

Warmest August on record for NZ. Dry in many parts; wet in the east and north of the North Island.

| Temperature | Record or near record-high August mean temperatures recorded throughout the North Island and South Island, with many locations at least 2.0°C above August average. Well above average temperatures (more than 1.2°C above August average) throughout most of New Zealand. The exception was areas of Northland, Auckland and western Waikato where temperatures were in the above average range (0.5-1.2°C above August average). The nation-wide mean temperature was 1.9°C above the August average, based on NIWA's seven-station temperature series, making this the warmest August on record since 1909. |
|---------------|--|
| Rainfall | Well below normal rainfall (less than 50 percent of August normal) for southwestern and eastern Southland, as well as parts of South Otago and Central Otago, and the McKenzie Country. Below normal rainfall (50-79 percent of August normal) in most remaining areas of Southland and Otago, as well as coastal and inland Canterbury south of Christchurch, Wellington, Wanganui and parts of Waikato. In contrast, well above normal rainfall (more than 150 percent of August normal) in parts of Hawke's Bay and Gisborne. |
| Sunshine | Above normal sunshine (110-125 percent of normal August sunshine) for South Otago, and western parts of Southland and Otago. Below normal sunshine (75-90 percent of normal August sunshine) throughout Nelson, Marlborough, the northern West Coast, Wellington, western Bay of Plenty and parts of Waikato and Auckland. Near normal sunshine elsewhere (within 10 percent of normal August sunshine). |
| Soil moisture | As at 1 September 2013, most soils throughout New Zealand were at normal soil moisture levels for the time of year. In isolated parts of Central Otago, coastal North Otago and about Kaikoura, soils were wetter than normal for the time of year. |

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<u>Overview</u>

Temperature

Rain

Sunshine

August climate in the six main centres

Highlights and extreme events

Overview

August 2013 was characterised by mean sea level pressure (MSLP) which was much lower than normal across all of New Zealand, with strongly negative anomalies to the south of Australia. In contrast, MSLP anomalies were well above normal to the east of New Zealand. These regional pressure patterns resulted in more frequent northerly and north-easterly flows across the country, resulting in high mean temperatures for the time of year across much of the country.

A very warm August was experienced throughout New Zealand. Mean temperatures for August were well above average (more than 1.2°C above August average) across almost the entire South Island, and most parts of the North Island. The exception was areas of Northland, Auckland and western Waikato where temperatures were in the above average range (0.5-1.2°C above August average). Mean temperatures of at least 2.0°C above average for August were recorded in inland parts of Southland, Otago, and Canterbury, as well as Christchurch, Banks Peninsula, West Coast, Manawatu, Taranaki, Bay of Plenty, and Waikato. The nation-wide average temperature in August 2013 was 10.6°C, (1.9°C above the 1971-2000 August average) from NIWA's seven-station temperature series which begins in 1909. August 2013 recorded the highest August mean temperature on record for the seven-station series.

August was a dry month for southwestern and eastern Southland, as well as parts of South Otago and Central Otago, and the McKenzie Country. Well below normal rainfall (less than 50 percent of August normal) was recorded at those locations. Below normal rainfall (50-79 percent of August normal) was recorded in most remaining areas of Southland and Otago, as well as coastal and inland Canterbury south of Christchurch, Wellington, Wanganui and parts of Waikato. In contrast, August was a wet month for Gisborne and Hawke's Bay. Well above normal rainfall (more than 150 percent of August normal) was recorded throughout those regions, with some areas towards the coast recording more the double their August normal rainfall. Above normal rainfall (120-140 percent of August normal) fell in eastern parts of Northland. Near normal rainfall was experienced elsewhere (within 20 percent of August normal rainfall). As at 1 September 2013, most soils throughout New Zealand were at normal soil moisture levels for the time of year. In isolated parts of Central Otago, coastal North Otago and about Kaikoura, soils were wetter than normal for the time of year.

Sunshine hours for August were above normal (110-125 percent of normal August sunshine) for South Otago, and western parts of Southland and Otago. Below normal sunshine (75-90 percent of normal August sunshine) was recorded throughout Nelson, Marlborough, the northern West Coast, Wellington, western Bay of Plenty and parts of Waikato and Auckland. Near normal sunshine was experienced elsewhere (within 10 percent of normal August sunshine). Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2013 (January to August) are: Whakatane (1800 hours), New Plymouth (1706 hours), Blenheim (1604 hours) and Lake Tekapo (1591 hours).

Further Highlights:

- The highest temperature was 22.1 °C, recorded at Kaitaia on 13 August.
- The lowest temperature was -8.0°C, observed at Lake Tekapo on 28 August.
- The highest 1-day rainfall was 155 mm, recorded at North Egmont, on 8 August.

- The highest wind gust was 154 km/hr, at South West Cape, on 28 August.
- In August 2013, Auckland was the wettest and warmest, Christchurch was the coolest,
 Dunedin was the driest, Tauranga was the sunniest, and both Wellington and Hamilton were the cloudiest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2013 (January to August) are: Whakatane (1800 hours), New Plymouth (1706 hours), Blenheim (1604 hours) and Lake Tekapo (1591 hours).

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Temperature: Well above average temperatures throughout most areas of New Zealand, with the exception of parts of Northland, Auckland and western Waikato where above average temperatures were recorded.

