

New Zealand's third-warmest winter on record

Temperature	Temperatures were above average (+0.51°C to +1.20°C of average) for most of the country. Temperatures were near average ($\pm 0.50^\circ\text{C}$ of average) for parts of Waikato, northern Canterbury, and inland parts of Otago and Southland.
Rainfall	Rainfall was below normal (50-79% of normal) in parts of southern Northland, central Waikato, the Ruapehu District, and northern Canterbury. In contrast, rainfall was above normal (120-149% of normal) about the Bay of Islands, Gisborne, Tasman, Nelson, Marlborough, the Mackenzie Basin, and eastern and central parts of Otago.
Soil moisture	At the end of winter, soil moisture levels were near normal for most of the country. Soil moisture levels were above normal for isolated parts of Central Otago.

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Overview

Winter 2024 mean sea level air pressure was higher than normal over, east and south of Aotearoa New Zealand. This was associated with more easterly and northeasterly winds than normal, particularly over the South Island, with relatively few cold southerly outbreaks. This resulted warmer than average temperatures throughout the season, with the country registering its 12th-warmest June, 8th-warmest July, and 9th-warmest August on record. Overall, the nationwide average temperature for winter was 9.6°C. This was 1.0°C above the 1991-2020 average, making it New Zealand's 3rd-warmest winter since NIWA's seven station temperature series began in 1909. New Zealand's warmest and 2nd-warmest winters on record are 2022 and 2021, respectively.

June and July were dry months for many parts of the country, although eastern and central areas of Otago were relatively wet during these months. The lack of rain contributed to low hydro lake levels for the time of year. Unsettled westerly airflows prevailed over the country during the second half of August, with a number of fronts passing over the country. This weather pattern delivered abundant precipitation to the main divide, boosting hydro lake levels, and balancing out overall winter rainfall totals for parts of the country that had been drier than normal up to that point.

ENSO-neutral conditions prevailed in the tropical Pacific during the season, although an increased prevalence of easterly-quarter wind flows in New Zealand was likely influenced by an ocean-atmosphere system that was progressing toward La Niña.

Further highlights for winter 2024:

- The highest temperature was 25.7°C, observed at Hastings on 10 June. This is the second-highest temperature ever recorded in New Zealand for the winter season.
- The lowest temperature was -11.8°C, observed at Lake Tekapo on 3 August.
- The highest 1-day rainfall was 139 mm, recorded at Arthur's Pass on 9 June.
- The highest wind gust was 181 km/h, observed at Cape Turnagain on 12 August.
- Of the available, regularly reporting sunshine observation sites, the sunniest four regions in 2024 so far are wider Nelson (1766 hours), Marlborough (1758 hours), Bay of Plenty (1737 hours) and Tasman (1717 hours).
- Of the six main centres in winter 2024, Auckland was the warmest, Tauranga was the sunniest, Wellington was the wettest, Christchurch was the coolest and driest, and Dunedin was the least sunny.

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Temperature: A very warm winter

Forty locations observed record or near-record high mean temperatures during winter 2024. Perhaps most notable was Dunedin, with the city observing its warmest winter since records began in 1947 (the city's previous warmest winter on record was 2023). It was New Zealand's third-warmest winter on record, and five of the country's six warmest winters have occurred since 2020.

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Puysegur Point	9.6	1.0	1978	Highest
Le Bons Bay	8.8	0.8	1984	Highest
Dunedin (Musselburgh)	8.7	1.4	1947	Highest
Kaitiāia	13.8	1.5	1948	2nd-highest
Whangaparāoa	13.4	1.2	1982	2nd-highest
Kawerau	11.1	1.1	1954	2nd-highest
Motu	7.9	1.2	1990	2nd-highest
Mt Ruapehu Chateau	4.8	1.3	2000	2nd-highest
Ohakune	7.3	1.1	1962	2nd-highest
Oban (Stewart Island)	8.0	1.1	1975	2nd-highest
Nugget Point	7.8	1.0	1970	2nd-highest
Tautuku	7.9	1.0	1976	2nd-highest
Mokohinau Island	14.4	0.9	1994	3rd-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.

