

National Climate Summary – July 2009: The cold continued

- Temperature: Below average temperatures over much of the country, except for near average temperatures in the southwest of the South Island, and the north of the North Island.
- Sunshine: Well above average sunshine totals across the northern South Island; gloomy in and around the Capital (Wellington, the Kapiti Coast and the southern Wairarapa).
- Rainfall: Well above normal rainfall in the far south; very dry in Taranaki, the Kapiti Coast, Wellington, southern Wairarapa, Marlborough, Canterbury and Otago. Near normal elsewhere.

It was the third month in a row with below average temperatures over much of the country – although the cold temperatures in July were not as unusual as those in May or June. Well below average temperatures for July (between 1.2 and 2.0 °C lower than normal) were recorded in North Otago, alpine areas of Canterbury and Westland, and Waiouru. Most other regions around the country experienced below average July temperatures (between 0.5 and 1.0 °C lower than normal), except for near average temperatures at either end of the country (in the southwest of the South Island and the north of the North Island). The national average temperature of 7.3°C was 0.4°C below the long-term average for July.

July 2009 was a sunny month across much of the South Island, and in the north of the North Island. July sunshine totals were well above average (greater than 125 percent of normal) around the Kaipara and Manukau Harbours, and in Nelson, Marlborough, Buller, and parts of Canterbury and Otago. In contrast, well below normal July sunshine totals (less than 75 percent of normal) were recorded in Wellington, the Kapiti Coast, and the southern Wairarapa.

Well above normal rainfall for July (about 150 percent of normal) occurred in Southland, Stewart Island, and parts of Fiordland, Westland and Buller. Well below normal July rainfalls (less than 50 percent of normal) were recorded in Taranaki, Kapiti Coast, Wellington, southern Wairarapa, Marlborough, and parts of Canterbury and North Otago. Elsewhere, over the majority of the country, July rainfall was near normal.

There were several extreme events during July. Seven snow/ice events occurred during the month. A tornado struck Kaitia on the 4th, damaging homes; a second was reported just north of Cromwell on the 21st. Fog brought Christchurch Airport to a standstill on the 18th. Severe winds affected Northland on the 11th and 18th; on the 23rd, high winds affected Wellington and much of the east coast of the North Island. Heavy rain affected Northland on the 13th, and Wellington, the Wairarapa and Greymouth on the 23rd and 24th. This latter event was significant, causing road and rail closures, slips and flooding in these areas.

During July 2009, there was a transition towards more southwesterly winds across New Zealand. Lower than normal pressures continued east of the country.

Further Highlights:

- The highest temperature during July 2009 was 20.8 °C recorded at Rangiora on the 31st. The lowest temperature was recorded at Middlemarch, with a minimum temperature of -11.7 °C on the 19th.
- The highest 1-day rainfall total for July was 125 mm, recorded at Milford Sound on the 30th.
- The highest wind gust for July was 182 km/hr recorded at Cape Turnagain on the 19th.
- Of the six main centres, Auckland was the warmest and sunniest of the main centres, Tauranga was the wettest, and Christchurch was the coldest and driest.

For further information, please contact:

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

Tel. (09) 375 4506 (work) or (027) 2936545 (mobile); or

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

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

TEMPERATURES: BELOW AVERAGE TEMPERATURES IN MOST LOCATIONS, EXCEPT FOR CLOSER TO AVERAGE TEMPERATURES AT EITHER END OF THE COUNTRY

The national average temperature of 7.3°C was 0.4°C below the long-term average for July. It was the third month in a row with below average temperatures over much of the country – although July temperatures were not nearly as unusual (extreme) as those in May or June. Well below average temperatures for July (between 1.2 and 2.0 °C lower than normal) were recorded in North Otago, alpine areas of Canterbury and Westland, and Waiouru. Most other regions around the country experienced below average July temperatures (between 0.5 and 1.0 °C lower than normal), except for near average temperatures for Northland, Auckland, Coromandel, Fiordland, Southland, and parts of Nelson, Canterbury, the Kapiti Coast and Manuwatu. Record low July maximum temperatures were recorded in Kaitaia and Pukekohe, the lowest since records began in 1967 and 1969, respectively.

