NEW ZEALAND NATIONAL CLIMATE SUMMARY - *THE YEAR 2006*

2006: SEVERE WINTER SNOWSTORMS; FLOODS, WIND STORMS, DESTRUCTIVE TORNADOES; VARIABLE TEMPERATURES, YET SUNNY OVERALL

Erratic and sometimes extreme, New Zealand's climate for 2006 will probably be most remembered for one of the severest winter snowstorms in decades, a very windy spring, and a cold start to summer late in the year. So it may surprise people to hear that 2006 was also very sunny in the southeast of the South Island, and generally sunny in many other regions.

"The year was marked by too little rain in some places and too much in others", says NIWA Principal scientist Dr Jim Salinger. Extreme climatic events continued, with severe snowstorms, floods, destructive tornadoes, and windstorms. Excessive winter rainfall produced severe flooding in the Wairarapa, but it was very dry for the year in Otago. Of the main centres, Dunedin was dry and sunny, while Wellington and Christchurch were very wet.

"The year saw a swing from a La Niña to an El Niño climate pattern. The first quarter of the year was dominated by weak La Niña-like characteristics in the equatorial Pacific, and frequent troughs of low pressure often over New Zealand. From September onwards weak–moderate El Niño conditions in the tropical Pacific had developed, with a noticeable increase in windiness, and more frequent south westerlies than normal over the country."

"There were numerous heavy rainfall events during 2006, about 18 of which produced floods. Notable snowfall events occurred on nine occasions, mainly in high country areas from mid-autumn to late winter, with ski areas having an extended season. Other climate extremes included a summer heat-wave, four tornado incidents, three severe hailstorms, and many damaging windstorms", said Dr Salinger.

The year in review

The year began with significant soil moisture deficits in the north and east of the North Island and eastern South Island, which persisted in these regions until March. A 3-day heat wave in Central Otago with temperatures reaching 36°C occurred at the end of January.

March was cold, and an ex-tropical cyclone produced high rainfall in the north of the North Island.

Flood-producing rainfall events occurred in north and east Otago and in the Hauraki-Coromandel region during April. As a result the month's rainfall was very high in these regions. Rainfall in north and east Otago totalled 300–400 percent (three to four times) of normal, and totals in the Hauraki-Coromandel region were at least 200 percent (two times) of normal. It was the 8th warmest April on record. May produced well above average rainfall in the north of the North Island, and east of the South Island, with low rainfall in parts of the south of the South Island.

Two severe winter snowstorms accompanied by bitterly cold conditions, and later heavy frost contributed to a particularly cold June. Temperatures were 2°C below average in some regions. It was much sunnier than normal in all western and southern regions, with record high June totals in the north of the North Island, and coastal Otago.

In contrast, July was warmer than June, going against the usual trend. It was very wet in the south and west of the North Island, with twice the normal rainfall in Wairarapa with flooding. July was

rather settled in other areas with rainfall totals a mere 25 percent (a quarter) to 50 percent (half) or less of normal in the north of the North Island and Otago.

High rainfall continued in August in the south and west of the North Island, but it was dry in much of the South Island, and extremely sunny in the south.

September was a month of climate extremes with record low rainfall and high mean temperatures at many locations. Rainfall was low throughout much of New Zealand, especially in the east with some locations recording 10 percent (one tenth) or less of normal rainfall. In some areas temperatures were 2°C above average, with windy conditions in the south.

It was windier than usual over most of the South Island and southern half of the North Island in October with several locations in Marlborough and Otago recorded their windiest October in over a decade.

November produced stormy westerlies over the South Island: it was particularly warm in the east of the North Island, yet cold in the southwest of the South Island. Significant soil moisture deficits existed in Northland and central Marlborough by the end of the year. December ended the year on a cool note, with one of the coldest Decembers in the last 60 years.

Significant extremes

The most significant extreme event of the year was the winter snowfall event over the night of 11/12 June in Canterbury, especially in the south, with snow settling to sea level. This was severe with snow settling to depths of 75-90cm around Fairlie and Burkes Pass, almost 40cm in Ashburton, and more than 20cm in Timaru, some remaining in some inland areas until the 27th. Extended power cuts occurred throughout much of South Canterbury, due to broken power lines and poles. The roofs of several buildings also collapsed, due to the weight of snow. Many motorists were stranded in the snow, and many roads closed.

The worst flooding events during 2006 were those of 25/26 April in Otago and 4-6 July in Wairarapa. In the Otago flood, rivers ran extremely high, and much of the Taieri Plains including Mosgiel were flooded, with some evacuations. Flood waters also affected the towns of Oamaru and Waitati. The Wairarapa flood occurred during a three day period of high rainfall, also affecting Wanganui and Wellington. This resulted in high rivers and severe surface flooding throughout much of southern Wairarapa, with substantial landslips in parts of Wanganui and Wellington. There were evacuations in parts of southern Wairarapa. Martinborough was isolated by the floodwaters, with surface flooding in Greytown and Carterton. Many roads were closed by flooding or landslips. In the Wanganui region, the settlement of Mangamahu was isolated by the collapse of a river bridge (with damages estimated at $10 million). 125 people were evacuated from Whangaehu, and Turakina.

Windstorms occurred on 13 separate occasions, and in October days with strong gusty winds were more frequent than average over much of the South Island and over the southern North Island, especially in the east, with near or record number of windy days (gusts to at least 60 km/h). Four tornadoes were reported, one damaging 20 houses in Greymouth.

Records for the year

NIWA analyses of month-by-month records and preliminary end of year data show:

The highest annual mean temperature recorded for the year was 15.8 °C recorded at Kaitaia.

The highest recorded extreme temperature of the year occurred during a heat-wave in Central Otago toward the end of January. Alexandra recorded maximum temperatures of 36 °C for three consecutive days from the 27-29th (unheard of in their historical record, commencing in 1930).

The lowest air temperature for the year was -14.0 °C recorded at both Tara Hills, Omarama on 14 June and Fairlie on 28 June. The minimum air temperatures were –10 °C or lower in parts in inland South Canterbury and/or North Otago, on nine days between 14 and 29 June.

April was the warmest since 1978.

June was the equal coldest (with 1992) since 1972.

September was the 3rd warmest on record.

December was one of the coldest since 1945, approximately equal with Decembers 1946 and 2004.

