

December 2006 Monthly Flow and Rainfall Report

General

December 2006 was an unseasonably cold, windy and in some areas wet month causing slow grass and crop growth and upsetting holidaymakers in the latter stages of the month. While December is often an unsettled month in Otago, it is not usually as cold and it was the greater frequency of southerly quarter winds which brought the cold.

The weather pattern during the month was a series of fronts and troughs from the west followed by cold southerly quarter winds as each front and trough passed. These southerlies occurred on at least 12 days during the month and brought snow down to low levels on the mountains at times. Significantly wetter than average conditions occurred in the more eastern parts of the region with well above average rainfalls being recorded but the more western areas generally received close to average or below average falls. The weather systems were generally spread throughout the month although the last week of December tended to be the wettest.

North Otago

Apart from the inland northwest section of this area, rainfall totals were well above their long term averages as shown by the indicator sites (average monthly totals in brackets):

Omarama	49.1mm (54.3mm)	10% below average
Waikoura	123.5mm (58.1mm)	113% above average
Oamaru	107.0mm (63.7mm)	68% above average
Kaura the Dasher	142.6mm (87.0mm)	64% above average
Islay Downs	130.6mm (75.8mm)	72% above average
Palmerston	101.8mm (65.7mm)	55% above average

Some of the heavier falls included: on 7/8 December, Waikoura 25.0mm, Oamaru 29.4mm, the Dasher 27.2mm, Islay Downs 31.9mm; on 12 December, Waikoura 32.0mm, Oamaru 23.6mm; and on 26-29 December, Waikoura 51.0mm, Oamaru 43.0mm, the Dasher 71.4mm, Islay Downs 67.2mm, Palmerston 57.2mm.

Average monthly river flows were well above their long term averages for the month and some minor flooding occurred when rivers rose 0.5 – 1.0m on 9 December and at the end of the month. Any threats of droughts and irrigation restrictions were not part of December but if a dry January occurred it could quickly change the situation.

Farmers report a cold wet month with slow growth of grass and crops in the first 3 weeks and lambs were not doing well with the cold. The last week saw increased growth and warmer conditions. Farmers are hoping for plenty of sunshine and warmer conditions in January.

Central Otago

Conditions were much wetter than average in the more eastern parts of this area but average to well below average in other parts. Total rainfalls at the indicator sites (average monthly totals in brackets) included:

Lindis Crossing	12.5mm (53.9mm)	77% below average
Alexandra	35.8mm (36.5mm)	2% below average
Blackstone Hill	126.3mm (65.8mm)	92% above average
Ranfurlly	99.8mm (47.0mm)	112% above average
Tima	92.5mm (83.5mm)	11% above average

Some of the heavier falls during the month included: on 7/8 December, Blackstone Hill 30.9mm, Tima 17.0mm; on 20 December, Blackstone Hill 29.2mm; and on 28/29 December, Blackstone Hill 42.2mm, Tima 19.0mm.

River flows were generally well above average in this area especially in areas where rainfalls were well above average. Rivers such as the Manuherikia flowed above its long-term average throughout the month with rises of up to 1m at Ophir when the heavier bursts of rain occurred. All rivers in the more eastern parts of Central Otago experienced good rises at the end of the month resulting from a heavy burst of rain at this time. While there was some minor flooding in some areas, no significant problems occurred.

Farmers report that although it was cold early and growth was slow, by the end of the month the weather had warmed and growth was very good. They are hoping for more sunshine and continued good growth in January.

Lakes Wanaka, Wakatipu and Hawea and Surrounding Areas

Rainfalls were generally close to or below average in this area in December. Total falls at the indicator sites (average monthly totals in brackets) included:

Makarora Station	162.6mm (169.8mm)	4% below average
Hunter Valley Station	80.8mm (92.0mm)	12% below average
Hawea Flat	37.0mm (56.6mm)	34% below average
Routeburn Station	143.4mm (211.0mm)	32% below average
Queenstown	52.1mm (68.3mm)	24% below average

Halfway Bay Station recorded 102mm for the month.

Some of the more significant falls during the month included: on 12 December, Makarora Station 21.4mm, Routeburn Station 24.5mm; and on 25-29 December, Makarora Station 85.6mm, Hunter Valley Station 47.0mm, Routeburn Station 74.9mm.

Along with the generally below average rainfalls, river flows were also below their long term averages with no major rises or low flows occurring throughout the month.

Levels in Lakes Wanaka and Wakatipu steadily declined during the month. They began at 278.65m and 310.92m, 1.0m and 0.8m above average respectively and by the end of the month were at 277.70m and 310.30m, 0.05m and 0.15m above average respectively.

Lake Hawea continued to rise throughout the month. It rose 1.25m during December to end the month at 344.90m, just 1.1m below full.

Farmers in this area report cold conditions at the start of the month gave way to warmer conditions by the end of the month. Growth, while slow at the start, had improved significantly by the end of the month. More sunshine and warmth are hoped for in January.

Strath Taieri, Lower Taieri and Dunedin

December was a wetter and colder than average month throughout this area. Total falls at the indicator sites (average monthly totals in brackets) included:

Garthmyl Middlemarch	137.5mm (65.0mm)	111% above average
Musselburgh Dunedin	98.4mm (74.6mm)	32% above average
Lee Flat	130.1mm (76.0mm)	71% above average
Maungatua	147.3mm (86.0mm)	71% above average
Dunedin Airport	107.6mm (75.2mm)	43% above average
Sullivans Dam	148.0mm (105.0mm)	41% above average

Other raingauge totals in this area included Southern Reservoir 113.7mm, Ross Creek 121.8mm, Pine Hill 118.0mm, Deep Stream 117mm, Riccarton Road 116.5mm.

Significant falls during the month included: Garthmyl 34.3mm, Musselburgh 21.0mm, Lee Flat 17.4mm, Maungatua 16.4mm, on 7 December; and on 25-29 December, Garthmyl 83.0mm, Musselburgh 39.6mm, Lee Flat 72.4mm, Maungatua, 86.4mm.

Average December river flows were above their long term averages for the month. Rises occurred with the heavier rainfalls and at the end of the month many rivers and streams rose 1-2m as a result of the heavy rain late in the month. No significant flooding occurred.

Farmers report good soil moisture but lack of heat in the first half of the month resulted in slow grass and crop growth. Growth improved later in the month as temperatures warmed.

South and West Otago

Rainfall totals for December were either close to or above average in this area. Total falls at the indicator sites (average monthly totals in brackets) included:

Tuapeka Mouth	87.3mm (72.1mm)	21% above average
Balclutha	111.5mm (64.8mm)	72% above average
Waikoikoi	84.8mm (89.7mm)	6% above average
Slopedown	104.0mm (114.3mm)	9% below average

Other raingauge totals from this area included Moa Flat 121.5mm, Clarks Flat 95.5mm.

Significant falls generally occurred only at the end of the month in the period 25–29 December. In this period, Balclutha recorded 61.0mm, Waikoikoi 56.9mm, Slopedown 51.5mm, Moa Flat 52.0mm, Clarks Flat 50mm.

Average monthly river flows were close to or above their long-term averages. They began the month at above average flows due to the wet November and rain throughout the month caused levels to remain higher than usual. Rises of between 1 – 3 metres on 30 December were common but no significant flooding problems occurred.

Farmers report slow growth at the start of the month, but much improved growth by the end of the month as temperatures warmed up. All are hoping for more sunshine and warmth in January to continue the good growth.

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