

New Zealand's 3rd-warmest May on record

Temperature	Temperatures were above average (0.51°C to 1.2°C above average) or well above average (>1.2°C above average) across the entire country, with the most unusually warm temperatures in the South Island. Many locations observed record or near-record warm mean, mean maximum, and mean minimum May temperatures.
Rainfall	Rainfall was below normal (50% to 79% of normal) or well below normal (<50% of normal) for the majority of the North Island, with the exception being parts of Waikato, Taranaki, and coastal Manawatu-Whanganui where rainfall was near normal (80% to 119% of normal). Rainfall was above (120% to 149% of normal) or well above (>149% of normal) normal for much of western and lower South Island. Near or below normal rainfall occurred in parts of Marlborough, Canterbury, coastal Otago, and southern Southland.
Soil Moisture	As of 31 May, soils were drier than normal for much of the North Island with small areas of wetter than normal soils about western Waitomo and the Kapiti Coast. South Island soil moisture was generally near normal with pockets of below normal soil moisture about Waimate and Waitaki as well as the interior Marlborough region.

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Overview

May 2019 was characterised by higher than normal sea level pressure over and to the east of the North Island and lower than normal pressure to the south of the South Island. This resulted in more northwesterly winds than usual over the country. The distinct lack of southerlies throughout the month, frequent rounds of high pressure and warmer than average seas contributed to unseasonably warm temperatures and what is now officially New Zealand's 3rd warmest May on record.

The nationwide average temperature in May 2019 was 12.5°C (1.7°C above the 1981-2010 May average from NIWA's seven station temperature series which begins in 1909).

Dry conditions were observed across much of the North Island and parts of eastern South Island with monthly rainfall totals below or well below normal for the time of year. Conversely, the majority of western and lower South Island received rainfall totals that were above or well above normal.

With frequent bouts of high pressure there were relatively few significant weather events during the month of May, however, an active low pressure system from the Tasman Sea brought an unsettled Mother's Day weekend (11-12 May) to many, and the month ended on a stormy note as a series of

fronts brought rain, thunderstorms, snow and strong winds (refer to the [highlights and extreme events](#) section for further details).

Further Highlights:

- The highest temperature was 25.3°C, observed at Napier on 10 May.
- The lowest temperature was -5.3°C, observed at Motu on 18 May.
- The highest 1-day rainfall was 202 mm, recorded at Milford Sound on 25 May.
- The highest wind gust was 196 km/h, observed at Cape Turnagain on 15 May.
- Of the six main centres in May 2019, Auckland was the warmest, Christchurch was the coldest and wettest, Tauranga was the driest, Wellington the sunniest and Dunedin the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four regions in 2019 are Wider Nelson (1279 hours), Marlborough (1259 hours), Bay of Plenty (1233 hours) and Taranaki (1202 hours).

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Temperature: A warm May across New Zealand

May 2019 was New Zealand's 3rd warmest May on record with temperatures above average (0.51°C to 1.2°C above average) or well above average (>1.2°C above average) across the entire country. The nationwide average temperature in May 2019 was 12.5°C (1.7°C above the 1981-2010 May average from NIWA's seven station temperature series which begins in 1909).

Many locations observed record or near-record warm mean, mean maximum, and mean minimum May temperature as shown in the table below. Notably, the mean maximum temperature in Hanmer Forest during May was 18.1°C, which is 4.0°C warmer than average for this location, the highest since records began there in 1906.

