

## Warm and dry for the middle to lower South Island

<b>Rainfall</b>	For locations in the middle and lower South Island, rainfall was below normal (50-79% of normal) or well below normal (<50% of normal) with increasing dryness toward the east of these areas. The upper South Island observed above normal (120-149% of normal) or well above normal (>149% of normal) rainfall in Hurunui, Tasman and northern Marlborough, and near normal rainfall (80-119% of normal) in remaining locations. In the North Island, rainfall was below normal for many locations between upper Waikato and lower Manawatu-Whanganui, although near normal rainfall was observed in some locations between Taranaki and Te Urewera. Most locations in the Auckland and Wellington regions experienced near or above normal May rainfall, while rainfall in Northland was below normal to the west and above normal to the east.
<b>Soil Moisture</b>	At the end of May, soils were drier than normal for many northern, central and eastern parts of the North Island, as well as eastern, inland and southern parts of the South Island. Soil moisture was generally near normal for remaining parts of the country.
<b>Temperature</b>	Temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) for many locations in the middle and lower South Island as well as the western parts of the Tasman District. Above average temperatures were also experienced along the eastern margins of the North Island and around Hunterville in the Manawatu-Whanganui region. Remaining parts of both islands largely experienced near average ( $\pm 0.50^\circ\text{C}$ of average) temperatures except for isolated areas around lower Marlborough and between Taumarunui and Turangi where temperatures were below average (0.51-1.20°C below average).

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### Overview

May 2020 mean sea level air pressure was above normal over and to the east of New Zealand and lower than normal to the southwest of the country. This was associated with more easterly and northeasterly air flows than normal. Dry conditions were widespread for the middle and lower portions of the South Island. Eastern parts of this area observed the lowest rainfall amounts with respect to normal for May and several locations there set new record low rainfall totals for the time of year. May was also relatively dry for a good portion of the North Island, particularly for many locations between the upper Waikato and lower Manawatu-Whanganui regions as well as for western

Northland. Some notable rainfall events occurred during the month, leading to elevated rainfall totals for eastern Northland, western Auckland, western Wellington, Nelson, northern Marlborough and Hurunui. Coromandel Peninsula was hard hit by a storm at the very end of the month (extending into the start of June) and the May rainfall total at Whitianga was 208% of normal (2nd-highest on record for May). Impacts of this storm are listed in the *Highlights and extreme events* section.

Temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) throughout the middle to lower portion of the South Island as well as western parts of the Tasman District and much of the east coast of the North Island. Mild temperatures were experienced however for much of the remaining North Island locations and for the upper South Island, with a few cold spots around lower Marlborough and Taumarunui to Turangi. Overall, the nationwide average temperature in May 2020 was 11.3°C. This was 0.5°C above the 1981-2010 May average from NIWA's seven station temperature series which begins in 1909.

Further Highlights:

- The highest temperature was 25.9°C, observed at Christchurch on 3 May.
- The lowest temperature was -8.2°C, observed at Middlemarch on 31 May.
- The highest 1-day rainfall was 219 mm, recorded at Milford Sound on 21 May.
- The highest wind gust was 158 km/h, observed at Secretary Island on 21 May.
- Of the six main centres in May 2020, Auckland was the warmest, Christchurch was the coldest, Wellington was the wettest, Dunedin was the driest (by a good margin) and least sunny, and Tauranga was the sunniest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2020 so far are Bay of Plenty (1291 hours), Taranaki (1263 hours), Greater Nelson (1217 hours) and Waikato (1178 hours).

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## Rainfall: Dry for the middle to lower South Island

May was a dry month for most of the middle and lower South Island and well below normal rainfall (<50% of normal) was observed for eastern locations south of Christchurch. The driest of these were closest to the coast of Otago and eastern Southland where some sites observed less than 10% of their normal May rainfall. Nine locations observed record-low May rainfall in this area. Notably, Middlemarch recorded only 2 mm of rainfall during May (6% of normal), making this the driest May on record there since records began in 1896. Several other locations (including Dunedin) saw similar values which are summarised in the table below.

It was a relatively dry month once again for parts of the North Island. Many locations between the upper Waikato and lower Manawatu-Whanganui regions observed below normal rainfall, as did western Northland. Elevated May rainfall levels were observed for eastern Northland, and western parts of the Auckland and Wellington regions, however Whitianga (in the Coromandel Peninsula) was the only location to observe near-record high rainfall amounts with a monthly total of 355 mm (208%

of normal). Most of this occurred during a heavy rainfall event at the very end of the month, the impacts of which are detailed in the [Highlights and extreme events](#) section.

