

**National Climate Summary – November 2008: Sunny for most of country, warm and dry in the east**

- Rainfall: Well below normal in Gisborne, Hawkes Bay, Wairarapa, Marlborough, Canterbury and Otago, and below normal in many other places, except in Northland, Taranaki, Tasman, West Coast and coastal Southland.
- Temperature: Near or above average for most of the country (particularly eastern South Island), but below average in the western South Island.
- Sunshine: Very sunny in the North Island from Waikato south, and in all of the South Island except the Tasman district and the West Coast.

Rainfall was less than 50% of normal (half) in eastern areas of the country (continuing the pattern from October) and between 50 and 80% of normal for the majority of the North Island except Taranaki and Northland. Soil moisture levels in eastern areas and in Waikato are between 30 and 50 mm lower than normal for this time of the year as at the end of November. Double the normal rainfall (200% of normal) for November fell in Tasman (mostly in two days) and 150% of normal rainfall (one and a half times) fell in Northland and the West Coast over the month.

November temperatures were near their average values for most of the North Island and western and southern South Island (between  $-0.5$  and  $+0.5^{\circ}\text{C}$  of normal). Manawatu, Wellington, Marlborough, Canterbury and Otago had above average temperatures of more than  $0.5^{\circ}\text{C}$  above normal, with north Canterbury being particularly warm (between  $1.5$  and  $2.0^{\circ}\text{C}$  warmer than average). Tasman and parts of the West Coast were slightly cooler than average for November. The national average temperature of  $14.0^{\circ}\text{C}$  was  $0.3^{\circ}\text{C}$  above the average for November.

Sunshine totals were above average (more than 110% of normal) for the central and southern North Island and the majority of the South Island except Tasman and the West Coast. Canterbury and parts of Manawatu received well above normal (more than 125% of normal) sunshine for November.

Like September and October, the country experienced relatively few extreme weather events in November, the most significant being the cold snap (bringing snow to some low elevations) from the 5<sup>th</sup> to the 8<sup>th</sup>, with record low November temperatures in Fiordland and parts of Otago; northwesterlies bringing record high temperatures on the 14<sup>th</sup> and 15<sup>th</sup> in parts of Canterbury and Otago, and the storm on the 24<sup>th</sup> which resulted in heavy rainfall and flooding in the Tasman district and the West Coast.

The generally more settled weather for November resulted from more frequent 'highs' (anticyclones) to the east of the country, extending ridges of high pressure onto the North Island. There were stronger than normal westerly to northwesterly winds over the South Island, and northeasterlies onto the North Island, which contributed to the low rainfalls in the east.

**Further Highlights:**

- The lowest temperature during November was recorded at Middlemarch on the 8<sup>th</sup>, where the minimum temperature was  $-4.6^{\circ}\text{C}$ . The highest temperature during November was  $33.3^{\circ}\text{C}$  recorded at Waione (Wairarapa) on the 24<sup>th</sup>.
- The highest 1-day rainfall for November was 175 mm recorded at Arthurs Pass on the 24<sup>th</sup>.
- The highest wind gust for the month was 158 km/hr at Mount Kaukau (Wellington) on the 1<sup>st</sup>. At the MetService office site in Kelburn the wind gusted to 135 km/hr on the same day (the equal-fourth highest wind gust for November at this location).
- Of the five main centres, Auckland was the warmest, Wellington was the wettest, and Christchurch was the driest and sunniest.

**Rainfall:** November rainfall for Otago, Canterbury, Wairarapa, Hawkes Bay and Gisborne was well below normal (less than 50% of normal). It was also drier than normal (between 50 and 80% of normal) for the majority of the North Island except Taranaki and Northland. Above normal rainfall (greater than 150% of

normal) for November was received in Northland and the West Coast with greater than 200% of normal rainfall falling in the Tasman district.

**Temperature:** Mean temperatures were near average for most of the country but above average for Manawatu, Wellington, Marlborough, Canterbury and Otago. The Tasman district and parts of the West Coast were cooler than average for November.

**Sunshine:** November totals of bright sunshine were above average (more than 110% of normal) for much of the country from Waikato south, excluding Tasman and the West Coast. Canterbury and parts of Manawatu received well above average (more than 125% of normal) sunshine for the month.

