

A cool month for most of the country.

Temperature	November temperatures were below average (-1.20°C to -0.51°C) for many parts of the country, particularly for southern and western parts of the South Island, and central, western and northern-most parts of the North Island. It was a particularly cold month for Fiordland, parts of the Southern Lakes and Central Otago, the Canterbury High Country and central-western parts of Waikato where temperatures were well below average (> 1.20°C below average). In contrast, isolated locations including Kaikoura and Te Kuiti recorded above average temperatures (+0.51°C to +1.20°C).
Rainfall	Rainfall was below normal (50-79%) or well below normal (< 50%) for Central Otago, South Canterbury, Nelson, Marlborough, Wellington, Kapiti Coast, Hawke's Bay, Gisborne, Bay of Plenty, Coromandel Peninsula and Auckland. Conversely, rainfall was above normal (120-149%) or well above normal (> 149%) for western and southern parts of the South Island and isolated locations in the North Island including Palmerston North, Whanganui and Dargaville.
Soil Moisture	As of 1 December 2014, soil moisture levels were below normal for the time of year for extensive areas of New Zealand, but especially for Nelson, Marlborough, Wellington, southern Wairarapa, the East Cape and Bay of Plenty. Soil moisture levels were above normal in the southern and northern-most parts of the country.
Sunshine	A sunny November for the eastern North Island as well as the eastern and northern South Island, with above normal sunshine (110-125%) recorded in many of these areas. Sunshine was below normal (75-90%) or well below normal (< 75%) for the south-western parts of the South Island.

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Overview

November 2014 was characterised by air pressures which were lower than normal over New Zealand and to the south of the Chatham Islands, with higher pressures than normal present in the north Tasman Sea. This pressure pattern resulted in westerly flow anomalies over New Zealand. Southerly outbreaks occurred frequently during the month, and these contributed to the changeable and generally unsettled weather that characterised the month for many parts of the country. Cold fronts associated with these southerly outbreaks triggered a number of thunderstorms, with many locations

observing lightning and hail at least once during the month (see *Highlights and extreme events* section for further details). The high frequency of southerly outbreaks were reflected in temperatures for the month as a whole, which were below average (-1.20°C to -0.51°C) for southern and western parts of the South Island, and central, western and northern-most parts of the North Island. November temperatures were particularly low for Fiordland, parts of the Southern Lakes and Central Otago, the Canterbury High Country and central-western parts of Waikato where temperatures were well below average (> 1.20°C below average). Despite the generally cool conditions overall, warm periods occurred when westerly flows became established, enabling the foehn effect to increase temperatures in eastern parts of both islands. This was especially notable during the last ten days of the month, when daily maximum air temperatures frequently reached the mid-20's and beyond in Christchurch, Blenheim, Napier and Gisborne. The nation-wide average temperature in November 2014 was 13.4°C (0.3°C below the 1971-2000 November average from NIWA's seven station temperature series which begins in 1909)¹.

The westerly flow anomaly for the month as a whole contributed to rainfall totals that were above normal (120-149%) or well above normal (> 149%) for western and southern parts of the South Island, and isolated locations in the North Island including Palmerston North, Whanganui and Dargaville. The orographic effect of air moving eastwards over elevated land meant that rainfall was below normal (50-79%) or well below normal (< 50%) in eastern parts of both islands such as Central Otago, South Canterbury, Marlborough, Hawke's Bay, Gisborne, Bay of Plenty and the Coromandel Peninsula. It was a similarly dry month for Nelson, Wellington, the Kapiti Coast and Auckland. Remaining areas of the country typically received near normal rainfall (within 20% of normal) for the month.

As of 1 December 2014, soil moisture levels throughout New Zealand were closely reflective of the rainfall anomalies observed during November. Soils had dried considerably for many areas of the North Island in comparison to the soil moisture levels observed on 1 November. Specifically, soils had become notably drier than normal for Wellington, southern Wairarapa, Hawke's Bay, Gisborne and Bay of Plenty. In the South Island, soils around the Nelson region had become considerably drier than normal for the time of year, whilst soils on the east coast of the South Island remained drier than normal. In contrast, soils were wetter than normal for the south of the South Island on the back of an especially wet November. Soil moisture levels were largely near normal for remaining parts of New Zealand.