Leigh	14.3	3.3	1966	3rd-highest
Whakatāne	11.3	1.2	1974	3rd-highest
Auckland (Airport)	12.4	0.8	1959	3rd-highest
Dannevirke	9.5	1.5	1951	3rd-highest
Gisborne	11.3	0.7	1905	3rd-highest
Whakatu	10.3	1.5	1965	3rd-highest
Paraparaumu	10.4	1.0	1953	3rd-highest
Palmerston North	10.3	1.1	1928	3rd-highest
Greymouth	9.9	1.3	1947	3rd-highest
Waimate	7.6	1.3	1908	3rd-highest
Oamaru	7.7	0.7	1967	3rd-highest
Campbell Island	5.8	0.7	1991	3rd-highest
Kerikeri	12.7	0.7	1945	4th-highest
Dargaville	13.0	1.1	1943	4th-highest
Purerua	13.3	0.8	1983	4th-highest
Auckland (Whenuapai)	11.8	0.7	1945	4th-highest
Napier	11.1	1.2	1870	4th-highest
Waipawa	8.7	0.7	1945	4th-highest
Māhia	11.4	0.8	1990	4th-highest
Wellington (Kelburn)	10.4	0.8	1928	4th-highest
Upper Hutt (Trentham)	9.3	1.3	1939	4th-highest
Hāwera	10.1	0.8	1977	4th-highest
Arapito	10.3	1.6	1978	4th-highest
Cape Campbell	10.6	0.8	1953	4th-highest
Kaikōura	9.8	0.9	1963	4th-highest
Cheviot	7.7	0.8	1982	4th-highest
Windsor	6.9	1.0	2000	4th-highest
Low records or near-records				
None observed				

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Whangaparāoa	16.3	1.4	1982	Highest
Kawerau	17.3	1.9	1954	Highest
Mt Ruapehu Chateau	8.9	1.6	2000	Highest
Napier	15.9	1.2	1870	Highest
Whakatu	16.6	2.2	1965	Highest
Puysegur Point	11.8	0.9	1978	Highest
Appleby	14.9	1.3	1932	Highest
Cheviot	13.7	1.2	1982	Highest
Leigh	17.5	2.4	1966	2nd-highest
Auckland (Whenuapai)	16.2	1.0	1945	2nd-highest
Tauranga	16.0	0.9	1913	2nd-highest
Whakatāne	16.5	1.1	1974	2nd-highest

Rotorua	13.7	1.2	1964	2nd-highest
Taupō	14.0	2.3	1949	2nd-highest
Auckland (Māngere)	16.2	1.1	1959	2nd-highest
Dannevirke	13.9	2.1	1951	2nd-highest
Martinborough	14.5	1.3	1986	2nd-highest
Paraparaumu	14.5	1.3	1953	2nd-highest
Ohakune	11.7	1.4	1962	2nd-highest
Waiouru	10.0	1.8	1962	2nd-highest
Whanganui	15.1	1.1	1937	2nd-highest
Arapito	14.9	1.6	1978	2nd-highest
Greymouth	13.9	1.7	1947	2nd-highest
Haast	13.0	1.0	1949	2nd-highest
Waiau	13.6	1.0	1974	2nd-highest
Tapanui	11.3	1.1	1900	2nd-highest
Campbell Island	7.9	0.7	1991	2nd-highest
Purerua	16.6	0.8	1983	3rd-highest
Whangārei	17.3	0.9	1967	3rd-highest
Mokohinau Island	15.8	0.8	1994	3rd-highest
Whitianga	16.8	0.9	1962	3rd-highest
Motu	12.6	1.4	1990	3rd-highest
Waikeria	15.3	0.8	1957	3rd-highest
Gisborne	16.2	0.9	1905	3rd-highest
Waipawa	14.3	1.1	1945	3rd-highest
Palmerston North	14.7	1.3	1928	3rd-highest
Hāwera	13.7	0.9	1977	3rd-highest
Tākaka	15.0	1.1	1978	3rd-highest
Reefton	12.2	1.2	1960	3rd-highest
Dunedin (Musselburgh)	11.9	1.1	1947	3rd-highest
Matamata	15.4	1.3	1999	4th-highest
Hamilton (Ruakura)	15.6	1.0	1906	4th-highest
Te Kuiti	15.3	1.1	1959	4th-highest
Takapau Plains	12.7	1.4	1962	4th-highest
Ngawi	14.5	1.0	1972	4th-highest
Franz Josef	13.4	1.2	1953	4th-highest
Five Rivers	10.7	1.0	1982	4th-highest
Waipounamu	10.4	0.8	1980	4th-highest
Nugget Point	10.2	0.7	1970	4th-highest
Low records or near-records				
None observed				

