

**National Climate Summary – August 2011: Snow & sunshine - very dry in north & west**

- **Precipitation:** Polar outbreak mid-month produced heavy snow across eastern and alpine areas of the South Island, as well as Wellington. Snow also fell across the lower North Island, with flurries in unusual locations further north. But overall, August was extremely dry for western, northern and alpine areas of the South Island, as well as for Taupo northwards.
- **Sunshine:** Extremely sunny across alpine and northern South Island, as well as Central Plateau, Bay of Plenty, Waikato, Gisborne and Hawkes Bay. Rather sunny in all other regions, excepting Wanganui, Kapiti, and Wellington.
- **Temperatures:** Well below average or below average across much of the North Island, as well as for the northwest, north and east of South Island. Near average in Southland, Fiordland, southern Westland and the Lakes District.

August 2011 was characterised by frequent southerly winds, and higher pressures than usual, over New Zealand. A polar outbreak affected New Zealand mid-month, bringing heavy snow to unusually low levels across eastern and alpine areas of the South Island, as well as Wellington. Snow also fell across the lower North Island, with flurries in unusual locations further north. The long-lived southerly winds between August 14 and 17 delivered extremely cold air over the country. Numerous August low temperature records were broken between the 14<sup>th</sup> and 17<sup>th</sup>. Anticyclones (highs) then prevailed over New Zealand between August 19 and 24, resulting in extremely icy or frosty mornings. The last week of the month was mostly dry and sunny in many regions, with some unusually warm and ‘spring-like’ temperatures experienced.

While the southerly winds brought precipitation (rain, snow, or sleet) to eastern areas of both Islands, the remainder of the country stayed extremely dry overall, due to the dominance of anticyclones (highs) during the month. August precipitation was mostly well below average (less than 50 percent of August normal) for western, northern and alpine areas of the South Island, as well as for Taupo northwards. It was the driest August on record in the Waikato, and in and around Nelson. Rainfall was near normal (between 80 and 119 percent of normal) between Wanganui and Hawera, in coastal Southland, and along the east coasts of both Islands, as well as for Wellington. Locally, there were small areas of above normal precipitation in the east (Wairarapa, Kaikoura coast, near Ashburton, and north Otago).

Sunshine totals were well above normal for alpine and northern areas of the South Island, as well as for the Central Plateau, Bay of Plenty, Waikato, Gisborne and Hawkes Bay. It was the sunniest August on record for Te Kuiti, Nelson, Takaka, Blenheim and Lake Tekapo. It was also a rather sunny for the remainder of the country, with sunshine totals between 110 and 124 percent of August normal. The only exceptions were Wanganui, Kapiti coast, and Wellington, which experienced near normal August sunshine.

Anticyclones during August and the mid-month polar outbreak meant that monthly minimum temperatures were below average or well below average across the entire North Island, as well as the northwest, north and east of the South Island. However, maximum temperatures were elevated in some areas sheltered from the prevailing southerly winds. The average temperature in August 2011 was 8.2°C (0.5°C below the 1971–2000 August average) using NIWA’s seven-station temperature series which begins in 1909<sup>1</sup>.

**Further Highlights:**

- The highest temperature was 22.1°C, observed at both Whangarei and Cheviot on 30 August.
- The lowest temperature recorded was -10.1°C at Lake Rotoiti (Nelson Lakes) on 16 August.
- The highest 1-day rainfall experienced was 76.2 mm recorded at Milford Sound on 26 August.
- The highest gust was 167 km/hr observed at Cape Turnagain on 7 August.
- Of the six main centres in August 2011, Auckland was the warmest, Christchurch the coldest, Tauranga the sunniest, Wellington the wettest, and Auckland and Hamilton jointly the driest.

**For further information, please contact:**

**Ms Georgina Griffiths – Climate Scientist– NIWA National Climate Centre, Auckland,  
Tel. (09) 375 4506 (office) or (027) 293 6545 (mobile)**

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<sup>1</sup> Interim monthly value.

