

# A warm and dry month for much of New Zealand

Rainfall	Rainfall was well below normal (<50% of normal) for parts of Northland, much of Auckland, northern Waikato, Bay of Plenty, much of Gisborne, Wairarapa, Marlborough, and central Canterbury. Below normal rainfall (50-79% of normal) was observed in nearly all remaining portions of the North Island, as well as Nelson, northern Canterbury, and interior central Canterbury in the South Island. Conversely, above normal (120-149% of normal) rainfall was widespread across the West Coast, Fiordland, much of Southland, and Stewart Island.
Temperature	Temperatures were above average (0.51°C to 1.2°C above average) or well above average (>1.2°C above average) across all of the North Island and nearly all of the South Island, except for parts of eastern Otago where temperatures were near average (±0.50°C of average).
Soil Moisture	As of 1 November, soil moisture was lower than normal across approximately the northern third of the North Island, Wairarapa, Marlborough, and central Canterbury south to eastern Otago. Soil moisture was considerably lower than normal in coastal Bay of Plenty, East Cape, Wairarapa, and central Canterbury – these areas were categorised as "Dry" or "Very Dry" according to NIWA's New Zealand Drought Index. Soil moisture was higher than normal in interior Manawatu-Whanganui, northern Tasman, and Southland. Soil moisture was generally near normal for remaining areas of New Zealand.

Click on the link to jump to the information you require:

Overview <u>Rainfall</u> <u>Temperature</u> <u>October 2020 climate in the six main centres</u> <u>Highlights and extreme events</u>

### Overview

October 2020 was characterised by higher than normal mean sea level pressure over and to the east of the North Island. This pressure set up resulted in a north to northeast wind flow anomaly across the country (i.e. more north to northeast winds than normal). However, at times westerly winds also affected the South Island. Overall, this was consistent with a developing La Niña in the equatorial Pacific. The prevalence of high pressure resulted in a dry month across the North Island and upper South Island, where rainfall was below normal (50-79% of normal) or well below normal (<50% of normal). In fact, Auckland (Western Springs) had its driest October since records began in 1948, with only 20% of its normal October rainfall. Conversely, periodic westerly winds brought several moisture-rich fronts to the west and south of the South Island, resulting in widespread above normal (120-149% of normal) rainfall for the West Coast, Southland, and Stewart Island. However, these westerly winds descending off the eastern slopes of the Southern Alps caused a very dry month across central Canterbury, where below to well below rainfall was widespread.

High pressure and northerly-quarter winds were an ideal recipe for warm temperatures, resulting in above average (0.51°C to 1.20°C above average) to well above average (>1.20°C above average) temperatures across all of the North Island and nearly all of the South Island. Notably, Te Puke experienced its warmest October since records began there in 1973, while Tauranga had its second-warmest October since 1913. Overall, the nationwide average temperature in October 2020 was 13.2°C. This was 1.2°C above the 1981-2010 October average, making it New Zealand's 5<sup>th</sup>-warmest October since NIWA's seven station temperature series began in 1909, and the warmest October since 2001. It has now been 45 consecutive months since New Zealand's nationwide average temperature was below average.

Further Highlights:

- The highest temperature was 30.8°C, observed at Wairoa on 5 October.
- The lowest temperature was -5.0°C, observed at Middlemarch on 9 October.
- The highest 1-day rainfall was 183 mm, recorded at Awakino on 18 October.
- The highest wind gust was 172 km/h, observed at South West Cape on 3 and 25 October.
- Of the six main centres in October 2020, Auckland was the warmest, Dunedin was the coolest, Wellington was the wettest, Tauranga was the driest, Christchurch was the sunniest, and Hamilton was the least sunny.
- Of the available, regularly reporting sunshine observation sites, the sunniest four regions in 2020 so far are Bay of Plenty (2170 hours), Wider Nelson (2168 hours), Marlborough (2164 hours) and Taranaki (2108 hours).

### For further information, please contact:

Seth Carrier Meteorologist/Forecaster – NIWA Auckland Tel. 09 375 4508

# Rainfall: Very dry in most areas, but a wet month for West Coast and Southland

Rainfall was well below normal (<50% of normal) for parts of Northland, much of Auckland, northern Waikato, Bay of Plenty, much of Gisborne, Wairarapa, Marlborough, and central Canterbury. Below normal rainfall (50-79% of normal) was observed in nearly all remaining portions of the North Island, as well as Nelson, northern Canterbury, and interior central Canterbury in the South Island. Conversely, above normal (120-149% of normal) rainfall was widespread across the West Coast, Fiordland, much of Southland, and Stewart Island.

It was a particularly dry month from Auckland to Bay of Plenty, as well as for central Canterbury. Some locations in these regions received less than 25% of their normal October rainfall. Whakatane received only 22% of its normal October rainfall, while Auckland (Western Springs) and Akaroa received just 20% of normal. This was the driest October at Auckland (Western Springs) since records for that station grouping began in 1948.

