

National Climate Summary – Summer 2007/08: Warm; extremely cloudy and wet in the far north, extremely dry in the Waikato and record sunshine in the south

- **Temperature: Warm, especially in the west, and inland South Island areas**
- **Rainfall: Below normal in many North Island areas, and the south of the South Island, above normal in Northland**
- **Soil moisture deficits: Severe in many North Island areas and the east of the South Island in January, persisting in the North Island during February**
- **Sunshine: Record low values in Northland; record high values in the south**

The summer produced some new records. It was a warm summer, with mean summer temperatures were well above average. The national average temperature of 17.3°C was 0.8°C above normal and the highest for summer since 1998/99. January was particularly warm. Summer temperatures were over 1°C above average in Nelson and inland areas of the South Island. Rainfall was below normal over much of the North Island, and in Southland and Otago, with less than 50 percent (half) of normal in the Waikato. By mid summer severe soil moisture deficits had developed in many North Island areas, and the east of the South Island, which persisted in the North Island in February. Above average summer rainfall occurred in Northland, with 200 percent (double) normal around the Bay of Islands. Record high sunshine hours were observed in the southern South Island, whilst record low sunshine hours occurred in the Far North. The overall summer climate pattern was dominated by the strong La Niña conditions, which produced more anticyclones ('highs') south east of the South Island, and more frequent mild north easterly winds over New Zealand.

Major Highlights:

- The highest temperature was recorded in January 2008 with 34.8 °C recorded at both Timaru Airport on the 12th and Waione on the 22nd. The lowest air temperature recorded was -1.7 °C recorded at Hanmer Forest in December on the 8th.
- From the 30th December to 22nd of January, apart from two days, heat wave conditions occurred in inland and eastern areas of the South Island. Wallaceville (Upper Hutt) recorded its highest January temperature on record of 30.9°C (records commenced in 1940) on the 21st and Palmerston North 31.8°C on the 22nd (records commenced in 1918).
- Wind speeds of 158 km/hr occurred at Castlepoint, and 143 km/hr at Mt Kaukau (Wellington) from the westerly quarter. The former was the highest gust for the month. These were all caused by ex-tropical cyclone Funa on 22 January.
- Persistent rainfall occurred in Northland, with almost 200 mm in the Bay of Islands between 1-10 December. Periods of persistent heavy rainfall occurred on the West Coast of the South Island, with as much as 560 mm at Franz Josef between 9-17 December and 258 mm at Milford Sound between 23-30 December.
- In January, heavy rain localised to the Kapiti District produced widespread flooding in Horowhenua. Over 200 mm of rain fell at Muhunoa, with 320 mm at Oriwa, 140 mm at Waikanae and 120 mm at Levin in 30 hours.
- A subtropical low brought between 200 and 240 mm to the hills between Kaeo and Kaikohe on February 22 and 23rd, which caused minor flooding in Kaeo.
- Of the five main centres, Auckland was warmest, Christchurch the wettest and sunniest, and Hamilton the driest. Summer temperatures were above average in all five main centres, especially in Hamilton. Rainfall was well above normal in Christchurch, but below normal in the other four, especially in Hamilton. Summer sunshine was well above normal in Dunedin, with the highest total there on record. It was near or below normal in the four other centres.

Temperature: Seasonal mean temperatures were above average throughout much of New Zealand. These were at least 1.0 °C above average in some western North Island areas, Nelson and inland South Island areas. In the east of the North Island and coastal Canterbury these were near average to 0.5°C above average.

Rainfall: Summer rainfall was less than 50 percent (half) of normal in parts of Waikato and less than 75 percent of normal in many other North Island areas, and southern New Zealand. Rainfall was above normal in parts of Northland and Canterbury, with 200 percent (double) normal around the Bay of Islands.

Sunshine: Summer sunshine hours and/or solar radiation were above normal in parts of Northland and Westland, and below normal in South Taranaki, and North Canterbury. Sunshine hours were near normal elsewhere.

For further information, please contact:

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TEMPERATURE: WELL ABOVE AVERAGE

Seasonal mean temperatures were at least 1.0 °C above average in the west from Auckland to north Taranaki, Manawatu, Nelson, Buller, North Westland, Fiordland and inland areas of the South Island. Daytime maximum temperatures were extremely warm in inland areas of the South Island, being 2°C above average, with some Central Otago locations recording their highest average maximum temperatures on record. Mean summer temperatures were between 0.5 and 1°C above average in remaining western North Island areas, and the rest of Marlborough, Otago and Southland. In the Bay of Plenty, east of the North Island, and coastal Canterbury temperatures were between 0 and 0.5°C above average. The national average temperature of 17.3°C was 0.8°C above average and the highest for summer since 1998/99.

