

Wet for some of the North Island, dry for the South Island

Rainfall	Rainfall for February was above normal (120 to 149% of normal) or well above normal (>149% of normal) for central and southeastern parts of the North Island, as well in the Far North. The rest of the North Island experienced mostly near normal (80 to 119% of normal) rainfall. Much of the eastern South Island experienced below normal (50 to 79% of normal) or well below normal (<50% of normal) rainfall totals while areas of near normal (80 to 119% of normal) rainfall were recorded to the west.
Temperature	Near average February temperatures (-0.50°C to +0.50°C of average) for most of the South Island except in western Southland and northern Tasman where below average temperatures (-0.51°C to -1.20°C of average) and well below average (<-1.2°C of average) were experienced, respectively. Near average temperatures occurred for the south and west of the North Island while above average (+0.51 to +1.20°C of average) and well above average (>1.2°C of average) temperatures occurred in the north and eastern North Island.
Soil Moisture	As at 1 March 2017, soil moisture levels were much higher than normal for the time of year in the central and far north of the North Island, as well as the Wairarapa. Lower than normal soil moisture levels were found in Northland, Taranaki, and through much of the South Island. Otago, Marlborough, and Southland, as well as the rest of the South Island, experienced normal soil moisture for this time of year.
Sunshine	Below normal (75 – 89% of normal) through much of the western and central North Island. Near normal (90-110% of normal) in Northland, Wellington, and Taumarunui. Above (110 to 125% of normal) or well above normal (>125% of normal) sunshine hours occurred for much of the eastern and central South Island. The exclusion to this was Christchurch which, along with Nelson, experienced near normal sunshine hours.

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Overview

February 2017 was characterised by higher than normal atmospheric pressure over much of New Zealand with lower than normal pressure to the southwest. This pressure pattern resulted in more winds from a northwesterly direction than normal.

While the month got off to a dry start, several storms in mid-February caused wetter than normal conditions for the month as a whole across much of the North Island. Northland received near normal (80-119% of normal) rainfall around Kaipara and Whangarei, and above normal (120-149% of normal) to well above normal (>149% of normal) rainfall in the Far North. Rainfall in the Wellington, Waikato and Bay of Plenty regions as well as in southern Hawke's Bay was above normal or well above normal with Hastings receiving 237% of its normal February rainfall, experiencing its fourth wettest February on record at this location. Much of the rest of the North Island received near normal (80-119% of normal) rainfall totals. In stark contrast, most of the eastern South Island was drier than normal for February, experiencing below normal (50-79% of normal) to well below normal (<50% of normal) rainfall totals. The exceptions to this were southern Canterbury where near normal rainfall was observed, and eastern Marlborough where rainfall was well above normal. Most of the western South Island received near normal or below normal rainfall.

February temperatures were above average (+0.50°C to +1.20°C) in Northland and much of the eastern North Island with well above average (>1.20°C) temperatures observed at stations in Whangarei and Wairoa. Other parts of the North Island were largely characterised by near average (-0.50°C to +0.50°C) temperatures. Most of the South Island experienced near average temperatures, although above average temperatures were recorded in Central Otago, Hurunui, and Christchurch. Below average (-0.51°C to -1.20°C) temperatures were observed in western Southland and well below average (<-1.20°C of average) were observed in the north of the Tasman District.

After a dry December through to early February, the Minister of Primary Industries officially classified the impact of Northland's drought as a medium-scale adverse event under the Primary Sector Recovery Policy. Soil moistures in February, however, were higher than normal in central and southern parts of the North Island, and also in the Far North. Much of coastal Taranaki and part of Northland experienced soil moisture levels that were below normal. Due to limited rainfall, much of the South Island experienced below normal soil moistures except for a large area around Otago where average soil moistures were observed, and in eastern Marlborough to Kaikoura where soil moisture levels were normal to above normal for this time of year.

Sunshine hours recorded between Te Kuiti and Palmerston North (including Taranaki) were below normal (75-89% of normal) for February while north of Auckland and the southern part of Wellington experienced near normal (90-109% of normal) sunshine hours. Many of the available, reporting stations in the South Island observed above normal (110-125% of normal) February sunshine hours, with well above normal (>125% of normal) hours recorded in Dunedin and Rangiora. Near normal sunshine was observed in northern Nelson and at locations in Dunedin, Christchurch, and parts of the West Coast.

