

National Climate Summary – September 2008: Mild start to spring

- Temperature: Above average for most of the country, especially in South Canterbury, and Central Otago.
- Rainfall: Low in Northland, Auckland, Waikato, Coromandel, and all of the east coast of the North Island; high in Wellington, Nelson, and Central Otago.
- Sunshine: Above average for much of the North Island (with the exception of Kapiti and Wellington), North Canterbury, and South Otago.

September temperatures were well above average (more than 1.5°C above their normal values) in South Canterbury and Central Otago. The majority of the remainder of the country (with the exception of Auckland, coastal Waikato, eastern Bay of Plenty, Hawke's Bay, Wairarapa, and the northern West Coast – where temperatures were at or slightly above average) was more than 0.5°C above their average September temperature. Many eastern locations experienced their highest September temperatures on record on the 23rd during strong north-westerly conditions. Timaru recorded 26.8°C, Dunedin recorded 25.6°C, Kaikoura got to 25.5°C, and Nugget Point recorded 23.9°C (all records for September for the respective locations). A cold spell persisted for three days from the 4th to the 6th when maximum and minimum temperatures in some areas were at or near record low values. The national average temperature of 11.1°C was 0.7°C above average for September.

Rainfall in September was below normal for many areas (after significantly higher than normal rainfall in both July and August), particularly in parts of Northland, Auckland, Waikato, Coromandel, and the east coast of the North Island where less than 50% (half) of normal rainfall fell. Most other areas received near-normal rainfall for September, with the exception of Wellington, Nelson and Central Otago where rainfall totals were between 150% (one and a half times) and 200% (twice) the normal values.

There were much fewer extreme weather events during September compared with July and August. The north-westerly on the 23rd which brought the very high temperatures to eastern locations also resulted in very high rainfall at Mount Cook (236 mm) and high winds (greater than 100 km/hr) across much of Otago. On the 27th, snow fell to about 200 m in Otago and Southland, accompanied by strong winds with gale-force gusts.

The generally mild and settled weather for September resulted from more anticyclones well to the east of New Zealand, extending ridges back across northern New Zealand, with more northerlies than normal over the country.

Further Highlights:

- The lowest temperature during September was recorded at Alexandra on the 6th, where the minimum temperature was -6.0°C. The highest temperature during September 2008 was 26.8°C, recorded at Timaru on the 23rd during a strong north-westerly air flow.
- The highest 1-day rainfall was 236 mm recorded at Mount Cook on the 23rd (the third highest 1-day total for September at this location since records began in 1928).
- The highest wind gust for the month was 169 km/hr at Castlepoint on the 27th, the highest September gust speed for this location since records began in 1972 (this same location had the highest gust for the nation last month as well; 128 km/hr on the 22nd of August).
- Of the five main centres, Auckland was the warmest and sunniest, Wellington was the wettest, and Christchurch the coldest and driest.

Temperature: Mean temperatures were above average for most of the country, especially in South Canterbury and Central Otago where temperatures were more than 1.5°C above the September average.

Rainfall: Less than 50% (half) of normal rainfall fell in parts of Northland, Auckland, Waikato, Coromandel, and the east coast of the North Island. Other areas received near-normal rainfall for September, with the exception of Wellington, Nelson, and Central Otago where rainfall totals were between 150% (one and a half times) and 200% (twice) the normal values.

Sunshine: September totals of bright sunshine were well above average (more than 125% of normal) for Waikato, Hawke’s Bay and from Christchurch to Kaikoura and above average (between 110 and 125% of normal) for much of the remainder of the North Island (with the exception of Kapiti and Wellington) and South Otago. Sunshine totals were below average (less than 90 percent of normal) in Kapiti, Wellington, Tasman, North and Central Otago, and western Southland.

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TEMPERATURE: ABOVE AVERAGE, ESPECIALLY IN THE SOUTH ISLAND

The national average temperature of 11.1°C for September 2008 was 0.7°C above average for this time of the year. Most locations in the country received above average temperatures for the month, with much of the South Island experiencing well above (more than 1.2°C) average temperatures – particularly south Canterbury and central Otago. The areas with temperatures least above average were Auckland, coastal Waikato, Bay of Plenty, Hawke’s Bay, Wairarapa, and around Westport – though these areas were still at or slightly above their average temperatures for September.

