

National Climate Summary – December 2009: Very sunny in the north

- Sunshine: Very sunny for the north and east of the North Island
- Rainfall: Dry in the north and east of both islands; very dry in the Far North
- Temperature: Near average for most of country

December sunshine totals were well above normal (more than 125 percent of normal) in the north and east of the North Island and parts of North Canterbury. Much of the rest of the country received above normal sunshine (between 110 and 125 percent of normal).

Well below normal rainfall (less than 50 percent of normal) was recorded in much of the Far North District for December. It was also drier-than-normal (between 50 and 80 percent of normal) in Central North Island, Bay of Plenty, Gisborne, southern Hawkes Bay, Taranaki District, Wairarapa, Northern South Island, Canterbury and Otago. December rainfall was above normal (between 120 and 150 percent of normal) in the south and west of the South Island and coastal Taranaki. Soil moisture levels on 31 December 2009 were well below normal (more than 50mm below normal) in the Far North, Central North Island and Eastern Bay of Plenty.

Temperatures were near average (between -0.5°C and 0.5°C from average) for most of the country. Below average temperatures (between 0.5 and 1.0°C below average) were recorded in parts of Hawkes Bay, Kapiti, South Canterbury, West Coast and Southland. Above average temperatures were recorded in parts of Bay of Plenty, Coromandel and Northland. The national average temperature was 15.3°C (0.3°C below the long-term December average).

The most significant weather events during the month were during the three days from 2 to 4 December when heavy rain caused localised flooding in parts of Auckland, the North Shore and Waikato and several locations throughout the country recorded extremely low maximum and minimum temperatures. Also, on 14 December, severe hailstorms were observed (with hailstones as large as 3cm in diameter reported) in inland Canterbury from Geraldine to north of Rangiora and a tornado was witnessed near Springfield, 70 km west of Christchurch.

During December 2009, higher than normal pressures over the Tasman Sea and New Zealand (particularly over the North Island) resulted in sunny skies and more frequent southwesterly winds over the country. This pattern is typical of El Niño conditions, and has contributed to the lower than normal rainfall in the north and east and higher than normal rainfall in the west and south of the country.

Further Highlights:

- The highest temperature was 32.0°C recorded at Dunedin Airport on the 25th (2nd highest in December temperature for this site).
- The lowest temperature of -3.5°C was recorded at Lumsden on the 3rd (lowest December temperature at this site).
- The highest 1-day rainfall was 197 mm, recorded at Mount Cook on the 9th (not a record).
- The highest wind gust was 182 km/hr, recorded at Cape Turnagain on the 12th (not a record).
- Of the six main centres, Tauranga was the warmest and sunniest, Hamilton the wettest, Christchurch and Dunedin the equal driest, and Dunedin the coolest.

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SUNSHINE: VERY SUNNY FOR THE NORTH AND EAST OF THE NORTH ISLAND

December sunshine totals were well above normal (more than 125 percent of normal) in the north and east of the North Island and parts of North Canterbury. Much of the rest of the country received above normal sunshine (between 110 and 125 percent of normal). It was the sunniest December at Kaitaia in 25 years, with 287 hours of bright sunshine recorded. Whakatane received 300 hours of sunshine, the nation's highest December sunshine total.

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

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Kaitaia	287	131	1985	Highest
Te Kuiti	223	127	1962	3rd-highest
Tauranga	285	123	1932	3rd-highest
Turangi	240	125	1976	3rd-highest
Dannevirke	241	125	1963	2nd-highest
Waipawa	253	137	1945	3rd-highest

RAINFALL: DRY IN NORTH AND EAST OF BOTH ISLANDS; VERY DRY IN FAR NORTH

Well below normal rainfall (less than 50 percent of normal) was recorded in much of the Far North District for December. It was also drier-than-normal (between 50 and 80 percent of normal) in Central North Island, Bay of Plenty, Gisborne, southern Hawkes Bay, Tararua District, Wairarapa, Northern South Island, Canterbury and Otago. December rainfall was above normal (between 120 and 150 percent of normal) in the south and west of the South Island and coastal Taranaki.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kaitaia	28	31	1967	4th-lowest
Kerikeri	24	23	1981	3rd-lowest
Taupo	30	27	1949	2nd-lowest
Turangi	55	43	1968	2nd-lowest
Takaka	52	39	1976	4th-lowest

TEMPERATURES: NEAR AVERAGE FOR MOST OF COUNTRY

Temperatures were near average (between -0.5°C and 0.5°C from average) for most of the country. The national average temperature was 15.3°C (0.3°C below the long-term December average). Two locations in the Far North (Kerikeri and Kaikohe) recorded their highest ever December mean maximum temperatures.

