NIWA National Climate Centre

Seasonal Climate Summary

NIWA Taihoro Nukurangi

National Climate Summary: **Autumn 2014** Issued: 5 June 2014

A warm and sunny autumn for much of the North Island, wet for many parts of the South Island.

Rainfall	It was a wet autumn for much of the South Island and parts of the lower North Island. Autumn rainfall was well above normal (more than 150% of normal) in south-western Southland, and along the eastern South Island near Dunedin and north of Timaru. Autumn rainfall was above normal (120-150% of normal) in Nelson, Marlborough, many remaining parts of Canterbury and Otago, and inland Southland. In contrast, rainfall was below normal (50-79% of autumn normal) for Northland, Auckland, and the Coromandel Peninsula, as well as in parts of Gisborne, Hawke's Bay and Taranaki. Remaining areas of New Zealand typically received near normal autumn rainfall (within 20% of autumn normal).
Soil moisture	At the start of autumn, soils were much drier than normal across most of the North Island. Welcome autumn rainfall saw an improvement in soil moisture levels across many parts of the North Island, but as of 1 June 2014, drier than normal soils persist for parts of Auckland and Northland, whilst soils about northern Gisborne, the Central Plateau and Hawke's Bay were also drier than normal. As of 1 June 2014 soils were wetter than normal throughout the eastern South Island, the Southern Lakes and Central Otago, whilst soil moisture levels were near normal for most remaining areas of the country.
Temperature	Autumn temperatures were near average (within 0.5°C of the autumn average) for much of Northland, Auckland, Mahia Peninsula, coastal Wairarapa, Wellington, Marlborough, Canterbury, eastern Otago and the Catlins. Autumn temperatures were above average (0.5°C to 1.2°C above average) or well above average (more than 1.2°C above average) for remaining areas of the country.
Sunshine	Autumn sunshine was abundant for most of the North Island, where above normal (110-125% of autumn normal) or well above normal (more than 125% of autumn normal) sunshine was received. The exception was towards and along the south-western coast of the island from Taranaki to Wellington, where sunshine was near normal (within 10% of autumn normal) or below normal (75-89% of autumn normal). Below normal or near normal sunshine for autumn was received across the entire South Island.

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Overview

As a whole, autumn 2014 was characterised by pressure anomalies that were very weak over most of the country, with slightly higher than normal pressures recorded to the southeast of New Zealand. This pattern resulted in a weak south-easterly flow anomaly. March was characterised by anomalously high pressure anomalies over much of New Zealand, which exacerbated dry conditions being experienced over the North Island at the time. April saw a north-easterly quarter wind flow anomaly over most of the country, which brought welcome rain to North Island parts, but considerable rainfall and flooding to eastern and northern parts of the South Island. The frequency of westerly flows across New Zealand was higher than is usual in May, which contributed to a dry and sunny end to autumn for much of the North Island.

Rainfall for the autumn season was well above normal (more than 150% of normal) in south-western Southland, and along the eastern South Island near Dunedin and north of Timaru. It was especially wet in coastal parts from Christchurch to Kaikoura where autumn rainfall totals recorded were more than double that which normally occurs. Autumn rainfall was above normal (120-150% of normal) in Nelson, Marlborough, many remaining parts of Canterbury and Otago, and inland Southland. In contrast, rainfall was below normal (50-79% of autumn normal) for Northland, Auckland, and the Coromandel Peninsula, as well as in parts of Gisborne, Hawke's Bay and Taranaki. It was an especially dry autumn for Kerikeri and Whangarei, with both locations recording around half of normal autumn rainfall. Remaining areas of New Zealand typically received near normal autumn rainfall (within 20% of autumn normal).

At the beginning of March, much of the North Island had experienced a relatively dry summer, and soils were much drier than normal for the time of year. Welcome autumn rainfall saw an improvement in soil moisture levels across many parts of the North Island, but as of 1 June 2014, drier than normal soils persist for parts of Auckland and Northland, whilst soils about northern Gisborne, the Central Plateau and Hawke's Bay were also drier than normal. In contrast, as of 1 June 2014 soils were wetter than normal throughout the eastern South Island, the Southern Lakes and Central Otago. The wetter than normal soils about eastern Canterbury were as a result of considerable rainfall occurring in March and April. For example, parts of Christchurch received 71% of the city's average annual rainfall over those two months. As of 1 June 2014, soil moisture was near normal for most remaining parts of New Zealand.

