

Warmest recorded November closes 12th warmest Spring

Temperature	Temperatures were near average (-0.50°C to +0.50°C of the spring average) for most of New Zealand, while areas in the eastern North Island and parts of Canterbury observed above average temperatures (+0.51°C to +1.20°C of the spring average). A small portion of coastal southern Canterbury recorded below average temperatures (-1.0°C to -0.5°C of the spring average).
Rainfall	Rainfall was near normal (80-119% of the spring normal) for the majority of the country. Areas of below normal rainfall (50-79% of the spring normal) were observed in parts of Bay of Plenty, Manawatu-Wanganui, Gisborne, Hawke's Bay, Wellington, coastal north Canterbury and interior south Canterbury. Areas of above normal rainfall (120-149% of the spring normal) were observed in parts of the Coromandel Peninsula, southern Hawke's Bay, Westland, central Canterbury, along with eastern Otago and Fiordland.
Soil moisture	At the end of spring 2019, soil moisture levels were below normal for much of the upper and eastern North Island, along with scattered portions of Tasman, Marlborough and Canterbury. Above normal soil moisture levels were observed in the lower west coast of the North Island, interior Gisborne, Banks Peninsula and in parts of Otago and Southland.

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Overview

Spring 2019 was characterised by lower than normal mean sea level pressure over, south and east of New Zealand. This pressure setup resulted in a southwest airflow anomaly across the country (i.e. more southwesterly winds than normal).

Variable temperatures started the spring season in September with warm subtropical winds mixed with chilly southerlies. The cool temperatures were influenced by a sudden stratospheric warming (SSW) event, which occurred in the polar stratosphere during late August and peaked in mid-September. Temperatures as a whole were near average for the time of year in September and continued on the near average note in October, before prevailing northwesterlies in November brought unseasonably warm temperatures and New Zealand's warmest November on record. In terms of rainfall, it was variable throughout the season as well, with rainfall below normal in the southern portion of both islands during September. Rainfall varied considerably based on geographic location in October, with eastern areas generally experiencing wetter conditions while western areas

tended drier. Rainfall patterns were contrasting during November, owing to a northwesterly air flow anomaly. Below to well below normal rainfall occurred in the North Island during the month, while the western South Island experienced above or well above normal rainfall, leading to a marked increase in hydro lake storage levels.

The main climate influencers during spring 2019 were the SSW event in September and a strongly positive Indian Ocean Dipole (IOD) event in October and November. The IOD's hallmark is cooler than average sea surface temperatures in the eastern Indian Ocean near Indonesia and warmer than average sea surface temperatures in the Arabian Sea. This particular IOD event was of near-record strength and caused abnormally dry conditions across Indonesia and Australia over the past several months. For New Zealand, it brought more westerly quarter winds than normal during spring, from cooler, drier southwesterlies in October to warm, moist northwesterlies in November.

For the season as a whole, spring had near average temperatures across the country. The nationwide average temperature for spring 2019 was 12.5°C (0.4°C warmer than the 1981-2010 spring average, using NIWA's seven-station temperature series which begins in 1909). This makes the spring 2019 the 12th-warmest spring on record.

Further Highlights:

- The highest temperature was 34.6°C, observed at Kawerau on 3rd November, which is also New Zealand's third-highest spring temperature on record.
- The lowest temperature was -8.0°C, observed at Middlemarch on 10 September.
- The highest 1-day rainfall was 226 mm, recorded at Rings Beach in the Coromandel Peninsula on 9 September.
- The highest wind gust was 191 km/hr, observed at South West Cape on 22 November.
- Of the six main centres, Auckland and Tauranga were the warmest, Dunedin was the coolest, Wellington was the wettest, Christchurch was the driest, Tauranga was the sunniest while Hamilton was the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four regions in 2019 so far are Wider Nelson (2582 hours), Marlborough (2527 hours), Hawke's Bay (2466 hours), and Bay of Plenty (2412 hours).

