

**National Climate Summary – May 2007: Warmest May on record
Indian summer in many parts of New Zealand; flooding in Nelson and Taranaki**

- **Temperature: New Zealand’s warmest May in over 140 years of temperature measurements**
- **Rainfall: Record low rainfall in the north and east, well above normal in Nelson**
- **Soil moisture: Significant deficits in the east of the North Island, as well as Otago**
- **Sunshine: Above average in many regions, especially in the east**

May 2007 produced a truly Indian Summer¹ for much of New Zealand with record temperatures for the month and the driest May on record in the north and east. This was produced by warmer than normal seas to the west of New Zealand and anticyclones to the east producing warm north westerlies over the country. The national average temperature was 12.4 °C (1.7 °C above normal); a new record for May, making it the highest in reliable records dating back to the 1860s. Similarly, Australia recorded its warmest equal May on record being 2.0°C above normal. At the same time a mere tenth to quarter of the normal monthly rainfall occurred in parts of the north and east of the North Island and the Kaikoura coast. Rainfall recorded in the east of the North Island and eastern Otago was 10 mm or less. The very dry weather meant that significant soil moisture deficits (of at least 110 mm) occurred in many eastern regions from Gisborne to Wairarapa, as well as Central Otago, unusual for the time of year.

May 2007 topped previous New Zealand temperature records of 12.3 °C in May 1962 and 12.2 °C in May 1999. Mean temperatures were at least 1.5 °C or more above average throughout much of New Zealand, but temperature anomalies were highest (more than 2.5 °C above normal) throughout Marlborough, Canterbury, and Otago, due to very frequent northwesterly winds. The month was the warmest on record averaged over the country as a whole. One third (35) of NIWA’s (104) near real-time New Zealand temperature stations recorded their highest May mean temperature.

Low rainfall was also a feature for May, with record low May totals in many northern and eastern regions. Rainfall was well below normal in the northern half of the North Island, as well as Gisborne, Hawke’s Bay, Wairarapa, along the Kaikoura coast, and in East Otago. In contrast, rainfall totals were 200 percent (twice) of normal in Nelson due to high rainfall over 22/23 May.

May was sunnier than normal in many North Island and eastern South Island locations.

Depressions (‘lows’) were much more frequent than normal south of Australia, while anticyclones (‘highs’) were more frequent than normal well to the east of the North Island. This pattern produced more frequent northwesterlies than usual over much of New Zealand, the strongest and most frequent for May since 1990.

Other Highlights:

- Parts of Nelson and Taranaki were hit by heavy rainfall over 22/23 May, with localised severe flooding.
- The highest temperature during May 2007 was 24.8 °C recorded at Whangarei Airport on the 1st.
- The lowest air temperature during the month was -4.1 °C recorded at Motu on the 31st.
- A wind gust as high as 156 km/h was recorded from the west at Taiaroa Head on the 27th.

¹ An Indian Summer is a period of very mild and sunny weather occurring in late autumn. The term came from the north east of the USA where the indigenous people (“Indians”) were able to harvest and store nuts and crops for the coming winter.

- Auckland was the warmest, Dunedin the driest, and Christchurch the sunniest, of the five main centres. Rainfall was below normal and temperatures well above normal in all five main centres. Sunshine hours were above normal in Auckland, Wellington, Christchurch, and Dunedin, and near normal in Hamilton.

Temperature: Mean temperatures were at least 1.5°C or more above average throughout much of New Zealand, and more than 2.5°C above average in parts of Marlborough, Nelson, Canterbury, and Otago.

Rainfall: Rainfall was 25 percent (a quarter) or less of normal in parts of Northland, Auckland, Waikato, Taupo, Gisborne, Hawke’s Bay, Wairarapa, along the Kaikoura coast, and in East Otago, and 50 percent (half) or less of normal in Coromandel, Bay of Plenty, Wanganui, Manawatu, Horowhenua, Kapiti, North Canterbury, and inland Southland, and also below normal in Thames, Taranaki, Wellington, and much of Southland. In contrast, rainfall totals were 200 percent (twice) of normal in Nelson, and also above normal in Fiordland and parts of Marlborough.

