

Warm December with several temperature records broken

Temperature	Above average December temperatures for all of New Zealand, particularly throughout the North Island.
Rainfall	Wetter than normal in the Far North, Fiordland and Stewart Island. Much drier than normal in eastern North Island, South Canterbury and Otago.
Sunshine	A very sunny month for the South Island and eastern North Island. Cloudy for the northern half of the North Island.
Soil moisture	At the end of December, soils were much drier than usual in Bay of Plenty, Hawkes Bay, Taranaki, coastal Waikato, Nelson, parts of Canterbury and central Southland.

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Overview

It was a warm month, with more frequent northerly and northwest winds than usual affecting New Zealand. On 6 December, a tornado struck west Auckland and the North Shore. The wind brought down trees and flung them over the motorway, along with panels ripped from beside the motorway. Three people were killed by falling slabs of concrete at a construction site.

Well above average temperatures (greater than 1.2°C above the December average) were observed over much of the North Island, as well as around Nelson and parts of eastern South Island, resulting in several December temperature records or near-records (see table below). The remainder of the country experienced above average temperatures (between 0.5 and 1.2°C above average). The nation-wide average temperature in December 2012 was 16.7°C (1.1°C above the 1971-2000 December average), using NIWA's seven-station temperature series which begins in 1909.

Rainfall for December was above normal in the extreme north and south of the country. Less than 50

percent of normal rainfall for December fell in Gisborne, Hawkes Bay, Wairarapa, Nelson and much of Canterbury, Otago and central Southland. For other areas, rainfall was close to normal.

At the end of December, soils were much drier than usual in Bay of Plenty, Hawkes Bay, Taranaki, coastal Waikato, Nelson, parts of Canterbury and central Southland. In contrast, soils were wetter than usual in Northland. Elsewhere, soil moisture levels were close to normal for the time of year.

It was a very sunny December for the South Island and eastern North Island (with sunshine totals greater than 120 percent of December normal). In contrast, below normal sunshine totals were recorded for the northern half of the North Island (between 75 and 90 percent of December normal). Near normal sunshine totals were generally observed elsewhere.

Further Highlights:

- The highest temperature was 34.5°C, observed at Gisborne on 19 December.
- The lowest temperature was -1.7°C, recorded at Motu on 1 December.
- The highest 1-day rainfall experienced was 319 mm at Milford Sound on 31 December.
- The highest gust recorded was 206 km/hr at Cape Turnagain, on 2 December.
- Of the six main centres in December 2012, Christchurch was the driest and sunniest, Hamilton the wettest and cloudiest, Dunedin the coolest; and Tauranga the warmest.

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Temperature: A warm month for the whole country, especially the North Island

Well above average temperatures (greater than 1.2°C above the December average) were observed over much of the North Island, as well as around Nelson and parts of eastern South Island, resulting in several December temperature records or near-records (see table below). The remainder of the country experienced above average temperatures (between 0.5 and 1.2°C above average).

The nation-wide average temperature in December 2012 was 16.7°C (1.1°C above the 1971-2000 December average), using NIWA's seven-station temperature series which begins in 1909¹.

Record² or near-record mean air temperatures for December were recorded at:

Location	Mean air temp. (°C)	Departure from normal ³ (°C)	Year records began	Comments
Record high or near-record high				
Kaikohe	19.1	1.9	1973	Highest
Whangaparaoa	18.8	0.9	1982	4th-highest
Tauranga Aero	19.4	1.4	1913	2nd-highest
Te Puke	18.4	1.4	1973	4th-highest
Auckland Aero	19.6	1.3	1959	3rd-highest
Dannevirke	17.7	1.7	1951	3rd-highest
Waione	18.5	1.2	1991	4th-highest
Ngawi	18.4	1.1	1972	4th-highest
Hicks Bay	18.3	1.1	1969	4th-highest
Gisborne	19.4	1.3	1905	4th-highest
Hastings	19.8	2.0	1965	2nd-highest
Waipawa	18.4	1.8	1945	Highest
Mahia	17.8	0.9	1990	3rd-highest
Palmerston North	18.1	1.7	1991	2nd-highest
Ohakune	16.7	2.7	1962	Highest
Wanganui	17.8	1.2	1987	4th-highest
Takaka	17.6	1.6	1978	3rd-highest
Nelson	18.0	1.4	1943	3rd-highest
Kaikoura	16.7	1.3	1963	4th-highest
Cheviot	16.8	1.7	1982	2nd-highest
Le Bons Bay	15.6	1.9	1984	3rd-highest

¹ Interim monthly value

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.

