

New Zealand's second-warmest spring on record

Temperature	Spring 2021 was the second warmest spring on record in Aotearoa New Zealand. Temperatures were above average (+0.51°C to +1.20°C of average) across nearly all of the North Island and a majority of the South Island. Pockets of well above average temperatures (>1.20°C above average) were recorded in the Bay of Plenty. Near average temperatures ($\pm 0.50^\circ\text{C}$ of average) were recorded in northern Tasman, parts of Marlborough, much of coastal Canterbury, and parts of Otago.
Rainfall	Above normal rainfall (120-149% of normal) was observed in much of Northland, northern Auckland, Gisborne and northern Hawke's Bay, northern Tasman and interior Otago. Spring rainfall was below normal (50-79% of normal) in parts of Wellington-Wairarapa, eastern Marlborough, and coastal northern and central Canterbury. Near normal (80-119% of normal) rainfall was observed elsewhere.
Soil moisture	At the end of November, soil moisture levels were below normal across northern Waikato, Bay of Plenty, most of the Central Plateau, northern Manawatū-Whanganui, Wairarapa, Nelson, Marlborough, northern and central Canterbury, and the lower West Coast. Soil moisture levels were above normal in a portion of the Far North, coastal Gisborne, interior southern Canterbury, and interior Southland. Elsewhere, soil moisture levels were near normal.

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Overview

In typical spring fashion, the season as a whole featured variable weather patterns. Extended periods of settled weather were interrupted by active weather and extreme events. Developing La Niña conditions resulted in a transition from a westerly air flow, near average temperatures and widespread wet weather during September to more northerly and north-easterly winds during October and November, bringing frequent warm and humid weather and contributing to what was the country's 5th-warmest October and warmest November on record.

For spring as a whole, the nationwide average temperature was 13.1°C (1.0°C above the 1981-2010 average from NIWA's seven station temperature series which begins in 1909), making spring 2021 the second warmest spring on record. The warmest spring on record occurred in 1988. Many locations experienced record or near-record high mean temperatures for the season while no locations observed record or near-record low mean temperatures. The Southern Annular Mode (SAM) was predominantly positive during spring, which favoured higher than normal air pressure in the New Zealand region. In fact, the SAM was exclusively in its positive phase for the entirety of September and November. The warmth was also helped along by the aforementioned change to

more northerly quarter (sub-tropical) wind flows from October onwards, frequently bringing warm and humid weather. Moreover, warm coastal sea surface temperatures (particularly in November when marine heatwave conditions emerged) influenced temperatures on land. This is in addition to a generally warmer background state due to our warming climate.

Spring rainfall was below normal (50-79% of normal) in parts of Wellington-Wairarapa, eastern Marlborough, and coastal northern and central Canterbury while above normal rainfall (120-149% of normal) was observed in much of Northland, northern Auckland, Gisborne and northern Hawke's Bay, northern Tasman and interior Otago. There were several flood events during the season. Most notably between 3-5 November, a slow-moving subtropical low caused persistent heavy rainfall that affected the eastern North Island and brought flooding and slips to parts of Gisborne, resulting in a State of Emergency being declared. The region saw more rain over 3-days than what the average is for the entire spring. See the *Highlights and extreme events* section for more details.

Further highlights for spring 2021:

- The highest temperature was 31.7°C, observed at Hastings on 14 November.
- The lowest temperature was -6.3°C, observed at Middlemarch on 1 September.
- The highest 1-day rainfall was 178 mm, recorded at Tolaga Bay on 3 November.
- The highest wind gust was 222 km/h, observed at Cape Turnagain on 10 September.
- Of the six main centres in spring 2021, Auckland was the warmest, Christchurch was the coolest, driest and sunniest, Hamilton was the wettest and least sunny.

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Temperature: Widespread record and near-record warmth

The nationwide average temperature for spring 2021 was 13.1°C (1.0°C above the 1981-2010 average from NIWA's seven station temperature series which begins in 1909), making spring 2021 the second warmest spring on record.

Temperatures were above average (+0.51°C to +1.20°C of average) across nearly all of the North Island and a majority of the South Island. Pockets of well above average temperatures (>1.20°C above average) were recorded in the Bay of Plenty. Near average temperatures (±0.50°C of average) were recorded in northern Tasman, parts of Marlborough, much of coastal Canterbury, and parts of Otago.