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## **RAINFALL: VERY DRY IN EASTERN AREAS, DRY IN MANY AREAS; WET IN NORTHLAND, TASMAN AND WEST COAST**

November rainfall for eastern areas of both islands was less than half of normal (less than 50%), with some areas receiving less than a quarter their normal totals. It was also drier than normal (between 50 and 80% of normal) for most of the remainder of the country, except for Northland and the West Coast (150% of normal) and the Tasman district (200% of normal).

**Extreme (high and low) November rainfall totals were recorded at:**

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kaitaia Observatory	143	142	1985	4th highest
Takaka	443	249	1976	2nd highest
Okarito	547	214	1981	Highest
Matamata	38	42	1951	3rd lowest
Rotorua Aero	42	41	1963	2nd lowest
Taupo	34	42	1949	equal 4th-lowest
Ruakura	37	39	1905	4th lowest
East Taratahi	17	24	1926	3rd lowest
Gisborne	12	20	1905	3rd lowest
Wairoa	11	14	1964	Lowest
Hawera	40	36	1977	2nd lowest
Waiouru	38	48	1950	3rd lowest
Wanganui	44	59	1987	4th lowest
Hanmer Forest	20	21	1905	4th lowest
Kaikoura	11	18	1898	4th lowest
Culverden	8	16	1921	2nd lowest
Darfield	13	24	1919	3rd lowest
Lincoln	11	24	1881	2nd lowest
Oamaru Airport	15	33	1898	3rd lowest
Ranfurly	12	34	1943	4th lowest

## **TEMPERATURE: ABOVE AVERAGE IN THE EAST OF THE SOUTH ISLAND AND SOUTHERN NORTH ISLAND**

The national average temperature of 14.0°C for November 2008 was 0.3°C above average for this time of the year. Most locations in the country received near average temperatures for the month (between -0.5 and +0.5°C from their typical November values). Manawatu, Wellington, Marlborough, Canterbury and Otago had above average temperatures of more than 0.5°C above normal, with north Canterbury being particularly warm (between 1.5 and 2.0°C warmer than average). The Tasman district and parts of the West Coast were slightly cooler than average for November.

**Extreme (high and low) November mean maximum daily air temperatures were recorded at:**

Location	Mean maximum air temperature (°C)	Departure from normal	Year records began	Comments
Whangaparaoa	19.5	0.9	1982	3rd highest
Hanmer Forest	21.4	3.0	1906	2nd highest
Kaikoura	18.8	2.0	1963	4th highest
Culverden	23.4	3.8	1928	Highest
Darfield	21.7	2.4	1939	4th highest
Le Bons Bay	17.1	1.8	1984	3rd highest
Fairlie	21.5	3.0	1925	2nd highest
Dunedin Aero	19.6	2.1	1947	Highest
Cape Campbell	16.0	-2.4	1953	4th lowest

**Extreme (high and low) November mean minimum daily air temperatures were recorded at:**

Location	Mean minimum air temperature (°C)	Departure from normal	Year records began	Comments
Kumeu (Waitakere)	11.5	1.0	1978	3rd highest
Woodbury	2.9	-3.7	1973	Lowest

**SUNSHINE: ABOVE AVERAGE FOR MOST OF COUNTRY**

November totals of bright sunshine were above average (more than 110% of normal) or well above average (more than 125% of normal) for much of the South Island and central and southern parts of the North Island. Sunshine was below average in parts of Northland, Tasman and the West Coast.

**Extreme (high and low) November sunshine hours were recorded at:**

Location	Sunshine (hours)	Percentage of normal	Year records began	Comments
Te Kuiti	214	133	1962	2nd highest
Taumarunui	225	137	1947	3rd highest
Turangi	219	117	1976	4th highest
Martinborough	230	119	1986	4th highest
Waipawa	246	136	1945	4th highest
Christchurch Aero	268	125	1930	3rd highest
Balclutha	222	130	1964	2nd highest

**NOVEMBER'S CLIMATE IN THE FIVE MAIN CENTRES**

Rainfall was well below normal for Hamilton and Christchurch (the driest of the main centres), below normal for Auckland and Dunedin, and normal for Wellington (the wettest of the five main centres). Auckland, Hamilton and Dunedin received average temperatures for November, while Wellington and Christchurch received above average temperatures, with Auckland the warmest overall. Christchurch was the sunniest of the main centres.

