

A dry month with mixed temperatures

Rainfall	Below normal rainfall (50-79% of normal) or well below normal rainfall (<50% of normal) was observed in much of the country. Parts of the Far North and Whangārei Districts observed above normal rainfall (120-149% of normal). Near normal rainfall (80-119%) was observed in most of Auckland, the Coromandel, some areas around Gisborne and Hawke's Bay, as well as Stewart Island.
Temperature	Temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) in parts of Waikato, inland areas of Marlborough, southern Tasman, northern and southwestern portions of Canterbury, northern and southern portions of the West Coast, inland Otago, and western and central Southland. However, below average temperatures (0.51-1.20°C below average) were observed in western Taranaki, Kapiti Coast, the southwest fringe of Manawatū-Whanganui, and a small area of Nelson. The rest of New Zealand experienced near average temperatures (±0.50°C of average).
Soil Moisture	At the end of February, soil moisture levels were lower than normal for nearly all of the North Island for this time of year, except the Far North, where soil moisture was normal or above normal. In the South Island, soil moisture levels were near normal in small portions of the central West Coast and southern Canterbury. The remainder of the South Island had below normal soil moisture levels.

Click on the link to jump to the information you require:

[Overview](#)

[Rainfall](#)

[Temperature](#)

[February 2021 climate in the six main centres](#)

[Highlights and extreme events](#)

Overview

February mean sea level pressure was higher than normal over and to the southeast of New Zealand. This resulted in more easterly quarter air flows for the North Island and little or no flow anomaly in the South Island. The pattern was associated with the continuation of a non-traditional central Pacific La Niña, which weakened slightly for the second consecutive month.

Most of Aotearoa New Zealand experienced below normal rainfall (50-79% of normal) or well below normal rainfall (<50% of normal) during February. However, during the middle of the month, an area of low pressure caused heavy rain across parts of Northland, Auckland, Bay of Plenty and Gisborne. Daily rainfall totals exceeded 100 mm in a number of locations, and places like Kerikeri, Te Puke and Kaikohe recorded their heaviest rain since last winter. This brief spell of wet weather meant that some areas received their monthly rainfall or more in a short period of time.

February temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) in parts of Waikato, inland areas of Marlborough, southern Tasman, northern and southwestern portions of Canterbury, northern and southern portions of the West Coast, inland Otago, and western and central Southland. The only areas to experience below average temperatures (0.51-1.20°C below average) were western Taranaki, Kapiti Coast, the southwest fringe of Manawatū-Whanganui, and a small area of Nelson. The nationwide average temperature in February 2021 was 17.3°C. This was 0.1°C above the 1981-2010 February average from NIWA's seven station temperature series which begins in 1909.

Further Highlights:

- The highest temperature was 34.8°C, observed at Hanmer Forecast on 22 February. This was the hottest day in a six-day heatwave where maximum temperatures exceeded 30°C on each day.
- The lowest temperature was -1.1°C, observed at Middlemarch on 17 February.
- The highest 1-day rainfall was 125 mm, recorded at Kerikeri on 14 February.
- The highest wind gust was 161 km/h, observed at Secretary Island on 24 February.
- Of the six main centres in February 2021, Auckland was the warmest and sunniest, Dunedin was the driest and coolest, Tauranga was the wettest and Hamilton was the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations so far in 2021 are Taranaki (602 hours), Marlborough (573 hours), Hawke's Bay (564 hours) and Bay of Plenty (559 hours).

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Rainfall: Dry for most of Aotearoa

Higher than normal air pressure contributed to below normal rainfall (50-79% of normal) or well below normal rainfall (<50% of normal) across much of the country. The only areas that received above normal rainfall (120-149% of normal) were in parts of the Far North and northern Whangārei Districts. Near normal rainfall (80-119%) was observed in most of Auckland, the Coromandel, some areas around Gisborne and Hawke's Bay, as well as Stewart Island.

As high pressure hovered overhead, it prevented rain-bearing weather systems from reaching the lower South Island, with a mere 11% of the monthly normal rainfall observed at Mt Cook Airport. This was associated with particularly low hydro lake levels (around the 10th percentile) for the time of year.