There was a plethora of locations that experienced record or near-record warm temperatures for spring as a whole detailed in the table below. Notably, in Hamilton (Ruakura) the warmest spring on record was observed with records extending back to 1906. It was both warm day time maximum temperature and warm overnight minimum temperatures that contributed to the overall warmth. No locations experienced record or near-record low spring temperatures.

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				
Cape Reinga	15.4	0.8	1951	Highest
Kerikeri	15.6	1.3	1945	Highest
Whangārei	16.1	1.2	1967	Highest
Leigh	16.6	1.7	1966	Highest
Whangaparāoa	15.8	1.2	1982	Highest
Auckland (Whenuapai)	14.9	1.1	1945	Highest
Whitianga	15.4	1.5	1962	Highest
Te Puke	15.0	1.7	1973	Highest
Auckland (Pukekohe)	15.0	1.4	1969	Highest
Hamilton (Ruakura)	14.4	1.2	1906	Highest
Dannevirke	13.6	1.6	1951	Highest
Hāwera	12.9	1.1	1977	Highest
Windsor	11.4	1.0	2000	Highest
South West Cape	10.7	1.1	1991	Highest
Auckland (Western Springs)	15.6	1.2	1948	2nd-highest
Paeroa	15.0	1.0	1947	2nd-highest
Matamata	14.3	1.7	1999	2nd-highest
Tauranga	15.4	1.3	1913	2nd-highest
Rotorua	13.3	1.4	1964	2nd-highest
Taupō	13.3	2.2	1949	2nd-highest
Hamilton (Airport)	14.1	1.1	1946	2nd-highest
Ngawi	14.7	0.8	1972	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.

Levin	13.6	1.1	1895	2nd-highest
Ohakune	11.1	1.3	1962	2nd-highest
Middlemarch	11.2	0.9	2000	2nd-highest
Dunedin (Musselburgh)	12.1	1.1	1947	2nd-highest
Kaitaia	15.8	1.2	1948	3rd-highest
Kaikohe	14.7	1.1	1973	3rd-highest
Whakatāne	14.7	1.0	1974	3rd-highest
Auckland (Airport)	15.7	1.2	1959	3rd-highest
Mt Ruapehu (Chateau)	7.6	1.0	2000	3rd-highest
Paraparaumu	13.5	1.1	1953	3rd-highest
Reefton	12.6	1.3	1960	3rd-highest
Hanmer Forest	11.8	1.6	1906	3rd-highest
Dargaville	15.3	1.0	1943	4th-highest
Port Taharoa	15.1	0.9	1973	4th-highest
Taumarunui	13.6	1.2	1947	4th-highest
Lower Retaruke	13.1	1.1	1966	4th-highest
Martinborough	13.7	1.4	1986	4th-highest
Gisborne	15.4	1.6	1905	4th-highest
Wellington (Kelburn)	12.9	0.9	1928	4th-highest
Wellington (Airport)	13.9	0.9	1962	4th-highest
Upper Hutt	12.9	1.1	1939	4th-highest
Franz Josef	11.6	1.2	1953	4th-highest
Brothers Island	13.1	0.5	1997	4th-highest
Waiau	12.7	1.4	1974	4th-highest
Ranfurly	10.2	1.0	1897	4th-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				
Whangaparāoa	19.3	1.4	1982	Highest
Matamata	19.5	1.7	1999	Highest
Taupō	18.8	2.8	1949	Highest
Tūrangi	17.8	1.4	1968	Highest
Dannevirke	18.4	2.0	1951	Highest
Tākaka	19.3	1.6	1978	Highest
Farewell Spit	19.7	2.8	1971	Highest
South West Cape	13.5	1.1	1991	Highest
Te Puke	19.4	1.1	1973	2nd-highest
Rotorua	17.9	1.7	1964	2nd-highest
Stratford	16.5	1.3	1960	2nd-highest
Ohakune	16.5	2.1	1962	2nd-highest
Hanmer Forest	19.3	2.4	1906	2nd-highest
Whitianga	20.2	1.7	1962	3rd-highest

