

National Climate Summary – December 2011: Wet over North Island and northern South Island

- **Rainfall: More than double normal December rainfall for most of the North Island and northern South Island. Less than half normal rainfall in Southland and Otago.**
- **Soil moisture levels: Drier than normal in Southland, Otago and West Coast. Much wetter than normal in most of North Island and northern South Island.**
- **Temperatures: Much above average in the south and west of the South Island; above average in the west of the North Island. Below average in the east of the North Island and northeastern South Island.**
- **Sunshine: Sunny for much of the South Island and Taranaki. Below normal sunshine for the northern half of the North Island and northern South Island.**

More northeast winds than normal affected New Zealand during December 2011, producing warm, dry and sunny conditions in the southwest of the country and cool, wet and dull conditions in the north.

Well above normal rainfall for December was experienced in most of the North Island and northern South Island. Many areas received significant rainfalls in the last two days of the year. Nelson received more than six times and Takaka received more than eight times their normal December rainfall (the highest December totals there since records began in 1941 and 1976, respectively). 392 mm fell on the 14th of the month in Takaka, the highest ever (all months) 1-day rainfall there, beating the previous record of 259 mm which was recorded in November 1990. Highest December rainfall totals were also recorded in Kerikeri, Te Puke, Rotorua, Hamilton, Stratford, Hawera, Wanganui and Motueka. Conversely, in the south and west of the country, rainfall was well below normal. Lowest December rainfall totals were recorded in Milford Sound, Puysegur Point, Dunedin, Manapouri, Queenstown, Lumsden, Gore, Invercargill, Balclutha and Tiwai Point.

Mean temperatures in December were well above average (more than 1.2°C above December average) in much of Southland, Otago and the West Coast. Above average temperatures (between 0.5°C and 1.2°C above December average) were recorded in many other western areas of the country. It was cooler than average (between 0.5°C and 1.2°C below average) for December in parts of Gisborne, Hawkes Bay, Wairarapa and Marlborough. The nation-wide average temperature in December was 15.8°C (0.2°C above the 1971–2000 December average), using NIWA's seven-station temperature series which begins in 1909.

December 2011 was a sunny month in the south and west of the South Island as well as in Taranaki. In contrast, below normal sunshine totals were observed in the north of the South Island and from Bay of Plenty northwards. Elsewhere, sunshine totals were near normal.

Further Highlights:

- The highest temperature was 31.3°C, observed at Alexandra on 13 December
- The lowest temperature was -0.6°C, at Ranfurly on 18 December
- The highest 1-day rainfall experienced was 392 mm at Takaka on 14 December
- The highest gust recorded was 148 km/hr at Southwest Cape (Stewart Island) on 27 December
- Of the six main centres in December 2011, Auckland and Tauranga were equal-warmest, Dunedin the sunniest and driest, and Tauranga the wettest.

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RAINFALL: MORE THAN DOUBLE NORMAL DECEMBER RAINFALL FOR MOST OF THE NORTH ISLAND AND NORTHERN SOUTH ISLAND. LESS THAN HALF NORMAL RAINFALL IN SOUTHLAND AND OTAGO.

Well above normal rainfall for December was experienced in most of the North Island and northern South Island. Many areas received significant rainfalls in the last two days of the year. Nelson received more than six times and Takaka received more than eight times their normal December rainfall (the highest December totals there since records began in 1941 and 1976, respectively). Highest December rainfall totals were also recorded in Kerikeri, Te Puke, Rotorua, Hamilton, Stratford, Hawera, Wanganui and Motueka.

Conversely, in the south and west of the country, rainfall was well below normal. Lowest December rainfall totals were recorded in Milford Sound, Puysegur Point, Dunedin, Manapouri, Queenstown, Lumsden, Gore, Invercargill, Balclutha and Tiwai Point.

