

# Seasonal Climate Summary

National Climate Summary: **Spring 2012**

Issued: 4 December 2012

A sunny and cool spring for many regions. Rather dry for much of North Island and Marlborough.

<b>Sunshine</b>	Unusually sunny for most of the country between Waikato and south Canterbury. Records broken in Gisborne, New Plymouth and Paraparaumu.
<b>Temperature</b>	A cooler than usual spring for much of the country.
<b>Rainfall</b>	Extremely dry for many regions of the North Island, also Marlborough. In contrast, a wetter than usual spring across the southern half of the South Island.
<b>Soil moisture</b>	Unusually low soil moisture levels for the time of year across much of the North Island (except Gisborne and northern Hawkes Bay), as well as Nelson and Buller. Wetter than usual soils in south Canterbury. Close to normal soil moisture levels elsewhere.

Click on links to jump to the information you require:

[Overview](#)

[Sunshine](#)

[Temperature](#)

[Rainfall](#)

[Spring climate in the six main centres](#)

[Highlights and extreme events](#)

## Overview

Spring was characterised by much lower pressures than normal to the south and east of New Zealand, and higher pressures than normal over the Tasman Sea, which caused a predominantly southwest flow over the country for the season. This southwesterly airflow produced a somewhat cool spring for most of the country, with dry conditions across many North Island regions, as well as Marlborough and the Kaikoura Coast.

It was an unusually sunny spring for the regions between Waikato and south Canterbury. Many locations in the central and southern North Island, as well as the northern South Island, experienced record or near-record sunshine. Notably, Gisborne, New Plymouth, and Paraparaumu all experienced their sunniest spring on record. Northland, Auckland, and Otago experienced near normal sunshine hours. In contrast, Fiordland was cloudier than usual for spring.

The enhanced southwesterly winds produced a cooler than usual spring in many regions of the country. Well below average spring temperatures (between 0.5°C and 1.2°C below spring average) were observed across the Waikato, extending southwards to Mt. Ruapehu, as well as for coastal parts of southern Hawkes Bay and the Tararua District. Elsewhere across the country, spring temperatures were generally around 0.5°C below the seasonal average. The nation-wide average temperature in spring 2012 was 11.8°C (0.3°C below the 1971-2000 spring average), using NIWA's seven-station temperature series which begins in 1909.

It was an extremely dry spring for many North Island regions, as well as Marlborough and the Kaikoura Coast. Spring rainfall totals ranged between 50 percent (only half) and 60 percent of spring normal in southern Hawkes Bay, Wairarapa, Wellington, between Wanganui and the Kapiti Coast, as well as in the Bay of Plenty and Blenheim. It was the driest spring on record for Wanganui and at Wellington Airport. It was also rather dry (with between 60 and 80 percent of spring normal rainfall) across much of the remainder of the North Island (the exceptions being Northland, Taranaki, Waikato to the Central Plateau, as well as Gisborne, which experienced closer to normal spring rainfall), as well as in Nelson, Marlborough, the Kaikoura Coast and north Canterbury. In contrast, it was a wetter than usual spring across much of the southern half of the South Island, with above normal rainfall observed (exceeding 120 percent of spring normal).

At the end of spring, soils were unusually dry for the time of year across much of the North Island (except for Gisborne and northern Hawkes Bay), as well as Nelson and Buller. In contrast, soils remain wetter than usual for the time of year across much of south Canterbury. Elsewhere, levels were closer to normal.

Further Highlights:

- The highest temperature was 30.1°C, at Blenheim on 25 November.
- The lowest temperature was -8.3°C, at Lake Tekapo on 14 October.
- The highest 1-day rainfall experienced was 165 mm at Milford Sound on 14 September.
- The highest gust recorded was 185 km/hr at Cape Turnagain, on both 18 and 25 October.
- Of the six main centres in spring 2012, Auckland was the warmest, Hamilton the wettest, Tauranga was the sunniest (followed closely by Wellington), Christchurch the driest, and Dunedin the coolest and cloudiest.