**Record<sup>1</sup> or near-record May rainfall totals were recorded at:**

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
<b>High records or near-records</b>				
Whitianga	355	208	1961	2nd-highest
<b>Low records or near-records</b>				
Oamaru	3	7	1941	Lowest
Middlemarch	2	6	1896	Lowest
Dunedin (Musselburgh)	5	8	1918	Lowest
Waipounamu	13	16	1917	Lowest
Cromwell	3	11	1949	Lowest
Invercargill	15	13	1900	Lowest
Tiwai Point	15	14	1970	Lowest
Balclutha	5	8	1964	Lowest
Nugget Point	9	10	1930	Lowest
Clyde	6	17	1978	Equal lowest
Arapito	101	51	1978	3rd-lowest
Waimate	3	9	1898	3rd-lowest
Dunedin (Airport)	11	19	1962	3rd-lowest
Waiouru	38	39	1950	4th-lowest
Ranfurly	8	26	1897	4th-lowest
Campbell Island	84	63	1992	4th-lowest

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## Temperature: Warm for the south, average for the north

The nationwide average temperature in May 2020 was 11.3°C. This was 0.5°C above the 1981-2010 May average from NIWA’s seven station temperature series which begins in 1909. It has now been 40 consecutive months since New Zealand experienced a nationwide temperature that was below average.

No locations observed record-high mean temperatures for May and only two locations saw near-record mean temperatures in this category. Several locations, however, observed record or near-record mean maximum (daytime) temperatures. Notably, Te Kuiti and Farewell Spit both observed their highest mean daytime temperatures on record for May with values that were 1.7°C and 2.3°C warmer than average for the two locations respectively. A handful of sites also experienced record or near-record mean minimum (nighttime) temperatures for May, including Taumarunui and Ohakune

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<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.

with values that were 3.9°C and 2.8°C cooler than average for the two locations respectively, and the lowest on record for both sites.

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
<b>High records or near-records</b>				
Farewell Spit	14.6	2.0	1971	2nd-highest
South West Cape	11.1	1.8	1991	3rd-highest
<b>Low records or near-records</b>				
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
<b>High records or near-records</b>				
Te Kuiti	18.3	1.7	1959	Highest
Farewell Spit	18.5	2.3	1971	Highest
Porirua	16.3	1.0	1968	3rd-highest
South West Cape	13.1	1.9	1991	3rd-highest
Arapito	17.1	1.3	1978	4th-highest
Ranfurly	13.6	2.5	1897	4th-highest
Nugget Point	12.9	1.5	1970	4th-highest
<b>Low records or near-records</b>				
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
<b>High records or near-records</b>				
South West Cape	9.1	1.8	1991	3rd-highest
<b>Low records or near-records</b>				
Taumarunui	1.1	-3.9	1947	Lowest
Ohakune	1.2	-2.8	1962	Lowest
Turangi	1.6	-2.7	1968	2nd-lowest
Dunedin (Airport)	0.2	-1.9	1962	3rd-lowest
Te Kuiti	4.1	-2.4	1959	4th-lowest

## May climate in the six main centres

May rainfall was above normal in Wellington, near normal in Auckland, and below normal in Tauranga, Hamilton and Christchurch. Dunedin only received 5 mm of rain during the month, making May 2020 the driest May on record for this location. Temperatures were above average in Wellington and Dunedin, and near normal for remaining main centres. Of the six main centres in May 2020, Auckland was the warmest, Christchurch was the coldest, Wellington was the wettest, Dunedin was the driest and least sunny, and Tauranga was the sunniest.

### May 2020 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	13.9	-0.1	Near average
Tauranga <sup>b</sup>	13.7	+0.4	Near average
Hamilton <sup>c</sup>	11.3	-0.4	Near average
Wellington <sup>d</sup>	12.3	+0.6	Above average
Christchurch <sup>e</sup>	9.4	+0.4	Near average
Dunedin <sup>f</sup>	10.0	+0.7	Above average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	98	91	Near normal
Tauranga <sup>b</sup>	57	52	Below normal
Hamilton <sup>c</sup>	77	72	Below normal
Wellington <sup>d</sup>	136	123	Above normal
Christchurch <sup>e</sup>	32	55	Below normal
Dunedin <sup>f</sup>	5	8	Well below normal (lowest on record)
Sunshine			
Location	Sunshine (hours)		
Auckland <sup>a</sup>	153		
Tauranga <sup>b</sup>	170		
Hamilton <sup>g</sup>	153		
Wellington <sup>d</sup>	146		
Christchurch <sup>e</sup>	142		
Dunedin <sup>f</sup>	132		

<sup>a</sup> Mangere <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

### Temperatures

The highest temperature was 25.9°C, observed at Christchurch on 3 May.