Conversely, periodic westerlies brought substantial rainfall to the West Coast, Southland, and Stewart Island during October, with many locations receiving more than 120% of their normal October rainfall.

In fact, South West Cape on Stewart Island had its wettest October since 1991, with 172% of its monthly normal rainfall.

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments		
High records or near-records						
South West Cape	182	172	1991	Highest		
Low records or near-recor	ds					
Auckland (Western Springs)	20	20	1948	Lowest		
Whakatane	22	22	1952	2nd-lowest		
Akaroa	17	20	1977	2nd-lowest		

### Record<sup>1</sup> or near-record October rainfall totals were recorded at:

# Temperature: A very warm month nearly everywhere

Temperatures were above average ( $0.51^{\circ}$ C to  $1.2^{\circ}$ C above average) or well above average (> $1.2^{\circ}$ C above average) across all of the North Island and nearly all of the South Island, except for parts of eastern Otago where temperatures were near average ( $\pm 0.50^{\circ}$ C of average).

While October was a warm month overall for most of New Zealand, westerlies brought especially warm air across the Tasman Sea around 5 October and again on 25 October. These days saw many locations set record or near-record high temperature readings. Notably, on 5 October, Wairoa reached 30.8°C, which is the third year in the last decade that New Zealand observed a >30°C temperature measurement in the month of October.

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Cape Reinga	15.8	1.3	1951	Highest
Te Puke	14.9	1.6	1973	Highest
Ngawi	15.0	1.3	1972	Highest
Farewell Spit	15.0	1.9	1971	Highest
Kaitaia	16.0	1.5	1948	2nd-highest
Kaikohe	14.7	1.2	1973	2nd-highest
Leigh	16.3	1.6	1966	2nd-highest
Whangaparaoa	16.0	1.4	1982	2nd-highest
Tauranga	15.4	1.3	1913	2nd-highest
Rotorua	13.4	1.5	1964	2nd-highest
Таиро	13.2	2.1	1949	2nd-highest

### Record or near-record mean air temperatures for October were recorded at:

<sup>&</sup>lt;sup>1</sup> The rankings (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>.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.

Te Kuiti	14.4	1.4	1959	2nd-highest			
Wairoa	16.2	2.3	1964	2nd-highest			
Porirua	13.2	0.6	1968	2nd-highest			
Waiouru	9.9	1.6	1962	2nd-highest			
Motueka	13.8	1.6	1956	2nd-highest			
Whangarei	16.2	1.5	1967	3rd-highest			
Mokohinau	15.9	1.0	1994	3rd-highest			
Matamata	14.2	1.6	1999	3rd-highest			
Motu	11.8	1.6	1990	3rd-highest			
Auckland (Airport)	15.8	1.3	1959	3rd-highest			
Lower Retaruke	13.2	1.2	1966	3rd-highest			
Gisborne	15.9	2.2	1905	3rd-highest			
Cheviot	12.7	1.4	1982	3rd-highest			
Kerikeri	15.4	1.2	1945	4th-highest			
Dargaville	15.4	1.1	1943	4th-highest			
Auckland (Western Springs)	15.5	1.2	1948	4th-highest			
Whakatane	14.7	1.0	1974	4th-highest			
Pukekohe	15.0	1.5	1969	4th-highest			
Mahia	14.3	1.0	1990	4th-highest			
Ohakune	11.4	1.7	1962	4th-highest			
Low records or near-records	Low records or near-records						
None observed							

# Record or near-record mean maximum air temperatures for October were recorded at:

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Kaitaia	20.4	2.3	1948	Highest
Kaikohe	18.8	1.9	1973	Highest
Whangarei	21.3	2.4	1967	Highest
Whangaparaoa	19.5	1.7	1982	Highest
Auckland (Whenuapai)	19.7	1.9	1945	Highest
Whitianga	20.4	2.1	1962	Highest
Matamata	19.5	1.7	1999	Highest
Auckland (Airport)	19.7	2.0	1959	Highest
Te Kuiti	20.5	2.7	1959	Highest
Ohakune	17.5	3.3	1962	Highest
Farewell Spit	19.1	2.4	1971	Highest
Cape Reinga	18.7	1.5	1951	2nd-highest
Leigh	21.0	3.4	1966	2nd-highest
Pukekohe	19.6	2.2	1969	2nd-highest
Hamilton (Ruakura)	20.0	2.0	1906	2nd-highest
Hamilton (Airport)	19.4	1.4	1946	2nd-highest
Lower Retaruke	18.5	1.5	1966	2nd-highest
Wairoa	22.2	3.4	1964	2nd-highest
Stratford	16.6	1.6	1960	2nd-highest