Sunshine: May sunshine hours and/or solar radiation were more than 110 percent of normal in many North Island and eastern South Island locations, and at least 120 percent of normal in Gisborne, South Taranaki, Marlborough, inland South Canterbury, coastal Otago, and Southland.

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TEMPERATURE: WARMEST MAY ON RECORD IN MOST REGIONS

The national average temperature was 12.4 °C (1.7 °C above normal); a new record for May, making it the highest in reliable records dating back to the 1860s, and highest on record at many recording stations. Mean temperatures were at least 1.5 °C or more above average throughout much of New Zealand, and more than 2.5 °C above average throughout Marlborough, Canterbury, and Otago.

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

Location	Mean air temperature (°C)	Departure from Normal	Year Records began	Comments
Kaikohe	14.8	+1.3	1973	2 nd highest
Dargaville	15.6	+1.7	1943	Highest
Whangarei Airport	15.6	+1.4	1968	Equal 2 nd highest
Auckland, Henderson	15.0	+1.7	1986	Highest
Auckland, Mangere	15.4	+1.6	1959	Equal highest
Auckland Airport	15.1	+1.4	1963	2 nd highest
Pukekohe	14.6	+1.6	1971	Highest
Whitianga Airport	14.1	+1.3	1991	Equal 3 rd highest
Te Puke	13.6	+1.6	1973	Equal highest
Port Taharoa	15.4	+1.6	1982	Highest
New Plymouth Airport	14.2	+1.9	1944	Highest
Lower Retaruke	11.4	+1.5	1967	2 nd highest
Chateau, Mt Ruapehu	7.6	+2.1	1930	3 rd highest
Castlepoint	14.4	+1.6	1972	Highest
East Taratahi	11.9	+1.9	1973	Highest
Martinborough EWS	12.4	+1.8	2001	Highest
Ngawi, Palliser	15.1	+2.2	1972	Highest
Hicks Bay	14.9	+1.2	1992	Equal highest
Napier Airport	13.2	+1.5	1974	2 nd equal highest

Wairoa, North Clyde	13.6	+1.6	1993	Highest
Mahia AWS	14.4	+1.9	1992	Highest
Paraparaumu Airport	13.4	+2.0	1953	Highest
Palmerston North Airport	13.0	+2.1	1962	Highest
Levin	13.2	+2.0	1896	2 nd highest
Wellington, Kelburn	12.9	+1.4	1928	3 rd highest
Wellington Airport	14.2	+2.0	1962	Highest
Wallaceville	12.7	+2.2	1940	Highest
Stratford	12.0	+1.8	1961	Highest
Wanganui, Spriggens Park	13.5	+1.3	1937	Equal 3 rd highest
Wanganui Airport	13.6	+1.3	1979	2 nd highest
Farewell Spit	14.1	+2.0	1971	Highest
Hokitika Airport	11.4	+1.4	1964	Equal highest
Milford Sound	10.1	+1.8	1935	2 nd highest
Puyssegur Point	11.6	+1.5	1979	2 nd highest
Motueka, Riwaka	11.6	+1.6	1956	2 nd highest
Nelson Airport	12.3	+2.2	1943	Highest
Blenheim Research	13.1	+2.5	1937	Highest
Blenheim Airport	12.1	+2.0	1941	3 rd highest
Hanmer Forest	9.9	+2.3	1906	2 nd highest
Kaikoura	13.6	+2.6	1964	Highest
Arthurs Pass	7.9	+2.7	1978	Highest
Mt Cook Village	8.6	+2.4	1931	Equal highest
Winchmore	11.4	+2.8	1950	Highest
Darfield	12.2	+3.0	1939	Highest
Christchurch Airport	11.4	+2.5	1954	Highest
Christchurch Gardens	12.1	+2.6	1864	Highest
Lincoln, Broadfield	11.8	+2.6	1881	Highest
Le Bons Bay	12.8	+2.6	1984	Highest
Lake Tekapo	9.5	+3.5	1927	Highest
Timaru Airport	10.1	+2.0	1962	Highest
Tara Hills	9.0	+3.0	1950	Highest
Wanaka Airport	9.7	+2.6	1993	Highest
Dunedin Airport	9.9	+2.2	1963	2 nd highest
Dunedin, Musselburgh	11.2	+1.9	1948	2 nd highest
Manapouri, West Arm	8.8	+2.1	1998	2 nd highest
Queenstown	10.3	+2.7	1872	2 nd highest
Queenstown Airport	9.1	+2.5	1969	Highest
Lumsden	9.8	+2.5	1982	2 nd highest
Clyde	9.5	+2.8	1983	Highest
Gore	10.0	+2.5	1988	2 nd highest
Invercargill Airport	10.3	+2.3	1949	Highest
Tiwai Point	11.1	+2.2	1970	Highest
Nugget Point	10.5	+2.0	1971	2 nd highest
Raoul Island	20.1	+1.1	1940	3 rd highest