**PRECIPITATION: POLAR OUTBREAK MID-MONTH PRODUCED HEAVY SNOW ACROSS EASTERN AND ALPINE AREAS OF THE SOUTH ISLAND, AS WELL AS WELLINGTON. SNOW ALSO FELL OVER THE LOWER NORTH ISLAND, WITH FLURRIES IN UNUSUAL LOCATIONS FURTHER NORTH.**

**BUT OVERALL, AN EXTREMELY DRY AUGUST FOR WESTERN, NORTHERN AND ALPINE AREAS OF THE SOUTH ISLAND, AS WELL AS FOR TAUPO NORTHWARDS. DRIEST AUGUST ON RECORD FOR WAIKATO AND NELSON.**

An unusually long-lived southerly airstream brought blast after blast of sub-Antarctic air onto New Zealand, between 14-17 August. On the 14<sup>th</sup>, snow fell to very low levels across much of the South Island, as well to central Wellington and the hill suburbs.

On the 15<sup>th</sup>, the southerly winds continued to deliver extremely cold air and snowfalls to the country, and airports and schools remained closed in Christchurch, Queenstown, Invercargill and Dunedin. On the West Coast, snow fell in Rotomanu, Inchbonnie, Reefton, Greymouth, Blackball and Ikamatua. Snow fell again to sea level in Wellington, closing schools and the airport. Both Rotorua and New Plymouth reported snow falling in the central city. Snow reached the Kaimai Ranges and Mount Fitzroy (Great Barrier Island), and Te Mata Peak was covered in snow. Snow fell briefly in Auckland city but did not settle, and was also reported from the Waitakere Ranges, Drury, Waiuku, Clevedon and the Bombay Hills. The snow reached Northland, with hillside properties around Dargaville reporting snow falling. Taupo Airport was also closed as heavy snow fell around the lake, particularly on the western side. In the Waikato, snow was seen in central Hamilton, Te Kuiti, and briefly in Raglan. Snow settled in Wanganui, reputedly for the first time since 1974.

Between the 15<sup>th</sup> and 17<sup>th</sup>, many eastern and alpine South Island roads, as well as lower North Island roads, remained affected by snow or ice, and airports, hospitals, mail deliveries, and power lines remained affected in these regions.

While the southerly winds brought precipitation (rain, snow, or sleet) to eastern areas of both Islands, the remainder of the country stayed extremely dry overall, due to the dominance of anticyclones (highs) during the month. August precipitation was mostly well below average (less than 50 percent of August normal) for western, northern and alpine areas of the South Island, as well as for Taupo northwards. It was the driest August on record in the Waikato, and in and around Nelson. Rainfall was near normal (between 80 and 119 percent of normal) between Wanganui and Hawera, in coastal Southland, and along the east coasts of both Islands, as well as in Wellington. Locally, there were small areas of above normal precipitation in the east (Wairarapa, Kaikoura coast, near Ashburton, and north Otago).

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

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kaitaia	74	48	1985	3rd-lowest
Kerikeri	40	21	1981	2nd-lowest
Kaikohe	48	31	1956	2nd-lowest
Dargaville	43	38	1943	2nd-lowest
Whangarei	39	28	1937	2nd-lowest
Leigh	46	38	1966	3rd-lowest
Warkworth	40	26	1966	3rd-lowest
Whangaparaoa	40	40	1946	3rd-lowest
Whitianga	78	44	1961	2nd-lowest
Te Puke Ews	79	50	1973	3rd-lowest
Taupo Aws	24	21	1949	2nd-lowest
Auckland (Airport)	44	40	1959	4th-lowest
Pukekohe	56	48	1944	4th-lowest
Hamilton (Ruakura)	28	24	1905	Lowest
Te Kuiti	48	30	1950	Lowest

Levin	37	39	1895	3rd-lowest
Takaka	29	14	1976	Lowest
Westport	69	35	1944	4th-lowest
Lake Rotoiti	25	20	1933	2nd-lowest
Hokitika	64	29	1963	2nd-lowest
Greymouth	64	33	1947	3rd-lowest
Motueka	22	13	1943	Lowest
Appleby	16	17	1941	2nd-lowest
Nelson	15	16	1941	Lowest
Wanaka	6	10	1927	3rd-lowest
Alexandra	6	24	1983	3rd-lowest