Significant soil moisture deficit (more than 110 mm of deficit) was observed in parts of Otago and Southland, at the end of December.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kerikeri	411	397	1981	Highest
Leigh	171	247	1966	4th-highest
Whangaparaoa	150	229	1946	3rd-highest
Matamata, Hinuera	224	238	1951	2nd-highest
Tauranga	276	302	1898	4th-highest
Te Puke	413	313	1973	Highest
Rotorua	351	307	1963	Highest
Auckland, Airport	192	232	1959	3rd-highest
Hamilton, Ruakura	226	237	1905	Highest
Turangi	225	177	1968	3rd-highest
New Plymouth	343	337	1944	3rd-highest
Stratford	344	229	1960	Highest
Hawera	234	294	1977	Highest
Wanganui	212	302	1890	Highest
Takaka	1103	814	1976	Highest
Lake Rotoiti	258	166	1933	3rd-highest
Motueka, Riwaka	292	294	1943	Highest
Appleby	391	527	1941	2nd-highest
Nelson	446	601	1941	Highest
Milford Sound	83	13	1929	Lowest
Puysegur Point	54	28	1879	Lowest
Mt Cook	111	24	1928	4th-lowest
Ranfurlly	11	20	1943	4th-lowest
Dunedin, Airport	11	15	1962	Lowest
Dunedin, Musselburgh	9	11	1918	Lowest
Manapouri	8	8	1961	Lowest
Queenstown	9	15	1871	Lowest
Lumsden	21	23	1982	Lowest
Alexandra	11	25	1983	4th-lowest
Gore	8	8	1950	Lowest
Invercargill	15	17	1939	2nd-lowest
Tiwai Point	13	15	1970	Lowest
Balclutha, Telford	6	9	1964	Lowest

TEMPERATURE: MUCH ABOVE AVERAGE IN THE SOUTH AND WEST OF THE SOUTH ISLAND; ABOVE AVERAGE IN THE WEST OF THE NORTH ISLAND. BELOW AVERAGE IN THE EAST OF THE NORTH ISLAND AND NORTHEASTERN SOUTH ISLAND.

Mean temperatures in December were well above average (more than 1.2°C above December average) in much of Southland, Otago and the West Coast. Record high December-average maximum temperatures were recorded at Milford Sound, Manapouri and Lumsden. Above average temperatures (between 0.5°C and 1.2°C above December average) were recorded in many other western areas of the country. It was cooler than average (between 0.5°C and 1.2°C below average) for December in parts of Gisborne, Hawkes Bay, Wairarapa and Marlborough. The nation-wide average temperature in December was 15.8°C (0.2°C above the 1971–2000 December average), using NIWA’s seven-station temperature series which begins in 1909¹.

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

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Hokitika	19.7	1.6	1963	4th-highest
Reefton	23.5	2.6	1960	3rd-highest
Haast	19.5	2.6	1949	2nd-highest
Milford Sound	22.3	4.7	1934	Highest
Manapouri	22.3	3.3	1963	Highest
Lumsden	21.9	3.1	1982	Highest
Invercargill	20.1	2.1	1948	2nd-highest
Nugget Point	17.7	1.4	1970	3rd-highest
Kerikeri Ews	21.7	-0.9	1981	4th-lowest
Whitianga Aero Aws	20.5	-1.9	1962	2nd-lowest
Te Puke Ews	20.7	-1	1973	2nd-lowest
Rotorua Aero Aws	19.2	-1.7	1964	3rd-lowest
Castlepoint Aws	16.9	-3.1	1972	2nd-lowest
Mahia Aws	18.2	-2.1	1990	3rd-lowest
Takaka Ews	19.8	-1	1978	4th-lowest
Cape Campbell Aws	16.3	-4.2	1953	3rd-lowest

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

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	15.1	1.7	1985	3rd-highest
Kerikeri	15.1	2.4	1981	2nd-highest
Whangarei	15.5	1.5	1967	4th-highest
Whenuapai	14.4	2.1	1945	3rd-highest
Puysegur Point	11.6	1.7	1978	2nd-highest
Alexandra	11.1	2.1	1983	4th-highest

¹ Interim monthly value.