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Temperature: Warmest November on record ended a near average Spring

Mean temperatures for New Zealand were near average during September and October, followed by the warmest November to conclude spring. For the season as a whole, temperatures were near average for most of New Zealand, while areas in the eastern North Island and parts of Canterbury observed above average temperatures. A small area of coastal southern Canterbury observed below average temperatures.

Several locations experienced record or near-record high mean maximum temperatures. Notably, Hanmer Forest had its warmest spring on record in term of mean maximum temperatures, with records going all the way back to 1906.

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Le Bons Bay	11.5	0.9	1984	Highest
Wairoa (North Clyde)	15.6	1.8	1964	2nd-highest
Farewell Spit	14.4	1.2	1971	2nd-highest
Kaikoura	12.8	1.0	1963	3rd-highest
Low records or near-records				
None observed				

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Farewell Spit	18.4	1.6	1971	Highest
Hanmer Forest	19.5	2.6	1906	Highest
Ohakune	16.6	2.1	1962	Highest
Rotorua	18.1	1.9	1964	Highest
Taupo	18.5	2.5	1949	Highest
Te Kuiti	19.9	1.8	1959	Highest
Whangarei	20.5	1.5	1967	Highest
Whitianga	20.4	2.0	1962	Highest
Waipawa	19.5	1.9	1945	2nd-highest
Wairoa (North Clyde)	21.5	2.6	1964	2nd-highest
Whangaparaoa	18.8	0.9	1982	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.

Gisborne	21.0	2.0	1905	3rd-highest
Hamilton	19.0	1.0	1946	3rd-highest
Kaikoura	16.6	1.3	1963	3rd-highest
Le Bons Bay	14.9	1.0	1984	3rd-highest
Tauranga (Airport)	19.5	1.2	1913	3rd-highest
Te Puke	19.2	0.9	1973	3rd-highest
Waiau	19.0	1.4	1974	3rd-highest
Hastings	20.5	2.4	1965	4th-highest
Kaikohe	18.2	1.1	1973	4th-highest
Kerikeri	20.2	1.1	1945	4th-highest
Lower Retaruke	18.1	0.9	1966	4th-highest
Mahia	17.2	0.7	1990	4th-highest
Ngawi	17.7	0.7	1972	4th-highest
Turangi	17.3	1.0	1968	4th-highest
Upper Hutt (Trentham)	17.3	1.1	1939	4th-highest
Low records or near-records				
None observed				

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Medbury	6.1	0.9	1927	4th-highest
Le Bons Bay	8.0	0.9	1984	4th-highest
Low records or near-records				
None observed				

Rainfall: Variability month to month – near normal as a whole

Spring started on a dry note for many with rainfall below normal (50-79% of normal) or well below normal (<50% of normal) in the southern portion of both islands during September. Rainfall varied considerably based on geographic location in October, with eastern areas generally experiencing wetter conditions while western areas tended drier. Mixed rainfall patterns ended the spring, with below to well below normal rainfall in the majority of the North Island and above normal rainfall (120-149% of normal) in the western and lower South Island.

When looking at the rainfall pattern for spring as a whole, rainfall was near normal (80-119% of the spring normal) for the majority of the country. Areas of below normal rainfall were found in parts of Bay of Plenty, Manawatu-Wanganui, Gisborne, Hawke’s Bay, Wellington, coastal north Canterbury and interior south Canterbury. Above normal rainfall was observed in parts of the Coromandel Peninsula, southern Hawke’s Bay, Westland, central Canterbury, along with eastern Otago and Fiordland. Of note, Manapouri experienced its 2nd-wettest spring on record, with records dating back to 1971. There were also several 1-day rainfall records observed during spring (see [Highlights and extreme events](#) section for further details).

