

National Climate Summary – February 2010: Hot and dry for most of the country

- **Rainfall:** Well below normal rainfall in most areas of New Zealand. A record dry February in Auckland; also very dry in the other main centres.
- **Soil moisture:** Severe soil moisture deficits continue in Northland, and have developed in parts of Auckland, Marlborough, Canterbury and Otago.
- **Temperature:** Above average temperatures in most regions of the country, except for near average temperatures in coastal margins of Wairarapa, Marlborough, Canterbury, and Otago.
- **Sunshine:** Extremely sunny over much of the South Island and around Cape Reinga. Quite cloudy in Auckland, Waikato, and Taranaki.

Overall, February 2010 was a very settled month, with more frequent anticyclones ('highs') affecting New Zealand than is usual at this time of year. This resulted in an extremely dry and warm February, for many regions of the country. There was a notable lack of unsettled weather during the month. Severe soil moisture deficits continued in Northland during February, and have now developed in parts of Auckland, Marlborough, Canterbury and Otago.

Well below normal rainfall (less than 50 percent of normal) occurred in many regions of New Zealand. Record low February rainfall totals were observed in Auckland, with less than 10 percent of normal rainfall observed. It was also very dry in the other main centres. In contrast, near normal rainfall was recorded in parts of Southland, Otago, the West Coast; Taranaki, and around Cape Reinga.

Overall, February temperatures were above average (more than 0.5°C above average) across all of New Zealand, except for a narrow coastal margin of near average temperatures, from Wairarapa right down to Invercargill. Regions with well above average temperatures (more than 1.2°C above average) included central Auckland, Coromandel, the western Bay of Plenty, and the Central Plateau region, as well as much of the western South Island. The New Zealand national average temperature was 17.7°C (+0.5°C above the long-term February average).

February was an extremely sunny month over most of the South Island, with sunshine totals well above normal (above 125 percent of normal) in Southland, Otago, parts of Canterbury, parts of the West Coast, and also around Cape Reinga. It was the sunniest February on record for Dunedin and Balclutha. In contrast, it was a rather cloudy month for Auckland, the Waikato, and Taranaki. For the remainder of the country, February sunshine totals were close to normal.

Further Highlights:

- The highest temperature was 35.6°C recorded at Cheviot on the 22nd (2nd highest February temperature at this site). The lowest temperature of 0.5 °C was recorded at Omarama, central Otago, on the 19th (not a record for February).
- The highest 1-day rainfall was 188.4 mm, recorded at Secretary Island, Fiordland, on the 28th (not a record at this site).
- The highest wind gust in February 2010 was 178 km/hr, recorded at Waipawa on the 15th (not a record).
- Of the six main centres, Auckland was the driest, Tauranga was the warmest, and Dunedin the sunniest but also the wettest and coolest.

For further information, please contact:

Ms Georgina Griffiths – Climate Scientist– NIWA National Climate Centre, Auckland,

Tel. (09) 375 4506 (work) or (027) 2936545 (mobile); or

Dr Andrew Tait – Climate Scientist – NIWA National Climate Centre, Wellington,

Tel. (04) 386 0562 (work) or (027) 327 7948 (mobile)

RAINFALL: VERY DRY OVERALL

It was an extremely dry February overall. Well below normal rainfall (less than 50 percent of normal) occurred in many regions of New Zealand. The exceptions were parts of Southland, Otago, the West Coast; Taranaki, and around Cape Reinga, where near normal rainfall was recorded. Record low February rainfall totals were observed in Auckland, with less than 10 percent of the normal February rainfall observed. It was also very dry in the other main centres.

Record or near-record February rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kaitaia	23	30	1985	4th-lowest
Kumeu	11	15	1978	2nd-lowest
Tauranga	10	14	1898	2nd-lowest
Auckland (Airport)	5	7	1959	Lowest
Pukekohe	12	15	1944	3rd-lowest
Culverden	4	11	1921	2nd-lowest
Tara Hills	6	16	1949	4th-lowest
Lumsden	47	62	1982	4th-lowest

TEMPERATURES: WELL ABOVE AVERAGE IN AUCKLAND, COROMANDEL, PARTS OF BAY OF PLENTY AND CENTRAL PLATEAU, AND FOR MANY WESTERN PARTS OF THE SOUTH ISLAND.