**SUNSHINE: EXTREMELY SUNNY ACROSS ALPINE AND NORTHERN SOUTH ISLAND, AS WELL AS THE CENTRAL PLATEAU, BAY OF PLENTY, WAIKATO, GISBORNE AND HAWKES BAY. SUNNY IN ALL OTHER AREAS EXCEPT WANGANUI, KAPITI AND WELLINGTON.**

Sunshine totals were well above normal (more than 125 percent of August normal) for alpine and northern areas of the South Island, as well as for the Central Plateau, Bay of Plenty, Waikato, Gisborne and Hawkes Bay. It was the sunniest August on record for Te Kuiti, Nelson, Takaka, Blenheim and Lake Tekapo. It was also a rather sunny month for the remainder of the country, with sunshine totals between 110 and 124 percent of August normal. The only exceptions were Wanganui, Kapiti coast, and Wellington, which experienced near normal August sunshine totals (between 90 and 110 percent of August normal).

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

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Kaitaia	189	121	1985	4th-highest
Dargaville	163	122	1943	4th-highest
Te Kuiti	151	134	1962	Highest
Taumarunui	144	134	1947	4th-highest
Takaka	217	131	1985	Highest
Nelson	247	146	1948	Highest
Appleby	237	140	1948	2nd-highest
Blenheim	235	130	1947	Highest
Cheviot	187	138	1983	2nd-highest
Mt Cook	149	135	1930	3rd-highest
Lake Tekapo	218	152	1928	Highest
Balclutha	152	132	1964	3rd-highest

**TEMPERATURE: WELL BELOW AVERAGE OR BELOW AVERAGE ACROSS MUCH OF THE NORTH ISLAND, AS WELL AS THE NORTH AND EAST OF THE SOUTH ISLAND. NEAR AVERAGE IN SOUTHLAND, FIORDLAND, SOUTHERN WESTLAND, AND THE LAKES DISTRICT.**

Due to the prevalence of anticyclones (highs) during August and the mid-month polar outbreak, monthly minimum temperatures were lower than usual in many regions of the country. However, maximum temperatures were elevated in some areas, too, particularly those sheltered from the prevailing southerly winds. Winter highs often bring cooler mornings (because of clear skies at night, sometimes resulting in icy or frosty conditions), but can bring warmer, sunnier afternoons too – and this is reflected in some of the August maximum temperatures observed.

Monthly minimum temperatures were below average (between 0.5°C and 1.2°C below August average) or well below average (more than 1.2°C below the August average) across the entire North Island, as well as the northwest, north and east of the South Island.

The average temperature in August 2011 was 8.2°C (0.5°C below the 1971–2000 August average) using NIWA’s seven-station temperature series which begins in 1909<sup>2</sup>.

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

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	7.3	-0.9	1985	3rd-lowest
Leigh	8.0	-1.7	1966	2nd-lowest
Warkworth	5.3	-3.0	1966	4th-lowest
Whangaparaoa	8.2	-1.2	1982	3rd-lowest
Te Puke	4.1	-1.3	1973	2nd-lowest
Rotorua	2.4	-1.7	1964	3rd-lowest
Hamilton	2.8	-1.4	1946	2nd-lowest
Port Taharoa	6.9	-1.2	1973	3rd-lowest
Martinborough	2.0	-2.3	1986	Lowest
Wairoa	3.5	-1.7	1964	2nd-lowest
Takaka Ews	2.0	-1.9	1978	2nd-lowest
Motueka	0.5	-2.1	1956	2nd-lowest
Blenheim	0.7	-1.9	1932	4th-lowest
Hanmer	-2.4	-2.2	1906	4th-lowest
Christchurch	0.3	-1.7	1863	2nd-lowest
Orari	0.1	-1.0	1972	4th-lowest
Timaru	-0.6	-1.4	1990	4th-lowest
Lumsden	-0.4	-1.1	1982	3rd-lowest

<sup>2</sup> Interim monthly value.

Monthly maximum temperatures were well above average (more than 1.2°C above the August average) in parts of Northland and Auckland, as well as for Mt Cook and Motueka. In contrast, maximum temperatures in the Waikato and in the northwest of the South Island were well below average (more than 1.2°C below the August average).

