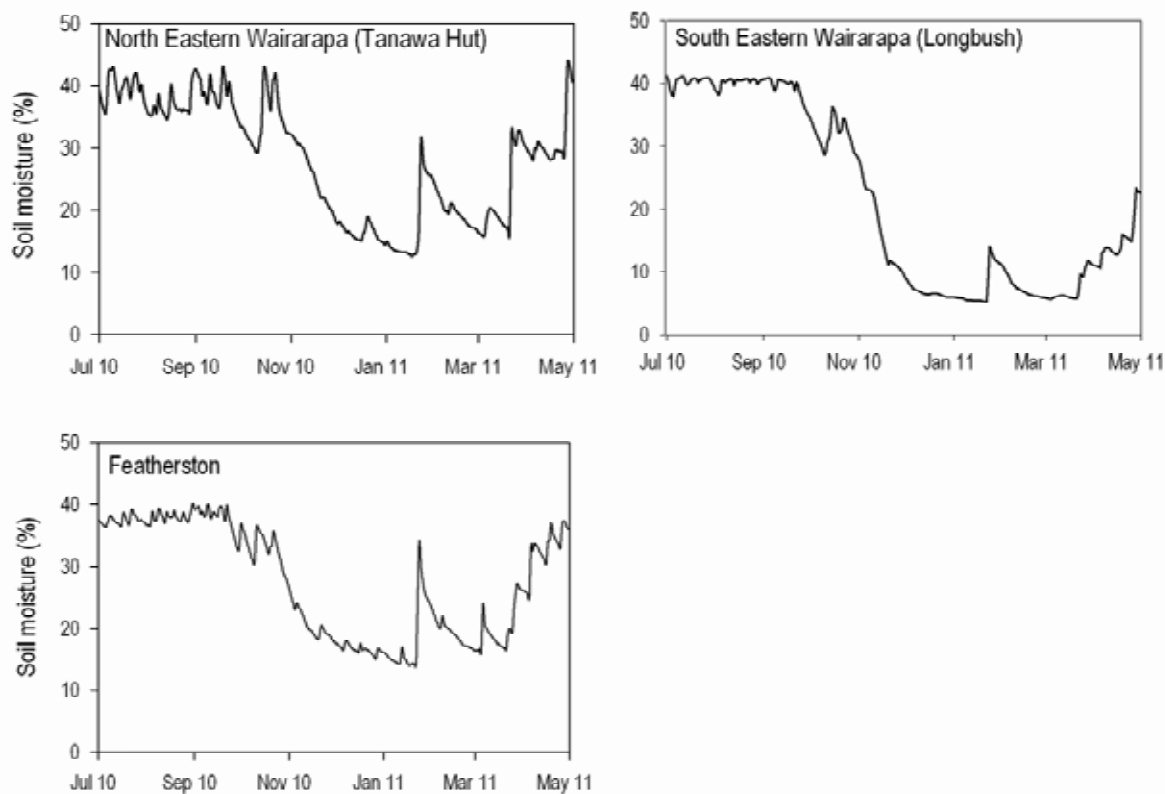
	Average river flow for April 2011 (m ³ /s)	Percentage of long-term April average	Peak (instant) flow during April (raw data)
Otaki River at Pukehinau	27.14	142%	394.3 m ³ /s on 25/4
Akatarawa River at Cemetery	5.646	166%	79.46 m ³ /s on 25/4
Hutt River at Taita Gorge	29.84	202%	263.2 m ³ /s on 25/4
Wainuiomata River at Manuka Track	0.720	155%	5.007 m ³ /s on 27/4
Waingawa River at Kaituna	10.32	135%	65.76 m ³ /s on 25/4
Waiohine River at Gorge	30.62	172%	231.4 m ³ /s on 25/4
Ruamahanga River at Wardells	22.06	147%	133.3 m ³ /s on 27/4
Ruamahanga River at Waihenga	74.59	136%	385.6 m ³ /s on 27/4



River flows recorded during the period February to April 2011 at selected monitoring locations in the Wellington region

Soil moisture levels in the Wairarapa

Soil moisture content at Greater Wellington monitoring sites in the Wairarapa climbed in April in response to the significant rainfall (see graphs below). By the end of the month, soil moisture content was back to typical winter levels at two monitoring sites ('Tanawa Hut' and 'Featherston') and additional NIWA monitoring data indicated no significant soil moisture deficits existed in the Wairarapa.



Soil moisture content for the period July 2010 to April 2011 at Greater Wellington monitoring locations in the Wairarapa

Climate outlook – April to June 2011

NIWA's climate outlook for April to June 2011 indicates that the La Niña event is continuing in the tropical Pacific, but is weakening. Neutral conditions are expected in the tropical Pacific by the beginning of winter. In the west of the Wellington region, seasonal rainfall, soil moisture and river flows for the period April–June are likely to be near normal. In the Wairarapa, rainfall, soil moisture and river flows are equally likely to be near normal or above normal (see <http://www.niwa.co.nz/our-science/climate/publications/all/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.

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.