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				
Ngawi	15.3	2.2	1972	Highest
Porirua	13.6	1.7	1968	Highest
Farewell Spit	14.7	2.1	1971	Highest
Medbury	10.9	2.4	1927	Highest
Waiau	11.6	3.2	1974	Highest
Te Anau	10.7	3.5	1963	Highest
Roxburgh	10.6	2.9	1950	Highest
Invercargill	10.5	2.5	1905	Highest
South West Cape	11.4	2.1	1991	Highest
Cape Reinga	16.4	1.1	1951	2nd-highest
Martinborough	12.5	1.8	1986	2nd-highest
Wellington (Kelburn)	13.7	2.0	1927	2nd-highest
Wellington (Airport)	14.3	1.8	1962	2nd-highest
Upper Hutt	12.7	1.9	1939	2nd-highest
Arapito	13.0	1.8	1978	2nd-highest
Hokitika	11.9	1.7	1866	2nd-highest
Reefton	11.2	2.7	1960	2nd-highest
Milford Sound	10.6	2.2	1934	2nd-highest
Secretary Island	12.6	1.6	1985	2nd-highest
Puysegur Point	12.2	2.0	1978	2nd-highest
Blenheim	12.9	2.0	1932	2nd-highest
Cheviot	11.2	2.1	1982	2nd-highest
Lake Tekapo	8.6	2.7	1927	2nd-highest
Dunedin (Musselburgh)	11.8	2.5	1947	2nd-highest
Manapouri	9.0	2.4	1971	2nd-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.

Nugget Point	10.5	1.9	1970	2nd-highest
Kaitaia	16.2	1.3	1948	3rd-highest
Mokohinau	17.1	1.6	1994	3rd-highest
Whangaparaoa	16.1	1.5	1982	3rd-highest
Paraparaumu	13.7	2.1	1953	3rd-highest
Levin	13.4	2.0	1895	3rd-highest
Whanganui	14.3	1.9	1937	3rd-highest
Westport	13.0	1.8	1937	3rd-highest
Brothers Island	14.2	1.4	1997	3rd-highest
Kaikoura	13.2	2.1	1963	3rd-highest
Mt Cook (Airport)	8.4	2.2	1929	3rd-highest
Oamaru	11.0	1.8	1967	3rd-highest
Five Rivers	9.7	2.4	1982	3rd-highest
Balclutha	10.0	1.9	1964	3rd-highest
Lower Retaruke	11.6	1.4	1966	4th-highest
Gisborne	13.8	1.5	1905	4th-highest
Hawera	13.0	1.8	1977	4th-highest
Ohakune	9.8	1.5	1962	4th-highest
Motueka	11.6	1.5	1956	4th-highest
Cape Campbell	13.5	1.4	1953	4th-highest
Culverden	10.7	2.3	1928	4th-highest
Orari Estate	10.0	1.8	1972	4th-highest
Wanaka	9.2	2.0	1955	4th-highest
Ranfurly	7.9	2.4	1897	4th-highest
Lumsden	9.5	2.2	1982	4th-highest
Gore	9.8	2.3	1907	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				
Blenheim	18.6	2.3	1932	Highest
Cheviot	18.3	3.1	1982	Highest
Farewell Spit	17.7	1.5	1971	Highest
Hanmer Forest	18.1	4.0	1906	Highest
Medbury	17.5	3.0	1927	Highest
Mt Cook (Airport)	13.8	3.0	1929	Highest
Ngawi	18.3	2.6	1972	Highest
Ohakune	15.1	2.5	1962	Highest
Porirua	17.5	2.2	1968	Highest
Reefton	15.3	2.1	1960	Highest
South West Cape	13.3	2.1	1991	Highest
Te Kuiti	18.2	1.6	1959	Highest
Upper Hutt	17.9	2.5	1939	Highest

