

# Monthly Climate Summary

National Climate Summary: **February 2014**

Issued: 4 March 2014

## Widespread dryness for much of New Zealand, particularly western and central North Island.

<b>Rainfall</b>	Well below normal rainfall (less than 50 percent of February normal) occurred for much of the North Island except for eastern Northland where near (within 20% of normal) or above normal (120-150% of normal) rainfall was recorded and for the coast south of Hawke's Bay, where well above normal (more than 150% of normal) rainfall was recorded. Below normal rainfall (50-79 percent of February normal) occurred for the remainder of the North Island. Many locations in the South Island were well below normal, such as parts of north Canterbury and southern Marlborough regions, but especially in areas from south Canterbury through central Otago and northern Southland regions. Most other parts of the South Island recorded below normal rainfall, with the exception of Christchurch which recorded above normal and Dunedin which recorded near normal precipitation.
<b>Temperature</b>	Temperatures for much of New Zealand were near average (within 0.5°C of February average). Exceptions to this were localised areas of above average temperatures such as Auckland, Hamilton, and central North Island (0.5-1.2°C above February average). Above average temperatures were recorded in Reefton and Arthurs Pass as well as parts of south Canterbury, Central Otago and Fiordland. Pockets of below average temperatures (0.5-1.2°C below February average) were experienced for Wellington, northern portions of Hawke's Bay and far northern parts of the South Island.
<b>Soil moisture</b>	As at 1 March 2014, soils were much drier than normal across the North Island, except for eastern Northland and the coast south of Hawke's Bay where soils are slightly wetter than normal for time of year. Drier than normal soils for much of the interior of the South Island, particularly Tasman, Marlborough and much of Canterbury and Southland regions. Western coastal areas and around Banks Peninsula have slightly wetter than normal soils for this time of year.
<b>Sunshine</b>	Above normal sunshine was recorded for the central portions of the North Island (110-124 percent of February normal). North of Auckland, sunshine was well below normal (less than 75 percent of February normal). Areas around Nelson recorded above normal sunshine as well as inland Canterbury and Dunedin. Near normal sunshine was recorded elsewhere (within 10 percent of February normal).

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## Overview

February 2014 was characterised by anomalously high pressure to the south of New Zealand and anomalously lower pressures to the northeast of the country. This set up resulted in a predominantly southeast wind flow over the country for the month. Consequently, this contributed to the abnormally dry conditions in western and central areas of the North Island. In contrast, this supported higher than normal rainfall for eastern coastal sections of the North Island.

Well below normal rainfall (less than 50 percent of February normal) occurred for much of the North Island except for eastern Northland where near (within 20% of normal) or above normal (120-150% of normal) rainfall was recorded and for the coast south of Hawke's Bay, where well above normal (more than 150% of normal) rainfall was recorded. Below normal rainfall (50-79 percent of February normal) occurred for the remainder of the North Island. Many locations in the South Island were well below normal, such as parts of north Canterbury and southern Marlborough regions, but especially in areas from south Canterbury through central Otago and northern Southland regions. Most other parts of the South Island recorded below normal rainfall, with the exception of Christchurch which recorded above normal and Dunedin which recorded near normal precipitation.

Temperatures for much of New Zealand were near average (within 0.5°C of February average). Exceptions to this were localised areas of above average temperatures such as Auckland, Hamilton, and central North Island (0.5-1.2°C above February average). Above average temperatures were recorded in Reefton and Arthurs Pass as well as parts of south Canterbury, Central Otago and Fiordland. Pockets of below average temperatures (0.5-1.2°C below February average) were experienced for Wellington, northern portions of Hawke's Bay and far northern parts of the South Island. The nation-wide average temperature in February 2014 was 17.3°C (0.1°C above the 1971-2000 February average from NIWA's seven station temperature series which begins in 1909).

As at 1 March 2014, soils were much drier than normal across the North Island, except for eastern Northland and the coast south of Hawke's Bay where soils are slightly wetter than normal for time of year. Drier than normal soils for much of the interior of the South Island, particularly Tasman, Marlborough and much of Canterbury and Southland regions. Western coastal areas and around Banks Peninsula have slightly wetter than normal soils for this time of year. Soil moisture deficits are not as extensive as those a year ago in the 2013 drought, but may be as severe as 2013 in isolated regions. Soil moisture levels are lowest, relative to normal at this time of year, in the Waikato, Waitomo and Taupo districts.

