

National Climate Summary – Winter 2005

One of the warmest, very dry in parts, sunny and a relatively settled winter

Rainfall: Extremely low in the east from Wairarapa to Otago, including Wellington

Soil moisture: Moderate deficits in parts of south Canterbury and north Otago

Temperature: Above average throughout much of the South Island and the north and west of the North Island; near average elsewhere

Sunshine: Rather sunny in the far north and south

Winter was warmer, drier, rather settled, and sunny in many regions. Although June was the coldest in more than a decade with frequent southerly winds, both July and August were unusually mild, with more north westerly winds. Dunedin recorded its sunniest winter ever in over 50 years, and Lincoln (in Canterbury) recorded its driest winter in more than 120 years of records.

It was the sixth warmest winter in reliable records dating back to the mid 1860s with a national average temperature of 9.1 °C, 0.7 °C above normal. Only the winters of 1984 and 2000 (9.2 °C), and 1971, 1988, and 1998 (all 9.1 °C) were warmer. Seasonal rainfall was well below average throughout much of New Zealand, especially in coastal areas of Canterbury and north Otago where totals were less than 25 percent (quarter) of normal. The dryness has resulted in significant soil moisture deficits for the end of August developing in parts of south Canterbury and north Otago. Sunshine hours were well above average in parts of Northland, inland South Canterbury, and Otago, and also above average in most North Island regions. The overall winter climate pattern was dominated by more frequent northwesterlies over the South Island, and more frequent anticyclones ('highs') over the North Island.

Major Highlights:

- The highest temperatures during winter 2005 were 25.1 °C recorded at Hanmer Forest on 30 August, and 25.4 C recorded in Amberley on 31 August, both exceeding the previous all-time New Zealand maximum temperature record for August.
- The lowest temperature for the season was -8.6°C, recorded at Middlemarch on 16 June.
- There were at least eight major rainfall events – three with flooding, all occurring between 17 June and 19 July.

Damaging winds occurred on June 1 near Rotorua that toppled trees cutting electricity. On 25 June, at least three tornados hit southeastern parts of Auckland, resulting in fallen trees.

Only two periods of significant snowfall occurred. Over 2-3 June snow fell in Otago and Southland, and in the central North Island. Over 25-26 June, snow fell on the North Island Desert Road.

Of the four main centres Auckland was the warmest, wettest, and sunniest, while Christchurch was the coldest and driest. Rainfall was below average and temperatures above average in all four main centres. Winter sunshine hours were the highest on record for Dunedin, and they were also above average in Auckland and Wellington. Near average winter sunshine hours were observed in Christchurch.

Temperature: Seasonal mean temperatures were above average throughout Auckland, Coromandel, and the west of the North Island from Taranaki to Wellington, as well as southern Wairarapa and most South Island regions. They were more than 1.0 °C above average in north Canterbury and Nelson. Temperatures were near average in Waikato, Bay of Plenty, Gisborne, Hawke's Bay, south Canterbury, and parts of Fiordland.

Rainfall: Winter rainfall was less than 50 percent (half) of normal throughout Canterbury and Otago, as well as Horowhenua, southern Wairarapa and Wellington, some coastal areas in Canterbury and north Otago recording less than 25 percent (quarter) of normal winter rainfall. Rainfall was also below average throughout most central and western North Island and northern South Island regions.

Sunshine: Sunshine hours were at least 120 percent of average in parts of Northland, inland South

Canterbury, and Otago. They were also above average in most other North Island regions.

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ABOVE AVERAGE TEMPERATURES THROUGHOUT MUCH OF THE SOUTH ISLAND AND IN THE NORTH AND WEST OF THE NORTH ISLAND

Seasonal mean temperatures were at least 0.5 °C above average throughout Auckland, Coromandel, and the west of the North Island from Taranaki to Wellington, as well as southern Wairarapa and most South Island regions. The largest anomalies, more than 1.0 °C above average, occurred in north Canterbury and Nelson. Winter temperatures were near average in Waikato, Bay of Plenty, Gisborne, Hawke’s Bay, south Canterbury, and parts of Fiordland.