Autumn temperatures were near average (within 0.5°C of the autumn average) for much of Northland, Auckland, Mahia Peninsula, coastal Wairarapa, Wellington, Marlborough, Canterbury, eastern Otago and the Catlins. Autumn temperatures were above average (0.5°C to 1.2°C above average) or well above average (more than 1.2°C above average) for remaining areas of the country. The above average autumn temperatures recorded across New Zealand largely resulted from an abnormally warm April, when temperatures for a significant part of the country were well above average (more than 1.2°C above April average). The nation-wide average temperature in autumn 2014 was 13.7°C (0.5C° above the 1971-2000 April average from NIWA's seven station temperature series which begins in 1909).

Autumn sunshine was abundant for most of the North Island, where above normal (110-125% of autumn normal) or well above normal (more than 125% of autumn normal) sunshine was received. The exception was towards and along the south-western coast of the island from Taranaki to Wellington, where sunshine was near normal (within 10% of autumn normal) or below normal (75-89% of autumn normal). Autumn sunshine wasn't quite so prevalent in the South Island, with below normal or near normal sunshine received across the entire island.

Further Highlights:

- The highest temperature was 30.8°C, observed at Wallaceville (Upper Hutt) on 16 March.
- The lowest temperature was -7.4°C, observed at Middlemarch on 30 May.
- The highest 1-day rainfall was 256 mm, recorded at Milford Sound on 22 May.
- The highest wind gust was 202 km/hr, observed at Cape Turnagain on 25 May.
- Of the six main centres in autumn 2014, Auckland was the warmest and driest, Tauranga was the sunniest, Dunedin was the coolest and cloudiest, and Wellington was the wettest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres[1] so far in 2014 (January to May) are: Whakatane (1262 hours), Tauranga (1153 hours), Auckland - Albany (1090 hours) and Takaka (1077 hours).

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Rainfall: Very wet for eastern parts of the South Island, dry for northern parts of the North Island.

Autumn was a wet season for south-western Southland, and along the eastern South Island near Dunedin and north of Timaru. It was especially wet in the eastern South Island from Christchurch to Kaikoura, however much of this rainfall occurred in March and April. For example, NIWA's climate station in Christchurch (Riccarton) recorded 459 mm of rainfall over the autumn season, which is the highest autumn rainfall total recorded in the city in records dating back to 1863. 424 mm of that total (92%) was recorded in March and April. A relatively dry month of May in Christchurch was certainly a welcome relief for the city. In contrast, autumn was relatively dry in parts of Northland and Auckland, with four northern locations recording record or near-record low rainfall totals for the season. These rainfall anomalies were reflected in soil moisture levels, which as at 1 June 2014 were drier than normal for parts of Auckland and Northland, and wetter than normal throughout the eastern South Island.

Record[2] or near-record autumn rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Winchmore	441	248	1909	2nd-highest

[1] New Plymouth sunshine is still omitted from this ranking while recent instrumentation changes are assessed.
[2] 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.

Christchurch (Riccarton)	459	305	1863	Highest
Lincoln	327	219	1881	4th-highest
Low records or near-records				
Kerikeri	220	51	1981	2nd-lowest
Dargaville	189	68	1943	4th-lowest
Leigh	114	40	1966	Lowest
Warkworth	171	49	1966	4th-lowest
Campbell Island	270	71	1992	3rd-lowest

Temperature: Near average or above average temperatures across the country.