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## Sunshine: Unusually sunny for most of the country between Waikato and south Canterbury. Records broken in Gisborne, New Plymouth and Paraparaumu.

It was an unusually sunny spring for the regions between Waikato and south Canterbury, with sunshine hours between 115 and 125 percent of normal for spring. Many locations in the central and southern North Island, as well as the northern South Island, experienced record or near-record spring sunshine. Notably, Gisborne, New Plymouth, and Paraparaumu all experienced their sunniest spring on record, in observations starting 1905, 1972, and 1953, respectively. Northland, Auckland, and Otago experienced near normal sunshine hours. In contrast, Fiordland was cloudier than usual for spring.

### Record or near-record spring sunshine hours were recorded at:

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Te Kuiti	564	129	1962	2nd-highest
Taumarunui	541	127	1947	2nd-highest
New Plymouth	673	120	1972	Highest
Gisborne	741	120	1905	Highest
Paraparaumu	665	125	1953	Highest
Wellington	643	114	1928	4th-highest
Takaka	694	102	1985	3rd-highest
Hokitika	596	121	1912	2nd-highest
Nelson	758	117	1948	2nd-highest
Appleby	740	106	1948	4th-highest
Cheviot	639	123	1983	2nd-highest

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## Temperature: A cooler than usual spring for many regions of the country.

The enhanced southwesterly winds produced a cooler than usual spring in many regions of the country. Well below average spring temperatures (between 0.5°C and 1.2°C below spring average) were observed across the Waikato, extending southwards to Mt. Ruapehu, as well as for coastal parts of southern Hawkes Bay and the Tararua District. Elsewhere across the country, spring temperatures were generally around 0.5°C below the seasonal average.

The nation-wide average temperature in spring 2012 was 11.8°C (0.3°C below the 1971-2000 spring average), using NIWA's seven-station temperature series which begins in 1909<sup>1</sup>.

Notably, an unusually cold southerly air stream for the time of year affected New Zealand between 11 and 13 September, with record or near-record low spring temperatures observed at many locations during this time (see later in the report for details).

### Near-record<sup>2</sup> mean air temperatures for spring were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C) <sup>3</sup>	Year records began	Comments
Low records or near-records				
Hamilton, Ruakura	11.6	-1.6	1906	3rd-lowest
Te Kuiti	11.9	-1.2	1959	3rd-lowest
Taumarunui	11.3	-1.1	1947	4th-lowest
Turangi	10.5	-0.8	1968	4th-lowest

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<sup>1</sup> Interim seasonal value

<sup>2</sup> The rankings (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>.etc) in 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 because of the practical limitations of performing homogeneity checks in real-time.

<sup>3</sup> This climate summary uses the updated 'normal' period, 1981-2010, unless otherwise stated. (A 'normal' period is a 30 year window of time from which the normal (average) and percentage of normal are calculated from).

**Rainfall: Unusually dry for many regions of the North Island, also Marlborough and the Kaikoura Coast. In contrast, a wetter than usual spring across the southern half of the South Island.**

It was an extremely dry spring for many North Island regions, as well as Marlborough and the Kaikoura Coast. Spring rainfall totals ranged between 50 percent (only half) and 60 percent of spring normal in southern Hawkes Bay, Wairarapa, Wellington, between Wanganui and the Kapiti Coast, as well as in the Bay of Plenty and Blenheim, with record or near record low spring rainfalls experienced in these areas (see Table overleaf). It was the driest spring on record for Wanganui and at Wellington Airport.

A rather dry spring (with between 60 and 80 percent of spring normal rainfall) was also observed across much of the remainder of the North Island (the exceptions being Northland, Taranaki, Waikato to the Central Plateau, as well as Gisborne, which experienced closer to normal spring rainfall), as well as in Nelson, Marlborough, the Kaikoura Coast and north Canterbury.