A very warm August was experienced throughout New Zealand. Highest ever August mean temperatures were recorded in 31 locations around the country (see Table below), with over half of the locations in New Zealand where long-term temperature measurements have been made (82 out of 146) recording an August 2013 mean temperature in the top four of their respective temperature records.

The nation-wide average temperature in August 2013 was 10.6°C, (1.9°C above the 1971-2000 August average) from NIWA's seven-station temperature series which begins in 1909¹. August 2013 recorded the highest August mean temperature on record for the seven-station series, slightly above the previous record in August 2009 of 1.8°C above average.

Record² or near-record mean air temperatures for August were recorded at:

| Location | Mean air temp. (°C) | Departure from normal (°C) | Year records began | Comments |
|----------------------------|---------------------------|----------------------------------|--------------------------|-------------|
| High records or near-recor | ds | | | |
| Cape Reinga | 13.4 | 0.8 | 1951 | 3rd-highest |
| Kaitaia (Airport) | 13.4 | 1.3 | 1948 | 3rd-highest |
| Kaitaia (Observatory) | 13.1 | 0.9 | 1985 | 2nd-highest |
| Kerikeri | 12.9 | 1.2 | 1981 | 2nd-highest |

¹ Interim monthly value

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² The rankings (1st, 2nd, 3rd.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.

| Dangavilla | 12.7 | 2.2 | 1042 | Highoot |
|------------------------|------|-----|------|-------------|
| Dargaville | 13.7 | 2.2 | 1943 | Highest |
| Whangarei (Airport) | 13.2 | 1.2 | 1967 | 2nd-highest |
| Leigh | 14.2 | 1.5 | 1966 | Highest |
| Whangaparaoa | 12.8 | 0.9 | 1982 | 4th-highest |
| Auckland (Whenuapai) | 12.3 | 1.3 | 1945 | 2nd-highest |
| Auckland (Lincoln Rd) | 12.7 | 0.7 | 1948 | 4th-highest |
| Auckland (Mangere) | 13.0 | 1.4 | 1959 | 2nd-highest |
| Auckland (Airport) | 12.6 | 1.0 | 1959 | 3rd-highest |
| Pukekohe | 12.1 | 1.3 | 1969 | Highest |
| Paeroa | 12.0 | 1.4 | 1947 | 2nd-highest |
| Tauranga (Aiport) | 12.5 | 1.7 | 1913 | 2nd-highest |
| Te Puke | 12.1 | 2.0 | 1973 | Highest |
| Whakatane (Airport) | 11.2 | 1.5 | 1974 | 3rd-highest |
| Rotorua (Airport) | 9.8 | 1.4 | 1964 | 3rd-highest |
| Taupo | 8.8 | 1.6 | 1949 | 2nd-highest |
| Motu | 8.7 | 2.2 | 1990 | Highest |
| Whatawhata | 11.1 | 1.0 | 1952 | 4th-highest |
| Hamilton (Ruakura) | 11.6 | 1.8 | 1906 | Highest |
| Turangi | 8.7 | 1.4 | 1968 | 2nd-highest |
| New Plymouth | 11.9 | 1.7 | 1944 | Highest |
| Stratford Ews | 10.4 | 2.2 | 1960 | Highest |
| Hawera Aws | 10.7 | 1.7 | 1977 | Highest |
| Wanganui | 11.7 | 1.5 | 1937 | 2nd-highest |
| Masterton (Airport) | 9.7 | 1.4 | 1906 | 3rd-highest |
| Masterton (Te Ore Ore) | 10.3 | 2.0 | 1992 | 2nd-highest |
| Dannevirke | 10.4 | 1.9 | 1951 | Highest |
| Waione | 10.8 | 1.3 | 1991 | Highest |
| Martinborough | 10.6 | 1.7 | 1986 | 3rd-highest |
| Ngawi | 12.5 | 1.7 | 1972 | Highest |
| Hicks Bay | 12.8 | 1.4 | 1969 | 2nd-highest |
| Gisborne | 11.9 | 1.8 | 1905 | Highest |
| Waipawa | 9.8 | 1.3 | 1945 | Highest |
| Wairoa | 12.0 | 2.0 | 1964 | 2nd-highest |
| Mahia | 12.0 | 1.7 | 1990 | Highest |
| Paraparaumu | 10.7 | 1.3 | 1953 | 2nd-highest |
| Palmerston North | 11.1 | 1.9 | 1928 | Highest |
| Levin | 11.1 | 1.7 | 1895 | 2nd-highest |
| Wellington (Airport) | 11.7 | 1.5 | 1962 | Highest |
| Wallaceville | 10.1 | 1.5 | 1939 | 2nd-highest |
| Takaka | 10.0 | 1.3 | 1978 | 3rd-highest |
| Farewell Spit | 12.1 | 1.7 | 1971 | Highest |
| Westport | 11.2 | 1.9 | 1937 | Highest |
| Hokitika | 10.1 | 1.7 | 1866 | 3rd-highest |
| Reefton | 9.6 | 2.5 | 1960 | Highest |
| Greymouth | 10.7 | 1.8 | 1947 | 3rd-highest |
| Haast | 10.0 | 1.8 | 1949 | 3rd-highest |
| Milford Sound | 8.6 | 1.7 | 1934 | Highest |
| Secretary Island | 10.6 | 1.3 | 1985 | 2nd-highest |
| | | | | 0 |