Record^{1,2} or near-record February rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Campbell Island	161	152	1992	3rd-highest
Low records or near-records				
Nugget Point	19	30	1930	Lowest
Mt Cook Airport	29	11	1928	2nd-lowest
Balclutha	13	19	1964	2nd-lowest
Mt Ruapehu (Chateau)	42	25	2000	2nd-lowest
Milford Sound	138	30	1929	2nd-lowest
Gore	15	18	1907	3rd-lowest
Waiouru	12	18	1929	4th-lowest
Dannevirke	13	16	1951	4th-lowest
Takapau Plains	17	22	1962	4th-lowest
Dunedin (Musselburgh)	17	25	1918	4th-lowest

¹ The rankings (1st, 2nd, 3rd.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.

² All normal values in this climate summary are compared to the 1981-2010 normals.

Temperature: Cool overnight temperatures, late heat in the south

Temperatures were above or well above average (0.51-1.20°C above average) in parts of Waikato, inland areas of Marlborough, southern Tasman, northern and southwestern portions of Canterbury, northern and southern portions of the West Coast, inland Otago, and western and central Southland. However, below average temperatures (0.51-1.20°C below average) were observed in western Taranaki, Kapiti Coast, the southwest fringe of Manawatū-Whanganui, and a small area of Nelson. The rest of New Zealand experienced near average temperatures ($\pm 0.50^\circ\text{C}$ of average).

Persistent high pressure and dry weather also lead to enhanced overnight radiational cooling. The result was a seven day spell of minimum temperatures below 7°C in Ohakune and five day spell of minimum temperatures below 10°C in Whakatu between 18-24 February. The average February daily minimum temperature in Ohakune and Whakatu is 9.7°C and 13.2°C , respectively.

The nationwide average temperature in February 2021 was 17.3°C . This was 0.1°C above the 1981-2010 average (and considered to be near average) from NIWA's seven station temperature series which begins in 1909. It was the coolest February since 2017 and the coolest month relative to average since March 2020.

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

Location	Mean air temp. ($^\circ\text{C}$)	Departure from normal ($^\circ\text{C}$)	Year records began	Comments
High records or near-records				
Campbell Island	10.4	+0.9	1991	2nd-highest
Secretary Island	16.4	+1.4	1985	3rd-highest
Puysegur Point	15.0	+1.1	1978	4th-highest
Low records or near-records				
Whakatu	16.7	-1.1	1965	3rd-lowest

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

Location	Mean maximum air temp. ($^\circ\text{C}$)	Departure from normal ($^\circ\text{C}$)	Year records began	Comments
High records or near-records				
Matamata	27.3	+2.8	1999	2nd-highest
Ohakune	23.9	+2.7	1962	3rd-highest
Mt Ruapehu, Chateau	19.8	+2.0	2000	3rd-highest
Campbell Island	12.7	+0.7	1991	3rd-highest
Low records or near-records				
None observed				

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
High records or near-records				
Campbell Island	8.1	+1.1	1991	Equal 2nd-highest
Low records or near-records				
Whakatu	10.7	-1.8	1965	Lowest
Ohakune	6.7	-3.0	1962	2nd-lowest
Appleby	9.5	-3.0	1932	2nd-lowest
Middlemarch	6.3	-1.6	2000	2nd-lowest
Te Kuiti	10.7	-2.2	1959	3rd-lowest
Motu	9.1	-1.8	1990	3rd-lowest
Martinborough	10.0	-1.8	1986	3rd-lowest
Paraparaumu	10.9	-2.4	1953	4th-lowest
Waipawa	9.7	-2.3	1945	4th-lowest
Hāwera	11.1	-1.5	1977	4th-lowest

February climate in the six main centres

February rainfall was near normal in Auckland, below normal in Tauranga and Wellington, and well below normal in the other main centres. Temperatures were above average in Dunedin, and near average in the other main centres. Of the six main centres in February 2021, Auckland was the warmest and sunniest, Dunedin was the driest and coolest, Tauranga was the wettest and Hamilton was the least sunny.