The highest recorded wind gust for the year was 180 km/h was recorded from the northwest, at Southwest Cape (Stewart Island) on 2 September, a new record for a wind gust at that site. Mean wind speeds reached 128 km/h.

The driest rainfall recording locations were Alexandra in central Otago with 266 mm of rain for the year, followed by Clyde with 286 mm.

Of the regularly reporting gauges, the Cropp River gauge in Westland, inland in the headwaters of the Hokitika River, recorded the highest rainfall with a 2006 annual total of 11370 mm.

Dunedin was easily the driest of the five main centres with 641 mm and Wellington the wettest with 1579 mm. Hamilton received 1155 mm, Auckland 1263 mm, and Christchurch 884 mm.

Nelson was the sunniest centre in 2006, recording 2580 hours, followed by Blenheim with 2528 hours, and Tauranga with 2507 hours. Auckland was the sunniest of the five main centres with 2189 sunshine hours, followed closely by Christchurch (2169 hours), and Wellington (2159 hours). Dunedin recorded 1960 hours, and Hamilton 1996 hours.

For further information, please contact:
Dr Jim Salinger, NIWA National Climate Centre - Auckland, Tel (09) 375 2053 (Business) or (Mobile) 027 521 9468; or Stuart Burgess – Climatologist, NIWA National Climate Centre, Wellington Tel. (04) 386 0569

PREVAILING CLIMATE PATTERNS – A CHANGE FROM LA NIÑA LIKE CONDITIONS EARLY IN THE YEAR TO AN EL NIÑO IN SPRING WITH MORE SOUTHWESTERLIES

The weak La Niña-like characteristics that occurred in the equatorial Pacific during the first quarter of the year were accompanied by more frequent troughs of low pressure over New Zealand from January to May. From September onwards a weak-moderate El Niño had developed and persisted for the remainder of the year. It was noticeably windy over New Zealand, with winds being were much more frequent from the southwest during the second half of the year. The overall mean sea level pressure pattern for 2006 showed more frequent winds from the southwest over the whole of New Zealand, along with troughs of low pressure to the south east of the country. Warmer than normal sea temperatures around New Zealand disappeared over winter, and were much cooler than normal at the end of the year.

WELL BELOW NORMAL RAINFALL IN PARTS OF OTAGO, HIGH RAINFALL IN WAIRARAPA, WANGANUI, WELLINGTON, AND CANTERBURY

2006 was much drier than average (with totals less than 75 percent of normal) throughout parts of Central Otago and the Awatere Valley in Marlborough; Clyde in Central Otago recording its driest year in more than 20 years, with only 286 mm for the year. Rainfall was also below average (75 to 90 percent of normal) in parts of Northland, Coromandel, North Taranaki, Buller, Nelson, Marlborough, north and east Otago, and South Westland. However, rainfall was well above average (at least 125 percent of normal) in parts of Wairarapa, Wanganui, Wellington, and Canterbury, and at least 110 percent of normal in Taupo, Manawatu, Kapiti, North Westland, and coastal areas of Southland. Wellington recorded its wettest year since the late 1970s. Rainfall was near normal elsewhere.

Extremely low annual rainfall, for the year 2006, was measured at:

Location	2006 rainfall (mm)	Percentage of normal	Year records began	Comments
Awatere Valley	486	73	2001	Well below normal
Clyde	286	69	1984	Lowest
Raoul Island	948	61	1938	3rd lowest

High annual rainfall, for the year 2006, was measured at:

Location	2006 rainfall (mm)	Percentage of normal	Year records began	Comments
East Taratahi	1150	137	1973	2nd highest
Wellington, Kelburn	1579	126	1900	Highest since 1642 mm in 1979
Wanganui, Spriggens Park	1149	130	1890	Well above normal
Christchurch, Gardens	884	135	1864	Highest since 993 mm in 1986

Alexandra, in Central Otago, was the driest of the sites where NIWA records rainfall, with only 266 mm (73% of average), followed by Clyde with 286 mm (69% of average). Of the regularly reporting rainfall stations, the wettest location in 2006, for which rainfall data are presently available was the Cropp River gauge in Westland, inland in the headwaters of the Hokitika River, with an annual total of 11370 mm. Milford Sound's rainfall totalled 6853 mm (101% of average).

Of the five main centres, Dunedin was the driest with 641 mm (80 % of average) and Wellington the wettest with 1579 mm (126 % of average). Hamilton received 1155 mm (99 % of average), Auckland 1263 mm (102% of average), and Christchurch 884 mm (135 % of average).

2006 TEMPERATURES: ABOVE NORMAL IN THE NORTHEAST OF BOTH ISLANDS,

BELOW NORMAL IN MANY INLAND AREAS

The national average temperature in 2006 was 12.4 °C, 0.2 °C below the 1971 – 2000 normal. Thus, 2006 ended up very close to the 1971-2000 normal, as a consequence of very warm months (April, September) offsetting some very cold months (March, June, December).

Temperatures were above normal (by about 0.3 °C) in the northeast of both islands, in regions like Gisborne, as well as parts of Marlborough and Nelson. However, they were at least 0.5 °C below average in inland South Canterbury and parts of King Country, and at least 0.3 °C below average in parts of Northland, Wairarapa, Buller, Westland, Otago, and inland areas of Southland. The warmest local was Kaitaia, with a mean temperature for the year of 15.8 °C (0.2 °C above normal).

For New Zealand as a whole, there were three warmer than normal months (April, May, and September), and three cooler than normal months (March, June, and December). All other months had mean temperatures close to the climatological average. March with a mean temperature of 14.2°C (1.5 °C below normal) was the coldest since 1992, April with 14.6 °C (1.2 °C above normal) was the warmest since 1981, June with 7.3 °C (1.2 °C below normal) was coldest since 1972, and September with 11.6 °C (1.2 °C above normal) was the warmest since 1988, and 3rd warmest nationally since reliable records commenced in the 1860s. December was the coolest since 2004 (1.9°C below normal) and one of the coldest in the last 60 years.

MORE SUNSHINE THAN NORMAL OVER MUCH OF THE SOUTH ISLAND AND IN THE NORTH EAST OF THE NORTH ISLAND

Sunshine hours were more than 110 percent of normal in Bay of Plenty, Southland, coastal Otago, and inland South Canterbury, with Invercargill recording its sunniest year on record. Totals were at least 105 percent of normal in many South Island regions, as well as Northland, Auckland, and Gisborne. Sunshine hours were near normal elsewhere. Nelson was the sunniest centre in 2006, recording 2580 hours, followed by Blenheim with 2528 hours, and then Tauranga with 2507 hours.