Extreme July mean maximum daily air temperatures were recorded at:

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Kaitaia	14.0	-1.4	1967	Lowest
Whakatane	13.5	-0.8	1974	3rd-lowest
Taupo	10.0	-1.2	1949	2nd-lowest
Pukekohe	13.2	-0.7	1969	Lowest
Dannevirke	9.7	-1.9	1951	2nd-lowest
Ngawi	11.6	-1.0	1972	4th-lowest
Wairoa, North Clyde	12.7	-1.2	1964	4th-lowest
Wanganui	12.2	-0.8	1987	2nd-lowest
Arthurs Pass	4.4	-2.8	1973	3rd-lowest
Le Bons Bay	8.9	-0.9	1984	2nd-lowest
Tiwai Point	8.7	-0.9	1970	4th-lowest

Record low July minimum temperatures were observed at Warkworth (north Auckland) and also Dunedin. The Dunedin mean minimum temperature for July 2009 was a chilly -0.6°C – the lowest in over 60 years of record there.

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

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Warkworth	5.9	-2.0	1966	Lowest
Ngawi	6.7	-0.9	1972	Equal 4th-lowest
Le Bons Bay (Banks Peninsula)	4.1	-0.8	1984	3rd-lowest
Dunedin	-0.6	-0.4	1947	Lowest

SUNSHINE: WELL BELOW NORMAL IN WELLINGTON, KAPITI COAST AND THE SOUTHERN WAIRARAPA; VERY SUNNY IN NELSON, MARLBOROUGH, BULLER AND NORTHERN CANTERBURY, AND PARTS OF AUCKLAND AND NORTHLAND

Well below normal July sunshine totals (less than 75 percent of normal) were recorded in Wellington, the Kapiti Coast, and the southern Wairarapa. July sunshine totals were well above average (greater than 125 percent of normal) around the Kaipara and Manukau Harbours, and across much of Nelson, Marlborough, Buller and north Canterbury. It was a sunny month across the South Island and northern North Island in general.

Extreme low July sunshine hours were recorded at:

Location	Sunshine (hours)	Percentage of normal	Year records began	Comments
Martinborough	79	71	1986	4th-lowest
Paraparaumu	90	73	1953	3rd-lowest

RAINFALL: WET IN THE FAR SOUTH, FIORDLAND, WESTLAND AND BULLER; VERY DRY IN CANTERBURY, MARLBOROUGH, TARANAKI, KAPITI COAST, WELLINGTON AND SOUTHERN WAIRARAPA

Well above normal rainfall for July (about 150 percent of normal) occurred in Southland, Stewart Island, and parts of Fiordland, Westland and Buller. Well below normal July rainfalls (less than 50 percent of normal) were recorded in Taranaki, the Kapiti Coast, Wellington, southern Wairarapa, Marlborough, and parts of Canterbury and north Otago. Elsewhere, over the majority of the country, July rainfall was near normal. Near record-low rainfall was experienced in parts of west Auckland, as well as in the Capital (where around half of the usual July rainfall was recorded).

Extreme low July rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kumeu (Waitakere)	107	73	1978	3rd-lowest
Wellington (Airport)	52	46	1958	4th-lowest

JULY CLIMATE IN THE SIX MAIN CENTRES

July temperatures were below average in Auckland, Wellington, Christchurch and Dunedin, and near average for Tauranga and Hamilton. Monthly rainfalls were near normal for Tauranga, Hamilton, and Dunedin, but below normal in Auckland. It was very dry in Wellington and Christchurch, with only about half of July normal rainfall recorded. Sunshine totals for July were above normal in Auckland, Hamilton, Christchurch and Dunedin, near normal in Tauranga, and well below normal in Wellington, which received only 84 hours of sunshine in the month (about ¾ of July normal).

Auckland was the warmest and sunniest of the main centres, Tauranga was the wettest, and Christchurch was the coldest and driest.