In contrast, it was a wetter than usual spring across much of the southern half of the South Island, with above normal rainfall observed (exceeding 120 percent of spring normal).

At the end of spring, soils were unusually dry for the time of year across much of the North Island (except for Gisborne and northern Hawkes Bay), as well as Nelson and Buller. In contrast, soils remain wetter than usual for the time of year across much of south Canterbury. Elsewhere, levels were closer to normal.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
<b>Record high or near-record high</b>				
Lumsden	274	122	1982	2nd-highest
Invercargill	360	133	1939	4th-highest
<b>Record low or near-record low</b>				
Te Puke	217	59	1973	2nd-lowest
Whakatane	147	55	1952	3rd-lowest
Pukekohe	180	55	1944	3rd-lowest
Takapau Plains	157	63	1962	3rd-lowest
Wellington Airport	113	46	1960	Lowest
Hawera	215	72	1977	4th-lowest
Wanganui	161	66	1987	Lowest

## Spring climate in the six main centres

Temperatures were below average for spring in Hamilton and Christchurch, but near average in the other main centres. It was an extremely dry and sunny spring in Wellington. It was also rather dry for the other North Island main centres, Auckland, Tauranga and Hamilton.

Of the six main centres in spring 2012, Auckland was the warmest, Hamilton the wettest, Tauranga was the sunniest (followed closely by Wellington), Christchurch the driest, and Dunedin the coolest and cloudiest.

### Spring 2012 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	14.2	-0.3	Near average
Tauranga <sup>b</sup>	14.0	-0.1	Near average
Hamilton <sup>c</sup>	12.4	-0.6	Below average
Wellington <sup>d</sup>	12.1	0.0	Near average
Christchurch <sup>e</sup>	10.8	-0.7	Below average
Dunedin <sup>f</sup>	10.7	-0.2	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	187	72%	Below normal
Tauranga <sup>b</sup>	153	62%	Below normal
Hamilton <sup>c</sup>	236	82%	Near normal
Wellington <sup>d</sup>	168	54%	Below normal
Christchurch <sup>e</sup>	132	94%	Near normal
Dunedin <sup>f</sup>	157	94%	Near normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland <sup>a</sup>	529	102%	Near normal
Tauranga <sup>b</sup>	657	114%	Above normal
Hamilton <sup>g</sup>	521	101%	Near normal
Wellington <sup>d</sup>	643	114%	4 <sup>th</sup> sunniest spring on record
Christchurch <sup>e</sup>	614	103%	Near normal
Dunedin <sup>f</sup>	514	109%	Near normal

<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

### Rain and slips

The highest 1-day rainfall experienced in spring 2012 was 165 mm at Milford Sound on 14 September.

On 3 September, heavy rain caused flooding and property damage in Auckland and Northland. The northbound Esmonde Road onramp to SH1 was flooded, some schools were closed, and flights were delayed.

A slip closed SH6 at the Haast Pass between Haast and Hawea on 6 September.

On 8 September, torrential rain caused a slip, which closed one lane of SH1 south of Paekakariki for about two hours. Parts of Manawatu also suffered surface flooding.

On 13 September, after recent heavy rain and snow, a large section of Skippers Canyon Road at Devil's Elbow slipped into the Shotover River, closing the road.

On 16 September, another slip closed SH6 at Makarora. Overnight closures were planned to clear the slip. In the Bay of Plenty, heavy rain caused slips and turned paddocks into lakes.

On 17 September, very heavy rain in Wellington caused surface flooding, affecting commuter traffic. All buses were running 15 minutes late. Slips in Wadestown closed the Johnsonville railway line, and Mairangi Road, with other roads affected by slips. There were reports of heavy water flows blowing off manhole covers.

On 19 September, a large slip came down on SH35 at the new alignment on Maraenui Hill.

On 6 October, the afternoon stage of the Yunca Junior Cycle Tour of Southland was abandoned for the first time in the event's 29-year history because of horrendous weather conditions (both wind and rainfall) at Te Tipua.