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Dunedin (Musselburgh)	5.4	1.7	1947	Highest

Māhia	9.0	1.0	1990	2nd-highest
Puysegur Point	7.4	1.1	1978	2nd-highest
Kaikōura	6.9	0.9	1963	2nd-highest
Le Bons Bay	6.5	1.1	1984	2nd-highest
Windsor	1.1	1.1	2000	2nd-highest
Oamaru	3.7	1.1	1967	2nd-highest
Oban (Stewart Island)	4.8	1.4	1975	2nd-highest
Nugget Point	5.3	1.3	1970	2nd-highest
Tautuku	4.4	1.3	1976	2nd-highest
Kaitia	10.5	1.6	1948	3rd-highest
Mokohinau Island	12.9	1.0	1994	3rd-highest
Motu	3.2	0.9	1990	3rd-highest
Castlepoint	8.9	1.1	1972	3rd-highest
Christchurch (Botanic Gardens)	3.8	1.8	1863	3rd-highest
Akaroa	6.0	1.0	1978	3rd-highest
Kerikeri	8.6	1.0	1945	4th-highest
Mt Ruapehu Chateau	0.7	1.0	2000	4th-highest
Wellington (Kelburn)	8.0	1.0	1928	4th-highest
Ōkārīto	4.5	0.9	1982	4th-highest
Cape Campbell	8.4	0.7	1953	4th-highest
Waimate	2.7	1.5	1908	4th-highest
Low records or near-records				
Tūrangi	0.5	-1.6	1968	Lowest
Waipounamu	0.0	0.1	1980	3rd-lowest

Rainfall: Near normal for many, but dry in the Ruapehu District

Winter rainfall was near normal (80-119% of normal) for 69% of New Zealand's regularly reporting climate stations. Stations at Mt Ruapehu Chateau and Waiouru observed their lowest and 3rd-lowest winter rainfall totals on record, respectively. The country's wettest location relative to normal was Russell. The town received 755 mm of rain, which is 161% of its normal winter rainfall.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Purerua	571	147	1983	2nd-highest
Low records or near-records				
Mt Ruapehu Chateau	267	33	2000	Lowest
Waiouru	184	54	1950	3rd-lowest

Winter in the six main centres

It was the warmest winter on record for Dunedin. Temperatures were above average for the remaining main centres except Hamilton, where temperatures were near average. It was a wet winter in Dunedin, where rainfall was above normal. Rainfall was near normal for the remaining main centres. Of the six main centres in winter 2024, Auckland was the warmest, Tauranga was the sunniest, Wellington was the wettest, Christchurch was the coolest and driest, and Dunedin was the least sunny.

Winter 2024 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	12.3	+0.7	Above average
Tauranga ^b	11.5	+0.6	Above average
Hamilton ^c	9.6	+0.2	Near average
Wellington ^d	10.4	+0.8	Above average
Christchurch ^e	7.2	+0.6	Above average
Dunedin ^f	8.7	+1.4	Warmest on record
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^g	342 ²	92	Near normal
Tauranga ^b	394 ²	108	Near normal
Hamilton ^c	332	86	Near normal
Wellington ^d	397	97	Near normal
Christchurch ^e	163	86	Near normal
Dunedin ^f	209	127	Above normal
Sunshine			
Location	Sunshine (hours)		
Auckland ^a	468 ³		
Tauranga ^b	536 ³		
Hamilton ^h	405		
Wellington ^d	367		
Christchurch ^e	427		
Dunedin ^f	322		

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

² Missing 2 days of data.

³ Missing 1 day of data.

Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred during winter 2024. Note that a more detailed list of significant weather events for winter 2024 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 25.7°C, observed at Hastings on 10 June. The lowest temperature was -11.8°C, observed at Lake Tekapo on 3 August.

