

New Zealand Climate Summary: **Autumn 2017** Issued: 6 June 2017

# Wettest autumn on record for parts of the North Island

|  |  |
| --- | --- |
| **Rainfall** | Well above normal rainfall (>150% of autumn normal) was experienced across the majority of the North Island. Autumn rainfall was well above normal for parts of the northern and eastern South Island, including Nelson, Marlborough, and coastal Canterbury. A number of locations recorded their wettest or near-wettest autumn on record. The west and south of the South Island (south of Hokitika) experienced less rainfall than usual for autumn, with some locations recording well below rainfall (<50% of autumn normal).  |
| **Temperatures** | Autumn 2017 temperatures were above average (+0.50°C to +1.20°C) for almost the entire North Island. There were pockets of well above average temperatures (> +1.20°C) in the Bay of Plenty and Auckland. The eastern side of the South Island mostly experienced near (-0.50°C to +0.50°C) or below average (-1.20°C to -0.51°C) temperatures. The western South Island observed above average temperatures. |
| **Soil moisture** | At the end of autumn 2017 soil moisture was well above normal along the east coast of the North Island south of Gisborne, around Whanganui, and in Marlborough, eastern Canterbury and Otago. Soils were drier than normal in mid-Canterbury, central Otago and southeast Southland. Soil moisture levels were near normal elsewhere.  |
| **Sunshine** | Autumn sunshine was near normal (90-109% of autumn normal) for Northland to Waikato, the West Coast, inland Canterbury and parts of central Otago. Below normal sunshine (75-89% of autumn normal) was observed in central New Zealand (southern North Island and northern South Island). |

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## Overview

For the autumn season as a whole, mean sea level pressures were above normal over and to the southwest of New Zealand, which resulted in more northeasterly winds than usual over the North Island and more easterly winds than usual over the South Island. The anomalous northerly flow over the North Island caused numerous moist, tropical airmasses to travel down to New Zealand, including two ex-tropical cyclones, which delivered significant amounts of rain to the top of the country during March and April. These rainfall events caused severe flooding and slips for parts of the North Island, particularly Auckland, Coromandel, and Bay of Plenty, as well as the top of the South Island. More details about these extreme events can be found in the *Highlights and Extreme Events* section below. Temperatures were generally warmer than usual for autumn across the North Island due to the northerly flows.

In contrast, the predominant easterly flow over the South Island caused wetter than normal conditions for the exposed regions of eastern Canterbury and Otago, but sheltering of western and southern parts encouraged drier than normal conditions to persist for the season in Southland, Central Otago and the West Coast. Temperatures were near average for most of the South Island, and slightly below average for parts of coastal Canterbury. In contrast, the sheltered West Coast experienced above average temperatures for autumn.

**Further Highlights:**

* The highest temperature was 33.0°C, observed at Leeston on 17 March.
* The lowest temperature was -6.9°C, observed at Middlemarch on 22 May.
* The highest 1-day rainfall was 231.8 mm, recorded at North Egmont on 11 March.
* The highest wind gust was 167 km/hr, observed at Akitio on 19 May.
* Of the six main centres in autumn 2017, Auckland was the warmest and sunniest, Tauranga was the wettest, Dunedin was the driest and Wellington was the least sunny, and Dunedin and Christchurch were both the coolest.

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## Rainfall: Very wet in the North Island and north and east of the South Island

Well above normal rainfall (>150% of autumn normal) was experienced across most of the North Island except for localised areas of western Northland, Taranaki and the Central Plateau that recorded near normal (80-119% of normal) or above normal (120-149% of normal) rainfall. Rainfall was also well above normal for parts of the northern and eastern South Island, including Nelson, Marlborough, and coastal Canterbury.

Thirty-five locations recorded their wettest or near-wettest autumn on record. Significantly, Whangaparaoa (north of Auckland) recorded a massive 294% (791 mm) of its normal autumn rainfall total.

In contrast, the west and south of the South Island (south of Hokitika) experienced less rainfall than usual for autumn. Well below normal rainfall (<50% of autumn normal) was observed at Milford Sound, Mt Cook, Tiwai Point, and Invercargill. In fact, Milford Sound and Tiwai Point recorded their lowest autumn rainfall totals on record, with 37% and 48% of their normal autumn rainfalls, respectively.

As a reflection of the stark differences in rainfall during autumn, Lake Taupo experienced its highest autumn inflow on record since 1926 (206% of normal inflow) and the Clutha dam lakes as well as Lake Te Anau experienced their lowest inflows on record for autumn since 1926, with 46% and 43% of normal autumn inflows, respectively.