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

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaikohe	15.4	1.4	1973	4th-highest
Leigh	16.5	1.3	1966	2nd-highest
Motueka	15.5	2.0	1956	2nd-highest
Mt Cook	10.8	2.4	1929	3rd-highest
Hamilton	13.2	-1.4	1906	2nd-lowest
Greymouth	11.5	-1.1	1947	4th-lowest
Puysegur Point	9.8	-0.9	1978	2nd-lowest

**AUGUST CLIMATE IN THE SIX MAIN CENTRES**

Of the six main centres in August 2011, Auckland was the warmest, Christchurch the coldest, Tauranga the sunniest, Wellington the wettest and Auckland and Hamilton jointly the driest.

**August 2011 main centre climate statistics:**

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland <sup>a</sup>	11.2	-0.3	Near average	37	32%	Well below normal	173	121%	Above normal
Tauranga <sup>b</sup>	10.5	0.0	Average	71	61%	Below normal	201	125%	Well above normal
Hamilton <sup>c</sup>	8.6	-0.8	Below average	37	32%	3 <sup>rd</sup> lowest for August	154 <sup>g</sup>	111%	Above normal
Wellington <sup>d</sup>	9.0	-0.2	Near average	137	111%	Near normal	136	100%	Normal
Christchurch <sup>e</sup>	6.4	-0.6	Below average	63	95%	Near normal	174	117%	Above normal
Dunedin <sup>f</sup>	7.5	-0.1	Near average	42	63%	Below normal	131	115%	Above normal

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

**HIGHLIGHTS AND EXTREME EVENTS**

• **Snow and ice**

On 6 August, SH94, Te Anau to Milford Sound, was affected by snow with chains required.

On the 7<sup>th</sup>, the Napier-Taupo highway was closed by snow and black ice, trapping at least two trucks.

On 14 August, a southerly storm brought snow to much of the country, including central Wellington and the hill suburbs. SH2 over the Rimutaka Hills was closed, trapping about 100 people who were rescued using 4-wheel drive vehicles. Sleet stopped play in the men's National Hockey League final in Wellington with around 20 minutes remaining. Queenstown and Dunedin Airports were closed, and flights to Wanaka were also cancelled. Snow-laden trees toppled on to power lines, cutting power to about 3500 customers in the lower North Island.

On 15 August, following the snow of the 14th, major North Island road closures included SH1 Desert Road to Rangipo to Waiouru to Taihape, SH2 Rimutaka Hill, near Mount Bruce, Dannevirke to Norsewood to Waipukurau, and Gisborne to Nuhaka, SH3 from Inglewood to Stratford, SH5 Napier to Taupo, Napier to Taihape, SH38 Tuai to Waikaremoana, SH54 Cheltenham to Vinegar Hill, SH4 National Park to Raetihi, SH49 Tohunga Junction (SH4) to Waiouru, SH46 Rangipo to Otukou, SH47 National Park to Tokaanu. South Island roads closed by snow or ice included SH74 the Lyttelton Tunnel Road, Raes Junction to McNab, SH8 Raes Junction to Milton, Alexandra to Roxburgh, and at the Lindis Pass Omarama to Tarras, SH6 Queenstown to Kingston to Five Rivers, SH93 Clinton to Matura, SH1 Kaikoura to Waipara, Palmerston to Dunedin, and Dunedin to Gore, SH85 Kyeburn to Palmerston, and Ranfurly to Omakau, SH93 Clinton to Matura, and SH87 Outram to Kyeburn. Many inner-city roads in Dunedin and hill roads around Wellington were also closed. Chains were required on SH7 from Hammer Springs junction to Springs Junction, and SH6 Frankton and Cromwell, Arrowtown and Frankton, and on the Crown Range road. Chains had to be carried on SH73 Springfield to Arthurs Pass at Porter's Pass, SH94 from Mossburn to Milford Sound, and SH75 Cooptown to Barry's Bay, all of which were closed to towing vehicles.