Auckland (Airport)	19.2	1.3	1959	3rd-highest
Hamilton (Airport)	19.0	1.0	1946	3rd-highest
Te Kuiti	19.3	1.2	1959	3rd-highest
Waipawa	19.4	1.8	1945	3rd-highest
Kaikohe	18.2	1.1	1973	4th-highest
Whangārei	20.2	1.2	1967	4th-highest
Auckland (Whenuapai)	18.9	1.0	1945	4th-highest
New Plymouth	17.4	1.2	1944	4th-highest
Lower Retaruke	18.2	0.9	1966	4th-highest
Hāwera	16.6	1.2	1977	4th-highest
Arapito	17.3	1.0	1978	4th-highest
Ranfurlly	16.7	1.2	1897	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				
Cape Reinga	12.8	1.0	1951	Highest
Kaitaia	12.5	1.7	1948	Highest
Kerikeri	11.3	1.6	1945	Highest
Whangārei	12.2	1.4	1967	Highest
Mokohinau	13.9	0.9	1994	Highest
Auckland (Western Springs)	11.5	1.0	1948	Highest
Te Puke	10.6	2.2	1973	Highest
Culverden	7.0	2.0	1928	Highest
South West Cape	8.0	1.0	1991	Highest
Whitianga	11.0	1.5	1962	2nd-highest
Whakatāne	10.3	1.4	1974	2nd-highest
Ngawi	11.6	0.9	1972	2nd-highest
Hicks Bay	12.0	1.2	1969	2nd-highest
Wellington (Kelburn)	10.1	1.1	1928	2nd-highest
Wellington (Airport)	11.1	1.1	1962	2nd-highest
Hāwera	9.3	1.1	1977	2nd-highest
Brothers Island	11.2	0.6	1997	2nd-highest
Middlemarch	4.6	0.7	2000	2nd-highest
Dunedin (Musselburgh)	8.3	1.1	1947	2nd-highest
Kaikohe	11.3	1.2	1973	3rd-highest
Tauranga	11.6	1.6	1913	3rd-highest
Pukekohe	10.9	1.4	1969	3rd-highest
Port Taharoa	12.1	1.4	1973	3rd-highest
Mt Ruapehu (Chateau)	3.0	1.0	2000	3rd-highest
Martinborough	9.1	1.8	1986	3rd-highest
Mahia	11.0	0.9	1990	3rd-highest

Secretary Island	9.0	1.0	1985	3rd-highest
Waiau	6.9	1.9	1974	3rd-highest
Lincoln	7.7	1.4	1881	3rd-highest
Gore	6.3	0.9	1907	3rd-highest
Taupō	7.8	1.5	1949	4th-highest
Gisborne	10.4	1.9	1905	4th-highest
Westport	9.6	1.2	1937	4th-highest
Cape Campbell	10.7	0.9	1953	4th-highest
Cheviot	6.5	1.0	1982	4th-highest
Windsor	5.7	1.0	2000	4th-highest
Haast	7.7	1.0	1949	Equal 4th-highest
Low records or near-records				
None observed				

Rainfall: Periods of extended dryness interspersed with extreme rainfall events

Spring rainfall was below normal (50-79% of normal) in parts of Wellington-Wairarapa, eastern Marlborough, and coastal northern and central Canterbury. In Akaroa, 60% of normal spring rainfall fell making it the 4th-driest spring there since records began in 1977. At the end of the season, NIWA's [New Zealand Drought Index](#) was indicating "very dry" conditions in coastal Wairarapa and "dry" conditions in mid-Canterbury, Banks Peninsula, and coastal eastern Marlborough.

Above normal rainfall (120-149% of normal) was observed in much of Northland, northern Auckland, Gisborne and northern Hawke's Bay, northern Tasman and interior Otago. It was the wettest spring on record in Kerikeri with records extending back to 1935. Gisborne experienced its 2nd-wettest spring on record with records beginning in 1905. More than half of the seasonal rainfall fell over just a few days at the start of November and led to a State of Emergency declaration - see the *Highlights and extreme events* section for more details.