Near or record high winter mean air temperatures were recorded at:

Location	Mean temperature	Departure from average (°C)	Records Began	Comments
Motu	7.3	+1.3	1991	2 nd highest
Pukekohe	11.5	+1.1	1970	3 rd highest
Wellington, Kelburn	9.9	+0.7	1928	Well above average
Wallaceville	9.1	+0.9	1940	3 rd equal highest
Wanganui, Spriggens Park	10.8	+1.0	1937	Well above average
Takaka	9.0	+1.0	1986	3 rd highest
Farewell Spit	11.1	+1.6	1971	3 rd highest
Puysegur Point	9.3	+0.9	1978	Equal highest
Nelson Airport	8.7	+1.1	1943	Well above average
Blenheim Research	9.3	+1.3	1932	2 nd highest
Blenheim Airport	8.5	+0.9	1941	2 nd equal highest
Hanmer Forest	6.1	+1.3	1906	Well above average
Lincoln	7.7	+1.2	1881	Well above average
Tara Hills	4.1	+1.4	1950	3 rd equal highest
Dunedin, Musselburgh	7.8	+0.8	1947	Well above average
Invercargill Airport	6.7	+0.9	1948	2 nd highest
Tiwai Point	7.6	+0.9	1970	2 nd equal highest
Campbell Island	5.8	+0.8	1941	2 nd equal highest

EXTREMELY LOW WINTER RAINFALL IN THE EAST FROM WAIRARAPA TO OTAGO, INCLUDING WELLINGTON

Rainfall was less than 50 percent (half) of normal throughout Canterbury and Otago, as well as Horowhenua, southern Wairarapa and Wellington, some coastal areas in Canterbury and north Otago recording less than 25 percent (quarter) of normal winter rainfall. Rainfall was also below average (less than 75 percent of normal) throughout most central and western North Island and northern South Island regions. Winter rainfall totals were near normal in Northland, Auckland, Coromandel, Gisborne, Hawke’s Bay, Westland, Fiordland, and Southland.

Near or record low winter rainfall was recorded at:

Location	Winter 2005 rainfall (mm)	Percentage of normal	Year Records began	Comments
East Taratahi	163	49	1972	3 rd lowest
Martinborough	121	45	2001	Lowest
Ngawi	178	50	1988	Lowest
Wellington, Kelburn	192	47	1862	Lowest since 1959
Wellington Airport	179	56	1960	3 rd lowest
Wallaceville	187	46	1924	3 rd lowest
Blenheim Airport	119	58	1941	3 rd lowest, lowest since 1969
Hanmer Forest	114	33	1905	3 rd lowest, lowest since 1958
Winchmore	61	30	1947	Lowest
Darfield	69	30	1920	Equal lowest
Christchurch Airport	62	31	1944	3 rd lowest
Lincoln	47	23	1881	Lowest
Le Bons Bay	86	26	1984	Lowest
Timaru Airport	44	36	1957	Well below average
Oamaru Airport	29	22	1941	3 rd lowest
Wanaka Airport	102	58	1992	2 nd lowest
Ranfurly	31	39	1975	2 nd lowest
Middlemarch	30	32	1916	Lowest since 1967
Dunedin Airport	58	37	1963	2 nd lowest, lowest since 1967
Dunedin, Musselburgh	84	40	1918	3 rd lowest, lowest since 1959
Clyde	38	42	1983	Lowest

VERY SUNNY IN THE FAR NORTH AND SOUTH, NEAR AVERAGE ELSEWHERE

Sunshine hours were at least 120 percent of average in parts of Northland, inland South Canterbury, and Otago, and at least 110 percent of average in most North Island regions. Totals were near average elsewhere.