| Puysegur Point | 9.8 | 1.2 | 1978 | 4th-highest |
|--------------------------|------|-----|------|---------------|
| Motueka | 9.7 | 1.4 | 1956 | 4th-highest |
| Nelson | 10.4 | 1.7 | 1943 | Highest |
| Appleby | 9.6 | 1.0 | 1932 | 4th-highest |
| Blenheim | 10.8 | 1.9 | 1941 | 2nd-highest |
| Kaikoura | 10.5 | 1.7 | 1963 | 2nd-highest |
| Culverden | 8.6 | 2.0 | 1928 | 3rd-highest |
| Waiau School | 8.7 | 2.1 | 1974 | 3rd-highest |
| Cheviot | 9.0 | 1.7 | 1982 | Highest |
| Mt Cook | 6.1 | 2.1 | 1929 | 2nd-highest |
| Waipara West | 10.0 | 1.6 | 1973 | 4th-highest |
| Christchurch (Riccarton) | 9.8 | 2.1 | 1863 | 2nd-highest |
| Lincoln | 9.6 | 2.0 | 1881 | Highest |
| Le Bons Bay | 9.5 | 1.8 | 1984 | 3rd-highest |
| Lake Tekapo | 5.6 | 1.8 | 1927 | 4th-highest |
| Orari Estate | 7.9 | 1.2 | 1972 | 4th-highest |
| Tara Hills | 6.6 | 2.1 | 1949 | Highest |
| Wanaka (Airport) | 7.7 | 2.2 | 1955 | Highest |
| Cromwell | 7.5 | 1.9 | 1949 | 3rd-highest |
| Lauder | 6.6 | 1.7 | 1924 | 2nd-highest |
| Alexandra | 7.6 | 1.7 | 1983 | 2nd-highest |
| Ranfurly | 6.3 | 2.0 | 1975 | Highest |
| Oamaru | 8.9 | 1.4 | 1908 | 3rd-highest |
| Dunedin (Musselburgh) | 9.5 | 1.8 | 1947 | Highest |
| Manapouri | 6.8 | 1.7 | 1963 | 2nd-highest |
| Gore | 8.8 | 2.6 | 1971 | Highest |
| Invercargill | 8.1 | 1.4 | 1905 | Equal highest |
| Nugget Point | 9.1 | 2.0 | 1970 | Highest |
| South West Cape | 9.5 | 1.6 | 1991 | Highest |
| Campbell Island | 6.4 | 1.1 | 1991 | 3rd-highest |
| | | | | |

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

| Location | Mean maximum air temp. (°C) | Departure from normal (°C) | Year records began | Comments |
|---------------------------|--------------------------------------|----------------------------------|--------------------------|-------------|
| High records or near-reco | rds | | | |
| Kerikeri | 17.2 | 1.0 | 1981 | 3rd-highest |
| Dargaville | 16.9 | 2.2 | 1943 | 4th-highest |
| Leigh | 17.8 | 2.5 | 1966 | Highest |
| Auckland (Mangere) | 16.4 | 1.4 | 1959 | 2nd-highest |
| Tauranga (Airport) | 16.7 | 1.7 | 1913 | Highest |
| Te Puke | 16.4 | 1.4 | 1973 | Highest |
| Whakatane (Airport) | 16.3 | 1.3 | 1974 | Highest |
| Rotorua (Airport) | 13.9 | 1.1 | 1964 | 4th-highest |
| Motu Ews | 14.1 | 3.0 | 1990 | Highest |