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

**Rainfall: Wetter than normal in the Far North, Fiordland and Stewart Island.
Much drier than normal in eastern North Island, South Canterbury and Otago.**

Rainfall for December was above normal in the extreme north and south of the country. Less than 50 percent of normal rainfall for December fell in Gisborne, Hawkes Bay, Wairarapa, Nelson and much of Canterbury, Otago and central Southland. For other areas, rainfall was close to normal.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Record high or near-record high				
Kaikohe	217	198	1956	4th-highest
Palmerston North	127	133	1991	4th-highest
South West Cape	155	145	1991	4th-highest
Record low or near-record low				
Wairoa, North Clyde	18	26	1964	4th-lowest
Timaru Aero	11	21	1990	2nd-lowest
Dunedin Aero	14	20	1962	2nd-lowest
Lumsden	57	60	1982	4th-lowest
Cromwell	12	27	1949	4th-lowest
Alexandra	11	22	1983	4th-lowest

At the end of December, soils were much drier than usual in Bay of Plenty, Hawkes Bay, Taranaki, coastal Waikato, Nelson, parts of Canterbury and central Southland. In contrast, soils were wetter than usual in Northland. Elsewhere, soil moisture levels were close to normal for the time of year.

**Sunshine: A very sunny month for the South Island and eastern North Island.
Cloudy for the northern half of the North Island.**

It was a very sunny December for the South Island and eastern North Island (with sunshine totals greater than 120 percent of December normal). In contrast, below normal sunshine totals were recorded for the northern half of the North Island (between 75 and 90 percent of December normal). Near normal sunshine totals were generally observed elsewhere.

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

Location	Sunshine hours	Percentage of normal	Year records began	Comments
Record high or near-record high				
Greymouth Aero	230	138	1947	4th-highest
Cheviot	261	132	1983	2nd-highest
Balclutha, Telford	260	159	1964	3rd-highest

December climate in the six main centres

Of the six main centres, Christchurch was the driest and sunniest, Hamilton the wettest and cloudiest, Dunedin the coolest; and Tauranga the warmest.

December 2012 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	19.3	1.1	Above average
Tauranga ^b	19.4	1.4	Well above average
Hamilton ^c	18.3	1.4	Well above average
Wellington ^d	16.3	0.9	Above average
Christchurch ^e	17.0	1.2	Well above average
Dunedin ^f	15.1	1.3	Well above average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	64	75%	Below normal
Tauranga ^b	79	84%	Near normal
Hamilton ^c	132	125%	Above normal
Wellington ^d	70	84%	Near normal
Christchurch ^e	38	81%	Near normal
Dunedin ^f	59	73%	Below normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland ^a	172	87%	Below normal
Tauranga ^b	196	84%	Below normal
Hamilton ^g	155	70%	Well below normal
Wellington ^d	217	97%	Near normal
Christchurch ^e	231	105%	Near normal
Dunedin ^f	185	110%	Above normal

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

Highlights and extreme events

Rain and slips

The highest 1-day rainfall experienced in December was 319 mm at Milford Sound on 31 December.

On 6 December, heavy rain caused flooding, closing SH18 between Tauhinu Road and Westgate, the major link between North Shore and west Auckland. Flash flooding affected many minor roads particularly in the Hobsonville and Whenuapai areas. The storm caused delays and cancellations of flights into and out of Auckland International Airport. Near Rotorua, intense rain caused flash flooding in Ngongotaha, sweeping a caravan about 50 m from its berth. In the Reporoa area, the storm uprooted trees, flooded roads and paddocks, and damaged driveways.

On 7 December, heavy rain caused the Heathcote River in Christchurch to burst its banks.

On 18 December, a slip caused delays on SH6 between Inangahua Junction and Westport.

On 30 December, brief but intense heavy rain, thunder and lightning, affected Dunedin about 4pm causing stormwater systems to back up and floodwaters to lap at the front doors of Mosgiel shops. Dunedin firefighters were kept busy with about eight water-related callouts in about 40 minutes.

On 1 January 2013, the Milford Track was closed after heavy rainfall overnight. The Arthur and Clinton rivers were flooded across the track in several places, with the Arthur having reached record levels. About 120 stranded trampers already on the track had to hunker down in Department of Conservation huts for two nights, and no new walkers joined the trail. In addition, one tramper had to be airlifted from the Kepler Track with hypothermia. The trampers were able to resume their walk on 2 January.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Kaikohe	106	24th	1956	2nd-highest
Palmerston North	39	30th	1991	2nd-highest
Milford Sound	319	31st	1929	3rd-highest
Tiwai Point	40	1st	1970	3rd-highest

Temperatures

The highest temperature was 34.5°C, observed at Gisborne on 19 December. Several record or near-record temperatures were also experienced (see tables below).