Near or record high sunshine hours for the year 2006 were:

Location	2006 Sunshine (hours)	Normal (hours)	Departure from normal	Records Began	Comments
Kaitaia Observatory	2264	2098	+8%	1985	2nd highest
Tauranga Airport	2507	2250	+11%	1932	2nd highest
Dunedin	1960	1592	+23%	1948	2nd highest
Invercargill	1853	1609	+15%	1932	Highest on record
Hokitika Airport	2036	1860	+9%	1964	3rd highest

2006 CLIMATE IN THE FIVE MAIN CENTRES

Dunedin was by far the driest, and Wellington easily the wettest. Dunedin was the coldest, and Auckland the sunniest of the main centres. Rainfall was below average in Dunedin, well above average in Wellington and Christchurch, and near average in the other main centres. Temperatures were below average in Wellington, and near average in the other main centres. Sunshine totals were near average in Hamilton, and above average in the other main centres. Dunedin recorded its 2nd sunniest year on record.

2006 climatological statistics for the five main centres:

Location	2006 Mean Temp. (°C)	Dep. from normal (°C)		2006 rainfall (mm)	% of normal		2006 Sunshine (hours)	% of normal	
Auckland	15.1	-0.2	Near normal	1263[a]	102	Near normal	2189	109	Above normal
Hamilton	13.5	-0.2	Near normal	1155	99	Near normal	1996	100	Near normal
Wellington	12.5	-0.3	Below normal	1579	126	Well above normal	2159	105	Above normal
Christchurch	12.0	-0.2	Near normal	884	135	Well above normal	2169[b]	103	Above normal
Dunedin	11.1	0.0	Near normal	641	80	Below normal	1960	123	2nd highest

[a] *Owairaka* [b] *Christchurch Airport*

For further information, please contact:
Dr Jim Salinger, NIWA - Auckland,
Tel (09) 375 2053 (Business) or (027) 521 9468 (Mobile)
Stuart Burgess – Climatologist, NIWA National Climate Centre, Wellington Tel. (04) 386 0569

© Copyright NIWA 2007. All rights reserved.
Acknowledgement of NIWA as the source is required.

SIGNIFICANT WEATHER AND CLIMATE EVENTS - 2006

FLOODS AND HIGH RAINFALL

There were numerous heavy rainfall events during 2006, about 18 of which produced floods. Most of the rainfall events that produced flooding are listed below. The worst flooding events during 2006 were those of 25/26 April in Otago and 4-6 July in Wairarapa.

- **24/25 January**

A depression of tropical origin produced substantial rainfall in Northland, Coromandel, Waikato, Bay of Plenty, and Nelson over 24-25 January, with at least 50 mm in many areas. Higher rainfall, totalling 140 mm was recorded at Rotorua Airport over the 24 hour period to 9am on the 25th, and reports of 260 mm in 14 hours were noted in the Coromandel Peninsula. Surface flooding, although not severe, occurred throughout these regions, creating hazardous driving conditions for motorists.

- **29 January**

Further high rainfall, totalling 74 mm, was recorded at Taupo Airport in the 24 hours to 9am on the 29th. The same weather system produced 66 mm of rainfall in Rotorua in the 3-hours from 9pm, and 32 mm in the hour to 11pm on the 28th, along with a severe thunderstorm, and surface flooding throughout the district.

- **11 February**

High rainfall, totalling 182 mm and 125 mm, was recorded at Whakatane Airport and Rotorua Airport respectively, in the 48 hours to 9am on the 11th. SH2 at Matata was closed due to slips and surface flooding. Major flooding occurred on farmland around Awakeri and Taneatua.

- **18 April**

Thunderstorms produced high rainfall in Papakura, Auckland at about noon on the 18th, with about 30 people having to evacuate their homes due to flooding.

- **25/26 and 27/28 April**

Severe flooding occurred during high rainfall over the 25/26th in North and East Otago. Rivers ran extremely high throughout the region. Much of the Taieri Plains including Mosgiel were flooded, with some evacuations. The towns of Oamaru and Waitati were also flooded. Many motorists were stranded overnight in their cars. High rainfall, totalling 123 mm and 128 mm was recorded at Dunedin Airport and in Oamaru in the 24 hours to 9am on the 26th. Thunderstorms with high intensity rainfall and flooding occurred in the Hauraki/Coromandel and Auckland regions over the 27/28th. Floodwaters resulted in the closure of the Karangahake Gorge Road between Paeroa and Waihi, and SH26 between Pareoa and Te Aroha. Several motorists were stranded in their cars. Water was as much as 1 m deep in Whangamata, and Pauanui was cut off. Several schools were closed. Parts of North Shore, Auckland were also affected by flooding. Rainfall, totalling 116 mm was recorded at Paeroa in the 24 hours to 9am on the 28th.

- **2 May**

High rainfall occurred on 2 May, with surface flooding occurred in Raupunga and Mohaka, Hawke's Bay. Surface flooding in Auckland, and the Napier-Gisborne and Napier to Taupo roads were closed by slips.Substantial surface flooding occurred on the 6th in Silverdale, north of Auckland.

- **12 May**

On 12 May, rainfall totalled more than 60 mm in Hoon Hay (Christchurch), and 66 mm in Lyttelton. Heavy rainfall and surface flooding occurred in Christchurch, with some rivers (including the Heathcote) bursting their banks. Accumulated autumn leaves also blocked drains. Heavy rainfall on 22 May resulted in surface flooding in the Tasman district.

- **11/12 and 18 June**

On 11 June 20 houses were evacuated due to flooding in Runanga north of Greymouth on 11 June. Flooding also occurred in Brunner and Dobson. Rainfall totalled 145 mm in Greymouth. Surface flooding occurred in Christchurch city on the 12th. Heavy rain with surface flooding occurred in Paraparaumu on the 18th, rainfall totalling 15 mm in 20 minutes.