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				
Kerikeri	713	177	1935	Highest
Gisborne	436	213	1905	2nd-highest
Lauder	170	173	1924	4th-highest
Low records or near-records				
Akaroa	132	60	1977	4th-lowest

Spring in the six main centres

Near-record high mean spring temperatures were observed in all main centres except Christchurch, where the mean temperature was near average. Tauranga and Hamilton received above normal spring rainfall while the remainder of the six main centres experienced near normal rainfall.

Of the six main centres in spring 2021, Auckland was the warmest, Christchurch was the coolest, driest and sunniest, Hamilton was the wettest and least sunny.

Spring 2021 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^h	15.7	+1.2	Above average (3 rd -highest on record)
Tauranga ^b	15.4	+1.3	Well above average (2 nd -highest on record)
Hamilton ^c	14.1	+1.1	Above average (2 nd -highest on record)
Wellington ^d	12.9	+0.9	Above average (4 th -highest on record)
Christchurch ^e	12.0	+0.5	Near average
Dunedin ^f	12.1	+1.1	Above average (2 nd -highest on record)
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	279	108	Near normal
Tauranga ^b	316	128	Above normal
Hamilton ^c	362	126	Above normal
Wellington ^d	268	85	Near normal
Christchurch ^e	131	96	Near normal
Dunedin ^f	141	85	Near normal
Sunshine			
Location ²	Sunshine (hours)		
Auckland ^a	562		
Tauranga ^b	537		
Hamilton ^g	484		
Wellington ^d	584		
Christchurch ^e	663		
Dunedin ^f	645		

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

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

Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred during spring 2021. Note that a more detailed list of significant weather events for spring 2021 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 [here](#).

Temperatures

The highest temperature was 31.7°C, observed at Hastings on 14 November.

The lowest temperature was -6.3°C, observed at Middlemarch on 1 September.

Despite spring 2021 being New Zealand's 2nd-warmest spring on record, only one record daily maximum temperature was observed during the season (at Mahia on the 14th November). This indicates that the record warmth was a product of a season that was consistently warm as opposed to having a spate of unusually hot days.

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				
Mahia	28.1	Nov-14th	1990	Highest
Waipawa	29.5	Nov-14th	1945	Equal highest
Auckland (Whangaparāoa)	25.4	Nov-29th	1982	2nd-highest
Whitianga	28.5	Nov-29th	1962	2nd-highest
Te Puke	27.9	Nov-29th	1973	2nd-highest
Dargaville	26.2	Nov-21st	1943	Equal 2nd-highest
Mokohinau	23.0	Nov-29th	1994	3rd-highest
Paeroa	27.3	Nov-29th	1947	3rd-highest
Dannevirke	27.6	Nov-13th	1951	3rd-highest
Windsor	29.0	Nov-12th	2000	3rd-highest
Leigh	26.5	Nov-11th	1966	Equal 3rd-highest
Tūrangi	27.6	Nov-29th	1968	Equal 3rd-highest
Hastings	31.7	Nov-14th	1965	Equal 3rd-highest
Whakatu	31.3	Nov-14th	1965	4th-highest
Reefton	28.0	Nov-29th	1960	4th-highest
Hanmer Forest	29.9	Nov-29th	1906	4th-highest
South West Cape	21.0	Nov-11th	1991	4th-highest
Low records or near-records				
Taihape	7.0	Sep-28th	1972	Equal 2nd-lowest
Porirua	9.9	Sep-16th	1972	4th-lowest

