

NATIONAL CLIMATE CENTRE

Friday 1 August 2008

National Climate Summary – July 2008: Very wet and dull for most of country especially Marlborough, Canterbury and eastern Otago; Temperatures generally near or slightly above average

- Temperature: Near or slightly above average for most of the country;
- Rainfall: Well above normal rainfall (more than 200% of normal) in Marlborough, Canterbury, and eastern Otago; above normal (around 150% or more of normal) in Westland, Tasman, and the majority of the North Island;
- Sunshine: Below normal hours of bright sunshine recorded for most of country.

July was slightly warmer than average overall, and only slightly cooler than June, despite the cold spell which saw frosts as far north as Auckland and -9.1°C in Waiouru (a record low July minimum temperature for this location) in the second week of the month. The national average temperature of 8.3°C was 0.6°C above average. Kaikoura experienced a maximum temperature of 22.0°C on the 11th, its second highest temperature ever for the month of July.

Rainfall was well above normal (more than 200%) in Marlborough, Canterbury, and eastern Otago, with near record high July totals in many locations. Much of the rest of the country, with the exception of Southland and Gisborne, received above normal rainfall for July. In terms of other extremes, there were several storms during the month bringing a mixture snow, high winds, heavy rainfall and high seas to much of the country (see Highlights and Extremes section below). In the last week of the month New Zealand was hit by two intense storms which caused significant damage to property, resulted in several evacuations, and led to the deaths of four people (and one person still missing).

Further Highlights:

- The highest temperature during July 2008 was 22.0°C recorded at Kaikoura on the 11th. Waiouru, Motu (inland from Gisborne), and Culverden received record or near record low temperatures on the 7th (Waiouru and Motu) and the 15th (Culverden).
- The highest 1-day rainfall was 165.8 mm recorded at Paeroa on the 26th (the highest 1-day total at this location since records began in 1914).
- The highest wind gust for the month was 174 km/hr at Cape Reinga on the 26th.
- Of the five main centres, Auckland was the warmest and sunniest, Wellington was the wettest, Christchurch the coldest, and Dunedin the driest (or the least wet!).

Temperature: Mean temperatures were near or slightly above average for most of the country.

Rainfall: Rainfall was more than twice (200 percent) normal in Marlborough, Canterbury, and eastern Otago, and about one and a half (150%) times normal in Westland, Tasman, and the majority of the North Island (with the exception of Gisborne).

Sunshine: July totals of bright sunshine were below average (less than 90 percent of normal) throughout much of the country. Sunshine totals were well below average (less than 75 of normal) in parts of Northland, Taranaki, Wairarapa, Marlborough, and inland Canterbury.

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TEMPERATURE: NEAR TO SLIGHTLY ABOVE AVERAGE IN MOST AREAS

The national average temperature of 8.3°C was 0.6 °C above average. Most locations around the country received near or slightly above average temperatures for the month, with Milford Sound's mean temperature of 6.8°C being 1.6°C above normal for this location (the largest temperature departure from normal for the country). Fairlie, in South Canterbury, had an average July temperature of only 1.7°C which was 1.9°C cooler than normal.

RAINFALL: WELL ABOVE NORMAL FOR MOST OF COUNTRY

July rainfall totals were above normal over most of New Zealand. The only areas to escape the high rainfall totals were coastal Gisborne and Southland. Marlborough, Canterbury, and eastern Otago received more than twice (200%) their normal July totals, while Westland, Tasman, and the majority of the North Island received about 150% of normal rainfall.

Near or record high July rainfall totals were recorded at:

Location	July rainfall total (mm)	Percentage of normal	Year records began	Comments
Stratford	442	208	1938	Third highest
Paeroa	416	275	1914	Highest
Wallaceville (Upper Hutt)	326	232	1924	Highest
Hanmer Forest	284	248	1905	Third highest
Auckland (Owairaka)	249	170	1949	Second highest
Pukekohe	248	186	1963	Third highest
Auckland Airport	215	157	1962	Third highest
Paraparaumu Airport	210	207	1945	Fourth highest
Winchmore	182	281	1947	Highest
Nelson Airport	166	198	1941	Second highest
Christchurch Airport	165	230	1944	Third highest
Blenheim	153	210	1927	Third equal highest
Darfield	148	196	1920	Fourth highest
Culverden	132	216	1915	Second highest
Dunedin Airport	123	249	1963	Second highest
Timaru Airport	116	262	1957	Third highest

SUNSHINE: BELOW AVERAGE HOURS OF BRIGHT SUNSHINE FOR ALL OF COUNTRY

July totals of bright sunshine were below average (75 to 90 percent of normal) throughout much of the country. The only location to receive normal sunshine hours for July was Southland. Sunshine totals were well below average (less than 75 percent of normal) in parts of Northland, Taranaki, Wairarapa, Marlborough, and inland Canterbury.