July 2009 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland ^a	10.3	-0.6	Below average	104	75%	Below normal	161	124%	Above normal
Tauranga ^b	10.1	+0.1	Near average	145	113%	Near normal	137	91%	Near normal
Hamilton	8.2	-0.3	Near average	111	81%	Near normal	141 ^e	117%	Above normal
Wellington ^c	8.2	-0.6	Below average	77	56%	Below normal	84	71%	Well below normal
Christchurch ^d	5.2	-0.6	Below average	37	51%	Below normal	148	119%	Above normal
Dunedin	5.8	-0.8	Below average	58	87%	Near normal	115	114%	Above normal

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

HIGHLIGHTS AND EXTREME EVENTS

• Temperature

The highest temperature during July 2009 was 20.8 °C recorded at Rangiora on the 31st (not a July maximum temperature record at this site). Only one station recorded a near-record high July daily extreme maximum temperature (Waipara, recording 19.7 °C on the 31st).

Record or near record high extreme daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Waipara (Canterbury)	19.7	31 st	1973	4th-highest

Record low July daily maximum air temperatures were recorded at Kaitaia and Pukekohe, on the 12th and 11th, respectively.

Record or near record low extreme daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia	9.9	12th	1972	Lowest
Kumeu (Waitakere)	10.8	11th	1978	Equal 2nd-lowest
Te Puke	8.8	11th	1973	4th-lowest
Pukekohe	8.2	11th	1972	Lowest
Hicks Bay	9.5	13th	1972	2nd-lowest
Wanganui	8.7	12th	1987	3rd-lowest
Takaka	7.7	14th	1978	3rd-lowest
Farewell Spit	9.0	5th	1972	Equal 4th-lowest
Greymouth	7.5	2nd	1972	4th-lowest
Hanmer Forest	1.3	2nd	1972	Equal 3rd-lowest

The lowest temperature during July was recorded at Middlemarch on the 19th, with a minimum temperature of -11.7 °C (not a July minimum temperature record for this location). Warkworth recorded its lowest-ever July extreme daily minimum air temperature of -0.5 °C on the 26th, in records that extend back to 1966.

Record or near record low extreme daily minimum air temperatures were recorded at:

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Kaitaia	1.5	26 th	1985	Equal lowest
Warkworth	-0.5	26 th	1966	Lowest
Te Kuiti	-3.6	14 th	1959	Equal 2nd-lowest
New Plymouth	-1.8	14 th	1944	2nd-lowest
Takapau Plains	-3.6	27 th	1962	Equal 4th-lowest
Dannevirke	-4.6	27 th	1951	2nd-lowest
Ngawi	2.9	14 th	1972	4th-lowest
Hawera	-2.8	14 th	1977	Equal 3rd-lowest
Le Bons Bay (Banks Peninsula)	0.9	13 th	1984	4th-lowest

- **Heavy rain and flooding**

The highest 1-day rainfall total for July was 125 mm at Milford Sound, recorded on the 30th (not a July record at this site). High 1-day rainfall totals for July are shown below:

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year Records Began	Comments
Wallaceville	66	23rd	1939	3rd-highest
Lumsden	23	21st	1982	4th-highest
Invercargill	31	21st	1939	4th-highest
Tiwai Point	28	21st	1970	4th-highest

On 13 July, SH10 in Northland was closed after it collapsed under the weight of a major landslide.

Heavy rain on 23 July caused a slip at Maymorn Tunnel, north of Upper Hutt. About 300 train passengers were stranded after the locomotive ploughed into the wall of mud and debris about 6.20 pm, and was derailed. A tree came down causing a slip, and blocking SH1 at Pukerua Bay from about 5.30 pm the same day, causing extensive delays. One lane re-opened just before 8 pm, but there was still a backlog of traffic at 10 pm. Slips and flooding also closed SH58 between Pauatahanui and Haywards Hill, the Paekakariki Hill Road, and SH53 between Martinborough and Featherston. In Lower Hutt, Eastern Hutt Road was under about 1 m of water. Five houses were evacuated in Silverstream after a creek burst its banks. In Greymouth, Sawyers Creek flooded, and houses were inundated, with some residents evacuated to motels. The Midland railway line was closed after a washout of the track at Kokiri, near Greymouth. Tranz Alpine passengers had the option of travelling by bus between Christchurch and Greymouth, or travelling by train on another day.