Waiouru	14.9	2.1	1962	2nd-highest		
Hanmer Forest	19.9	3.1	1906	2nd-highest		
Dargaville	19.8	2.3	1943	3rd-highest		
Whatawhata	18.9	1.7	1952	3rd-highest		
Turangi	17.6	1.4	1968	3rd-highest		
Waipawa	19.7	2.1	1945	3rd-highest		
Porirua	16.4	0.4	1968	3rd-highest		
Mokohinau	17.9	1.0	1994	4th-highest		
Rotorua	17.7	1.6	1964	4th-highest		
Motu	16.7	2.1	1990	4th-highest		
Ngawi	18.3	1.5	1972	4th-highest		
Gisborne	21.3	2.3	1905	4th-highest		
Takaka	18.7	0.9	1978	4th-highest		
Arapito	17.3	1.1	1978	4th-highest		
Low records or near-records						
None observed						

### Record or near-record mean minimum air temperatures for October were recorded at:

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Te Anau	6.2	2.1	1963	Highest
Cape Reinga	12.9	1.1	1951	2nd-highest
Mokohinau	14.0	1.1	1994	2nd-highest
Te Puke	10.8	2.4	1973	2nd-highest
Ngawi	11.7	1.2	1972	2nd-highest
Porirua	10.0	0.8	1968	2nd-highest
Tara Hills	5.1	1.7	1949	2nd-highest
Medbury	7.1	1.6	1927	Equal 2nd-highest
Whakatane	10.9	2.0	1974	3rd-highest
Motu	7.0	1.2	1990	3rd-highest
Port Taharoa	12.2	1.4	1973	3rd-highest
Franz Josef	7.8	1.8	1953	3rd-highest
Secretary Island	8.6	0.7	1985	3rd-highest
Brothers Island	11.2	0.8	1997	3rd-highest
Culverden	7.1	2.0	1928	3rd-highest
Cheviot	6.7	1.2	1982	3rd-highest
Gisborne	10.5	1.9	1905	4th-highest
Mahia	11.1	1.0	1990	4th-highest
Motueka	8.5	1.8	1956	4th-highest
Blenheim	9.5	1.9	1932	4th-highest
Lincoln	8.2	1.8	1881	4th-highest
Orari Estate	6.5	1.5	1972	4th-highest
Roxburgh	6.9	2.3	1950	4th-highest
Low records or near-records				
None observed				

# October climate in the six main centres

October temperatures were above or well above average for all main centres. Tauranga observed its second-warmest October on record, with records there extending back to 1913. It was a particularly dry month in the upper North Island, with both Auckland and Tauranga receiving well below normal rainfall. Of the six main centres in October 2020, Auckland was the warmest, Dunedin was the coolest, Wellington was the wettest, Tauranga was the driest, Christchurch was the sunniest, and Hamilton was the least sunny.

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	15.7	+1.3	Well above average
Tauranga <sup>b</sup>	15.4	+1.3	Well above average (2 <sup>nd</sup> - highest on record)
Hamilton <sup>c</sup>	14.0	+1.0	Above average
Wellington <sup>d</sup>	12.8	+0.8	Above average
Christchurch <sup>e</sup>	12.9	+1.5	Well above average
Dunedin <sup>f</sup>	11.9	+1.0	Above average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	33	36	Well below normal
Tauranga <sup>b</sup>	24	27	Well below normal
Hamilton <sup>c</sup>	61	62	Below normal
Wellington <sup>d</sup>	102	87	Near normal
Christchurch <sup>e</sup>	29	60	Below normal
Dunedin <sup>f</sup>	50	81	Near normal
Sunshine			
Location	Sunshine (hours)		
Auckland <sup>a</sup>	210		
Tauranga <sup>b</sup>	183		
Hamilton <sup>g</sup>	148		
Wellington <sup>d</sup>	178		
Christchurch <sup>e</sup>	216		
Dunedin <sup>f</sup>	193		

### October 2020 main centre climate statistics:

<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

### Temperatures

The highest temperature was 30.8°C, observed at Wairoa on 5 October.

The lowest temperature was -5.0°C, observed at Middlemarch on 9 October.

An unseasonably warm air mass that originated over Australia moved across New Zealand in early October, causing well above average temperatures. On 4 October, Kaikoura reached 28.0°C, its second-warmest October day on record. On 5 October, Wairoa reached 30.8°C, which is the third year in the last decade that New Zealand observed a 30°C temperature in the month of October. Several other locations around New Zealand also set record or near-record high temperatures on 5 October.

Another warm air mass swept across the South Island late in the month. On 25 October, Christchurch (Riccarton) reached 29.8°C, that location's second-warmest October temperature since 2002. Meanwhile, Dunedin (Musselburgh) reached 29.1°C, the third-warmest October temperature there since 1947. Multiple other locations around New Zealand also saw near-record high temperatures on this day.

