

## A dry month for many regions

<b>Temperature</b>	Temperatures were near average ( $\pm 0.50^{\circ}\text{C}$ of average) in many areas, although above average temperatures ( $0.51\text{-}1.20^{\circ}\text{C}$ above average) were observed in parts of Northland, Coromandel Peninsula, Bay of Plenty, Gisborne, northern Hawke's Bay, Wairarapa, southern Marlborough, Canterbury, and north-east Otago. Below average temperatures ( $0.51\text{-}1.20^{\circ}\text{C}$ below average) covered parts of western Auckland, Waikato, Taranaki, West Coast, and northern Fiordland.
<b>Rainfall</b>	Below normal (50-79% of normal) or well below normal (<50% of normal) rainfall occurred in most regions of the country. However, near normal (80-119% of normal) rainfall was observed in parts of central Waikato, inland Manawatū-Whanganui, West Coast, and inland Southland. The remainder of Southland, Fiordland, and Stewart Island observed above normal (120-149% of normal) or well above normal (>149% of normal) rainfall.
<b>Soil Moisture</b>	At the end of February, soil moisture levels were lower than normal in parts of Northland, Auckland, Coromandel Peninsula, eastern Bay of Plenty, Gisborne, southern Hawke's Bay, eastern Taranaki, Manawatū-Whanganui, Wellington-Wairarapa, eastern Tasman, Nelson, Marlborough, Canterbury, and eastern Otago. Normal or above normal soil moisture was observed elsewhere. According to the New Zealand Drought Index, very dry or extremely dry conditions were present in Northland, East Cape, southern Manawatū-Whanganui, Wellington-Wairarapa, eastern Tasman, Nelson, Marlborough, North Canterbury, and north-east Otago.

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

[Overview](#)

[Temperature](#)

[Rainfall](#)

[February 2024 climate in the six main centres](#)

[Highlights and extreme events](#)

### Overview

February 2024 was characterised by above normal mean sea level pressure (MSLP) in the northern Tasman Sea and near the North Island, with below normal MSLP near the South Island and in the Southern Ocean. This led to westerly airflows that were both more frequent and stronger than normal (Figure 1). This pattern was consistent with a strong, but waning, El Niño event in the equatorial Pacific. The nationwide average temperature in February 2024 was  $17.3^{\circ}\text{C}$ . This was  $0.1^{\circ}\text{C}$  below the 1991-2020 February average from NIWA's seven station temperature series which begins in 1909, making it the coolest February since 2017.

The most notable climatic feature of the month was widespread below normal or well below normal rainfall, which occurred in most of the North Island and northern and eastern South Island – a stark contrast to [February 2023](#). As far as temperatures go, above average temperatures were uncommon,

with the bulk of both islands observing near average conditions. Below average temperatures lined west coastal areas of both islands, a rarity in New Zealand's warming climate but consistent with stronger than normal westerly winds and cooler than average sea surface temperatures in parts of the western and northern South Island and western North Island.