Extreme high and low December mean maximum daily air temperatures were recorded at:

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kerikeri	24.6	2.0	1981	Highest
Kaikohe	24.0	2.9	1973	Highest
Whangarei	24.3	1.6	1967	3rd-highest
Whangaparaoa	22.4	1.8	1982	2nd-highest
Whakatane	22.6	0.8	1974	3rd-highest
Napier	21.7	-1.1	1973	4th-lowest

Paraparaumu	18.0	-1.5	1953	4th-lowest
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Extreme low December mean minimum daily air temperatures were recorded at:

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	11.5	-2.1	1967	3rd-lowest
Warkworth	12.2	-1.4	1966	4th-lowest
Pukekohe	11.2	-1.5	1969	4th-lowest
Te Kuiti	9.9	-1.5	1959	4th-lowest
Turangi	8.7	-1.6	1968	4th-lowest
Timaru	7.5	-2.2	1962	4th-lowest
Dunedin	7.6	-0.8	1947	2nd-lowest

DECEMBER CLIMATE IN THE SIX MAIN CENTRES

December temperatures were above average for Tauranga (the warmest of the main centres), below average for Dunedin and near average for the other main centres. Monthly rainfalls were well below normal for Dunedin (which was equal driest with Christchurch) and below normal for Tauranga and Wellington. Hamilton was the wettest of the main centres, but still quite a lot below its normal December rainfall total. Sunshine totals were near normal in all the main centres except for Auckland and Tauranga (the sunniest of the main centres), which were above normal for December.

December 2009 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland ^a	17.7	-0.4	Near average	72	82%	Near normal	238	114%	Above normal
Tauranga ^b	18.4	0.8	Above average	72	79%	Below normal	285	123%	3 rd highest
Hamilton	16.5	-0.1	Near average	80	81%	Near normal	217 ^e	98%	Near normal
Wellington ^c	15.0	-0.3	Near average	53	62%	Below normal	210	93%	Near normal
Christchurch ^d	15.1	-0.7	Below average	40	85%	Near normal	217	98%	Near normal
Dunedin	13.3	-0.6	Below average	40	49%	Well below normal	175	104%	Near normal

^a Mangere ^b Tauranga Airport ^c Kelburn ^d Christchurch Airport ^e Ruakura

HIGHLIGHTS AND EXTREME EVENTS

- Temperature**

The highest temperature in December 2009 was 32.0°C recorded at Dunedin Airport on the 25th (2nd highest December temperature at this site). Kaikohe recorded its highest ever December temperature on the 26th (27.8°C). Gisborne, Napier, Blenheim and Arthurs Pass all recorded their highest ever December minimum temperatures during the month.

Extreme high daily maximum and minimum air temperatures were recorded at:

Location	Extreme high maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kerikeri	29.2	11th	1981	2nd-highest
Kaikohe	27.8	26th	1973	Highest
Whangaparaoa	26.5	26th	1982	2nd-highest
Whitianga	27.9	10th	1962	4th-highest
Whakatane	29.3	19th	1975	Equal 2nd-highest
Taupo	27.0	10th	1976	2nd-highest
Le Bons Bay	27.8	26th	1984	3rd-highest
Dunedin	32.0	25th	1962	2nd-highest
Nugget Point	27.0	25th	1970	3rd-highest

Location	Extreme high minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaikohe	18.9	2nd	1973	3rd-highest
Rotorua	18.0	12th	1972	3rd-highest
Taupo	17.0	29th	1976	2nd-highest
Hamilton	18.0	2nd	1972	2nd-highest
New Plymouth	19.0	29th	1944	Equal 3rd-highest
Gisborne	21.0	12th	1940	Highest
Napier	21.0	12th	1973	Highest
Hastings	21.0	12th	1972	2nd-highest
Waipawa	18.3	12th	1945	2nd-highest
Stratford	16.7	29th	1972	Equal 4th-highest
Reefton	17.0	11th	1972	4th-highest
Blenheim	20.0	27th	1972	Highest
Arthurs Pass	16.0	28th	1978	Highest
Cheviot	18.5	26th	1982	2nd-highest
Timaru	16.0	26th	1972	3rd-highest
Oamaru	16.0	26th	1972	3rd-highest
Lumsden	16.0	18th	1982	2nd-highest
Cromwell	18.4	26th	1949	4th-highest

The lowest December temperature of -3.5 °C was recorded at Lumsden on the 3rd (the lowest December temperature at this site since 1982). From the 2nd to the 4th, several locations received record or near-record low December daily maximum temperatures and Dunedin and Lumsden recorded their lowest December temperatures ever. Record low December temperatures were also observed at Warkworth and Martinborough.

