

National Climate Summary – October 2009: Coldest October in over half a century

- Temperature: The coldest October in 64 years, with all-time record low October temperatures in many areas. Exceptionally late snowfalls. Record low October temperatures were recorded on the 4th/5th in most North Island locations, and on the 9th at many South Island sites.
- Rainfall: Well above normal rainfall in the east of the North Island, as well as in Wellington, Marlborough and parts of Canterbury. Very dry on the West Coast of the South Island.
- Sunshine: Extremely sunny on the West Coast of the South Island.

Record or near-record low October temperatures were experienced in many locations, with temperatures more than 2.0°C below average throughout eastern and alpine areas of the South Island, as well as in the lower half of the North Island. Temperatures were below average (between 0.5°C and 1.2°C below average) elsewhere. Overall for New Zealand, it was the coldest October in 64 years (since 1945), with a national average temperature of 10.6°C (1.4°C below the long-term October average). Such a cold October has occurred only four times in the past 100 years. Record low October temperatures were recorded on the 4th/5th in most North Island locations, and on the 9th at many South Island sites.

Well above normal October rainfall (above 150 percent of normal) was experienced across the East Coast of the North Island, as well as Wellington, Marlborough and Canterbury (north of about Ashburton). Rainfall was near-record (and more than 200 percent of normal) in parts of Hawkes Bay, Gisborne and the Taranaki District. Rainfall was also above normal (between 120 and 150 percent of normal) in Manawatu-Wanganui, Waikato and the Bay of Plenty. Rainfall totals were near normal (between 80 and 120 percent of normal) in the Tasman District, central Otago, Auckland, Taranaki and western parts of Northland. In contrast, it was very dry on the West Coast and in Fiordland, with only about half of normal October rainfall recorded there.

October sunshine totals were well above normal (more than 125 percent of normal) on the West Coast and in Fiordland; in contrast, sunshine totals were below normal (between 75 and 90 percent of normal) for Taranaki, Wellington and the Wairarapa. Elsewhere, sunshine totals were in the near normal range.

Unseasonable snowfalls characterised October 2009. An exceptionally heavy snow event on the 4th/5th in the Hawkes Bay and Central North Island was estimated to be the worst in October since 1967, stranding hundreds of travellers, closing roads, and resulting in heavy lambing losses. Many locations in the North Island experienced record low October temperatures on the 5th. Snowfall was also observed in Taranaki, Waikato and Rotorua on the 6th, for the first time in about 30 years around Rotorua. Snowfall also affected Otago and Canterbury on the 8th/9th, with many sites observing record low October temperatures on the 9th.

During October 2009, lower than normal pressures and frequent southeasterly winds affected New Zealand, leading to the low temperatures around the country. Southeasterlies also led to the sunny and dry conditions experienced on the west coast of the South Island, as the Southern Alps provided shelter from the wind.

Further Highlights:

- The highest temperature was 24.3°C recorded at Whangarei on the 17th (4th highest in October). The lowest temperature of -5.5 °C was recorded at Ranfurly on the 5th (not a record).
- The highest 1-day rainfall was 89 mm, recorded at Motu, Gisborne, on the 4th (not a record).
- The highest wind gust was 148 km/hr, recorded at Stewart Island on the 21st (not a record).
- Of the six main centres, Tauranga was the warmest, Wellington the wettest, Dunedin the coolest and driest, and Christchurch the sunniest.

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TEMPERATURES: COLDEST OCTOBER IN 64 YEARS; RECORD OR NEAR RECORD COLD IN MANY LOCATIONS

Record or near-record low October temperatures were experienced in many locations, with temperatures more than 2.0°C below average throughout eastern and alpine areas of the South Island, as well as the lower half of the North Island. Temperatures were generally below average (between 0.5°C and 1.2°C below average) elsewhere. It was the coldest October in 64 years (since 1945), with a national average temperature of 10.6°C (1.4°C below the long-term October average). Such a cold October has occurred only four times in the past 100 years. Record low October temperatures were recorded on the 4th/5th in most North Island locations, and on the 9th at many South Island sites.