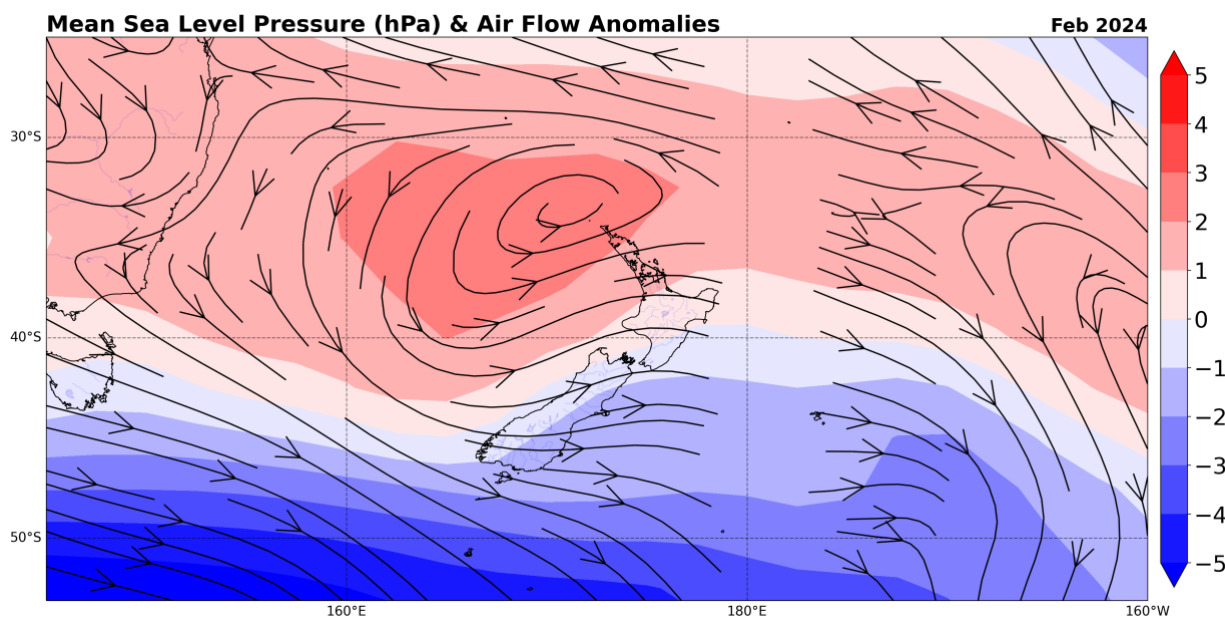


Figure 1: February 2024 mean sea level pressure and airflow as a difference from the 1991-2020 long-term normal (data: NOAA/NCEP).

Sunshine was abundant for wide swathes of the country, outside of northern Northland, coastal Manawatū-Whanganui, and Southland. A number of locations experienced their sunniest February on record, including Tākaka, Hokitika, Appleby, and Richmond, where 298 hours of sunshine were recorded. Auckland (Māngere) and Hamilton (Ruakura) experienced their 2<sup>nd</sup>-sunniest February on record with 260 hours and 253 hours of sunshine, respectively.

#### Further Highlights:

- The highest temperature was 37.0°C, observed at Hanmer Forest on 5 February.
- The lowest temperature was -0.4°C, observed at Cass (inland Canterbury) on 21 February.
- The highest 1-day rainfall was 165 mm, recorded at Secretary Island on 6 February.
- The highest wind gust was 165 km/h, observed at Cape Turnagain on 19 February.
- Of the six main centres in February 2024, Auckland was the warmest, Christchurch was the driest, Tauranga was the wettest and sunniest, and Dunedin was the coolest and least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations so far in 2024 are wider Nelson (618 hours), Tasman (612 hours), Marlborough (604 hours), and Taranaki (595 hours).

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## Temperature: average conditions for most of New Zealand

February was rather unremarkable in terms of temperatures, with no record or near-record high mean air temperatures. However, the frequency of maximum temperatures above 25°C during February 2024 was much greater than February 2023 for several locations (February 2024 | February 2023): Kaitiāia: 20 days | 9 days, Auckland (Western Springs): 18 days | 9 days, Hamilton (Ruakura): 20 days | 13 days, Whitiānga: 18 days | 8 days, Tauranga: 17 days | 5 days, Gisborne: 18 days | 12 days, Masterton: 20 days | 12 days. To the contrary, several locations in the South Island’s West Coast experienced no days with maximum temperatures above 25°C (February 2024 | February 2023): Westport: 0 days | 6 days, Greymouth: 0 days | 7 days, Hokitika: 0 days | 4 days. The difference can be attributed to the climate drivers and associated air flows: El Niño with strong westerlies in February 2024 compared with a La Niña event, easterly-quarter winds, and a persistent marine heatwave in February 2023.

### Record<sup>1</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				
None observed				
Low records or near-records				
Pukekohe	17.4	-2.0	1969	2nd-lowest
Ōkārito	14.3	-2.0	1982	3rd-lowest

### 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				
Whangaparāoa	25.8	1.7	1982	2nd-highest
Kawerau	28.6	3.0	1954	2nd-highest
Leigh	26.8	3.1	1966	3rd-highest
Low records or near-records				
Ōkārito	18.6	-1.9	1982	2nd-lowest
Te Anau	18.0	-2.5	1963	3rd-lowest

### 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				
None observed				
Low records or near-records				
Appleby	9.5	-1.5	1932	2nd-lowest

<sup>1</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.

