

National Climate Summary – Winter 2004

- **Temperature:** A very warm start, followed by colder months of July and August
- **Sunshine:** Extremely sunny in the north and west of the North Island and sunnier than normal in the south and east of the South Island
- **Rainfall:** Above average in Bay of Plenty, Gisborne, and Fiordland; below average in Northland and the Kaikoura Coast

For many, winter began with a very mild June, followed by a colder frosty July and then a cold August. June was the 5th warmest on record, and the July-August national average temperature of 7.6°C (0.8°C below normal) was the lowest since 1986. Record winter sunshine occurred in parts of Northland, Auckland, Waikato and Tekapo. The season was sunnier than average throughout much of the north and west of the North Island, and the south and east of the South Island. Winter rainfall was above average for the season in Bay of Plenty (after the severe flood producing event in July), Gisborne, and Fiordland, and below average in Northland and along the Kaikoura Coast. Winter's climate was dominated by more frequent northwesterlies in June, anticyclones ("highs") in July, and extended periods of very cold southerlies in August, producing an overall pattern of stronger westerly airflow, at times, over the country.

Highlights:

- The highest winter 2004 temperature was 22.5°C, recorded at Darfield on 4 June. The lowest temperature for the season was -12.0°C, recorded at Fairlie on the 16 August.
- Significant weather events during the winter included at least three heavy hailstorms, a destructive tornado resulting in the death a woman and child in Taranaki, four damaging wind events, including the worst southerly storm to affect Wellington in over a decade on 17-18 August, at least three high rainfall-flood producing events, the worst being in eastern Bay of Plenty from 15-18 July, resulting in a state of emergency, with about 2000 people evacuated from their homes. Several periods of snowfall affecting motorists occurred on high-country roads during the winter, especially in the later half of August, with snowfall to near sea level from Southland to Canterbury on 15 August and again for several days from 22 August including sleet and hail in the south and east of the North Island.
- Of the four main centres Auckland's winter sunshine hours were the highest in over 90 years of recording. Sunshine hours were also above normal in the other three centres. Rainfall was near average in Christchurch and below average in the other three centres. Temperatures were below average in Dunedin, and near average in the other centres.

Temperature: Seasonal temperatures were average in most regions, the winter national average temperature of 8.4°C being normal.

Sunshine: Sunshine totals were above normal throughout much of the north and west of the North Island, and the south and east of the South Island, especially Northland, Auckland, and inland south Canterbury. Totals were near average elsewhere.

Rainfall: Rainfall was 125 percent (one and a quarter) of the winter average in Bay of Plenty, Gisborne, and Fiordland, and less than 75 percent (three quarters) of average in Northland and along the Kaikoura Coast. The season's rainfall was near average in other regions.

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NEAR AVERAGE TEMPERATURES

Winter for many, began with a very mild June, followed by colder than usual months of July and August, resulting in close to average temperatures for the season in many regions. Mean temperatures were about 0.5°C below average in much of Buller and Westland.

SUNNY IN MANY REGIONS, ESPECIALY NORTHLAND, AUCKLAND AND INLAND SOUTH CANTERBURY

Sunshine totals were 105-110 percent of normal throughout much of the north and west of the North Island, and the south and east of the South Island, and at least 125 percent of normal in parts of Northland, Auckland, and inland south Canterbury. Totals were near average elsewhere.

Near or record high winter sunshine hours were recorded at:

| Location | Winter sunshine (hours) | Percentage of normal | Year Records began | Comments |
|-------------------|-------------------------|----------------------|--------------------|-------------------------|
| Dargaville | 441 | 131 | 1943 | Highest |
| Auckland | 488 | 127 | 1910 | Highest |
| Hamilton, Ruakura | 440 | 122 | 1936 | 2 nd highest |
| Lake Tekapo | 502 | 141 | 1928 | Highest |

ABOVE AVERAGE RAINFALL IN BAY OF PLENTY, GISBORNE, AND FIORLAND BELOW AVERAGE RAINFALL IN NORTHLAND AND ALONG THE KAIKOURA COAST

Winter's rainfall, although highly variable by month, was close to average in many regions. Seasonal totals were 125 percent (one and a quarter) of the winter average in eastern Bay of Plenty and Gisborne (due to the mid July flood producing event), and in Fiordland, and less than 75 percent (three quarters) of average in Northland and along the Kaikoura Coast.

Near or record high winter rainfall was recorded at:

| Location | Winter rainfall (mm) | Percentage of normal | Year Records began | Comments |
|-------------------|----------------------|----------------------|--------------------|-------------------------|
| Whakatane Airport | 564 | 165 | 1975 | 4 th highest |
| Milford Sound | 1821 | 142 | 1930 | 4 th highest |
| Queenstown | 318 | 145 | 1872 | 4 th highest |
| Tiwai Point | 401 | 156 | 1970 | Highest |

Near record low winter rainfall was recorded at:

| Location | Winter rainfall (mm) | Percentage of normal | Year Records began | Comments |
|----------|----------------------|----------------------|--------------------|------------------------|
| Kaikoura | 73 | 31 | 1949 | 2 nd lowest |

WINTER'S CLIMATE IN THE FOUR MAIN CENTRES

Of the four main centres Auckland was the sunniest and Dunedin the driest. Sunshine hours were above normal in all four centres, and highest on record for Auckland. Rainfall was near average in Christchurch and below average in the other three centres. Temperatures were below average in Dunedin, and near average in the other three main centres.