- **4-6 July**

High rainfall totalling 100 to 160 mm or more over 3-days occurred throughout Wairarapa, Wanganui, and Wellington during 4-6 July. This resulted in high rivers and severe surface flooding throughout much of southern Wairarapa, along with substantial landslips in parts of the Wanganui and Wellington regions. 100 mm was reported within 24 hours in parts of South Wairarapa, where people had to be evacuated from their homes. Martinborough was isolated by the floodwaters, and surface flooding also affected Greytown and Carterton. In Wairarapa, more than 50 roads were closed due to flooding or landslips. In Wellington, a landslip occurred on SH2 affecting traffic between the city and the Hutt Valley. The settlement of Mangamahu (northeast of Wanganui) was isolated by the collapse of the Mangawhero river bridge (damages estimated at $10 million) following the high rainfall. 125 people were evacuated from Whangaehu, and Turakina. A house in Wanganui was hit by a landslide, with two others later affected in Hunterville. In Taranaki SH45 was closed due to surface flooding.

- **8 and 25 August**

Surface flooding occurred in Wellsford, Northland on 6 August, and 8 August in Christchurch after 3 days of rainfall causing the Heathcote River to burst its banks. A major landslip occurred in Kelson, Wellington on the 8th, with another near in Oriental Parade, Wellington on the 16th. Flooding occurred in Makara, Wellington on the 25th, with further landslips in some areas.

- **1 October**

On 1 October, heavy rainfall with widespread surface flooding occurred, with as much as 50 mm in an hour in parts of Auckland City, and 70-110 mm in 24 hours throughout much of the region.

- **3 October**

Torrential rainfall occurred in parts of Wairarapa, especially north of Carterton on 3 October, with surface flooding throughout the Masterton District, and rainfall totalling 65 mm in 90 minutes. More than 25 mm was reported within 30 minutes near Mauriceville on the 3rd, with large landslips in the area, and the approach to a rail bridge washed out.

- **November**

Heavy alpine rainfalls (over 200 mm) on 13 November brought a number of large South Island rivers (e.g. Waimakariri, Rakaia, Rangitata) to their highest flows in over ten years. By the end of the month hydroelectric power storages were at their highest levels for several years and Lake Wakatipu was on the verge of flooding Queenstown.

- **29 December**

High rainfall (83 mm) produced flooding in parts of Ashburton.

NEAR OR RECORD HIGH MONTHLY RAINFALL

Locations that experienced near or record high monthly rainfall at various times during the year were:

Location	Rainfall (mm)	Percentage of normal for the month	Year Records began	Comments
January				
Taupo Airport	161	204	1962	2nd highest
February				
Whakatane Airport	220	297	1975	3rd highest
March				
Cape Reinga	174	267	1920	3rd highest
Kaikohe	233	218	1973	3rd highest
Mahia	200	271	1992	Highest
April				
Warkworth	227	202	1972	Highest
Whangaparaoa	191	243	1987	Highest
Auckland, Henderson	217	228	1986	Highest
Pareoa	284	257	1914	3rd highest
Rotorua Airport	231	200	1964	3rd highest
Taupo Airport	151	204	1976	Highest

Hokitika	540	217	1866	2nd highest
Reefton	373	231	1904	3rd highest
Oamaru Airport	134	299	1941	2nd highest
Dunedin Airport	164	364	1963	2nd highest
May				
Auckland Airport	191	209	1962	3rd highest
July				
Wellington Airport	206	182	1960	2nd highest
Waiouru MWD	194	182	1950	2nd highest
Wanganui, Spriggens Pk.	176	200	1890	3rd highest
October				
Auckland, Henderson	214	194	1986	2nd highest
Auckland, Mangere	192	222	1959	Highest
Auckland Airport	158	187	1962	3rd highest
Pukekohe	178	177	1969	3rd highest
East Taratahi	166	247	1972	Highest
Palmerston North Airport	172	220	1943	2nd highest
November				
Motu	329	207	1990	Highest
Paraparaumu Airport	195	238	1945	2nd highest
Wallaceville	226	220	1924	3rd highest
Reefton	351	201	1960	3rd highest
Arthurs Pass	1013	240	1906	3rd highest
Winchmore	120	221	1947	3rd highest
Wanaka Airport	122	238	1992	Highest
Queenstown Airport	137	249	1968	3rd highest
Lauder	91	197	1942	Equal 3rd highest
Clyde	73	261	1983	2nd highest
Invercargill Airport	162	199	1940	Equal 3rd highest
December				
Winchmore	147	244	1947	3rd highest
Middlemarch	128	187	2000	Highest

LOW SOIL MOISTURE LEVELS AND RECORD LOW MONTHLY RAINFALL

January
Significant soil moisture deficits developed in northern and eastern regions of both Islands until a depression of tropical origin produced substantial rainfall during 24-25 January. However, the high rainfall did not affect the southern and eastern South Island, and significant soil moisture deficits persisted in parts of Canterbury and Central Otago, as well as Manawatu, Wellington, and Wairarapa.

February
Significant soil moisture deficits redeveloped in Northland, Auckland, and Gisborne, and persisted in Canterbury, Central Otago, and Manawatu.

March
Significant soil moisture deficits persisted during the first three weeks the month in Northland, Auckland, and Gisborne, and continued for the rest of the month in Wanganui, Manawatu, Nelson, and the east of the South Island from Canterbury to Central Otago.

September
Spring commenced with rainfall totalling 10 mm or less in parts of Marlborough, Canterbury, and Otago. The low rainfall resulted in the development of significant soil moisture deficits (110-130 mm) in Central Otago. Soil moisture deficits, although not major, also existed as far north as Marlborough.

October
Low rainfall in the southern South Island resulted in continued significant soil moisture deficits in parts of North and Central Otago. Soil moisture deficits, although not major, also existed in South Canterbury, Marlborough, and central Hawke's Bay.

November
Rainfall was less than 50 percent (half) of normal in eastern Northland, and Gisborne. The low rainfall in Gisborne and below normal rainfall in Hawke's Bay resulted in severe soil moisture deficits (more than 130 mm) there. Significant soil moisture deficits (more than 110 mm) also existed in eastern Northland, Bay of Plenty, central Marlborough, and Otago.

December
Significant soil moisture deficits (more than 110 mm) persisted in eastern Northland, Bay of Plenty, Gisborne, Hawke's Bay, central Marlborough, and Otago, and spread to Nelson.