At the end of spring 2019, soil moisture levels were below normal for much of the upper and eastern North Island, along with portions of Tasman, Marlborough and Canterbury. Above normal soil moisture levels were observed in the lower west coast of the North Island, interior Gisborne, Banks Peninsula and in parts of Otago and Southland.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Manapouri, West Arm Jetty	1547	151	1971	2nd-highest
Low records or near-records				
None observed				

Spring climate in the six main centres

Temperatures were near average or above average for all main centres. Dunedin observed above normal rainfall while the remaining main centres saw near normal rainfall. Of the six main centres, Auckland and Tauranga were the warmest, Dunedin was the coldest, Wellington was the wettest, Christchurch was the driest, Tauranga was the sunniest while Hamilton was the least sunny.

Spring 2019 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	15.1	+0.5	Near average
Tauranga ^b	15.1	+0.9	Above average
Hamilton ^c	13.7	+0.7	Above average
Wellington ^d	13.3	+0.3	Near average
Christchurch ^e	11.9	+0.4	Near average
Dunedin ^f	11.3	+0.4	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	255	98%	Near normal
Tauranga ^b	226	91%	Near normal
Hamilton ^c	275	103%	Near normal
Wellington ^d	305	97%	Near normal
Christchurch ^e	161	119%	Near normal
Dunedin ^f	212	128%	Above normal
Sunshine			
Location	Sunshine (hours)		
Auckland ^a	633		
Tauranga ^b	667		
Hamilton ^g	539		
Wellington ^d	567		
Christchurch ^e	607		
Dunedin ^f	599		

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

Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred during spring 2019. Note that a more detailed list of significant weather events for spring 2019 can be found in the *Highlights and extreme events* section of NIWA's monthly Climate Summaries. These monthly summaries are available online, and may be viewed at the following website: <https://www.niwa.co.nz/climate/monthly>

Rain and slips

On 3 September, heavy rain caused motorway flooding in Auckland. Surface water blocked the right lane on the northern motorway just past the upper harbour highway on-ramp.

On 4 September, a slip in the Whangapoua Hill area, east of Coromandel town, partially blocked lanes of SH 25.

On 10 September, heavy rain in the Coromandel Peninsula caused closures for sections of SH 25 from Coromandel to Whitianga, Tairua to Whitianga and Tairua to Hikuai. Kuaotunu bore the brunt of the storm's damage and a large slip just south of Cemetery Rd in Kuaotunu caused a road closure until 12 September. Several local roads in Kuaotunu were also affected by flooding and slips, while garages, backyards and paddocks were fully submerged. Several people in Kuaotunu were displaced by flooding with some on standby to be evacuated. A small flock of sheep drowned in their paddock and a resident found his missing herd of cows on the beach (where they had been washed out).

On 30 September, SH 6 between Ross and Franz Josef was closed due to flooding.

On 2 October, a detour was in place at Omoto as heavy rain caused a slip between Greymouth and Stillwater.

On 14 October, slips caused by heavy rain closed SH 5 between Napier and Taupo, SH 7 between Greymouth and Reefton, SH 25 near Thames, and SH 25A between Kopu and Hikuai.

On 14 October in Coromandel, rising waters in the Kauaeranga River forced 40 freedom campers to move from their camping spot.

On 16 October, the Napier Council requested that residents minimise water usage to prevent an emergency discharge from the wastewater network into the Ahuriri estuary due to heavy rainfall in the preceding days.

On 11 November a large slip closed SH6 between Korere and Glenhope, north of Murchison. Heavy rain fell in Wellington, causing a slip on SH2 at Horokiwi.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Rings Beach	226	Sep-09th	1986	Highest
Coroglen (Coromandel)	221	Sep-09th	1988	Highest
Whangapoua	127	Sep-09th	1991	2nd-highest
Whitianga (Airport)	128	Sep-09th	1961	2nd-highest
Wellington (Airport)	77	Nov-10th	1958	2nd-highest
Nithdale	50	Sep-16th	1946	2nd-highest
Paeroa	148	Oct-14th	1914	Equal 2nd-highest
Karangahake Gorge	99	Oct-14th	1981	3rd-highest
Te Puia Springs	154	Sep-04th	1946	3rd-highest
Maud Island	113	Oct-18th	1997	4th-highest
Boyle River Lodge	113	Oct-05th	1984	4th-highest