| Location | Winter Mean Temp. (°C) | Dep. from normal (°C) | | Winter rainfall (mm) | % of normal | | Winter Sunshine (hours) | % of normal | |
|--------------|------------------------|-----------------------|---------------|----------------------|-------------|---------------|-------------------------|-------------|---------------|
| Auckland | 11.5 ^a | +0.1 | Near average | 305 ^b | 75 | Below average | 488 ^a | 127 | Record high |
| Wellington | 9.0 | -0.2 | Near average | 344 | 85 | Below average | 394 | 112 | Above average |
| Christchurch | 6.3 ^c | -0.1 | Near average | 187 ^c | 94 | Near average | 410 ^c | 105 | Above average |
| Dunedin | 6.8 | -0.3 | Below average | 173 | 83 | Below average | 348 | 115 | Above Average |

a Mangere b Mt. Albert c Christchurch Airport d Whenuapai

HIGHLIGHTS AND EXTREME EVENTS

Temperature

- The highest winter 2004 temperature was 22.5°C, recorded at Darfield on 4 June. The lowest temperature for the season was -12.0°C, recorded at Fairlie on the 16 August.

Hailstorms

- Heavy hailstorms occurred in Hokitika on 5 July, and southwest of New Plymouth on 7 July. Large hailstones were reported in Upper Hutt, associated with thunderstorms on 12 August.

Destructive Tornado

- A destructive tornado occurred in Taranaki on 15 August, leaving at least a 1 km path of damage, destroying a house near Waitara, and resulting in the death a woman and one child.

High winds

- High winds buffeted exposed parts of Auckland on 22 June, felling trees and lifting roof tiles. Electrical storms and thick hail also occurred in parts of the upper North Island.
- Gale southwesterlies occurred in Hawke's Bay on 29/30 June, with power cuts to 11,000 homes.
- Storm force southerlies occurred, with high seas through Cook Strait on the afternoon of 22 July, during which time the Aratere endured an 8-hour journey to Wellington.
- Storm force southerlies (mean speeds at least 89 km/h) and very high seas (averaging 9m swells, periodically up to 11m) occurred through Cook Strait and in Wellington. At Wellington Airport there were 20 hours with mean wind speeds of at least 74 km/h and gusts in excess of 100 km/h from the evening on the 17th through the 18th. The highest gust recorded was 183 km/h at Baring Head. This was the worst southerly storm to affect Wellington in more than a decade. Trees and power poles were felled, with subsequent outages, and roads were closed. Huge waves broke over southern coastal roads. Roofs were lifted and many windows blown out. Cladding was blown off an airport hangar, and some of Wellington airport roofing was lifted. All Wellington trains, flights, and ferry sailings were cancelled. Buses from the Hutt Valley were also cancelled, and several schools were closed. Thousands of commuters could not make it to work.

High rainfall

- Significant rainfall occurred in north-western districts of the South Island on 15, 18, and 20 June, with surface flooding after several days of rainfall to 21 June, closing some central North Island roads. Rainfall and flooding affected the East Cape/Gisborne region on 29 and 30 June.
- Prolonged heavy rainfall occurred in Bay of Plenty, between 15 and 18 July resulting in severe flooding, with a state of emergency in the eastern Bay of Plenty. About 2000 people were evacuated from their homes. The flooding was reported to be the worst in the district in living memory. Whakatane Airport recorded rainfall totalling 246 mm in 48-hours and Opotiki 280 mm.
- High rainfall in Fiordland and the Southern Alps from 11 to 14 August, totalling 434 mm at Milford Sound, of which 202 mm occurred on 11 August.
- High rainfall accompanied the windstorm of 17-18 August, with surface flooding in Lower Hutt and Masterton, with rainfall totalling 50-100 mm in many areas, and as much as 140 mm in the Orongorongo Ranges. There were many slips.

Snowfall

- Snowfall occurred in the central North Island on 1 June, closing the Desert Road. Further cold southwesterlies produced heavy snowfall in Central Otago, Arthur's Pass, Nelson Lakes, and the Ruapehu/Tongariro district of the central North Island on 22 June, resulting in the closure of several high country roads. Motorists were also stuck in the snow, and some Central Otago schools closed.
- The North Island's Desert Road was closed by heavy snowfall on 3 and 4 July, and several motorists had to be rescued. The Desert Road and Taupo-Napier highway were closed by further snowfall on 23 July, with many trucks, and motorists, stranded. Cold southerlies brought further snowfall down to 500 m in inland high country areas of Canterbury 28 July.
- Snow fell to low levels in the east of the South Island, from Southland to Canterbury, on 15 August, with depths to 10 cm in some inland areas, and also at the summit of the Rimutaka Hill Road north of Wellington. Dunedin Airport was closed, along with SH1 north and south of the city. Several Dunedin schools were closed.
- Snowfall resulted in the closure of many central North Island high country roads from 17-19 August, including the Napier-Taupo highway.
- Bitterly cold southerlies spread over New Zealand for several days from 22 August, with snowfall to near sea level in the east of the South Island, and sleet and hail in the south and east of the North Island, with snow closing roads near Dunedin, as well as many central North Island high country roads (20-30 cm on the Desert Road) and the Rimutaka Hill Road. Further snowfall occurred to near sea level in Canterbury on 27/28 August and as low as 300 m in the lower North Island (including the Kapiti hill country and the Orongorongo Ranges). As much as 20 cm of snowfall was reported near the summit of the Rimutaka Hill Road. Kelburn, Wellington recorded seven consecutive days from 23-29 August with maximum temperatures of 9.0°C or less, making this the longest cold spell there since July 1981. The cold spell ended with severe ground frosts about -6°C below zero in parts of Northland, Waikato and the Bay of Plenty on 29 and 30 August.

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