Relatively few locations recorded record or near-record mean temperatures over autumn, suggesting periods of abnormally high temperatures and periods of abnormally low temperatures were balanced out over the course of the season at most locations. Timaru recorded its highest ever mean minimum temperature for autumn, which was especially notable given records there began in 1885. A relatively warm spell occurred over the North Island in early April, whilst a cold snap was followed by frosts throughout New Zealand in late May. Details of these events are presented in the *Highlights and extreme events* section. The nation-wide average temperature in autumn 2014 was 13.7°C (0.5C° above the 1971-2000 April average from NIWA's seven station temperature series which begins in 1909)[3].

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Motu	12.5	1.3	1990	2nd-highest
Masterton	14.4	1.7	1992	Highest
Reefton	13.4	1.6	1960	2nd-highest
Milford Sound	12.2	1.3	1934	4th-highest
South West Cape	11.3	0.6	1991	3rd-highest
Campbell Island	8.1	0.7	1991	Highest

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Motu	18.5	2.6	1990	Highest

[3] Interim value

Hamilton	21.1	1.3	1946	4th-highest
Hicks Bay	20.5	1.5	1969	4th-highest
Stratford	18.0	1.1	1960	3rd-highest
Reefton	18.5	1.5	1960	Highest
Milford Sound	16.4	1.0	1934	2nd-highest
Tiwai Point	15.3	0.9	1970	4th-highest
Campbell Island	9.9	0.3	1991	4th-highest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Masterton	8.7	2.1	1992	Highest
Reefton	8.2	1.7	1960	Highest
Cheviot	6.7	1.1	1982	2nd-highest
Orari Estate	6.5	1.1	1972	3rd-highest
Timaru	8.5	1.4	1885	Highest
Ranfurly	4.1	1.4	1975	4th-highest
South West Cape	9.3	0.8	1991	3rd-highest
Campbell Island	6.4	1.0	1991	Highest

Sunshine: A sunny autumn across much of the North Island.

Autumn sunshine was plentiful across much of the North Island, especially in northern parts. Auckland and Dargaville each recorded their highest total autumn sunshine hours on record. The skies weren't quite so clear across the South Island, where Hokitika recorded its fourth-lowest autumn sunshine total in records which began in 1912. Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2014 (January to May) are: Whakatane (1262 hours), Tauranga (1153 hours), Auckland - Albany (1090 hours) and Takaka (1077 hours).

Record or near-record autumn sunshine hours were recorded at:

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Kaitaia	581	106	1985	3rd-highest
Dargaville	557	111	1943	Highest
Auckland (Mangere)	606	122	1963	Highest
New Plymouth	635	119	1972	3rd-highest
Low records or near-records				
Hokitika	351	79	1912	4th-lowest

Autumn climate in the six main centres

Temperatures were above average for the three northern-most main centres, and near average for the remaining three main centres. There was considerable contrast in rainfall anomalies for autumn across the main centres. Auckland recorded approximately three-quarters of normal autumn rainfall, whereas more than double normal autumn rainfall was recorded in Christchurch. Autumn sunshine was above normal for the three northern-most main centres, but below normal in Wellington and Christchurch. Of the six main centres in autumn 2014, Auckland was the warmest and driest, Tauranga was the sunniest, Dunedin was the coolest and cloudiest, and Wellington was the wettest.

Autumn 2014 main centre climate statistics:

Temperature			
Location	**Mean temp. (°C)**	**Departure from normal (°C)**	**Comments**
Auckland[a]	17.1	0.8	Above average
Tauranga[b]	16.5	0.8	Above average
Hamilton[c]	14.8	0.6	Above average
Wellington[d]	14.2	0.4	Near average
Christchurch[e]	12.0	0.0	Near average
Dunedin[f]	11.9	0.3	Near average
Rainfall			
Location	**Rainfall (mm)**	**% of normal**	**Comments**
Auckland[a]	214	77%	Below normal
Tauranga[b]	296	90%	Near normal
Hamilton[c]	248	89%	Near normal
Wellington[d]	400	142%	Above normal
Christchurch[e]	323[4]	218%	Well above normal
Dunedin[f]	273	152%	Well above normal
Sunshine			
Location	**Sunshine (hours)**	**% of normal**	**Comments**
Auckland[a]	606	122%	Highest on record
Tauranga[b]	636	113%	Above normal
Hamilton[g]	564	117%	Above normal
Wellington[d]	445	89%	Below normal
Christchurch[e]	414[5]	83%	Below normal
Dunedin[f]	391	103%	Near normal

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

[4] Missing one day of data from 1 May.
[5] Missing one day of data from 2 April.

Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred in autumn 2014. Note that a more detailed list of significant weather events for autumn 2014 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 http://www.niwa.co.nz/climate/summaries/monthly

Rain and slips

Heavy rain on 4 and 5 March caused considerable flooding throughout Christchurch and surrounding areas. On 5 March, a number of Christchurch schools were closed due to the flooding, whilst a slip closed a section of Dyers Pass Road. It was reported that at least 100 homes in Woolston, Richmond, St Albans and Mairehau had been inundated with water. Flooding caused a number of road closures, including SH75 from Little River to Barry's Bay. Residents of Akaroa and Sumner were temporarily isolated by flooding.

On the evening of 14 March, rain associated with ex-tropical cyclone *Lusi* began falling in the upper North Island. The low pressure system travelled south to the west of the North Island, before crossing the South Island and heading east to be clear of the country by midday 17 March. Highest daily rainfall totals associated with the storm were recorded in parts of Northland, Coromandel and coastal Bay of Plenty on 15 March, and around Nelson and the Kaikoura Coast on 16 March. No significant flooding was reported as a result of the rainfall across New Zealand, however minor surface flooding was reported in Wellington, Christchurch and the Tasman district.

On 3 April, 14 mm of rain was recorded in Hamilton. Whilst not a considerable rainfall total, it was noteworthy due to the dry conditions being experienced there at the time – the fall of rain was greater than double the total rainfall recorded in the previous month (6 mm in March 2014). Isolated surface flooding was also reported in parts of Auckland, where there were localised bursts of heavy rain. For example, 25.8 mm of rain was recorded in Mangere, Auckland, in just one hour between 8 p.m. and 9 p.m.

On 9 April, Whanganui received a total of 6 mm of rain, with rain first falling between 3 a.m. and 4 a.m. The rainfall ended a 34-day dry spell in the city which began on 6 March 2014.

On 16 April, heavy rain associated with the remnants of ex-tropical cyclone *Ita* moved onto New Zealand. Surface flooding was reported on many roads in Nelson. Farther north in Wellington, flash flooding and surface water was reported on the Urban Motorway (SH 1) from Aotea Quay to Ngauranga Interchange, Hutt Rd, as well as parts of Porirua, Hutt Valley and central Wellington. At around 9.30 p.m., Wellington City Council inspectors ordered the evacuation of two Oriental Parade buildings due to a slip. A storm-water drain was severed in the slip, resulting in torrents of water flooding nearby property.

On 17 April, caution was advised to motorists travelling on SH 3 through the Manawatu Gorge due to rock falls in the area. Waikato Police advised against all but essential travel to or around the Coromandel, as numerous roads were affected by slips, flooding and fallen trees. Tairua was cut off

to the south, whilst the Pauanui access road was closed. Farther south in Marlborough, Port Underwood Road (east of Picton) was closed due to a large slip, whilst a diversion was activated on Old Renwick Road due to flooding. In Blenheim, the Taylor River burst its banks, flooding Nelson Street. Motorists were urged to exercise caution on SH 6 between Blenheim and Rai Valley due to surface water on the road, whilst SH 1 south of Ward was temporarily closed due to numerous slips and debris strewn across the road. To the west, a slip on Takaka Hill had reduced the road there to a single lane.

On 29 April, heavy rain caused widespread surface flooding in Christchurch, resulting in the closure of a number of streets in the city. SH 73 from Port Hills Road to Tunnel Road, and SH 75 from Little River to Akaroa were also struck by flooding. Farther south, SH 1 at Hilderthorpe (north of Oamaru) was closed due to flooding.

On 23 May heavy rain caused a slip on SH 73 near Arthur's Pass. The large size of the slip meant the road was remained closed until 26 May.