**November 2008 main centre climate statistics:**

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland <sup>a</sup>	15.8	-0.4	Near average	45	52	Below normal	206	108	Near normal
Hamilton	14.9	0.2	Near average	40	42	Well below normal	188 <sup>c</sup>	95	Near normal
Wellington	14.1	0.7	Above average	98	99	Near normal	239	114	Above normal
Christchurch <sup>b</sup>	14.2	0.7	Above average	10	23	Well below normal	268	124	Above normal
Dunedin	12.7	0.4	Near average	34	54	Below normal	182	113	Above normal

<sup>a</sup> Mangere <sup>b</sup> Christchurch Airport <sup>c</sup> Ruakura

## HIGHLIGHTS AND EXTREME EVENTS

### • Temperature

The coldest temperature during November was recorded at Middlemarch on the 8<sup>th</sup>, where the minimum temperature was -4.6°C (not a November record for this location). The maximum temperatures on the 5<sup>th</sup> of November were also quite low for many southern locations during this cold snap, with Manapouri reaching only 5.5°C, and Gore getting to 5.7°C on that day.

#### Near record low extreme daily minimum air temperatures were recorded at:

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia Observatory	5.9	1st	1985	equal 4th-lowest
Warkworth	4.4	21st	1966	Lowest
Taumarunui	-0.3	8th	1947	equal 4th-lowest
Turangi	-2.1	8th	1968	2nd lowest
Dannevirke	-1.5	8th	1951	2nd lowest
Martinborough	0.3	8th	1986	4th lowest
Waipawa	-0.2	8th	1945	equal 4th-lowest
Greymouth Aero	2.2	6th	1947	3rd lowest
Haast	0.1	6th	1949	Lowest
Milford Sound	0.4	6th	1934	2nd lowest
Puysegur Point	1.3	6th	1978	Lowest
Motueka	1.4	7th	1956	equal 4th-lowest
Pelorus Sd	5.0	6th	1982	equal 4th-lowest
Winchmore	-1.9	6th	1928	4th lowest
Christchurch Aero	-2.6	6th	1863	Lowest
Lincoln	-2.0	6th	1881	3rd lowest
Le Bons Bay	0.5	6th	1984	Lowest
Woodbury	-2.0	6th	1973	equal 2nd-lowest
Wanaka Aero	-2.0	6th	1955	3rd lowest
Dunedin Aero	-1.7	8th	1947	Lowest
Dunedin, Musselburgh	1.1	8th	1947	equal 2nd-lowest
Queenstown Aero	-2.1	8th	1871	Lowest
Lumsden	-2.9	8th	1982	Lowest
Tiwai Point	0.7	5th	1970	2nd lowest
Balclutha	-0.4	8th	1964	2nd lowest
Nugget Point	0.5	6th	1970	3rd lowest

#### Near record low extreme daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Westport Aero	10.0	6th	1966	Lowest
Hokitika Aero	10.2	5th	1964	2nd lowest
Reefton	8.9	6th	1972	Lowest
Greymouth Aero	9.8	6th	1972	2nd lowest
Haast	9.8	5th	1949	2nd lowest
Puysegur Point	7.5	5th	1978	Lowest
Arthurs Pass	4.3	5th	1973	Lowest
Manapouri Aero	5.5	5th	1973	Lowest
Queenstown Aero	6.0	5th	1871	Lowest
Lumsden	7.0	5th	1982	2nd lowest
Gore	5.7	5th	1972	2nd lowest
Invercargill Aero	6.6	5th	1948	2nd lowest
Tiwai Point	6.2	5th	1972	Lowest
Balclutha	6.9	5th	1972	Lowest
Nugget Point	6.4	5th	1972	Lowest

The highest temperature during November 2008 was 33.3°C recorded at Waione (Wairarapa) on the 24<sup>th</sup> (not a November record for this location). The minimum temperature of 19.2°C at Wanganui on the night of the 23<sup>rd</sup>/24<sup>th</sup> was the highest minimum for the country for November. Warm northwesterlies also brought record high temperatures in Otago and Canterbury on the 14<sup>th</sup> and 15<sup>th</sup>.