RAINFALL: BELOW NORMAL IN MANY REGIONS, WELL ABOVE NORMAL IN NELSON

Rainfall was 25 percent (a quarter) or less of normal in parts of Northland, Auckland, Waikato, Taupo, Gisborne, Hawke's Bay, Wairarapa, along the Kaikoura coast, and in East Otago, and 50 percent (half) or less of normal in Coromandel, Bay of Plenty, Wanganui, Manawatu, Horowhenua, Kapiti, North Canterbury, and inland Southland, and 75 percent (three quarters) or less of normal in Thames, Taranaki, Wellington, and much of Southland.

In contrast, rainfall totals were 200 percent (twice) of normal in Nelson (due to high rainfall over 22/23 May), and at least 125 percent of normal in Fiordland and parts of Marlborough.

Near or record low May rainfall was recorded at:

Location	May Rainfall (mm)	Percentage of normal	Year Records began	Comments
Cape Reinga	19	26	1920	Lowest
Kaitaia Obs.	29	24	1985	Lowest
Kerikeri EWS	13	10	1982	Lowest
Kerikeri Airport	14	11	1978	Lowest
Kaikohe	23	20	1987	Lowest
Dargaville	22	20	1943	Lowest
Whangarei Airport	29	28	1991	2 nd lowest
Warkworth	15	13	1972	Lowest
Auckland, Henderson	28	26	1986	Lowest
Auckland, Owairaka	23	23	1949	Lowest
Whitianga Airport	37	30	1991	2 nd lowest
Te Puke	38	33	1973	Lowest
Whakatane Airport	21	27	1991	2 nd lowest
Taupo Airport	10	13	1976	Lowest
Auckland, Mangere	11	11	1959	Lowest
Auckland Airport	12	13	1962	Lowest
Pukekohe	31	26	1986	Lowest
Ruakura	22	22	1906	2 nd lowest
East Taratahi	8	10	1973	Lowest
Martinborough EWS	4	6	2001	Lowest
Hicks Bay	11	8	1992	Lowest
Gisborne Airport	7	8	1905	Lowest
Napier Airport	4	7	1951	Lowest
Wairoa, North Clyde	8	6	1992	Lowest
Mahia AWS	10	7	1991	Lowest
Paraparaumu Airport	33	33	1945	2 nd lowest
Kaikoura	4	6	1949	Lowest
Rangiora EWS	11	21	1999	Lowest
Le Bons Bay	25	25	1984	Lowest
Ranfurlly EWS	8	25	2001	Lowest
Middlemarch EWS	7	19	2001	Lowest
Dunedin Airport	9	15	1963	Lowest
Dunedin, Musselburgh	8	12	1918	2 nd lowest
Nugget Point	20	19	1930	Lowest
Raoul Island	28	21	1938	Lowest

High May rainfall was recorded at:

Location	May Rainfall (mm)	Percentage of normal	Year Records began	Comments
Nelson Airport AWS	153	199	1941	Well above normal

SUNSHINE: ABOVE AVERAGE IN MANY REGIONS, ESPECIALLY IN THE EAST

May sunshine hours and/or solar radiation were more than 110 percent of normal in many North Island and eastern South Island locations, and at least 120 percent of normal in Gisborne, South Taranaki, Marlborough, inland South Canterbury, coastal Otago, and Southland.