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Cape Reinga	22.3	27th	1951	Highest
Mokohinau	21.0	30th	1994	Highest
Leigh	24.8	24th	1966	Highest
Whitianga	26.7	27th	1962	Highest
Rotorua	24.2	5th	1964	Highest
Таиро	27.6	5th	1949	Highest
Te Kuiti	26.5	5th	1959	Highest
Turangi	26.6	5th	1968	Highest
Waipawa	27.8	5th	1945	Highest
Wairoa	30.8	5th	1964	Highest
Hawera	22.9	25th	1977	Highest
Ohakune	25.0	5th	1962	Highest
Whangarei	25.6	31st	1967	Equal highest
Whatawhata	23.5	25th	1952	Equal highest
Auckland (Mangere)	23.5	27th	1959	2nd-highest
Lower Retaruke	25.4	5th	1966	2nd-highest
Takapau Plains	23.8	5th	1962	2nd-highest
Waiouru	22.0	5th	1962	2nd-highest
Motueka	27.1	4th	1956	2nd-highest
Rangiora	28.9	25th	1965	2nd-highest
Akaroa	28.1	25th	1978	2nd-highest
Lumsden	24.6	25th	1982	2nd-highest
Tiwai Point	23.5	25th	1970	2nd-highest

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

Farewell Spit 23.6 5th 1971 Equal 2nd-highest   Hammer Forest 28.4 24th 1906 Equal 2nd-highest   Whangarei 25.3 27th 1967 3rd-highest   Matamata 23.6 22nd 1999 3rd-highest   Matimata 25.7 5th 1990 3rd-highest   Ngawi 26.3 5th 1972 3rd-highest   Mahia 25.8 6th 1990 3rd-highest   Cheviot 27.4 25th 1982 3rd-highest   Dunedin (Musselburgh) 29.1 25th 1982 3rd-highest   Balcutha (Telford) 26.1 25th 1982 Equal 3rd-highest   Whangaparaoa 23.6 26th 1959 Equal 3rd-highest   Pukekohe 23.2 26th 1959 Equal 3rd-highest   Hatings 28.3 5th 1966 4th-highest   Warkworth 24.1 27th 1945 Equal 3rd-highest   M	Nugget Point	26.0	25th	1970	2nd-highest
Whangarei 25.3 27th 1967 3rd-highest   Matamata 23.6 22nd 1999 3rd-highest   Motu 25.7 5th 1990 3rd-highest   Ngawi 26.3 5th 1972 3rd-highest   Mahia 25.8 6th 1990 3rd-highest   Cheviot 27.4 25th 1982 3rd-highest   Dunedin (Musselburgh) 29.1 25th 1982 3rd-highest   Balcutha (Telford) 26.1 25th 1982 Srd-highest   Whangaparaoa 22.6 31st 1982 Equal 3rd-highest   Auckland (Airport) 23.2 26th 1969 Equal 3rd-highest   Vakworth 24.1 27th 1966 4th-highest   Warkworth 24.1 27th 1966 4th-highest   Blenheim 28.5 5th 1932 4th-highest   Oamaru 27.1 25th 1967 4th-highest   Oamaru 27.0<	Farewell Spit	23.6	5th	1971	Equal 2nd-highest
Matamata 23.6 22nd 1999 3rd-highest   Motu 25.7 5th 1990 3rd-highest   Ngawi 26.3 5th 1972 3rd-highest   Mahia 25.8 6th 1990 3rd-highest   Cheviot 27.4 25th 1982 3rd-highest   Dunedin (Musselburgh) 29.1 25th 1982 3rd-highest   Balclutha (Telford) 26.1 25th 1982 srd-highest   Whangaparaoa 22.6 31st 1982 Equal 3rd-highest   Auckland (Airport) 23.2 26th 1959 Equal 3rd-highest   Pukekohe 23.6 26th 1969 Equal 3rd-highest   Warkworth 24.1 27th 1966 4th-highest   Hastings 28.3 5th 1932 4th-highest   Oamaru 27.1 25th 1863 4th-highest   Olyde 28.0 25th 1973 Equal 4th-highest   Odagar	Hanmer Forest	28.4	24th	1906	Equal 2nd-highest
Motu25.75th19903rd-highestNgawi26.35th19723rd-highestMahia25.86th19903rd-highestCheviot27.425th19823rd-highestDunedin (Musselburgh)29.125th19823rd-highestFive Rivers24.525th19473rd-highestBalclutha (Telford)26.125th19823rd-highestWhangaparaoa22.631st1982Equal 3rd-highestAuckland (Airport)23.226th1959Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestChristchurch (Airport)29.125th18634th-highestClyde28.025th19654th-highestClyde28.025th19784th-highestClyde27.05th1973Equal 4th-highestQamaru27.031st1967Equal 4th-highestComaru27.05th1973Equal 4th-highestComaru27.05th19723rd-lowestRokurgh21.525th1950Equal 4th-highestClyde8.015th19723rd-lowestMatanata9.815th19723rd-lowestMatanata9.615th19723rd-lowestHastings9	Whangarei	25.3	27th	1967	3rd-highest
Ngawi26.35th19723rd-highestMahia25.86th19903rd-highestCheviot27.425th19823rd-highestDunedin (Musselburgh)29.125th19473rd-highestFive Rivers24.525th19823rd-highestBalclutha (Telford)26.125th19643rd-highestAuckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestChristchurch (Airport)29.125th19674th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestQamaru27.05th1973Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.525th1967Equal 4th-highestOutschurgh27.525th1973Equal 4th-highestOutschurgh27.525th1973Equal 4th-highestOweds7.525th19723rd-lowestAuckland (Whenuapai)9.615th1972 </td <td>Matamata</td> <td>23.6</td> <td>22nd</td> <td>1999</td> <td>3rd-highest</td>	Matamata	23.6	22nd	1999	3rd-highest
Mahia25.86th19903rd-highestCheviot27.425th19823rd-highestDunedin (Musselburgh)29.125th19473rd-highestFive Rivers24.525th19823rd-highestBalclutha (Telford)26.125th198227-highestAuckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestBlenheim28.55th19654th-highestOamaru27.125th18634th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.03tst1967Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.63tst1967Equal 4th-highestOamaru27.63tst1967Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.03tst1967Equal 4th-highestOamaru27.525th19992nd-lowestAuckland (Whenuapai)9.615th19723	Motu	25.7	5th	1990	3rd-highest
