

Warm and dry to start, followed by cooler and unsettled conditions

Temperature	May temperatures were well above average ($> +1.20^{\circ}\text{C}$) in parts of Hawke's Bay. Temperatures were above average ($+0.51^{\circ}\text{C}$ to $+1.20^{\circ}\text{C}$) for most remaining parts of the North Island, except Northland, Taranaki and Wellington where temperatures were near average (-0.50°C to $+0.50^{\circ}\text{C}$). May temperatures were above average in Nelson and coastal Canterbury north of Ashburton, and below average (-0.51°C to -1.20°C) in parts of Southland.
Rainfall	Rainfall was well below normal ($< 50\%$) for coastal south Canterbury and north Otago. Below normal rainfall (50-79%) was recorded in the western Bay of Plenty, Hawke's Bay, Wairarapa and eastern Otago. Rainfall was well above normal ($>149\%$) for parts of the eastern Bay of Plenty, Taranaki, Manawatu, Marlborough, and Kaikoura. Above normal rainfall (120-149%) was observed in parts of Waikato, Whanganui, and north Canterbury.
Soil Moisture	As at 1 June 2018, soil moisture levels were above normal for the time of year for eastern and inland parts of the South Island north of Southland, and southwestern parts of the North Island. Soil moisture levels were generally near normal for the time of year across the remainder of the country.

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Overview

Overall, mean sea level air pressures were much lower than normal over and to the south of New Zealand during May. The first half of the month was relatively warm and dry throughout the country. However, during the second half of May, a blocking anticyclone became established over the southeast of Australia. This delivered a prolonged period of disturbed west and southwesterly winds over the country. Many fronts were embedded in this flow, which resulted in an unsettled spell of weather with bands of thunderstorms passing over the country (see *Highlights and extreme events* section for further details). A weak ridge of high pressure covered the lower South Island during the final days of May, bringing heavy frosts to parts of Central Otago, Southland, and the Mackenzie Basin.

The nationwide average temperature in May 2018 was 11.2°C (0.4°C above the 1981-2010 May average from NIWA's seven station temperature series which begins in 1909).

Further Highlights:

- The highest temperature was 24.5°C, observed at Wairoa on 16 May.
- The lowest temperature was -8.8°C, observed at Mt Cook Airport on 31 May.
- The highest 1-day rainfall was 152 mm, recorded at North Egmont on 11 May.
- The highest wind gust was 187 km/hr, observed at Akitio on 21 May.
- Of the six main centres in May 2018, Auckland was the warmest, Tauranga was the sunniest, Dunedin was the coldest and driest, Hamilton was the wettest, and Wellington was the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2018 so far (1 January – 31 May) were Wider Nelson (1069 hours), Marlborough (1068 hours), Hawke's Bay (1042 hours) and Canterbury (1031 hours).

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Temperature: Mild in the North Island, cool in Southland

The nationwide average temperature in May 2018 was 11.2°C (0.4°C above the 1981-2010 May average from NIWA's seven station temperature series which begins in 1909). May temperatures were well above average (> +1.20°C of the May average) in parts of Hawke's Bay. This was a result of more westerly winds than average over New Zealand and the resulting Foehn Effect. Temperatures were above average (+0.51°C to +1.20°C of the May average) for most remaining parts of the North Island, except Northland, Taranaki and Wellington where temperatures were near average (-0.50°C to +0.50°C of the May average). In the South Island, May temperatures were above average in Nelson and coastal Canterbury north of Ashburton, and below average (-0.51°C to -1.20°C of the May average) in parts of Southland. Temperatures were typically near average for remaining areas of the South Island.

Record¹ or near-record mean air temperatures for May were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Hastings	12.9	1.1	1965	3rd-highest
Waipawa	11.9	1.4	1945	3rd-highest
Wairoa	13.6	1.4	1964	3rd-highest
Akaroa	12.5	2.0	1978	3rd-highest

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.