Further Highlights:

- The highest temperature was 35.5°C, observed at Wairoa on 6 February.
- The lowest temperature was -0.5°C, observed at Hanmer Forest on 15 February.
- The highest 1-day rainfall was 149.4 mm, recorded at Milford Sound on 6 February.
- The highest wind gust was 178 km/hr, observed at Akitio on 13 February.
- Of the six main centres in February 2017, Dunedin was the sunniest and coldest, Tauranga was the wettest and warmest, Christchurch was the driest, and Hamilton was the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2017 (1 January – 28 February) were Gisborne (538.5 hours), Whakatane (529.8 hours), Blenheim (528.3 hours) and Lake Tekapo (522.6 hours).

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Rainfall: Record dryness in parts of the South Island, wet in the North Island.

February was a dry month for much of the South Island, particularly through Canterbury, Otago and Southland with many stations recording above normal (120-149% of normal) or well above normal (> 149% of normal) rainfall. Record low rainfall for February was observed in eastern Canterbury where Akaroa and Waipara recorded only 7% and 14% of normal February rainfall, respectively, with both records extending back to the 1970s. In Central Otago, Clyde recorded its third-driest February (23% of normal) since records began in 1978. Most of the West Coast received below normal (50 to 79% of normal) or near normal (80 to 119% of normal) rainfall. Above normal or well above normal (>149% of normal) rainfall was only observed in the northeast of the South Island. At this location, Cape Cambell recorded 234% of its average February rainfall (although this was not a near-record breaking February rainfall total).

Many North Island sites recorded very high rainfall in February, much of which was observed around the Wellington, Waikato and Bay of Plenty regions. In addition to these areas, southern Hawke's Bay experienced well above normal (>149% of normal) rainfall with Hastings observing 237% of its normal February rainfall (the fourth wettest February at this site). Despite a dry January, Northland recorded near normal (80-119% of normal) amounts of rainfall around Kaipara and Whangarei, and well above normal rainfall in the tip of the Far North. This was largely attributed to a few days of rain in an otherwise dry month.

Record 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				
Hastings	129	237	1965	4th-highest
Low records or near-records				
Waipara West	6	14	1973	Lowest
Akaroa	4	7	1977	Lowest
Clyde	9	23	1978	3rd-lowest

Temperature: Above average for eastern parts of the country

Temperatures in February 2017 were above average (+0.50°C to +1.20°C) for many eastern parts of the country. In the North Island, above average temperatures occurred in Northland and the eastern North Island including Hawke's Bay, Gisborne, Bay of Plenty, and part of the Waikato region. Well above average (>1.20°C) temperatures were observed at single stations in Whangarei and Wairoa, with the former experiencing its fourth warmest February on record. The western and southern parts of the North Island were characterised by near average (-0.50°C to +0.50°C) temperatures.

Most of the South Island experienced near average (-0.50°C to +0.50°C) temperatures although above average (+0.50°C to +1.20°C) temperatures were recorded in Central Otago, Hurunui, and Christchurch. Cheviot, in Hurunui, experienced temperatures 1.3°C warmer than average, making 2017 its third-warmest February on record. Cooler February temperatures were experienced in western Southland where temperatures were below average (-0.51°C to -1.20°C). Well below average (<-1.20°C) temperatures were observed to the north of the Tasman region where Takaka recorded its third-coldest February since records began in 1978.

The nationwide average temperature in February 2017 was 17.2°C (-0.1°C below the 1981-2010 February average from NIWA's seven station temperature series which begins in 1909).

Record¹ 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				
Cheviot	17.7	1.3	1982	3rd-highest
Whangarei Airport	21.6	1.4	1967	4th-highest
Low records or near-records				
Takaka	16.0	-1.4	1978	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				
Whangarei	26.5	2.0	1967	3rd-highest
Whitianga	25.4	1.4	1962	3rd-highest
Cheviot	24.2	1.9	1982	3rd-highest
Whangaparaoa	24.8	1.1	1982	4th-highest
Hicks Bay	23.7	1.5	1969	4th-highest
Low records or near-records				
Takaka	21.5	-1.6	1978	4th-lowest
Secretary Island	17.2	-1.1	1985	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.

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				
Cheviot	11.3	0.8	1982	4th-highest
Low records or near-records				
Kaikoura	10.8	-2.2	1963	2nd-lowest
Motu	9.5	-1.4	1990	3rd-lowest
Appleby	9.9	-2.6	1932	4th-lowest
Balclutha	8.0	-1.7	1964	4th-lowest

Sunshine: A sunny month for parts of the South Island.