Cheviot27.425th19823rd-highestDunedin (Musselburgh)29.125th19473rd-highestFive Rivers24.525th19823rd-highestBalclutha (Telford)26.125th1982Equal 3rd-highestWhangaparaoa22.631st1982Equal 3rd-highestAuckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.625th1984Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestOamaru27.03th1945Equal 4th-highestOamaru27.03th1945Equal 4th-highestOamaru27.03th1973Equal 4th-highestCorret1973Equal 4th-highest1973Equal 4th-highestLow records or near-records27.525th1950Equal 4th-highestNatamata9.815th19723rd-lowestNatamata9.615th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th<	Ngawi	26.3	5th	1972	3rd-highest
Dunedin (Musselburgh) 29.1 25th 1947 3rd-highest   Five Rivers 24.5 25th 1982 3rd-highest   Balclutha (Telford) 26.1 25th 1964 3rd-highest   Whangaparaoa 22.6 31st 1982 Equal 3rd-highest   Auckland (Airport) 23.2 26th 1959 Equal 3rd-highest   Pukekohe 23.6 26th 1969 Equal 3rd-highest   Le Bons Bay 25.3 25th 1984 Equal 3rd-highest   Warkworth 24.1 27th 1966 4th-highest   Hastings 28.3 5th 1932 4th-highest   Christchurch (Airport) 29.1 25th 1863 4th-highest   Oamaru 27.1 25th 1967 4th-highest   Clyde 28.0 25th 1978 4th-highest   Gamaru 27.0 5th 1973 Equal 4th-highest   Qual 4th-highest 27.0 3th 1967 Equal 4th-highest	Mahia	25.8	6th	1990	3rd-highest
Five Rivers 24.5 25th 1982 3rd-highest   Balclutha (Telford) 26.1 25th 1964 3rd-highest   Whangaparaoa 22.6 31st 1982 Equal 3rd-highest   Auckland (Airport) 23.2 26th 1959 Equal 3rd-highest   Pukekohe 23.6 26th 1969 Equal 3rd-highest   Le Bons Bay 25.3 25th 1984 Equal 3rd-highest   Warkworth 24.1 27th 1966 4th-highest   Hastings 28.3 5th 1932 4th-highest   Blenheim 28.5 5th 1932 4th-highest   Clyde 28.0 25th 1967 4th-highest   Oamaru 27.1 25th 1967 4th-highest   Vaipara West 27.0 5th 1978 4th-highest   Oamaru 27.0 5th 1973 Equal 4th-highest   Oamaru 27.0 5th 1973 Equal 4th-highest   Oamar	Cheviot	27.4	25th	1982	3rd-highest
Balclutha (Telford)26.125th19643rd-highestWhangaparaoa22.631st1982Equal 3rd-highestAuckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestBlenheim28.55th19324th-highestOamaru27.125th18634th-highestOamaru27.125th19784th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestI.ow records or near-records27.525th19784th-highestI.ow records or near-records27.531st1967Equal 4th-highestWhatawhata11.015th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestWhatawhata10.515th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestHamilton9.615th197	Dunedin (Musselburgh)	29.1	25th	1947	3rd-highest
Whangaparaoa22.631st1982Equal 3rd-highestAuckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestChrona Magna Mest7.031st19523rd-lowestRoxburgh27.031st1967Equal 4th-highestChrona Mest7.031st19523rd-lowestRoxburgh9.815th19723rd-lowestHamilton9.615th19723rd-lowestHamilton9.615th19723rd-l	Five Rivers	24.5	25th	1982	3rd-highest
Auckland (Airport)23.226th1959Equal 3rd-highestPukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19324th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestOamaru27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestClyde28.025th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru8.015th1973Equal 4th-highestNatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestHamilton9.615th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19714th-lowest	Balclutha (Telford)	26.1	25th	1964	3rd-highest
Pukekohe23.626th1969Equal 3rd-highestLe Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19654th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.525th1950Equal 4th-highestLow records or near-records27.525th1950Equal 4th-highestMatamata9.815th19723rd-lowestMatawhata11.015th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestWhatawhata10.515th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestHamilton9.615th19723rd-lowestHamilton9.615th19723rd-lowestHamilton9.615th19723rd-lowestHamilton9.615th19723rd-lowestHamilton	Whangaparaoa	22.6	31st	1982	Equal 3rd-highest
Le Bons Bay25.325th1984Equal 3rd-highestWarkworth24.127th19664th-highestHastings28.35th19654th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.525th1950Equal 4th-highestLow records or near-records27.525th1950Equal 4th-highestMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestHastings9.615th19723rd-lowestHastings9.615th19723rd-lowestHastings9.615th19723rd-lowestHastings9.615th19734th-lowestFe Puke11.915th19734th-lowestTaupo8.115th19734th-lowest	Auckland (Airport)	23.2	26th	1959	Equal 3rd-highest