At the end of autumn 2017, soil moisture was well above normal along the east coast of the North Island south of Gisborne, around Whanganui, and in Marlborough, eastern Canterbury and Otago. Soils were drier than normal in mid-Canterbury, central Otago and southeastern Southland. Soil moisture levels were near normal elsewhere. The first two months of autumn exhibited very wet soils throughout the North Island, but near normal rainfall in May for many areas, as well as the increasing climatological average for soil moisture towards the winter season, resulted in soil moisture levels declining to near normal levels for the time of year.

**Record[[1]](#footnote-1) or near-record autumn rainfall totals were recorded at:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Rainfall total (mm)** | **Percentage of normal** | **Year records began** | **Comments** |
| High records or near-records |
| Warkworth  | 747 | 214 | 1966 | Highest |
| Whangaparaoa  | 791 | 294 | 1946 | Highest |
| Auckland (Albany) | 655 | 226 | 1966 | Highest |
| Whitianga  | 958 | 208 | 1961 | Highest |
| Te Puke  | 1075 | 256 | 1973 | Highest |
| Auckland (Mangere) | 642 | 231 | 1959 | Highest |
| Pukekohe  | 640 | 225 | 1944 | Highest |
| Lower Retaruke  | 541 | 167 | 1966 | Highest |
| Hawera  | 472 | 179 | 1977 | Highest |
| Ohakune  | 477 | 169 | 1961 | Highest |
| Waiouru  | 460 | 194 | 1950 | Highest |
| Takaka  | 866 | 189 | 1976 | Highest |
| Rotorua  | 822 | 205 | 1963 | 2nd-highest |
| Taupo  | 512 | 247 | 1949 | 2nd-highest |
| Auckland (Airport) | 547 | 203 | 1959 | 2nd-highest |
| Turangi  | 592 | 167 | 1968 | 2nd-highest |
| Waione  | 356 | 175 | 1991 | 2nd-highest |
| Wairoa | 623 | 171 | 1964 | 2nd-highest |
| Palmerston North  | 396 | 184 | 1928 | 2nd-highest |
| Akaroa  | 465 | 205 | 1977 | 2nd-highest |
| Kaitaia  | 575 | 185 | 1948 | 3rd-highest |
| Kaikohe  | 701 | 181 | 1956 | 3rd-highest |
| Paeroa  | 675 | 232 | 1914 | 3rd-highest |
| Taumarunui  | 574 | 177 | 1913 | 3rd-highest |
| Hastings  | 332 | 158 | 1965 | 3rd-highest |
| Stratford  | 700 | 153 | 1960 | 3rd-highest |
| Tauranga  | 722 | 220 | 1898 | 4th-highest |
| Whakatane  | 648 | 192 | 1952 | 4th-highest |
| Takapau Plains  | 450 | 197 | 1962 | 4th-highest |
| Martinborough  | 313 | 174 | 1924 | 4th-highest |
| Paraparaumu  | 423 | 195 | 1945 | 4th-highest |
| Whanganui | 350 | 165 | 1890 | 4th-highest |
| Farewell Spit  | 542 | 188 | 1874 | 4th-highest |
| Appleby  | 458 | 178 | 1932 | 4th-highest |
| Waipara West | 269 | 195 | 1973 | 4th-highest |
| Low records or near-records |
| Milford Sound  | 639 | 37 | 1929 | Lowest |
| Tiwai Point  | 146 | 48 | 1970 | Lowest |
| Mt Cook  | 422 | 39 | 1928 | 2nd-lowest |
| Lake Manapouri  | 172 | 63 | 1961 | 2nd-lowest |
| Invercargill  | 146 | 47 | 1900 | 2nd-lowest |

## Temperature: Warmer than usual in the North, near average in the South

Autumn 2017 mean temperatures were above average (+0.50°C to +1.20°C) for almost the entire North Island, in part due to the persistent northerly flow pattern for much of the season. There were pockets of well above average temperatures (> +1.20°C) observed in the Bay of Plenty and Auckland regions. Te Puke experienced its warmest autumn on record. Some localised areas of the western Waikato and Wellington region experienced near average temperatures for autumn (-0.50°C to +0.50°C).

Due to the persistent easterly flows across the South Island, the exposed eastern side of the island experienced near average or below average (-1.20°C to -0.51°C) temperatures, and a few locations recorded well below average temperatures (< -1.20°C). In contrast, the western South Island observed above average temperatures due to sheltering by the Southern Alps and the [foehn effect](https://www.youtube.com/watch?v=4AVMUIw2E_k) of the easterly winds warming as they descended the western slopes of the Southern Alps.

