

National Climate Summary – September 2005

Rainfall: Below average in many regions, especially Nelson

Temperature: Above average almost everywhere

Sunshine: Sunny over much of the North Island, below average sunshine in coastal Canterbury

Snowstorm: Significant snowfall event affects the eastern South Island

September was the third consecutive month with above average temperatures. September was also drier and sunnier than normal in many regions, especially during the first two weeks and in the closing days. However, a significant very cold outbreak with snow to low levels followed by severe frost affected some areas during the third week. Rainfall was well below average in parts of Nelson. Appleby's rainfall totalled 9 mm (11 percent of normal), was the lowest September total in more than 70 years of measurement. Rainfall was less than 50 percent (half) of normal in Gisborne and Marlborough. A lack of substantial rainfall in North and Central Otago and South Canterbury (less than 25 mm for the month in some areas) resulted in a continuation of significant soil moisture deficits. Fire bans existed in parts of Canterbury and Otago at the start of the month. September was the third consecutive month with above average temperatures. The month was warmer than average almost everywhere, the national average temperature of 11.1 °C being 0.7 °C above normal. September was sunnier than average in many North Island regions south of Waikato and Bay of Plenty, inland south Canterbury and Southland. There were more anticyclones than average east of the North Island, and also south of the South Island. This pattern produced more frequent northerlies over the North Island.

Other Highlights:

The highest temperature during September 2005 was 23.6 °C recorded at Hanmer Forest on the 11th, and in Henderson, Auckland on the 12th. The lowest temperature for the month was -7.0°C, at Arthurs Pass, on the 20th.

The highest wind gust for the month was 156 km/h from the southwest, recorded at Cape Reinga on the 19th.

High rainfall totalling 338 mm was recorded at Arthur's Pass between 4 and 7 September.

A tornado struck Hokitika on the 5th, lifting a house roof, smashing windows, overturning a furniture truck, and leaving a trail of damage.

A deep depression was accompanied by high rainfall and gale force winds in parts of Northland, Bay of Plenty and Taranaki on the 18th, with a damaging tornado in Hamilton. An unseasonably cold southerly outbreak followed, with snowfall to sea level in Canterbury on the 19th. The southerlies produced hail showers in the lower North Island, and resulted in significant fresh snowfall in the central North Island mountains, and closed the Desert Road. Severe ground frosts followed in some areas over 20-21 September. Frost prevention measures occurred in many areas, including the use of helicopters, to avoid potential plant damage.

Of the four main centres Christchurch was the driest and Wellington was the sunniest. Auckland was warmer than average. Wellington was warmer, sunnier, and much drier than average. Christchurch was rather cloudy and drier than average. Dunedin was sunnier with near average rainfall and temperature.

Rainfall: Rainfall was less than 25 percent of normal rainfall in parts of Nelson, and less than 50 percent of normal in Gisborne and Marlborough. Totals were average or below average in most other regions. Scattered areas of above average rainfall (at least 125 percent of normal) occurred in isolated parts of Northland, Waikato, Wanganui, Manawatu, and Westland.

Temperature: Mean temperatures were above average almost everywhere, and almost 1.5 °C above average in parts of Otago, and 1.0 °C above average in the northern half of the North Island from Northland to Bay of Plenty, as well as Wellington, and much of the South Island.

Sunshine: Sunshine hours were at least 120 percent of average in Manawatu and Gisborne, and more than 110 percent of average in many North Island regions south of Waikato and Bay of Plenty, inland south Canterbury and Southland. In contrast, it was rather cloudy in coastal areas of Canterbury.