Warkworth	12.8	-1.4	1966	3rd-lowest
Tākaka	10.1	-1.5	1978	4th-lowest
Arapito	10.8	-1.0	1978	4th-lowest
Ōkārito	10.1	-1.9	1982	4th-lowest

## Rainfall: drier than normal for many regions

February was particularly dry for several regions, with less than 50% of the monthly normal rainfall across the north and east of both islands. Of note was Ranfurly, where just 7 mm of rain was recorded, making it the town's 2<sup>nd</sup>-driest February since records began there in 1897.

For the lower North Island and upper South Island, February was the 6<sup>th</sup> or 7<sup>th</sup> drier than normal month in a row (depending on location), dating back to August or September 2023. This culminated in severe soil moisture deficits. At the end of the month, the New Zealand Drought Index (NZDI) showed widespread very dry conditions across Wellington-Wairarapa, eastern Tasman, Nelson, Marlborough, and North Canterbury.

A number of locations also experienced lengthy dry spells, as described in the highlights and extreme events section below.

Southland was a wet exception to the dry rule of February, where over 150% of the monthly normal rainfall fell in Fiordland. Manapouri had its 3<sup>rd</sup>-wettest February on record (142 mm) since records began there in 1961.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
<b>High records or near-records</b>				
Manapouri	142	166	1961	3rd-highest
<b>Low records or near-records</b>				
Ranfurly	7	15	1897	2nd-lowest
Windsor	14	28	2000	4th-lowest

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## February climate in the six main centres

None of the main centres experienced above normal February rainfall; Christchurch was the driest with 32 mm observed, although three other main centres observed less than 40 mm of rain (Auckland, Wellington, and Dunedin). Dunedin was the only main centre to experience above average temperatures while Auckland was the warmest main centre overall. It was a sunny month across the main centres, with five out of six observing more than 200 sunshine hours (all main centres except Dunedin). Of the six main centres in February 2024, Auckland was the warmest, Christchurch was the driest, Tauranga was the wettest and sunniest, and Dunedin was the coolest and least sunny.

### February 2024 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	20.3	+0.1	Near average
Tauranga <sup>b</sup>	20.2	+0.1	Near average
Hamilton <sup>c</sup>	18.5	-0.6	Below average
Wellington <sup>d</sup>	17.4	+0.1	Near average
Christchurch <sup>e</sup>	16.9	0.0	Near average
Dunedin <sup>f</sup>	15.7	+0.6	Above average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	35	62	Below normal
Tauranga <sup>b</sup>	80	96	Near normal
Hamilton <sup>c</sup>	72	99	Near normal
Wellington <sup>d</sup>	38	53	Below normal
Christchurch <sup>e</sup>	32	80	Near normal
Dunedin <sup>f</sup>	38	54	Below normal
Sunshine			
Location	Sunshine (hours)		
Auckland <sup>a</sup>	260		
Tauranga <sup>b</sup>	271		
Hamilton <sup>g</sup>	253		
Wellington <sup>d</sup>	231		
Christchurch <sup>e</sup>	216		
Dunedin <sup>f</sup>	189		

<sup>a</sup> Māngere <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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## Highlights and extreme events

### Rain and slips

The highest 1-day rainfall was 165 mm, recorded at Secretary Island on 6 February.

**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
Invercargill	70	6th	1939	Highest
Tiwai Point	69	6th	1970	Highest
Stewart Island	65	6th	1975	2nd-highest
Secretary Island	165	6th	1985	4th-highest
Manapouri (West Arm Jetty)	115	6th	1971	4th-highest

**Drought and dryness**

A number of locations experienced lengthy dry spells (consecutive days with less than 1 mm of rain) during February, including: Gisborne (23 days), Kaitiāia (22 days), Blenheim, Nelson, and Cape Reinga (21 days), Motueka (20 days), Whangārei (19 days).

On 20 February, following several weeks of reduced rainfall and occasionally strong wind, Hawke's Bay and the Tararua District moved into a restricted fire season.