Many locations measured unusually low rainfall at various times during the year. These were:

Location	Rainfall (mm)	Percentage of normal	Year records began	Comments
February				
Cape Reinga	7	11	1920	Lowest since 1946 (8 mm)
Kaitaia Obs.	13	17	1986	Lowest
Kaikohe	15	17	1973	Lowest
Dargaville	6	9	1905	Lowest since 1950 (6 mm)
Whangarei Airport	15	16	1937	Lowest since 1973 (6 mm)
Mokohinau Is.	5	11	1935	2nd lowest
Auckland, Henderson	10	16	1986	Lowest
Auckland, Mangere	5	7	1959	Lowest
Auckland Airport	7	10	1963	Lowest
Pukekohe	6	8	1970	Lowest
March				
Ranfurly	3	8	1975	Lowest
May				
Dunedin Airport	23	39	1963	Equal 3rd lowest
July				
Kerikeri EWS	64	36	1982	2nd lowest
Kaikohe	53	31	1986	2nd lowest
Whangarei Airport	33	21	1937	2nd lowest
Warkworth	57	31	1972	2nd lowest
Middlemarch	5	14	2001	Lowest
September				
Kerikeri EWS	43	24	1982	Lowest
Kerikeri Airport	47	29	1978	Lowest
Te Puke	53	39	1973	Lowest
Rotorua Airport	41	35	1964	2nd lowest
Taupo Airport	24	29	1976	2nd lowest
Pukekohe	42	36	1970	Lowest
Hamilton, Ruakura	21	20	1906	Lowest
Hamilton Airport	28	26	1935	Lowest
East Taratahi	17	25	1972	2nd lowest
Wellington Airport	25	31	1960	3rd lowest
Waiuoru MWD	32	36	1950	2nd lowest
Motueka, Riwaka	23	20	1943	Equal 2nd lowest
Nelson Airport	21	30	1941	Equal 3rd lowest
Nelson, Appleby	11	15	1932	2nd lowest
Blenheim Research	7	14	1929	3rd lowest
Blenheim Airport	10	15	1941	Equal 2nd lowest
Winchmore	11	21	1947	Equal 3rd lowest
Darfield	9	15	1920	Equal lowest
Christchurch Airport	4	8	1944	2nd lowest
Lincoln, Broadfield	3	7	1881	Equal 2nd lowest
Le Bons Bay	10	16	1987	Lowest
Ranfurly	5	19	2000	Lowest
Chatham Islands	17	24	1951	Lowest
November				
Raoul Island	3	3	1937	2nd lowest
December				
Kerikeri Airport	34	28	1978	2nd lowest

SNOWFALL

There were many snowfall events from mid autumn through late winter, with ski areas having an extended season. The 11/12 June occurrence to sea level in Canterbury was a very notable event.

- **25/26 April**

Heavy snowfall (40 cm) occurred on the Remarkable's in West Otago, with 20 cm on Coronet Peak and Cardrona. Linda's Pass was closed due to snowfall.

- **14-15 May**

Wintry conditions occurred with a cold southerly outbreak during 14-15 May. Snowfall occurred to 400-500 metres in Southland and Otago. In Canterbury, snowfall closed Burkes Pass SH8 with several vehicles stranded. Snowfall also occurred on SH94 between Te Anau and Milford, as well as the Cashmere Hills. In the North Island, snowfall closed the Desert Road, with depths of 15 cm at altitudes of 800 m above mean sea level. In Canterbury, Mt. Hutt received about 10 cm of fresh snow. Gale force southerlies produced 6 m swells through Cook Strait, and hail lay on the ground in parts of Auckland. The Desert Road remained closed until 16 May.

- **5 June**

Snow settled at the summit of the Rimutaka Hill Road, north of Wellington, to depths of several cm on 5 June, and down to about 600 m elsewhere in the region. Meanwhile, 15 cm of fresh snow settled at Mt. Hutt Skifield further south.

- **11/12 June**

A severe, widespread heavy snowfall event occurred in Canterbury over the night of 11/12 June, especially in the south, snow settling to depths of 75-90cm around Fairlie and Burkes Pass, almost 40cm in Ashburton and Darfield, and more than 20cm in Timaru, some remaining in some inland areas until the 27th. Extended power cuts occurred throughout much of South Canterbury (affecting thousands of people), due to broken power lines and poles. The roofs of several buildings also collapsed, due to the weight of snow. Many motorists were stranded in the snow, and many roads closed.

- **20-22 June**

Southerlies spread over the North Island over 20-22 June, bringing heavy snowfall down to 500 m, affecting the Desert Road, and townships of Waiouru (15 cm), Ohakune, National Park, and the outskirts of Taupo, with many roads closed, including those to the east coast. Two buses slid off icy roads in the Central North Island, and nearly 100 cars were stranded in the snow.

- **4-6 July**

Cold southerlies resulted in 10 cm of fresh snow lying at Tekapo on the 4th. Snowfall closed the North Island's Desert Rd on the 6th, with many skiers stranded on Mt. Ruapehu.

- **21 July**

Showers of sleet and snow fell to low levels in the lower North Island on the 21st, and chains were required due to heavy snowfall in the Queenstown area, which closed Queenstown airport.

- **21 & 25 August**

Snowfall occurred in Otago, and inland areas of Southland and Canterbury on the 21st, with all major high-country passes closed. Snowfall closed the North Island's Desert Road on the 25th.

- **8 November**

Cold southerlies brought snowfall to 200 m in the South Island, including Queenstown and Geraldine on the 8th.

- **1 and 30 December**

Arthur's Pass was closed due to snowfall over the night of 30 November/1 December. Sleet and snow were observed at Porters Pass on 30 December.

SEVERE OR DAMAGING HAIL AND ELECTRICAL STORMS

- **6 February**

A violent thunderstorm occurred over Waterton and Pendarves (near Ashburton) between 2am and 3am on the 5th, ruining millions of dollars worth of kale, raddish, squash, and onion crops.

- **9 March**

Hail occurred during thunderstorms over Wellingtons southern suburbs of Miramar and Island Bay during the morning on the 9th, resulting in the closure of the airport for a short period of time.

- **8 May**

Lightning struck a tree in Mangere Bridge, Auckland, at about 5.55 am that morning, shattering at least 16 nearby windows, burning out electrical appliances, and resulting in a localised power cut.

- **9 October**

Hail struck Hokitika at 12.45 p.m., for ten minutes, some the size of small marbles.

- **8 November**

Hail damaged some blackcurrant crops at Lowcliffe and Waterton (Canterbury).

- **1 December**

A hailstorm hit Riwaka at about 2pm, with slight damage occurring to apples in some orchards.

