

## August 2012 Monthly Flow and Rainfall Report

### General

The weather during August 2012 was dominated by large troughs of low pressure or depressions in the Tasman Sea or over New Zealand bringing easterly quarter winds onto the South Island, significant rain in the east of the South Island but generally dry weather inland and to the south. Westerly quarter and southerly quarter winds were very infrequent which resulted in low rainfall totals around the southern lakes and warmer than average temperatures throughout the region.

The easterly quarter winds and rain were a continuation of the pattern that had started in July and a significant rainstorm at the end of July had caused high river levels and generally saturated ground in the east from Taieri Plains to the Waitaki River.

### North Otago

August was very wet in this area. Virtually all the rain fell in the first 21 days of August and the final 10 days of the month were dry which allowed the rivers to fall and the ground to dry out somewhat. Total falls at the indicator sites (average monthly totals in brackets) included:

Waikoura	165.9mm (42.6mm)	289% above average
Oamaru Airport	111.8mm (37.9mm)	195% above average
Oamaru Town	142.6mm (42.3mm)	237% above average
Kauru the Dasher	273.5mm (55.4mm)	394% above average
Islay Downs	79.5mm (43.8mm)	82% above average
Palmerston	169.4mm (56.7mm)	199% above average

Heavy falls during the month included: on 7/8 August, Waikoura 38.8mm, Oamaru Airport 35.6mm, Oamaru Town 40.4mm, the Dasher 44.5mm, Islay Downs 55mm; on 12-14 August, Waikoura 75mm, Oamaru Airport 50.8mm, Oamaru Town 67mm, the Dasher 132mm, Palmerston 70mm; and 19/20 August, Waikoura 37.1mm, Oamaru Town 23.8mm, the Dasher 77.5mm, Palmerston 22.6mm.

Average monthly river flows in all rivers and streams in this area were well above their long term averages and flooding did occur in much of North Otago. A significant flood on 31 July meant that rivers were high and the ground was wet at the start of August. The subsequent heavy rains in August resulted in rapid rises in all rivers and streams. The largest of the flood peaks occurred on 14/15 August with a 3m rise being recorded in the Kakanui at Clifton Falls and a 1.6m rise in the Shag River at the Grange. River flows had fallen considerably by the end of August.

Farmers report growth was good by the end of the month but had been too wet during most of the month for any growth before that. Temperatures were warmer than usual with fewer frosts.

### **Central Otago**

With one exception, rainfall totals were all well below average for August. The exception was Hills Creek which ended the month 40% above average. Total falls at the indicator sites (average monthly totals in brackets) included:

Lindis Crossing	10.5mm (38.5mm)	73% below average
Cromwell	13mm (31.6mm)	59% below average
Alexandra	8.6mm (18.5mm)	54% below average
Hills Creek	37.5mm (27mm)	39% above average
Merino Ridges	12mm (20mm)	30% below average
Ranfurly	22.6mm (25mm)	10% below average
Tima	12.5mm (42.2mm)	70% below average

Significant falls included on 12 August, Hills Creek 23.5mm, Ranfurly 14.6mm.

Average monthly river flows were above their long term averages for the month. They began August at above average flows due to the rain at the end of July and while the valleys and plains generally avoided the easterly quarter rain, it did occasionally fall on the hills and mountains and this maintained flows higher than average. There was a small rise in the Manuherikia at Ophir following the heavier rain on 12 August.

Farmers report a good month with some growth and not as many frosts as usual. Conditions are good going into spring.

### **Lakes Wanaka, Wakatipu and Hawea and Surrounding Areas**

Rainfall totals were well below average throughout this area in August. The persistent easterly quarter weather resulted in long dry periods during the month.