Waiau	9.9	1.5	1974	Equal 4th-highest
Low records or near-records				
None observed				

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Whitianga	19.4	1.7	1962	2nd-highest
Low records or near-records				
Stratford	12.5	-1.8	1960	4th-lowest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Medbury	4.8	2.2	1927	2nd-highest
Cheviot	5.5	2.4	1982	2nd-highest
Wairoa	9.0	1.8	1964	3rd-highest
Motueka	6.3	2.1	1956	3rd-highest
Culverden	5.4	3.1	1928	3rd-highest
Akaroa	8.9	3.1	1978	3rd-highest
Hastings	8.0	1.7	1965	4th-highest
Arapito	7.8	1.2	1978	4th-highest
Waiau	4.6	2.3	1974	4th-highest
Low records or near-records				
Secretary Island	7.9	-0.4	1985	4th-lowest

Rainfall: Dry for eastern Otago and south Canterbury

Rainfall was well below normal (< 50% of the May normal) for coastal south Canterbury and north Otago. It was a particularly dry month in Timaru, where just 9 mm of rainfall was recorded (19% of the May normal). Farther south, Oamaru recorded 19 mm of rainfall (46% of the May normal). Below normal rainfall (50-79% of the May normal) was recorded in the western Bay of Plenty, Hawke's Bay, Wairarapa and eastern Otago. In contrast, rainfall was well above normal (>149% of the May normal) for parts of the eastern Bay of Plenty, Taranaki, Manawatu, Marlborough and Kaikoura. Whakatane recorded 224 mm of rainfall (212% of the May normal). Over half of Whakatane's May total occurred on 14 May, when 114 mm of rain was recorded. Rainfall was above normal (120-149% of the May normal) for parts of Waikato, Whanganui and north Canterbury. Monthly rainfall totals were typically near normal (80-119% of the May normal) for remaining parts of the country.

By the end of May, soil moisture levels were above normal for the time of year for eastern and inland parts of the South Island north of Southland, and southwestern parts of the North Island. Soil moisture levels were typically near normal for the time of year in remaining parts of New Zealand.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Lower Retaruke	238	192	1966	Equal highest
Low records or near-records				
None observed				

May climate in the six main centres

Of the six main centres in May 2018, Auckland was the warmest, Tauranga was the sunniest, Dunedin was the coldest and driest, Hamilton was the wettest, and Wellington was the least sunny. It was a particularly dry month for Dunedin and Tauranga, where total rainfall was just 59% and 64% of the May average, respectively.

May 2018 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	14.4	+0.4	Near average
Tauranga ^b	14.1	+0.8	Above average
Hamilton ^c	12.4	+0.8	Above average
Wellington ^d	12.1	+0.4	Near average
Christchurch ^e	9.6	+0.6	Above average
Dunedin ^f	9.1	-0.2	Near average

Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	100	92%	Near normal
Tauranga ^b	71	64%	Below normal
Hamilton ^c	146	136%	Above normal
Wellington ^d	125	112%	Near normal
Christchurch ^e	58	101%	Near normal
Dunedin ^f	38	59%	Below normal

Sunshine	
Location	Sunshine (hours)
Auckland ^a	174
Tauranga ^b	189
Hamilton ^g	166
Wellington ^d	113
Christchurch ^e	132
Dunedin ^f	132

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

Highlights and extreme events

Temperatures

The highest temperature for the month was 24.5°C, observed at Wairoa on 16 May. The lowest temperature was -8.8°C, observed at Mt Cook Airport on 31 May.