**Temperatures**

The highest temperature was 37.0°C, observed at Hanmer Forest on 5 February.

The lowest temperature was -0.4°C, observed at Cass (inland Canterbury) on 21 February.

On 5-6 February, a very hot Australian-sourced air mass lay over New Zealand. The presence of a strong high pressure system over the North Island caused a northwest wind to blow across the South Island, producing the hottest temperatures of the summer season. The highest temperature recorded was at Hanmer Forest in North Canterbury on 5 February, when it reached 37°C, the location's 2<sup>nd</sup>-highest February temperature on record. Waipara West reached a maximum of 36.9°C on the same day. The only hotter day on record at both sites occurred in early February 1973, during the heatwave that produced New Zealand's all-time hottest temperature on record. Although not part of NIWA's standard record keeping, a Fire and Emergency weather station in the Clarence River Valley, near the Canterbury/Marlborough border, reached 38.4°C on 6 February. A number of locations in the north-east South Island and lower North Island experienced near-record temperatures over this period.

**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
<b>High records or near-records</b>				
Waiau	36.5	5th	1974	Highest
Ngawi	32.8	6th	1972	2nd-highest
Blenheim	34.9	6th	1932	2nd-highest
Hanmer Forest	37.0	5th	1906	2nd-highest
Medbury	35.5	5th	1927	2nd-highest
Cheviot	36.3	6th	1982	2nd-highest
Waipara West	36.9	5th	1973	2nd-highest
Whakatāne	31.5	1st	1975	3rd-highest
Mt Ruapehu (Chateau)	26.3	7th	2000	3rd-highest
Masterton	34.7	6th	1906	3rd-highest

Lake Tekapo	32.6	5th	1925	3rd-highest
Rangiora	35.0	5th	1965	Equal 3rd-highest
Leigh	30.2	16th	1966	Equal 4th-highest
Whangaparāoa	28.9	8th	1982	Equal 4th-highest
<b>Low records or near-records</b>				
Mt Ruapehu (Chateau)	9.2	3rd	2000	3rd-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
<b>High records or near-records</b>				
Middlemarch	21.2	6th	2000	Highest
Ngawi	23.6	7th	1972	2nd-highest
Cheviot	22.8	7th	1982	2nd-highest
Oamaru	17.6	6th	1972	4th-highest
Lumsden	17.7	6th	1982	4th-highest
<b>Low records or near-records</b>				
Campbell Island	-1.0	27th	1991	Equal lowest
Warkworth	6.9	22nd	1966	2nd-lowest
Secretary Island	6.5	11th	1985	3rd-lowest
Purerua	12.0	12th	1983	4th-lowest
Whakatu	4.1	12th	1965	4th-lowest

#### Wind and wildfires

The highest wind gust was 165 km/h, observed at Cape Turnagain on 19 February.

Wellington (as measured at the Wellington Airport) had its windiest February in over 30 years. For February 2024, the mean speed at Wellington Airport was 29.64 km/h. The last time it was this windy in February in Wellington was 1992, which was also an El Niño year.

On 3 February, strong wind gusts caused power cuts around Auckland and led to the closure of some lanes on the Harbour Bridge.

On 4 February around 10:00 p.m., a large 80-hectare forest fire developed in Kirwee, outside Christchurch. By 5 February, the fire had been contained, but a seven-helicopter aerial operation was needed to keep it at bay. The fire formed as a hot, dry air mass from Australia arrived, along with west-to-northwest winds. On 7 February, a major vegetation fire broke out in Tasman's Lee Valley, requiring a significant aerial operation.

On the afternoon on 14 February, a wildfire ignited in the Worsley area in the Port Hills near Christchurch. The fire initially required 130 firefighters on the ground and 11 helicopters, and saw a State of Local Emergency declared for Christchurch City and the Selwyn District. Around 30 properties were evacuated. The fire was initially fanned by hot, dry, northwesterly winds before a southerly change on 15 February made smoke more noticeable around Christchurch City. By 20 February, significant progress was being made on extinguishing hotspots and strengthening containment lines in the area. A number of other wildfires broke out across Canterbury during mid-February, including a fast-moving blaze in Waikari Valley near Waipara on 19 February.