Most of the country received near normal (90-109%) or above normal (110-125%) sunshine hours for November. It was particularly sunny for eastern areas of the North Island, and eastern and northern parts of the South Island, with well above normal sunshine (> 125%) observed in Gisborne, Blenheim and Cheviot. In contrast, it was a cloudy month for south-western parts of the South Island, where sunshine was below normal (75-90%) or well below normal (< 75%) for the south-western parts of the South Island.

Further Highlights:

- The highest temperature was 31.1°C, observed at Christchurch (Riccarton) on 22 November.
- The lowest temperature was -3.4°C, observed at Middlemarch on 11 November.

¹ Interim value

- The highest 1-day rainfall was 226 mm, recorded at Milford Sound on 21 November.
- The highest wind gust was 209 km/hr, observed at Cape Turnagain on 18 November.
- Of the six main centres in November 2014, Auckland was the warmest, Dunedin was the coolest, Tauranga was the driest, Hamilton was the wettest and cloudiest and Christchurch was the sunniest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres² so far in 2014 (1 January to 30 November) are: Whakatane (2477 hours), Blenheim (2289 hours), Nelson (2283 hours) and Lake Tekapo (2255 hours).

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Temperature: Below average for many parts of the country

November as a whole was a cool month across much of New Zealand, but not excessively cold. This is reflected in relatively few locations observing record high or low mean temperatures for the month. Perhaps most notable this month was Masterton (14.9°C) observing a higher mean temperature for the month than Kaitaia (14.1°C): a quite uncommon occurrence. It is likely that the relative warmth experienced in Masterton resulted from the foehn effect of the anomalous westerly flow during the month. A number of southern locations observed near-record low mean maximum air temperatures, which is likely to be a reflection of the cloudy and wet conditions that prevailed during November there. The nation-wide average temperature in November 2014 was 13.4°C (0.3°C below the 1971-2000 November average from NIWA's seven station temperature series which begins in 1909).

Record³ or near-record mean air temperatures for November were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Masterton	14.9	1.0	1992	3rd-highest
Low records or near-records				
Kaitaia	14.1	-1.8	1967	Lowest
Te Kuiti	11.9	-2.9	1959	Lowest
Secretary Island	10.7	-1.2	1985	3rd-lowest
South West Cape	9.4	-1.2	1991	3rd-lowest
Taumarunui	12.6	-1.7	1947	4th-lowest
Tiwai Point	10.5	-1.3	1970	4th-lowest

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

³ 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.

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Mahia	18.9	0.7	1990	4th-highest
Low records or near-records				
Te Kuiti	17.2	-2.8	1959	Lowest
Kaitaia	17.8	-1.9	1967	2nd-lowest
Port Taharoa	17.7	-1.3	1973	2nd-lowest
Secretary Island	13.4	-1.6	1985	2nd-lowest
South West Cape	11.8	-1.8	1991	3rd-lowest
Manapouri	14.7	-2.0	1963	4th-lowest
Lumsden	15.5	-1.4	1982	4th-lowest
Balclutha	15.3	-1.9	1964	4th-lowest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Masterton	9.3	1.5	1992	3rd-highest
Campbell Island	5.4	0.9	1991	3rd-highest
Low records or near-records				
Te Kuiti	6.6	-2.9	1959	Lowest
Whangaparaoa	11.2	-1.4	1982	2nd-lowest
Taumarunui	7.0	-1.9	1947	2nd-lowest
Tiwai Point	6.8	-1.6	1970	2nd-lowest
Motueka	6.7	-2.0	1956	3rd-lowest
Winchmore	5.1	-2.2	1928	3rd-lowest
Kaitaia	10.4	-1.6	1967	4th-lowest
Motu	6.0	-1.4	1990	4th-lowest
Wairoa	9.1	-1.4	1964	4th-lowest
Appleby	6.4	-2.6	1932	4th-lowest
Mt Cook Village	2.9	-2.5	1929	4th-lowest