Southern District Health Board postponed all outpatient clinics and elective surgery. Airports and schools were closed in Christchurch, Queenstown and Dunedin, and Invercargill Airport was also closed. The University of Canterbury and Christchurch Polytechnic Institute of Technology were closed, as was the Christchurch campus of the University of Otago. Contractors were forced to stop working in Christchurch's Red Zone because of snow and ice. Bus services in Dunedin were cancelled. Power cuts affected about 6000 households in South Taranaki, Manawatu and Whanganui. Wainuiomata Primary School in Lower Hutt was closed because it had no power, heating or phone lines. Many other schools in the Wellington region closed early. Snow again fell down to sea level in Wellington, and as far north as the Kaimai Ranges. Both Rotorua and New Plymouth reported snow falling in the central city, and Te Mata Peak was covered in snow. Road closures meant Fonterra milk tankers were unable to reach about 1700 dairy farms in snow-bound areas of the South Island. All flights in and out of Wellington airport were cancelled in the evening, some buses which service the hill suburbs were cancelled during the afternoon, and all bus services stopped at 7 pm. Some commuter train services from Wellington to Waikanae and Upper Hutt were cancelled or replaced with buses. Snow fell briefly in Auckland city but did not settle, and was also reported from the Waitakere Ranges, Drury, Waiuku, Clevedon and the Bombay Hills. In Queenstown, the Freeski event was cancelled. Taupo Airport was also closed as heavy snow fell around the lake, particularly on the western side. In the Waikato, snow was seen in central Hamilton, Te Kuiti, and briefly in Raglan. Snow settled in Wanganui, reputedly for the first time since 1974. On the West Coast, snow fell in Rotomanu, Inchbonnie, Reefton, Greymouth, Blackball and Ikamatua. Awahono School at Ahaura closed at lunchtime because of the snow. Eight adults and 16 school pupils spent an extra night on Mt Ruapehu as the road down was too icy to safely navigate and major highways were closed.

On 16 August, all Dunedin kindergarten, primary, intermediate and secondary schools remained closed for a second day, and in Wellington icy roads forced the closure of several schools. Many Wellington hill suburb roads remained closed, bus services were cancelled, and the Cable Car was also out of action. Many schools in Canterbury, both universities, and most schools in Southland were also closed. Canterbury District Health Board cancelled all outpatient clinics, elective and non-urgent surgery. Some customers in Wanganui, Manawatu and Taranaki were without electricity overnight after snow and falling trees damaged power lines. Snow falling into the uplink dish at TVNZ's Avalon studios in Lower Hutt caused the loss of Freeview channel reception. There were no mail deliveries in the lower North Island. The snow reached Northland with hillside properties around Dargaville reporting snow falling. The Tranz Alpine passenger train was stopped by snow at Springfield. All South Island passes were closed, and other road closures included SH1 Kaikoura to Waipara and Waikouaiti to Dunedin, SH63 the Wairau Valley to Kawatiri, SH6 Queenstown to Kingston and to Five Rivers, SH8 from Fairlie to Lake Tekapo, SH79 from Geraldine to Fairlie, SH85 from Kyeburn to Palmerston, SH87 from Kyburn to Outram, SH93 Clinton to Matura, SH96 Matura to Te Tipua, SH94 Te Anau to Milford Sound, SH65 from O'Sullivan's Bridge to Springs Junction, and SH7 from Springs Junction to Reefton. North Island closures included SH1 between Waiouru and Vinegar Hill, and from Rangipo to Waiouru, the Napier-Taupo road, SH4 from Wanganui to National Park, SH49 from Ohakune to Waiouru, SH46 from Tongariro to Rangipo, SH47 National Park to Turangi, SH54 Cheltenham to Vinegar Hill, and SH2 from Brown Owl to Te Marua, over the Rimutaka Hills between Wairarapa and Wellington, from Ekatahuna to Mt Bruce, and between Morere and Bartletts. Black ice affected SH1 between Levin and Manakau, Ngauranga Gorge and the northern motorway of Wellington, and SH56 near

the Longburn overbridge. A helicopter with four passengers was forced to land in the Lammerlaw Range on a trip from Queenstown to Dunedin. The tourists were rescued on the 17th, and the pilot flew out on the 18<sup>th</sup>.