The highest 1-day rainfall for autumn 2014 was 256 mm, recorded at Milford Sound on 22 May.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Karangahake Gorge	143	Mar-15th	1981	2nd-highest
Omeheu	121	Apr-17th	1987	4th-highest
Opouriao	144	Apr-18th	1962	Highest
Woodside	110	Apr-17th	1958	3rd-highest
Te Wharau	84	Apr-07th	1923	3rd-highest
Greentops	130	Apr-07th	1923	3rd-highest
Brandy Creek	105	Mar-16th	1985	3rd-highest
Kaikoura Plains	147	Apr-17th	1980	Highest
Mt Somers	67	Apr-17th	1980	4th-highest
Winchmore	97	Apr-28th	1927	2nd-highest
Woodend	75	Apr-17th	1981	Highest
Prebbleton	74	Mar-04th	1969	2nd-highest
Christchurch (Gardens)	130	Mar-04th	1873	Highest
Shirley	113	Mar-05th	1940	2nd-highest
Christchurch (Riccarton)	123	Mar-04th	1873	2nd-highest
Living Springs	95	Mar-04th	1978	2nd-highest
Governors Bay	136	Mar-04th	1989	Highest
Mcqueens Valley	61	Apr-07th	1947	Equal 2nd-highest
Leeston	44	Mar-16th	1986	Equal 4th-highest
Motunau	82	Apr-17th	1992	Highest
Brockworth	183	Mar-04th	1911	Highest
Lake Tekapo	180	Apr-28th	1925	Highest
Powder Creek	79	Apr-17th	1993	3rd-highest

Wind

Strong southerly winds on 4 March cut power to more than 1000 homes near Christchurch and on Banks Peninsula, with Akaroa, Flea Bay and Stony Bay the worst affected areas. Roofs were lifted off and windows blown in at homes in Lyttleton, whilst a number of trees in the region were also downed by the winds. Some regional flights arriving in and departing out of Christchurch were cancelled. Motorists were warned to be cautious due to the strong winds on a number of roads, including SH1 from Dunedin to Balclutha and from Clarence to Kaikoura.

Strong winds associated with ex-tropical cyclone *Lusi* caused a number of issues across New Zealand on 15 and 16 March. Electricity infrastructure faults caused by storm damage resulted in a loss of power to many parts of Banks Peninsula with power out for more than 12 hours in Lyttelton. Power outages were also experienced by 1400 households in the Bay of Plenty, 7000 customers in Auckland, and a further 3000 customers in Northland. In Nelson, the *Weet-Bix Kids Tryathlon* and the open day at the Brook Waimarama Sanctuary were cancelled, whilst in the Hawke's Bay organisers of the *Triple Peaks Challenge* were forced to modify the course in the interests of participants' safety. In central Paihia, high swells pushed seawater and debris onto a stretch of SH 11, forcing it to be temporarily closed. In addition, 35 Paihia businesses along the waterfront were expected to be closed for a few days to allow clean-up required due to broken windows and seawater infiltration.

On 3 April, a funnel cloud was reported near a thunderstorm occurring over rural areas close to Auckland Airport.

On 17 April, strong winds associated with ex-tropical cyclone *Ita* struck much of both the North Island and South Island. In Auckland, around 17,000 properties were without power – mostly as a result of trees blowing onto power lines. Strong winds and high-tide combined to cause severe flooding on Tamaki Drive, as waves crashed over the sea wall there. Farther south, caution was advised to motorists on SH 29 near Te Poi (east of Cambridge) due to fallen trees across the highway. In Cambridge, Victoria Road near the intersection with Bellevue Road was closed after trees and power lines came down there. Falling trees also closed SH 5 from the intersection with SH 1 south of Tirau through to Rotorua. More than 1000 Waikato customers were without power. In Manawatu, power was out for around 9300 properties due to faults caused by strong winds, including in parts of Aokautere, Apiti, Ashurst and Pohangina. In the South Island, drivers of motorcycles, campervans and high-sided vehicles were warned to take extra care on SH 1 between Blenheim and Kaikoura, and SH 6 from Harihari to Haast. Many roads in the West Coast region were closed due to downed trees and powerlines, whilst a number of vehicles, including several buses, were blown over. Strong winds felled a number of trees in Nelson and surrounding areas, and the power supply to thousands of properties throughout Golden Bay, Stoke and Richmond was affected. A section of Nelson Hospital's roof had to be replaced after it had lifted and was damaged by the winds. Wind damage was severe and extensive along the west coast of the South Island. Westport lost its power supply, and many roofs were lifted in the township and surrounds. Westport *New World* had a plate glass window blown in. In Greymouth, the central business district was closed in the afternoon because of danger from flying debris after a roof had lifted off an industrial building. The Greymouth suburbs of Cobden and Blaketown were hit hard by the winds, with many houses and halls losing roofs and suffering significant structural damage. An aircraft hangar and the aircraft inside it were damaged at Greymouth Airport. Extensive tracts of native forest on Department of