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

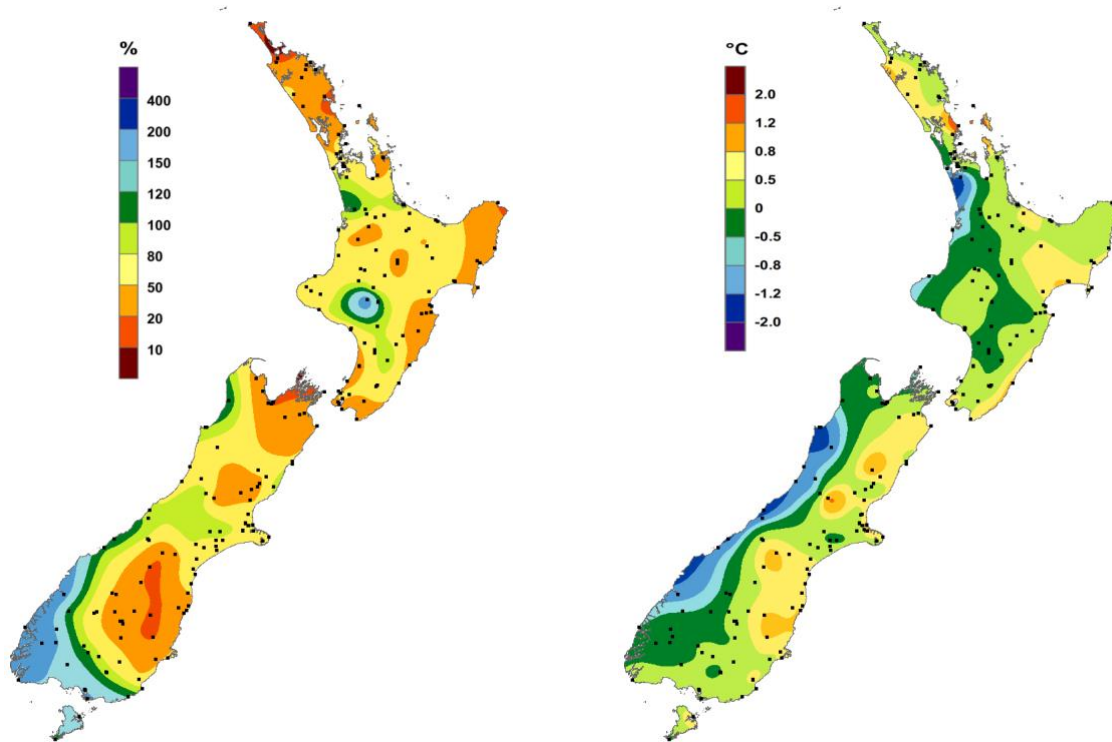
Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Manapouri	87	19th	1991	Highest
Clyde	72	19th	1983	Highest
Alexandra	82	19th	2001	Highest
Whakatāne	91	3rd	1974	Highest
Te Kuiti	59	3rd	2003	2nd-highest
Waiouru	95	2nd	1970	2nd-highest
Taupō	93	3rd	1982	Equal 2nd-highest
Auckland (Whenuapai)	91	3rd	1972	3rd-highest
Te Puke	63	3rd	1987	3rd-highest
Whatawhata	91	3rd	2003	3rd-highest
Dannevirke	80	2nd	1961	3rd-highest
Puysegur Point	152	14th	1986	3rd-highest
Brothers Island	128	2nd	1997	3rd-highest
Pukekohe	72	3rd	1986	Equal 3rd-highest
Hamilton (Ruakura)	65	3rd	1996	Equal 3rd-highest
Port Taharoa	98	3rd	1978	Equal 3rd-highest
Hamilton (Airport)	82	3rd	1978	4th-highest
Māhia	89	4th	1991	4th-highest
Upper Hutt	85	2nd	1999	4th-highest
Farewell Spit	93	2nd	1973	4th-highest
Oamaru	78	6th	1984	4th-highest
South West Cape	159	4th	1991	4th-highest



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**February rainfall**

Expressed as a percentage of the 1991-2020 normal.

**February temperature**

Expressed as a departure from the 1991-2020 average in degrees Celsius.

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

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