

**National Climate Summary – February 2005**

- **Temperature: Extreme warmth - extended heat-wave - 8<sup>th</sup> warmest February on record**
- **Soil moisture: Severe or significant deficits throughout much of the North Island, and the north and east of the South Island**
- **Rainfall: Below average in many eastern areas - above average in north Westland and the east of the South Island, from south Canterbury to Southland**
- **Sunshine: Above average in the west of the South Island and southern half of the North Island**

February 2005 was one of the warmest on record. The first 10-days of February were very hot, with maximum temperatures of 30°C or more in many locations throughout New Zealand, and temperatures of 35°C or more in sheltered inland areas of the South Island. For the month, the national average temperature of 18.6°C was 1.3°C above normal, and 8<sup>th</sup> highest since reliable measurements dating back to the mid 1860s. Rainfall was below average over much of the North Island, especially parts of Hawke's Bay, Wairarapa, inland and eastern Bay of Plenty, Gisborne, and Manawatu. It was also drier than average in Wanganui, Kapiti, south Westland, Marlborough, and north Canterbury. Severe soil moisture deficits occurred in parts of Bay of Plenty, Gisborne, Hawke's Bay, Wairarapa, Wanganui, Marlborough, and north Canterbury, and were significant in parts of Northland, Auckland, Thames, Taupo, Manawatu, Horowhenua, Kapiti, Wellington, Nelson. Water restrictions occurred in Taranaki, with total bans on sprinklers, irrigation systems and unattended hoses. Rainfall was above average in parts of Northland, King Country, Eastland, north Westland, Banks Peninsula, south Canterbury, Otago, and Southland. It was sunnier than average in the west of the South Island and the southern half of the North Island but sunshine hours were below average in south Taranaki, and inland south Canterbury. Anticyclones ('highs') were often centred to the east of New Zealand, with depressions in the south Tasman Sea. This pattern resulted in more frequent north easterlies than average over much of New Zealand.

**Highlights:**

- The highest temperatures during the February 2005 heat wave was 38.7°C recorded at Alexandra on the 5<sup>th</sup> (the highest temperature there for any month, in records back to 1929). This is only one of a few occasions when temperatures in New Zealand have exceeded 100°F (37.8°C).
- The lowest temperature for the month was 1.8°C, recorded at Ettrick (Central Otago) on the 18<sup>th</sup>. This was the lowest February temperature there since measurements commenced in 1971.
- Thunderstorms and brief, but torrential rainfall occurred in Dunedin on the 7<sup>th</sup>, with flooding affecting many houses and shops. Heavy rainfall, totalling at least 100 mm, occurred in Temuka over the 13-14<sup>th</sup>, resulting in surface flooding, and a temporary closure of SH1 south of Timaru.
- Persistent fog resulted in the closure of Wellington Airport and disruption of about 250 flights affecting 1000s of travellers from 2-4 February.
- Of the four main centres Wellington was the sunniest and Christchurch the driest. Rainfall was above average in Dunedin, and below average in the other main centres. Temperatures were above average in all four centres, especially Wellington and Christchurch. Sunshine hours were above average in Wellington, and below average in Dunedin.

**Rainfall:** Rainfall was less than 25 percent of normal in parts of Hawke's Bay, and less than 50 percent of normal in inland and eastern Bay of Plenty, Gisborne, Manawatu, Wairarapa. It was also drier than average in western Bay of Plenty, Ruapehu, Wanganui, Horowhenua, Kapiti, Wellington, south Westland, Marlborough, and north Canterbury. Above average rainfall occurred in parts of Northland, King Country, Eastland, north Westland, Banks Peninsula, south Canterbury, Otago, and Southland.

**Temperature:** Mean temperatures were about 1.5°C above average in many regions, but more than 2.0°C above average in parts of the southern half of the North Island and eastern parts of the South Island from Canterbury to Otago.

**Sunshine:** Sunshine hours were above average in north Westland, Manawatu, Kapiti, Wellington, and Wairarapa. However, they were below average in south Taranaki, and inland south Canterbury.

**For further information, please contact:**

**Dr Jim Salinger – Principal Scientist – Climate, NIWA National Climate Centre, Auckland,  
Tel. (09) 375 2053, or (027) 521 9468 (mobile)**

**Stuart Burgess – Climatologist – NIWA National Climate Centre, Wellington, Tel. (04) 386 0569**  
**WELL ABOVE AVERAGE TEMPERATURES THROUGHOUT MUCH OF NEW ZEALAND**

Mean temperatures were at about 1.5°C above average in many regions, but more than 2.0°C above average throughout parts of inland Wairarapa, Manawatu, Horowhenua, Kapiti, Canterbury, the Southern Lakes, and in Central Otago. Temperatures were 0.5°C above average in Northland.