On 17 August, the snow storm battering Wellington caused the closure of many kindergartens, primary, intermediate and secondary schools and roads throughout the region, and the cancellation of all Cook Strait passenger ferries. The snow, together with high winds, caused more damage to power lines cutting electricity supply across South Taranaki, rural Wanganui, Manawatu and Wairarapa. Some roads remained closed, including SH1 at the Desert Road, Taihape to Waiouru, and at Hunterville, SH2 at the Rimutaka Hill Road, Te Marua to Pakuratahi, and Muriwai to Morere, SH5 the Napier to Taupo Highway, and SH54 from Cheltenham to Vinegar Hill, SH7 from Springs Junction to Reefton, SH7 from Springs Junction to Hanmer Springs, SH73 at Porters Pass and at Otira, and SH65 at Shenandoah. Severe ice caused the closure of SH36 from Rotorua to Tauranga. There were no mail deliveries to Ohakune, Raetihi, Waiouru, Taihape and Hunterville, and limited deliveries in Christchurch, Queenstown and Dunedin. In Rotorua black ice was reported on the roads to Tokoroa and Tirau, as well as SH5 south of the city. South Canterbury roads re-opened to vehicles with chains, but remained closed to towing vehicles. SH2 over the Rimutaka Ranges was re-opened late afternoon. Queenstown Airport re-opened, and a start was made on clearing the backlog of stranded passengers, but most schools in the area remained closed.

On 18 August snow was finally cleared from SH87, the last of the Otago highways to be cleared, liberating locals at Clarks Junction and Middlemarch who had been cut off for four days. On 19 August, ice warnings were still in place for SH8 from Milton to Raes Junction.

- **Lightning and hail**

On 7 August, hail was reported over Wellington, associated with the sudden arrival of a southerly front. In Invercargill, many residents were woken by an early morning thunderstorm.

On 14 August, two Air New Zealand planes were struck by lightning at Wellington Airport. They were grounded for engineering checks. Hail fell over most of Christchurch.

On 15 August, heavy hail and lightning affected Taranaki with power cuts to parts of South Taranaki. A loud thunder and lightning storm struck Wellington, with frequent brief power outages. Lightning hit the wireless internet antennas on the roof of a Wellington apartment block, burning out the wiring down to the computer box, and tripping the fire alarms, forcing tenants to evacuate the building and stand outside for about 20 minutes in freezing conditions until the fire service gave the all clear.

- **Rain and slips**

The highest 1-day rainfall experienced in August 2011 was 76.2 mm recorded at Milford Sound on 26 August. No new August rainfall extremes were observed, as it was a relatively dry, anticyclonic month overall.

On 11 August, heavy rain caused surface flooding in the western Bay of Plenty.

Heavy rainfall caused flooding on 14 August in the Wellington suburb of Kilbirnie.

On 18 August, a massive slip closed both lanes of SH3 through the Manawatu Gorge.

- **Temperatures**

The lowest temperature recorded in August 2011 was -10.1°C at Lake Rotoiti (Nelson Lakes) on 16 August, closely followed by -9.5°C at Mt Ruapehu, Chateau, also on the 16<sup>th</sup>. The highest temperature during the month was 22.1°C, observed at both Whangarei and Cheviot on 30 August.

Numerous new August low temperature extremes were observed (for both minimum and maximum temperatures) between 14-17 August during the worst of the southerly event. At Auckland Airport, and in Upper Hutt, the Wairarapa, Rotorua, Port Taharoa, the Takapau Plains, as well as the Kaikoura Coast and

parts of the east coast maximum temperatures on the 15<sup>th</sup> were the lowest ever observed (for any month) based on climate records of approximately 30-50 years' duration. This is consistent with climate histories, which show this snow fall event to be comparable, in terms of North Island snow fall and temperatures, to the 21 June 1976 snowfall.

Minimum air temperatures on the 16<sup>th</sup> were also the lowest ever observed (for any month) at Leigh (north Auckland) and Rotorua, again based on climate records of approximately 30-50 years' duration.

In contrast, temperatures were unusually high or record high at several locations during the last week of August.