Some clear skies associated with reduced rainfall over much of the South Island meant that sunshine hours were near normal (90-109% of normal) or above normal (110-125% of normal) for the majority of this part of the country in February. Well above normal (>125% of normal) sunshine was recorded in Dunedin and Rangiora with the former experiencing its third highest sunshine amount on record for February (137% of normal). Invercargill observed its highest sunshine hours on record for February at 150% of the long term average while Franz Josef and Cheviot both received their fourth highest February sunshine hours at 113% and 119% of normal, respectively.

Central North Island locations between Te Kuiti and Palmerston North mostly experienced below normal (75-89% of normal) sunshine. Of note was Rotorua where only 81% of February normal sunshine hours were recorded. This was the fourth cloudiest February on record at this location, with records beginning in 1976. Locations in Auckland, Northland, and southern Wellington recorded near normal (90-109%) sunshine hours.

Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2017 (1 January – 28 February) were Gisborne (539 hours), Whakatane (530 hours), Blenheim (528 hours) and Lake Tekapo (523 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				
Invercargill	249	150	1913	Highest
Dunedin (Musselburgh)	215	137	1980	3rd-highest
Franz Josef	186	113	1983	4th-highest
Cheviot	231	119	1983	4th-highest
Low records or near-records				
Rotorua	168	81	1976	4th-lowest

February climate in the six main centres

February temperatures were above average for Tauranga, and near average for the remaining centres. It was wet for two of the North Island main centres, with Tauranga and Hamilton observing well above normal rainfall while Auckland and Wellington experienced near normal rainfall totals. In contrast, the South Island main centres were drier than usual, with well below normal rainfall observed in Christchurch and below normal rainfall recorded in Dunedin. Sunshine was below normal for Tauranga and Hamilton, and near normal in Auckland, Wellington, and Christchurch. Sunshine hours in Dunedin were well above normal at 124%, making this the third sunniest February on record for the station. Of the six main centres in February 2017, Dunedin was the sunniest and coldest, Tauranga was the wettest and warmest, Christchurch was the driest, and Hamilton was the least sunny.

February 2017 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	19.8	-0.2	Near average
Tauranga ^b	20.6	0.8	Above average
Hamilton ^c	19.2	0.4	Near average
Wellington ^d	17.0	-0.2	Near average
Christchurch ^e	16.7	-0.1	Near average
Dunedin ^f	15.0	0.0	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	73	103	Near normal
Tauranga ^b	154	179	Well above normal
Hamilton ^c	139	188	Well above normal
Wellington ^d	83	118	Near normal
Christchurch ^e	20	47	Well below normal
Dunedin ^f	39	57	Below normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland ^a	176	90	Near normal
Tauranga ^b	182	84	Below normal
Hamilton ^g	154	80	Below normal
Wellington ^d	199	95	Near normal
Christchurch ^e	199	102	Near normal
Dunedin ^f	215	137	Well above normal (3 rd -highest)

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

Highlights and extreme events

Rain and slips

On 1 February, severe rain on the West Coast caused flooding and slips, delaying motorists on two highways. State Highway 6 was closed between Ross and Haast for several hours on Wednesday morning due to slips and flooding. An existing slip at Deception Point in the lower Otira Gorge (SH 73), was also affected by the rain, with another 3000 cubic metres of material falling overnight. Flooding occurred in the Okuru area forcing the evacuation of the local motor camp, where floodwaters were thigh-deep. Several cars were also submerged.

On February 3, The Minister of Primary Industries officially classified the impact of Northland's drought as a medium-scale adverse event under the Primary Sector Recovery Policy. This announcement came following several months of low rainfall resulting in significant soil moisture deficits, low pasture covers, and low supplementary feed on Northland farms.

Also on 3 February, heavy rain in the south of the North Island caused flooding and road closures. Flooding occurred over a 15km stretch of SH 1 between Waikanae and Otaki. A Wairarapa highway to a long weekend tourist hotspot was closed and motorists were warned to watch for flooding on stretches of highway north of Wellington. At least one road in Lower Hutt was left impassable by deep floodwater overnight until the water receded. A bridge on SH53 linking Martinborough to Featherston was also flooded, becoming impassable. A number of other streets in the Wellington region were closed due to rising floodwaters. Meanwhile, heavy rainfall caused a slip on Gladstone Road near Levin, affecting 35 properties in the immediate vicinity, 12 of which were occupied.