Above normal sunshine was recorded for the central portions of the North Island (110-124 percent of February normal). North of Auckland, sunshine was well below normal (less than 75 percent of February normal). Areas around Nelson recorded above normal sunshine as well as inland Canterbury and Dunedin. Near normal sunshine was recorded elsewhere (within 10 percent of February normal).

### Further Highlights:

- The highest temperature was 35.7°C, observed at Clyde on 20 February.
- The lowest temperature was -2.4°C, observed at Pukaki on 23 February.
- The highest 1-day rainfall was 108 mm, recorded at Milford Sound on 21 February.
- The highest wind gust was 156 km/hr, observed at Cape Turnagain on 13 February.
- In February 2014, Auckland was the warmest and driest, Dunedin was the coolest and cloudiest, Tauranga was the wettest with Hamilton the sunniest of the six main centres.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2014 (February) are: Whakatane (578 hours), Lake Tekapo (546 hours), Nelson (534 hours) and Takaka (534 hours).

### For further information, please contact:

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## Rainfall: Widespread dryness for much of the country, especially western and central North Island.

February was a very dry month for much the North Island as well as parts of the eastern and southern South Island with the table below indicating specific rainfall rankings for February. Of note are Ohakune, Motu and Waipara West which experienced their driest February on record.

As at 1 March 2014, soil moisture deficits are not as extensive as those a year ago in the 2013 drought, but may be as severe as 2013 in isolated regions. Soil moisture levels are lowest, relative to normal at this time of year, in the Waikato, Waitomo and Taupo districts.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Low records or near-records				
Paeroa	10	12	1914	Equal 3rd-lowest
Toenepi	6	9	1951	3rd-lowest
Motu	16	13	1990	Lowest
Auckland (Airport)	11	15	1959	4th-lowest
Whatawhata	22	27	1952	4th-lowest
Te Kuiti	11	12	1950	4th-lowest
Taumarunui	9	9	1913	Equal 2nd-lowest
Stratford	18	14	1960	4th-lowest
Hawera	16	22	1977	4th-lowest
Ohakune	0	0	1961	Lowest
Waipara West	6	15	1973	Lowest

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## Temperature: Near average temperatures for much of the country.

Temperatures for much of New Zealand were near average (within 0.5°C of February average) with pockets of higher and lower than average temperatures in some areas. Motu recorded its highest mean maximum temperature for February. The nation-wide average temperature in February 2014 was 17.3°C (0.1°C above the 1971-2000 February average from NIWA's seven station temperature series which begins in 1909)<sup>1</sup>.

### Record<sup>2</sup> or near-record mean air temperatures for February were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Waiau	17.7	0.7	1974	4th-highest
Cheviot	17.0	0.6	1982	2nd-highest

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Motu	22.7	2.1	1990	Highest
Cheviot	23.5	1.2	1982	3rd-highest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
Low records or near-records				
Taumarunui Aws	9.7	-2.4	1947	3rd-lowest

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<sup>1</sup> Interim value

<sup>2</sup> The rankings (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>.etc) in all Tables in this summary are relative to climate data from a *group* of nearby stations, some of which may no longer be operating. The current climate value is compared against all values from any member of the group, without any regard for homogeneity between one station's record, and another. This approach is used due to the practical limitations of performing homogeneity checks in real-time.

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## Sunshine: Above normal sunshine for central North Island and much of the South Island

Above normal sunshine was recorded for many locations in New Zealand (110-124 percent of February normal). Of note on the table below is Takaka which recorded its highest amount of sunshine on record for the month February.

Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2014 (February) are: Whakatane (578 hours), Lake Tekapo (546 hours), Nelson (534 hours) and Takaka (534 hours).

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

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Taumarunui	230	125	1947	4th-highest
Takaka	259	123	1985	Highest
Balclutha	209	129	1964	4th-highest
Low records or near-records				
Kaitaia	169	85	1985	4th-lowest

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## February climate in the six main centres

All the main centres recorded near average temperatures for the month of February. Auckland and Hamilton recorded their 7<sup>th</sup> and 6<sup>th</sup> driest February on record, respectively. Additionally, Tauranga and Wellington experienced below normal precipitation. On the South Island, Christchurch was the only main centre to receive above normal precipitation while Dunedin was near normal. All centres received near normal sunshine except Dunedin which received above normal amounts.