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

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records Began	August ranking [An asterisk (*) indicates an all-time (any-month) record low rank]
Kerikeri	21.8	30th	1981	Highest
Kaikohe	20.5	30th	1973	Highest
Dargaville	20.9	30th	1943	Equal 3rd-highest
Whangarei	22.1	30th	1967	Highest
Leigh	20.2	30th	1966	Highest
Whangaparaoa	18.4	12th	1982	Equal 3rd-highest
Whakatane	19.7	31st	1975	3rd-highest
Hawera	17.0	30th	1977	Equal 4th-highest
Takaka	19.6	27th	1978	Equal 2nd-highest
Lake Rotoiti	17.5	23rd	1965	Highest
Motueka	20.1	27th	1956	3rd-highest
Blenheim	21.0	24th	1941	Equal 2nd-highest
Cheviot	22.1	30th	1982	Equal 2nd-highest
Mt Cook	17.9	23rd	1929	4th-highest
Kaitaia	10.9	15th	1985	3rd-lowest
Kaikohe	9.5	15th	1973	3rd-lowest
Dargaville	9.2	16th	1951	2nd-lowest
Whangarei	9.6	16th	1967	Lowest
Leigh	10.4	16th	1966	2nd-lowest
Warkworth	8.1	16th	1966	Lowest
Whangaparaoa	8.9	15th	1982	Lowest
Whenuapai	8.8	16th	1951	Lowest
Whitianga	8.2	15th	1971	Lowest*
Paeroa	8.1	15th	1971	Lowest
Tauranga	8.9	15th	1941	Lowest
Te Puke	9.0	15th	1973	2nd-lowest
Whakatane	8.9	15th	1975	Lowest
Rotorua	5.7	15th	1972	Lowest*
Taupo	4.7	15th	1950	2nd-lowest
Auckland (Airport)	8.1	15th	1961	Lowest*
Pukekohe	8.2	16th	1969	Lowest
Whatawhata	7.4	15th	1952	2nd-lowest
Hamilton (Ruakura)	6.8	15th	1940	2nd-lowest
Port Taharoa	8.6	15th	1974	Lowest*
Te Kuiti	7.5	15th	1959	Lowest
Taumarunui	6.0	15th	1947	Lowest
New Plymouth	8.3	15th	1944	Equal lowest
Masterton	2.1	15th	1943	Lowest
Takapau Plains	2.2	15th	1972	Lowest*



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Dannevirke	4.5	15th	1951	Lowest
Castlepoint	3.2	15th	1972	Lowest
Martinborough	3.5	15th	1986	Lowest*
Ngawi	6.2	15th	1972	Lowest*
Hicks Bay	8.8	15th	1972	Lowest
Gisborne	8.2	15th	1940	2nd-lowest
Hastings	8.0	17th	1972	4th-lowest
Waipawa	5.5	17th	1945	Lowest
Wairoa	8.0	15th	1972	Equal 2nd-lowest
Mahia	6.8	15th	1990	Lowest
Paraparaumu	6.1	15th	1972	2nd-lowest
Palmerston North	6.2	15th	1940	Lowest
Levin	7.2	15th	1950	2nd-lowest
Wellington (Airport) <sup>3</sup>	6.8	15th	1972	Lowest
Wallaceville	4.2	15th	1972	Equal lowest*
Stratford	5.5	15th	1972	Lowest
Hawera	7.6	17th	1977	Lowest
Ohakune	2.2	15th	1972	2nd-lowest
Waiouru	-1.0	15th	1972	Lowest
Wanganui	8.5	15th	1972	Equal 3rd-lowest
Farewell Spit	9.1	15th	1972	4th-lowest
Westport	8.4	15th	1966	Lowest
Lake Rotoiti	-0.5	15th	1972	Lowest*
Reefton	4.4	15th	1972	2nd-lowest
Puysegur Point	4.9	15th	1978	Lowest
Appleby	6.6	15th	1943	Lowest
Nelson	6.1	15th	1943	Lowest
Blenheim	7.0	15th	1972	3rd-lowest
Cape Campbell	7.3	15th	1972	Equal 3rd-lowest
Hanmer Forest	0.1	15th	1972	Lowest*
Kaikoura	3.5	15th	1972	Lowest*
Arthurs Pass	-2.5	15th	1973	Lowest*
Culverden	2.7	15th	1930	4th-lowest
Cheviot	2.8	15th	1982	Lowest*
Waipara West	2.6	15th	1973	Lowest*
Le Bons Bay	3.5	15th	1984	Lowest
Lake Tekapo	-1.2	15th	1928	4th-lowest
Orari	4.7	15th	1972	4th-lowest
Dunedin	4.6	15th	1972	4th-lowest
Manapouri	2.7	15th	1973	3rd-lowest
Lumsden	2.0	14th	1982	Equal lowest
Invercargill	4.5	14th	1948	Equal lowest
Tiwai Point	5.0	14th	1972	2nd-lowest
Balclutha	4.2	15th	1972	4th-lowest