Temperatures

The first week of November saw unusually high temperatures nationwide. The heat was associated with a northwesterly airflow delivering warm and dry air from interior Australia. Several locations observed record or near-record high daily maximum temperatures for spring during this time. Most notable was Kawerau (Bay of Plenty), which recorded a maximum temperature of 34.6°C on 3 November. This was New Zealand's third-highest spring temperature on record.

The lowest temperature during spring was -8.0°C, observed at Middlemarch on 10 September.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Kawerau	34.6	Nov -03rd	1954	Highest
Balclutha (Telford)	28.6	Nov-02nd	1964	Highest
Cheviot	33.1	Nov-03rd	1982	Highest
Clyde	32.5	Nov-02nd	1978	Highest
Hanmer Forest	32.5	Nov-28th	1906	Highest
Kaikohe	28.4	Nov-04th	1973	Highest
Kaitaia (Airport)	26.4	Nov-04th	1948	Highest
Kerikeri (Airport)	29.4	Nov-04th	1945	Highest
Lower Retaruke	29.5	Nov-23rd	1966	Highest
Lumsden	27.5	Nov-02nd	1982	Highest
Mokohinau	23.6	Nov-05th	1994	Highest
Ohakune	27.8	Nov-03rd	1962	Highest
Rangiora	31.7	Nov-28th	1965	Highest

Rotorua	30.9	Nov-23rd	1964	Highest
Taupo	32.8	Nov-23rd	1949	Highest
Tauranga (Airport)	29.2	Nov-03rd	1913	Highest
Te Kuiti	29.2	Nov-25th	1959	Highest
Te Puke	31.5	Nov-03rd	1973	Highest
West Waipara	32.1	Nov-03rd	1973	Highest
Whangarei	29.4	Nov-05th	1967	Highest
Whitianga	30.9	Nov-04th	1962	Highest
Hamilton	28.3	Nov-07th	1946	Equal highest
Le Bons Bay	26.9	Nov-03rd	1984	Equal highest
Wairoa (North Clyde)	34.1	Nov-27th	1964	Equal highest
Akaroa	31.1	Nov-03rd	1978	2nd-highest
Castlepoint	27.6	Nov-03rd	1972	2nd-highest
Dargaville	26.2	Nov-07th	1943	2nd-highest
Farewell Spit	26.2	Nov-03rd	1971	2nd-highest
Five Rivers	27.4	Nov-02nd	1982	2nd-highest
Gisborne	32.6	Nov-05th	1905	2nd-highest
Hastings	32.1	Nov-05th	1965	2nd-highest
Martinborough	28.4	Nov-03rd	1986	2nd-highest
Motu	28.1	Nov-04th	1990	2nd-highest
Nugget Point	26.9	Nov-03rd	1970	2nd-highest
Oamaru	31.1	Nov-02nd	1967	2nd-highest
Orari Estate	32.3	Nov-02nd	1972	2nd-highest
Paeroa	27.4	Nov-04th	1947	2nd-highest
Turangi	28.7	Nov-03rd	1968	2nd-highest
Waiau	31.6	Nov-03rd	1974	2nd-highest
Waiouru	25.4	Nov-23rd	1962	2nd-highest
Whakatane (Airport)	31.9	Nov-04th	1975	2nd-highest
Whangaparaoa	24.9	Nov-05th	1982	2nd-highest
Lake Tekapo	28.1	Nov-04th	1925	Equal 2nd-highest
Mt Cook (Airport)	28.5	Nov-02nd	1929	Equal 2nd-highest
Ranfurly	29.0	Nov-02nd	1897	Equal 2nd-highest
Cape Reinga	23.8	Nov-04th	1951	3rd-highest
Cromwell	31.2	Nov-02nd	1949	3rd-highest
Motueka (Riwaka)	28.7	Nov-22nd	1956	3rd-highest
Napier (Airport)	31.7	Nov-05th	1868	3rd-highest
Upper Hutt (Trentham)	26.4	Nov-03rd	1939	3rd-highest
Warkworth	26.8	Nov-05th	1966	3rd-highest
Auckland (Whenuapai)	25.8	Nov-05th	1945	Equal 3rd-highest
Alexandra	31.8	Nov-02nd	1928	4th-highest
Christchurch (Airport)	31.4	Nov-03rd	1863	4th-highest
Lincoln (Broadfield)	31.5	Nov-03rd	1881	4th-highest
Medbury	30.8	Nov-03rd	1927	4th-highest
Palmerston North	26.7	Nov-23rd	1918	4th-highest
Taumarunui	29.7	Nov-23rd	1947	4th-highest
Te Anau	25.9	Nov-02nd	1963	4th-highest
Wanganui (Spriggens Park)	26.9	Nov-08th	1937	4th-highest
Pukekohe	25.8	Nov-07th	1969	Equal 4th-highest