The lowest temperature was -8.2°C, observed at Middlemarch on 31 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
<b>High records or near-records</b>				
Puysegur Point	20.9	1st	1978	Highest
Martinborough	22.7	3rd	1986	2nd-highest
Wairoa	25.4	1st	1964	2nd-highest
South West Cape	20.4	2nd	1991	2nd-highest
Clyde	23.6	2nd	1978	3rd-highest
Waipawa	23.5	2nd	1945	Equal 3rd-highest
Porirua	19.8	11th	1968	Equal 3rd-highest
Te Kuiti	22.8	2nd	1959	4th-highest
Cheviot	24.7	3rd	1982	4th-highest
Mt Cook (Airport)	20.2	1st	1929	Equal 4th-highest
<b>Low records or near-records</b>				
None observed				

#### 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
<b>High records or near-records</b>				
Puysegur Point	16.7	2nd	1978	Highest
South West Cape	14.7	2nd	1991	Highest
Kaitaia	18.9	3rd	1948	2nd-highest
Akaroa	15.2	3rd	1978	2nd-highest
Auckland (Western Springs)	17.3	3rd	1971	3rd-highest
Balclutha	10.9	8th	1972	3rd-highest
Martinborough	16.5	3rd	1986	Equal 3rd-highest
Farewell Spit	16.0	3rd	1972	Equal 3rd-highest
Wairoa	16.2	4th	1972	4th-highest
Cheviot	13.7	3rd	1982	4th-highest
Te Anau	11.9	2nd	1973	4th-highest
Queenstown	11.4	8th	1871	4th-highest
Roxburgh	12.5	2nd	1950	4th-highest
Mokohinau	18.1	4th	1994	Equal 4th-highest
<b>Low records or near-records</b>				
Turangi	-5.6	22nd	1968	Lowest

Ohakune	-6.7	22nd	1962	Lowest
Taumarunui	-4.9	23rd	1947	2nd-lowest
Takapau	-3.4	21st	1962	2nd-lowest
Waiouru	-6.9	13th	1962	3rd-lowest
Porirua	-0.2	20th	1968	4th-lowest
Te Kuiti	-2.5	23rd	1959	Equal 4th-lowest

### Rain and slips

The highest 1-day rainfall was 219 mm, recorded at Milford Sound on 21 May.

On 3 May, a front moving east over the country brought heavy rain and strong winds to many locations. There were reports of surface flooding across parts of Wellington City and about five properties across Island Bay and Karori had water pumped out. In Hillcrest, Hamilton, the left northbound lane was closed on SH1 between Howell Ave and Galloway St due to surface flooding. Further south, the lower Buller Gorge access to Westport along SH6 was closed as heavy rain overnight had caused flooding and slips, with the slips occurring at each end of the Lower Buller Gorge. Nearby, SH69 was also closed between Inangahua and Reefton due to flooding and slips.

On 5 May, a slip caused a temporary road closure on SH2 at Remutaka Hill, Wellington. Surface flooding also closed SH2 at Petone in Lower Hutt for much of the day.

On 7 May, in response to one of the most severe droughts in Auckland's history, Auckland Council's Emergency Committee voted to introduce mandatory 'Stage 1' water restrictions. These restrictions came into effect across the region from 16 May, prohibiting the use of outdoor hoses and water-blasters, as well as the watering of sports fields, plants and/or paddocks. Commercial car washes were allowed to operate using recyclable water.

On 31 May, heavy rain hit parts of the upper North Island. The Coromandel Peninsula was particularly hard hit and there were various slips and debris on the roads. Most notably, SH25 between Hikuai and Whitianga was closed overnight due to flooding but reopened later that morning. At least two vehicles were trapped in floodwaters. Tairua residents were asked to conserve water as the increased sediment load in the rivers resulted in lower volumes of treated water being produced at the treatment plant. A Coromandel farm park south of Whitianga was forced to close indefinitely due to flooding only one day after reopening their doors since the Covid-19 lockdown.