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
Low records or near-records				
Kerikeri	4.8	21st	1981	Lowest
Taupo	-1.1	1st	1949	2nd-lowest
Motu	-1.7	1st	1990	Lowest
Taumarunui	2.1	1st	1947	Equal 4th-lowest
Turangi	0.2	1st	1968	2nd-lowest
Hicks Bay	5.7	1st	1969	Equal lowest
Wairoa, North Clyde	4.5	1st	1964	3rd-lowest
Le Bons Bay	3.7	1st	1984	2nd-lowest
Balclutha, Telford	0.3	6th	1964	2nd-lowest
High records or near-records				
Cape Reinga	18.6	30th	1971	Equal highest
Kaikohe	19.5	25th	1973	Highest
Dargaville	19.5	25th	1951	Equal 3rd-highest
Whangaparaoa	18.6	25th	1982	Equal 4th-highest
Whenuapai	20.1	24th	1951	2nd-highest
Paeroa	20.1	26th	1971	3rd-highest
Tauranga Aero	20.1	27th	1941	2nd-highest
Whakatane Aero	20.0	25th	1975	2nd-highest
Rotorua Aero	18.5	25th	1972	Equal 3rd-highest
Taupo	18.3	25th	1950	2nd-highest
Motu	16.6	27th	1990	Highest
Hamilton	20.0	26th	1946	2nd-highest
Port Taharoa	20.8	25th	1974	Highest
Taumarunui	19.0	26th	1947	Equal 2nd-highest
Turangi	17.5	27th	1968	3rd-highest
New Plymouth	19.5	26th	1944	2nd-highest
Martinborough	18.8	18th	1986	Equal 4th-highest
Hastings	20.2	18th	1972	4th-highest
Waipawa	18.2	25th	1945	4th-highest
Paraparaumu Aero	18.5	26th	1972	4th-highest
Palmerston North	19.4	25th	1991	Highest
Wellington Aero	19.6	26th	1972	2nd-highest
Stratford	17.6	26th	1972	2nd-highest
Ohakune	16.9	27th	1972	3rd-highest
Wanganui	19.4	22nd	1972	Equal 4th-highest
Takaka	20.3	26th	1978	Highest
Farewell Spit	18.6	25th	1972	Highest
Puysegur Point	16.2	17th	1978	Equal 4th-highest
Motueka, Riwaka	18.1	26th	1972	Equal 3rd-highest
Nelson	20.1	26th	1943	Highest

Blenheim	19.8	26th	1972	Equal 2nd-highest
Ranfurly	15.6	17th	1975	4th-highest

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Kaikohe	28.1	19th	1973	Highest
Whakatane Aero	28.8	3rd	1975	Equal 4th-highest
Port Taharoa	31.4	24th	1973	Highest
Te Kuiti	29.3	24th	1959	2nd-highest
New Plymouth	29.9	24th	1944	Highest
Dannevirke	29.4	26th	1951	3rd-highest
Waione	31.6	26th	1991	2nd-highest
Martinborough	31.3	25th	1986	Highest
Ngawi	30.0	25th	1972	Highest
Paraparaumu Aero	29.2	24th	1953	Equal highest
Palmerston North	30.8	26th	1991	Highest
Levin	29.7	25th	1895	Highest
Wellington Aero	29.6	25th	1962	Highest
Wallaceville	29.3	25th	1939	Highest
Stratford	26.8	25th	1960	2nd-highest
Hawera	25.5	26th	1977	Equal highest
Ohakune	29.0	25th	1962	Highest
Wanganui	29.5	24th	1937	3rd-highest
Wanganui	29.7	24th	1987	Highest
Takaka	30.5	24th	1978	Highest
Farewell Spit	26.8	25th	1971	2nd-highest
Reefton	32.2	24th	1960	Highest
Motueka, Riwaka	31.9	25th	1956	Highest
Appleby	29.1	24th	1943	4th-highest
Nelson	30.3	24th	1943	Highest
Hanmer Forest	32.0	25th	1906	4th-highest
Cheviot	31.9	17th	1982	2nd-highest
Le Bons Bay	28.8	17th	1984	4th-highest
Ranfurly	31.1	25th	1975	3rd-highest
Manapouri Aero	28.3	24th	1963	4th-highest
Lumsden	28.8	25th	1982	3rd-highest
Lauder	32.5	25th	1924	4th-highest
Alexandra	33.2	25th	1983	3rd-highest
Gore	29.0	25th	1971	Equal highest
Low records or near-records				
Port Taharoa	16.6	2nd	1974	Equal 4th-lowest

Wind

The highest wind gust recorded in December was 206 km/hr at Cape Turnagain, on 2 December.