On 10 October, SH6 was affected by flooding between Harihari and Haast.

On 13 October, a 200-metre slip came down on the road to Milford Sound following heavy rain, closing it for at least three days. Stranded tourists got out by helicopter. In Canterbury, the old Waimakariri Bridge (not SH1) was closed after high rainfall and rising river levels threatened its safety. In the Hokitika area, heavy rain caused surface flooding, and creeks burst their banks, flooding paddocks and access roads. Surface flooding also caused problems in Nelson, and in the Pelorus Valley, rivers burst their banks, flooding paddocks and a rugby field in Canvastown.

On 18 October a washout was reported on SH73 between Griffin and Kumara, closing the road. In New Plymouth, the police station was flooded to a depth of about 20 cm in the early hours of the morning after a sudden downpour.

On 26 October, a slip came down on SH4 between Wanganui and Raetahi, blocking the southbound lane and obstructing the northbound lane.

On 2 November, a slip came down on SH94 after heavy overnight rain. The road was closed mid-afternoon between Lower Hollyford and the Chasm.

On 13 November, heavy rain affected the Gisborne region, causing surface flooding on the Poverty Bay flats, with minor problems in the city.

On 17 November, heavy rain caused flash flooding in Mosgiel, inundating some properties.

**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
Mahia	61	Nov-13th	1990	4th-highest

**Temperatures**

The highest spring temperature was 30.1°C, experienced at Blenheim on 25 November. The lowest temperature recorded in spring was -8.3°C, observed at Lake Tekapo on 14 October.

An unusually cold southerly air stream for the time of year affected New Zealand on 11 and 12 September, breaking spring records at many southeastern sites. Afternoon temperatures on the 12th at Mahia, Arapito, Lumsden, and Queenstown were the coldest on record for spring (see Tables next two pages). On the following morning (13 September), ridging produced clear skies and light winds, which resulted in record or near-record low minimum temperatures at numerous locations across the country. It was a record cold spring morning on the 13th at Kaitaia, Kerikeri, Warkworth, Whangaparaoa, Rotorua and Te Kuiti. Also notable was the -4.4°C minimum temperature recorded at Christchurch Airport on the 13th, being equal to the second-lowest spring temperature in a group of Christchurch stations which date back to 1863.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Spring ranking
<b>Low records or near-records</b>				
Dargaville	12.0	Sep-12th	1951	3rd-lowest
Whangaparaoa	11.7	Sep-12th	1982	3rd-lowest
Port Taharoa	12.4	Sep-12th	1974	4th-lowest
Castlepoint	7.9	Sep-12th	1972	2nd-lowest
Martinborough	8.5	Sep-12th	1986	3rd-lowest
Gisborne	9.0	Sep-12th	1940	2nd-lowest
Mahia	8.5	Sep-12th	1990	Lowest
Waiouru	1.9	Sep-12th	1972	3rd-lowest
Wanganui	9.9	Sep-12th	1987	3rd-lowest
Arapito	8.4	Sep-11th	1978	Lowest
Reefton	7.1	Sep-11th	1972	3rd-lowest
Franz Josef	6.7	Sep-9th	1982	2nd-lowest