Near or record low July sunshine hours were recorded at:

Location	July sunshine (hours)	Percentage of normal	Year records began	Comments
Mt Cook, The Hermitage	41	55	1930	Lowest
Stratford	79	66	1963	2 nd lowest
Martinborough	75	73	1968	3 rd lowest
Kaitaia	85	57	1951	2 nd lowest
Motueka	89	60	1965	Lowest

JULY'S CLIMATE IN THE FIVE MAIN CENTRES

All the main centres received near to slightly above average temperatures for July, with Auckland the warmest. Rainfall was well above normal for Auckland, Wellington (the wettest of the main centres), Christchurch, and Dunedin (the driest – or least wet! – of the main centres) and above normal for Hamilton. All of the main centres received below normal sunshine hours for July, with the sun peeping through the cloud most often in Auckland and least often in Dunedin.

July 2008 main centre climate statistics:

Location	July mean temp. (°C)	Dep. from normal (°C)		July rainfall (mm)	% of normal		July Sunshine (hours)	% of normal	
Auckland	11.1 ^a	0.3	Average	249 ^a	170	Well above normal	113 ^c	87	Below normal
Hamilton	9.2	0.7	Above average	173	126	Above normal	101 ^d	83	Below normal
Wellington	9.2	0.4	Average	252	184	Well above normal	94	80	Below normal
Christchurch ^b	6.5	0.7	Above average	165	230	Well above normal	97	79	Below normal
Dunedin	7.0	0.4	Average	144	215	Well above normal	80	79	Below normal

^a Owairaka ^b Christchurch Airport ^c Mangere ^d Ruakura

HIGHLIGHTS AND EXTREME EVENTS

• Temperature

The highest temperature during July 2008 was 22.0°C recorded at Kaikoura on the 11th, the second equal highest July temperature on record (since 1964) at this location. The North Shore recorded 20.2°C on the 19th, which was the third highest July temperature at this location.

There were freezing temperatures across the country on the 9th, with negative numbers recorded from Auckland (-1°C) to Queenstown (-4°C). The unusual sight of frost in Auckland was seen for two days in a row on the 8th and 9th.

Near record low extreme minimum daily air temperatures were recorded at:

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Waiouru	-9.1	7 th	1962	Lowest
Motu (west of Gisborne)	-7.1	7 th	1991	Lowest
Culverden	-6.0	15 th	1983	Second lowest

• High winds and tornadoes

Gale force winds in the Cook Strait led to the cancellation of interisland ferry services on the 6th and strong winds in Christchurch also blew down several power poles.

Wind gusts along the east coasts of the North and South Islands reached 120km/hr overnight on the 8th.

High winds on the 22nd damaged property in the Taranaki region. There were also reports of a small tornado in coastal Taranaki. Along Auckland's west coast gusts reached 105km/hr.

Wind gusts of between 100km/hr and 110km/hr buffeted both the Hauraki Gulf and Manukau Heads on the 23rd. Further south, at Golden Valley west of Tauranga, gusts of up to 100km/hr were recorded.

Northland experienced wind gusts of up to 174km/hr on the 26th bringing down trees and power lines as the storm made landfall. Thousands of homes were without power in the region. Power was also cut to 53,000 homes in Rodney, Waitakere and the North Shore. There were another 7000 without power in Auckland in Howick, Otara, Clevedon, Mangere and parts of Waiheke Island. Gusts in Auckland Harbour reached 125km/hr on the 26th. Hundreds of trees were brought down and several roofs were blown off by high winds in Te Aroha, in the eastern Waikato.

Winds of around 80km/hr hit Tauranga between 4am and 5am on the 30th and a tornado struck Tauranga and Mt Maunganui around 9am lifting roof tiles and smashing windows.

Near record high extreme wind gusts were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records began	Comments
Cape Reinga	174	26 th	1974	Fourth highest
Awakino (Taranaki)	147	26 th	2005	Highest
Baring Head (Wellington)	143	29 th	1991	Highest
Brothers Island (Cook Strait)	143	29 th	1997	Highest
Mokohinau Island (Northland)	124	27 th	1994	Second highest
Nelson	119	30 th	1972	Highest
Warkworth	115	26 th	1973	Fourth equal highest
Paeroa	115	26 th	1993	Highest
Awakino (Taranaki)	115	31 st	2005	Third highest
Dargaville	108	26 th	1998	Second highest
Auckland Airport	107	27 th	1971	Fourth highest
Lincoln	100	5 th	1999	Highest

• **Heavy rain and flooding**

The area around Mt Taranaki received 100mm of rain in the 24 hours to 6am on the 9th, and 60mm also fell in Milford Sound. Lower Hutt received 26mm of rain between 4am and 6am on the 9th.