The nation-wide average temperature for autumn 2017 was 13.2°C (0.2°C above the 1981-2010 autumn average, using NIWA’s seven-station temperature series which begins in 1909). This is in sharp contrast to autumn 2016, which was New Zealand’s 2nd warmest autumn on record and had a nationwide average temperature of 14.7°C.

**Record or near-record mean air temperatures for autumn were recorded at:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Mean** **air temp. (oC)** | **Departure from normal (oC)** | **Year records began** | **Comments** |
| High records or near-records |
| Te Puke  | 16.2 | 1.6 | 1973 | Highest |
| Motu  | 12.8 | 1.5 | 1990 | 2nd-highest |
| Arapito  | 14.4 | 1.0 | 1978 | 2nd-highest |
| Taupo  | 14.1 | 1.9 | 1949 | 3rd-highest |
| Whatawhata  | 16.3 | 1.6 | 1952 | 3rd-highest |
| Whangarei  | 17.7 | 1.1 | 1967 | 4th-highest |
| Mokohinau  | 18.4 | 0.9 | 1994 | 4th-highest |
| Whitianga  | 16.5 | 1.1 | 1962 | 4th-highest |
| Hicks Bay  | 17.1 | 1.1 | 1969 | 4th-highest |
| Low records or near-records |
| Oamaru | 10.0 | -1.3 | 1967 | 2nd-lowest |
| Kaikoura | 11.8 | -1.3 | 1963 | 3rd-lowest |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Mean maximum****air temp. (oC)** | **Departure from normal (oC)** | **Year records began** | **Comments** |
| High records or near-records |
| Hanmer Forest  | 19.8 | 2.2 | 1906 | 2nd-highest |
| Whitianga  | 21.7 | 1.5 | 1962 | 2nd-highest |
| Te Puke  | 20.9 | 1.1 | 1973 | 2nd-highest |
| Taupo  | 18.9 | 1.6 | 1949 | 2nd-highest |
| Milford Sound | 16.5 | 1.2 | 1934 | 2nd-highest |
| Secretary Island  | 16.4 | 1.1 | 1985 | 3rd-highest |
| Low records or near-records |
| Timaru  | 14.5 | -1.6 | 1885 | Lowest |
| Oamaru  | 14.2 | -1.7 | 1967 | Lowest |
| Takaka  | 17.3 | -1.5 | 1978 | 3rd-lowest |
| Le Bons Bay  | 14.2 | -1.1 | 1984 | 3rd-lowest |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Mean minimum****air temp. (oC)** | **Departure from normal (oC)** | **Year records began** | **Comments** |
| High records or near-records |
| Te Puke  | 11.5 | 2.0 | 1973 | Highest |
| Taupo  | 9.3 | 2.2 | 1949 | 2nd-highest |
| Cape Reinga  | 15.4 | 1.1 | 1951 | 3rd-highest |
| Mokohinau  | 16.6 | 1.0 | 1994 | 3rd-highest |
| Wairoa | 11.1 | 1.4 | 1964 | 3rd-highest |
| Waiouru  | 6.5 | 1.7 | 1962 | 3rd-highest |
| Lower Retaruke  | 8.8 | 1.6 | 1966 | 4th-highest |
| Low records or near-records |
| Kaikoura | 7.4 | -2.6 | 1963 | 2nd-lowest |

## Sunshine: Near normal sunshine for many

Autumn sunshine was near normal (90-109% of autumn normal) for Northland to Waikato, the West Coast, inland Canterbury and parts of central Otago. Queenstown recorded its sunniest autumn on record since 1930 with 127% of normal sunshine, consistent with below normal rainfall and clear skies there. Below normal sunshine (75-89% of autumn normal) was observed in central New Zealand (southern North Island and northern South Island).