At the end of May, an inversion and persistent low cloud trapped cold air at the earth surface throughout Central Otago, resulting in low daytime maximum temperatures for many locations. For example, Lauder's maximum temperature on 31 May was just -2.6°C and in Tara Hills (Omarama) the maximum temperature on 31 May was -1.0°C.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Hamilton (Ruakura)	23.5	1st	1906	Highest
Whitianga	23.2	16th	1962	2nd-highest
Tauranga	23.2	1st	1913	Equal 2nd-highest
Whatawhata	23.0	1st	1952	Equal 2nd-highest
Hamilton (Airport)	22.5	14th	1946	Equal 2nd-highest
Taupo	21.0	1st	1949	3rd-highest
Te Kuiti	22.9	14th	1959	3rd-highest
Whangaparaoa	21.8	13th	1982	Equal 3rd-highest
Te Puke	22.4	1st	1973	Equal 3rd-highest
Whakatane	22.8	1st	1975	4th-highest
Rotorua	20.8	1st	1964	4th-highest
Motueka	23.7	9th	1956	4th-highest
Brothers Island	19.9	9th	1997	4th-highest
Mokohinau	20.5	15th	1994	Equal 4th-highest
Auckland (Whenuapai)	23.2	13th	1945	Equal 4th-highest
Auckland (Western Springs)	23.7	14th	1948	Equal 4th-highest
Low records or near-records				
Whangaparaoa	11.2	28th	1982	Lowest
Stratford	4.9	28th	1972	Lowest
Tara Hills	-1.0	31st	1949	Lowest
Manapouri (West Arm Jetty)	0.4	30th	1972	Lowest
Lauder	-2.6	31st	1924	Lowest
Alexandra	0.1	31st	1930	Lowest
Ohakune	4.1	28th	1972	2nd-lowest
Clyde	1.2	31st	1978	2nd-lowest
Wanaka	3.1	31st	1972	Equal 2nd-lowest
Brothers Island	9.2	28th	1997	3rd-lowest
Lake Tekapo	0.1	31st	1928	3rd-lowest
Mokohinau	13.1	29th	1994	Equal 3rd-lowest
Cape Reinga	13.3	29th	1971	4th-lowest
Dargaville	12.1	28th	1951	4th-lowest
Motu	8.1	29th	1990	4th-lowest

Waiouru	2.2	28th	1972	4th-lowest
Auckland (Whenuapai)	12.0	28th	1951	Equal 4th-lowest
Waipara West	6.3	28th	1973	Equal 4th-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Cheviot	15.9	9th	1982	2nd-highest
Mokohinau	18.2	12th	1994	3rd-highest
Akaroa	14.8	8th	1978	3rd-highest
Oamaru	11.7	9th	1972	3rd-highest
South West Cape	12.5	4th	1991	Equal 3rd-highest
Low records or near-records				
Brothers Island	4.6	28th	1997	2nd-lowest
Kaikoura (Middle Creek)	-0.1	24th	1963	2nd-lowest
Dunedin (Musselburgh)	-2.2	31st	1947	Equal 2nd-lowest
Kaikohe	3.3	29th	1973	3rd-lowest
Whangarei	0.8	29th	1967	3rd-lowest
Warkworth	0.0	30th	1966	3rd-lowest
Five Rivers	-6.4	30th	1982	3rd-lowest
Mt Cook (Airport)	-8.8	31st	1929	Equal 3rd-lowest
Alexandra	-7.1	30th	1929	Equal 3rd-lowest

Rain and slips

The highest 1-day rainfall for the month was 152 mm, recorded at North Egmont on 11 May.

On 22 May, heavy rain caused surface flooding on SH6 between Cromwell and Makarora, SH8 from Cromwell to Omarama, and parts of Wanaka. Roads in and around Mossburn (Southland) were also affected by surface flooding. Minor surface flooding was reported in Wellington after a downpour of rain.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Whakatane	117	14th	1952	2nd-highest

Wind

The highest wind gust for the month was 187 km/hr, observed at Akitio on 21 May.

On 15 May, strong wind gusts struck in parts of Tauranga, particularly along Pyes Pa Road. Several garden sheds and trampolines were picked up and deposited in neighbouring properties.

On 20 May, flights to and from Dunedin Airport were disrupted due to strong winds. A bush fire near Taieri Mouth was fanned by the strong winds, and it required two helicopters and eight fire crews to bring under control.

On 21 May, strong winds brought down power lines in the Wairarapa, with about 300 residents losing power. A tree was also blown onto a car near Greytown.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Manapouri	89	8th	1991	Highest
Hawera	93	22nd	1986	2nd-highest
Gore	107	8th	1987	2nd-highest
South West Cape	161	7th	1991	2nd-highest
Puysegur Point	152	8th	1986	Equal 3rd-highest
Castlepoint	143	21st	1972	4th-highest
Oamaru	89	20th	1984	4th-highest
Queenstown	85	8th	1972	4th-highest
Tara Hills	82	20th	1985	Equal 4th-highest

Lightning and hail

On 14 May, hundreds of lightning strikes were recorded over Taranaki, with power cuts at more than 2000 properties in the region.