Extreme (high and low) September mean daily air temperatures were recorded at:

Location	Mean air temperature (°C)	Departure from normal	Year records began	Comments
Whangaparaoa	13.8	1.0	1982	3rd highest
Tauranga Aero	13.3	1.3	1913	4th equal highest
Takaka	11.5	0.9	1978	3rd highest
Farewell Spit	12.7	1.2	1971	4th highest
Lake Rotoiti	8.2	1.5	1965	2nd highest
Milford Sound	9.7	1.2	1934	4th highest
Puysegur Point	10.3	1.0	1978	4th highest
Nelson	11.7	1.2	1943	2nd highest
Woodbury	10.4	1.8	1973	3rd highest
Cromwell	10.9	2.3	1949	2nd highest
Nugget Point	9.8	1.4	1970	2nd highest

Extreme (high and low) September mean maximum daily air temperatures were recorded at:

Location	Mean maximum air temperature (°C)	Departure from normal	Year records began	Comments
Kaikohe	16.8	1.4	1973	3rd highest
Whangaparaoa	17.0	1.7	1982	Highest
Kumeu (Waitakere)	17.0	0.7	1978	2nd highest
Waipawa	16.7	1.6	1945	2nd highest
Farewell Spit	16.2	0.9	1971	2nd highest
Lake Rotoiti	13.9	2.1	1965	3rd highest
Culverden	17.6	2.6	1928	3rd highest
Dunedin Aero	15.7	1.5	1947	3rd highest

Extreme (high and low) September mean minimum daily air temperatures were recorded at:

Location	Mean minimum air temperature (°C)	Departure from normal	Year records began	Comments
Dargaville	10.1	1.4	1943	Highest
Farewell Spit	9.3	1.5	1971	4th highest
Puysegur Point	8.0	1.2	1978	3rd highest
Nelson	7.3	1.0	1943	Highest
Blenheim Research Centre	6.7	1.1	1941	3rd highest
Arthurs Pass	2.4	1.4	1978	4th highest
Waipara West	6.1	1.9	1973	3rd highest
Darfield	6.2	2.2	1939	2nd highest
Woodbury	4.2	1.4	1973	2nd highest
Orari Estate	4.9	1.8	1972	Highest
Timaru	6.0	2.2	1885	Highest
Manapouri Aero	4.1	1.1	1963	4th highest
Lumsden	4.0	1.4	1982	4th highest
Cromwell	6.1	3.6	1949	Highest
Gore	5.3	1.5	1971	2nd highest
Nugget Point	6.4	1.3	1970	3rd highest
Dannevirke	4.2	-1.9	1951	3rd lowest

RAINFALL: VERY DRY IN THE NORTH AND EAST OF THE NORTH ISLAND, RATHER WET IN WELLINGTON, NELSON AND CENTRAL OTAGO

In stark contrast to the winter months, rainfall for almost all of the North Island was below normal for September. It was particularly dry (less than 50% of normal) in parts of Northland, Auckland, Waikato, Coromandel, and the east coast of the North Island. Other areas received near-normal rainfall for September, with the exception of Wellington, Nelson, and Central Otago where rainfall totals were between 150% (one and a half times) and 200% (twice) the normal values.

Extreme (high and low) September rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Lumsden	107	166	1982	2nd highest
Kerikeri	70	39	1981	4th lowest
Dargaville	39	38	1943	4th lowest
Warkworth	49	36	1966	2nd lowest
Whangaparaoa	31	34	1946	3rd lowest
Whitianga Aero	80	48	1961	4th lowest
Whakatane Aero	44	49	1952	3rd equal lowest
Auckland Aero	39	40	1959	2nd lowest
Gisborne	13	15	1905	4th lowest
Wairoa, North Clyde	24	22	1964	3rd lowest
Hawera	48	52	1977	4th lowest

SUNSHINE: ABOVE AVERAGE FOR MOST OF NORTH ISLAND AND EAST OF SOUTH ISLAND; BELOW AVERAGE NORTH AND SOUTH OF SOUTH ISLAND

September totals of bright sunshine were well above average (more than 125% of normal) for Waikato, Hawke's Bay, and from Christchurch to Kaikoura, and above average (between 110 and 125% of normal) for much of the remainder of the North Island (with the exception of Kapiti and Wellington) and South Otago. Sunshine totals were below average (less than 90 percent of normal) in Kapiti, Wellington, Tasman, North and Central Otago, and western Southland.