Overall, February temperatures were above average (more than 0.5°C above average) across all of New Zealand, except for a narrow coastal margin of near average temperatures, from Wairarapa right down to Invercargill. Regions with well above average temperatures (more than 1.2°C above average) included central Auckland, Coromandel, the western Bay of Plenty, and the Central Plateau region, as well as much of the western South Island. The New Zealand national average temperature was 17.7°C (+0.5°C above the long-term February average).

Record or near-record February mean maximum daily air temperatures were recorded at:

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	26.3	1.4	1985	3rd-highest
Kerikeri	26.4	1.7	1981	Highest
Kaikohe	25.1	1.8	1973	3rd-highest
Whangaparaoa	25.2	2.7	1982	Highest
Kumeu	24.4	0.2	1978	3rd-highest
Auckland	25.5	1.6	1959	4th-highest
Wallaceville	24.7	2.5	1939	Highest
Westport	21.9	1.4	1937	4th-highest
Lake Rotoiti	23.6	2.7	1965	3rd-highest
Puysegur Point	17.5	0.7	1978	3rd-highest
Appleby	24.1	1.7	1943	2nd-highest
Nelson	24.1	1.8	1943	Highest
Cheviot	23.7	1.3	1982	2nd-highest
Mt Cook	24.0	3.2	1929	3rd-highest
Wanaka	26.5	3.8	1955	2nd-highest
Dunedin	22.3	1.6	1947	4th-highest
Cromwell	27.4	3.2	1949	2nd-highest
Alexandra	26.0	2.2	1983	4th-highest
Cape Campbell	18.8	-2.8	1953	3rd-lowest

Record or near-record February mean minimum daily air temperatures were recorded at:

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Whangaparaoa	18.1	1.4	1982	2nd-highest
Kumeu	15.0	0.8	1978	3rd-highest
Whitianga	16.8	2.7	1962	Highest
Paeroa	16.4	2.2	1947	4th-highest
Tauranga	17.5	2.6	1913	2nd-highest
Te Puke	15.7	2.1	1973	3rd-highest
Whakatane	16.0	1.9	1974	3rd-highest
Rotorua	15.1	2.3	1964	4th-highest
Taupo	14.1	2.7	1949	3rd-highest
Auckland	17.8	1.5	1959	3rd-highest
Hamilton	15.5	3.2	1946	4th-highest
Port Taharoa	17.1	1.6	1973	4th-highest
Te Kuiti	14.7	2.0	1959	3rd-highest
Turangi	13.2	1.7	1968	Equal 4th-highest
Ohakune	11.4	2.1	1962	3rd-highest
Reefton	12.8	2.0	1960	4th-highest
Dunedin	7.9	-1.0	1947	2nd-lowest

SUNSHINE: EXTREMELY SUNNY OVER MUCH OF THE SOUTH ISLAND AND AROUND CAPE REINGA; QUITE CLOUDY FOR TARANAKI AND THE WAIKATO.

Overall, February was an extremely sunny month over much of the South Island, with the exception of Nelson and Marlborough (where near normal sunshine totals were observed). Sunshine totals were well above normal (above 125 percent of normal) in Southland, Otago, parts of Canterbury, parts of the West Coast, and also around Cape Reinga. It was the sunniest February on record for Dunedin and Balclutha, since records began in 1947 and 1964, respectively. In contrast, it was a rather cloudy month for Auckland, the Waikato, and Taranaki, with sunshine totals between 75 and 90 percent of normal. For the remainder of the North Island, February sunshine totals were close to normal.

Record or near-record February sunshine hours were recorded at:

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Kaitia	248	126	1985	2nd-highest
Greymouth	225	131	1947	4th-highest
Cheviot	220	114	1983	3rd-highest
Mt Cook	213	126	1930	2nd-highest
Dunedin	245	158	1947	Highest
Cromwell	269	126	1979	3rd-highest
Invercargill	204	124	1932	3rd-highest
Balclutha, Telford	269	166	1964	Highest

FEBRUARY CLIMATE IN THE SIX MAIN CENTRES

Of the six main centres, Auckland was the driest, Tauranga was the warmest, and Dunedin the sunniest but also the wettest and coolest.