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				

Paraparaumu	-2.5	Sep-1st	1953	3rd-lowest
Whanganui	-0.2	Sep-1st	1937	4th-lowest
Puysegur Point	1.7	Oct-22nd	1978	4th-lowest
High records or near-records				
Cape Reinga	17.5	Nov-14th	1971	Highest
Kaitaia	19.8	Nov-14th	1948	Highest
Kaikohe	18.7	Nov-14th	1973	Highest
Dargaville	19.2	Nov-14th	1951	Highest
Whangārei	20.2	Nov-14th	1967	Highest
Mokohinau	18.0	Nov-29th	1994	Highest
Warkworth	18.7	Nov-14th	1966	Highest
Whangaparāoa	17.7	Nov-14th	1982	Highest
Auckland (Whenuapai)	19.1	Nov-14th	1951	Highest
Auckland (Western Springs)	19.2	Nov-14th	1971	Highest
Whitianga	19.0	Nov-14th	1971	Highest
Paeroa	19.1	Nov-14th	1971	Highest
Te Puke	18.0	Nov-14th	1973	Highest
Whakatāne	18.1	Nov-22nd	1975	Highest
Motu	15.8	Nov-14th	1990	Highest
Auckland (Māngere)	19.0	Nov-14th	1961	Highest
Hamilton (Airport)	18.2	Nov-14th	1946	Highest
Masterton	18.7	Nov-13th	1943	Highest
Dannevirke	19.0	Nov-14th	1951	Highest
Mahia	17.8	Nov-14th	1990	Highest
Porirua	16.3	Nov-13th	1972	Highest
Waiouru	14.8	Nov-14th	1972	Highest
Reefton	15.9	Nov-13th	1972	Highest
Kerikeri	19.4	Nov-14th	1952	Equal highest
Tauranga	18.4	Nov-14th	1941	Equal highest
Gisborne	20.1	Nov-14th	1940	Equal highest
South West Cape	13.0	Nov-9th	1991	Equal highest
Rotorua	16.8	Nov-14th	1972	2nd-highest
Pukekohe	18.4	Nov-14th	1969	2nd-highest
Port Taharoa	18.2	Nov-22nd	1974	2nd-highest
Te Kuiti	17.4	Nov-14th	1959	2nd-highest
Lower Retaruke	16.2	Nov-14th	1972	2nd-highest
Takapau Plains	17.3	Nov-14th	1972	2nd-highest
Palmerston North	17.0	Nov-13th	1940	2nd-highest
Whanganui	19.0	Nov-13th	1972	2nd-highest
Westport	17.0	Nov-30th	1966	2nd-highest
Arapito	16.3	Nov-30th	1978	2nd-highest
Franz Josef	14.0	Nov-12th	1953	2nd-highest
Brothers Island	15.0	Nov-27th	1997	2nd-highest
Whatawhata	17.8	Nov-14th	1952	Equal 2nd-highest
Mt Ruapehu (Chateau)	11.7	Nov-14th	2000	Equal 2nd-highest
Martinborough	17.8	Nov-13th	1986	Equal 2nd-highest
Wellington (Kelburn)	16.0	Nov-30th	1931	Equal 2nd-highest
Ohakune	14.7	Nov-14th	1972	Equal 2nd-highest

Leigh	18.1	Nov-22nd	1966	3rd-highest
Tūrangi	15.2	Nov-13th	1968	3rd-highest
Hicks Bay	17.2	Nov-13th	1972	3rd-highest
Upper Hutt	16.9	Nov-13th	1972	3rd-highest
Hāwera	17.0	Nov-13th	1977	3rd-highest
Motueka	16.5	Nov-13th	1972	Equal 3rd-highest
Matamata	18.0	Nov-14th	1999	4th-highest
Hamilton (Ruakura)	18.3	Nov-14th	1940	4th-highest
Nelson	17.4	Nov-30th	1862	4th-highest
Appleby	16.1	Nov-13th	1941	4th-highest

Rain and slips

The highest 1-day rainfall during spring 2021 was 178 mm, recorded at Tolaga Bay on 3 November.

A front brought areas of heavy rain to the western North Island on 13-14 September. Pockets of flooding was reported along the Kāpiti Coast and into Whanganui, including on areas of the State Highway 1 and State Highway 3.

On 7 October, heavy rainfall in eastern Northland led to a slip at Te Ngaere Bay which affected a property and it was deemed unsafe.

On 28 and 29 October, thunderstorms brought heavy downpours to the Bay of Plenty, Hawke's Bay and Marlborough. Reported damage was worst in Marlborough where many homes and businesses were flooded.

Between 3-5 November, a slow-moving subtropical low caused persistent heavy rainfall that affected the eastern North Island and brought flooding and slips to parts of Gisborne, resulting in a State of Emergency being declared. A search and rescue squad used boats to evacuate residents from flooded homes. Additional flooding occurred in the Gisborne suburb of Sponge Bay, where electricity was turned off as a precautionary measure. Flooding was also reported in Rototahi on 4 November. The heavy rain caused Gisborne District Council to open the emergency sewer valve at Wainui Rd into the Turanganui River to prevent sewage from overflowing back into homes and onto roads. By 4 November, Gisborne had received more than its normal November rainfall total in less than one day, and it was already the town's wettest month in 2021. In less than one day Gisborne also received more rainfall than it did during all of summer 2020-2021 (67 mm). By the end of the rain event, some locations in the Gisborne region had received well above 200 mm of rainfall.