Low records or near-records

None observed

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
Low records or near-records				
Timaru (Airport)	-5.3	Sep-10th	1885	Lowest
Puysegur Point	1.6	Sep-09th	1978	2nd-lowest
Manapouri (Airport)	-5.7	Sep-09th	1963	Equal 2nd-lowest
Orari Estate	-3.4	Sep-10th	1972	Equal 2nd-lowest
Balclutha (Telford)	-3.7	Sep-10th	1964	3rd-lowest
Clyde	-5.9	Sep-10th	1978	3rd-lowest
Five Rivers	-4.5	Sep-10th	1982	3rd-lowest
Lumsden	-4.5	Sep-09th	1982	3rd-lowest
Upper Hutt (Trentham)	-4.4	Sep-11th	1939	3rd-lowest
Mt Cook (Airport)	-7.2	Sep-10th	1929	Equal 3rd-lowest
Alexandra	-5.2	Sep-10th	1992	4th-lowest
Tautuku	-1.5	Sep-14th	1976	4th-lowest
Christchurch (Airport)	-4.2	Sep-08th	1863	Equal 4th-lowest
High records or near-records				
Akaroa	20.5	Nov-28th	1978	Highest
Dunedin (Airport)	18.3	Nov-27th	1972	Highest
Ngawi	19.1	Nov-23rd	1972	Highest
Porirua (Elsdon Park)	16.1	Nov-10th	1972	Highest
Motueka (Riwaka)	16.7	Nov-08th	1972	Equal highest
Arapito	16.2	Nov-08th	1978	2nd-highest
Ashburton (Airport)	18.8	Nov-28th	1928	2nd-highest
Cheviot	18.2	Nov-09th	1982	2nd-highest
Kaikoura	17.7	Nov-28th	1972	2nd-highest
Le Bons Bay	17.9	Nov-28th	1984	2nd-highest
Martinborough	17.8	Nov-09th	1986	2nd-highest
Ranfurlly	15.8	Nov-27th	1897	2nd-highest
Upper Hutt (Trentham)	17.3	Nov-10th	1972	2nd-highest
Secretary Island	14.6	Nov-28th	1988	Equal 2nd-highest
Milford Sound	15.4	Nov-28th	1935	3rd-highest
Mokohinau	17.6	Nov-29th	1994	3rd-highest
Port Taharoa	17.6	Nov-10th	1974	3rd-highest
Puysegur Point	15.0	Nov-27th	1978	3rd-highest
Queenstown	15.4	Nov-28th	1871	3rd-highest
Waipara West	19.6	Nov-10th	1973	3rd-highest
Nugget Point	13.2	Nov-04th	1972	Equal 3rd-highest
Whakatane (Airport)	17.5	Nov-09th	1975	Equal 3rd-highest
Farewell Spit	15.2	Nov-08th	1972	4th-highest
Hawera	16.5	Nov-10th	1977	4th-highest