Warkworth 24.1 27th 1966 4th-highest   Hastings 28.3 5th 1965 4th-highest   Blenheim 28.5 5th 1932 4th-highest   Christchurch (Airport) 29.1 25th 1863 4th-highest   Oamaru 27.1 25th 1967 4th-highest   Clyde 28.0 25th 1978 4th-highest   Auckland (Whenuapai) 23.2 27th 1945 Equal 4th-highest   Waipara West 27.0 5th 1973 Equal 4th-highest   Oamaru 27.0 31st 1967 Equal 4th-highest   Oamaru 27.0 31st 1967 Equal 4th-highest   Oamaru 27.5 25th 1950 Equal 4th-highest   Low records or near-records 1972 3rd-lowest   Matamata 9.8 15th 1972 3rd-lowest   Mhatamata 9.6 15th 1972 3rd-lowest   Hamilton 9.6 <t< td=""><td>Pukekohe</td><td>23.6</td><td>26th</td><td>1969</td><td>Equal 3rd-highest</td></t<>	Pukekohe	23.6	26th	1969	Equal 3rd-highest
Hastings28.35th19654th-highestBlenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestComaru27.031st1967Equal 4th-highestComaru27.031st1967Equal 4th-highestComaru27.031st1967Equal 4th-highestComaru27.525th1950Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestLow records or near-records11015th1972Whatawhata9.815th19723rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Le Bons Bay	25.3	25th	1984	Equal 3rd-highest
Blenheim28.55th19324th-highestChristchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestComaru27.525th1950Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestLow records or near-records15th19723rd-lowestMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19734th-lowest	Warkworth	24.1	27th	1966	4th-highest
Christchurch (Airport)29.125th18634th-highestOamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.525th1950Equal 4th-highestLow records or near-records27.525th1950Equal 4th-highestLow records or near-records9.815th19723rd-lowestMatamata9.815th19723rd-lowestRotorua8.015th19523rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTaupo8.115th19734th-lowest	Hastings	28.3	5th	1965	4th-highest
Oamaru27.125th19674th-highestClyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.525th1950Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestIow records or near-recordsVMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestPaeroa12.215th19714th-lowestTaupo8.115th19734th-lowest	Blenheim	28.5	5th	1932	4th-highest
Clyde28.025th19784th-highestAuckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestOamaru27.525th1950Equal 4th-highestLow records or near-records </td <td>Christchurch (Airport)</td> <td>29.1</td> <td>25th</td> <td>1863</td> <td>4th-highest</td>	Christchurch (Airport)	29.1	25th	1863	4th-highest
Auckland (Whenuapai)23.227th1945Equal 4th-highestWaipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestLow records or near-records27.525th1950Equal 4th-highestMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Oamaru	27.1	25th	1967	4th-highest
Waipara West27.05th1973Equal 4th-highestOamaru27.031st1967Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestLow records or near-records9.815th19992nd-lowestMatamata9.815th19923rd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19723rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Clyde	28.0	25th	1978	4th-highest
Oamaru27.031st1967Equal 4th-highestRoxburgh27.525th1950Equal 4th-highestLow records or near-recordsMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Auckland (Whenuapai)	23.2	27th	1945	Equal 4th-highest
Roxburgh27.525th1950Equal 4th-highestLow records or near-recordsMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Waipara West	27.0	5th	1973	Equal 4th-highest
Low records or near-recordsMatamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Oamaru	27.0	31st	1967	Equal 4th-highest
Matamata9.815th19992nd-lowestRotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowest	Roxburgh	27.5	25th	1950	Equal 4th-highest
Rotorua8.015th19723rd-lowestWhatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Low records or near-records				
Whatawhata11.015th19523rd-lowestHamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Matamata	9.8	15th	1999	
Hamilton9.615th19463rd-lowestHastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Rotorua	8.0	15th	1972	3rd-lowest
Hastings9.615th19723rd-lowestWhakatu10.515th19723rd-lowestPaeroa12.215th19714th-lowestTe Puke11.915th19734th-lowestTaupo8.115th19504th-lowest	Whatawhata	11.0	15th	1952	3rd-lowest
Whakatu 10.5 15th 1972 3rd-lowest   Paeroa 12.2 15th 1971 4th-lowest   Te Puke 11.9 15th 1973 4th-lowest   Taupo 8.1 15th 1950 4th-lowest	Hamilton	9.6	15th	1946	3rd-lowest
Paeroa 12.2 15th 1971 4th-lowest   Te Puke 11.9 15th 1973 4th-lowest   Taupo 8.1 15th 1950 4th-lowest	Hastings		15th	1972	3rd-lowest
Te Puke 11.9 15th 1973 4th-lowest   Taupo 8.1 15th 1950 4th-lowest	Whakatu	10.5	15th	1972	3rd-lowest
Taupo8.115th19504th-lowest	Paeroa	12.2	15th	1971	
	Te Puke	11.9	15th	1973	
Port Taharoa11.915th19744th-lowest	Таиро	8.1	15th	1950	4th-lowest
	Port Taharoa	11.9	15th	1974	4th-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Cape Reinga	16.0	31st	1971	Highest
Mokohinau	17.0	31st	1994	Highest
New Plymouth	16.2	31st	1944	Highest