Extreme low October mean maximum daily air temperatures were recorded at:

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	15.4	-2.6	1967	Lowest
Dargaville	15.8	-2.4	1943	Lowest
Warkworth	16.5	-1.1	1966	4th-lowest
Paeroa	17.4	-1.5	1947	4th-lowest
Whakatane	17.2	-1.4	1974	3rd-lowest
Rotorua	15.1	-1.5	1964	3rd-lowest
Taupo	14.2	-2.3	1949	2nd-lowest
Port Taharoa	16.1	-1.2	1973	3rd-lowest
Te Kuiti	16.1	-1.8	1959	3rd-lowest
Taumarunui	15.5	-2.5	1947	Lowest
Turangi	14.7	-1.6	1968	3rd-lowest
Takapau Plains	13.6	-2.5	1962	2nd-lowest
Dannevirke	12.7	-3.8	1951	Lowest
Castlepoint	13.6	-2.9	1972	Lowest
East Taratahi	15.2	-2.2	1906	4th-lowest
Martinborough	15.2	-2.8	1986	Lowest
Ngawi	14.7	-2.0	1972	Lowest
Napier	16.2	-2.5	1870	2nd-lowest
Hastings	17.0	-2.0	1965	2nd-lowest
Waipawa	15.4	-2.1	1945	2nd-lowest
Wairoa, North Clyde	16.6	-2.4	1964	Lowest
Paraparaumu	14.4	-1.4	1953	Lowest
Palmerston North	14.8	-1.9	1928	3rd-lowest
Levin	14.8	-1.6	1895	3rd-lowest
Wellington	14.0	-1.9	1962	Lowest
Wallaceville	14.1	-1.9	1939	Lowest
Stratford	13.1	-2.0	1960	Lowest
Hawera	14.0	-1.7	1977	Lowest
Ohakune	11.8	-2.5	1962	2nd-lowest
Waiohuru	10.0	-3.3	1962	Lowest
Wanganui	15.1	-1.9	1937	2nd-lowest
Motueka, Riwaka	16.3	-1.4	1956	2nd-lowest
Cape Campbell	13.0	-3.8	1953	Lowest
Kaikoura	12.4	-3.1	1963	Lowest
Arthurs Pass	10.3	-2.6	1973	3rd-lowest
Waipara West	14.6	-3.1	1973	Lowest
Darfield	14.8	-2.5	1939	4th-lowest
Christchurch	14.3	-2.7	1863	2nd-lowest
Lincoln	14.3	-2.5	1881	3rd-lowest
Le Bons Bay	11.7	-2.4	1984	Lowest
Timaru	13.5	-2.6	1885	2nd-lowest
Oamaru	13.4	-2.6	1908	2nd-lowest
Dunedin (Airport)	14.0	-2.0	1947	4th-lowest
Dunedin, Musselburgh	12.8	-2.0	1947	Lowest

Manapouri	13.2	-1.6	1963	4th-lowest
Lumsden	13.3	-1.9	1982	2nd-lowest
Invercargill	12.9	-1.5	1948	3rd-lowest
Tiwai Point	12.3	-1.6	1970	2nd-lowest
Balclutha	13.0	-2.5	1964	Lowest
Nugget Point	12.1	-1.2	1970	3rd-lowest

Notably, the mean minimum temperature recorded at Queenstown (2.8°C) was the lowest ever for October, since records began in 1871.

Extreme low October mean minimum daily air temperatures were recorded at:

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitia	8.7	-1.9	1967	2nd-lowest
Warkworth	8.5	-2.1	1966	Lowest
Whangaparaoa	10.1	-1.3	1982	4th-lowest
Port Taharoa	9.4	-1.6	1973	2nd-lowest
Dannevirke	5.3	-2.5	1951	2nd-lowest
Castlepoint	8.0	-2.2	1972	2nd-lowest
Ngawi	8.5	-1.6	1972	2nd-lowest
Wellington	8.5	-1.4	1962	3rd-lowest
Wanganui	8.4	-1.2	1987	3rd-lowest
Westport	6.3	-2.1	1937	3rd-lowest
Lake Rotoiti	1.6	-2.0	1965	3rd-lowest
Hokitika	5.4	-2.0	1963	2nd-lowest
Reefton	3.6	-2.6	1960	Lowest
Greymouth	6.6	-1.7	1947	3rd-lowest
Haast	5.1	-1.4	1949	4th-lowest
Puysegur Point	6.7	-1.0	1978	3rd-lowest
Blenheim	4.7	-2.1	1932	2nd-lowest
Hanmer Forest	1.3	-2.8	1906	3rd-lowest
Kaikoura	6.3	-1.9	1963	Lowest
Arthurs Pass	0.8	-3.4	1973	Lowest
Waipara West	4.4	-2.1	1973	Lowest
Le Bons Bay	5.0	-2.0	1984	2nd-lowest
Lake Tekapo	1.1	-2.4	1927	3rd-lowest
Tara Hills	1.5	-2.2	1949	3rd-lowest
Wanaka	3.5	-1.8	1955	4th-lowest
Dunedin	4.1	-0.8	1947	Lowest
Queenstown	2.8	-1.6	1871	Lowest
Nugget Point	5.5	-0.9	1970	4th-lowest