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Sunshine hours** | **Percentage of normal** | **Year records began** | **Comments** |
| High records or near-records |
| Queenstown  | 532 | 127 | 1930 | Highest |
| Dunedin (Musselburgh) | 452 | 119 | 1980 | 3rd-highest |
| Franz Josef  | 469 | 108 | 1983 | 4th-highest |
| Low records or near-records |
| Paraparaumu  | 362 | 72 | 1953 | 2nd-lowest |
| Martinborough  | 408 | 81 | 1986 | 3rd-lowest |
| Takaka  | 496 | 88 | 1985 | 4th-lowest |

## Autumn climate in the six main centres

Temperatures were above average for Auckland, Tauranga and Hamilton for autumn 2017, and near average at the remaining main centres. Well above normal rainfall was observed at all main centres except for Dunedin, which recorded above normal rainfall. Auckland observed its wettest autumn on record in 2017. Sunshine was near normal for Auckland, Hamilton and Tauranga, below normal for Wellington and Christchurch, and above normal in Dunedin. Of the six main centres in autumn 2017, Auckland was the warmest and sunniest, Tauranga was the wettest, Dunedin was the driest, Wellington was the least sunny, and Dunedin and Christchurch were both the coolest.

**Autumn 2017 main centre climate statistics:**

|  |
| --- |
| **Temperature** |
| **Location** | **Mean temp. (oC)** | **Departure from normal (oC)** | **Comments** |
| Aucklanda | 16.9 | +0.7 | Above average |
| Taurangab | 16.5 | +0.8 | Above average |
| Hamiltonc | 14.9 | +0.7 | Above average |
| Wellingtond | 13.8 | +0.1 | Near average |
| Christchurche | 11.7 | -0.2 | Near average |
| Dunedinf | 11.7 | +0.1 | Near average |
| **Rainfall** |
| **Location** | **Rainfall (mm)** | **% of normal** | **Comments** |
| Aucklanda | 642 | 231% | Well above normal (highest) |
| Taurangab | 722 | 220% | Well above normal (4th highest) |
| Hamiltonc | 544 | 195% | Well above normal |
| Wellingtond | 458 | 163% | Well above normal |
| Christchurche | 278 | 188% | Well above normal |
| Dunedinf | 223 | 124% | Above normal |
| **Sunshine** |
| **Location** | **Sunshine (hours)** | **% of normal** | **Comments** |
| Aucklanda | 499 | 101% | Near normal |
| Taurangab | 564 | 96% | Near normal |
| Hamiltong | 496[[2]](#footnote-2) | 95% | Near normal |
| Wellingtond | 386 | 77% | Below normal |
| Christchurche | 3893 | 79% | Below normal |
| Dunedinf | 452 | 119% | Above normal (3rd highest) |  |

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

## Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred during autumn 2017. Note that a more detailed list of significant weather events for autumn 2017 can be found in the *Highlights and extreme events* section of NIWA’s monthly Climate Summaries. These monthly summaries are available online, and may be viewed at the following website: <http://www.niwa.co.nz/climate/summaries/monthly>

### Rain and slips

On 7-8 March, heavy downpours and significant flooding affected the upper North Island, particularly southeast Auckland and the Coromandel Peninsula. Early on 8 March, nearly 200 school children were evacuated from waist-deep floodwaters at a school camp (Camp Adair) in the Hunua Ranges, southeast of Auckland. Major flooding in Clevedon caused significant stock losses from farms in the area, as well as road closures and evacuations. Houses and roads were also affected by flooding in Beachlands and Maraetai. 150 children at another school camp (Hunua Falls Camp) were evacuated when a fallen tree blocked access to the camp. Around 1000 homes were without power in Auckland’s southeast. Waiheke Island also experienced flooding and slips, and a wooden footbridge washed up on Onetangi Beach after being washed down a stream.

The Coromandel Peninsula was cut off due to SH 25 being closed at both Kopu and south of Tairua, due to flooding and slips. The towns of Pauanui, Whangamata, Tairua, Onemana, Hikuai, and Kaiaua were affected by severe flooding and slips, with some evacuations taking place. Whiritoa was cut off by slips on SH 25, and some houses were evacuated there. Seventeen schools and 11 early childcare centres were closed for the day across Auckland and Coromandel, although mostly in Coromandel. More than 8000 homes on the Coromandel Peninsula were without power for a time. Other roads throughout the Coromandel Peninsula and northeast Waikato were closed due to flooding and slips, leading to lengthy detours for motorists. Many of these roads remained closed for a number of days.

On 10-11 March, the second extreme rainfall event occurred. Heavy rain fell in eastern Northland, Auckland, and Coromandel. Many houses were flooded and thousands of people were without power. Waiheke Island was affected by flooding and slips in some areas, with a house being left perched above a slip on a cliff in Oneroa. The Clevedon River flooded again for the second time in three days, and Kawakawa Bay was cut off by slips.