About 8 am on 24 July, a slip immediately north of the Ngauranga Gorge closed the North Island Main Trunk Line between Wellington and Porirua. Also on 24 July, heavy rain in Auckland triggered a fresh slip at Buckland's Beach.

On 29 July, a slip, with some boulders reported as big as cars, fell on to SH6 near Greymouth. Traffic was diverted to a bridge further up the Grey River, until the road was partially re-opened in the afternoon.

- **High winds and tornadoes**

The highest wind gust for July was 182 km/hr, recorded at Cape Turnagain (coastal Wairarapa) on the 19th (not a July record at this site). Castlepoint (coastal Wairarapa) and Westport both recorded their highest July wind gust, on the 21st and 3rd of the month, respectively.

Record or near record high extreme wind gusts for July were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Kaitaia	106	18th	1985	4th-highest
Kaikohe	82	18th	1986	Equal 3rd-highest
Whangarei	104	18th	1973	Equal 4th-highest
Castlepoint	148	21st	1972	Highest
Paraparaumu	109	23rd	1972	Equal 2nd-highest
Westport	163	3rd	1973	Highest
Tara Hills	85	21st	1985	Equal highest
Gore	104	21st	1987	2nd-highest

A tornado affected Kaitaia on 4 July, damaging at least 20 homes as well as the local hospital.

Severe winds in Northland on 11 July brought down trees, in one case crushing a caravan and killing one of

the occupants. Many homes in Northland, Auckland and the Coromandel were without electricity after falling trees brought down power lines.

High winds in Northland on 18 July cut power to about 5,000 buildings.

A tornado was reported in the morning of 21 July, just north of Cromwell, causing a dust storm at the local quarry. That evening, a mini tornado damaged houses in Opunake, and brought down power lines.

High winds on 23 July closed the Rimutaka Hill Road from 8 pm until about 9 pm. In Wellington, gale-force winds of up to 130 kph ripped the glass of a balcony in the central city, and a contractor had to abseil in to secure the site. In Wairarapa, the storm brought down trees and branches on to high voltage lines, cutting power to substations at Tinui and Awatoitoi, and briefly cutting power to about 4000 customers from Masterton to Castlepoint. Further north, powerlines between Tokomaru Bay and Ruatoria were also damaged when trees were blown over by the strong northwesterlies.

- **Snow and ice**

On 2 July, the Desert Road between Rangipo and Waiouru was closed overnight by snow.

Heavy snow on 3 July brought down trees, closing the Haast Pass. Cromwell was cut off as SH8 to Roxburgh, SH85 to Omakau, the Kawarau Gorge to Queenstown, and the Lindis Pass were all closed. Schools in Cromwell, Alexandra, Roxburgh and Omakau were closed on what was the last day of term.

On 5 July, a risk of avalanche on the access road forced the Mt Hutt ski field to close for the day, after about 20 cm of snow fell overnight.

On 13 July snow and ice closed SH1 at the Desert Road, and roads in Otago and South Canterbury were affected by black ice.

The first Wilson Cup curling fixture in six years was played on natural ice at Idaburn Dam near Oturehua on 14 July. The ice was about 15 cm thick.

Snow closed the Desert Road section of SH1 for a short time on 18 July.

A freezing front brought snow, hail, sleet and icy winds to Otago and Southland on 19 July. SH93 between Clinton and Matura, and SH87 from Mosgiel to Kyeburn were closed by snow.

- **Lightning**

Thunder and lightning were reported on 22 July in Lower Hutt, Christchurch and Invercargill.

- **Fog**

On 18 July, Christchurch Airport was brought to a standstill by thick fog. Dozens of flights were diverted, delayed or cancelled.

For further information, please contact:

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

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