Martinborough	17.0	25th	1986	Highest
Paraparaumu	15.6	31st	1972	Highest
Porirua	15.4	31st	1972	Highest
Wellington (Airport)	16.5	31st	1972	Highest
Upper Hutt (Trentham)	16.1	31st	1972	Highest
Arapito	14.9	26th	1978	Highest
Reefton	15.0	26th	1972	Highest
Greymouth	14.4	31st	1972	Highest
Puysegur Point	15.2	25th	1978	Highest
Motueka	15.8	27th	1972	Highest
Blenheim	17.3	26th	1947	Highest
Arthurs Pass	11.6	26th	1973	Highest
Manapouri (West Arm Jetty)	12.2	31st	1972	Highest
Roxburgh	17.8	4th	1950	Highest
Hawera	15.3	31st	1950	Equal highest
Franz Josef	13.4	26th	1977	Equal highest
	15.4	31st	1933	2nd-highest
Whangaparaoa	15.8			-
Port Taharoa		30th	1974	2nd-highest
Ngawi	18.1	25th	1972	2nd-highest 2nd-highest
Wellington (Kelburn)	14.9	31st	1931	Ū
Farewell Spit	15.0	27th	1972	2nd-highest
Hokitika	14.6	31st	1866	2nd-highest
Milford Sound	14.9	31st	1935	2nd-highest
Secretary Island	13.7	30th	1988	2nd-highest
Brothers Island	14.1	26th	1997	2nd-highest
Hanmer Forest	17.0	26th	1972	2nd-highest
Mt Cook (Airport)	15.8	25th	1929	2nd-highest
Le Bons Bay	15.2	6th	1984	2nd-highest
Tiwai Point	14.5	25th	1972	2nd-highest
Nugget Point	13.6	25th	1972	2nd-highest
Auckland (Western Springs)	16.3	25th	1971	Equal 2nd-highest
Matamata	14.9	30th	1999	Equal 2nd-highest
Westport	15.2	31st	1966	Equal 2nd-highest
Te Anau	13.4	25th	1973	Equal 2nd-highest
Levin	15.7	26th	1950	3rd-highest
Takaka	14.6	27th	1978	3rd-highest
Akaroa	16.1	4th	1978	3rd-highest
Wanaka	14.4	5th	1972	3rd-highest
Ranfurly	14.4	4th	1897	3rd-highest
Lauder	15.3	25th	1924	3rd-highest
Whitianga	16.1	21st	1971	Equal 3rd-highest
Turangi	13.3	31st	1968	Equal 3rd-highest
Hicks Bay	15.5	20th	1972	Equal 3rd-highest
Lincoln	16.9	4th	1881	Equal 3rd-highest
Whakatane	15.8	31st	1975	4th-highest
Tauranga (Airport)	16.3	25th	1941	Equal 4th-highest
Motu	11.8	25th	1990	Equal 4th-highest
Auckland (Mangere)	16.7	31st	1961	Equal 4th-highest