Arthurs Pass	1.2	Oct-8th	1973	3rd-lowest
Ranfurly	4.2	Sep-11th	1975	3rd-lowest
Dunedin, Musselburgh	6.1	Sep-11th	1947	Equal 4th-lowest
Queenstown Airport	3.2	Sep-11th	1871	Lowest
Lumsden	4.4	Sep-11th	1982	Lowest
Balclutha	6.3	Sep-11th	1972	3rd-lowest
Tautuku	6.5	Sep-11th	1976	Equal 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	Spring ranking
<b>Low records or near-records</b>				
Kaitaia	2.0	Sep-13th	1985	Lowest
Kerikeri	0.9	Sep-13th	1981	Lowest
Leigh	4.8	Sep-13th	1966	Equal 4th-lowest
Warkworth	-0.5	Sep-13th	1966	Lowest
Whangaparaoa	4.6	Sep-12th	1982	Lowest
Henderson	-1.1	Sep-13th	1948	4th-lowest
Thames	-0.1	Sep-13th	1946	2nd-lowest
Whakatane	-1.0	Sep-13th	1975	Equal 4th-lowest
Rotorua	-3.2	Sep-13th	1964	Lowest
Taupo	-4.7	Sep-13th	1949	4th-lowest
Opotiki	-1.4	Sep-13th	1947	2nd-lowest
Hamilton (Ruakura)	-3.5	Sep-13th	1906	2nd-lowest
Hamilton	-2.6	Sep-13th	1946	3rd-lowest
Port Taharoa	2.0	Sep-13th	1973	Equal 3rd-lowest
Te Kuiti	-2.4	Sep-13th	1959	Lowest
New Plymouth	-1.3	Sep-13th	1944	2nd-lowest
Castlepoint	1.2	Sep-12th	1972	3rd-lowest
Mahia	4.1	Sep-12th	1990	3rd-lowest
Hawera	-1.3	Sep-13th	1977	4th-lowest
Arapito	-0.6	Sep-12th	1978	3rd-lowest
Hokitika	-1.9	Sep-12th	1963	3rd-lowest
Okarito	-1.9	Sep-12th	1982	2nd-lowest
Franz Josef	0.1	Sep-12th	1982	2nd-lowest
Haast	-1.5	Sep-12th	1949	Equal 3rd-lowest
Motueka	-2.4	Sep-12th	1956	2nd-lowest
Christchurch (Airport)	-4.4	Sep-13th	1863	Equal 2nd-lowest
Le Bons Bay	0.2	Sep-12th	1984	2nd-lowest
Lake Tekapo	-8.3	Oct-14th	1925	3rd-lowest
Orari Estate	-3.1	Sep-13th	1972	Equal 4th-lowest
Naseby Forest	-5.9	Oct-22nd	1983	2nd-lowest
Ranfurly	-5.9	Sep-13th	1975	Equal 3rd-lowest
<b>High records or near-records</b>				
Wanaka	14.6	Nov-2nd	1972	4th-highest

## Wind

The highest gust recorded in spring 2012 was 185 km/hr at Cape Turnagain, on both 18 and 25 October.

On 3 September, strong winds brought down trees in the Bay of Plenty, closing some secondary roads. In Tauranga city, a strong gust blew the head off a Queen Palm tree leaving just a tall stump.

On 4 September, a wind warning was issued for SH87 between Outram and Middlemarch.

On 5 September, wind warnings were issued for SH1 between Waikouaiti and Milton, SH8 between Fairlie and Twizel, and SH80 between Pukaki and Mt Cook. In the Mackenzie Country, the wind closed Mt Dobson ski field, with snow drifts blown on to the access roads. At the Remarkables, the Freeski Open of New Zealand final was delayed after strong winds closed the ski field.

On 6 September, strong winds brought down power lines in Balclutha, and uprooted trees at Whataroa on the West Coast. Wind warnings were issued for SH73 at Porters Pass. The Lux-Mini Light Festival on the Wellington waterfront was closed early because of the strong winds.

On 7 September, strong winds battered Wellington, bringing down power lines and trees, cutting power to some northern suburbs.

On 8 September, strong winds closed SH2 over the Rimutaka Ranges. Flights at Wellington Airport were cancelled, delayed or diverted. Power poles, telephone lines and trees were brought down, trampolines were sent flying, roofs were lifted, and in the central city, the wind forced a window at the Amora Hotel to crash onto Wakefield Street, and a large sign on Dixon Street was uplifted, smashing into a car, breaking its windscreen. Gusts caused powerlines to clash, resulting in about 6000 homes in Upper Hutt, and another 700 in Wainuiomata, losing power for several hours. In Taranaki, high winds brought down trees and cut power to 1600 homes. A Stratford supermarket had to close for more than an hour when glass panels on the entrance roof were lifted by the wind. Trees were also brought down in Manawatu, while in Wairarapa, power lines were downed and roofs lifted. Wind warnings were issued for SH1 between Blenheim and Kaikoura.