RAINFALL: VERY WET IN THE EASTERN NORTH ISLAND, WELLINGTON, MARLBOROUGH, AND PARTS OF CANTERBURY. VERY DRY ON THE WEST COAST.

Well above normal October rainfall (above 150 percent of normal) was experienced across the East Coast of the North Island, as well as Wellington, Marlborough and Canterbury (north of about Ashburton). Rainfall was, in fact, more than 200 percent of normal in parts of Hawkes Bay, Gisborne and the Taranaki District, with Dannevirke experiencing its wettest October since records began in 1951. Much of the precipitation in these three regions fell on the 4th, during the significant snowfall event. Rainfall was also above normal (between 120 and 150 percent of normal) in Manawatu-Wanganui, Waikato and the Bay of Plenty. Rainfall totals were near normal (between 80 and 120 percent of normal) in the Tasman District, central Otago, Auckland, Taranaki and western parts of Northland. In contrast, it was very dry on the West Coast and Fiordland, with only about half of normal October rainfall recorded there.

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Dannevirke	207	221	1951	Highest
Gisborne	152	266	1905	4th-highest
Waipawa	133	215	1945	3rd-highest
Wellington	161	171	1958	4th-highest
Ohakune	254	191	1961	3rd-highest
Wanganui	142	175	1987	3rd-highest
Blenheim	139	204	1927	4th-highest

SUNSHINE: VERY SUNNY ON THE WEST COAST; DULL IN WELLINGTON, WAIRARAPA, AND TARANAKI

October sunshine totals were well above normal (more than 125 percent of normal) on the West Coast and in Fiordland. It was the second sunniest October at Greymouth in over 60 years, with a whopping 233 hours of bright sunshine. In contrast, sunshine totals were below normal (between 65 and 90 percent of normal) for Taranaki, Wellington and the Wairarapa. Elsewhere, sunshine totals were in the near normal range.

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

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Hokitika	218	138	1964	4th-highest
Greymouth	233	162	1947	2nd-highest
Martinborough	158	85	1986	3rd-lowest
Wallaceville	110	65	1939	4th-lowest
Stratford	130	76	1963	3rd-lowest

OCTOBER CLIMATE IN THE SIX MAIN CENTRES

October temperatures were the lowest on record for Wellington, Christchurch and Dunedin; were well below average in Auckland, below average in Hamilton, and near normal in Tauranga. Monthly rainfalls were well above normal for all of the main centres except Dunedin (with below normal rainfall). Sunshine totals for October were near normal in all main centres except for Christchurch, which experienced 232 hours of bright sunshine in October. Of the six main centres, Tauranga was the warmest, Wellington the wettest, Dunedin the coolest and driest, and Christchurch the sunniest.

October 2009 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland ^a	12.8	-1.7	Well below average	104	120%	Well above normal	175	98%	Near normal
Tauranga ^b	13.5	-0.3	Near average	152	170%	Well above normal	214	107%	Near normal
Hamilton	12.2	-0.7	Below average	163	170%	Well above normal	178 ^e	101%	Near normal
Wellington ^c	10.4	-1.6	Lowest on record	206	179%	Well above normal	179	93%	Near normal
Christchurch ^d	9.5	-2.2	Lowest on record	83	170%	Well above normal	232	117%	Above normal
Dunedin	9.0	-1.5	Lowest on record	40	61%	Below normal	152	103%	Near normal

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

HIGHLIGHTS AND EXTREME EVENTS

• Temperature

The highest temperature in October 2009 was 24.3°C recorded at Whangarei on the 17th (4th highest October temperature at this site).

