

## Wet and cool for inland parts of the South Island, variable elsewhere

<b>Rainfall</b>	Above normal (120% to 149% of normal) or well above normal (>149% of normal) rainfall for much of inland Otago, southern Westland, Canterbury, Marlborough Wellington, Wairarapa and Taranaki. Below normal (50% to 79% of normal) or well below normal (<50% of normal) rainfall for eastern Southland, north Otago, Nelson and Tasman, Hawke's Bay, eastern Waikato, western Bay of Plenty and Northland.
<b>Temperature</b>	Inland parts of Southland, Otago and Canterbury experienced below average (-0.51°C to -1.20°C of average) temperatures. In contrast, areas along the west coast of the South Island experienced above average (+0.51 to +1.20°C of average) temperatures. Temperatures were near average (-0.50 to +0.50°C of average) for the majority of the North Island.
<b>Soil Moisture</b>	By the end of April, soils were drier than normal for northern and central parts of the North Island. Soils were also drier than normal for southern parts of Marlborough, north Otago and southern Southland. Soil moisture levels were above normal for northern Fiordland, western Otago, eastern Marlborough, Wellington and northern Taranaki.

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### Overview

Overall, April 2019 was characterised by higher pressure than normal over the Tasman Sea and New Zealand. This resulted in more northerly winds than usual overall, however the prevailing area of high pressure over the Tasman Sea enabled several outbreaks of southerly airflow over New Zealand during the month. The lack of a consistent airflow anomaly during April resulted in a variety of rainfall and temperature patterns observed throughout the country. It was a wet and cool month for inland parts of the South Island, yet temperatures were mild for the time of year along the West Coast. For most of the North Island, temperatures were typical for April. It was a wet month for southern and western parts of the North Island, with most remaining areas of the island experiencing a drier April than usual.

There were relatively few significant weather events during the month, which is likely a result of the higher than normal air pressure observed over and to the west of New Zealand. The most notable event occurred towards the end of April, when a southerly blast brought areas of surface flooding and power outages to Christchurch and Banks Peninsula (refer to the [highlights and extreme events](#) section for further details).

The nationwide average temperature in April 2019 was 13.1°C (0.1°C below the 1981-2010 April average from NIWA's seven station temperature series which begins in 1909).

Further Highlights:

- The highest temperature was 28.1°C, observed at Akaroa on 1 April.
- The lowest temperature was -6.0°C, observed at Ranfurly on 7 April.
- The highest 1-day rainfall was 117 mm, recorded at Mt Cook Village on 10 April.
- The highest wind gust was 137 km/h, observed at Cape Turnagain on 12 April.
- Of the six main centres in April 2019, Auckland and Tauranga were the equal-warmest, Auckland was the sunniest, Christchurch was the driest and coolest, and Wellington was the wettest and least sunny.
- Of the available automatic sunshine observation sites, the sunniest four locations in 2019 so far (1 January – 30 April) are Wider Nelson (1079 hours), Bay of Plenty (1048 hours), Taranaki (1046 hours) and Marlborough (1044 hours).

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## Rainfall: Wet for some but dry for others

Rainfall anomalies were variable throughout New Zealand, with relatively few locations observing record or near-record monthly rainfall totals. Rainfall was above normal (120% to 149% of normal) for much of inland Otago and Dunedin, southern Westland, Canterbury, Wairarapa and Taranaki. Well above normal rainfall (>149% of normal) was recorded in parts of south Taranaki, Wellington, eastern Marlborough, coastal Canterbury south of Christchurch, and the Southern Lakes. In contrast, rainfall was below normal (50% to 79% of normal) for eastern Southland, north Otago, Nelson and Tasman, Hawke's Bay, eastern Waikato, western Bay of Plenty and Northland. Well below normal rainfall (<50% of normal) was observed small pockets about the Far North, Coromandel Peninsula and to the south of Nelson. April rainfall was near normal (80% to 119% of normal) for remaining parts of New Zealand.

By the end of April, soils were drier than normal for many northern and central parts of the North Island, especially about Northland, Waikato, western Bay of Plenty, inland Hawke's Bay and eastern Manawatu-Wanganui. Soils were also drier than normal for southern parts of Marlborough, north Otago and southern Southland. Soils were wetter than normal for northern Fiordland, western Otago about the Southern Lakes, eastern Marlborough, Wellington and northern Taranaki. Soil moisture levels were near normal for most remaining areas of the country.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Wellington (Kelburn)	247	290	1928	4th-highest
Hawera	198	238	1977	4th-highest
Cape Campbell	157	525	1873	4th-highest
Low records or near-records				
Kaitaia	24	19	1948	4th-lowest

### Temperature: Near average for many, cooler for inland parts of the South Island

The nationwide average temperature in April 2019 was 13.1°C (0.1°C below the 1981-2010 April average from NIWA's seven station temperature series which begins in 1909).