Extreme low daily maximum and minimum air temperatures were recorded at:

Location	Extreme low maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Warkworth	16.4	4th	1966	2nd-lowest
Whangaparaoa	16.6	4th	1982	3rd-lowest
Kumeu	15.8	4th	1978	2nd-lowest
Whenuapai	16.0	4th	1951	2nd-lowest
Whitianga	16.1	4th	1971	2nd-lowest
Paeroa	15.8	4th	1972	Lowest
Tauranga	15.5	4th	1941	3rd-lowest
Rotorua	13.0	4th	1972	Lowest
Taupo	12.0	4th	1976	Lowest
Pukekohe	16.3	4th	1972	3rd-lowest

Hamilton	17.0	4th	1972	Equal 3rd-lowest
Takapau Plains	9.8	3rd	1972	Lowest
Dannevirke	11.6	3rd	1951	Equal 4th-lowest
Castlepoint	10.7	3rd	1972	Lowest
Martinborough	12.4	3rd	1986	3rd-lowest
Gisborne	14.0	3rd	1940	Lowest
Napier	13.0	3rd	1973	Lowest
Hastings	12.8	3rd	1972	2nd-lowest
Waipawa	11.4	3rd	1945	Lowest
Wairoa, North Clyde	13.6	3rd	1972	2nd-lowest
Wallaceville	12.1	3rd	1972	2nd-lowest
Hawera	13.2	3rd	1977	Lowest
Blenheim Research	12.7	3rd	1972	3rd-lowest
Arthurs Pass	8.0	13th	1978	Equal 3rd-lowest
Le Bons Bay	9.7	2nd	1984	Equal 2nd-lowest
Timaru	11.0	2nd	1972	Equal lowest
Oamaru	10.0	2nd	1972	Lowest
Dunedin	11.0	2nd	1972	4th-lowest
Lumsden	10.6	14th	1982	4th-lowest
Tiwai Point	10.8	20th	1972	2nd-lowest
Balclutha, Telford	11.0	2nd	1972	Equal 2nd-lowest

Location	Extreme low minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kerikeri	8.0	16th	1978	Equal 4th-lowest
Warkworth	5.2	16th	1966	Lowest
Martinborough	1.4	22nd	1986	Lowest
Napier	4.0	22nd	1973	3rd-lowest
Waipawa	1.1	22nd	1945	Equal 4th-lowest
Winchmore	0.9	4th	1928	4th-lowest
Le Bons Bay	4.4	15th	1984	4th-lowest
Woodbury	0.0	2nd	1973	Equal 3rd-lowest
Timaru	1.0	31st	1962	4th-lowest
Oamaru	2.0	15th	1967	4th-lowest
Dunedin	-0.7	4th	1947	Lowest
Lumsden	-3.5	3rd	1982	Lowest

- **Heavy rain and flooding**

The highest 1-day rainfall total for December was 197 mm, recorded at Mount Cook on the 9th (not a December record at this site).

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year Records Began	Comments
Warkworth	73	3rd	1967	3rd-highest
Whangaparaoa	70	4th	1946	2nd-highest
Whitianga	122	4th	1961	4th-highest

Heavy rain caused localised flooding in parts of Auckland, the North Shore and Waikato on 2 and 4 December.

On 11 December, wet weather caused a giant slip to block SH3 north of New Plymouth.

After heavy rainfall in the Tararua Ranges on 27 December, the Tokomaru River in the Manawatu rose above its banks.

On 29 December, SH1 was closed south of Levin when the Kuku stream burst its banks. The Kahuterawa River near Linton reached levels not seen in many years. The North Manakau Road bridge between Otaki and Levin was closed as a precaution amid fears rising water could wash away the approach to the structure.

- **High winds and tornados**

The highest wind gust for December was 182 km/hr, recorded at Cape Turnagain (Tararua District) on the 12th (not a December record at this site).

On 12 December, high winds in North Canterbury brought down trees and tore roofs off houses and sheds in Kaikoura.

A tornado was reported near Springfield, 70 km west of Christchurch on 14 December.

On 18 December, winds gusted up to 130 km/hr in exposed areas of Canterbury, Otago, Southland and Fiordland. Winds also blasted the lower North Island and upper South Island, with gusts of up to 100 km/hr reported on the Rimutaka Hill road (SH2).

Record high extreme wind gusts for December were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Farewell Spit	93	30th	1973	Equal 3rd-highest
Puysegur Point	145	18th	1986	Equal 2nd-highest
Blenheim	109	30th	1972	2nd-highest
Tara Hills	89	18th	1985	Equal 3rd-highest
Lauder	106	18th	1981	3rd-highest

- **Hail**

On 14 December, severe hailstorms in inland Canterbury (from Geraldine to north of Rangiora) caused thousands of dollars of damage to vegetable and arable crops.

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