In February 2014, Auckland was the warmest and driest, Dunedin was the coolest and cloudiest, Tauranga was the wettest with Hamilton the sunniest of the six main centres.

### February 2014 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	20.3	0.3	Near average
Tauranga <sup>b</sup>	20.1	0.3	Near average
Hamilton <sup>c</sup>	19.0	0.2	Near average
Wellington <sup>d</sup>	17.1	-0.1	Near average
Christchurch <sup>e</sup>	17.0	0.2	Near average
Dunedin <sup>f</sup>	14.7	-0.3	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	11	16%	7 <sup>th</sup> Driest February on Record
Tauranga <sup>b</sup>	64	74%	Below normal
Hamilton <sup>c</sup>	12	17%	6 <sup>th</sup> Driest February on Record
Wellington <sup>d</sup>	48	68%	Below normal
Christchurch <sup>e</sup>	52	120%	Above normal
Dunedin <sup>f</sup>	57	84%	Near normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland <sup>a</sup>	211	108%	Near normal
Tauranga <sup>b</sup>	216	100%	Near normal
Hamilton <sup>g</sup>	213 <sup>3</sup>	108%	Near normal
Wellington <sup>d</sup>	211	106%	Near normal
Christchurch <sup>e</sup>	195	100%	Near normal
Dunedin <sup>f</sup>	190	121%	Above normal

<sup>a</sup> Mangere <sup>b</sup> Tauranga Airport <sup>c</sup> Hamilton Airport <sup>d</sup> Kelburn <sup>e</sup> Christchurch Airport <sup>f</sup> Musselburgh <sup>g</sup> Ruakura

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<sup>3</sup> Missing one day, 19<sup>th</sup> February

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## Highlights and extreme events

### Temperatures

From 18 to 23 February very high humidity was experienced in Auckland, due to a combination of high temperatures and airflows from the east and northeast. The highest recorded humidity was 97 percent on the morning of 23 February, and 94 percent humidity was recorded on 21 February. Humidity did not fall below 69 percent on the night of 19 February. All week, night-time temperatures were around 20°C, making it difficult to sleep.

As can be seen at the tables below, there were numerous sites recording record or near record high afternoon temperatures (maximum). Additionally, many sites observed record or near record low morning temperatures (minimum). This is a product of clear skies during the month in many places.

The highest temperature was 35.7°C, observed at Clyde on 20 February.

The lowest temperature was -2.4°C, observed at Pukaki on 23 February.

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Port Taharoa	29.8	19th	1973	4th-highest
Taumarunui	33.0	20th	1947	3rd-highest
Martinborough	32.2	20th	1986	4th-highest
Hastings	34.5	22nd	1965	4th-highest
Palmerston North	31.9	19th	1918	2nd-highest
Ohakune	30.7	20th	1962	Highest
Reefton	32.5	20th	1960	3rd-highest
Milford Sound	27.8	9th	1934	2nd-highest
Cheviot	34.4	4th	1982	3rd-highest
Ranfurly	32.4	20th	1975	3rd-highest
Lumsden	29.1	20th	1982	3rd-highest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
Low records or near-records				
Kaitiāia	6.0	8th	1967	Lowest
Taumarunui	1.7	24th	1947	Equal 4th-lowest
Hanmer Forest	-1.5	24th	1906	3rd-lowest
Waiau	2.4	24th	1974	Equal 4th-lowest

Le Bons Bay	6.5	24th	1984	4th-lowest
Timaru	1.4	24th	1885	Equal 3rd-lowest
Ranfurly	-1.5	24th	1975	3rd-lowest
Alexandra	1.5	24th	1983	3rd-lowest
Balclutha	0.7	6th	1964	2nd-lowest

## Rain and slips

The highest 1-day rainfall was 108 mm, recorded at Milford Sound on 21 February.

On 6 February, multiple road accidents in Northland were attributed to the wet weather conditions. The heavy rain didn't stop big crowds enjoying the Waitangi Day atmosphere at Waitangi.

On 7 February, Northland police officers were called out to six road accidents in two hours, which were attributed to wet and greasy roads.

The weekend of 8-9 February was wet for the Hawke's Bay and Gisborne due to the remnants of tropical cyclone Edna.

On 12 February, at least six Christchurch homes in the suburbs of Avonhead, St Albans, Rangiora, Wigram, and Belfast, were flooded after a burst of heavy rain clogged stormwater drains.