Also on 31 May, a slip overnight blocked Comers Rd in Coroglen near SH25. Further north, SH12 was closed west of Brynderwyn, due to a slip blocking the route to Dargaville.

### 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
Whitianga	163	30th	1961	Highest
Farewell Spit	105	24th	1882	3rd-highest
Reefton	73	2nd	1960	3rd-highest
Whangarei	107	31st	1943	4th-highest
Paraparaumu	56	3rd	1951	4th-highest
Milford Sound	219	21st	1929	4th-highest
Queenstown	49	21st	1890	Equal 4th-highest

## Wind

The highest wind gust was 158 km/h, observed at Secretary Island on 21 May.

On 3 May, strong winds battered much of the country. In South Taranaki, a roof was lifted off a cottage, trampolines were upended, and power lines were downed, causing outages to approximately 150 properties. In Wellington, a strong gust of wind lifted the roof from a house in Crofton Downs, and a tree fell onto Wilton Road. In Auckland, a tree fell into the roof of a home in Hillcrest, while in Paengaroa, Bay of Plenty, a tree came down onto an unoccupied car.

On 4 May, a tree came down on an unoccupied parked car in Rambler Drive, Whakatāne.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Hawera	111	3rd	1986	Highest
Reefton	61	2nd	1999	3rd-highest
Motu	87	4th	1991	Equal 3rd-highest
Secretary Island	128	2nd	1994	Equal 3rd-highest

## Snow and ice

On 31 May, heavy fog and thick ice contributed to two crashes on the north side of the turn-off to Aoraki/Mt Cook at the junction of SH8 and SH80.

## Cloud and fog

On 14 May, morning fog caused delays for the first wave of COVID-19 alert level 2 domestic flights in and out of Christchurch.

On 27 May, two missing trampers were found after surviving 19 days in Kahurangi National Park. The pair had set out on 9 May for a 6-7 day trip but were lost in fog early during their trip and were both injured in a fall.

On 30 May, several Queenstown flights were delayed by fog.

## Lightning and hail

On 5 May, approximately 140 lightning strikes were recorded over New Zealand in the two hours leading up to 10:45 am.

Also on 5 May, more than 400 homes in Hawera, Taranaki were without power after a suspected lightning strike damaged the electricity supply. In South Auckland, lightning reportedly took out a power pole, cutting power to part of Papakura.

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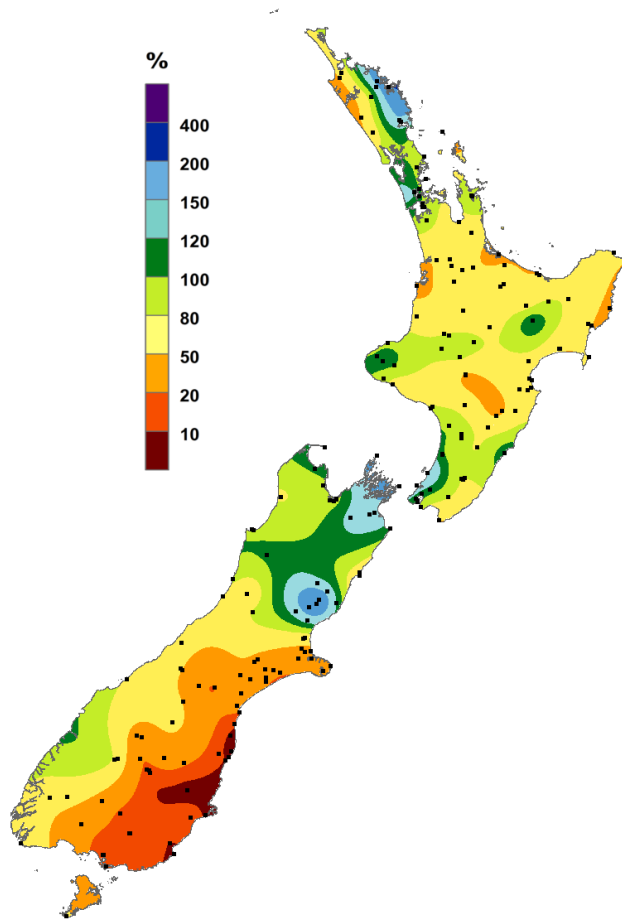


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May 2020 rainfall expressed as a percentage of normal (1981-2010 normal).

It was a dry month for parts of the North Island and for much of the middle and lower South Island.

Eastern parts of Otago and Southland received less than 20% of normal rainfall, as indicated by the dark orange and red colours on the map.

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

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