

**National Climate Summary – January 2010: Wet and cloudy for much of the country.**

- **Rainfall:** Exceptionally wet in the east of the North Island and parts of the Waikato following heavy rainfall on the 31<sup>st</sup>. Above normal rainfall for most other regions of New Zealand – the notable exceptions being Northland and parts of coastal Canterbury and north Otago, which recorded well below normal rainfall.
- **Soil moisture:** Severe soil moisture deficits continue in Northland.
- **Temperature:** Near average temperatures across much of the country. Small pockets of below average temperatures in Manuwatu-Wanganui, Wairarapa and southern Hawkes Bay, south Canterbury and in the Clutha.
- **Sunshine:** Extremely cloudy over the lower North Island, and eastern South Island. Very sunny in Northland.

Overall, January 2010 was an unsettled month, being wet, slightly cool, and extremely cloudy. The month was characterised by lower pressures than normal over the country.

The most significant extreme weather event to impact on the country in January was the heavy rainfall event on January 31<sup>st</sup>, which affected the eastern and central North Island, as well as Waikato and Coromandel. A moist, easterly air stream brought heavy rain and embedded thunderstorms to these areas, causing flooding, slips, and road closures. Particularly hard hit were Gisborne and Hawkes Bay. This one event produced most of the month's rainfall total in these regions. More than double normal January rainfall was recorded in Gisborne, Hawkes Bay, the Wairarapa and in parts of the Waikato. Above normal rainfall (between 120 and 150 percent of normal) was also recorded in most other regions of New Zealand. The notable exception was Northland, which experienced well below normal rainfall (less than 50 percent of January normal) with severe soil moisture deficits continuing through to the end of January. Other areas which experienced below normal rainfall (between 50 and 70 percent of January normal) were coastal Canterbury and north Otago.

Overall, January temperatures were near average (between -0.5°C and 0.5°C of average) across most of New Zealand. The exceptions were small pockets of below average temperatures (between 1.2°C and 0.5°C below average) in Manawatu-Wanganui, the Wairarapa and southern Hawkes Bay, south Canterbury and in the Clutha district. The New Zealand national average temperature for January was 16.7°C (0.4°C below the long-term January average).

January sunshine totals were well below normal (below 75 percent of normal) over the lower North Island, and the entire eastern South Island, from Blenheim to Dunedin. In contrast, Northland experienced a very sunny month, with sunshine totals between 110 and 125 percent of normal. Elsewhere, sunshine totals were close to normal.

**Further Highlights:**

- The highest temperature was 34.3°C recorded at Blenheim on the 1<sup>st</sup> (not a January record). The lowest temperature of -0.3 °C was recorded at Alfredton on the 24<sup>th</sup> (not a record for January).
- The highest 1-day rainfall was 202.6 mm, recorded at Franz Josef on the 6<sup>th</sup> (not a January record).
- The highest wind gust was 165 km/hr, recorded at Stewart Island on the 1<sup>st</sup> (not a record for January).
- Of the six main centres, Tauranga was the warmest and sunniest, Hamilton the wettest, Dunedin the coolest, and Christchurch the driest.

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**RAINFALL: EXCEPTIONALLY WET IN EAST OF NORTH ISLAND AND IN PARTS OF WAIKATO. ABOVE NORMAL RAINFALL IN MOST OTHER REGIONS OF THE COUNTRY. CONTINUING DRY IN NORTHLAND, COASTAL CANTERBURY AND NORTH OTAGO.**

The most significant extreme weather event to impact on the country in January was the heavy rainfall event on January 31st, which affected the eastern and central North Island, as well as Waikato and Coromandel. A moist, easterly air stream brought heavy rain and embedded thunderstorms to these areas, causing flooding, slips, and road closures. Particularly hard hit were Gisborne and Hawkes Bay. This one event produced most of the month's rainfall total in these regions. More than double normal January rainfall was recorded in Gisborne, Hawkes Bay, the Wairarapa and in parts of the Waikato.

Above normal rainfall (between 120 and 150 percent of normal) was also recorded over most other regions of New Zealand. The notable exception was Northland, which experienced well below normal rainfall (less than 50 percent of January normal) and which continues to be in a drought state, with severe soil moisture deficits persisting through to the end of January. Other areas which experienced below normal rainfall (between 50 and 70 percent of January normal) were coastal Canterbury and north Otago.