Extreme (high and low) September sunshine hours were recorded at:

Location	Sunshine (hours)	Percentage of normal	Year records began	Comments
Kaitaia	198	118	1985	2nd highest
Turangi	164	120	1976	3rd highest
Dannevirke	182	141	1963	3rd highest
Waipawa	207	141	1945	3rd highest

SEPTEMBER'S CLIMATE IN THE FIVE MAIN CENTRES

Rainfall was well above normal for Wellington (the wettest of the main centres – it was the wettest in July and August as well), normal for Dunedin, below normal for Hamilton and Christchurch, and well below normal for Auckland. Dunedin received well above average temperatures for September, while the other main centres received average temperatures, with Auckland the warmest. Auckland was the sunniest of the main centres.

September 2008 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland	12.6 ^a	-0.3	Average	43 ^a	40	Well below normal	199 ^a	133	Well above normal
Hamilton	11.5	0.4	Average	74	69	Below normal	170 ^c	117	Above normal
Wellington	11.0	0.4	Average	181	180	Well above normal	127	81	Below normal
Christchurch ^b	9.5	0.2	Average	34	75	Below normal	152	92	Normal
Dunedin	10.7	1.4	Well above average	61	114	Normal	147	114	Above normal

^a Mangere ^b Christchurch Airport ^c Ruakura

HIGHLIGHTS AND EXTREME EVENTS

• Temperature

The coldest temperature during September was recorded at Alexandra on the 6th, where the minimum temperature was -6.0°C. However, this did not rank in the coldest four minimum temperatures for Alexandra. The maximum temperatures on the 4th, 5th and 6th were also quite low for many locations, with Hanmer only reaching 2.8°C on the 5th.

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

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Ngawi	9.4	6th	1972	2nd lowest
Wanganui	10.8	6th	1987	4th lowest
Farewell Spit	11.1	5th	1972	4th lowest
Reefton	9.0	4th	1972	3rd equal lowest
Cape Campbell	8.0	5th	1972	2nd lowest
Hanmer Forest	2.8	5th	1972	4th lowest
Kaikoura	6.0	5th	1972	3rd lowest
Waipara West	5.6	4th	1973	2nd lowest
Le Bons Bay	5.3	5th	1984	4th lowest

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

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Takapau Plains	-2.9	28th	1962	3rd lowest
Dannevirke	-3.1	28th	1951	4th lowest
Martinborough	-3.0	6th	1986	2nd lowest
Ngawi	3.0	6th	1972	Lowest
Paraparaumu Aero	-1.9	6th	1953	4th lowest
Wallaceville	-4.0	6th	1939	3rd lowest
Pelorus Sd, Crail Bay	1.0	11th	1982	4th lowest
Dunedin Aero	-3.8	6th	1947	2nd lowest
Queenstown Aero	-3.9	5th	1871	3rd lowest
Lumsden	-4.1	5th	1982	2nd lowest
Balclutha	-4.2	4th	1964	Lowest

The highest temperature during September 2008 was 26.8°C recorded at Timaru on the 23rd during a strong north-westerly air flow. The minimum temperature of 15.7°C at Blenheim Research Centre on the night of the 22nd/23rd was the highest minimum for the country for September. Both of these temperatures were the highest September temperatures (maximum and minimum) at these locations since records began in 1885 and 1972, respectively.

Near record high extreme daily maximum air temperatures were recorded at:

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Whakatane Aero	22.0	22nd	1975	4th highest
Gisborne	24.7	23rd	1905	4th equal highest
Farewell Spit	19.5	15th	1971	4th highest
Lake Rotoiti	20.4	16th	1965	3rd highest
Kaikoura	25.5	23rd	1963	Highest
Culverden	25.0	16th	1928	3rd highest
Cheviot	22.8	23rd	1982	4th highest
Fairlie	25.0	16th	1925	4th highest
Woodbury	26.0	23rd	1973	2nd highest
Timaru	26.8	23rd	1885	Highest
Dunedin Aero	24.5	23rd	1947	2nd highest
Dunedin, Musselburgh	25.6	23rd	1947	Highest
Manapouri Aero	19.2	23rd	1963	4th highest
Lumsden	21.8	23rd	1982	2nd highest
Cromwell	24.1	23rd	1949	3rd highest
Gore	20.9	23rd	1971	3rd highest
Tiwai Point	20.5	23rd	1970	3rd highest
Balclutha	23.0	23rd	1964	2nd highest
Nugget Point	23.9	23rd	1970	Highest