| Hamilton (Ruakura) | 17.5 | 2.9 | 1906 | Highest |
|-----------------------------------|------|------------|------|-------------------|
| Hamilton | 15.8 | 1.1 | 1946 | 3rd-highest |
| Turangi | 14.0 | 1.8 | 1968 | Highest |
| New Plymouth | 15.1 | 1.3 | 1944 | 4th-highest |
| Stratford | 13.9 | 1.8 | 1960 | Highest |
| Hawera | 14.4 | 1.7 | 1977 | 2nd-highest |
| Wanganui | 16.4 | 2.5 | 1937 | 2nd-highest |
| Masterton (Te Ore Ore) | 15.2 | 1.4 | 1992 | 3rd-highest |
| Dannevirke | 14.7 | 2.2 | 1952 | Highest |
| Waione | 15.1 | 0.8 | 1991 | 4th-highest |
| Ngawi | 14.9 | 1.5 | 1972 | 3rd-highest |
| Gisborne | 16.7 | 1.6 | 1905 | Highest |
| | 14.7 | 1.6 | 1905 | |
| Wainan | | | | 3rd-highest |
| Wairoa | 17.4 | 2.6 | 1964 | Highest |
| Mahia | 14.5 | 1.5 | 1990 | Highest |
| Paraparaumu | 15.1 | 1.9 1.9 | 1953 | Highest |
| Palmerston North | 15.4 | | 1928 | 2nd-highest |
| Levin | 15.3 | 1.8 | 1895 | Highest |
| Wellington (Airport) Wallaceville | 14.3 | 1.4 | 1962 | 2nd-highest |
| | 14.9 | 1.7 | 1939 | 3rd-highest |
| Westport | 15.0 | 1.9 | 1937 | Highest |
| Reefton | 14.4 | 2.2 | 1960 | Highest |
| Motueka | 15.3 | 1.4 | 1956 | 4th-highest |
| Nelson | 14.8 | 1.4 | 1943 | Highest |
| Appleby | 14.6 | 0.9 | 1932 | 3rd-highest |
| Blenheim | 15.4 | 1.3 | 1941 | 3rd-highest |
| Kaikoura | 13.2 | 1.5 | 1963 | 4th-highest |
| Cheviot | 14.1 | 1.1 | 1982 | 4th-highest |
| Mt Cook | 11.3 | 2.6 | 1929 | 2nd-highest |
| Christchurch (Riccarton) | 14.3 | 1.7 | 1863 | 4th-highest |
| Le Bons Bay | 11.6 | 1.2 | 1984 | 4th-highest |
| Lake Tekapo | 11.0 | 2.4 | 1927 | 2nd-highest |
| Tara Hills | 12.5 | 2.6 | 1949 | Highest |
| Wanaka (Airport) | 12.7 | 2.3 | 1955 | 2nd-highest |
| Ranfurly Cromwell Ews | 11.8 | 2.0 | 1975 | 4th-highest |
| | 13.3 | 1.9 | 1949 | 3rd-highest |
| Lauder Ews | 12.2 | 2.0 | 1924 | 4th-highest |
| Alexandra Cws | 13.6 | 1.6 | 1983 | 4th-highest |
| Dunedin (Alussalhurah) | 13.8 | 1.7 | 1962 | 3rd-highest |
| Dunedin (Musselburgh) | 12.7 | 1.5 | 1947 | 4th-highest |
| Manapouri | 11.8 | 1.7 | 1963 | 3rd-highest |
| Queenstown | 12.1 | 2.2 | 1871 | 2nd-highest |
| Lumsden | 12.2 | 1.6 | 1982 | 3rd-highest |
| Gore | 13.2 | 3.0 | 1971 | Highest |
| Invercargill | 12.5 | 1.4 | 1905 | Equal 3rd-Highest |
| Nugget Point | 11.8 | 1.8 | 1970 | 2nd-highest |
| Secretary Island | 13.0 | 0.8 | 1985 | 4th-highest |
| South West Cape | 11.7 | 1.6 | 1991 | Highest |

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

| Location | Mean minimum air temp. (°C) | Departure from normal (°C) | Year records began | Comments |
|---------------------------|--------------------------------------|----------------------------------|--------------------------|-------------|
| High records or near-reco | rds | | | |
| Cape Reinga | 11.4 | 1.2 | 1951 | 3rd-highest |
| Kaitaia | 10.3 | 1.6 | 1948 | 4th-highest |
| Kerikeri | 8.7 | 1.5 | 1981 | 3rd-highest |
| Dargaville | 10.6 | 2.3 | 1943 | Highest |
| Whangarei | 9.7 | 1.5 | 1967 | 2nd-highest |
| Auckland (Whenuapai) | 8.8 | 1.9 | 1945 | 3rd-highest |
| Auckland (Mangere) | 9.7 | 1.5 | 1959 | 3rd-highest |
| Pukekohe | 8.4 | 1.4 | 1969 | 2nd-highest |
| Whitianga | 8.5 | 2.1 | 1962 | 3rd-highest |
| Paeroa | 8.0 | 1.9 | 1947 | 3rd-highest |
| Te Puke | 7.7 | 2.5 | 1973 | Highest |
| Whakatane | 6.1 | 1.7 | 1974 | 4th-highest |
| Taupo | 4.7 | 2.1 | 1949 | 3rd-highest |
| Port Taharoa | 9.9 | 1.8 | 1973 | 3rd-highest |
| New Plymouth | 8.7 | 2.1 | 1944 | Highest |
| Stratford | 6.9 | 2.6 | 1960 | Highest |
| Hawera | 7.0 | 1.6 | 1977 | Highest |
| Masterton (Te Ore Ore) | 5.4 | 2.6 | 1992 | 2nd-highest |
| Dannevirke | 6.2 | 1.6 | 1951 | 3rd-highest |
| Waione | 6.5 | 1.8 | 1991 | Highest |
| Castlepoint | 9.4 | 1.7 | 1972 | Highest |
| Martinborough | 6.3 | 2.1 | 1986 | 2nd-highest |
| Ngawi | 10.2 | 2.0 | 1972 | Highest |
| Hicks Bay | 10 | 1.8 | 1969 | 2nd-highest |
| Gisborne | 7.3 | 1.8 | 1905 | 4th-highest |
| Hastings | 5.8 | 2.4 | 1965 | 4th-highest |
| Waipawa | 4.9 | 1.1 | 1945 | 3rd-highest |
| Mahia | 9.6 | 1.9 | 1990 | Highest |
| Palmerston North | 7.1 | 1.8 | 1928 | Highest |
| Wellington (Airport) | 9.0 | 1.6 | 1962 | Highest |
| Farewell Spit | 9.5 | 2.7 | 1971 | Highest |
| Westport | 7.4 | 1.9 | 1937 | Highest |
| Hokitika | 6.0 | 1.9 | 1866 | 3rd-highest |
| Reefton | 4.9 | 2.9 | 1960 | Highest |
| Greymouth | 7.5 | 2.4 | 1947 | Highest |
| Haast | 6.6 | 2.4 | 1949 | 3rd-highest |
| Milford Sound | 5.2 | 2.8 | 1934 | Highest |
| Secretary Island | 8.3 | 1.8 | 1985 | Highest |
| Puysegur Point | 7.7 | 1.6 | 1978 | 2nd-highest |
| Nelson | 6.0 | 2.0 | 1943 | 2nd-highest |
| Blenheim | 6.1 | 2.5 | 1941 | Highest |