**Near record high February mean air temperatures were recorded at:**

Location	Mean temperature	Departure from average (°C)	Records Began	Comments
Pukekohe	20.3	+1.5	1971	2 <sup>nd</sup> highest
Tauranga Airport	20.9	+1.7	1913	3 <sup>rd</sup> equal highest
Whakatane Airport	20.6	+1.9	1975	2 <sup>nd</sup> highest
Taupo Airport	18.3	+1.6	1976	Well above average
New Plymouth Airport	19.5	+1.5	1945	2 <sup>nd</sup> equal highest
East Taratahi	19.6	+2.3	1973	3 <sup>rd</sup> highest
Paraparaumu Airport	19.4	+2.1	1953	2 <sup>nd</sup> equal highest
Palmerston North Airport	20.2	+2.5	1962	3 <sup>rd</sup> highest
Palmerston North	20.4	+2.2	1928	3 <sup>rd</sup> highest
Levin	19.7	+2.2	1896	2 <sup>nd</sup> equal highest
Kelburn	18.7	+1.5	1928	3 <sup>rd</sup> equal highest
Wellington Airport	19.6	+1.7	1962	3 <sup>rd</sup> highest
Wallaceville	18.8	+1.8	1940	2 <sup>nd</sup> equal highest
Ohakune	17.4	+2.6	1994	Highest
Wanganui	20.1	+1.8	1938	Well above average
Takaka	18.7	+1.5	1986	2 <sup>nd</sup> highest
Farewell Spit	19.5	+1.9	1971	Equal highest
Franz Josef	16.8	+1.3	1982	Equal highest
Puysegur Point	15.0	+1.3	1981	3 <sup>rd</sup> highest
Motueka, Riwaka	18.9	+1.6	1957	Well above average
Nelson Airport	19.5	+1.9	1944	2 <sup>nd</sup> highest
Blenheim Airport	19.4	+1.7	1986	3 <sup>rd</sup> highest
Hanmer Forest	18.2	+2.7	1906	2 <sup>nd</sup> highest
Kaikoura	18.1	+1.7	1964	3 <sup>rd</sup> highest
Winchmore	18.2	+2.0	1950	2 <sup>nd</sup> highest
Rangiora	17.8	+1.4	1965	3 <sup>rd</sup> highest
Christchurch Airport	18.5	+1.7	1954	2 <sup>nd</sup> highest
Lincoln, Broadfield	18.2	+1.7	1881	Well above average
Lake Tekapo	16.7	+1.6	1927	Well above average
Timaru Airport	17.3	+1.9	1962	2 <sup>nd</sup> highest
Wanaka Airport	18.8	+1.9	1993	3 <sup>rd</sup> highest
Dunedin Airport	16.8	+2.1	1963	3 <sup>rd</sup> highest
Manapouri Airport	16.0	+1.9	1991	3 <sup>rd</sup> highest
Queenstown	18.6	+2.0	1872	Well above average
Queenstown Airport	17.4	+2.3	1969	3 <sup>rd</sup> equal highest
Lauder	17.6	+1.6	1982	3 <sup>rd</sup> highest
Clyde	18.6	+2.2	1984	3 <sup>rd</sup> equal highest
Chatham Islands	17.3	+2.2	1957	2 <sup>nd</sup> highest

**BELOW AVERAGE RAINFALL IN MANY EASTERN AREAS  
ABOVE AVERAGE RAINFALL IN NORTH WESTLAND AND THE EAST OF THE  
SOUTH ISLAND FROM SOUTH CANTERBURY TO SOUTHLAND**

Rainfall was well below average (less than 25 percent of normal) in parts of Hawke’s Bay, and less than 50 percent of normal in inland and eastern Bay of Plenty, Gisborne, Manawatu, and Wairarapa. It was also drier than average, with less than 75 percent of normal rainfall in western Bay of Plenty, Ruapehu, Wanganui, Horowhenua, Kapiti, Wellington, south Westland, Marlborough, and north Canterbury.

Above average rainfall (at least 125 percent of normal) occurred in parts of Northland, King Country, Eastland, north Westland, Banks Peninsula, south Canterbury, Otago, and Southland. Rainfall was generally near average elsewhere.

**Low February rainfall was recorded at:**

Location	February rainfall (mm)	Percentage of normal	Year Records began	Comments
Whakatane Airport	22	28	1975	Well below average
Whakatu	10	16	1983	3 <sup>rd</sup> lowest
Martinborough	12	29	1945	Well below average
Rangiora	16	38	1918	Well below average
Lincoln	19	38	1881	Well below average

**Near record high February rainfall was recorded at:**

Location	February rainfall (mm)	Percentage of normal	Year Records began	Comments
Timaru Airport	129	287	1957	2 <sup>nd</sup> highest
Tiwai Point	142	186	1971	3 <sup>rd</sup> highest

**ABOVE AVERAGE SUNSHINE IN THE WEST OF THE SOUTH ISLAND AND THE SOUTH OF THE NORTH ISLAND**

Sunshine hours were 110 percent or more of average in north Westland and at least 105 percent of average in Manawatu, Kapiti, Wellington, and Wairarapa, but less than 90 percent of average in south Taranaki, and inland south Canterbury. Hours of bright sunshine were near average elsewhere.