Rainfall: Wet for the south of the South Island

November was a particularly wet month for southern parts of the South Island, where double the normal November rainfall was recorded. Invercargill observed its third-wettest November on record; remarkably, rainfall was recorded on all but four days of the month there. It was also a wet month in Milford Sound, which recorded approximately 1000 mm of rainfall (nearly 200% of normal). In contrast, it was especially dry in Nelson where just 13% of normal rainfall was received.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Tiwai Point	179	205	1970	Highest
Balclutha	100	196	1964	2nd-highest
Secretary Island	531	150	1985	3rd-highest
Invercargill	181	200	1900	3rd-highest
Nugget Point	132	201	1930	3rd-highest
South West Cape	139	128	1991	4th-highest
Low records or near-records				
Mahia	17	22	1990	2nd-lowest
Wairoa	23	30	1964	3rd-lowest
Nelson	10	13	1941	3rd-lowest

Sunshine: A sunny month for eastern parts

November was a sunny month for eastern parts of both islands. Cheviot observed its highest total sunshine hours for November on record, coming on the back of the town observing its third-highest total sunshine hours for October on record. It was an especially gloomy month in Queenstown, which recorded just 57% of its normal November sunshine: the lowest in records which began in 1930. A relatively cloudy month for Lake Tekapo compared to other sunny spots meant it slipped from second position to fourth in the rankings of New Zealand's sunniest centres in 2014. Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2014 (1 January to 30 November) are: Whakatane (2477 hours), Blenheim (2289 hours), Nelson (2283 hours) and Lake Tekapo (2255 hours).

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

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Cheviot	266	139	1983	Highest
Blenheim	292	125	1947	2nd-highest
Gisborne	285	131	1905	3rd-highest
Low records or near-records				
Queenstown	124	57	1930	Lowest
Invercargill	130	72	1913	4th-lowest

November climate in the six main centres

November temperatures were well below average in Hamilton and below average in Dunedin, but near average in the remaining four main centres. It was a dry month in Tauranga and Wellington, which received just 47% and 52% of normal November rainfall respectively. Whilst it was both colder and wetter than normal in Dunedin, the city did at least enjoy above normal sunshine hours. Sunshine was similarly above normal in Auckland, Wellington and Christchurch. Of the six main centres in November 2014, Auckland was the warmest, Dunedin was the coolest, Tauranga was the driest, Hamilton was the wettest and cloudiest and Christchurch was the sunniest.

November 2014 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	16.0	-0.1	Near average
Tauranga ^b	15.8	-0.1	Near average
Hamilton ^c	13.5	-1.2	Well below average
Wellington ^d	13.6	+0.2	Near average
Christchurch ^e	13.5	0.0	Near average
Dunedin ^f	11.5	-0.9	Below average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	47	72%	Below normal
Tauranga ^b	35	47%	Well below normal
Hamilton ^c	82	92%	Near normal
Wellington ^d	51	52%	Below normal
Christchurch ^e	48	104%	Near normal
Dunedin ^f	74	131%	Above normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland ^a	216	112%	Above normal
Tauranga ^b	235	105%	Near normal
Hamilton ^g	176	93%	Near normal
Wellington ^d	242	116%	Above normal
Christchurch ^e	254	113%	Above normal
Dunedin ^f	195	117%	Above normal

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

Highlights and extreme events

Temperatures

On 1 and 2 November a strong northwest airflow brought high temperatures to many parts of the country. Temperatures were especially high for the time of year on 2 November, when the maximum temperature reached 28.4°C in Timaru, 27.9°C in Napier, 27.8°C in Gisborne, 27.2°C in Clyde and 24.9°C in Dunedin. Also notable were some very high overnight temperatures recorded on the night of 1 November. Between 6 p.m. on 1 November and 8 a.m. on 2 November, the temperature never dropped below 18.2°C in Balclutha, 19.2°C in Clyde and 20.7°C in Dunedin. In addition, Lumsden (16.1°C) observed its highest daily minimum temperature on record for the month of November (see table below).