Record cold or near-record cold afternoon conditions were experienced on October 4th/5th in many North Island locations, associated with the heavy snowfall and bitterly cold southeast winds over the central North Island, as well as on the 9th at numerous southern sites, associated with another snowfall event in the southeast South Island.

Extreme daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Whangarei	24.3	17th	1967	4th-highest
Kaitaia	11.7	5th	1972	Lowest
Kaikohe	12.4	5th	1973	4th-lowest
Dargaville	11.0	5th	1951	Lowest
Whangarei	12.7	5th	1967	2nd-lowest
Warkworth	10.7	5th	1966	Lowest
Whangaparaoa	10.0	5th	1982	Lowest
Whenuapai	11.0	5th	1951	Lowest
Whitianga	11.8	5th	1972	Lowest
Paeroa	8.1	5th	1972	Lowest
Tauranga	9.4	5th	1941	Lowest
Te Puke	8.6	5th	1973	Lowest
Whakatane	12.1	5th	1975	4th-lowest
Rotorua	7.6	5th	1972	Lowest
Taupo	8.2	5th	1950	3rd-lowest
Auckland	10.6	5th	1961	Lowest
Pukekohe	8.2	5th	1972	Lowest
Whatawhata	8.9	5th	1952	Lowest
Hamilton, Ruakura	8.2	5th	1940	Lowest
Hamilton	8.4	5th	1946	Lowest
Port Taharoa	9.7	5th	1974	Lowest
Te Kuiti	7.7	5th	1959	Lowest
Taumarunui	7.6	5th	1947	Lowest
Turangi	7.8	5th	1968	Equal 2nd-lowest
New Plymouth	9.4	4th	1944	Lowest
Takapau Plains	5.2	5th	1972	Lowest
Dannevirke	5.3	5th	1951	Lowest
Castlepoint	8.0	6th	1972	Lowest
Martinborough	9.4	4th	1986	4th-lowest
Ngawi	9.1	5th	1972	Lowest
Hastings	8.6	5th	1972	Lowest
Waipawa	7.4	4th	1945	Lowest
Wairoa, North Clyde	9.1	5th	1972	Lowest
Paraparaumu	10.1	4th	1972	2nd-lowest
Palmerston North	8.1	5th	1940	Lowest
Levin	10.3	4th	1950	4th-lowest
Wellington	9.4	9th	1972	Equal 2nd-lowest
Stratford	6.0	4th	1972	Lowest
Hawera	8.4	4th	1977	Lowest
Ohakune	2.6	5th	1972	Lowest
Waouru	1.0	5th	1972	Lowest
Wanganui, Spriggins Park	8.9	4th	1972	Lowest

Westport	9.8	9th	1966	Lowest
Lake Rotoiti	6.2	9th	1972	2nd-lowest
Reefton	6.4	9th	1972	Lowest
Greymouth	8.5	9th	1972	Lowest
Motueka, Riwaka	10.0	9th	1972	Lowest
Blenheim	8.8	9th	1947	Lowest
Cape Campbell	7.4	9th	1972	Lowest
Hanmer Forest	3.4	9th	1972	2nd-lowest
Kaikoura	6.0	9th	1972	Lowest
Arthurs Pass	1.0	9th	1978	Lowest
Culverden	3.0	9th	1930	Lowest
Winchmore	5.9	9th	1928	2nd-lowest
Waipara West	5.6	9th	1973	Lowest
Darfield	7.7	9th	1954	3rd-lowest
Christchurch	6.6	9th	1863	Equal lowest
Lincoln, Broadfield	6.9	9th	1881	Equal 2nd-lowest
Le Bons Bay	5.5	9th	1984	2nd-lowest
Lumsden	6.8	26th	1982	4th-lowest

The lowest October temperature of -5.5 °C was recorded at Ranfurly on the 5th (not an October record).