TORNADOES, HIGH WINDS, AND ROUGH SEAS

- **2 and 4 January**

High winds gusted to 165 km/h from the northwest at Kaukau Top between, with mean speeds reaching 115 (violent storm) and 128 km/h (hurricane force) respectively; gales buffeted Wellington city.

- **24-25 January**

A depression of tropical origin produced gale force easterlies in Auckland, and Coromandel, with about 7000 homes on the Coromandel Peninsula losing power due to fallen branches or trees. A truck was overturned, and there were dozens of road accidents in Auckland during the hazardous conditions.

- **8 February**

Tornado-like winds blew through Oakura Beach Holiday Park, Taranaki at about 4am, toppling a caravan

- **3 March**

Southerly gales buffeted Wellington (storm force through Cook Strait), with gusts to 143 km/h recorded at Mt. Kau Kau. The 2 pm ferry sailing from Wellington to Picton encountered high seas with 10 m swells on its voyage, taking eight hours instead of the normal three. Several people were injured during the rough passage, and a number of railway wagons and motor vehicles came free from their lashings.

- **26 March**

North easterly gales affected exposed parts of Northland, with a gust of 141 km/h recorded at Cape Reinga.

- **8 March**

A *tornado* occurred at a Hinemoana Downs farm near Waimate at about 2 pm, destroying a very large 23 room historic homestead. Two sheds were also damaged.

- **8 April**

Tornado-like winds damaged property on the Kapiti coast during the morning, with a roof lifted off a house.

- **20 April**

Tornado-like winds damaged property at Leamington (Waikato).

- **11 May**

A small *tornado* lifted half an iron roof off a Ruawai (Kaipara) house, at about 11.05 am, scattering the debris up to 500 m away.

- **11 June**

A *tornado* damaged almost 20 properties in Greymouth. A wind gust to 93 km/h was recorded from the west at Hokitika Airport.

- **12 June**

Wind damage resulted in power outages in central Auckland, Thames-Coromandel, Waikato, and parts of the Marlborough Sounds. Trees fell in Tauranga, with other wind damage. A house roof was lifted by the wind in Kaitoke. A yacht broke its mooring in Nelson. Wind gusts to 91 km/h were recorded from the north or northwest at Auckland Airport, 87 km/h at Tauranga Airport, 146 km/h at Mt. Kaukau, and 82 km/h at Nelson Airport.

- **19 June**

Power lines damaged in Taranaki, Bay of Plenty, and Gisborne, with power cut to thousands of residents. Several iron roofs were damaged in Gisborne, and New Plymouth. Wind gusts to 98 km/h were recorded from the southeast at New Plymouth Airport, 76 km/h at Tauranga Airport, and 80 km/h at Gisborne Airport

- **5 July**

A wind gust of 146 km/h from the south was recorded at Mt. Kaukau, Wellington, with gale force southerlies and 7 m swells resulting in the cancellation of Cook Strait ferry sailings, and high winds damaged several roofs in Wellington.

- **12 July**

Twin *tornados* destroyed a garage and trees in the Waikato, from Hamilton to Eureka.

- **28 August**

A wind gust of 167 km/h from the northwest was recorded at Southwest Cape (Stewart Island).

- **2 September**

A wind gust of 180 km/h from the northwest was recorded at Southwest Cape (Stewart Island) on the 2nd, a new record for a wind gust at that site (measurements which commenced in 1992). Mean wind speeds reached 128 km/h.

- **October**

October was windier than usual over most of the South Island and southern half of the North Island. In fact, several locations in Marlborough and Otago recorded their windiest October in over a decade. Locations with a near or record high number of windy days (gusts to at least 60 km/h) during October 2006 were:

Location	Days with wind gusts of at least 60 km/h	Departure from normal	Year records began	Comments
Castlepoint	28	+5	1995	Equal highest
Wellington, Kelburn	27	+7	1967	2nd highest
Blenheim Airport	10	+6	1991	2nd highest
Kaikoura	17	+7	1991	Highest
Winchmore	8	+5	1970	Equal 2nd highest
Tara Hills	11	+7	1985	2nd highest
Dunedin Airport	13	+8	1991	Highest
Queenstown Airport	8	+5	1991	Highest

- **4/5 October**

Southerly gales and high seas resulted in Cook Strait ferry sailings being cancelled for much of the day on the 4th, and overnight into the 5th. These conditions also affected air travel. **/13 of 19 pages**

- **19 October**

A wind gust of 176 km/h from the northwest was recorded at Castlepoint.

- **19 October**

More southerly gales occurred through Cook Strait and Wellington, disrupting sea and air transport.

- **9/10 November**

High winds from the southwest buffeted Auckland and parts of Bay of Plenty over 9/10 November, Auckland's Sky tower recording gusts to 150 km/h. Damage occurred to roofs, along with fallen trees and broken power lines (20,000 homes were without electricity). In the Bay of Plenty some of the wind was attributed to tornadoes (most of a roof was lifted of a house and hurled 60m away and the house's chimney destroyed at Waiotahi at 10am on the 9th).

- **14 November**

Severe northwest gales occurred throughout Canterbury, Marlborough, and the lower North Island on 14 November. A man was killed by a fallen tree in North Canterbury, and about 100 trees had fallen at Hanmer Forest. Power was cut to about 2500 residents. Several roofs were damaged by the wind in Wellington's northern suburbs.

THREE WARMER MONTHS, THREE COOLER, SIX NEAR AVERAGE

The national average temperature in 2006 was 12.4 °C, 0.2 °C below the 1971 – 2000 normal. For New Zealand as a whole, there were three warmer than normal months (April, May, and September), and three cooler than normal months (March, June, and December). All other months had mean temperatures close to the climatological average. March with a mean temperature of 14.2°C (1.5 °C below normal) was the coldest since 1992, April with 14.6 °C (1.2 °C above normal) was the warmest since 1981, June with 7.3 °C (1.2 °C below normal) was coldest since 1972, and September with 11.6 °C (1.2 °C above normal) was the warmest since 1988, and 3rd warmest nationally since reliable records commenced in the 1860s. December was the coolest since 2004 (1.9°C below normal) and one of the coldest in the last 60 years.

HIGH TEMPERATURES

- **Mid-summer heat wave**

A heat-wave occurred in Central Otago toward the end of the month, Alexandra recording maximum temperatures of 36 °C for three consecutive days from the 27-29th, unheard of in their historical record, which commenced in 1930.