Waiau	19.1	4.5	1974	Highest
Wellington (Kelburn)	16.3	2.0	1927	Highest
Westport	16.6	1.6	1937	Highest
Arapito	17.4	1.6	1978	2nd-highest
Dunedin (Musselburgh)	15.6	2.9	1947	2nd-highest
Gisborne	20.1	2.5	1905	2nd-highest
Kerikeri	20.2	1.6	1945	2nd-highest
Lake Tekapo	14.6	3.6	1927	2nd-highest
Levin	17.6	2.0	1895	2nd-highest
Martinborough	17.9	2.2	1986	2nd-highest
Mokohinau	18.7	1.5	1994	2nd-highest
Oamaru	15.7	2.0	1967	2nd-highest
Puysegur Point	14.4	2.0	1978	2nd-highest
Ranfurly	14.1	3.0	1897	2nd-highest
Secretary Island	14.7	1.1	1985	2nd-highest
Taupo	16.5	2.4	1949	2nd-highest
Waipara	18.0	2.4	1973	2nd-highest
Waipawa	18.3	2.6	1945	2nd-highest
Whakatane	19.0	1.5	1974	2nd-highest
Whangarei	19.9	1.5	1967	2nd-highest
Whitianga	19.6	1.9	1962	2nd-highest
Appleby	17.3	1.3	1932	3rd-highest
Auckland (Mangere)	19.1	1.7	1959	3rd-highest
Balclutha	14.5	2.0	1964	3rd-highest
Brothers Island	16.0	1.4	1997	3rd-highest
Cromwell	15.1	2.4	1949	3rd-highest
Culverden	17.7	3.1	1928	3rd-highest
Dunedin (Airport)	15.9	2.5	1962	3rd-highest
Five Rivers	14.4	2.4	1982	3rd-highest
Kaikoura	17.0	2.8	1963	3rd-highest
Manapouri	11.3	1.9	1971	3rd-highest
Masterton	18.5	2.4	1906	3rd-highest
Milford Sound	13.8	1.4	1934	3rd-highest
Napier	19.6	2.8	1870	3rd-highest
New Plymouth	17.7	1.6	1944	3rd-highest
Nugget Point	13.2	1.8	1970	3rd-highest
Richmond	17.5	1.9	1862	3rd-highest
Rotorua	16.5	1.6	1964	3rd-highest
Tara Hills	14.2	2.5	1949	3rd-highest
Te Anau	13.9	2.3	1963	3rd-highest
Wanaka	14.2	2.2	1955	3rd-highest
Whanganui (Spriggens Park)	18.5	2.2	1937	3rd-highest
Wellington	17.0	1.8	1962	3rd-highest
Whangaparaoa	18.8	1.6	1982	3rd-highest
Cape Reinga	18.7	0.9	1951	Eq 3rd-highest
Akaroa	17.4	2.2	1978	4th-highest
Blenheim	18.0	2.0	1932	4th-highest
Hastings	19.3	2.5	1965	4th-highest

Hawera	16.5	1.5	1977	4th-highest
Kaikoura	16.9	2.7	1963	4th-highest
Kaitaia	20.0	1.6	1948	4th-highest
Lauder	14.2	2.3	1924	4th-highest
Lumsden	13.9	1.9	1982	4th-highest
Orari Estate	16.4	2.8	1972	4th-highest
Paeroa	18.9	1.5	1947	4th-highest
Paraparaumu	17.3	1.8	1953	4th-highest
Timaru	15.8	2.0	1885	4th-highest
Turangi	15.7	1.1	1968	4th-highest
Wairoa	19.4	2.2	1964	4th-highest
Winchmore	16.4	2.3	1928	4th-highest
Rangiora	16.7	2.1	1965	Eq 4th-highest
Low records or near-records				
None observed				

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				
Porirua	9.7	1.3	1968	Highest
Milford Sound	7.3	2.9	1934	Highest
Secretary Island	10.5	2.2	1985	Highest
Dunedin (Musselburgh)	8.0	2.1	1947	Highest
Te Anau	7.4	4.6	1963	Highest
Five Rivers	5.1	2.6	1982	Highest
Roxburgh	6.2	3.9	1950	Highest
Invercargill	6.9	3.1	1905	Highest
Nugget Point	7.8	2.0	1970	Highest
South West Cape	9.5	2.2	1991	Highest
Ngawi	12.3	1.9	1972	2nd-highest
Wellington (Kelburn)	11.2	2.2	1927	2nd-highest
Wellington (Airport)	11.7	2.0	1962	2nd-highest
Farewell Spit	11.8	2.8	1971	2nd-highest
Hokitika	8.5	2.4	1866	2nd-highest
Franz Josef	7.4	2.5	1953	2nd-highest
Puysegur Point	10.1	2.2	1978	2nd-highest
Cape Campbell	11.3	1.5	1953	2nd-highest
Mt Cook (Village)	3.7	2.2	1929	2nd-highest
Manapouri	6.6	2.9	1971	2nd-highest
Lumsden	5.1	2.6	1982	2nd-highest
Balclutha	5.5	1.8	1964	2nd-highest
Mokohinau	15.5	1.7	1994	3rd-highest
Paraparaumu	10.2	2.3	1953	3rd-highest
Westport	9.4	1.9	1937	3rd-highest
Arapito	8.6	2.0	1978	3rd-highest
Reefton	7.1	3.2	1960	3rd-highest