| Cape Campbell | 9.2 | 1.8 | 1953 | Highest |
|-----------------------|-----|-----|------|-------------------|
| Kaikoura | 7.7 | 1.8 | 1963 | Highest |
| Culverden | 3.6 | 3.0 | 1928 | 2nd-highest |
| Waiau School | 3.0 | 2.3 | 1974 | 4th-highest |
| Cheviot | 3.8 | 2.2 | 1982 | 2nd-highest |
| Mt Cook | 1.0 | 1.7 | 1929 | 4th-highest |
| Waipara West | 5.4 | 2.0 | 1973 | 2nd-highest |
| Lincoln | 5.5 | 2.7 | 1881 | Highest |
| Le Bons Bay | 7.3 | 2.3 | 1984 | Highest |
| Orari Estate | 3.0 | 1.8 | 1972 | 3rd-highest |
| Timaru | 4.3 | 1.6 | 1885 | 4th-highest |
| Tara Hills | 0.6 | 1.5 | 1949 | 3rd-highest |
| Wanaka (Airport) | 2.7 | 2.2 | 1955 | 4th-highest |
| Ranfurly | 0.7 | 1.9 | 1975 | 2nd-highest |
| Alexandra | 1.5 | 1.8 | 1983 | 2nd-highest |
| Oamaru | 5.0 | 1.9 | 1908 | 2nd-highest |
| Dunedin (Musselburgh) | 6.3 | 2.1 | 1947 | Highest |
| Gore | 4.4 | 2.2 | 1971 | Highest |
| Invercargill | 3.8 | 1.6 | 1905 | Equal 2nd-highest |
| Nugget Point | 6.3 | 2.1 | 1970 | Highest |
| South West Cape | 7.4 | 1.7 | 1991 | Highest |
| Campbell Island | 4.9 | 1.8 | 1991 | Highest |

Rainfall: Dry August for parts of Southland, Otago and inland Canterbury. Wet month for Gisborne and Hawke's Bay.

August was a dry month for Southland, Otago, the McKenzie Country, as well as coastal and inland Canterbury south of Christchurch, Wellington, Wanganui and parts of Waikato. In contrast, August was a wet month for Gisborne, Hawke's Bay and Northland.

As at 1 September 2013, most soils throughout New Zealand were at normal soil moisture levels for the time of year. In isolated parts of Central Otago, coastal North Otago and about Kaikoura, soils were wetter than normal for the time of year.

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

| Location | Rainfall total (mm) | Percentage of normal | Year records began | Comments | |
|------------------------------|------------------------|-------------------------|--------------------------|-------------|--|
| High records or near-records | | | | | |
| Kaikohe | 260 | 163 | 1956 | 4th-highest | |
| Gisborne | 219 | 288 | 1905 | 4th-highest | |
| Low records or near-records | | | | | |
| Turangi | 75 | 49 | 1968 | 4th-lowest | |
| Lumsden | 25 | 41 | 1982 | 2nd-lowest | |

Sunshine: Above normal August sunshine hours for South Otago, and western parts of Southland and Otago. Below normal sunshine throughout Nelson, Marlborough and the northern West Coast.

Sunshine hours for August were above normal for South Otago, western parts of Southland and Otago. Below normal sunshine was recorded throughout Nelson, Marlborough, the northern West Coast, Wellington, western Bay of Plenty and parts of Waikato and Auckland.

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

| Location | Sunshine hours | Percentage of normal | Year records began | Comments |
|---------------------------|-------------------|-------------------------|--------------------------|--------------|
| High records or near-reco | ds | | | |
| Queenstown | 156 | 130 | 1930 | 3rd-highest |
| Balclutha | 165 | 140 | 1964 | 2nd-highest |
| Low records or near-recor | ds | | | |
| Turangi | 102 | 73 | 1976 | 2nd-lowest |
| Takaka | 123 | 71 | 1985 | Equal lowest |
| Blenheim | 150 | 81 | 1947 | 3rd-lowest |

August climate in the six main centres

Mean air temperatures were well above average at all six main centres. It was the warmest August on record for Dunedin, whilst it was the second warmest August on record for Auckland and Tauranga. August rainfall was above normal in Auckland, near normal in Christchurch and below normal at the remaining four main centres. Sunshine hours were above normal in Dunedin, near normal in Auckland, and below normal at the remaining four main centres.