On 17 May, lightning and large hail stones were observed in parts of Auckland during the passage of thunderstorms embedded in an unsettled southwesterly airflow.

On 20 May, around 3500 lightning strikes were recorded about the western South Island and the Southern Alps. Two passenger aircraft bound for Queenstown were struck by lightning, and forced to divert to Christchurch.

On 21 May, about 700 lightning strikes were recorded in the 4-hour period to 5 a.m. near northern Wellington, the Kapiti Coast and Taranaki.

On 22 May, a flight was struck by lightning as it attempted to land in Wellington. Heavy falls of hail occurred throughout the city during the evening hours. In the 24-hour period to 5 a.m. on 23 May, approximately 9500 lightning strikes were recorded across New Zealand.

On 25 May, approximately 400 lightning strikes were recorded over Waikato, with a further 100 strikes recorded over the Bay of Plenty. Lightning struck a tree on Poihipi Road (north of Lake Taupo), which brought down branches over the road. Farther south, around 575 lightning strikes were recorded over Taranaki. A fire crew was called to New Plymouth Girls High School after a lightning strike triggered an alarm.

On 28 May, hail fell throughout Wellington city in the morning hours.

Snow and ice

On 21 May, SH94 from Milford Sound to Te Anau (the Milford Road) was closed due to snow. Motorists were urged to take caution on SH87 from Kyeburn to Mosgiel due to snow and ice on the road.

On 23 May, snow fell to low elevations in Southland and Otago. The Milford Road (SH94) was closed due to snow, and school bus operations from Mossburn, Garston and Waikaia to Northern Southland College were cancelled.

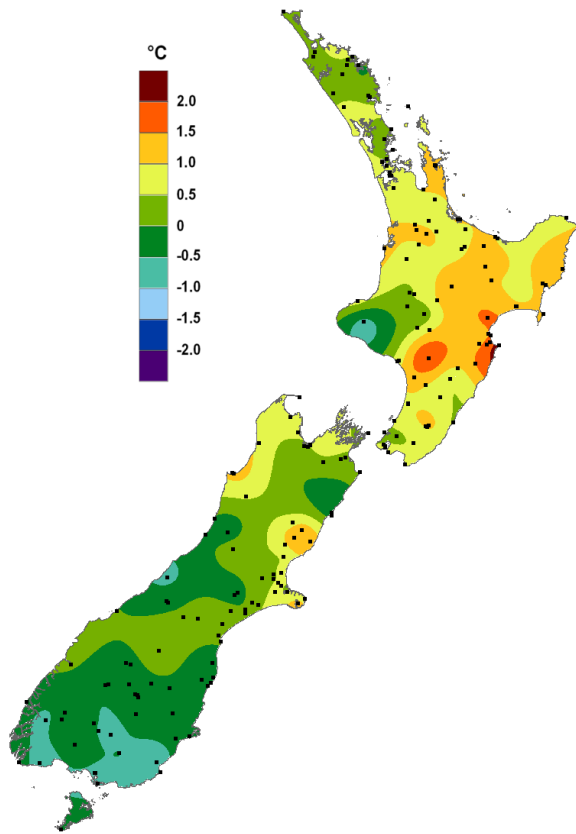
On 24 May, further snowfall occurred to low elevations throughout much of the South Island, and parts of the North Island. SH6 was closed from Haast to Makarora (Haast Pass) due to snow, as was the Milford Road (SH94), SH73 at Arthur's Pass and the Desert Road (SH1) in the North Island. Caution was advised to motorists travelling on SH6 from Gibbston to Cromwell (the Kawarau Gorge), and the Lindis Pass (SH8) due to snow.

Cloud and fog

Towards the end of May, settled weather under high pressure conditions saw inversions established over many inland valleys and basins in the South Island. This resulted in many consecutive days of persistent low cloud and freezing fog, particularly in Central Otago. Picturesque hoar frosts were observed in areas including Middlemarch and Lauder.

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May 2018 mean temperature, expressed as a departure from average (1981-2010 average).

May temperatures were warmer than average for many parts of the North Island, as indicated by the yellow and orange shades. Temperatures were near average (-0.50 to +0.50°C; green shades) for much of the South Island, although southern parts were cooler than average (teal shade).

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