Overall, the majority of the country observed near average mean temperatures (-0.50 to +0.50°C of average). The notable exceptions were inland parts of the South Island from Southland through to Canterbury, where mean temperatures were below average (-0.50°C to -1.20°C of average). It was a mild month for western parts of the South Island, with above average (+0.51 to +1.20°C of average) mean temperatures observed there.

For the upper North Island, drier than normal soils were a likely factor in below average or well below average overnight minimum temperatures. The lack of moisture in the ground created ideal conditions for enhanced radiative cooling.

### Record or near-record mean air temperatures for April were recorded at:

Location	Mean air temp. (°C)	Departure from average (°C)	Year records began	Comments
High records or near-records				
None observed				
Low records or near-records				
Brothers Island	13.8	-0.7	1997	3rd-lowest
Waipara West	11.3	-1.6	1973	3rd-lowest
Porirua	13.2	-0.7	1968	4th-lowest

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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.

**Record or near-record mean maximum air temperatures for April 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	21.1	1.4	1959	3rd-highest
<b>Low records or near-records</b>				
Brothers Island	15.3	-1.1	1997	Lowest
Waipara West	16.4	-2.1	1973	2nd-lowest
Porirua	16.7	-1.0	1968	3rd-lowest
Cheviot	16.7	-1.5	1982	4th-lowest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
<b>High records or near-records</b>				
None observed				
<b>Low records or near-records</b>				
Whatawhata	6.6	-3.1	1952	2nd-lowest
Tara Hills	0.9	-2.3	1949	2nd-lowest
Warkworth	9.0	-1.9	1966	3rd-lowest
Whangarei	9.7	-2.5	1967	4th-lowest
Te Kuiti	6.8	-1.7	1959	4th-lowest
Turangi	4.9	-1.5	1968	4th-lowest
Manapouri (West Arm Jetty)	5.1	-0.5	1971	4th-lowest
Taumarunui	5.3	-1.9	1947	Equal 4th-lowest

## April climate in the six main centres

April temperatures were near average for all main centres. It was a very wet month in Wellington, which experienced 290% of normal April rainfall. Meanwhile, northernmost main centres enjoyed a relatively sunny month for the time of year. Particularly notable was Hamilton, which observed its highest April sunshine hour total since records began in 1936. In addition, Auckland observed its second-highest April sunshine hour total since records began in 1963. Of the six main centres in April 2019, Auckland and Tauranga were the equal-warmest, Auckland was the sunniest, Christchurch was the driest and coolest, and Wellington was the wettest and least sunny.

### April 2019 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from average (°C)	Comments
Auckland <sup>a</sup>	15.7	-0.5	Near average
Tauranga <sup>b</sup>	15.7	+0.1	Near average
Hamilton <sup>c</sup>	13.8	-0.4	Near average
Wellington <sup>d</sup>	13.2	-0.5	Near average
Christchurch <sup>e</sup>	11.6	-0.3	Near average
Dunedin <sup>f</sup>	12.0	+0.3	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	65	77	Below normal
Tauranga <sup>b</sup>	92	76	Below normal
Hamilton <sup>c</sup>	83	94	Near normal
Wellington <sup>d</sup>	247	290	Well above normal
Christchurch <sup>e</sup>	59	134	Above normal
Dunedin <sup>f</sup>	68	134	Above normal
Sunshine			
Location <sup>2</sup>	Sunshine (hours)		
Auckland <sup>a</sup>	212		
Tauranga <sup>b</sup>	206		
Hamilton <sup>g</sup>	208		
Wellington <sup>d</sup>	138		
Christchurch <sup>e</sup>	148		
Dunedin <sup>f</sup>	155		

<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

<sup>2</sup> Tauranga, Wellington and Christchurch record sunshine use Campbell-Stokes manual sunshine recorders, whereas Auckland, Hamilton and Dunedin record sunshine with high-precision electronic sensors.

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## Highlights and extreme events

### Rain and slips

On 6-7 April, heavy rain fell in the Wellington region, causing slips on the Wainuiomata Coast Rd and surface flooding in Eastbourne.

On 10 April, heavy rain caused the temporary closure of SH6 between Makarora and Haast due to a washout at Diana Falls. The heavy rainfall delayed efforts to repair the Waiho River bridge (near Franz Josef), which had been damaged by flooding in March.

On 29 April, heavy rain hit Christchurch and the Canterbury region. There were widespread reports of surface flooding in Christchurch city, with 27 streets affected. Heavy rain was thought to have triggered a slip on SH73 between Otira and Kumara Junction, forcing the temporary closure of one lane in the area.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Stratford	98	11th	1960	2nd-highest
New Plymouth	105	21st	1944	3rd-highest
Hawera	56	1st	1977	4th-highest

### Temperatures

A warm northerly airflow over the country saw a number of locations observe near-record high daily minimum temperatures on 1 April.

On the morning of 7 April, clear skies over inland parts of the South Island contributed to widespread frosty conditions. Ranfurly dropped to  $-6.0^{\circ}\text{C}$ ; New Zealand's lowest temperature for 2019 so far (excluding remote high elevation locations).