Haast	8.4	2.0	1949	3rd-highest
Brothers Island	12.5	1.5	1997	3rd-highest
Kaikoura	9.6	1.5	1963	3rd-highest
Arthurs Pass	4.3	2.8	1973	3rd-highest
Oamaru	6.2	1.4	1967	3rd-highest
Gore	5.9	2.2	1907	3rd-highest
Cape Reinga	14.1	1.3	1951	4th-highest
Hawera	9.4	2.0	1977	4th-highest
Medbury	4.2	1.6	1927	4th-highest
Port Taharoa	12.3	1.6	1973	Eq 4th-highest
Low records or near-records				
None observed				

Rainfall: Dry in the North Island, variable in the South Island

Below normal (50% to 79% of normal) or well below normal (<50% of normal) rainfall for the time of year was experienced in the majority of the North Island, with the exception being parts of Waikato, Taranaki, and coastal Manawatu-Whanganui with near normal (80% to 119% of normal) rainfall. Above (120% to 149% of normal) or well above (>149% of normal) normal rainfall was observed in the majority of western and lower South Island. Conversely, near or below normal rainfall was recorded in parts of Marlborough, Canterbury, coastal Otago, and southern Southland.

Notably, Kaitaia only recorded 19 mm of rainfall, which is the driest May since records began there in 1948. Several locations (such as Cape Reinga, Whitianga, Wairoa, Wellington and Ohakune) were on track for one of their driest Mays on record, however the heavy rainfall that occurred during the last few days of the month greatly increased the monthly rainfall totals.

By the end of May, soils were drier than normal for much of the North Island with small areas of wetter than normal soils about western Waitomo and the Kapiti Coast. South Island soil moisture was generally near normal with pockets of below normal soil moisture about Waimate and Waitaki as well as interior Marlborough region.

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				
None observed				
Low records or near-records				
Kaitaia	19	14	1948	Lowest
Gisborne	12	13	1905	2nd-lowest
Whangarei	30	28	1937	4th-lowest
Auckland (Western Springs)	60	55	1948	4th-lowest
Masterton	30	33	1926	4th-lowest
Martinborough	17	25	1924	4th-lowest
Mahia	29	27	1990	4th-lowest
Whangarei	30	28	1937	4th-lowest

May climate in the six main centres

May temperatures were above or well above average for all main centres. Auckland, Tauranga, Hamilton and Wellington experienced below or well below normal May rainfall, and Dunedin near normal rainfall. It was a wet month in Christchurch with rainfall above normal for the time of year. Of the six main centres in May 2019, Auckland was the warmest, Christchurch was the coldest and wettest, Tauranga was the driest, Wellington the sunniest and Dunedin the least sunny.

May 2019 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	15.0	+1.0	Above average
Tauranga ^b	14.2	+0.9	Above average
Hamilton ^c	12.4	+0.8	Above average
Wellington ^d	13.7	+2.0	Well above average (2 nd warmest on record)
Christchurch ^e	10.3	+1.3	Well above average
Dunedin ^f	11.8	+2.5	Well above average (2 nd warmest on record)
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	56	51	Well below normal
Tauranga ^b	47	43	Well below normal
Hamilton ^c	62	58	Below normal
Wellington ^d	64	75	Below normal
Christchurch ^e	73	127	Above normal
Dunedin ^f	62	95	Near normal
Sunshine			
Location	Sunshine (hours)		
Auckland ^a	156		
Tauranga ^b	163		
Hamilton ^g	129		
Wellington ^d	169		
Christchurch ^e	148		
Dunedin ^f	109		

^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 12-13 May, a low pressure system in the Tasman Sea brought rain and strong winds to western and lower South Island and central and upper North Island and caused power outages, fallen trees and road closures.