For further information, please contact:

**Dr Jim Salinger – Principal Scientist – Climate, NIWA National Climate Centre, Auckland,
Tel. (09) 375 2053 (work) or (027) 521 9468 (mobile)**

Stuart Burgess – Climatologist – NIWA National Climate Centre, Wellington, Tel. (04) 386 0569

BELOW AVERAGE RAINFALL IN MANY REGIONS, ESPECIALLY NELSON

Rainfall was less than 25 percent of normal rainfall in parts of Nelson, less than 50 percent of normal in Gisborne, Marlborough, and less than 75 percent (three quarters) of normal in much of Coromandel, Bay of Plenty, Hawke's Bay, Wairarapa, Kapiti, Wellington, Buller, south Canterbury, and Central Otago. Scattered areas of above average rainfall (at least 125 percent of normal) occurred in isolated parts of Northland, Waikato, Wanganui, Manawatu, and Westland. Rainfall was near normal elsewhere.

Near or record low September rainfall was recorded at:

| Location | September Rainfall (mm) | Percentage Of normal | Year records began | Comments |
|-------------------|-------------------------|----------------------|--------------------|------------------------|
| Takaka | 51 | 25 | 1986 | Lowest |
| Motueka | 23 | 20 | 1943 | Lowest |
| Appleby | 9 | 11 | 1932 | Lowest |
| Blenheim Research | 19 | 30 | 1985 | 2 nd lowest |

ABOVE AVERAGE TEMPERATURES

Mean temperatures were almost 1.5 °C above average in parts of Otago, 1.0 °C above average in the northern half of the North Island from Northland to Bay of Plenty, as well as Wellington, and much of the South Island. Temperatures were 0.5 °C above average in other North Island regions, as well as Buller, Canterbury, and coastal Otago. The national average temperature was 11.1°C, 0.7°C above average.

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

| Location | Mean temperature | Departure from average (°C) | Records Began | Comments |
|--------------------------|------------------|-----------------------------|---------------|-------------------------------------|
| Whakatane Airport | 12.5 | +1.3 | 1975 | 2 nd highest 122 128 129 |
| Motu | 9.7 | +1.6 | 1991 | 2 nd highest |
| Wellington, Kelburn | 11.9 | +1.3 | 1928 | 3 rd highest |
| Stratford | 10.7 | +1.3 | 1960 | 3 rd equal highest |
| Wanganui, Spriggens Park | 13.0 | +1.3 | 1937 | 3 rd highest |
| Farewell Spit | 12.8 | +1.5 | 1971 | Equal highest |
| Motueka, Riwaka | 11.3 | +1.2 | 1956 | 2 nd highest |
| Wanaka Airport | 9.8 | +1.4 | 1992 | Highest |
| Invercargill Airport | 9.6 | +1.2 | 1948 | 3 rd equal highest |

VERY SUNNY IN MANAWATU AND GISBORNE, BELOW AVERAGE TOTALS IN COASTAL CANTERBURY

Sunshine hours were at least 120 percent of average in Manawatu and Gisborne, and more than 110 percent of average in other western North Island regions from Taranaki to Wellington, the east of the North Island from Hawke's Bay to Wairarapa, and inland south Canterbury, coastal Otago and Southland. It was cloudier than normal in the Southern Lakes, and coastal areas of Canterbury.

Near or record September sunshine hours were recorded at:

| Location | September sunshine (hours) | Percentage of normal | Year Records began | Comments |
|----------------------|----------------------------|----------------------|--------------------|-------------------------|
| Gisborne Airport | 218 | 126 | 1905 | Well above average |
| Palmerston North | 194 | 162 | 1930 | 3 rd highest |
| Christchurch Airport | 108 | 65 | 1949 | 2 nd lowest |

SEPTEMBER'S CLIMATE IN THE FOUR MAIN CENTRES

Of the four main centres Christchurch was the driest, while Wellington was the sunniest. Rainfall was below average in Christchurch and Wellington, and near average in Auckland and Dunedin. Temperatures were above average in Auckland and Wellington, and near average in Christchurch and Dunedin. Sunshine hours were above average in Wellington, below average in Christchurch, and near average in Auckland and Dunedin.