32mm of rain fell within a few hours at Nelson airport on the morning of the 11th and even heavier rains may have come down in the surrounding hills. A large slip on Rocks Road, SH6 was cleared enough to allow cars through by the afternoon. The heavy rain and flooding in Nelson caused sewage to overflow into the harbour.

A river burst its banks on the 26th near the township of Panguru, on the northern side of Hokianga Harbour, and up to 35 people had been evacuated and roads throughout Northland were closed by flooding. The Kauaeranga River in the Coromandel also broke its banks and flooded the highway.

More than 160mm of rain fell in parts of the Coromandel overnight on the 29th resulting in parts of Hikuai and Pauanui on State Highway 25 being under more than a metre of water. The Karangahake Gorge SH2 between Paeroa and Waihi was flooded with water about 30cm deep, SH25 south of Whitianga was flooded with water 1m deep and unpassable, and Kaihikatea Road Dairy Flat was flooded. Slips and downed trees caused closures of several other roads. One North Shore home has been completely destroyed in a slip, with another 14 homes at risk.

Tauranga and the Western Bay of Plenty received approximately 45mm of rain from 9pm on the 29th to 5pm on the 30th. Whakatane received around 22mm of rain and Rotorua received approximately 14mm of rain in that time. A number of roads to the west of Gisborne were closed by surface flooding.

A state of emergency was declared by Marlborough District Council on the 30th due to extensive surface flooding. The storm knocked out an important water pipeline in Nelson. Picton police and volunteers sandbagged the waterfront in an effort to save the town from flooding. Severe flooding in the small South Island town of Sefton meant that 12 people had to be evacuated and spent the night in the local school hall.

The cost of the storm on the country is estimated to be more than \$10 million.

One person drowned while attempting to cross a swollen stream near Kawakawa in Northland. Another person is missing, presumed dead.

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
Paeroa	165.8	26 th	1914	Highest
Cheviot	146.8	30 th	1983	Highest
Kaikoura	143.8	30 th	1898	Highest
Ngawi (Cape Palliser)	128.2	30 th	1930	Highest
Okuti (Banks Peninsula)	125.1	28 th	1916	Highest
Hanmer Forest	121.2	30 th	1906	Second highest
Paeroa	119.2	29 th	1914	Fourth highest
Takaka	111.2	10 th	1986	Fourth highest
Rangiora	107.6	30 th	1891	Highest
Tauranga Airport	91.0	29 th	1910	Third highest
Hicks Bay (East Cape)	88.4	29 th	1955*	Third highest
Tarapounamu (near Lake Waikaremoana)	79.8	30 th	1969	Highest
Little Akaloa (Banks Peninsula)	79.4	28 th	1912	Third highest

* includes Te Araroa rainfall data

• **High seas**

Huge waves on top of swells of more than 6m (up to 9m at Raglan) battered the North Island's west coast on the 23rd as a severe storm crossed the country. A man was plucked to safety from raging seas off the Kapiti Coast.

A canoeist drowned while paddling in stormy seas off Mt Maunganui on the 26th. Two other people died after the fishing boat they were on ran aground east of Opotiki.

Residents at Amberley Beach, about 50km north of Christchurch, were evacuated ahead of a high tide on the 31st but the high waters did not flood the settlement.

• **Snowfall**

Snow fell as far north as the Kaimai Ranges in the Waikato on the 5th while hail fell in Wanganui, Taranaki and Auckland on the same day. Sleet was reported in New Plymouth, Palmerston North and Wellington. Snow also fell in Queenstown (up to 18cm), Dunedin, Ashburton and Christchurch. Several roads were closed by snow or ice, including SH3 southeast of Hawera, the Napier-Taihape Rd, SH49 between Waiouru and Ohakune, SH1 between Rangipo and Waiouru, and several South Island roads including the main road to Akaroa.

Heavy snow on the 26th closed the Desert Rd and Napier to Taihape road in the central North Island.

Snow fell to depths of around 20cm in Temuka and elsewhere in inland Canterbury on the 31st.

• **Thunder and lightning**

More than 7500 lightning strikes were recorded on the South Island's West Coast on the 2nd, with 1100 in one hour alone, and power was knocked out for a short time. Around another 2200 strikes were recorded on the 5th, mostly along the west coast of both islands.

Northern and western parts of the North Island experienced a total of 25,000 lightning strikes from midnight

on the 18th to 6pm on the 20th.

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