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

Location	Extreme maximum ( $^{\circ}\text{C}$ )	Date of extreme temperature	Year records began	Comments
High records or near-records				
Tiwai Point	23.4	9th	1970	Equal 3rd-highest
Puysegur Point	20.8	9th	1978	4th-highest
Whakatane	25.3	2nd	1975	Equal 4th-highest
Low records or near-records				
Whatawhata	8.5	22nd	1952	Lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
<b>High records or near-records</b>				
Cape Reinga	19.4	1st	1971	2nd-highest
Mokohinau	20.2	1st	1994	2nd-highest
Whangaparaoa	19.6	1st	1982	2nd-highest
Brothers Island	16.7	1st	1997	2nd-highest
Oamaru	14.1	1st	1972	2nd-highest
Nugget Point	14.4	1st	1972	2nd-highest
Auckland (Whenuapai)	19.6	1st	1951	Equal 2nd-highest
Whitianga	19.6	1st	1971	3rd-highest
Paeroa	19.5	1st	1971	3rd-highest
Te Anau	14.1	10th	1973	3rd-highest
Whangarei	19.9	1st	1967	Equal 3rd-highest
Rotorua	17.2	1st	1972	Equal 3rd-highest
Porirua	15.8	11th	1972	4th-highest
Auckland (Western Springs)	19.8	1st	1971	Equal 4th-highest
Port Taharoa	18.9	1st	1974	Equal 4th-highest
<b>Low records or near-records</b>				
Whangarei	3.9	14th	1967	Equal 2nd-lowest
Five Rivers	-4.0	6th	1982	4th-lowest
Porirua	1.7	19th	1968	Equal 4th-lowest

**Wind**

On 29 April, strong winds in eastern parts of Canterbury caused damage to the power network, especially about Banks Peninsula. Approximately 4000 homes were without power for a time. Farther north, a tornado was reported on Lower Weld Road, south of Oakura (Taranaki), causing considerable damage to farm property there.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Waiouru	102	1st	1970	2nd-highest
Brothers Island	139	29th	1997	2nd-highest
Te Puke	52	30th	1987	3rd-highest
Oamaru	85	29th	1984	3rd-highest
Clyde	67	27th	1983	Equal 4th-highest

**Lightning and hail**

On 7 April, more than 500 lightning strikes were recorded over the central North Island. Motorists were warned to be cautious of extremely slippery road conditions due to heavy hail between Turangi and Tokoroa, and Taupo and Rotorua.

On 8 April, approximately 1000 lightning strikes were recorded in the Bay of Plenty region.

### Cloud and fog

On 22 April, a waterspout was observed off the eastern coast of Auckland. Waterspouts are generated by atmospheric instability, and in this case the instability was caused by relatively warm ocean temperatures with much cooler air temperatures above.

On the evening of 24 April, fog affected flights at Auckland and Wellington airports.

### Snow and ice

On 7 April, Mt Taranaki reportedly received its first snowfall of the year.

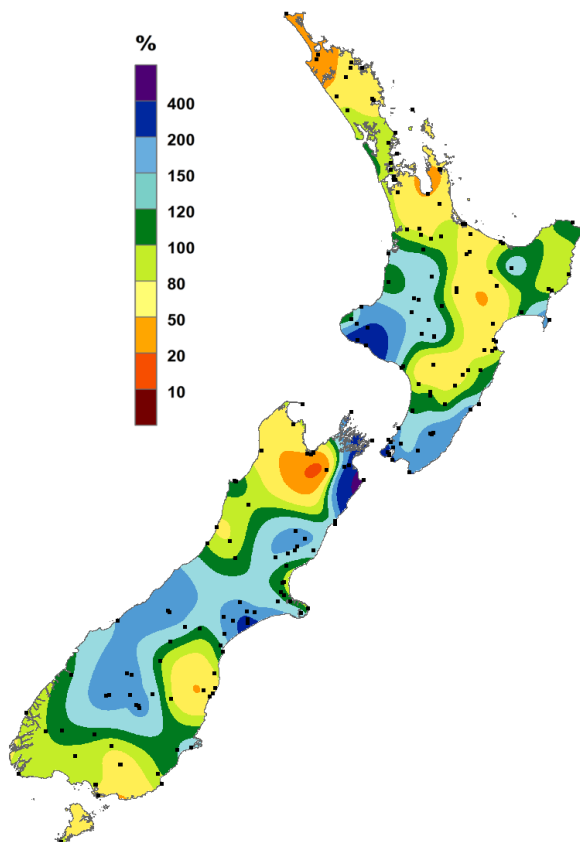
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*April 2019 rainfall expressed as percentage of the 30-year April average (1981-2010 average).*

*Southern and western parts of the North Island received higher than normal rainfall, as indicated by the blue shading. April was also wetter than normal for parts of Marlborough, Canterbury, West Coast and inland Otago.*

*It was a drier than normal month for parts of the southeastern and northwestern South Island, Hawke's Bay, Waikato and Northland, as indicated by the yellow and orange shades.*

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