SUNSHINE: SUNNY FOR MUCH OF THE SOUTH ISLAND AND TARANAKI. BELOW NORMAL SUNSHINE FOR THE NORTHERN HALF OF THE NORTH ISLAND AND NORTHERN SOUTH ISLAND

December 2011 was a sunny month in the south and west of the South Island as well as in Taranaki. It was the sunniest December on record in Balclutha, receiving one and a half times its normal December sunshine there. In contrast, below normal sunshine totals were observed in the north of the South Island and from Bay of Plenty northwards. Hamilton received its lowest December sunshine hours total since records began in 1936. Elsewhere, sunshine totals were near normal.

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

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Greymouth	239	137	1947	2nd-highest
Invercargill	251	135	1932	2nd-highest
Balclutha, Telford	276	156	1964	Highest
Dargaville	124	62	1943	2nd-lowest
Hamilton, Ruakura	136	64	1936	Lowest
Turangi	156	81	1976	2nd-lowest
Martinborough	157	74	1986	2nd-lowest
Takaka	153	70	1985	2nd-lowest

DECEMBER CLIMATE IN THE SIX MAIN CENTRES

It was an extremely wet December in Tauranga (the 4th-wettest December in over 100 years of record) and Hamilton (the highest December rainfall total there since 1935), and also very wet for Auckland and Wellington. In stark contrast, it was the lowest December rainfall total in Dunedin since 1918. Of the six main centres, Auckland and Tauranga were equal-warmest, Dunedin the sunniest and driest, and Tauranga the wettest.

December 2011 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland ^a	18.2	+0.1	Near average	201	228%	Well above normal	132	63%	Well below normal
Tauranga ^b	18.2	+0.6	Above average	276	302%	4 th -highest	165	73%	Well below normal
Hamilton ^c	17.5	+0.9	Above average	215	218%	Highest	136 ^g	61%	Well below normal
Wellington ^d	15.3	0.0	Average	190	222%	Well above normal	174	77%	Below normal
Christchurch ^e	15.4	-0.4	Near average	61	130%	Above normal	185	83%	Below normal
Dunedin ^f	14.3	+0.4	Near average	9	11%	Lowest	221	131%	Well 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 2011 was 392 mm at Takaka on 14 December (an all-month record for this location).

On 14 December, heavy rain caused slips and flooding in Nelson and Golden Bay. Filming of *The Hobbit* in the Pelorus Bridge area was halted. In Nelson city, the Matai river walkway was closed, as were many urban and rural roads, isolating communities. More than 100 homes near rising rivers were evacuated. SH60 Coastal Highway was closed at both Appleby Bridge, with traffic diverted to the inland Moutere Highway, and at Takaka Hill. Collingwood was cut off after the road was washed away at Birds Hill, and roads to Pakawau and Pūponga were closed. A dam collapsed above Pohara Gully in Golden Bay. SH6 was affected by surface flooding between Hokitika and Haast, but it was not closed.

On 15 December, schools in Golden Bay were closed after the extreme rainfall closed roads and damaged property. Many slips threatened properties in the Nelson region, and more homes were evacuated. Food was taken to Collingwood on an alternative four-wheel vehicle track. About 500 Tahunanui homes lost landlines after slips washed away power lines. Campers were trapped at the Totaranui Campground after mudslides closed the only access road. Pohara Beach Holiday Park was closed after its water and sewerage supplies were cut. In Ligar Bay, a slip containing mud, trees, and even eels, damaged several homes. Aniseed Valley residents were isolated by massive slips and washouts. In Northland, SH1 and SH10 were closed by flooding, and many other roads were affected by surface flooding.

On 16 December, many roads in Nelson, Waimea and Golden Bay remained closed, including SH60 from Takaka to Collingwood. In Christchurch, heavy rain caused flooding, with sewage overflowing into the Avon River.

On 17 December, heavy rain caused a landslide which dislodged three cabins at the Oakura Bay Holiday Park. Several homeowners who lived above the slip were evacuated. In Rotorua, heavy rain caused surface flooding in several areas, including Te Ngae Road and Fairy Springs Road.