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

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records began	Comments
Castlepoint	14.5	23rd	1972	2nd highest
East Taratahi	14.1	23rd	1943	4th highest
Martinborough	14.6	23rd	1986	2nd equal highest
Paraparaumu Aero	14.2	22nd	1972	Highest
Wallaceville	13.4	23rd	1972	4th equal highest
Hawera	12.7	23rd	1977	4th equal highest
Wanganui, Spriggens Park	14.2	23rd	1972	3rd equal highest
Farewell Spit	13.6	23rd	1972	3rd highest
Lake Rotoiti	9.5	23rd	1972	Highest

Puysegur Point	13.6	14th	1978	2nd highest
Blenheim Research Centre	15.7	23rd	1972	Highest
Blenheim Aero	15.3	23rd	1947	Highest
Mt Cook	12.1	14th	1929	4th highest
Winchmore	13.5	16th	1928	Highest
Darfield	13.9	16th	1954	3rd highest
Woodbury	12.0	16th	1973	2nd highest
Orari	12.1	16th	1972	3rd equal highest
Manapouri Aero	11.9	14th	1973	Highest
Cromwell	13.0	14th	1949	3rd highest
Invercargill	11.8	15th	1948	2nd highest
Nugget Point	12.0	16th	1972	Highest

- **Heavy rain and flooding**

A second major landslide at Clovelly Road on 1 September forced the evacuation of five homes in Bucklands Beach, Manukau City.

On 23 September, the Milford Road was closed by a slip, 200 m long, 40 m wide, and about 2 m deep, which isolated the town. Two women had to run for their lives to evade the cascading debris, and a group of people trapped by the debris spent a cold night in their van. Only helicopter access was available until the 28th when a single lane was open to traffic.

Heavy rain affected Otago on 27 September, with Queenstown receiving 25 mm, and Wanaka 20 mm between 8 am and noon. A landslip north of Lake Hawea on SH 6 reduced the main arterial link to the West Coast to one lane for most of Saturday afternoon.

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
Pelorus Sound	166	11th	1982	Highest
Mt Cook	236	23rd	1928	3rd highest

- **High winds and tornadoes**

A tornado was reported in the Bell Block area of New Plymouth about midnight on 11 September. Damage occurred to power lines and roofs.

High winds caused problems in Otago on 23 September. Crosswinds averaging 70 km/hr and gusting up to 100 km/hr disrupted flights at Dunedin Airport between noon and 5.30pm. Winds gusts reached 140 km/hr at Swampy Summit above Dunedin, 100 km/hr at Taiaroa Head, 135 km/hr on the Rock and Pillar Range, near Middlemarch. Some trees were damaged around the region. Nine flights were cancelled at Queenstown Airport because of poor visibility, strong winds and driving rain. High winds, with gusts of up to 157 km/hr, forced the closure of the Remarkables Ski Field at 2pm.

A tree fell on a moving car in on Three Mile Hill Road, Dunedin, about 10 am on the 23rd. The three occupants were travelling towards Dunedin when a section of a pine tree about 15 m long, probably weakened by strong overnight winds, split in two places, broke about 5 m from the ground, and fell on to the front passenger side of the car as it travelled up the hill, pushing in the car's bonnet, and smashing the windscreen, before bouncing off the car and being wedged underneath.

Strong southerly winds on the 27th caused problems on the Access Road to the Remarkables Ski Field, forcing its closure.

Near record high extreme wind gusts were recorded at:

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records began	Comments
Castlepoint	169	27th	1972	Highest
Puysegur Point	152	1st	1986	2nd equal highest
Tara Hills	100	27th	1985	3rd highest
Dunedin Aero	117	21st	1972	2nd highest
Lauder	119	23rd	1981	4th highest

- **Snowfall**

On 27 September, snow fell to about 220 m in Otago and Southland. Arrowtown and Naseby had 10 cm, St Bathans had 13 cm, and Jollys Pass, about 20km north of Lumsden on State Highway 6, had 15 cm. Cyclists on the Otago Central Rail Trail had to be picked up after being caught in a short but vicious storm which dumped 12 cm of snow at Wedderburn in just a couple of hours. SH 8 through the Lindis Pass was also closed briefly during the height of the snowstorm when a truck and trailer jack-knifed near the pass summit in the treacherous conditions. Strong winds with gale-force gusts in the early hours of 27 September gave way to heavy rain and then snow. In Athol, 9 cm of snow fell in the three hours to 10.30 am, and homes and businesses were without power for most of the day after two power poles outside the town boundary snapped. Electricity was restored at about 4.30 pm.

- **Fog**

Thick fog forced the cancellation of a number of flights in and out of Christchurch on the morning of 10 September. The fog lifted about 1pm.

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