High winter sunshine was recorded at:

Location	Winter 2005 sunshine (hours)	Percentage Of normal	Year Records began	Comments
Dargaville	447	133	1943	Highest
Auckland, Mangere	466	121	1963	3 rd highest
Palmerston North	383	126	1930	Well above average
Tekapo	467	131	1928	Well above average
Dunedin, Musselburgh	423	140	1948	Highest

WINTER CLIMATE IN THE FOUR MAIN CENTRES

Of the four main centres Auckland was the warmest, wettest, and sunniest, while Christchurch was the coldest and driest. Rainfall was below average and temperatures above average in all four main centres. Winter sunshine hours were the highest on record for Dunedin, and they were also above average in Auckland and Wellington. Near average winter sunshine hours were observed in Christchurch.

Location	Winter Mean Temp. (°C)	Dep. from normal (°C)		Winter rainfall (mm)	% of normal		Winter Sunshine (hours)	% of normal	
Auckland	12.0 ^a	+0.7	Above average	351 ^b	86	Below average	466 ^a	121	Well above average
Wellington	9.9	+0.7	Well above average	192	47	Well below average	388	111	Above average
Christchurch	7.0 ^c	+0.6	Above average	62 ^c	31	Well below average	402	103	Near average
Dunedin	7.8	+0.8	Well above average	84	40	Well below average	423	140	Record high

a Mangere b Mt Albert c Christchurch Airport

HIGHLIGHTS AND EXTREME EVENTS

Temperature

The highest temperatures during winter 2005 were 25.1 °C recorded at Hanmer Forest on 30 August, and 25.4 °C recorded in Amberley on 31 August, both exceeding the previous all-time New Zealand maximum temperature record for August. The lowest temperature for the season was -8.6°C, recorded at Middlemarch on 16 June.

High rainfall and/or flooding

17 June: Rainfall totalling 50 to 90 mm occurred in the Bay of Islands, western Nelson, and South Westland.

24 June: Rainfall totalling about 70 mm occurred in Whitianga.

28 June: Rainfall totalling 65-90 mm occurred in South Westland and Fiordland, and western Southland.

4-6 July: High rainfall totalling 130 – 215 mm occurred in inland and eastern parts of Northland, with some flooding, and several schools closed.

10 July: Surface flooding occurred near and about Matata, Bay of Plenty, after heavy rainfall, with truck drivers having to be rescued.

17 July: High rainfall totalling 160 - 170 mm occurred in the high country of southern Coromandel and western Bay of Plenty, with a washout near Pauanui, north of Whangamata. The rainfall was accompanied by severe electrical storms from Northland to Thames, with some places recording 200 lightning strikes in an hour.

18 July: Rainfall totalling 80-90 mm occurred in Golden Bay and western Nelson.

19 July: Isolated, but heavy rainfall (about 100 mm), occurred in the Kakanui Range (north Otago) causing the Kakanui River to reach its highest flood level since January 2002.

High winds, rough seas, and tornadoes

1 June: Damaging winds, attributed to a tornado, toppled trees – cutting electricity to over 1000 homes near Lake Rotoiti, Rotorua.

11-12 June: A couple (one person was injured) and their yacht were caught in a severe storm in high winds and 7 to 8 metre swells about 750 km north of New Zealand. They were safely rescued and brought back to New Zealand.

25 June: At least three tornados hit southeastern parts of Auckland, resulting in fallen trees (trapping several people), and surface flooding.

The highest wind gust for the winter was 154 km/h from the northwest, recorded at South West Cape on 19 August.

Snowfall

2-3 June: Several Otago and Southland roads were closed by snow on 2-3 June, with sleet and hail elsewhere in the region. As much as 15 cm of snowfall lay in parts of eastern Southland, with lesser amounts in the Catlins and along the South Otago coast, including the motorway north of Dunedin. Several central North Island roads were also closed due to snowfall, about 20 cars and two trucks being trapped in the snow. The Desert Road was closed by ice on 5 June.

25-26 June: Snow fall on the North Island Desert Road, and on the Orongorongo Ranges east of Wellington

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