On 10 June, a very warm northwesterly airflow covered much of New Zealand. The highest temperatures were recorded on the east coast of the North Island. Hastings recorded a maximum temperature of 25.7°C, which is the second-highest temperature ever recorded in New Zealand for the winter season. In Whakatu, the temperature reached 25.3°C, which is New Zealand's fourth-highest winter temperature on record.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Purerua	21.2	Jun-10th	1983	Highest
Te Puke	20.6	Jun-10th	1973	Highest
Kawerau	22.1	Jun-8th	1954	Highest
Hastings	25.7	Jun-10th	1965	Highest
Hāwera	19.3	Aug-29th	1977	Highest
Tautuku	23.5	Jul-26th	1976	Highest
Waimate	23.4	Jun-1st	1908	Equal highest
Kerikeri	21.6	Jun-10th	1945	2nd-highest
Mt Ruapehu Chateau	15.8	Jun-8th	2000	2nd-highest
Whakatu	25.3	Jun-10th	1965	2nd-highest
Waipawa	23.4	Jun-10th	1945	2nd-highest
Māhia	21.1	Aug-18th	1990	2nd-highest
Palmerston North	21.0	Aug-31st	1918	2nd-highest
Motueka	21.8	Jun-1st	1956	2nd-highest
Boyle River Lodge	18.1	Jun-1st	1983	2nd-highest
Windsor	21.8	Jun-1st	2000	2nd-highest
Tapanui	20.6	Aug-31st	1900	Equal 2nd-highest
Kaitaia	21.2	Jun-8th	1948	3rd-highest
Whakatāne	20.6	Jun-8th	1975	3rd-highest
Motu	19.4	Jun-3rd	1990	3rd-highest
Gisborne	22.8	Jun-10th	1905	3rd-highest
Pelorus Sound	18.7	Jun-9th	1982	3rd-highest
Brothers Island	17.7	Jun-3rd	1997	3rd-highest
Oamaru	22.2	Jun-1st	1967	3rd-highest
Tiri Tiri	18.9	Jun-10th	1982	Equal 3rd-highest
Warkworth	21.8	Aug-31st	1966	4th-highest

Napier	23.6	Jun-10th	1868	4th-highest
Whanganui	21.3	Aug-31st	1937	4th-highest
Waiau	22.1	Jun-1st	1974	4th-highest
Orari	22.8	Jun-1st	1972	4th-highest
Dargaville	21.7	Aug-31st	1943	Equal 4th-highest
Auckland (Māngere)	20.9	Aug-31st	1959	Equal 4th-highest
Dannevirke	20.7	Aug-29th	1951	Equal 4th-highest
Five Rivers	18.5	Jul-26th	1982	Equal 4th-highest
Low records or near-records				
None observed				

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
Low records or near-records				
Waipounamu	-7.4	Jul-15th	1980	Equal lowest
Tūrangi	-7.2	Aug-4th	1968	3rd-lowest
Waiheke Island	-1.3	Jul-12th	1985	4th-lowest
Middlemarch	-9.4	Jun-12th	2000	Equal 4th-lowest
High records or near-records				
Ohakune	12.4	Jun-10th	1972	Highest
Puysegur Point	13.5	Jun-7th	1978	Highest
Cheviot	13.2	Jun-1st	1982	Highest
Wānaka	11.1	Jul-27th	1972	Highest
Ranfurly	12.0	Jun-1st	1897	Highest
Middlemarch	14.8	Jun-1st	2000	Highest
Manapouri (West Arm Jetty)	10.1	Jun-1st	1972	Highest
Nugget Point	11.5	Jun-1st	1972	Highest
Tautuku	13.5	Jun-1st	1976	Highest
Kaitaia	18.2	Jun-9th	1948	Equal highest
Whanganui	15.8	Jun-10th	1972	2nd-highest
Arthurs Pass	8.5	Jun-10th	1978	2nd-highest
Medbury	14.2	Jun-1st	1927	2nd-highest
Mt Cook (Airport)	10.4	Jun-1st	1929	2nd-highest
South West Cape	11.9	Jun-1st	1991	2nd-highest
Auckland (Henderson North)	16.0	Jun-10th	1971	Equal 2nd-highest
Gore	12.8	Jun-1st	1907	Equal 2nd-highest
Mt Ruapehu Chateau	8.5	Jun-10th	2000	3rd-highest
Secretary Island	13.3	Jun-1st	1988	3rd-highest
Kaikōura	13.7	Jun-1st	1972	3rd-highest
Tara Hills	9.5	Jun-1st	1949	3rd-highest
Manapouri (Airport)	10.9	Jun-1st	1973	3rd-highest
Whangārei	16.4	Jun-10th	1967	Equal 3rd-highest
Lumsden	12.3	Jun-1st	1982	4th-highest
Waipounamu	10.1	Jun-1st	1980	4th-highest
Purerua	16.2	Jun-8th	1983	Equal 4th-highest