On 12 March, the third significant rainfall event occurred. Localised downpours hit Auckland, with many areas being affected by flooding. The area around New Lynn was the worst affected. Over 320 properties in Auckland were flooded (over 220 in west Auckland), some in waist-deep water. Roads were closed in New Lynn due to major flooding, and people were trapped in their cars and in retail stores by floodwaters at the intersection of Great North Road and Clark Street. In Kelston, residents were evacuated from a block of units due to flooding, and concerns were held for a commercial building in New Lynn which appeared to have a burst water main running through it. A damaged culvert ripped away some of the road and footpath on a New Lynn street. Thousands of people were without power, less than 24 hours after Vector repaired major faults on its network caused by the 10-11 March rain event. At one point during the day, the Fire Service was receiving one emergency call every 24 seconds. In Rotorua, Utuhina Stream burst its banks and threatened about six houses, and Paradise Valley Road was closed after slips and fallen trees blocked the road and a nearby bridge was washed out.

From 4-5 April, the remnants of ex-Tropical Cyclone Debbie impacted primarily the North Island, causing widespread flooding and damage. A slip slammed into an apartment building in the Kohimarama suburb of Auckland. Initially two people were feared to be missing, but they were quickly accounted for. In Whanganui and Rangitikei a state of emergency was declared due to heavy rain and the threat of flooding on the Whanganui River. More than 170 schools and early childcare centres were closed across the North Island, mostly in the Manawatu-Whanganui Region, and 200 flood-prone homes in Whanganui were evacuated. A cliff in Auckland’s Torbay partially collapsed from underneath homes, and trees, fences and gardens fell into the sea. The Maraetai and Clevedon areas of Auckland that were hit by floods in early March were again cut off by the flooded Wairoa River.

On the morning of 6 April, the entire township of Edgecumbe in Bay of Plenty (about 1600 people) was evacuated due to rising water on the Rangitaiki River. Flow on the Rangitaiki River was measured as high as 700 cubic metres per second. After a stopbank failure, floodwaters reached as high as 1.5 metres in the town, and boats were used to help evacuate residents. About 170 residents were able to return home on 14 April. However, some homes in the township may not be habitable until Christmas. Several towns in the Whakatane District were cut off by flooding and slips, including Ruatahana, Minginui, Waimana, and Ruatoki. In Taranaki, about 1600 properties in the towns of Urenui, Opunake, and Manaia lost power. Kaikoura was completely cut off as all roads into the town were closed by slips.