On 10 September, wind warnings were issued for SH1 between Allanton and Gore, SH8 between Clarksville and Raes Junction, SH73 at Porters Pass, SH87 between Outram and Kyeburn, and SH90 between Raes Junction and Gore. In Invercargill, trampolines were sent flying and trees toppled, and power cuts were reported in Winton, Otatara and Invercargill. In central Tauranga, a large waka sail on a stainless steel pole, blew over in strong winds, blocking the railway line.

On 11 September, wind warnings were issued for SH1 between Balclutha and Gore. In the Hutt Valley, a roof was blown off a home, cutting power to neighbouring houses.

On 14 September, wind warnings were issued for SH8 between Fairlie and Twizel, SH73 at Porters Pass, and SH80 between Pukaki and Mt Cook Village.

On 17 September, strong winds in Christchurch uprooted a large tree growing on the Avon River bank. In Queenstown, the wind disrupted flights, with some planes diverted to Dunedin, or returned to Christchurch.

On 4 October, strong winds damaged the main lift at Mt Dobson ski area, closing the field early for the season.

On 5 October, wind warnings were issued for SH73 at Porters Pass, SH85 between Palmerston and Kyeburn, SH8 between Fairlie and Omarama, and SH7 between the Hanmer Springs turn-off and Springs Junction. In central Wellington, strong winds were spun round by surrounding tall buildings creating a swirling effect.

On 8 October, wind warnings were issued for SH6 between Harihari and Haast.

On 13 October, unusually strong winds affected Northland, Auckland and the Waikato. Strong winds in Whangarei brought down a tree, trapping two young brothers underneath. Fortunately they were not injured. Trees were also brought down in Auckland, blocking roads and, in one case, crashing into a house. Further south, the wind brought afternoon power cuts to the Thames area. On the Mahia Peninsula, extreme winds were identified as a major factor in re-igniting and spreading two vegetation fires. Near Tolaga Bay, power lines brought down by the wind started a grass fire and blew the transformer for the East Coast. In Canterbury, trampolines and greenhouses were damaged, and about 700 passengers on the Sea Princess could not rejoin their ship in Akaroa Harbour, but were forced to stay on land overnight. Wind warnings were issued for SH6 from Harihari to Franz Josef, particularly for high-sided vehicles, with several trucks pulling off the road in the hazardous conditions, and a campervan blown off the road.

On 14 October, continuing high winds brought down trees in Auckland, disrupting power to many areas. At Auckland Airport a catering truck was blown over into the side of an aircraft. Winds also caused power outages in Bells Junction, Hihitahi, Kakatahi, Karioi, Rangiwai, the upper Whanganui Valley and Waiouru, with some rural customers having no power overnight. In the Rotorua district, several large trees were toppled by the wind.

On 17 October, four large trees were blown over, damaging one vehicle, and blocking both northbound lanes of SH1 north of Wellington. In the Wairarapa, fire fighters were forced to abandon a re-ignited blaze in a pine forest near Carterton because of the dangerous conditions caused by the wind. On SH2, a car was blown into the bank near the top of the Rimutaka Hill. The ambulance attending the scene was damaged when a gust of wind folded back its door. In Queenstown, windblown embers from a rubbish fire caused a vegetation blaze near Arthur's Point.

On 18 October, wind brought down a tree on SH29 over the Kaimai Ranges, closing the road for a short time. South of Tolaga Bay, high winds reignited blazes started by fallen power lines on the 13th, damaging trees on several hectares of land at Okitu. On SH5, the Napier-Taupo Road, a campervan was blown off the road near Tapawera. Further south, a northbound truck carrying four empty water tanks was blown over on SH1 near Kaikoura. Two cyclists who had been leaving Kaikoura about the same time turned back to town, fearing for their safety. Wind warnings were issued for SH73 between Christchurch and Arthur's Pass.