In August 2013, Auckland was the wettest and warmest, Christchurch was the coolest, Dunedin was the driest, Tauranga was the sunniest, and both Wellington and Hamilton were the cloudiest of the six main centres.

| Temperature Location Mean temp. (°C) Departure from normal (°C) Comments Aucklanda 13.0 1.4 2nd warmest August on record Taurangab 12.5 1.7 2nd warmest August on record Hamiltonc 11.0 1.4 Well above average Wellingtond 11.1 1.7 Well above average Christchurchc 9.0 1.8 Well above average Dunedinf 9.5 1.8 Warmest August on record Rainfall Location Rainfall (mm) 6 of normal Comments Aucklanda 142 126% Above normal Taurangab 70 63% Below normal Hamiltonc 89 75% Below normal Wellingtond 99 72% Below normal Christchurchc 51 82% Near normal Dunedinf 30 55% Below normal Sunshine Location Sunshine (hours) 6 of normal Comments Aucklanda 133 91% Near normal Taurangab 141 82% Below normal Hamiltonc 122 89% Below normal Wellingtond 122 89% Below normal Christchurchc 126 82% Below normal Dunedinf 136 111% Above normal | August 2013 main centre | climate statistics: | | |
|--|---------------------------|---------------------|-------------|------------------------------|
| Normal (°C) | Temperature | | | |
| Taurangab 12.5 1.7 2nd warmest August on record Hamiltonc 11.0 1.4 Well above average Wellingtond 11.1 1.7 Well above average Christchurche 9.0 1.8 Well above average Dunedinf 9.5 1.8 Warmest August on record Rainfall Location Rainfall (mm) % of normal Comments Aucklanda 142 126% Above normal Taurangab 70 63% Below normal Hamiltonc 89 75% Below normal Wellingtond 99 72% Below normal Christchurche 51 82% Near normal Sunshine Location Sunshine (hours) % of normal Comments Aucklanda 133 91% Near normal Taurangab 141 82% Below normal Hamiltong 122 89% Below normal Wellingtond 122 83% Below normal Wellingtond 122 83% Below normal | Location | Mean temp. (°C) | • | Comments |
| Hamilton ^c 11.0 1.4 Well above average Wellington ^d 11.1 1.7 Well above average Christchurch ^e 9.0 1.8 Well above average Dunedin ^f 9.5 1.8 Warmest August on record Rainfall Location Rainfall (mm) % of normal Comments Auckland ^a 142 126% Above normal Hamilton ^c 89 75% Below normal Wellington ^d 99 72% Below normal Christchurch ^e 51 82% Near normal Dunedin ^f 30 55% Below normal Sunshine Location Sunshine (hours) % of normal Comments Auckland ^a 133 91% Near normal Tauranga ^b 141 82% Below normal Hamilton ^g 122 89% Below normal Wellington ^d 122 83% Below normal Christchurch ^e 126 82% Below normal | Auckland ^a | 13.0 | 1.4 | 2nd warmest August on record |
| Wellington ^d 11.1 1.7 Well above average Christchurch ^e 9.0 1.8 Well above average Dunedin ^f 9.5 1.8 Warmest August on record Rainfall Location Rainfall (mm) % of normal Comments Auckland ^a 142 126% Above normal Tauranga ^b 70 63% Below normal Hamilton ^c 89 75% Below normal Wellington ^d 99 72% Below normal Christchurch ^e 51 82% Near normal Dunedin ^f 30 55% Below normal Sunshine Location Sunshine (hours) % of normal Comments Auckland ^a 133 91% Near normal Tauranga ^b 141 82% Below normal Hamilton ^g 122 89% Below normal Wellington ^d 122 89% Below normal Wellington ^d 122 89% Below normal Wellington ^d 122 83% Below normal | Tauranga ^b | 12.5 | 1.7 | 2nd warmest August on record |
| Christchurche 9.0 1.8 Well above average Dunedinf 9.5 1.8 Warmest August on record Rainfall Location Rainfall (mm) % of normal Comments Aucklanda 142 126% Above normal Taurangab 70 63% Below normal Hamiltonc 89 75% Below normal Wellingtond 99 72% Below normal Christchurche 51 82% Near normal Dunedinf 30 55% Below normal Sunshine Location Sunshine (hours) % of normal Comments Aucklanda 133 91% Near normal Taurangab 141 82% Below normal Hamiltong 122 89% Below normal Wellingtond 122 83% Below normal Wellingtond 122 83% Below normal | Hamilton ^c | 11.0 | 1.4 | Well above average |
| Dunedinf 9.5 1.8 Warmest August on record | Wellington ^d | 11.1 | 1.7 | Well above average |
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| Auckland³142126%Above normalTauranga¹b7063%Below normalHamilton²8975%Below normalWellington⁴9972%Below normalChristchurch²5182%Near normalDunedin⁴3055%Below normalSunshineLocationSunshine (hours)% of normalCommentsAuckland³13391%Near normalTauranga¹b14182%Below normalHamilton²g12289%Below normalWellington⁴12283%Below normalChristchurch²12682%Below normal | Rainfall | | | |
| Taurangab 70 63% Below normal Hamiltonc 89 75% Below normal Wellingtond 99 72% Below normal Christchurche 51 82% Near normal Dunedinf 30 55% Below normal Sunshine Location Sunshine (hours) % of normal Comments Aucklanda 133 91% Near normal Taurangab 141 82% Below normal Hamiltong 122 89% Below normal Wellingtond 122 83% Below normal Christchurche 126 82% Below normal | Location | Rainfall (mm) | % of normal | Comments |
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| Christchurche 51 82% Near normal Dunedinf 30 55% Below normal Sunshine Location Sunshine (hours) % of normal Comments Aucklanda 133 91% Near normal Taurangab 141 82% Below normal Hamiltong 122 89% Below normal Wellingtond 122 83% Below normal Christchurche 126 82% Below normal | Hamilton ^c | 89 | 75% | Below normal |
| Dunedinf3055%Below normalSunshineLocationSunshine (hours)% of normalCommentsAucklanda13391%Near normalTaurangab14182%Below normalHamiltong12289%Below normalWellingtond12283%Below normalChristchurche12682%Below normal | Wellington ^d | 99 | 72% | Below normal |
| SunshineLocationSunshine (hours)% of normalCommentsAucklanda13391%Near normalTaurangab14182%Below normalHamiltong12289%Below normalWellingtond12283%Below normalChristchurche12682%Below normal | Christchurch ^e | 51 | 82% | Near normal |
| LocationSunshine (hours)% of normalCommentsAucklanda13391%Near normalTaurangab14182%Below normalHamiltong12289%Below normalWellingtond12283%Below normalChristchurche12682%Below normal | Dunedin ^f | 30 | 55% | Below normal |
| Aucklanda13391%Near normalTaurangab14182%Below normalHamiltong12289%Below normalWellingtond12283%Below normalChristchurche12682%Below normal | Sunshine | | | |
| Taurangab14182%Below normalHamiltong12289%Below normalWellingtond12283%Below normalChristchurche12682%Below normal | Location | Sunshine (hours) | % of normal | Comments |
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| Wellingtond12283%Below normalChristchurche12682%Below normal | Tauranga ^b | 141 | 82% | Below normal |
| Christchurche 126 82% Below normal | Hamilton ^g | 122 | 89% | Below normal |
| | Wellington ^d | 122 | 83% | Below normal |
| Dunedin ^f 136 111% Above normal | Christchurch ^e | 126 | 82% | Below normal |
| | Dunedin ^f | 136 | 111% | Above normal |