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<sup>3</sup> The Wellington Airport maximum temperature of 6.8°C recorded between 9am on the 15<sup>th</sup> and 9am on the 16<sup>th</sup> ranked as the all-time (any month) 2<sup>nd</sup>-lowest maximum temperature at this site.

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

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year records began	August ranking [An asterisk (*) indicates an all-time (any-month) record low rank]
Leigh	2.6	16th	1966	Lowest*
Warkworth	-1.0	17th	1966	2nd-lowest
Whangaparaoa	2.3	16th	1982	Lowest
Te Puke	-2.2	16th	1973	2nd-lowest
Whakatane	-2.9	16th	1975	2nd-lowest
Rotorua	-5.2	16th	1964	Equal lowest*
Port Taharoa	0.1	16th	1973	Lowest
Te Kuiti	-3.4	16th	1959	Lowest
New Plymouth	-2.3	16th	1944	Lowest
Castlepoint	0.0	15th	1972	Lowest
Martinborough	-2.8	21st	1986	Equal 4th-lowest
Ngawi	0.6	15th	1972	Lowest
Hicks Bay	1.0	16th	1969	Lowest
Wairoa	-1.3	16th	1964	4th-lowest
Mahia	1.2	16th	1990	Lowest
Stratford	-4.6	16th	1960	Lowest
Hawera	-2.1	16th	1977	4th-lowest
Ohakune	-5.9	16th	1962	3rd-lowest
Waiouru	-7.7	16th	1962	2nd-lowest
Westport	-2.5	15th	1937	Lowest
Lake Rotoiti	-10.1	16th	1965	Lowest
Greymouth	-2.0	16th	1947	2nd-lowest
Haast	-3.5	15th	1949	2nd-lowest
Motueka	-4.2	16th	1956	2nd-lowest
Blenheim	-6.2	16th	1932	Lowest
Kaikoura	-1.0	15th	1963	Lowest
Arthurs Pass	-8.5	20th	1973	Equal 3rd-lowest
Le Bons Bay	-2.3	15th	1984	Lowest
Orari Estate	-5.8	10th	1972	4th-lowest
Lumsden	-7.1	19th	1982	Lowest
Nugget Point	-1.3	15th	1970	3rd-lowest
Whangaparaoa	12.7	30th	1982	Equal 4th-highest
Ohakune	9.2	31st	1972	3rd-highest

- **Wind**

The highest gust recorded during August 2011 was 167 km/hr observed at Cape Turnagain on 7 August.

On 7 August, the sudden arrival of 50 knot southerly winds caused problems for kayakers on Wellington Harbour.

A twister was reported on 11 August at Waiharara, north of Kaitaia.

On 14 August a truck was blown off Old Coach Rd between Clinton and Matura, but the driver was not injured. On the 15<sup>th</sup>, high winds made driving on the Auckland Harbour Bridge difficult, and in Pakuranga Heights a tree was blown over on to a house. In Christchurch, strong winds snapped power poles, cutting electricity in some areas.

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

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year records began	Comments
Castlepoint	148	24th	1972	4th-highest
Kaikoura	130	15th	1972	4th-highest

- **Fog**

On 12 August, fog caused the cancellation of five early morning flights from Dunedin Airport to Christchurch, Wellington and Auckland. Flights resumed about 11 am.

On 13 August, thick fog at Auckland Airport caused cancellations and delays for many domestic flights, and delays for international flights.

**For further information, please contact:**

**Ms Georgina Griffiths – Climate Scientist– NIWA National Climate Centre, Auckland,**

**Tel. (027) 293 6545 (mobile)**

**Dr Andrew Tait – Climate Scientist – NIWA National Climate Centre, Wellington,**

**Tel. (04) 386 0562 (work) or (027) 327 7948 (mobile)**

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