February 2021 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	20.2	+0.2	Near average
Tauranga ^b	19.8	0.0	Near average
Hamilton ^c	19.1	+0.3	Near average
Wellington ^d	17.0	-0.2	Near average
Christchurch ^e	17.0	+0.2	Near average
Dunedin ^f	15.7	+0.7	Above average

Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	59	82	Near normal
Tauranga ^b	63	74	Below normal
Hamilton ^c	42	56	Well below normal
Wellington ^d	60	85	Below normal
Christchurch ^e	25	58	Well below normal
Dunedin ^f	17	25	Well below normal

Sunshine	
Location	Sunshine (hours)
Auckland ^a	243
Tauranga ^b	228
Hamilton ^g	208
Wellington ^d	226
Christchurch ^e	235 ³
Dunedin ^f	236

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

³ Missing one hour of data.

Highlights and extreme events

Rain and slips

The highest 1-day rainfall was 125 mm, recorded at Kerikeri on 14 February.

Level 4 water restrictions were introduced in the Kaipara District Council on February 9 as severe meteorological drought emerged in the Far North.

Although February was characterised by its dryness, a low brought heavy rain to areas of Northland, Auckland, Bay of Plenty, Hawke's Bay and Gisborne between 15-18 February. Heavy rain over Northland led to localised flooding along Russel Road, causing a number of school closures due to school buses not being able to safely complete their morning runs. Over 100 mm was recorded in 24 hours at Kerikeri, Kaikohe and Te Puke, with adjacent areas recording 50-100 mm. Homes and businesses in Taipuha and Waiotira experienced unplanned power outages due to broken power lines, and an Air New Zealand flight to Whangārei was forced to turn back to Auckland. In Bay of Plenty, surface flooding was reported along State Highway 2. Power was lost in parts of the Western Bay, Lower Kaimai, Paeroa and Thames, likely due to damaged powerlines. Even though this rain was significant, the remainder of the month was very dry at these locations, with Kerikeri recording 16 dry days, Kaikohe experiencing 14 dry days and Te Puke having 18 dry days during February (where less than 1 mm of rain was recorded during any 24 hour period).

In mid-February, water restrictions were implemented in part of the Tasman District, requiring some areas to cut their groundwater use by 20%. Gardens could only be watered using a handheld hose or timer system every second day - even numbered addresses water on even numbered days and likewise for odd numbers.

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	33	9th	1991	4th-highest

Temperatures

The highest temperature was 34.8°C, observed at Hanmer Forest on 22 February.

The lowest temperature was -1.1°C, observed at Middlemarch on 17 February.

Between 19-24 Feb, parts of the northern Canterbury experienced a prolonged spell of 30°C heat. Hanmer Forest recorded six consecutive days above 30°C, with the average daily maximum temperature during this period reaching 33.3°C (this is 10.4°C higher than the average February daily maximum temperature at this site). Culverden and Cheviot recorded four consecutive days above 30°C. During this period, Christchurch also recorded two consecutive days above 30°C. This was the hottest it had been in these areas since the record-breaking heat experienced in late-January 2021.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Puysegur Point	25.4	23rd	1978	3rd-highest
Low records or near-records				
Secretary Island	10.9	11th	1989	Equal lowest

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
High records or near-records				
Milford Sound	18.3	24th	1935	Highest
Wānaka	20.4	24th	1972	Highest
Akaroa	22.2	24th	1978	2nd-highest
Franz Josef	16.9	24th	1953	4th-highest
Queenstown	19.5	24th	1871	4th-highest
Cromwell	20.9	24th	1949	4th-highest
Low records or near-records				
Appleby	1.0	17th	1932	Equal lowest
Winchmore	1.6	17th	1949	Equal lowest
Warkworth	7.0	22nd	1966	2nd-lowest
Motu	1.0	3rd	1990	2nd-lowest
Middlemarch	-1.1	17th	2000	2nd-lowest
Paraparaumu	3.1	18th	1953	Equal 2nd-lowest
Porirua	5.0	18th	1968	Equal 2nd-lowest
Tiwai Point	4.3	5th	1970	Equal 4th-lowest
Campbell Island	0.2	25th	1991	Equal 4th-lowest

Wind

The highest wind gust was 161 km/h, observed at Secretary Island on 24 February.