Near or record high summer mean air temperatures were recorded at:

Location	Mean temperature	Departure from average (°C)	Records Began	Comments
Palmerston North Airport	18.8	1.6	1962	Highest
Arthurs Pass	13.9	1.6	1978	Highest
Tara Hills, Omarama	16.8	1.2	1949	2 nd highest
Alexandra	18.6	1.8	1929	Equal 3 rd highest
Clyde	17.8	1.3	1949	Equal 3 rd highest

Near or record high summer average maximum air temperatures were recorded at:

Location	Mean max. temperature	Departure from average (°C)	Records Began	Comments
Blenheim Airport	24.2	1.0	1941	4 th highest
Lake Tekapo	23.1	2.2	1927	Equal 3 rd highest
Tara Hills, Omarama	24.6	2.1	1949	3 rd highest
Manapouri, West Arm	20.4	2.2	1962	Equal 2 nd highest
Queenstown Airport	23.1	2.1	1968	Equal 1 st highest
Alexandra	26.3	3.2	1929	2 nd highest
Winton	21.5	2.0	1965	Highest

RAINFALL: BELOW NORMAL IN MOST NORTH ISLAND REGIONS AND THE SOUTH OF THE SOUTH ISLAND, ABOVE NORMAL IN NORTHLAND

Rainfall was less than 75 percent (three quarters) of normal in all North Island areas except Northland, Gisborne, parts of Hawke's Bay and Horowhenua. It was also less than 75 percent of normal in Buller, Marlborough, MacKenzie Basin, and the southern South Island. Waikato was the driest region, recording less than 50 percent (half) of their normal summer rainfall. Rainfall was at least 125 percent (one and a quarter times) of normal in parts of Northland, and around Christchurch, and 200 percent (double) normal in the Bay of Islands. Summer rainfall was between 75 percent and 100 percent (near normal) elsewhere.

Near or record low summer rainfall was recorded at:

Location	Summer 2007/08 rainfall (mm)	Percentage of normal	Year Records began	Comments
Paeroa	95	38	1914	3 rd lowest
Matamata	106	38	1966	3 rd lowest
Ruakura	103	43	1905	4 th lowest
Hamilton Airport	111	46	1935	Equal 2 nd lowest
East Taratahi	87	57	1972	3 rd lowest

Near or record high summer rainfall was recorded at:

Location	Summer 2007/08 rainfall (mm)	Percentage of normal	Year Records began	Comments
Kaikohe	638	212	1973	2 nd highest

SUNSHINE: EXTREMELY HIGH IN SOUTHERN NEW ZEALAND; EXTREMELY LOW IN THE FAR NORTH

Summer sunshine totals were extremely high in the south of the South Island with at least 130 percent of normal. Many other South Island areas recorded above normal sunshine totals as did southern and western areas of the North Island. It was especially cloudy in Northland where sunshine totals were only 80 to 85 percent of normal, the lowest on record.

Near or record high or low summer sunshine was recorded at:

Location	Summer 2007/08 sunshine (mm)	Percentage of normal	Year Records began	Comments
Dunedin	662	132	1947	Highest on record
Invercargill	716	135	1932	Highest on record
Kaitaia	529	80	1951	Lowest on record
Dargaville	515	85	1943	2 nd lowest

SUMMER CLIMATE IN THE FIVE MAIN CENTRES

Of the five main centres, Auckland was warmest, Christchurch the wettest and sunniest, and Hamilton the driest. Summer temperatures were above average in all five main centres, especially in Hamilton. Rainfall was well above normal in Christchurch, but below normal in the other four, especially in Hamilton. Summer sunshine was well above normal in Dunedin, with highest total there on record. It was near or below normal in the four other centres.