Conservation land near Karamea were destroyed, and extensive damage to forests and infrastructure occurred further south near Whataroa. There were reports of flight cancellations in Auckland, New Plymouth and Wellington, whilst *Interislander* and *Bluebridge* ferry crossings on Cook Straight were significantly delayed or cancelled.

On 28 April, more than 300 homes in Timaru lost power due to strong winds damaging power lines.

On 24 May, around 2000 homes were without power in the Wairarapa and Tararua districts. The loss of power was largely as a result of trees brought down by strong winds falling onto power lines. Farther south, the Bluff Oyster and Food Festival was cancelled with people forced to evacuate due to dangerous weather conditions and damaging winds. Traffic delays of up to two hours occurred just north of Bluff due to power lines which had come down over the road and entrapped a vehicle. Strong winds caused power outages in Millers Flat, Lawrence, Milton, Mosgiel, Outram, and parts of Waldronville, and a woman was injured when a tree fell on the car she was occupying near Mosgiel. 1790 Dunedin customers were temporarily without power as strong winds felled power lines there.

The highest wind gust for autumn 2014 was 202 km/hr, observed at Cape Turnagain on 25 May.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Kaikohe	87	Apr-17th	1986	Highest
Paeroa	100	Apr-17th	1991	Highest
Whakatane	95	Apr-17th	1974	2nd-highest
Motu	83	May-24th	1991	Equal 4th-highest
Hamilton (Ruakura)	78	Apr-17th	1991	4th-highest
Castlepoint	154	May-24th	1972	3rd-highest
Baring Head	146	Apr-17th	1991	Highest
Palmerston North	93	Apr-17th	1991	Equal 3rd-highest
Levin	104	Apr-17th	1971	Highest
Farewell Spit	104	Apr-17th	1973	3rd-highest
Westport	126	Apr-17th	1973	Highest
Greymouth	141	Apr-17th	2008	Highest
Milford Sound	122	May-25th	1974	4th-highest
Queenstown Aero	93	May-29th	1972	Equal 3rd-highest

Temperatures

The beginning of autumn was heralded by the passage of a cold front on 1 March, which left a fresh dusting of snow on many South Island mountain ranges. The poor weather conditions nearly forced the suspension of play at the New Zealand Open (golf) being held near Arrowtown.

A further southerly outbreak brought unseasonably cold temperatures to the South Island and lower North Island on 3 March. The temperature in Wellington was just 8.5°C at 4.50 p.m., with the cold air accompanied by a short period of steady rain, thunder and lightning there. Farther south, Queenstown's temperature was just 6.8°C at 4.50 p.m.

Near the end of the first week of April, very warm temperatures for the time of year were experienced in many central and northern locations across the North Island. On 6 April, nine locations observed their highest or equal-highest April maximum temperature on record. However, temperatures were even higher for some of those locations on the following day – six of the nine locations (i.e. Hamilton, Tauranga, Paeroa, Te Puke, Whakatane and Rotorua) established new April maximum temperature records.