**Record or near-record January rainfall totals were recorded at:**

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Matamata	138	179	1951	2nd-highest
Hamilton	192	239	1935	2nd-highest
Takapau Plains	189	273	1962	3rd-highest
Castlepoint	321	601	1902	Highest
Gisborne	171	307	1905	3rd-highest
Napier	195	365	1870	4th-highest
Waipawa	188	497	1945	3rd-highest
Wairoa, North Clyde	281	292	1964	2nd-highest
Ohakune	198	191	1961	Highest
Lumsden	140	136	1982	2nd-highest
Oamaru	18	35	1898	4th-lowest

**TEMPERATURES: NEAR AVERAGE FOR MUCH OF COUNTRY. SMALL POCKETS OF BELOW AVERAGE TEMPERATURES IN MANAWATU-WANGANUI, WAIRARAPA, SOUTHERN HAWKES BAY, SOUTH CANTERBURY AND THE CLUTHA.**

Overall, January temperatures were near average (between -0.5°C and 0.5°C of average) across most of New Zealand. The exceptions were small pockets of below average temperatures (between 1.2°C and 0.5°C below average) in Manawatu-Wanganui, the Wairarapa and southern Hawkes Bay, south Canterbury and in the Clutha district. The New Zealand national average temperature was 16.7°C (0.4°C below the long-term January average).

**Record or near-record January mean maximum daily air temperatures were recorded at:**

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Whangaparaoa	23.9	1.6	1982	2nd-highest
Kaitaia	22.4	-1.5	1967	Lowest
Kumeu	23.0	-0.6	1978	4th-lowest
Castlepoint	18.7	-2.8	1972	2nd-lowest
Wanganui	20.4	-1.7	1987	Lowest
Cape Campbell	18.5	-3.5	1953	Lowest
Cheviot	22.4	-0.7	1982	3rd-lowest
Orari Estate	19.9	-2.4	1972	4th-lowest
Balclutha, Telford	17.7	-2.4	1964	2nd-lowest
Nugget Point	16.0	-1.7	1970	3rd-lowest

**Record or near-record January mean minimum daily air temperatures were recorded at:**

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	12.8	-2.3	1967	4th-lowest
Warkworth	13.6	-1.5	1966	3rd-lowest
Dunedin	8.6	-0.6	1947	2nd-lowest

**SUNSHINE: EXTREMELY CLOUDY OVER LOWER NORTH ISLAND, AND EAST OF SOUTH ISLAND. VERY SUNNY IN NORTHLAND.**

January sunshine totals were well below normal (below 75 percent of normal) over the lower North Island, and the entire eastern South Island, from Blenheim to Dunedin. In contrast, Northland experienced a very sunny month, with sunshine totals between 110 and 125 percent of normal. Elsewhere, sunshine totals were close to normal.

**Record or near-record January sunshine hours were recorded at:**

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Kaitaia	277	121	1985	4th-highest
Martinborough	173	75	1986	Lowest
Wallaceville	164	72	1939	3rd-lowest
Stratford	172	76	1963	3rd-lowest
Blenheim	221	85	1947	3rd-lowest
Cheviot	181	76	1983	2nd-lowest
Lake Tekapo	193	77	1928	4th-lowest
Cromwell	214	89	1979	3rd-lowest

## JANUARY CLIMATE IN THE SIX MAIN CENTRES

It was an extremely wet January for Tauranga, Hamilton and Wellington, with at least double normal January rainfalls experienced. Near normal rainfall was recorded in Auckland and Dunedin, while Christchurch experienced below normal January rainfall. Monthly temperatures were below average in Auckland, Wellington and Dunedin, and near average in Tauranga, Hamilton, and Christchurch. Sunshine totals for January were near normal in all main centres except for Wellington and Christchurch, which both recorded about three-quarters of usual January sunshine. Of the six main centres, Tauranga was the warmest and sunniest, Hamilton the wettest, Dunedin the coolest, and Christchurch the driest.

### January 2010 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland <sup>a</sup>	19.0	-0.7	Below average	51	84%	Near normal	239	104%	Near normal
Tauranga <sup>b</sup>	19.5	+0.3	Near average	178	244%	Well above normal	262	104%	Near normal
Hamilton <sup>c</sup>	18.3	+0.1	Near average	192	239%	2 <sup>nd</sup> highest since 1935	233 <sup>g</sup>	100%	Near normal
Wellington <sup>d</sup>	15.9	-1.0	Below average	165	229%	Well above normal	181	74%	Well below normal
Christchurch <sup>e</sup>	16.6	-0.5	Near average	33	76%	Below normal	174	76%	Below normal
Dunedin <sup>f</sup>	14.3	-0.9	Below average	69	96%	Near normal	171	96%	Near normal

<sup>a</sup> Mangere <sup>b</sup> Tauranga Airport <sup>c</sup> Hamilton Airport <sup>d</sup> Kelburn <sup>e</sup> Christchurch Airport <sup>f</sup> Musselburgh <sup>g</sup> Ruakura

## HIGHLIGHTS AND EXTREME EVENTS

- **Temperature**

The highest temperature in January 2010 was 34.3°C recorded at Blenheim on the 1<sup>st</sup> (not a January record at this site).