On 5 November, cold southerlies contributed to a winter-like day along the east coast of the South Island. Air temperatures dipped as low as 6.8°C in Christchurch and 4.3°C in Winchmore (near Ashburton) in mid-afternoon with heavy showers passing through frequently.

On 13 November Milford Sound recorded a maximum temperature of 19.9°C, the highest maximum temperature of the day across all of New Zealand. The southerly airflow resulted in a cool day throughout the country, with the exception of Milford Sound which benefitted from the foehn effect of the southerly winds passing over the western ranges.

At 10.45 a.m. on 15 November it was 26.2°C in Napier but just 6.2°C in Invercargill. This illustrated the considerable difference in temperature of the airmass in the pre-cold front north-westerly winds over Napier and the post-front south-westerlies in Invercargill.

On 22 November warm north-westerly winds saw temperatures climb into the late-20's and early-30's for eastern parts of the South Island. Temperatures were highest in Christchurch, where the temperature peaked at 31.1°C. This was the first time the temperature had exceeded 30°C in a New Zealand location since 16 March 2014.

The highest daily maximum temperature was 31.1°C, observed at Christchurch (Riccarton) on 22 November.

The lowest daily minimum temperature was -3.4°C, observed at Middlemarch on 11 November.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Kerikeri	27.3	25th	1981	2nd-highest
Mahia	26.1	26th	1990	2nd-highest
Kaikoura	29.5	22nd	1963	2nd-highest
Whangarei	26.8	25th	1967	3rd-highest
Te Puke	27.2	25th	1973	Equal 3rd-highest

Christchurch (Riccarton)	31.1	22nd	1863	Equal 3rd-highest
Low records or near-records				
Taumarunui	12.1	12th	1947	2nd-lowest
Kaitaia	14.9	6th	1971	3rd-lowest
Turangi	11.2	12th	1968	3rd-lowest
Ohakune	9.4	6th	1972	3rd-lowest
Westport	11.4	12th	1966	3rd-lowest
Te Kuiti	13.7	12th	1959	Equal 3rd-lowest
Martinborough	12.0	6th	1986	Equal 3rd-lowest
Wairoa	11.6	5th	1972	Equal 3rd-lowest
Dargaville	14.7	6th	1951	4th-lowest
Castlepoint	9.9	6th	1972	4th-lowest
Mahia	11.1	6th	1990	4th-lowest
Farewell Spit	13.6	12th	1972	Equal 4th-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Te Puke	17.8	26th	1973	Highest
Lumsden	16.1	2nd	1982	Highest
Whitianga	18.1	26th	1971	Equal highest
Kerikeri	18.3	25th	1981	2nd-highest
Masterton	17.2	26th	1992	2nd-highest
Blenheim	18.0	26th	1972	Equal 2nd-highest
Cheviot	16.5	22nd	1982	Equal 2nd-highest
Tauranga	18.2	26th	1941	3rd-highest
Rotorua	16.1	26th	1972	3rd-highest
Ranfurly	15.0	22nd	1975	Equal 3rd-highest
Taupo	15.5	26th	1950	4th-highest
Gisborne	18.9	26th	1940	4th-highest
Waipawa	17.7	26th	1945	4th-highest
Waiau	16.2	22nd	1974	4th-highest
Waipara West	19.0	22nd	1973	4th-highest
Whangarei	18.5	25th	1967	Equal 4th-highest
Low records or near-records				
Appleby	-0.5	13th	1932	2nd-lowest
Whangaparaoa	7.3	6th	1982	3rd-lowest
Motueka	1.1	7th	1956	4th-lowest

Wind

Strong winds on 2 November fanned a large and out-of-control scrub fire near Outram in Otago, forcing the evacuation of at least four homes. A scrub fire in Millers Flat (Central Otago) also forced

the evacuation of one property, and took local fire crews 8 hours to bring under control. Strong winds forced the diversion of an early-morning flight due to land in Queenstown. Wanaka and Manapouri observed their highest and third-highest maximum wind gusts for November respectively (see table below). Farther north, a family of four were trapped in their campervan after it was blown over near Mount Cook Village.