**Near record high extreme daily maximum air temperatures were recorded at:**

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia Observatory	24.2	14th	1985	equal 4th-highest
Kaikohe	24.5	14th	1973	3rd highest
Dargaville	26.0	30th	1943	equal 2nd-highest
Whangarei Aero	25.8	25th	1967	equal 3rd-highest
Whangaparaoa	24.4	29th	1982	Highest
Kumeu (Waitakere)	24.8	30th	1978	4th highest
Auckland Aero	25.6	30th	1959	Highest
Pukekohe	25.8	30th	1969	Highest
Whatawhata	25.1	14th	1952	3rd highest
Hamilton	26.6	30th	1946	2nd highest
Port Taharoa	25.7	23rd	1973	2nd highest
Te Kuiti	27.6	30th	1959	Highest
Takapau Plains	26.8	23rd	1962	2nd highest
Dannevirke	28.0	24th	1951	Highest
Martinborough	27.4	24th	1986	Highest
Ngawi	27.9	24th	1972	4th highest
Paraparaumu Aero	25.4	24th	1953	3rd highest
Palmerston North	28.6	24th	1918	Highest
Levin	26.9	24th	1895	3rd highest
Wellington Aero	25.3	24th	1962	3rd highest
Wallaceville	25.2	24th	1939	4th highest
Stratford	23.9	30th	1960	4th highest
Ohakune	24.9	12th	1962	3rd highest
Waiouru	23.3	14th	1962	3rd highest
Wanganui	26.0	28th	1937	4th highest
Arthurs Pass	23.0	13th	1978	3rd highest
Culverden	31.0	23rd	1928	equal 4th-highest
Cheviot	30.2	15th	1982	2nd highest
Waipara West	30.5	15th	1973	3rd highest
Darfield	31.4	15th	1939	Highest
Le Bons Bay	25.8	15th	1984	3rd highest
Fairlie	31.0	15th	1925	4th highest
Oamaru Airport	30.9	15th	1908	2nd highest

Wanaka Aero	27.5	14th	1955	equal 4th-highest
Dunedin Aero	31.0	15th	1947	Highest
Lumsden	27.1	14th	1982	Highest
Cromwell	30.6	14th	1949	Highest
Balclutha	27.6	15th	1964	3rd highest

**Near record high extreme daily minimum air temperatures were recorded at:**

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia Observatory	17.3	23rd	1985	equal 4th-highest
Paeroa	18.4	25th	1972	2nd highest
Tauranga Aero	17.7	24th	1941	equal 3rd-highest
Whakatane Aero	17.2	25th	1975	3rd highest
Rotorua Aero	15.9	25th	1972	equal 4th-highest
Taupo	15.8	25th	1950	2nd highest
Hamilton	17.3	25th	1946	4th highest
Te Kuiti	16.7	25th	1959	equal 4th-highest
Taumarunui	17.8	25th	1947	2nd highest
Turangi	15.3	25th	1968	2nd highest
East Taratahi	17.3	25th	1943	equal 4th-highest
Martinborough	17.2	25th	1986	Highest
Waipawa	18.5	25th	1945	3rd highest
Paraparaumu Aero	18.1	24th	1972	2nd highest
Palmerston North	16.5	25th	1940	3rd highest
Levin	18.2	24th	1950	Highest
Ohakune	14.7	24th	1972	Highest
Waiouru	14.0	25th	1972	Highest
Wanganui	19.2	24th	1972	Highest
Haast	14.6	24th	1949	3rd highest
Milford Sound	15.3	24th	1935	2nd highest
Kaikoura	17.0	23rd	1972	3rd highest
Arthurs Pass	13.0	29th	1978	Highest
Culverden	19.0	24th	1930	3rd highest
Cheviot	18.2	24th	1982	Highest
Le Bons Bay	16.5	23rd	1984	2nd highest
Timaru	16.6	25th	1885	equal 2nd-highest

• **Heavy rain and flooding**

On 4 November, the Manawatu Gorge road was closed to all traffic for several hours by a large slip blocking both lanes.