Between 3 February and 9 February, continuous rain and landslides upstream of the Ohau River had muddied the water, causing Levin's water treatment plant to be shut down. Horowhenua District Council issued two consecutive Precautionary Boil Water Notices for the Levin water supply, each lasting approximately 2 days. Residents were asked to conserve water as the town was running off a backup supply.

On February 17, heavy rain in Marlborough led to surface flooding and caused rocks to come down on main roads. A bridge serving as the main entrance to a Picton holiday park was covered by stream water.

Also on February 17, heavy rain hit Northland and Auckland, causing several traffic problems. A lane in Auckland's Victoria Park Tunnel (SH 1) was flooded and briefly closed. Meanwhile, Omamari Road in Northland was blocked by a landslip which had occurred overnight. The slip had allegedly taken out power lines and covered 50m of the road.

On February 18, overnight rainfall caused flooding in the streets of Kawerau, Bay of Plenty. Floodwaters were reportedly up to one metre high, particularly in the centre of town. Approximately 10 households were flooded and half a dozen cars abandoned.

The highest 1-day rainfall recorded in February 2017 was 149.4 mm observed at Milford Sound 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
Mokohinau	45	8th	1994	3rd-highest

Temperatures

The highest temperature was 35.5°C, observed at Wairoa on 6 February. The lowest temperature was -0.5°C, observed at Hanmer Forest on 15 February.

On 7 February, Auckland (Mangere) eclipsed 26°C for the first time since 3 April, 2016. On the same date in 2016, Auckland (Mangere) had already eclipsed 26°C 17 times.

On 13 February, pre-frontal northwesterly winds brought soaring temperatures to eastern parts of the North Island, while post-frontal southwesterlies delivered chilly temperatures and snow at high elevations to southern parts of the South Island. At 3 p.m., the temperature at Hastings was 33.4°C, whereas Queenstown was just 8.5°C.

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				
Whangarei Airport	31.8	13th	1967	Highest
Whangaparaoa	30.5	7th	1982	Highest
Whitianga	33.0	6th	1962	Highest
Whakatane	32.1	7th	1975	Highest
Leigh	29.6	13th	1966	3rd-highest
Wairoa	35.5	6th	1964	3rd-highest
Mahia	31.3	13th	1990	3rd-highest
Motu	29.0	7th	1990	Equal 3rd-highest
Cheviot	34.1	5th	1982	4th-highest
Lumsden	29.4	21st	1982	4th-highest
Low records or near-records				
Takaka	13.2	2nd	1978	Lowest
Auckland (Mangere)	17.0	16th	1961	2nd-lowest
Secretary Island	12.6	13th	1989	2nd-lowest
Lake Manapouri (West Arm)	10.0	13th	1972	Equal 3rd-lowest
Auckland (North Shore)	20.0	14th	1995	4th-lowest
Waione	16.0	8th	1993	4th-lowest
Hicks Bay	17.1	9th	1972	4th-lowest
Arapito	15.5	2nd	1978	4th-lowest
Waiau	12.6	8th	1974	4th-lowest
Farewell Spit	17.0	2nd	1972	Equal 4th-lowest
Motueka	16.4	2nd	1972	Equal 4th-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				
Cheviot	21.7	1st	1982	Highest
Mahia	20.6	14th	1990	2nd-highest
Franz Josef	17.4	21st	1953	2nd-highest
Waiau	21.3	1st	1974	2nd-highest
Ranfurly	18.2	6th	1897	2nd-highest
Le Bons Bay	18.5	1st	1984	Equal 2nd-highest
Waione	20.8	7th	1993	3rd-highest
Secretary Island	17.6	21st	1988	4th-highest
Waipara West	22.4	22nd	1973	4th-highest
Masterton	20.4	7th	1943	Equal 4th-highest
Low records or near-records				
Martinborough	1.8	9th	1986	Lowest
Kaikoura	3.8	10th	1963	Lowest
Cheviot	2.2	9th	1982	4th-lowest
Christchurch (Airport)	2.3	15th	1863	Equal 4th-lowest

Wind

On 13 February, strong winds in Wellington brought down power lines, cutting electricity to around 1600 Wellington households. The Rimutaka Hill Rd, one of the main routes out of the capital, was closed due to deteriorating conditions and inner harbour ferry sailings were cancelled. The strong winds also caused rough conditions at sea, bringing down a seawall on the Kapiti Coast at high tide.