April’s second major weather event occurred from the 12th to the 14th, as ex-Tropical Cyclone Cook struck New Zealand after moving through New Caledonia. A “predecessor rain event” arrived on 12 April ahead of Cook, spreading heavy rain across much of the upper North Island. A state of emergency was declared in Bay of Plenty on 11 April ahead of the approaching storm, with a state of emergency also declared in Thames-Coromandel on 12 April. All schools in Whakatane, Kawerau, and Opotiki districts were closed on 12 April. In the Auckland region, all train service between Papakura and Pukekohe was suspended due to flooding. On 13 April, Cook approached the upper North Island and made landfall near Whakatane. Thames-Coromandel Civil Defence evacuated everyone from low-lying areas in advance of the storm, and requested that no one visit the Coromandel Peninsula during and shortly after the event. On 13 April, schools in the eastern Bay of Plenty were closed, and schools in the western Bay of Plenty were asked to close by 1 pm. In addition, coastal areas of Whakatane were evacuated due to the threat of storm surge and coastal inundation, and about 120 people stayed at the Whakatane evacuation centre.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Extreme 1-day rainfall****(mm)** | **Date of extreme rainfall** | **Year records began** | **Comments** |
| Whangaparaoa | 172 | Apr-04th | 1946 | Highest |
| Waiheke Island | 210 | Mar-07th | 1980 | Highest |
| Thames | 112 | Mar-07th | 1957 | Highest |
| Te Aroha | 114 | Apr-04th | 1992 | Highest |
| Omeheu | 199 | Apr-04th | 1987 | Highest |
| Mangatawhiri | 142 | Mar-07th | 1969 | Highest |
| Whatawhata  | 120 | Apr-04th | 1952 | Highest |
| Horsham Downs  | 96 | Apr-04th | 1973 | Highest |
| Ngahinapouri | 140 | Apr-04th | 1935 | Highest |
| Glenochy | 155 | Apr-04th | 1956 | Highest |
| Mahoenui  | 151 | Apr-04th | 1970 | Highest |
| Otorohanga | 118 | Apr-04th | 1957 | Highest |
| Te Kuiti  | 109 | Apr-04th | 1957 | Highest |
| Mangakowhai | 130 | Apr-04th | 1995 | Highest |
| Lower Retaruke | 97 | Apr-04th | 1974 | Highest |
| Bainesse | 93 | Mar-29th | 1974 | Highest |
| Secretary Island  | 166 | May-02nd | 1985 | Highest |
| Rawene  | 110 | Mar-10th | 1977 | 2nd-highest |
| Whitianga  | 161 | Apr-04th | 1961 | 2nd-highest |
| Coroglen | 135 | Mar-07th | 1988 | 2nd-highest |
| Te Puke  | 186 | Apr-04th | 1973 | 2nd-highest |
| Edgecumbe | 153 | Apr-04th | 1990 | 2nd-highest |
| Ngakuru | 107 | Apr-04th | 1948 | 2nd-highest |
| Kopuriki | 128 | Apr-04th | 1962 | 2nd-highest |
| Taupo  | 97 | Apr-04th | 1949 | 2nd-highest |
| Rainbow Point | 90 | Apr-04th | 1978 | 2nd-highest |
| Auckland (Mangere) | 101 | Mar-10th | 1959 | 2nd-highest |
| Miranda | 114 | Mar-07th | 1978 | 2nd-highest |
| Kawhia | 93 | Apr-04th | 1905 | 2nd-highest |
| Ngapuke  | 92 | Apr-04th | 1989 | 2nd-highest |
| Turangi  | 88 | Apr-04th | 1968 | 2nd-highest |
| Te Rehunga | 117 | Apr-04th | 1954 | 2nd-highest |
| Takapau Plains  | 84 | Apr-04th | 1962 | 2nd-highest |
| Otane  | 71 | Apr-05th | 1995 | 2nd-highest |
| Sanson | 81 | Mar-29th | 1973 | 2nd-highest |
| Reikorangi | 83 | Mar-11th | 1969 | 2nd-highest |
| Glenledi Rd | 68 | Apr-12th | 1984 | 2nd-highest |
| Stewart Island | 88 | Mar-04th | 1975 | 2nd-highest |
| Waikanae W | 93 | Mar-11th | 1969 | Equal 2nd-highest |
| Tiri Tiri Lighthouse | 129 | Mar-08th | 1946 | 3rd-highest |
| Auckland (Albany) | 111 | Apr-12th | 1966 | 3rd-highest |
| Auckland (Henderson) | 106 | Mar-10th | 1948 | 3rd-highest |
| Rings Beach | 132 | Apr-04th | 1986 | 3rd-highest |
| Kerepehi | 117 | Apr-04th | 1925 | 3rd-highest |
| Elstow | 120 | Apr-04th | 1917 | 3rd-highest |
| Morrinsville | 87 | Apr-04th | 1978 | 3rd-highest |
| Thornton East | 134 | Apr-04th | 1948 | 3rd-highest |
| Awakeri | 131 | Apr-04th | 1962 | 3rd-highest |
| Rotorua  | 137 | Apr-04th | 1964 | 3rd-highest |
| Owhiro | 95 | Apr-04th | 1975 | 3rd-highest |
| Pukehinau | 74 | Apr-04th | 1979 | 3rd-highest |
| Waihau | 116 | Apr-04th | 1985 | 3rd-highest |
| Ohakune  | 62 | May-11th | 1961 | 3rd-highest |
| Waiouru  | 64 | Apr-04th | 1950 | 3rd-highest |
| Tapawera  | 69 | Apr-12th | 1992 | 3rd-highest |
| Akaroa  | 122 | Apr-05th | 1977 | 3rd-highest |
| Motunau | 68 | Apr-13th | 1992 | 3rd-highest |
| Auckland (Western Springs) | 93 | Mar-10th | 1948 | 4th-highest |
| Kennedy Bay | 158 | Apr-04th | 1988 | 4th-highest |
| Chiltern | 165 | Mar-07th | 1950 | 4th-highest |
| Whakatane  | 137 | Apr-04th | 1952 | 4th-highest |
| Opouriao | 125 | Apr-04th | 1962 | 4th-highest |
| Waiuku | 95 | Mar-10th | 1905 | 4th-highest |
| Waione  | 49 | Apr-04th | 1991 | 4th-highest |
| Pongaroa | 78 | Apr-04th | 1973 | 4th-highest |
| Rose Hill | 90 | Apr-04th | 1954 | 4th-highest |
| Paraparaumu  | 74 | Mar-11th | 1951 | 4th-highest |
| Moawhango | 50 | Apr-04th | 1970 | 4th-highest |
| Waipara West  | 65 | Apr-05th | 1973 | 4th-highest |

### Temperatures

On the morning of 22 May, the temperature at Auckland (Western Springs) dipped to 0.4°C, the coldest temperature since 3 July 2016 (323 days). Many locations in New Zealand dipped below freezing. The low temperatures were recorded after southerly winds hit the country, followed by settled anticyclonic conditions.