On 22 October, Labour Day, a tornado whipped through Hector and Ngakawau, destroying property, bringing down trees, and cutting power to the area. In Hawkes Bay, two kayakers were blown out to sea, but made it back to shore under their own steam. In a Hastings car park, a shopping trolley with a two-year old child in the seat, was blown over, causing minor injuries to the child.

On 24 October, wind warnings were issued for SH1 between Milton and Gore, and SH8 between Milton and Raes Junction.

On 25 October, wind warnings were issued for SH1 between Gore and Dunedin, SH7 at the Lewis Pass, and SH73 between Springfield and Arthur's Pass.

On 17 November, a bouncy castle was blown away in Whangarei, injuring four children, none seriously.

On 29 November, high winds forced the cancellation of a visit by the cruise ship *Pacific Dawn* to Port Chalmers.

**Near-record high extreme wind gusts for spring were recorded at:**

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Paeroa	91	Oct-13th	1991	4th-highest
Tauranga	98	Sep-09th	1973	4th-highest
Pukekohe	78	Oct-13th	1986	Equal 3rd-highest
Hamilton	85	Oct-13th	1991	Highest
Farewell Spit	98	Oct-06th	1973	Equal 4th-highest
Manapouri	91	Oct-25th	1991	3rd-highest

**Lightning and hail**

On 4 September, Christchurch had thunder, lightning and a severe hailstorm in the early evening. Conservatories and cars were damaged, power was lost to some suburbs, and one flight was delayed. Thunderstorms were also reported in Buller, Northland, Wellington and the Waikato.

On 8 September, a lightning storm in Manawatu caused a brief power outage in Wellington City. It occurred at half time in the rugby match between New Zealand and Argentina, causing a 30 minute delay as the lights had to cool down before being restarted. Hail storms also passed through Manawatu.

On 9 September, Hamilton and the surrounding region experienced thunder, lightning, and torrential downpours of hail, damaging cars.

On 11 September, hail fell in Wellington and Palmerston North.

On 17 September a fast-moving front brought thunderstorms to mid-Canterbury.

On 4 October, an intense hail storm stopped traffic at Matawai, between Gisborne and Opotiki.

On 13 November, a severe thunderstorm accompanied by hail swept through southern and eastern suburbs of Auckland, and the Coromandel Peninsula.

On 18 November, a mid-afternoon hailstorm struck Nelson.

## **Snow and ice**

On 5 September, SH94 was closed between Te Anau and Milford Sound because of the danger of avalanche caused by snow melt. It remained closed on 6 and 7 September.

On 9 September, snow fell on SH73 between Arthurs Pass and Otira, closing the road to towing vehicles, with chains required on all other vehicles.

On 10 September, heavy snow closed SH94 between Te Anau and Milford Sound. Chains were required on SH73 between Arthurs Pass and Otira, and the road was closed to towing vehicles.

On 11 September, SH94 remained closed by snow, Chains were essential on SH7 at the Lewis Pass, SH6 between Athol and Lumsden, SH94 between Mossburn and Te Anau, and the Crown Range Road between Arrowtown and Wanaka. These roads were closed to towing vehicles. Snow also affected SH1 between Balclutha and Gore, SH93 between Clinton and Mataura, SH6 between Kingston and Arrow Junction, and SH6A between Frankton and Queenstown, where chains had to be carried. The snow closed Queenstown Airport with about 30 flights diverted. Garston School was closed for the day, with 13 cm of snow measured at the school. In Dunedin, snow in the hill suburbs delayed starting times for schools and kindergartens with some high roads closed, and later in the day traffic in the hill suburbs came to a halt when hail stones froze on roads in the late afternoon. Taxis stopped running to the hill suburbs about 7 pm, and bus services were affected by sleet, snow and hail all day. SH1 was closed between Rangipo and Waiouru in the late afternoon.