On 22 December, a thunderstorm with associated very heavy rain, caused flash floods in south Auckland, flooding houses and causing traffic chaos, especially in the Dominion Road area.

On 30 December, a band of very heavy rain crossed most of the country. In Wellington, low lying suburbs were flooded and the Moa Point sewage treatment plant was overwhelmed by the storm water, overflowing into Lyall Bay, resulting in the beach being closed to swimmers. In Nelson, a new slip again closed Rocks Road, and in Golden Bay, the Wainui River carved a new course, isolating a commune and flooding farmland.

On 31 December, continuing heavy rain caused the cancellation of many planned New Year's Eve celebrations, including those at Mt Maunganui, Palmerston North, and Wellington. Slips closed SH29 over the Kaimai Ranges, and SH2 between Whakatane and Opoiki. Many roads in the Nelson region remained closed. Near Whangamata, a car attempting to cross a ford was swept down river, but both occupants escaped unharmed.

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
Kerikeri	103	4th	1981	Highest
Matamata, Hinuera	62	17th	1951	3rd-highest
Te Puke	98	30th	1973	Equal 3rd-highest
Hamilton, Ruakura	88	17th	1907	Highest
Paraparaumu	59	30th	1951	4th-highest
Stratford	105	30th	1960	2nd-highest
Hawera	77	30th	1977	3rd-highest
Wanganui	53	30th	1937	3rd-highest
Takaka	392	14th	1976	Highest
Lake Rotoiti	80	29th	1933	2nd-highest
Appleby	99	14th	1941	2nd-highest
Nelson	155	14th	1941	Highest

- **Temperatures**

The highest temperature was 31.3°C, observed at Alexandra on 13 December. The lowest temperature was -0.6°C, recorded at Ranfurly on 18 December.

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

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records Began	Ranking
Hokitika	26.7	31st	1963	2nd-highest
Reefton	29.6	26th	1960	4th-highest
Milford Sound	26.4	30th	1934	2nd-highest
Gore	28.8	12th	1971	4th-highest
Leigh	16.5	18th	1966	3rd-lowest
Whenuapai	15.1	18th	1951	Lowest
Paeroa	14.8	18th	1971	Lowest
Te Puke	15.9	18th	1973	Equal 3rd-lowest
Rotorua	13.1	18th	1972	2nd-lowest
Auckland, Airport	15.3	18th	1961	3rd-lowest
Pukekohe	15.8	18th	1969	3rd-lowest
Whatawhata	14.3	18th	1952	2nd-lowest
Hamilton	13.9	18th	1946	Lowest
Masterton	11.5	17th	1943	3rd-lowest
Takapau Plains	11.0	17th	1972	2nd-lowest
Hicks Bay	14.5	18th	1972	Lowest
Hawera	13.0	17th	1977	Lowest

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

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year records Began	Ranking
Kaitaia	19.3	31st	1985	Equal 2nd-highest
Paeroa	20.0	31st	1971	3rd-highest
Levin	18.8	14th	1950	Equal 4th-highest
Ohakune	16.3	31st	1972	Equal 4th-highest
Wanganui	19.4	14th	1987	3rd-highest
Hokitika	17.3	14th	1866	Equal 4th-highest
Reefton	17.4	14th	1972	4th-highest
Puysegur Point	16.3	27th	1978	Equal 2nd-highest
Waipara West	21.0	13th	1973	Equal 3rd-highest
Wanaka	17.1	12th	1972	4th-highest
Manapouri	16.5	28th	1973	2nd-highest
Alexandra	18.2	12th	1983	Highest
Wanganui	5.7	20th	1987	4th-lowest

- **Wind**

The highest wind gust recorded was 148 km/hr at Southwest Cape (Stewart Island) on 27 December. Funnel clouds were reported in Hamilton on 5 December, and Bulls and Sanson on 7 December. No record or near-record extreme wind gusts were observed this month.

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