Stratford	13.5	31st	1972	Equal 4th-highest				
Waiau	16.0	26th	1974	Equal 4th-highest				
Low records or near-records								
Timaru (Airport)	-4.5	16th	1885	Lowest				
Waipara West	-1.6	16th	1973	2nd-lowest				
Manapouri	-4.6	15th	1963	Equal 2nd-lowest				
Martinborough	-1.4	16th	1986	3rd-lowest				
Paraparaumu	-1.0	16th	1953	3rd-lowest				
Takaka	0.0	2nd	1978	3rd-lowest				
Appleby	-1.3	16th	1932	3rd-lowest				
Waiau	-3.4	16th	1974	3rd-lowest				
Cheviot	-2.6	16th	1982	3rd-lowest				
Orari Estate	-2.2	16th	1972	3rd-lowest				
Warkworth	2.0	17th	1966	Equal 3rd-lowest				
Motu	-3.6	10th	1990	4th-lowest				
Clyde	-2.8	1st	1978	4th-lowest				

### **Rain and slips**

The highest 1-day rainfall was 183 mm, recorded at Awakino on 18 October.

On 4 October, up to 60 mm of rainfall caused flooding across parts of Southland. Several properties in Riverton, Invercargill, and Otatara needed to be pumped out by fire crews. Additional flooding was observed in Winton, Mokoreta, Wyndham, Gore, Fortrose, and Tokanui, while slips were reported in the Catlins and Stewart Island.

On 6 October, widespread surface flooding on roads occurred in the Gore District following heavy overnight rain.

On 26 October, heavy rain caused road flooding in northern parts of Southland including the Waikaia Valley near Piano Flat. Some farmland also flooded as rivers burst their banks.

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Tiwai Point	48	3rd	1970	Highest
Greymouth	112	26th	1947	2nd-highest
Manapouri (Airport)	57	25th	1963	3rd-highest
Invercargill	43	25th	1939	4th-highest
South West Cape	50	30th	1991	4th-highest

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

#### Wind

The highest wind gust was 172 km/h, observed at South West Cape on 3 and 25 October.

During the night of 3-4 October, strong westerly winds gusting near or above 100 km/h fanned fires near Lake Ōhau Village and Livingstone in Canterbury. The 4800 hectare Lake Ōhau fire destroyed about 50 homes and at least 300 sheep and lambs were killed, while the Livingstone fire resulted in

several property evacuations. A separate fire near Domett resulted in the evacuation of Hurunui River Huts.

Also on 4 October, a fire began near Ahipara in the Far North, and three nearby homes were evacuated as a precaution.

On 5 October, strong winds in Southland tipped over a truck and trailer on the Winton-Hedgehope Highway, blocking a lane. Strong winds were also experienced about Lake Wakatipu, with a downed tree near Kingston crushing a campervan, and damage to roofs and windows at properties in Frankton.

Record or near-record October ext	reme wind gusts were recorded at:

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
South West Cape	172	3rd	1991	Equal 2nd-highest
Secretary Island	124	25th	1994	4th-highest

### Snow and ice

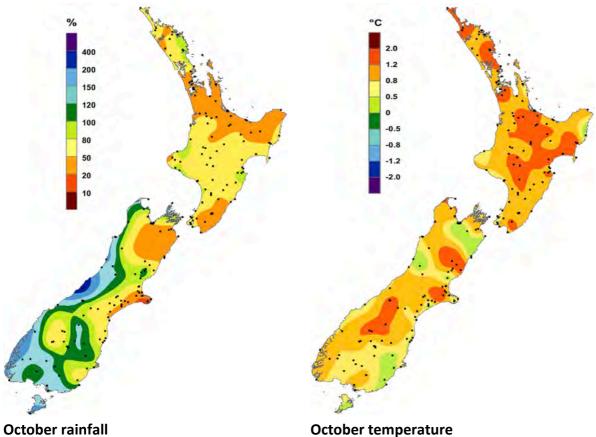
On 14 October, snow flurries, hail showers, and sleet fell in parts of Southland and interior Otago.

On 15 October, hail was reported in central Wellington and in several Wellington suburbs. A light snowfall was reported to relatively low-elevation hill areas of Hawke's Bay near Puketitiri, while a dusting of snow also occurred along the Desert Road and Napier-Taupo Road.

### **Cloud and fog**

On 25 October, at least five morning flights out of Wellington were delayed by thick fog.

For further information, please contact: Seth Carrier Meteorologist/Forecaster – NIWA Auckland Tel. 09 375 4508



Expressed as a percentage of the 1981-2010 normal.

October temperature Expressed as a departure from the 1981-2010 average in degrees Celsius.

### https://www.niwa.co.nz/our-science/climate

© Copyright NIWA 2020

All rights reserved. Information presented in this summary is based on data available at the time of publication, which is subject to ongoing quality assurance procedures.