Record or near-record warm afternoon conditions were experienced at several sites at the end of the month (29<sup>th</sup>, 30<sup>th</sup>, 31<sup>st</sup> January), linked to sub-tropical, easterly conditions. Notably, several sites recorded near-record high temperatures on the 31<sup>st</sup> of the month on the West Coast of the South Island, showing foehn warming with these easterly winds.

Record or near-record low afternoon temperatures were recorded over the lower North Island on the 16<sup>th</sup>, over the south-eastern South Island on the 8<sup>th</sup>, and over the far south of the country on the 11<sup>th</sup>.

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

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia	28.4	29th	1985	Equal 3 <sup>rd</sup> -highest
Whangaparaoa	28.6	30th	1982	Highest
Wallaceville	30.3	29th	1939	3rd-highest
Hawera	26.6	20th	1977	2nd-highest
Westport	28.5	31st	1937	Highest
Hokitika	27.7	31st	1963	3rd-highest
Milford Sound	27.9	31st	1934	2nd-highest
Puysegur Point	23.1	17th	1978	4th-highest
Le Bons Bay	28.7	2nd	1984	3rd-highest
Woodbury	33.0	1st	1973	4th-highest
Kaitaia	18.8	23rd	1971	3rd-lowest
Martinborough	14.4	16th	1986	3rd-lowest
Ngawi	13.3	16th	1972	4th-lowest
Napier	16.0	16th	1973	Lowest
Wellington	13.3	16th	1972	Equal 2nd-lowest
Westport	15.0	10th	1966	Equal 3rd-lowest
Greymouth	13.8	4th	1972	Lowest
Puysegur Point	10.6	11th	1978	Lowest
Arthurs Pass	9.6	10th	1973	Equal 4th-lowest
Dunedin	12.0	8th	1972	3rd-lowest
Queenstown	11.0	8th	1972	Equal 3rd-lowest
Tiwai Point	11.9	11th	1972	4th-lowest
Balclutha, Telford	11.8	8th	1972	Equal 4th-lowest

The lowest temperature recorded in January 2010 was -0.3 °C, recorded at Alfredton on the 24<sup>th</sup> (not a January record at this site).

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

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia	7.8	10th	1967	Equal 3rd-lowest
Warkworth	6.4	10th	1966	Equal lowest
Whangaparaoa	11.1	12th	1982	2nd-lowest
Taupo	2.0	9th	1976	4th-lowest
Whangaparaoa	19.8	31st	1982	3rd-highest
Whakatane	20.0	26th	1975	Equal 2nd-highest
Hamilton	19.0	21st	1972	Equal 4th-highest
Napier	22.0	4th	1973	2nd-highest
Waipawa	19.3	4th	1945	Equal 3rd-highest
Greymouth	18.4	17th	1972	Equal 2nd-highest

• **Heavy rain, flooding, lightning and hail**

The highest 1-day rainfall total for January was 202.6 mm recorded at Franz Josef on the 6<sup>th</sup> (not a January record at this location). Record high 1-day rainfalls for January were also recorded at several locations in the Waikato, Bay of Plenty, Gisborne and Hawkes Bay regions on the 31<sup>st</sup>, associated with moist easterly conditions and embedded thunderstorm activity over North Island. On January 21<sup>st</sup>, several central Otago and Southland sites experienced near-record high January 1-day rainfall totals, also linked to thunderstorm activity.

**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
Matamata	85	31st	1951	Highest
Tauranga	120	31st	1910	2nd-highest
Whatawhata	61	31st	1952	3rd-highest
Hamilton	78	31st	1935	3rd-highest
Masterton	84	22nd	1926	Highest
Castlepoint	160	22nd	1907	Highest
Gisborne	58	30th	1937	4th-highest
Waipawa	66	22nd	1945	3rd-highest
Wairoa, North Clyde	83	31st	1967	2nd-highest
Lumsden	53	21st	1982	2nd-highest
Cromwell	48	21st	1949	2nd-highest
Alexandra	39	21st	1983	2nd-highest

On 3 January, SH6, south of Fox Glacier, was closed for more than six hours after the northern bank of Bullock Creek broke.