On 2 December, strong winds caused property damage in Featherston.

On 5 December, strong winds in the Wellington region damaged property and brought down trees and power lines.

On 6 December, a tornado, struck west Auckland and the North Shore. The wind brought down trees and flung them over the motorway, along with panels ripped from beside the motorway. Three people were killed by falling slabs of concrete at a construction site. Several people were injured and required hospital treatment. Property damage was reported across the region and power was cut to Hobsonville, Henderson, Greenhithe and Riverhead. Auckland Transport suspended several bus services because of the extreme weather. Lights were blown down on the Upper Harbour motorway near Whenuapai. About 250 people were evacuated from damaged homes, and looked after at Whenuapai Airforce Base. Many homes were damaged beyond repair. Near Rotorua, a twister brought down trees and power lines, damaged property, sent calves flying, injured horses and trapped children at a remote riding school.

On 13 December, strong winds associated with a lightning storm, damaged property in Nelson, particularly in the Stoke area, with many trees uprooted, including historic trees in Isele Park. A tulip tree, possibly the biggest in the southern hemisphere, split and fell, squashing a 150-year-old fig tree, and a giant oak was uprooted. At Nayland Primary School, branches were torn off trees, and the telegraph poles holding up the shade sails over the playground were ripped off at ground level.

On 14 December, a twister moved through Cromwell, damaging property and uprooting at least one large tree.

On 31 December, strong winds forced Wellington City Council to cancel its midnight fireworks display at the last minute due to the strong northerly winds that would have sent the fireworks off 'sideways'.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Whenuapai	128	6th	1972	Highest
Rotorua Aero	96	6th	1972	Highest
Taupo	78	7th	1982	Equal 4th-highest
Castlepoint	172	2nd	1972	Highest
Nelson	93	6th	1972	Equal 3rd-highest
South West Cape	163	14th	1991	2nd-highest

Lightning and hail

On 2 December, a rare form of lightning storm crossed Wellington and Wairarapa, with cloud-to-cloud lightning bolts. The NIWA electronic weather station at Baring Head was destroyed by the lightning.

On 6 and 7 December, hail storms in the Nelson area caused significant damage to fruit crops. Lightning on 6 December killed eight young cows on a Reporoa farm.

On 13 December, a severe lightning storm struck Nelson, knocking out power in many areas.

Cloud and fog

On 2 December, low cloud and fog caused cancellations and delays of flights into and out of Wellington Airport.

On 5 December, low cloud and heavy rain near St Arnaud, caused the cancellation of an RNZAF helicopter training exercise.

On 18 December, fog caused the cancellation of several flights into and out of Wellington Airport, causing disruptions at other airports around the country. Low cloud also affected Nelson Airport, and sea fog closed New Plymouth Airport. In Christchurch, a rare rainbow cloud, formed when the sun is high in the sky and shines through ice particles in high-level cirrus clouds, was visible for about 30 minutes in the middle of the day.

On 19 December, fog again covered Wellington, but it did not affect flights.

On 23 December, thick fog and low cloud caused delays and cancellations to more than 100 flights in and out of Wellington Airport during the afternoon and evening. Flights were resumed at 9am on the 24th.

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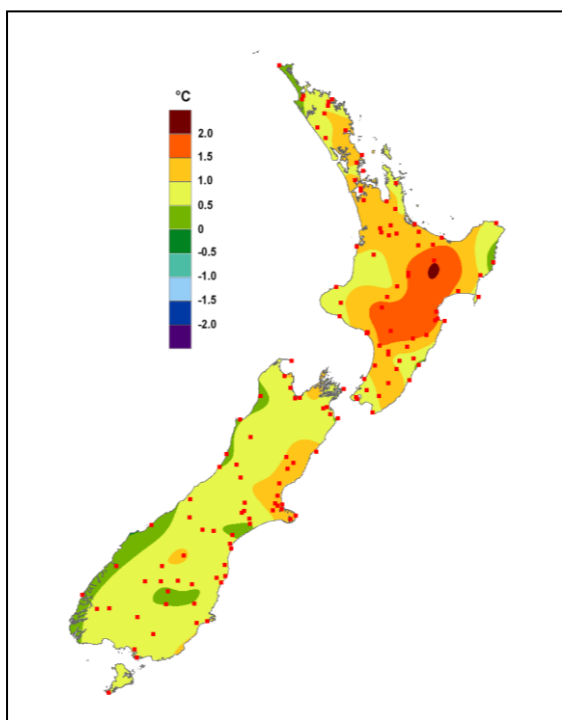
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December 2012 temperature, expressed as a difference from average December conditions.