Mokohinau Island	16.4	Jun-10th	1994	Equal 4th-highest
Lake Tekapo	8.2	Jun-1st	1928	Equal 4th-highest
Roxburgh	12.1	Jun-1st	1950	Equal 4th-highest

Rain and slips

The highest 1-day rainfall was 139 mm, recorded at Arthur's Pass on 9 June.

From 25-26 June, heavy rainfall caused severe impacts for much of Gisborne and Hawke's Bay. In Wairoa, at least 400 properties were affected by flooding, with hundreds of residents evacuated from their homes. A state of local emergency was declared for Wairoa, with power turned off in the town due to floodwaters putting substations at risk. Farther south, a regional State of Emergency was declared for the Heretaunga area of Hastings after high swells and high tide combined to cause inundation of low lying areas.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Roxburgh	31	Jul-29th	1950	2nd-highest
Taumata	28	Jul-29th	2001	2nd-highest
Tautuku	45	Jun-15th	1976	2nd-highest
Gisborne	126	Jun-25th	1937	3rd-highest
Palmerston North	64	Aug-17th	1928	3rd-highest
Waihau	123	Jun-25th	1985	4th-highest
Māhia	66	Jun-25th	1990	4th-highest
Glenledi	51	Jun-15th	1984	4th-highest
Round Hill	39	Jun-16th	2003	4th-highest

Wind

The highest wind gust was 181 km/h, observed at Cape Turnagain on 12 August.

On 1 June, strong northwesterly winds fanned approximately twelve vegetation fires across Canterbury. Residents were evacuated along Racecourse Rd, east of Mt Brown Rd, due to a vegetation fire in Broomfield, Hurunui. According to NIWA's New Zealand Drought Index, much of eastern Canterbury was classified as dry or very dry in early June.

From 25-26 June, strong southerly and southeasterly winds struck eastern parts of the North Island, bringing down trees and powerlines in parts of Gisborne and Hawke's Bay. More than 2000 customers were without power for a time. A fishing vessel along with three crew went missing in the storm. Sadly, the bodies of the crew were found washed ashore on the Māhia Peninsula.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
South West Cape	170	Jun-1st	1991	Highest
Whitianga	97	Aug-19th	1991	2nd-highest

Tara Hills	98	Jun-1st	1985	2nd-highest
Gisborne	104	Jun-26th	1972	3rd-highest
Reefton	66	Jul-1st	1999	3rd-highest
Ranfurly	90	Jun-1st	2000	3rd-highest

Snow and ice

From 8-21 July, freezing fog and black ice were regularly reported for inland parts of the South Island, especially about the Mackenzie Basin and Central Otago. The icy conditions were associated with an exceptionally strong high pressure system which prevailed over the South Island for nearly two weeks. On the evening of 10 July, Ranfurly recorded a mean sea level pressure of 1046.5 hPa – a new national barometric pressure record.

From 18-19 August, a cold southerly outbreak delivered snowfall to low elevations across the South Island. On 18 August, the more notable snowfalls occurred in Canterbury, where the southerly airflow undercut a relatively warm and moist airmass that had arrived from the north. Snow fell to approximately 200 m above sea level in parts of Canterbury, with sea level snowfall reported at Woodend Beach. Snow closed SH73 from Springfield to Otira, with approximately 50 people stuck in Arthur’s Pass Village for a night. On 19 August, snowfall occurred to sea level in southern parts of the South Island, including Dunedin and Invercargill.