High May sunshine hours were recorded at:

Location	May Sunshine (hrs)	Percentage of normal	Year Records began	Comments
Gisborne Airport	187	127	1905	Well above normal
Stratford	152	122	1963	3 rd highest
Lake Tekapo	179	137	1928	Well above normal
Dunedin, Musselburgh	127	127	1948	Well above normal
Invercargill	122	152	1932	Well above normal

MAY'S CLIMATE IN THE FIVE MAIN CENTRES

Auckland was the warmest, Dunedin the driest, and Christchurch the sunniest, of the five main centres. Rainfall was below normal and temperatures well above normal in all five main centres. Sunshine hours were above normal in Auckland, Wellington, Christchurch, and Dunedin, and near normal in Hamilton.

May 2007 main centre climate statistics:

Location	May. Mean Temp. (°C)	Dep. from normal (°C)		May. rainfall (mm)	% of Normal		May. Sunshine (hours)	% of Normal	
Auckland	15.4	+1.6	Equal highest	23 ^a	23	Lowest	149	108	Above normal
Hamilton	12.9	+1.2	Above normal	22	22	Well below normal	123	94	Near normal
Wellington	12.9	+1.4	3 rd highest	83	71	Below normal	145	113	Above normal
Christchurch ^b	11.4	+2.5	Highest	18	35	Well below normal	160 ^b	113	Above normal
Dunedin	11.2	+1.9	2 nd highest	8	12	2 nd lowest	127	127	Well above normal

^a Owairaka ^b Christchurch Airport

HIGHLIGHTS AND EXTREME EVENTS

- **Temperature**

The highest temperature during May 2007 was 24.8 °C recorded at Whangarei Airport on 1 May. It was also very warm on the same day in other parts of Northland, Auckland, Gisborne, and Hawke's Bay, many locations recording maximum temperatures between 24.0 and 24.6 °C.

Record high May maximum temperatures were recorded on 1 May 2007 at:

Location	Maximum temperature °C	Year Records began
Kerikeri EWS	24.6	1982
Whangarei Airport	24.8	1968
Warkworth	22.9	1972
Auckland, North Shore ARC	24.5	1995
Whitianga Airport	22.8	1991
Hastings AWS	24.6	1982

The lowest air temperature during the month was -4.1 °C recorded at Motu on the 31st.

- **Drought**

Low rainfall meant that significant soil moisture deficits of 110 mm or more persisted in Hawke’s Bay, Wairarapa and eastern Otago throughout the month, a highly unusual situation for late autumn. Rainfall in the eastern North Island had been below average every month so far this year, and May’s conditions were severe enough to cause Hawke’s Bay farmers to sell stock due to insufficient feed for winter.

- **High rainfall**

There were several high rainfall events, with at least 75 mm in 24 hours. These were:

Date	Region	Location	Rainfall (mm)*	Other comments
2 May	Waikato	Matamata	71	
6 May	Fiordland	Milford Sound	94	
9-10 May	Fiordland	Milford Sound	209	
20 May	Fiordland	Milford Sound	133	
	Aorangi	Mt Cook	127	
22 May	Nelson	Nelson Airport	97	Flooding in some areas
31 May	South Westland	Franz Josef	95	
	Fiordland	Milford Sound	131	
	Aorangi	Mt Cook	117	

* (9am-9am) rainfall

Parts of Nelson and Taranaki were hit by heavy rainfall over 22/23 May, with localised flooding. In Nelson, torrents of water washed down several Stoke streets, forcing the closure of a supermarket and three schools. Along the Taranaki coast, four houses were flooded and had to be evacuated, as the Oakura River overflowed its banks onto Hall Terrace. Even a car was swept downstream and into the sea. Water, in one house, was up to 2 m deep, with as much as 20 cm of mud and silt deposited on the floor. A man at the Timaru Stream managed to escape as raging water caught him on the swing bridge which was later torn and flung aside. Elsewhere, in New Plymouth, thigh-deep water flooded a motel at Burgess Park, where rainfall totalling 50 mm was estimated to have fallen in less than an hour. Official figures showed 63 mm in four hours at the Mangorei reservoir. New Plymouth airport recorded 35mm of rainfall between 7am and noon. Water was knee-deep in parts of the city, with a number of shops reporting damage.

- **High winds**

A wind gust as high as 156 km/h was recorded from the west at Taiaroa Head on the 27th.

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