On 15 November, approximately 3600 Canterbury properties were without power after damaging winds brought down trees and power lines. Areas around Darfield, Homebush, Springfield and Hororata were worst affected. The downed power lines also triggered scrub fires in the Selwyn and Waimakariri districts. Caution was advised to motorists travelling on SH 1 from Blenheim to Waipara, SH 7 from Waipara to Springs Junction (Lewis Pass) and SH 2 over the Rimutaka Hill due to strong winds. In Greymouth, a strong burst of wind struck at 5.25 a.m. that lifted roofs and caused damage to the local fire station. Approximately 18,000 homes in Auckland lost power as a result of the strong winds bringing down power lines, and the *Taste of Auckland* festival was forced to close due to severe wind gusts.

On 18 November, motorists travelling on SH 8 from Omarama to Burkes Pass, SH 2 over the Rimutaka Hill, SH 1 and 3 from Marton to Bulls and SH 1 on the Desert Road were warned to drive cautiously due to strong winds.

On 22 November, the Fire Service attended six weather-related callouts in Wellington, as strong winds hit the city. Motorists travelling on SH 2 over the Rimutaka Hill were warned to drive cautiously due to the windy conditions.

On 26 November motorists travelling on SH 1 from Milton to Balclutha, SH 90 from Raes Junction to McNab and SH 2 over the Rimutaka Hill were warned to drive cautiously due to strong winds.

The highest wind gust was 209 km/hr, observed at Cape Turnagain on 18 November.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Dannevirke	111	15th	1961	Highest
Winchmore	100	15th	1970	Highest
Wanaka	83	2nd	1992	Highest
Ashburton	93	15th	1970	Equal highest
Lyttelton Harbour	106	15th	1980	2nd-highest
Mt Kaukau (Wellington)	141	26th	1969	3rd-highest
Oamaru	87	15th	1984	3rd-highest
Manapouri	83	2nd	1991	3rd-highest
Tauranga	83	16th	1973	Equal 3rd-highest
Auckland (Whenuapai)	89	15th	1972	4th-highest
Oamaru	78	15th	1984	4th-highest
Lauder	122	15th	1981	4th-highest

Rain and slips

On 2 November heavy rain and strong winds forced the closure of the Milford Road (SH 94).

On 22 November heavy rain caused surface flooding and a slip near Gore, which resulted in the closure of four rural roads.

The highest 1-day rainfall was 226 mm, recorded at Milford Sound on 21 November.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Kaitaia	43	15th	1985	3rd-highest
Secretary Island	126	20th	1985	3rd-highest
Campbell Island	25	14th	1991	4th-highest

Lightning and Hail

A severe and damaging hailstorm struck parts of the Tasman District on 4 November, with the worst-affected areas around Lower Moutere, Motueka and Riwaka. The worst of the hailstorm lasted approximately 20 minutes and resulted in significant damage to apple and kiwifruit crops: an estimated 15 to 20 orchards were seriously affected with many crops deemed a complete write-off. In some cases hail nets that were used to protect the orchards collapsed under the weight of hail, with trees subsequently breaking under the weight of the collapsed nets. Thunder, lightning and hail was also reported in central Christchurch in the early evening, with hail the size of small marbles blanketing the ground.

On 5 November New Plymouth was struck by a hailstorm, with considerable surface flooding resulting from blocked drains. A number of businesses had to temporarily close due to flooding caused by blocked drains overflowing, and widespread damage to multiple buildings (e.g. roof collapses) were reported.

On 11 November a thunderstorm passed over Dunedin at around 2 p.m. A large *Macrocarpa* tree near Portobello (Otago Peninsula) was shattered after being struck by lightning.