- **8th warmest April on record**

April was much warmer than usual, with mean temperatures being the highest since 1981, and 8th highest since reliable records in the 1860s. The national average temperature of 14.6 °C (higher than March) was 1.2 °C above the 1971-2000 normal. April was much sunnier than normal in Gisborne.

- **Warm September**

Temperatures were above average throughout New Zealand, especially in the east from Marlborough to Otago where they were about 2.0 °C above average producing new records of mean temperature. Maximum temperatures exceeded 20 °C in many eastern regions from 21 through 26 September.

Extremes of daily maximum temperature in 2006 were recorded at:

Location	Maximum temperature (°C)	Date of occurrence	Records began	Comments
January				
Hanmer Forest	35.6	30 Jan.	1906	Equal highest for January
Culverden	36 *	30 Jan.	1984	Highest for any month
Tara Hills, Omarama	34.9	27 Jan.	1950	Highest for January
Wanaka Airport	34.3	28 Jan.	1993	Highest for January
Queenstown Airport	32.1	27 Jan.	1969	Highest for January
Lauder	34.3	27 Jan.	1982	Highest for January
Clyde	34.9	27 Jan.	1984	2nd highest for January
Reefton	33.3	30 Jan.	1961	2nd highest for January
February				
Whenuapai	31.2	20 Feb.	1946	Highest for any month
March				

Henderson	29.2	20 Mar.	1986	Equal highest for March.
May				
Henderson	23.6	1 May	1986	Equal 2nd highest for May
August				
Timaru Airport	21.8	29 Aug.	1962	3rd highest for August
September				
Gisborne Airport	24.9	26 Sep.	1905	3rd highest for September
Dunedin Airport	24.9	25 Sep.	1963	Highest for September
Queenstown	24.3	25 Sep.	1871	Highest for September
Whakatane Airport	23.8	24 Sep.	1975	2nd highest for September
Invercargill Airport	23.1	25 Sep.	1905	2nd highest for September
October				
Gisborne Airport	30.4	13 Oct.	1905	3rd highest for October
Wairoa, North Clyde	30.2	13 Oct.	1991	Highest for October
Winchmore	28.5	13 Oct.	1950	Highest for October
Oamaru Airport	28.3	13 Oct.	1967	2nd highest for October
Dunedin Airport	29.0	13 Oct.	1963	2nd highest for October
Dunedin, Musselburgh	30.2	13 Oct.	1947	2nd highest for October
Alexandra	29*	13 Oct.	1928	Equal highest for October

* *measured to the nearest whole number*

Unusually high mean monthly temperatures were recorded at:

Location	Mean temperature (°C)	Departure from normal (°C)	Records began	Comments
February				
Raoul Island	24.2	+1.5	1941	2nd highest
April				
Henderson, Auckland	17.6	+1.6	1986	2nd highest
Te Puke	16.2	+1.4	1973	3rd highest
Motu	13.5	+2.5	1991	Equal 2nd highest
Mangere, Auckland	17.4	+1.1	1959	Equal 3rd highest
Hamilton Airport	15.6	+1.4	1971	3rd highest
Wellington Airport	16.0	+1.5	1962	Highest
Wallaceville	14.7	+1.8	1940	Equal 2nd highest
Farewell Spit	15.9	+1.4	1971	Equal 2nd highest
Nelson Airport	14.7	+1.6	1943	3rd highest
Blenheim Research	15.1	+1.4	1986	Highest
Kaikoura	14.6	+1.4	1964	3rd highest
Winchmore	13.6	+1.9	1950	2nd highest
Rangiora	13.6	+1.6	1965	Equal 3rd highest
Christchurch Airport	13.7	+1.6	1954	Equal 3rd highest
Christchurch Gardens	14.5	+1.7	1864	3rd highest
Dunedin Airport	12.4	+1.6	1963	2nd highest
Lauder	11.6	+2.4	1987	Highest
Clyde	12.3	+1.8	1983	2nd highest
Ettrick	12.3	+1.8	1985	Highest
Invercargill Airport	12.2	+1.9	1949	3rd highest
Tiwai Point	12.7	+1.5	1971	2nd highest
Campbell Island	8.7	+1.2	1943	Highest
Chatham Island	13.8	+1.3	1957	3rd highest
July				
Chatham Is.	9.4	+1.3	1957	2nd highest
September				
Mt Ruapehu, Chateau	6.3	+1.6	1981	Equal 2nd highest
Ngawi, Palliser	13.9	+2.0	1972	Equal highest
Mahia AWS	13.1	+1.8	1991	Highest
Napier Airport	12.7	+1.3	1974	Equal 3rd highest
Paraparaumu Airport	12.3	+1.4	1953	Equal highest
Wellington Airport	12.7	+1.4	1962	Equal 3rd highest
Wallaceville	11.8	+1.6	1940	3rd highest
Farewell Spit	12.8	+1.3	1971	Equal highest
Reefton	10.7	+1.4	1960	Equal 3rd highest
Nelson Airport	11.9	+1.7	1943	Highest

Blenheim Research	12.5	+1.8	1932	3rd highest
Blenheim Airport	11.7	+1.4	1941	2nd highest
Mt Cook Village	8.7	+2.1	1930	2nd highest
Winchmore	10.9	+2.0	1950	2nd highest
Darfield	11.7	+2.2	1939	Equal 2nd highest
Le Bons Bay	10.9	+2.0	1984	Highest
Timaru Airport	9.9	+1.4	1962	Equal 3rd highest
Tara Hills	9.3	+2.1	1950	Equal highest
Wanaka Airport	9.9	+1.6	1992	Highest
Dunedin Airport	10.5	+1.9	1963	Highest
Dunedin, Musselburgh	11.3	+2.0	1947	Highest
Queenstown	10.3	+1.7	1871	Equal 2nd highest
Lumsden	9.6	+1.7	1982	2nd highest
Clyde EWS	10.4	+1.8	1983	Equal highest
Invercargill Airport	9.7	+1.4	1948	3rd highest
November				
Wairoa, North Clyde	17.5	+1.7	1991	Highest
Napier Airport	17.5	+2.2	1973	2nd highest

LOW TEMPERATURES AND SEVERE FROST

- **Coldest March since 1993**

March was cold with mean temperatures being the lowest since 1993. The national average temperature of 14.2 °C (almost 3.0 °C lower than in February) was 1.5 °C below the 1971-2000 normal. These were well below average in many regions, particularly in the South Island, and as low as normal April values in parts of inland south Canterbury.