Heavy rainfall from an atmospheric river affected the West Coast during 26-28 November. NZTA Waka Kotahi reported that there was substantial surface flooding on SH6, and parts of the road in southern Westland were shut for a time.

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
Kaeo	160	Oct-23rd	1981	Highest
Bulls	67	Sep-13th	1999	Highest
Palmerston North	69	Sep-13th	1928	Highest
Opiki	61	Sep-13th	1945	Highest

Greymouth	165	Nov-27th	1947	Highest
Edgecumbe	110	Oct-28th	1990	2nd-highest
Lichfield	66	Sep-22nd	1996	2nd-highest
Mahia	86	Nov-4th	1990	2nd-highest
Waituna	54	Sep-13th	1984	2nd-highest
Sanson	60	Sep-13th	1973	2nd-highest
Bainesse	61	Sep-13th	1974	2nd-highest
Whanganui	73	Sep-13th	1937	2nd-highest
Motueka	112	Sep-22nd	1956	2nd-highest
Stewart Island	54	Sep-9th	1975	2nd-highest
Balclutha	56	Sep-12th	1949	2nd-highest
Putara	145	Sep-13th	1917	Equal 3rd-highest
Kerikeri	137	Oct-23rd	1945	3rd-highest
Awakeri	126	Oct-28th	1962	3rd-highest
Makairo	64	Sep-13th	1968	3rd-highest
Waiheke Island (Awaroa)	59	Sep-22nd	1980	4th-highest
Whakatāne	112	Oct-28th	1952	4th-highest
Lauder Flat	45	Oct-10th	1945	4th-highest

Wind

The highest wind gust was 222 km/h, observed at Cape Turnagain on 10 September.

The first in a series of strong cold fronts hit the South Island on 10 September, causing widespread gusts over 100 km/h. The Canterbury and Otago regions were among the worst affected areas, as small buildings were damaged, roads were blocked by fallen trees, and almost 7000 homes were left without power. These winds also fanned several fires across the Canterbury and Otago regions. Three days later on 13 September, another powerful cold front hit the South Island. The winds caused several fires to start burning out of control in Canterbury and Otago as well as downed trees and localised power outages.

On 13 October, Cook Strait passenger ferry sailings were cancelled due to large swells and a southerly gale. The swells flooded parts of the road on Wellington's south coast and also threw up debris and damaged the recently resealed road. Some businesses on Port Road in the suburb of Seaview had to evacuate.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Mt Ruapehu (Chateau)	115	Nov-3rd	2000	Equal highest
Castlepoint	178	Sep-10th	1972	2nd-highest
Secretary Island	163	Oct-17th	1994	2nd-highest
Clyde	98	Sep-9th	1983	2nd-highest
Rotorua	93	Nov-3rd	1972	Equal 2nd-highest
Winchmore	117	Sep-13th	1970	Equal 2nd-highest
Middlemarch	120	Sep-12th	2000	3rd-highest
Oamaru	104	Sep-10th	1984	3rd-highest
Puysegur Point	152	Nov-19th	1986	Equal 3rd-highest

Tara Hills	100	Sep-9th	1985	Equal 3rd-highest
South West Cape	172	Sep-4th	1991	Equal 3rd-highest
Hanmer Forest	107	Sep-10th	1995	4th-highest
New Plymouth	109	Nov-3rd	1972	Equal 4th-highest
Lincoln	91	Sep-10th	1999	Equal 4th-highest

Snow and ice

On 26 September, a front brought late season heavy snow to the Southern Alps and parts of the North Island ranges. Snow made driving conditions hazardous in Arthur's Pass and Lindis Pass. Snow fell to around 500 metres above sea level in parts of the South Island, and about 900 metres above sea level in parts of the North Island.