On 12 May, the State Highway 33 end of Hamurana Rd at Mourea in Bay of Plenty was closed due to a slip and a large tree blocking both lanes.

On 16 May, Quertier Road, in Kaiwera, closed due to flooding on the Kaiwera Bridge.

On 16 May, all sports fields were closed in Gore due to heavy rain.

On 28 May, heavy rain caused problems with a sinkhole delaying traffic on the Takaka Hill Road in the Tasman Region. The sinkhole occurred near the bottom of Takaka Hill on the Riwaka side and briefly closed the state highway.

On 28 May, Rotorua Lakes Council closed all its sports fields due to anticipated heavy rain.

On 30 May, rain flooded parts of State Highway 6 which caused Westland District Council to activate its Emergency Operations Centre to monitor the situation. The Buller River reached its alarm point of 8.4m at Te Kuha (village east of Westport) forcing State Highway 6 at Inangahua Junction to close.

The highest daily rainfall for the month was 202 mm, recorded at Milford Sound on 25 May.

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
Akaroa	114	31st	1977	Highest
Secretary Island	140	4th	1985	2nd-highest
Winchmore	67	31st	1927	2nd-highest
Ashburton	63	31st	1927	3rd-highest
Taumarunui	74	30th	1913	4th-highest

Temperatures

The highest May temperature was 25.3°C, observed at Napier on 10 May. The lowest May temperature was -5.3°C, observed at Motu on 18 May.

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				
Arthurs Pass	17.6	6th	1973	Highest
Mokohinau	21.1	10th	1994	2nd-highest
Motu	20.7	5th	1990	3rd-highest
Porirua	19.8	19th	1968	3rd-highest

Tara Hills	21.3	2nd	1949	3rd-highest
Whangaparaoa	21.8	10th	1982	Equal 3rd-highest
Cheviot	24.4	4th	1982	4th-highest
Low records or near-records				
Puysegur Point	7.8	31st	1978	Equal 3rd-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				
Porirua	15.6	11th	1972	Highest
Te Anau	13.5	5th	1973	Highest
Secretary Island	15.0	9th	1988	2nd-highest
South West Cape	12.9	10th	1991	2nd-highest
Wanaka	12.9	5th	1972	Equal 2nd-highest
Balclutha	10.6	7th	1972	Equal 2nd-highest
Orari Estate	10.5	7th	1972	3rd-highest
Manapouri	11.2	5th	1972	3rd-highest
Medbury	13.6	30th	1927	4th-highest
Mt Cook	11.5	5th	1929	4th-highest
Oamaru	11.1	26th	1972	4th-highest
Low records or near-records				
Kaikoura	-0.3	18th	1963	2nd-lowest
Motu	-5.3	18th	1990	Equal 4th-lowest

Wind

On 15 May, flights were delayed out of Invercargill Airport and shipping containers were blown into Bluff Harbour as strong winds battered the region.

On 15-16 May, strong winds caused power outages throughout Southland and Otago. Three networks were affected: Invercargill Electricity, The Power Company and OtagoNet.

On 29 May, strong winds in Hokitika blew a piece of roofing iron into powerlines knocking them down. Strong winds caused damage to three power poles in Ōhakea, cutting power to 250 properties, including Ōhakea Air Force Base.