Overnight on 22-23 May, another cold night was experienced around the country, particularly for the North Island where several sites recorded below freezing temperatures. A northwesterly change caused comparatively warmer temperatures in the lower South Island.

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Extreme maximum (°C)** | **Date of extreme temperature** | **Year records began** | **Comments** |
| High records or near-records |
| Hawera  | 26.2 | Mar-10th | 1977 | Highest |
| Motu  | 25.7 | Mar-22nd | 1990 | 2nd-highest |
| Motueka | 30.1 | Mar-05th | 1956 | 2nd-highest |
| Pelorus Sound | 27.6 | Mar-05th | 1982 | 2nd-highest |
| Secretary Island  | 25.1 | Mar-14th | 1985 | 3rd-highest |
| Kaikohe  | 26.9 | Mar-08th | 1973 | Equal 3rd-highest |
| Farewell Spit  | 25.7 | Mar-01st | 1971 | Equal 3rd-highest |
| Whanganui  | 30.3 | Mar-10th | 1937 | 4th-highest |
| Lake Manapouri  | 26.5 | Mar-16th | 1963 | 4th-highest |
| Low records or near-records |
| Takaka  | 7.9 | May-20th | 1978 | Lowest |
| Le Bons Bay | 5.2 | May-20th | 1984 | Lowest |
| Akaroa  | 7.4 | May-20th | 1978 | 2nd-lowest |
| Oamaru  | 5.5 | May-20th | 1972 | 2nd-lowest |
| Five Rivers  | 2.9 | May-20th | 1982 | Equal 2nd-lowest |
| Dannevirke  | 6.4 | May-20th | 1951 | 3rd-lowest |
| Waione  | 8.3 | May-20th | 1993 | 3rd-lowest |
| Te Kuiti  | 8.9 | May-23rd | 1959 | Equal 3rd-lowest |
| Takapau Plains  | 5.1 | May-20th | 1972 | Equal 3rd-lowest |
| Castlepoint  | 8.1 | May-20th | 1972 | Equal 3rd-lowest |
| Lower Retaruke  | 9.0 | May-21st | 1972 | 4th-lowest |
| Ohakune  | 5.7 | May-21st | 1972 | 4th-lowest |
| Waiouru  | 2.9 | May-21st | 1972 | 4th-lowest |
| Reefton  | 5.6 | May-22nd | 1972 | 4th-lowest |
| Te Anau  | 4.1 | May-20th | 1973 | 4th-lowest |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Extreme minimum (°C)** | **Date of extreme temperature** | **Year records began** | **Comments** |
| High records or near-records |
| Port Taharoa  | 20.6 | Mar-12th | 1974 | Highest |
| Lower Retaruke  | 19.1 | Mar-12th | 1972 | Highest |
| Hicks Bay  | 20.5 | Mar-12th | 1972 | Equal highest |
| Mokohinau  | 20.7 | Apr-04th | 1994 | 2nd-highest |
| Waiouru  | 15.5 | Mar-12th | 1972 | 2nd-highest |
| Cape Reinga  | 19.9 | Mar-09th | 1971 | Equal 2nd-highest |
| Whangaparaoa  | 19.9 | Apr-04th | 1982 | Equal 2nd-highest |
| Te Puke  | 19.8 | Mar-12th | 1973 | 3rd-highest |
| Taupo  | 18.5 | Mar-12th | 1950 | 3rd-highest |
| Rotorua  | 18.8 | Mar-12th | 1972 | Equal 3rd-highest |
| Kerikeri  | 21.0 | Apr-05th | 1952 | Equal 4th-highest |
| Auckland (North Shore) | 20.8 | Apr-04th | 1994 | Equal 4th-highest |
| Thames  | 20.6 | Mar-12th | 1957 | Equal 4th-highest |
| Low records or near-records |
| Te Kuiti  | -3.2 | May-22nd | 1959 | Lowest |
| Kaikoura | -1.4 | May-26th | 1963 | Lowest |
| Auckland (North Shore) | 3.6 | May-23rd | 1994 | Equal 3rd-lowest |
| Turangi  | -4.9 | May-22nd | 1968 | Equal 3rd-lowest |
| Whangarei  | 1.5 | May-22nd | 1967 | 4th-lowest |
| Rotorua  | -2.7 | May-22nd | 1964 | 4th-lowest |
| Taumarunui  | -4.1 | May-22nd | 1947 | 4th-lowest |
| Hicks Bay  | 2.5 | May-21st | 1969 | 4th-lowest |
| Stratford  | -1.7 | May-22nd | 1960 | 4th-lowest |
| New Plymouth  | 0.1 | May-22nd | 1944 | Equal 4th-lowest |