^a Mangere ^b Tauranga Airport ^c Hamilton Airport ^d Kelburn ^e Christchurch Airport ^f Musselburgh ^g Ruakura

Highlights and extreme events

Temperatures

The highest temperature was 22.1 °C, recorded at Kaitaia on 13 August.

The lowest temperature was -8.0°C, observed at Lake Tekapo on 28 August, which was associated with clear overnight skies after the passage of a cold front.

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

| Location | Extreme maximum (°C) | Date of extreme temperature | Year records began | Comments | | |
|------------------------------|----------------------------|-----------------------------|-----------------------|-------------------|--|--|
| High records or near-records | | | | | | |
| Kaitaia | 22.1 | 13th | 1967 | Highest | | |
| Kerikeri | 20.5 | 5th | 1981 | 3rd-highest | | |
| Whangarei | 20.6 | 7th | 1967 | Equal 4th-highest | | |
| Leigh | 20.9 | 4th | 1966 | Highest | | |
| Motu | 17.7 | 5th | 1990 | 3rd-highest | | |
| Auckland (Mangere) | 19.2 | 6th | 1959 | Equal 4th-highest | | |
| Port Taharoa | 20.3 | 3rd | 1973 | Highest | | |
| Waione | 20.2 | 9th | 1991 | 4th-highest | | |
| Levin | 20.5 | 25th | 1895 | Highest | | |
| Wallaceville | 20.5 | 25th | 1939 | Highest | | |
| Stratford | 17.3 | 3rd | 1960 | 3rd-highest | | |
| Hawera | 17.7 | 9th | 1977 | 2nd-highest | | |
| Wanganui | 20.8 | 25th | 1937 | Highest | | |
| Westport | 18.5 | 3rd | 1937 | Equal highest | | |
| Arapito | 18.4 | 3rd | 1978 | Equal 3rd-highest | | |
| Reefton | 18.7 | 17th | 1960 | Highest | | |
| Secretary Island | 19.2 | 17th | 1985 | 2nd-highest | | |
| Motueka | 20.8 | 10th | 1956 | 3rd-highest | | |
| Nelson | 18.9 | 10th | 1943 | Highest | | |
| Appleby | 20.0 | 10th | 1932 | Highest | | |
| Ranfurly | 17.2 | 31st | 1975 | 4th-highest | | |
| South West Cape | 16.3 | 18th | 1991 | 2nd-highest | | |

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

| Location | Extreme minimum (°C) | Date of extreme temperature | Year records began | Comments | | | |
|------------------------------|----------------------------|-----------------------------|-----------------------|-------------------|--|--|--|
| High records or near-records | | | | | | | |
| New Plymouth | 13.6 | 8th | 1944 | Highest | | | |
| Masterton (Te Ore Ore) | 11.6 | 8th | 1992 | Equal 3rd-highest | | | |
| Dannevirke | 12.3 | 8th | 1951 | 3rd-highest | | | |
| Martinborough | 12.9 | 8th | 1986 | 4th-highest | | | |
| Wellington (Airport) | 13.1 | 8th | 1972 | 3rd-highest | | | |
| Wallaceville | 12.3 | 9th | 1972 | Equal 4th-highest | | | |
| Stratford | 11.4 | 8th | 1972 | 2nd-highest | | | |

Rain and slips

The highest 1-day rainfall was 155 mm, recorded at North Egmont, on 8 August.

The lack of rain in July and early August caused some Waikato water tanks to run dry. Demand for water tankers to fill tanks was up 80% from the same time last year.

On 10-11 August, heavy rain caused slips and washouts in the Gisborne region, closing some roads.