Manapouri (Airport)	13.9	Nov-28th	1973	4th-highest
Paeroa	17.9	Nov-10th	1971	4th-highest
Paraparaumu (Airport)	17.0	Nov-10th	1972	4th-highest
Reefton	15.1	Nov-09th	1972	4th-highest
Te Anau	13.8	Nov-05th	1973	4th-highest
Wanaka	15.3	Nov-24th	1972	4th-highest
Whangarei	18.6	Nov-18th	1967	4th-highest

Wind

On the night of 3-4 September, strong winds hit Auckland. In West Auckland, trees blocked the road at the intersection of Scenic Drive and Mountain Rd. Fire and Emergency NZ crews also responded to reports of power lines arcing onto SH 16.

On 7 September, residents of three beachfront households at Wainui Beach, Gisborne, were evacuated after king tides coupled with large swells washed away gabion baskets and dunes in front of their properties. Some sections in the area were reportedly eroded by 4-5 m.

Between 25 and 26 September, wild weather caused trees to fall in Auckland, brought down power lines and sent a trampoline flying. Fire crews were reportedly called to eight weather-related incidents between Wellsford and Hamilton overnight as trees fell and powerlines were damaged.

On 14 October a 47-foot sloop sank about 37 km off Cape Brett as winds gusted to 40-50 knots and swells reached 6 metres. Two rescue helicopters winched four people out of the water, but one of the people later died.

On 14 October, almost 2000 homes and businesses were without power in the Coromandel Peninsula and Bay of Plenty where strong winds brought down trees and power lines. Additional downed trees and scattered power outages were reported in Northland and Auckland.

On 22 October, a large fire began in the roof of the under-construction New Zealand International Convention Centre in Auckland's CBD. Gusty winds continuing into the morning of the 23rd aided the spread of the fire and the loss of the Convention Centre's entire roof.

On 30 October, a southerly change moving up the South Island dislodged roofing tiles and solar panels and blew over a fence in Christchurch, as wind gusts approached 100 km/h. Fire and Emergency NZ also needed to clear multiple roads and remove trees that had fallen on houses. Orion reported about 1,300 customers without power in the Christchurch area.

On 18 November, a tornado struck parts of Christchurch. Damage was reported from Sydenham to New Brighton, including roofing material being torn off buildings and severed vegetation. The storm briefly cut power to 1000 homes. As the severe thunderstorm moved offshore, waterspouts were reported over the ocean.

Record or near record spring extreme wind gusts were recorded at:

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
South West Cape	191	Nov-22nd	1991	Highest
Whitianga	87	Sep-26th	1991	2nd-highest
Waiouru	120	Nov-14th	1970	2nd-highest
Clyde	96	Nov-22nd	1983	2nd-highest
Cape Campbell	124	Oct-30th	1963	Equal 2nd-highest
Pukekohe	82	Oct-23rd	1986	3rd-highest
Mahia	104	Oct-02nd	1991	3rd-highest
Paeroa	95	Oct-15th	1991	4th-highest

Snow and ice

On 8 September, SH 1 Desert Road was briefly closed from Rangipo to Waiouru due to snow.

On 16 September, SH 94 Te Anau to Milford was closed due to snow.

On 25 September, SH 1 Desert Road was closed overnight due to snow. In addition, sections of SH 7 were closed between the Hanmer Turnoff to Springs Junction (Lewis Pass), and Springs Junction to Reefton (Rahu).

On 26 September, parts of the South Island, particularly around Queenstown, received a dusting of snow overnight with reports stating snow had fallen down to 100-200 m in some locations. Several road closures were in place including SH 87 Outram to Kyeburn and SH 94 Te Anau to Milford.