Total falls at the indicator sites (average monthly totals in brackets) included:

Makarora Station	104.9mm (213.5mm)	51% below average
Hunter Valley Station	N/A	
Glenfinnan	68.1mm (185.1mm)	63% below average
Hawea Flat	24.6mm (57.9mm)	58% below average
Routeburn Station	44.5mm (183.2mm)	76% below average
Queenstown	19.7mm (60.3mm)	67% below average

Significant falls during the month included: on 4/5 August, Makarora 41.8mm, Glenfinnan 18.3mm; and on 25/26 August, Makarora 46.4mm, Glenfinnan 31.7mm, Routeburn 33mm, Queenstown 18.1mm.

Average monthly river flows were well below their long term averages for August due to the lack of rain. Levels in Lakes Wanaka and Wakatipu began the month at

276.90m and 309.58m, 0.12m and 0.21m below their long term averages of 277.02m and 309.79m respectively. Levels in both lakes slowly fell during the month but they did become steady in the last week of August. By the end of the month, Wanaka was at 276.60m and Wakatipu 309.40m, 0.42m and 0.39m below average respectively.

Lake Hawea continued to decline during August. It began the month at 339.71m, 2.59m below the long term average of 342.30m and ended the month at 338.50m, 2.8m below the long term average and only 0.5m from its minimum level.

Farmers report August was a good month and was milder than usual. Good growth had started and was at least 2-3 weeks ahead of what is usual for this time of the year.

### **Strath Taieri, Lower Taieri and Dunedin**

Rainfall totals in this area were either close to average or well above average. The easterly quarter winds typically produce heavy rain in the higher parts of Dunedin City and rainfall amounts decrease rapidly with distance south from the City. Total falls at the indicator sites (average monthly totals in brackets) included:

Middlemarch	25.4mm (27mm)	6% below average
Musselburgh Dunedin	103.2mm (60.3mm)	71% above average
Lee Flat	N/A	
Maungatua	53.5mm (53.5mm)	average
Dunedin Airport	53.6mm (45.2mm)	19% above average
Pine Hill	235.5mm (56mm)	321% above average

Significant falls during the month included: on 12-14 August, Dunedin Airport 43.6mm, Musselburgh 69.2mm, Maungatua 44mm, Pine Hill 166.5mm; and on 19-21 August, Musselburgh 18.6mm, Pine Hill 43mm.

Average monthly river flows were generally above their long term averages for August. They began the month at high flows due to the heavy rain and flooding at the end of July and during the August they generally responded with each heavy rain period. The highest flows occurred around 14/15 August when the Water of Leith rose at least 1m, the Silverstream rose at least 2m, the Taieri at Outram rose 5m and the Taieri at Tiroiti about 2m. River flows were steadily declining at the end of the month since there was no significant rain in any of the catchments after 21 August.

Farmers report that while it was wet, it was also milder than usual and the warmer temperatures and moist ground resulted in good growth by the end of August. There were not as many frosts as usual during August.

## South and West Otago

Rainfall totals were well below average in this area in August. The predominance of easterly quarter winds and lack of westerly and southerly quarter winds ensured dry conditions in this region since it seldom receives any significant rain from the easterly quarter. Total falls at the indicator sites (average monthly totals in brackets) included:

Tuapeka Mouth	13.1mm (40.3mm)	67% below average
Balclutha	28.5mm (42.2mm)	32% below average
Waikoikoi	11.2mm (59.8mm)	81% below average
Slopedown	14.0mm (112.4mm)	88% below average
Moa Flat	14.5mm (48mm)	70% below average
Clarks Flat	19.5mm (51mm)	62% below average

The only fall of note during the month was 10mm at Balclutha on 13 August.

Average monthly river flows were below their long term averages for August. All rivers and streams began the month at above average flows due to the heavy rain at the end of July. All flows fell steadily throughout the month and by the end of the month were unusually low for this time of the year.

Farmers report a good month with good growth. Growth is generally 2-3 weeks in advance of what it normally is at this time of the year. It was a milder than average month with fewer frosts than usual.

**D.W. Stewart**  
**Hydrological Consultant**  
**Raineffects Limited.**

\* Data sources – Private individuals, Dunedin City Council, Otago Regional Council, NIWA