On 30 May, Wellington Airport cancelled and delayed several flights due to strong winds. Wellington had 5 consecutive hours with wind gust over 100 km/h, reaching a max gust of 121 km/h. Wellington's East by West ferries cancelled sailings between Days Bay and Queens Wharf with shuttles being brought in as replacement transport.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Motu	109	13th	1991	Highest
Dannevirke	95	16th	1961	2nd-highest
Secretary Island	139	16th	1994	2nd-highest
Whakatane	95	12th	1974	3rd-highest
Clyde	74	15th	1983	3rd-highest
Auckland (Western Springs)	70	12th	1994	Equal 3rd-highest
Paeroa	87	12th	1991	Equal 3rd-highest
Whakatu	82	16th	1997	4th-highest
Winchmore	98	30th	1970	Equal 4th-highest

Lightning and hail

On 14 May, two houses were struck by lightning in Waianiwa, 18 km northwest of Invercargill, as an active front moved through the region. The occupants were home, but luckily no one was injured.

On 30-31 May, Westland was hammered by heavy rain and thunderstorms and got hit by nearly 6000 lightning strikes.

On 31 May an Air NZ plane had to return to Auckland shortly after take-off as it was struck by lightning.

Snow and ice

On May 16, snow flurries were observed on Dunedin hill suburbs. The snow was the first near an urban area this year.

On 31 May, snow fell in parts of the South Island. The Remarkables ski area received 5 cm overnight and Coronet Peak 6 cm. the Milford Road was temporarily closed due to snow clearing operations.

Cloud and fog

On 4 May, 58 domestic flights out of Auckland Airport were cancelled due to fog, and 54 domestic flights were delayed. The fog was caused by a humid air mass and light winds.

On 11 May, 50 domestic flights out of Auckland Airport were cancelled and 36 domestic flights were delayed due to fog.

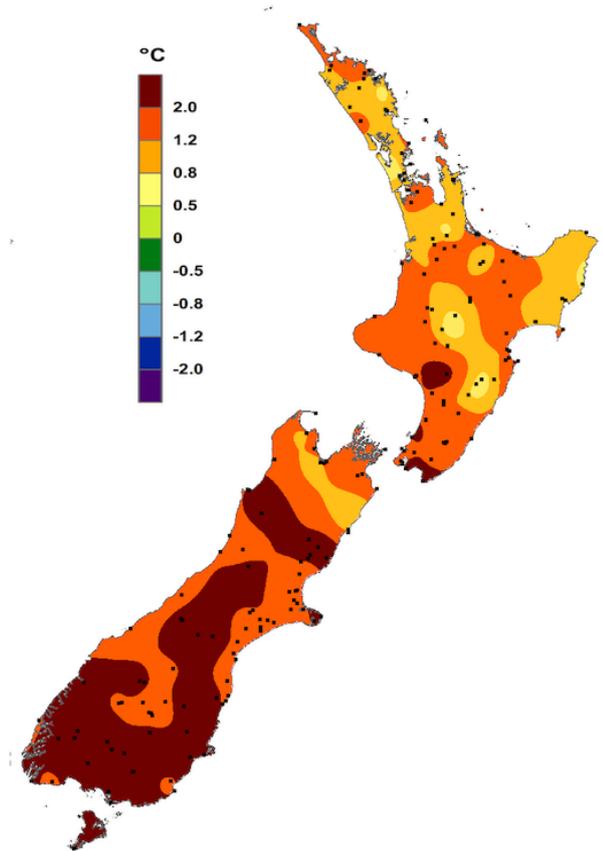
On 24 May, fog in Auckland caused disruptions and delays to ferry services between Hobsonville, Beach Haven and the CBD.

On 24-25 May, multiple flights were delayed or cancelled in and out of Christchurch Airport due to heavy fog that reduced visibility down to 100 m.

On 31 May, several flights were delayed and cancelled in and out of Dunedin Airport.

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May temperature, expressed as a departure from the 1981-2010 average.

All of New Zealand experienced temperatures above or well above average for the time of year, with the most anomalously warm temperatures in the South Island.

Overall, the month ranked as the 3rd warmest May on record.

It has now been 28 months since New Zealand experienced a nationwide average temperature that was below average (0.51°C to 1.20°C below the 1981-2010 average).

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

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