**FEBRUARY’S CLIMATE IN THE FOUR MAIN CENTRES**

Of the four main centres Wellington was the sunniest and Christchurch the driest. Rainfall was above average in Dunedin, and below average in the other main centres. Temperatures were above average in all four centres, especially Wellington and Christchurch. Sunshine hours were above average in Wellington, below average in Dunedin, and near average in Auckland and Christchurch.

Location	February Mean Temp. (°C)	Dep. from normal (°C)		February rainfall (mm)	% of normal		February Sunshine (hours)	% of normal	
Auckland	20.7 <sup>a</sup>	+0.8	Above average	49 <sup>b</sup>	75	Below average	209 <sup>a</sup>	105	Near average
Wellington	18.7	+1.5	Well above average	43	69	Below average	226	108	Above average
Christchurch	18.5 <sup>c</sup>	+1.7	Well above average	29 <sup>c</sup>	70	Below average	196	100	Average
Dunedin	15.8	+0.7	Above average	117	187	Well above average	144	94	Below average

a-Mangere    b Mt Albert    c-Christchurch Airport

## HIGHLIGHTS AND EXTREME EVENTS

### • Heatwaves and high temperatures

The first 10-days of February were very hot, with maximum temperatures of 30°C or more in many locations throughout New Zealand, and temperatures of 35°C or more in sheltered inland areas of the South Island. Daily minima and maxima were at 5-9°C above average in many places, during that period. At Murchison maximum temperatures were 30.0°C or higher on 10 consecutive days from the 1<sup>st</sup>-10<sup>th</sup>. During this period Central Otago and inland Canterbury were extremely hot.

The highest temperatures during the February 2005 heat wave was 38.7°C recorded at Alexandra on the 5<sup>th</sup> (the highest temperature there for any month, in records back to 1929). This is only one a few occasions when temperatures in New Zealand have exceeded 100°F (37.8°C).

### Near or record high February 2005 air temperatures were recorded at:

Location	Maximum temp. °C	Date of occurrence	Records Began	Comments
Alexandra	38.7	5 Feb.	1929	Highest for any month.
Whakatane Airport	31.3	1 Feb.	1975	Equal highest for Feb.
New Plymouth Airport	29.5	1 Feb.	1944	Highest for Feb.
East Taratahi	33.1	10 Feb.	1973	2 <sup>nd</sup> highest for Feb.
Palmerston N. Airport	31.3	5 Feb.	1962	2 <sup>nd</sup> highest for Feb.
Levin	31.1	5 Feb.	1896	Highest for any month
Wellington Airport	28.1	6 Feb.	1962	3 <sup>rd</sup> highest for Feb.
Reefton	33.5	1 Feb.	1961	Highest for Feb.
Murchison	36.8	4 Feb.	1970	Highest for any month
Hanmer Forest	35.1	10 Feb.	1906	3 <sup>rd</sup> highest for Feb.
Culverden	35	6, 9 & 10 Feb.	1984	Highest for any month
Hororata, Illana	35	9 Feb.	1998	Equal highest for any month
Wanaka Airport	34.5	4 Feb.	1993	Highest for any month
Queenstown	33.2	4 Feb.	1872	2 <sup>nd</sup> highest for Feb.
Queenstown Airport	32.2	4 Feb.	1969	Highest for any month
Alexandra	38.7	4 Feb.	1929	Highest for any month
Lauder	35.0	5 Feb.	1981	Highest for any month
Clyde	35.7	5 Feb.	1984	Highest for any month
Ranfurly	33.4	5 Feb.	1975	Highest for any month

### • Low Temperatures

The lowest temperature for the month was 1.8°C, recorded at Ettrick (inland Southland) on the 18<sup>th</sup>. This

was the lowest February temperature there since measurements commenced in 1971.

- **High rainfall and flooding**

Thunderstorms occurred in Dunedin on the 7<sup>th</sup>, between 6pm and 6.30pm, with heavy rainfall totalling 17 mm in 15 minutes in the city, and 34 mm in 20 minutes in the hills. Flash flooding resulted with the downpour, water being knee-high in some areas, affecting many houses and shops, damages estimated in millions of dollars. High rainfall totalling 70-80 mm occurred in Takaka on the 11<sup>th</sup>, with significant falls totalling 130-150 mm in Hokitika on the 16<sup>th</sup>. Heavy rainfall, totalling at least 100 mm, occurred in Temuka over the 13-14<sup>th</sup>, resulting in surface flooding, and a temporary closure of SH1 south of Timaru.

- **Fog**

Persistent fog resulted in the closure of Wellington airport and disruption of about 250 flights affecting 1000s of travellers from 2-3 February.

**For further information, please contact:**

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Tel. (09) 375 2053, or (027) 521 9468 (mobile)**

**Stuart Burgess – Climatologist – NIWA National Climate Centre, Wellington, Tel. (04) 386 0569, or  
Geoff Baird, NIWA Communications Manager Tel. (04) 385-0543 or (025) 229 6314.**

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