On February 13, strong winds at Tolaga Bay blew the roof off a barn, lifted pressed metal tiles off the roof of an Inn, and caused problems with power across parts of the district.

Also on 13 February, a formal Civil Defence State of Emergency warning was issued for Hastings District as strong northwesterly winds combined with high temperatures to fan four wildfires. Up to 70 homes were evacuated overnight and at least one home was completely destroyed. The emergency status was lifted on February 15 when the three largest fires were contained. Reports state that the three fires separately burnt 162ha, 270ha and 87ha of land.

High temperatures and strong winds also assisted the spread of two out-of-control wildfires on Christchurch's Port Hills, beginning February 13. A State of Emergency was declared for Christchurch City and the Selwyn District on February 15 after the fires continued to spread. The fires destroyed eleven homes, forced the evacuation of 450 homes and burned through more than 2000 hectares of land. One helicopter pilot died in a crash while combating the fires.

On February 15, it was reported that increased westerly winds and a lack of significant floods had caused a build-up of silt over the sand bar at the Whanganui port. The increase in silt meant that the only cargo ship using the port was unable to get in and had been forced to use the New Plymouth port.

The highest wind gust was 178 km/hr, observed at Akitio on 13 February.

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
Mt Kaukau	145	13th	1969	Highest
Wellington (Kelburn)	139	13th	1972	Highest
Dannevirke	82	1st	1961	2nd-highest
Paraparaumu	113	13th	1972	3rd-highest
Blenheim	83	13th	1972	3rd-highest
Baring Head	128	13th	1991	4th-highest
Whanganui	89	13th	1977	4th-highest

Lightning and hail

On 13 February, a thunderstorm wreaked havoc in Dunedin, with surface flooding and lightning strikes forcing shops to close. Locals ran for shelter as the storm struck mid-afternoon with heavy hail and torrential rain battering the southern city. Some manhole covers were reported as lifting in the deluge. Hail also struck parts of Central Otago to the northeast of Alexandra, including Omakau and Moa Creek with up to 1.5 square cm hail stones falling. A car crash occurred on SH 85 between Alexandra and Omakau during the hail storm.

For further information, please contact:

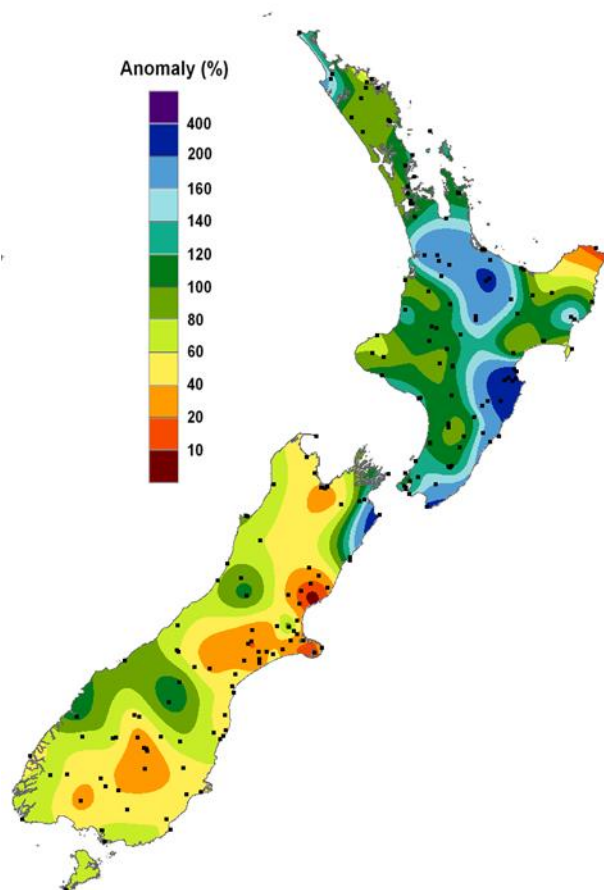
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February 2017 mean rainfall, expressed as percentage of the 1981-2010 normal.

The month was characterised by contrasting mean rainfall amounts in the North and South Islands. The South Island was mostly drier than normal or near normal for this time of year. The North Island experienced above average rainfall in the Far North, and in central and southeastern areas.

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