On 22 October, snowfall forced the closure of Milford Road and Haast Pass. SH 73 between Arthurs Pass and Otira and SH 6 between Haast and Makarora were also closed.

Lightning and hail

On 8 September, more than 800 lightning strikes had occurred over the upper North Island in the morning, with more than 10,000 offshore.

On 9 September, more than 800 lightning strikes were recorded across the upper North Island and offshore, with more than 300 occurring around Northland between 1 pm and 2 pm. During a similar period, lightning was averaging almost 7 strikes per minute in the Auckland region and offshore. Also on 9 September, a property in Whangarei was pelted with hailstones the size of golf balls which punctured holes in its clear plastic roofing.

On 26 September, hail pelted many parts of north Canterbury. Nets were ripped and plants damaged by falling hail at a plant nursery on the outskirts of Amberley.

On 1 October a severe thunderstorm brought significant hail (up to 3 centimetres deep) to the Napier-Hastings portion of Hawke's Bay, where there was concern that some of the early grape crops may have sustained damage. One orchard owner described the hailstorm as "the heaviest in 20 years".

On 23 October, convective showers produced small hail in several locations around Auckland. Hail was also reported in Wellington and Christchurch.

On 30 October, Fire and Emergency NZ announced that lightning may have been the cause of two scrub fires in Ohoka and Hororata in Canterbury.

Also on 30 October, a southerly change moving up the South Island brought heavy hail to Dunedin and Oamaru.

On 18 November, lightning and hail were reported in Christchurch. Lightning strikes were thought to have started four small fires in trees in Leeston, with another fire in the sand dunes at Waikuku Beach. Approximately 1100 lightning strikes were recorded over Christchurch city. Farther south, considerable falls of hail were reported about Waimate, with local strawberry growers reporting some damage to their crops.

On 20 November, significant hail struck Timaru about midday. The thunderstorm associated with the hail travelled slowly north along the Canterbury plains during the early-mid afternoon, with 1500 lightning strikes recorded.

Cloud and fog

On 14 September, a long white cloud from a frontal system blanketed northern parts of the South Island and central New Zealand stretching from northwest of Cape Reinga almost as far as the Chatham Islands.

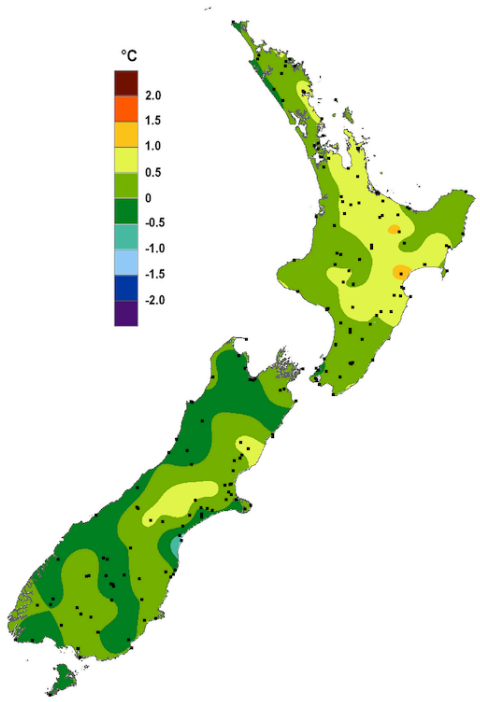
On 16 October a number of flights in and out of Napier were delayed due to low cloud, while a flight arriving from Auckland was diverted to Palmerston North.

For further information and climate data enquiries, please contact:

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Spring 2019 mean temperature, expressed as a departure from the 1981-2010 average (°C).

Spring 2019 was New Zealand's 12th-warmest spring on record. Mean temperatures were typically near average (-0.50°C to +0.50°C of the spring average) or above average (0.51-1.20°C above the spring average) throughout the country.

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

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