Location	Summer Mean Temp. (°C)	Dep. from normal (°C)		Summer rainfall (mm)	% of normal		Summer Sunshine (hours)	% of normal	
Auckland ^a	19.9	+0.7	Above average	176	76	Below normal	607	95	Near normal
Hamilton	19.1	+1.3	Well above average	103	43	4 th lowest	578	89	Below normal
Wellington	16.9	+0.5	Above average	178	81	Below normal	691	101	Near normal
Christchurch ^b	16.9	+0.3	Above average	188	144	Well above normal	694	107	Near normal
Dunedin	15.4	+0.6	Above average	185	86	Below normal	662	132	Highest

a Mangere, b Christchurch Airport

HIGHLIGHTS AND EXTREME EVENTS

- **Temperature**

The highest temperature was recorded in January 2008 with 34.8 °C recorded at both Timaru Airport on the 12th and Waione on the 22nd. The lowest air temperature recorded was -1.7 °C recorded at Hanmer Forest in December on the 8th. Wanaka Airport on the same day recorded its highest December temperature on record of 21.6 °C.

From the 30th December to 22nd of January, apart from two days, heat wave conditions occurred in inland and eastern areas of the South Island. At least two locations record temperatures of 30 °C or more over this period. Towards the end of this period numerous forest and scrub fires occurred. Culverden recorded its highest December temperature on record 32 °C on the 30th, Wallaceville (Upper Hutt) recorded its highest January temperature on record of 30.9 °C (records commenced in 1940) on the 21st and Palmerston North 31.8 °C on the 22nd (records commenced in 1918).

- **High rainfall producing flooding**

Periods of persistent heavy rainfall occurred on the West Coast of the South Island, with as much as 560 mm at Franz Josef between 9-17 December and 258 mm at Milford Sound between 23-30 December.

Heavy rain localised to the Kapiti District produced widespread flooding in January in Horowhenua. Over 200 mm of rain fell at Muhunua, with 320 mm at Oriwa, 140 mm at Waikanae and 120 mm at Levin in 30 hours. The floods closed State Highway 1 south of Levin, and closed several other roads. It also closed Waikanae camping ground and caused evacuations of some houses.

The remnants of ex-tropical cyclone Funa crossed the South Island on 22nd January producing 160 mm at Haparapara (Bay of Plenty), 217 mm at Little Devil (Tasman District) and 227 mm at Waiho (Westland). Makarora received 123 mm of rain which brought down a rockslide closing State Highway 6. however this brought welcome rain to Bendigo, Tarras and the Upper Clutha with 50 mm of rain.

In February a low crossed the South Island on 11/12th triggering thunderstorms with heavy rain, hail and flash flooding in the Canterbury foothills and north Canterbury. These same thunderstorms produced 64 mm at Amberley and 77 mm at Rangiora. A deluge of 23 mm in one hour occurred in Lower Hutt.

A subtropical low brought between 200 and 240 mm to the hills between Kaeo and Kaikohe on 22 and 23rd, which caused minor flooding in Kaeo.

- **Severe Soil Moisture Deficits**

By the end of January severe soil moisture deficits (more than 130 mm) had developed from Auckland to the King Country, South Taranaki, northern Manawatu, Hawke's Bay to Wairarapa, Wellington, and persisted in the South Island from Marlborough to central Canterbury. The remainder of the North Island, except Northland and Horowhenua were recording significant soil moisture deficit, as well as other northern and eastern South Island areas from Nelson through to inland Southland. The combination of the hot and dry conditions meant that dairy farmers in some areas started drying off dairy stock, with sheep farmers selling stock early. Water restrictions were imposed in Wanganui, South Taranaki and parts of the Waikato, with drought committees were formed in Southland and Canterbury.

By the end of summer severe soil moisture deficits (more than 130 mm) had persisted in the Hauraki plains, parts of the Waikato, southern Taranaki and northern Manawatu, in the east from Napier to the Wairarapa, central Marlborough, and in parts of Otago and Southland. Much of the remainder of the North Island, except Northland were recording significant soil moisture deficit, as well as Nelson, and much of Otago and Southland.

- **Strong winds**

A high wind gust of the month was 132 km/h from the northwest, recorded at South West Cape on December 30th.

Wind speeds of 158 km/hr occurred at Castlepoint, and 143 km/hr at Mt Kaukau (Wellington) from the westerly quarter. The former was the highest gust for summer. These were all caused by ex-tropical cyclone Funa, and high wind gusts brought down power lines in Canterbury, and also in the lower North Island to 16,000 homes.

During February, on the 16th strong southwesterlies with gusts of 126 km/h were recorded on Banks Peninsula. Wind speeds of 145 km/hr occurred at Cape Reinga from the north east on the 22nd. This was the highest for the month. On the same day 110 km/h occurred at Tiritiri.

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