Lightning, hail, and tornadoes

On 19 August, a lightning strike caused a power outage for 3,700 customers in the Raglan and Te Uku areas.

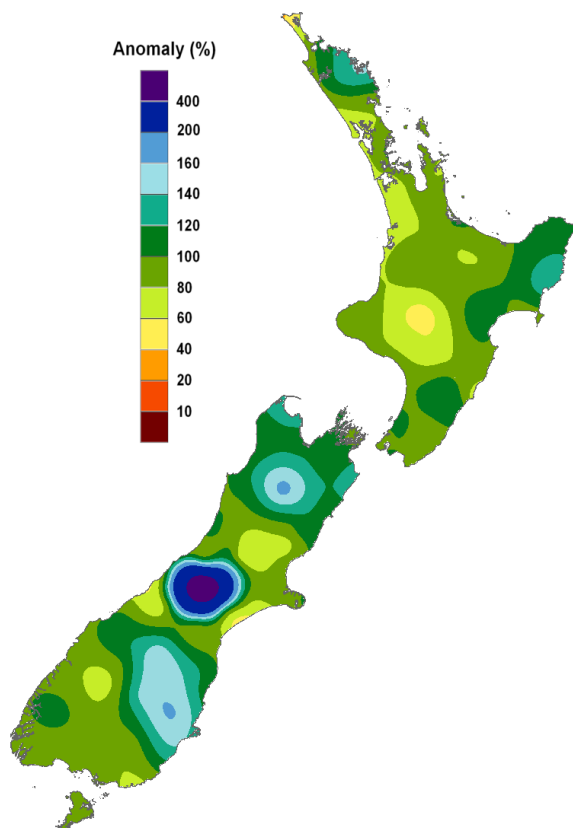
Cloud and fog

On 24 June, fog forced the cancellation and delay of more than 60 flights at Auckland Airport. Ferry services on Auckland Harbour were also delayed because of the poor visibility. On 25 June, fog was again present at Auckland Airport, with 24 flights cancelled or delayed

On 18 July, fog developed again at Auckland. Dozens of flights were delayed or cancelled at Auckland Airport, while several ferry services were cancelled.

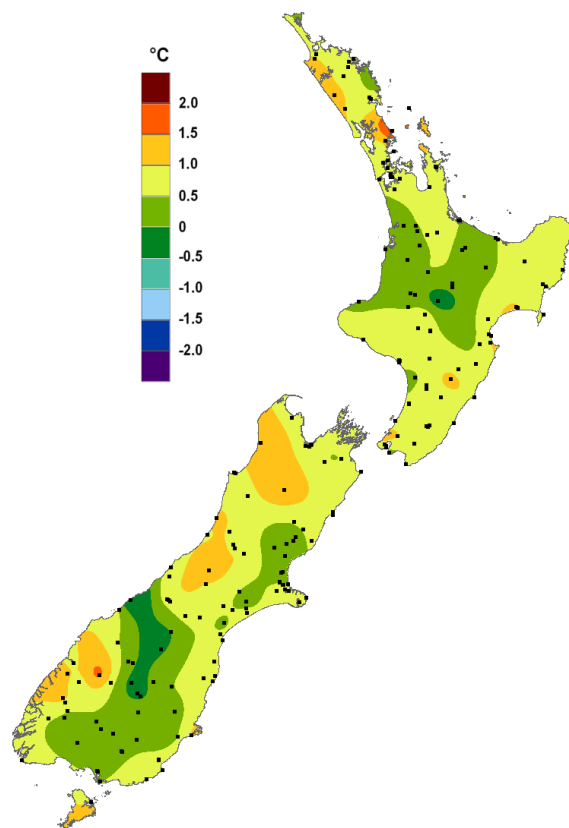
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Winter rainfall

Expressed as a percentage of the 1991-2020 normal. Note, the very high rainfall anomaly depicted for the central South Island is likely a result of station data errors which had not been reviewed before this map was produced.



Winter temperature

Expressed as a departure from the 1991-2020 average in degrees Celsius.

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