On 7 April, Whakatane recorded 29.6°C, which was the highest daily maximum temperature recorded there for the year 2014 to date. New Zealand locations typically observe their highest daily maximum temperatures for the year in January or February, so for Whakatane to observe its highest daily maximum air temperature for 2014 (to date) in April is both a rare and remarkable occurrence. Similarly, Tauranga recorded 28.4°C on 7 April, which was the second-highest daily maximum temperature recorded there for the year 2014 to date. Whakatane's 29.6°C ranks 38th-equal highest all-time for daily maximum temperature recorded in April across all New Zealand stations.

The highest temperature for autumn 2014 was 30.8°C, observed at Wallaceville (Upper Hutt) on 16 March. The lowest temperature for autumn 2014 was -7.4°C, observed at Middlemarch on 30 May.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Whitianga	27.8	Apr-06th	1962	2nd-highest
Whakatane	29.6	Apr-07th	1975	2nd-highest
Motu	26.0	Mar-30th	1990	Highest
Paraparaumu	30.0	Mar-16th	1953	Highest
Palmerston North	29.8	Mar-16th	1918	2nd-highest
Levin	28.7	Mar-16th	1895	3rd-highest
Mana Island	27.0	Apr-15th	1987	Highest
Wallaceville (Upper Hutt)	30.8	Mar-16th	1939	Highest
Ohakune	29.9	Mar-18th	1962	Highest
Westport	27.2	Mar-16th	1937	4th-highest
Franz Josef	26.0	Mar-15th	1982	Equal 4th-highest
Low records or near-records				
Whangaparaoa	12.4	May-27th	1982	Equal 4th-lowest
Paeroa	11.8	May-27th	1971	Equal 4th-lowest
Whatawhata	7.7	May-26th	1952	2nd-lowest
Wairoa	10.8	May-30th	1972	4th-lowest
Greymouth	8.1	May-27th	1972	3rd-lowest
Le Bons Bay	5.1	May-26th	1984	Lowest

Manapouri	3.8	May-26th	1973	4th-lowest
Lumsden	3.7	May-26th	1982	4th-lowest
Campbell Island	1.2	May-24th	1991	2nd-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Port Taharoa	19.9	Mar-16th	1974	3rd-highest
Te Kuiti	19.4	Mar-16th	1959	4th-highest
Masterton	17.5	Mar-17th	1992	4th-highest
Waione	18.3	Mar-18th	1993	2nd-highest
Low records or near-records				
Kaitaia	2.1	May-28th	1967	3rd-lowest
Kerikeri	1.6	May-28th	1981	Lowest
Kaikohe	3.7	May-27th	1973	3rd-lowest
Warkworth	-1.4	May-28th	1966	Lowest
Whangaparaoa	6.8	May-27th	1982	Equal 3rd-lowest
Auckland (Whenuapai)	-2.3	May-28th	1945	Lowest
Auckland (Mangere)	0.4	May-28th	1959	2nd-lowest
Paeroa	-3.0	May-28th	1947	4th-lowest
Te Puke	-1.5	May-28th	1973	2nd-lowest
Rotorua	-3.6	May-28th	1964	Lowest
Whatawhata	-2.5	May-27th	1952	3rd-lowest
Port Taharoa	2.4	May-27th	1973	2nd-lowest
Turangi	-5.3	May-28th	1968	Lowest
New Plymouth	0.1	May-27th	1944	Equal 4th-lowest
Ngawi	0.0	May-27th	1972	Lowest
Napier	-2.1	May-28th	1868	2nd-lowest
Wairoa	-0.1	May-28th	1964	4th-lowest
Secretary Island	2.0	May-26th	1985	3rd-lowest
Stephens Island	3.9	Mar-21st	1973	3rd-lowest
Appleby	-3.4	May-27th	1932	4th-lowest
Le Bons Bay	0.7	May-27th	1984	4th-lowest
South West Cape	1.7	May-25th	1991	4th-lowest

Snow and ice

A considerable snowfall for the time of year occurred on 3 and 4 March on many South Island mountain ranges, with staff reporting 20 cm - 30 cm of snow at *The Remarkables* and 7 cm – 10 cm at *Coronet Peak* ski areas near Queenstown. Snow also settled on Mt Ruapehu in the central North Island.