From 20 February, New Plymouth District Council introduced water use reduction measures for the district due to declining reservoir levels as a result of low rainfall. Hand-held hoses were only able to be used on alternate days. The use of sprinklers and unattended hoses was banned.

On 23 February, rain forced the 'Party in the Park' event in Mosgiel to end early. A fire ripped through part of a farm near Huntly, due to the tinder-dry condition of the vegetation in the area.

In late February, urban areas of Tasman district were under water use reduction measures due to intensifying dry conditions. Residents were given notice to conserve water, with handheld hosing only permitted on alternate days.

## Record or near record February extreme 1-day rainfall totals were recorded at:

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Campbell Island	36	21st	1991	3rd-highest

## Wind

The highest wind gust was 156 km/hr, observed at Cape Turnagain on 13 February.

On 6 February, drivers of caravans, motorcycles, and high sided vehicles were warned to take care on SH 1 at the Desert Road due to strong winds.

On 9 and 10 February, strong southerlies pounded Wellington, but no damage was reported.



On 23 February, a supercell storm swept through northern and mid-Canterbury. Two tornadoes formed, one in Amberley (north Canterbury) around 6pm and one in Leeston (mid-Canterbury) earlier in the day. The Amberley tornado ripped the roof of a home, lifted tiles off roofs near the Burnham Military Camp area, smashed windows, felled trees, and brought down powerlines. Trees that fell on powerlines in Southbridge sparked a fire in a paddock. More than 1000 homes lost power in the storm. The Leeston tornado was much weaker, only kicking up dust. On the Rimutaka Hill, a motorcyclist was knocked off her bike by a strong gust of wind.

On 25 February, wild weather battered Southland, with boat owners told to secure their moorings and sports practices cancelled.

On 27 February, a scrub fire near Cromwell spread quickly due to strong winds, eventually covering 50 hectares.

**Record or near record February extreme wind gusts were recorded at:**

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Manapouri	63	24th	1991	Equal 3rd-highest
South West Cape	152	24th	1991	Equal 4th-highest

**Lightning and hail**

On 23 February, a supercell storm swept through Canterbury. Large hail stones pelted the ground and lightning strikes caused a small fire in Halswell. Hail stones the size of golf balls fell in Ashburton.

**Snow and ice**

On 28 February snow settled on the mountains around Queenstown including Remarkables Ski Field and Cardrona Ski Field.

**Cloud and fog**

On 10 February, a rare iridescent 'rainbow' cloud was spotted by a tramper above the Molesworth hills in north Canterbury.

On the evening of 19 February and the morning of 20 February, thick sea fog surrounded Wellington city and grounded many domestic flights at Wellington airport.

On 20 February, flights were disrupted in and out of Blenheim airport and Wanganui airport due to fog. Heavy fog may have contributed to a car crash in Blenheim where a man was left in a serious condition.

On 21 February, flights were cancelled and delayed at Christchurch airport and Palmerston North airport due to fog.

On 22 February, sea fog was observed over the Waitemata Harbour in Auckland.

**For further information, please contact:**

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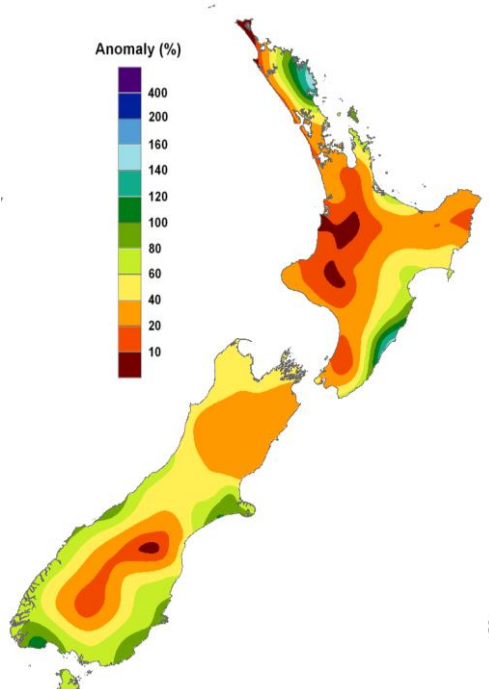
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*February 2014 total rainfall expressed as a % of normal*

*Well below normal rainfall throughout western, central and East Cape regions of the North Island as well as Marlborough north Canterbury, south Canterbury, central Otago and northern Southland regions of the South Island (less than 50% of February normal rainfall - orange, red and brown shades).*

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