| Location | Sept. Mean Temp. (°C) | Dep. from normal (°C) | | Sept. rainfall (mm) | % of normal | | Sept. Sunshine (hours) | % of Normal | |
|--------------|-----------------------|-----------------------|--------------------|---------------------|-------------|--------------------|------------------------|-------------|--------------------|
| Auckland | 13.7 ^a | +0.8 | Above average | 98 ^b | 84 | Near average | 150 ^a | 100 | Average |
| Wellington | 11.9 | +1.3 | Well above average | 50 | 50 | Well below average | 185 | 119 | Above average |
| Christchurch | 9.3 ^c | 0.0 | Average | 36 ^c | 78 | Below average | 108 | 65 | Well below Average |
| Dunedin | 9.5 | +0.3 | Near average | 48 | 89 | Near average | 144 | 112 | Above average |

a Mangere b Mt Albert c Christchurch Airport

HIGHLIGHTS AND EXTREME EVENTS

Temperature

The highest temperature during September 2005 was 23.6 °C recorded at Hanmer Forest on the 11th, and in Henderson, Auckland on the 12th. The lowest temperature for the month was -7.0°C at Arthurs Pass on the 20th.

Near or record September air temperatures were recorded at:

| Location | Maximum temperature °C | Date of occurrence | Year Records began | Comments |
|---------------------|------------------------|--------------------|--------------------|----------|
| Auckland, Henderson | 23.3 | 12 th | 1986 | Highest |

Rainfall

High rainfall totalling 338 mm was recorded at Arthurs Pass between 4 and 7 September.

High winds

The highest wind gust for the month was 156 km/h from the southwest, recorded at Cape Reinga on the 19th. A tornado struck Hokitika at 12.30am on the 5th, lifting a house roof, smashing windows, overturning a furniture truck, and leaving a trail of damage.

Fog

Flights were cancelled for several hours due to fog in Auckland on the 2nd.

Significant snowfall and severe frosts

A depression which had intensified over the Tasman Sea tracked over the lower North Island (with central pressures below 970 hPa) on the 18th. This was accompanied by rainfall totalling 50-80 in parts of Northland, Bay of Plenty and Taranaki, along with gale force winds. In Hamilton a tornado damaged several roofs and felled trees. An unseasonably cold southerly outbreak followed, with snowfall to sea level in Canterbury on the 19th. The snowfall resulted in the closure of Christchurch Airport, along with schools and universities, with snow depths of 5-10 cm reported in the region. Power cuts also occurred. The maximum air temperature at the airport was only 4.8 °C on 19 September, the lowest there in September in records that commenced in 1954. The southerlies produced hail showers in the lower North Island, and resulted in significant fresh snowfall in the central North Island mountains, and closed the Desert Road. In Canterbury, hundreds of newborn lambs died in the cold. Snowfall depths of 10 cm were reported in the Queenstown district. With 25 cm of new snow, Coronet Peak ski field was able to reopen after having closed early on 12 September. Further south, snow lay briefly in Alexandra on the 19th. The cold southerlies were followed by severe ground frosts (grass minimum temperature - 6.0 °C or lower) in the central North Island, Hawke's Bay, Manawatu, Kapiti, Wellington, Nelson, inland areas of Buller and Marlborough, Canterbury, Otago and Southland over 20-21 September. Further severe ground frost was measured in Otago on 24 September. Frost prevention measures, including the use of helicopters, were taken to avoid potential plant damage, especially in Marlborough and Hawke's Bay.

For further information, please contact:

**Dr Jim Salinger – Principal Scientist – Climate, NIWA National Climate Centre, Auckland,
Tel. (09) 375 2053 (work) or (027) 521 9468 (mobile)**

**Stuart Burgess – Climatologist – NIWA National Climate Centre, Wellington, Tel. (04) 386 0569,
or Geoff Baird, NIWA Communications Manager Tel. (04) 385-0543 or (027) 229 6314.**

www.niwa.co.nz/ncc

Copyright NIWA 2005. All rights reserved.