### Wind

High winds associated with ex-Tropical Cyclone Cook hit Gisborne and Hawke’s Bay on the night of 13-14 April, bringing down many trees. About 13,000 homes in Hawke’s Bay were without power as high winds brought down trees and power lines, and lines company Unison said the damage to its power network was “severe”. Twelve Spark cell towers were down and another 16 on battery backup across Bay of Plenty, Gisborne and Hawke’s Bay.

On 30 April, a storm hit the lower North Island which brought damage to Wellington. Trains on the Hutt Valley Line between Petone and Wellington were replaced by buses after balustrades along the waterfront were damaged. Marine Drive was closed temporarily as large waves dumped logs and debris on the road. Power was cut to more than 1300 homes in Lower Hutt. In Brooklyn, a power line came down, damaging three vehicles. Strong winds also forced a Jetstar flight from Auckland to Wellington to return to Auckland. Forty-four homes lost power in Hawera.

**Record or near record autumn extreme wind gusts were recorded at:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Extreme wind gust (km/h)** | **Date of extreme gust** | **Year records began** | **Comments** |
| Kaitaia  | 196 | May-07th | 1972 | Highest |
| Kaikohe  | 89 | May-20th | 1986 | Highest |
| Whakatane  | 117 | Apr-13th | 1974 | Highest |
| Motu  | 111 | Apr-13th | 1991 | Highest |
| Lauder  | 122 | Apr-28th | 1981 | Equal highest |
| Whitianga  | 85 | May-18th | 1991 | 2nd-highest |
| Mokohinau  | 119 | Mar-08th | 1994 | Equal 2nd-highest |
| Paeroa  | 98 | Mar-08th | 1991 | Equal 2nd-highest |
| Hawera  | 100 | Apr-30th | 1986 | Equal 2nd-highest |
| Levin  | 98 | Apr-06th | 1971 | 3rd-highest |
| Napier  | 100 | Apr-13th | 1973 | Equal 3rd-highest |
| Secretary Island  | 128 | May-19th | 1994 | 4th-highest |
| Tauranga  | 93 | May-19th | 1973 | Equal 4th-highest |

### Cloud and fog

On 29 March, sea fog caused major disruptions at Wellington Airport, cancelling all flights for about 24 hours. About 100 flights were affected. The fog caused numerous road accidents, leading to delays for commuters.

On 25 May, fog caused chaos at Auckland Airport, where about 120 domestic flights were delayed or cancelled, and one international flight was diverted. The fog lingered for much of the morning. Motorists were unable to see more than a few metres ahead of them in some parts of the city.

On 27 May, fog affected Auckland for much of the morning. In total, 42 domestic flights were cancelled and 42 more were delayed due to poor visibility. One international flight was diverted to Wellington.

### Snow and ice

On 20 May, a southerly outbreak delivered the first significant snowfall to low elevations for the year. Snow settled to approximately 200 metres above sea level in southern parts of the South Island, with snow flurries falling to near sea level. Around 13 cm of snow was recorded in Kingston, and numerous flights were cancelled or delayed in Queenstown due to adverse weather and snow on the runway. Several southern roads were closed due to snow, including SH1 between Dunedin and Waitati and SH87 from Outram to Sutton. Snow drifts of 70-90 cm were observed at *The Remarkables* ski area near Queenstown, although some exposed slopes were stripped bare of snow due to strong winds that accompanied the snowfall. Farther north, Mt Ruapehu received up to 25 cm of snow. The Desert Road (SH1) was closed for a time due to snow and ice, and some vehicles required towing after becoming stuck.

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*Autumn 2017 average rainfall, expressed as an anomaly of the 1981-2010 average (%).*

*The majority of the North Island and the north of the South Island recorded well above normal rainfall for autumn 2017 (>150%), whereas much of the southwest of the South Island recorded below normal rainfall (<79%).*

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1. 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. [↑](#footnote-ref-1)
2. Missing two days of data [↑](#footnote-ref-2)