All the main centres recorded well below average rainfall, with Auckland and Tauranga experiencing record or near-record low February rainfall totals. It was also extremely warm in Auckland, Tauranga and

Hamilton. Dunedin recorded its sunniest February ever, with an exceptional 245 hours of bright sunshine recorded during the month (160 percent of normal).

February 2010 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland ^a	20.6	+0.7	4 th highest	9	12%	Lowest on record	168	84%	Below normal
Tauranga ^b	21.2	+1.7	3 rd highest	10	14%	2 nd lowest on record	223	106%	Near normal
Hamilton ^c	20.3	+1.7	Well above average	24	39%	Well below normal	162	82%	Below normal
Wellington ^d	17.2	+0.1	Near average	33	54%	Below normal	200	96%	Near normal
Christchurch ^e	16.9	+0.1	Near average	18	44%	Well below normal	201	103%	Near normal
Dunedin ^f	15.7	+0.5	Above average	37	59%	Below normal	245	160%	Record high

^a Mangere ^b Tauranga Airport ^c Hamilton Airport ^d Kelburn ^e Christchurch Airport ^f Musselburgh ^g Ruakura

HIGHLIGHTS AND EXTREME EVENTS

• Heavy rain and flooding

The highest 1-day rainfall for February was 188.4 mm, recorded at Secretary Island, Fiordland on the 28th (not a record at this site). There were no record-high extreme 1-day rainfall totals observed in February. However, heavy rain and high rivers on 14 February forced changes to the planned route of the ‘Coast to Coast’ Race from Kumara to Christchurch, the first time in 28 years that “Plan B” had been enacted.

• Temperature

The highest temperature recorded in February 2010 was 35.6°C, observed at Cheviot on the 22nd (the 2nd highest February temperature recorded at this site).

Kerikeri, Westport, Greymouth and Milford Sound recorded their highest-ever February extreme temperatures in February 2010. In particular, conditions on the 1st of February were record-high on the West Coast of the South Island, following on from a heat-wave in this region over the period 29-31 January, associated with easterly winds and foehn warming in the lee of the Southern Alps.

Record or near-record high daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kerikeri	30.4	14 th	1981	Highest
Whangaparaoa	27.3	17 th	1982	2nd-highest
Westport	28.3	1 st	1937	Highest
Reefton	32.3	2 nd	1960	3rd-highest
Greymouth	28.7	1 st	1947	Highest
Milford Sound	28.5	1 st	1934	Highest
Arthurs Pass	28.0	3 rd	1978	4th-highest
Cheviot	35.6	22 nd	1982	2nd-highest
Wanaka	33.0	4 th	1955	4th-highest
Lumsden	29.0	6 th	1982	Equal 2nd-highest
Cromwell	34.2	5 th	1949	4th-highest

Record or near-record daily minimum air temperatures were recorded at:

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Dunedin	1.3	16 th	1947	Lowest
Queenstown	2.1	19 th	1871	4th-lowest
Balclutha, Telford	1.0	8 th	1964	Lowest
Whangaparaoa	20.6	18 th	1982	Highest
Takaka	19.5	1 st	1978	2nd-highest
Puysegur Point	18.1	23 rd	1978	2nd-highest
Kaikoura	20.0	25 th	1972	3rd-highest
Le Bons Bay	17.9	24 th	1984	4th-highest

The lowest temperature recorded in February 2010 was 0.5°C, observed at Omarama, Central Otago, on the 19th (not a February temperature record at this site).

- **High winds**

The highest wind gust in February 2010 was 178 km/hr, recorded at Waipawa on the 15th (not a record for this site, for February).

Near-record high extreme wind gusts for February were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Kaikohe	70	19 th	1986	Equal 2nd-highest
Paraparaumu	111	13 th	1972	3rd-highest

For further information, please contact:

Ms Georgina Griffiths – Climate Scientist– NIWA National Climate Centre, Auckland,

Tel. (09) 375 4506 (work) or (027) 2936545 (mobile); or

Dr Andrew Tait – Climate Scientist – NIWA National Climate Centre, Wellington,

Tel. (04) 386 0562 (work) or (027) 327 7948 (mobile)

www.niwa.co.nz/ncc

Copyright NIWA 2010. All rights reserved.