On 16 February, strong winds broke branches, uprooted trees, lifted roofs and caused power outages in Taranaki. State Highway 3 was partially blocked in several areas by several toppled trees and branches, causing heavy traffic. New Plymouth's clock tower was also closed off due to safety concerns when gusts caused one of the window fittings to come loose.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Middlemarch	98	23rd	2000	Highest
New Plymouth	100	16th	1972	2nd-highest
Secretary Island	161	24th	1994	2nd-highest

Kaikohe	80	15th	1986	3rd-highest
Mt Cook Airport	141	24th	2000	3rd-highest
Mt Ruapehu (Chateau)	104	16th	2000	3rd-highest
Hāwera	89	16th	1986	Equal 3rd-highest
Manapouri	69	23rd	1991	4th-highest
Brothers Island	122	16th	1997	4th-highest
Mt Kaukau (Wellington)	137	16th	1969	Equal 4th-highest

Cloud and fog

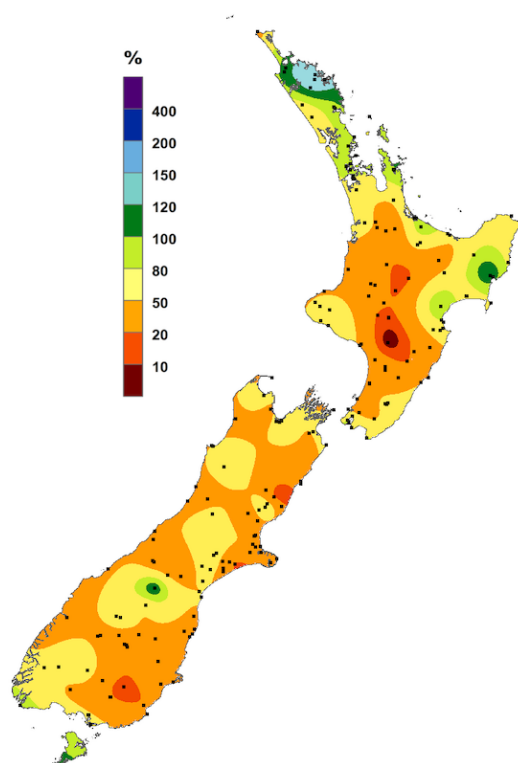
On 26 February, several flights were delayed in and out of Wellington Airport due to dense fog.

For further information, please contact:

Tristan Meyers

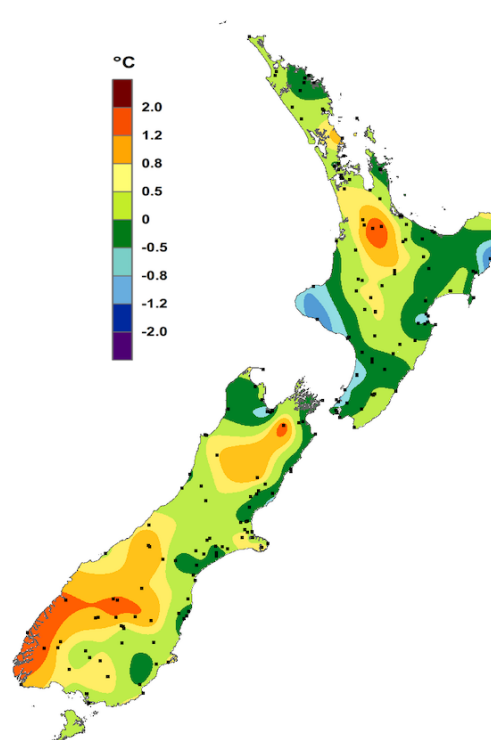
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February rainfall

Expressed as a percentage of the 1981-2010 normal.



February temperature

Expressed as a departure from the 1981-2010 average in degrees Celsius.

<https://www.niwa.co.nz/our-science/climate>

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