On 28 April, caution was advised to motorists travelling on SH 8 over the Lindis Pass due to wintry conditions: snow had fallen and settled at higher elevations on the road. The Crown Range Road between Queenstown and Wanaka was affected by snow, with chains required by motorists using that road in the morning. Staff at *The Remarkables* ski area in Queenstown reported approximately 20 cm of snow had fallen there. Farther north, staff at *Mt Dobson* and *Mt Hutt* in Canterbury reported 50 cm of snow had fallen at their ski areas.

On 26 May snow fell and settled to low levels in many areas of the South Island, but especially about Southland and Otago. Light snow was reported to sea level in Dunedin and Invercargill, whilst heavier falls occurred inland and at higher elevations including northern and eastern Southland, Queenstown Lakes District and Central Otago. Snow also settled at St Arnaud in the Tasman Distict, and at higher elevations of the Desert Road in the North Island. Many Dunedin and Northern Southland schools were closed for the day. Seven flights in and out of Queenstown Airport were cancelled. Staff attempting to access *Cardrona* ski area were forced to turn back at the 12 km mark on the access road due to at least 50 cm of snow on the road, whilst 50 cm of new snow was reported by staff at *The Remarkables* ski area. Numerous roads throughout the south were affected by snow, and several trucks slid off the northern motorway out of Dunedin prior to the road being closed. In addition the Queenstown Lakes District Council alerted drivers to watch for black ice throughout the region, with black ice reported around Roaring Meg in the Kawarau Gorge between Queenstown and Cromwell, (SH 6), the Lindis River Bridge and Tarras areas (SH 8) and between Cromwell and Clyde (SH 8).

Cloud and fog

On 20 March, fog caused the delay of at least 10 flights due to depart or arrive at Christchurch airport.

On 1 April, fog caused the delay or cancellation of 51 flights due to depart or arrive at Auckland airport.

On 7 April, low cloud at Wellington Airport forced the delay or cancellation of a number of domestic flights. However, the Royal New Zealand Air Force Boeing 757 carrying Prince William, Kate and their son George was able to land just prior to midday as scheduled.

On 20 May, flights at Auckland Airport and Hamilton Airport were delayed or cancelled due to fog.

Lightning and hail

Thunderstorms struck Hawke's Bay on 14 May, where at least six car accidents were attributed to drivers not adjusting their driving to the poor weather conditions. A severe hailstorm was reported between Maraekakaho and Tikokino, in Central Hawke's Bay.

On 23 May a lightning strike caused a major fire at a remote historic homestead at Paradise near Glenorchy.

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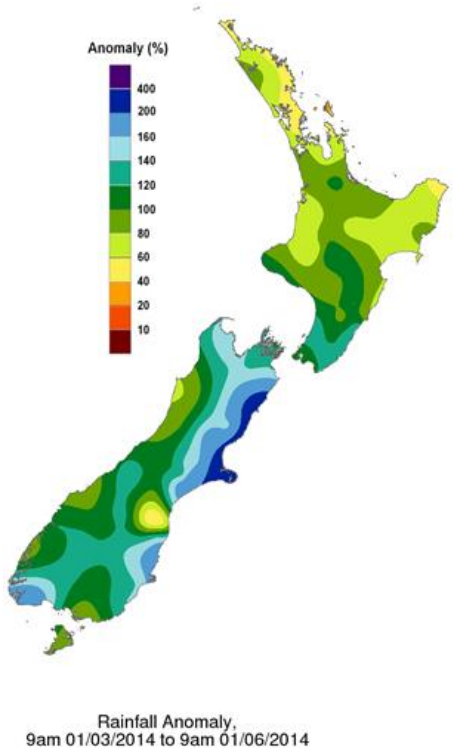

Autumn 2014 total rainfall expressed as a % of normal, illustrating the contrast in rainfall anomalies observed across New Zealand.

Well above normal rainfall for eastern parts of the upper South Island (150% or more of autumn normal rainfall – darker blue shades), but especially about Christchurch which recorded its wettest autumn on record.