In the 10 minutes before 2 pm on 7 January, Invercargill Airport recorded 8.4 mm of rain. The intense rainfall was caused by an intense mid-afternoon thunderstorm, with hail covering northern and central Invercargill. Buildings throughout the CBD, including the Southland District Council and the Invercargill Public Library, were flooded by water pouring in from outside. The thunderstorm also caused electricity cuts, which affected 3500 customers in south Invercargill, Bluff and Awarua. A horse died instantly when it was struck by lightning in a paddock on the outskirts of Invercargill. On the West Coast, the rain caused slips, flooding and closed roads. The Totara River, north of Ross, cut a new course about 1 pm, spilling into a paddock, closing SH6 for over an hour. The road was also closed by flooding between Fox Glacier and Haast, but re-opened about 2.30 pm. Surface flooding closed the Kaniere-Kowhitirangi Road from mid-afternoon.

The Desert Road was closed by heavy rain about 10.30 pm on 15 January, and re-opened the following morning.

On 16 January, heavy rain flooded campsites in the Wairarapa, and closed Paekakariki Hill Road, north of Wellington, when a slip and large trees blocked both lanes. The Wairoa A&P Show, held over the weekend of 16-17 January, was also affected by heavy rain, with events such as woodchopping, equestrian, and shearing either cancelled, cut back, or moved to an alternative location.

On 21 January, thunderstorm activity associated with a complex low over the country affected the Ida Valley, Central Otago, producing very intense rainfall rates. On the same day, thunderstorms and lightning affected the water treatment plant in Hamilton.

On 22 January, heavy rain flooded streets in Flaxmere, near Hastings, and closed SH50 between Ongaonga and Tikokino. The flash flooding was caused by downpours from thunderstorms in the area. Overnight on 22-23 January, Hawkes Bay experienced about 2000 lightning strikes. On 23 January, heavy rain caused a large slip on SH5, near Titikura Summit, with one lane closed, and other sections of the road affected by flooding.

On 26 January lightning struck the central North Island, especially Taranaki, Taumarunui and South Waikato. On 27 January, torrential rain caused flooding in the Fairy Springs Road area of Rotorua, and blocked SH1 near Lake Karapiro. Several homes in Cambridge were flooded. Again, the downpours were caused by thunderstorm activity, with a severe electrical storm centred directly over Hamilton City.

Exceptionally heavy rain, associated with moist easterly conditions and numerous embedded thunderstorms, affected the North Island on 31 January, causing slips, and floods, and closing SH5 between Napier and Taupo, and SH2 north of Gisborne. Rising floodwaters and debris buckled a bridge on the Waipaoa River,

isolating more than 30 people at Waipaoa Station. Mangatuna village residents were moved out in the morning as the Uawa River rose, allowed to return several hours later, but were evacuated again in the afternoon. In the Coromandel, Hahei and the Hot Water Beach area were cut off by flooding on Hot Water Beach Road, 200 m from SH25, SH25a, was closed by flooding near Hikuai and Duck Creek, Tairua was accessible from the north but not from the south, and SH25 at Onemana near Opoutere was blocked by flooding. In the Auckland region, homes were flooded on the Whangaparaoa Peninsula, North Shore, Auckland City, and Howick. A woman was trapped in her car by rising floodwaters underneath a motorway overpass in Ellerslie, and another driver was trapped by flood water in Remuera.

- **High winds**

Gales hit the bottom of the South Island on 1 January damaging trees in Invercargill. In South Canterbury, SH 8 between Lakes Pukaki and Tekapo was closed at about 6pm to motorcycles and high-sided vehicles. In Wanaka, a power line was brought down by the gale, disrupting power supplies. The highest wind gust for January was 165 km/hr, recorded at Southwest Cape (Stewart Island) on the 1<sup>st</sup> (not a January record at this site). Gore also recorded near-record high gusts on this date.

On 3 January, winds created havoc during the annual New Year Regatta in Napier, with one girl concussed, and another fished out of the water after boats collided. About half of the 120 boats, competing in 12 classes, withdrew from the regatta. Strong winds were also recorded in Wellington, with Mt. Kaukau recording an extreme gust of 145 km/hr.

On 31 January, gale force winds battered Taranaki, bringing down power lines and trees. The electricity supply was cut to parts of New Plymouth city, Bell Block, and Patea. SH45 near Lucy's Gully, and SH3, just south of Egmont Village, were partially blocked by fallen trees. Some flights in and out of New Plymouth airport were cancelled.

**Near-record high extreme wind gusts for January were recorded at:**

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Mt. Kaukau (Wellington)	145	3rd	1969	Equal 3rd-highest
Gore	115	1st	1987	2nd-highest

- **Fog**

On the morning of 18 January, Wellington airport was affected by fog, with more than 20 outbound flights cancelled, and five incoming flights diverted.

Wellington city was affected by fog in the evening of 26 January, and on the morning of 27 January.

Fog closed Wellington Airport again on the morning of 29 January, forcing cancellations and delays.

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