Extreme low daily minimum air temperatures were recorded at:

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Warkworth	2.4	30th	1966	Lowest
Whangaparaoa	5.9	5th	1982	Lowest
Pukekohe	1.6	30th	1969	4th-lowest
Dannevirke	-2.3	21st	1951	4th-lowest
Hokitika	-0.9	5th	1866	4th-lowest
Haast	-0.4	29th	1949	Equal 3rd-lowest
Puysegur Point	3.0	4th	1978	4th-lowest
Appleby (Nelson)	-0.7	6th	1943	4th-lowest
Le Bons Bay	1.7	10th	1984	Equal lowest
Dunedin (Airport)	-3.3	7th	1947	Lowest
Queenstown	-3.5	5th	1871	Lowest
Lumsden	-4.3	5th	1982	Lowest

• Heavy rain and flooding

The highest 1-day rainfall total for October was 89 mm, recorded at Motu (Gisborne) on the 4th (not an October record at this site). Other record or near-record 1-day rainfall totals for October are shown below.

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
Takapau Plains	48	4th	1962	3rd-highest
Dannevirke	48	4th	1951	4th-highest
Gisborne	62	4th	1937	3rd-highest
Wairoa, North Clyde	70	4th	1967	4th-highest
Blenheim	50	8th	1927	2nd-highest
Timaru Harbour	56	19th	1942	Highest

Heavy rain in Bay of Plenty on 5 October, caused slips in Tauranga, flooded businesses in Rotorua, and caused a 30 m high Acacia tree to fall, blocking the road at Pongakawa.

Heavy rain in the early hours of 9 October caused surface flooding in Wellington, and closed the

Johnsonville railway line.

On 14 October, at 7.30 pm, a slip closed SH3 just north of New Plymouth. One lane was opened about 8 pm.

Heavy rain in Wellington on 15-16 October caused surface flooding on SH1 north of the city, as well as causing slips in Lower Hutt and Evans Bay Parade.

SH1 was closed by flooding near Marton, south of Wanganui, on 18 October.

- **High winds**

The highest wind gust for October was 148 km/hr, recorded at Southwest Cape (Stewart Island) on the 21st (not an October record at this site).

Gusty cross-winds forced the closure of New Plymouth airport for 20 hours from 3 pm on 4 October. The strong winds also brought down trees and cut the power supply to about 1000 properties in Taranaki, particularly Okato, Oakura, and Hawera. Power was also cut to about 1200 homes in Rotorua district after high winds brought down trees.

High winds on 5 October, together with the heavy snow, brought down trees and power poles in the central North Island, leaving about 1300 people without power. Some properties were without power for four days.

Stock losses, particularly late born lambs, occurred in the Wairarapa during the first week in October, after several days of strong, very cold, southerly winds.

Record high extreme wind gusts for October were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Hawera	96	9th	1986	Highest

- **Snow and ice**

On 3 October, 20 cm of snow was reported to low levels in Fiordland and Southland. Coronet Peak skifield received 7 cm of fresh powder overnight on 2-3 October, while Treble Cone received 20 cm of snow, and Cardrona 15 cm.

Overnight, 4-5 October, several hundred motorists were stranded in up to 50cm of snow along the Napier-Taupo Highway. Most were rescued by the army, but some spent the night in their vehicles. Snow was reported as far north as Te Aroha and Katikati, and on Mt Taranaki. Unexpected snow in the Motu-Matawai area, and further south at Te Pohue, caused significant losses in newborn lambs and calves.

Roads closed by snow on 5 October were SH1 between Turangi and Taihape, SH5 from Taupo to Napier, SH38 in the Urewera National Park, SH47 at Turangi, SH49 from its junction with SH4 to Waiouru. The Desert Road, Napier-Taupo Road and SH38 remained closed until 7 October.

On 6 October, Waikato residents woke to see snow on Mt Pirongia and Mt Te Aroha. A DoC ranger reported 15 cm of snow on the road up Mt Te Aroha, the heaviest fall since 1978. On Mt Taranaki, skiers could not reach the Manganui ski field because the access road was blocked by fallen trees. About 20-25 cm of snow covered the road. At North Egmont car park a car was trapped in snow, forcing the owner to spend the night in the hut. Snow was also reported in the Rotorua district, for the first time in about 30 years.

Snow started falling in Central Otago in the evening on 8 October, and further north in Canterbury, it was reported in Darfield and Kirwee early in the morning of 9 October. Mt Hutt ski field received about 50 cm of new snow.

- **Hail**

Hail was reported in central Wellington on 5 October, during the morning commute to work.

Unseasonal, localised hail hit kiwifruit country around Tauranga and Te Puke several times in the last week of October, with heavy kiwifruit losses likely.

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