On 12 September, snow closed SH2 over the Rimutaka Ranges from early morning. Extreme care was required on SH25, the Napier-Taupo road. Further south, SH87 between Outram and Middlemarch and SH94 from Te Anau to Milford Sound were closed, and chains were required on SH73 at Porters Pass. Residents on Wellington's hill suburbs reported snow falling but not settling. Snow was also reported around Palmerston North and in Norsewood.

On 14 September, SH94 remained closed by snow at the Lower Hollyford turn-off to Milford Sound.

Snow fell on the Desert Road on 2 October, causing poor driving conditions, but the road remained open.

On 5 October snow closed SH94 overnight.

On 8 October, SH3 was closed by snow overnight at both Arthurs Pass and Porters Pass. The snow that closed the road extended the ski season at Mt Hutt.

Snow warnings remained in place for SH73 between Springfield and Otira on 9 October.

On 12-13 October, both Arthur's Pass and Porter's Pass were closed overnight by snow.

On 19 October, a snow warning was issued for SH73 between Arthur's Pass and Otira, with chains required on all vehicles.

On 22 October, snow fell in South Canterbury. All roads remained open but the final section of the three-day "Hard Labour" event, a 90 km cycle around the canal routes near Lake Tekapo village, was cancelled, because of the conditions.

## Cloud and fog

On 17 September, fog caused delays at Christchurch Airport.

On 28 September, fog caused flight cancellations at Gisborne Airport.

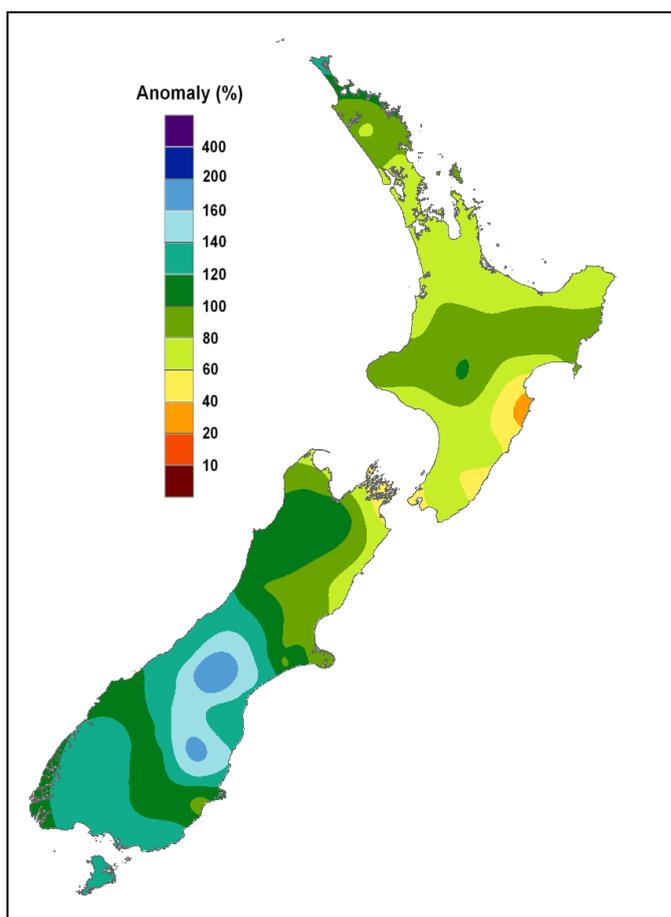
On 29 and 30 September, fog rolled across Hawkes Bay, causing cancellations and delays at Napier Airport.

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*Spring rainfall expressed as a percentage of spring normal. Areas that received below normal rainfall are shown in light green, yellow, and orange colours (many regions in the North Island, as well as Marlborough and the Kaikoura coast). Areas which were unusually wet (experiencing more 120 percent of spring rainfall) are shown in blue shades; namely much of the southern half of the South Island.*

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