Heavy rain from a northerly subtropical flow caused floods in Nelson and the West Coast on 24 November, with eastern areas experiencing warm, humid conditions. Some vineyards in the Nelson region turned into lakes as up to 300 mm of rain fell in just 24 hours. The Matai River was close to bursting its banks and flooding parts of the city. The ranges between Takaka and Collingwood received 328 mm of rain in 24 hours. In Takaka, rain was torrential all day, with sandbags needed when river water spilled into the street. Schools closed early in Golden Bay, stock were rescued from low-lying areas, and the army ferried stranded motorists. Several roads were closed by flooding and slips, including SH60 over Takaka Hill isolating Golden Bay, SH6 between Whataroa and Haast, and the highway between Nelson and Havelock. Three Tasman District Council hydrologists were trapped in the Upper Lee Valley when the heavy rain made ford crossings impassable, and the Upper Lee River flooded over a bridge. The rain gauge at Cropp River, in the Southern Alps inland from Hokitika, recorded 1000 mm in three days.

**Near record high extreme 1-day rainfall totals were recorded at:**



Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year Records Began	Comments
Kaitaia Observatory	45	24th	1985	2nd highest
Kaikohe	51	24th	1956	4th highest
Takaka	128	23rd	1976	2nd highest
Reefton	92	24th	1960	Highest
Okarito	154	22nd	1981	Highest
Nelson Aero	59	24th	1941	4th highest
Appleby	68	24th	1941	4th highest
Invercargill Aero	41	4th	1939	4th highest

- **High winds and tornadoes**

Winds of up to 140 km/hour hammered Wellington on 1 November, lifting roofs, cutting power, and disrupting flights. Motorcyclists and drivers of high-sided vehicles were warned to stay away from Wainuiomata Hill, after two vehicles were blown off the road, and on the Rimutaka Hill Road between Upper Hutt and the Wairarapa, a van was tipped over by the strong winds.

Strong winds swept through the Parklands suburb of Christchurch on 5 November causing significant damage to fences, houses and uprooting trees. It lasted 5 minutes and affected about 30 m of Queenspark Drive.

On 25 November, extreme winds affected State Highways 7 and 7A in the Hanmer Springs-Culverden area, and State Highway 1 through the Hundalees in North Canterbury. In Hanmer Springs, the roaring norwester damaged trees, power and telephone lines and blew roofing around like cardboard. Corrugated iron, ripped from a motel roof by a gust estimated at more than 130 km/h, hit and damaged cars in the street, and came to rest wedged beside a hedge and a wrought-iron rose arch.

**Near record high extreme wind gusts were recorded at:**

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records began	Comments
Wellington	135	1st	1972	equal 4th-highest
Hawera	93	24th	1986	equal 3rd-highest
Westport Aero	87	5th	1973	3rd highest
Hokitika	89	5th	1972	4th highest
Puysegur Point	137	1st	1986	equal 2nd-highest

- **Snowfall**

An unseasonably cold blast hit the South Island on 5 November, blanketing inland Southland, Fiordland and Central Otago with snow and hail. The brutal conditions forced Tour of Southland organisers to shorten two stages of the race, as competitors faced temperatures as low as 1 °C. Locals say it is the first time since the 1970s that they have seen this much snow in November. The West Coast was also affected with snow in Reefton, sleet at Ngahere and Hokitika, and unseasonal snow on the alpine passes.

State Highway 94, from Lower Hollyford to Milford Sound, re-opened on 5 November after being closed overnight by snow.

- **Hail**

Wellington city experienced a dramatic hail storm on the afternoon of 7 November. Hail remained in drifts for several hours.

Hail-stones as big as golf balls struck Ashburton late afternoon on 17 November. Crops, glass-houses, skylights and cars suffered serious damage. Many of the stones were larger than 25 mm. Streets and businesses were flooded.

- **Frosts**

Unseasonal frosts struck the Ashburton area overnight on 6 November, with grass minimum temperatures of -6.0 °C, affecting newly planted spring vegetables.

Hundreds of helicopters descended on vineyards and orchards in Central Otago and Canterbury overnight on 8 November after unseasonably cold temperatures were forecast. In some areas temperatures fell to -4 °C putting entire crops at risk.

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