On 12 October, snow fell as low as 400 metres above sea level across Southland, Otago and Canterbury. Waka Kotahi NZ Transport Agency advised of weather-related issues on several highways, including snow on SH85 Omakau-Kyeburn, SH8 (Lindis Pass) and SH94 (Milford Road). Approximately 20 cm of new snow was reported by ski fields around Queenstown and Wānaka.

Lightning, hail, and tornadoes

The front that brought powerful wind gusts to the South Island on 13 September also triggered several thunderstorms in the South Island. Lightning from these storms reportedly started a number of fires. Over 34,000 lightning strikes were observed over or near New Zealand during this period.

Unstable cold air due to a cold front brought pockets of hail showers to Wellington on 28 September. Hail stones were reportedly 1 cm in diameter.

Cloud and fog

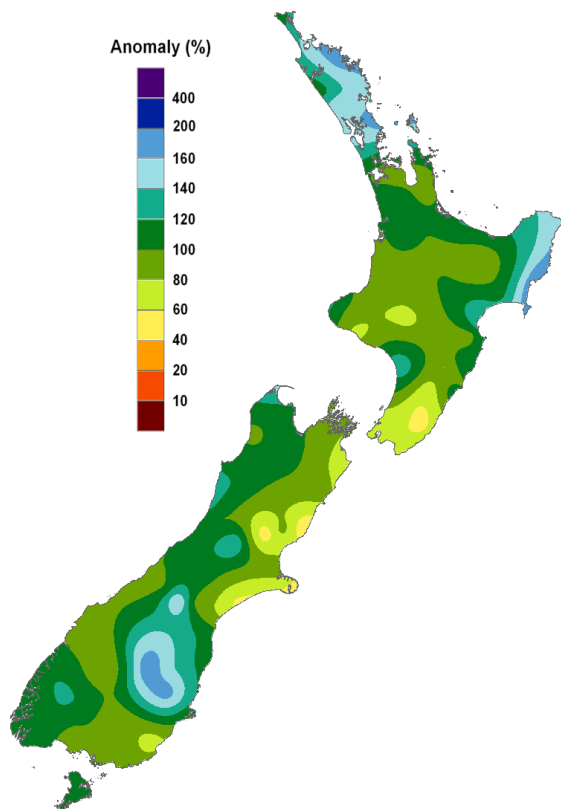
On 8 November, volcanic gases from Whakaari/White Island mixed with atmospheric moisture to create a rare phenomenon known as vog (volcanic fog). Light northerly winds brought the volcanic fog onshore in Bay of Plenty, resulting in complaints about the strong smell and watery eyes.

For further information please contact:

Nava Fedaeff

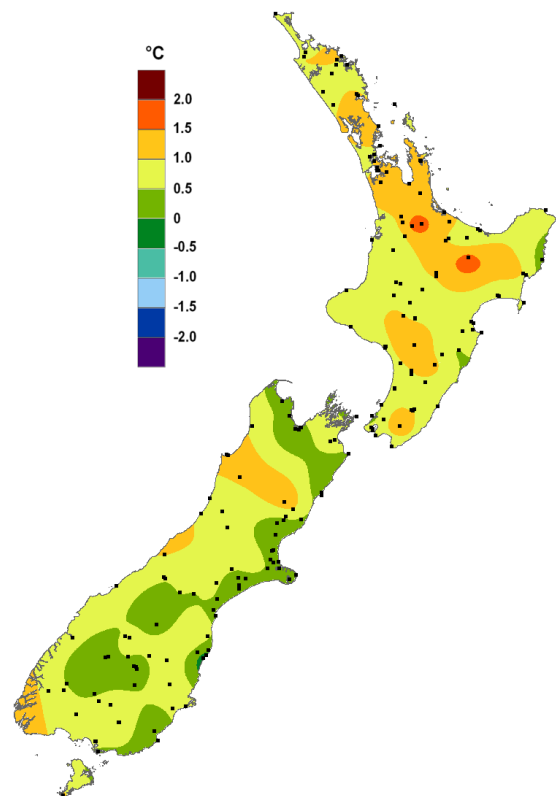
Forecaster

Tel. 09 375 6337



Spring rainfall

Expressed as a percentage of the 1981-2010 normal.



Spring temperature

Expressed as a departure from the 1981-2010 average in degrees Celsius.

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

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