On 12 November thunderstorms occurred in many parts of New Zealand as the northward passage of cold fronts and daytime heating resulted in atmospheric instability. A particularly severe but localised hailstorm struck just outside of Methven, with the hail reportedly accumulating up to 30 cm deep in parts.

On 19 November approximately 150 lightning strikes were recorded in the Canterbury region during the evening, with the thunderstorms also bringing localised heavy rain.

On 28 November thunderstorms again struck Canterbury, with hail falling in Christchurch. Farther north, two helicopters with monsoon buckets were required to contain a forestry fire which was triggered by a lightning strike near Port Underwood (Marlborough). Orchards near Nelson reported damage to crops after being struck by a hailstorm.

Snow and ice

On 3 November, the Milford Road (SH 94) was closed from Hollyford to The Chasm due to snow.

On 5 November, residents of Hanmer Springs awoke to an unseasonable settling of snow in the township. The snow in the town had melted by 10 a.m. but remained to relatively low elevations on the surrounding hills and mountains. *Mount Hutt* ski area, which by this stage had closed for the season, received approximately 25 cm of fresh snow. Ski area staff described this as the largest snowfall of the year (highlighting what a lean season it had been for the ski area snow-wise).

On 6 November, motorists were warned to drive cautiously on the Desert Road (SH 1) due to snow.

On 15 November caution was advised to motorists travelling on SH 94 from Hollyford to Milford Sound due to snow.

On 18 November, the Milford Road (SH 94) was closed at 5 p.m. in anticipation of heavy snowfalls.

Cloud and fog

On 25 November, fog at New Plymouth airport forced the cancellation of numerous flights. The fog persisted for some time, and at midday the temperature in New Plymouth was 16.5°C with humidity at 100%. Fog also forced the cancellation of flights at Wellington, Paraparaumu and Nelson airports.

For further information, please contact:

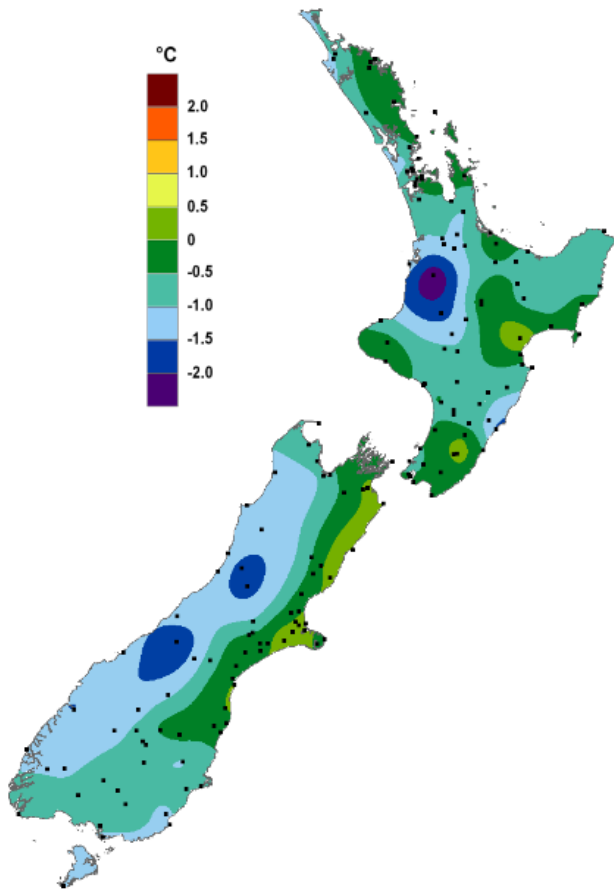
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November 2014 mean temperatures, expressed as a difference from the 1981-2010 average (°C).

Temperatures were below average (between 0.51°C and 1.20°C below average) for many areas of the country, as indicated by the light blue and teal shades. Isolated areas observed well below average temperatures (more than 1.2°C below average) as indicated by dark blue and purple shades. Green shades illustrate areas where temperatures were near average (within 0.50°C of average).

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