On 12 August, caution was advised to motorists on SH 35 from Gisborne to Te Araroa due to severe weather conditions. A slip blocked one lane of SH 35 at the intersection of Waihau Road.

On 17 August, heavy rain in Marlborough forced the closure of Marama Rd, Old Renwick Road and Omaka Road due to surface flooding.

On 19 August, heavy rain resulted in a slip that blocked one lane of SH 5 between Napier and Taupo near the Mohaka River.

On 22 August, slips blocked the south-bound lane and part of the north-bound lane on Kopu Hikuai Rd in Coromandel, and on the Tauranga side of the Kaimai Range on SH 29.

On 22 August, three people were rescued from a mountain near Taupo where they had become disoriented and cold when weather conditions changed while they were walking.

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

| Location | Extreme 1- day rainfall (mm) | Date of extreme rainfall | Year records began | Comments |
|-----------------|------------------------------------|--------------------------|--------------------------|-------------|
| Mahia | 60 | 4th | 1990 | 2nd-highest |
| Ohakune | 152 | 11th | 1961 | Highest |
| South West Cape | 32 | 15th | 1991 | 4th-highest |

Wind

The highest wind gust was 154 km/hr, at South West Cape, on 28 August.

On 3 August, the delay of a flight to Brisbane was blamed on the lack of wind at Wellington airport. Some passengers had to get off the plane to lighten the plane's weight before take-off.

On 7 August, a waterspout was seen off the coast of New Plymouth. It hit land near Bell Block but no damage was reported.

On 13 August, winds caused a large pine tree to fall onto a house in New Plymouth.

On 14 August, motorists in Hawke's Bay, Wairarapa, and SH 1 at the Desert Road were warned to take extra care while driving due to strong winds.

On 16 August, motorcyclists and drivers of high sided vehicles were cautioned to take extra care on SH1 at the Desert Road due to high winds.

On 17 August (the day after a significant earthquake), the Fire Service spent much of the day securing chimneys in Seddon, but high winds eventually brought their work to a standstill.

On 21 and 22 August, drivers of motorcycles, caravans and high-sided vehicles were warned to take extra care on SH 1 from Rangipo to Waiouru (Desert Road) due to high winds.

On 29 August, strong winds caused damage to scaffolding in central Auckland, closing part of Queen Street for a time.

Record or near record August extreme wind gusts were recorded at:

| Location | Extreme wind gust (km/hr) | Date of extreme gust | Year records began | Comments |
|-----------|---------------------------------|----------------------|--------------------------|-------------------|
| Paeroa | 85 | 2nd | 1991 | Equal 2nd-highest |
| Turangi | 82 | 15th | 1973 | Equal 4th-highest |
| Westport | 102 | 14th | 1973 | Highest |
| Winchmore | 85 | 23rd | 1970 | 4th-highest |

Snow and ice

On 12 August, a man was killed by an avalanche whilst climbing in the Remarkables Range near Queenstown.

On 14 August, SH 94 between the Hollywood turnoff and Milford Sound was closed to towing vehicles due to snow, and all other vehicles had to carry chains.

On 28 August, chains had to be carried on SH 94 from Hollyford to Milford Sound due to snow.

On 29 August, a short southerly blast caused snowfall across parts of Central Otago, Canterbury, and the hills around Nelson, boosting the snow base at skifields which hadn't seen decent snowfall for over a month. SH 73 from Springfield to Otira (Arthurs Pass and Porters Pass) and SH 94 from Te Anau to Milford Sound were closed to towing vehicles due to snow, and all other vehicles had to carry chains. Caution was advised on SH 8 between Fairlie and Omarama due to snow and ice.

Lightning and hail

On 17 August, a heavy hailstorm on SH 30 near Rotorua caused hazardous driving conditions, which were thought to contribute to a collision between a car and a truck that resulted in the death of a 55 year old woman.

In the early hours of 25 August, thunderstorms caused flooding of some homes and set off security alarms in Auckland. A house in Helensville was struck by lightning.

Cloud and fog

On 5 August, a number of domestic flights were delayed or cancelled at Christchurch airport due to fog.

On 23 August, thick fog delayed some domestic flights at Hamilton, Rotorua, and Whakatane airports.

On 26 August, around 50 domestic flights were delayed or cancelled at Auckland airport, and Auckland ferry services were delayed, due to heavy fog. Flights were also cancelled and delayed at Hamilton airport due to fog.

For further information, please contact:

Dr Brett Mullan

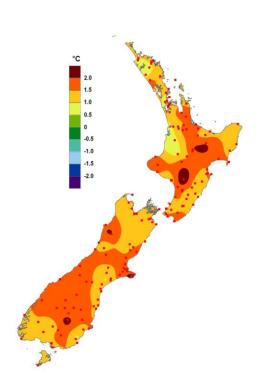
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August 2013 mean temperatures, expressed as a difference from average (°C).

Dark red colour indicates that mean temperatures were more than 2.0°C above average, whilst orange colour indicates mean temperatures were more than 1.5°C above average. Mean temperatures for August were well above average (more than 1.2°C above August average) across almost the entire South Island, and most parts of the North Island. The absence of any green, blue or purple colours indicates that mean temperatures were above average in August throughout all of New Zealand (at least 0.5°C above August average). Note that this map is produced by interpolating across many individual stations, resulting in a dampened pattern compared to the earlier table.

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