- **Coldest June since 1972**

The national average temperature of 7.3 °C was 1.2 °C below the 1971-2000 normal. This was the coldest June since 1972 which recorded 6.7 °C. The regions with the largest anomalies, more than 2.0 °C below average, were Waikato, King Country, inland Marlborough, South Canterbury, and North Otago. Parts of South Canterbury and North Otago recorded their lowest June mean temperatures in more than 50 years of record.

- **14 and 28 June – lowest annual minima**

The lowest air temperature for the year was -14.0 °C recorded at both Tara Hills, Omarama on the 14th, and Fairlie on the 28th. The minimum air temperatures were –10 °C or lower in parts in inland South Canterbury and/or North Otago, on nine days between 14 and 29 June.

Near or record low June minimum grass temperatures (ground frost) were recorded at:

Location	Minimum grass temperature (°C)	Date of occurrence	Records began	Comments
Auckland, Henderson	-7.9	27 June 2006	1986	2nd lowest
Invercargill Airport	-11.2	27 June 2006	1910	3rd lowest for June

- **Early July – severe frost**

Minimum air temperatures were –10 °C or lower in parts of inland South Canterbury/North Otago on the 1st, 5th, 6th, and 7th of July.

- **10 August – severe frost**

The lowest air temperature for the month was -9.0 °C recorded at Alexandra on the 10th. This was one of the lowest temperatures there for August since records commenced in 1929. **/16 of 19 pages**

- Cool southerlies were frequent during December. The national average temperature was 13.7 °C (1.9°C below normal), the lowest for December since 13.3 °C in 2004 and equal with 1946. Mean temperatures were 2.0 to 2.4 °C below average in many regions, and more than 2.5 °C below average in Taupo and parts of Canterbury. Many locations experienced one of their coldest December's on record.

Unusually low mean monthly temperatures were recorded at various times during the year at:

Location	Mean temperature	Departure from average (°C)	Records Began	Comments
March				
Taumarunui	14.1	-2.3	1948	2nd lowest
Castlepoint	15.0	-2.1	1972	Equal 2nd lowest
Wellington, Kelburn	14.0	-1.8	1928	Equal 3rd lowest
Wallaceville	13.5	-2.0	1948	Equal 3rd lowest
Hokitika Airport	13.3	-1.4	1964	3rd lowest
Hanmer Forest	11.7	-2.2	1906	2nd lowest
Kaikoura	13.3	-1.9	1964	2nd lowest
Mt Cook Village	9.2	-3.3	1930	Lowest
Rangiora	12.7	-2.0	1965	Lowest
Christchurch Airport	12.6	-2.5	1954	Lowest
Lincoln, Broadfield	12.6	-2.4	1881	2nd lowest
Lake Tekapo	9.0	-3.7	1927	Lowest
Timaru Airport	12.0	-1.8	1962	3rd lowest
Tara Hills	11.3	-2.1	1950	3rd lowest
Wanaka Airport	12.1	-2.4	1993	Equal lowest
Dunedin Airport	11.4	-1.7	1963	Lowest
Dunedin, Musselburgh	11.8	-2.0	1947	Lowest
Manapouri Airport	10.1	-2.1	1991	Lowest
Clyde	11.9	-2.3	1983	Lowest
Ettrick	11.3	-2.2	1985	Lowest
Gore	10.3	-2.3	1988	Lowest
Invercargill Airport	11.0	-1.5	1949	Equal 2nd lowest
Tiwai Point	11.3	-1.9	1971	Lowest
June				
Kerikeri EWS	10.4	-1.5	1982	2nd lowest
Whangarei Airport	10.7	-1.6	1968	2nd lowest
Warkworth	9.3	-1.9	1972	Lowest
Auckland, Henderson	9.4	-1.6	1986	Lowest
Auckland, Owairaka	9.8	-1.8	1949	Equal lowest
Rotorua Airport	6.7	-1.7	1964	Equal 2nd lowest
Taupo Airport	5.6	-1.7	1976	Lowest
Hamilton Airport	7.2	-2.0	1971	2nd lowest
Port Taharoa	10.1	-1.7	1982	Lowest
Te Kuiti	7.1	-2.1	1959	2nd lowest
Taumarunui	5.8	-2.4	1947	2nd lowest
Lower Retaruke	5.8	-2.1	1967	3rd lowest
Stratford	6.3	-1.9	1960	Lowest
Castlepoint	9.0	-1.8	1973	Lowest
Waiouru MWD	3.2	-1.7	1962	3rd lowest
Wanganui Airport	8.6	-1.6	1979	2nd lowest
Lake Tekapo	0.0	-2.5	1927	Equal 2nd lowest
Fairlie	1.1	-2.8	1925	Lowest
Timaru Airport	4.0	-1.5	1962	Lowest
Tara Hills, Oamarama	-0.1	-2.5	1950	Lowest
December				
Kaitaia Airport	15.6	-2.5	1948	Lowest
Kaikohe EDR	15.1	-1.9	1973	Equal lowest
Whangarei Airport	16.6	-1.7	1967	Equal lowest
Warkworth	15.1	-1.9	1972	2nd lowest
Paeroa	15.4	-2.6	1947	2nd lowest
Auckland,Owairaka	15.4	-2.3	1949	Equal lowest
Whakatane Airport	15.4	-2.2	1974	2nd lowest
Rotorua Airport	13.8	-2.3	1964	2nd lowest
Taupo Airport	12.8	-2.9	1976	Lowest
Aukland, Mangere	16.0	-2.1	1950	2nd lowest
Auckland Airport	15.9	-2.2	1962	Lowest
Pukekohe	15.1	-1.9	1970	Lowest
Hamilton Airport	14.3	-2.3	1970	Lowest
Port Taharoa	15.4	-2.3	1982	2nd lowest
Te Kuiti	14.4	-2.4	1959	Lowest

Taumarunui	13.7	-3.0	1947	2nd lowest
New Plymouth Airport	13.7	-2.3	1944	Lowest since 1946
Lower Retaruke	13.7	-2.3	1966	2nd lowest
Castlepoint	13.7	-2.9	1972	Lowest
East Taratahi	13.9	-1.9	1972	2nd lowest
Napier Airport	15.4	-2.9	1973	2nd lowest
Whakatu	14.3	-2.9	1982	2nd lowest
Paraparaumu Airport	14.0	-1.9	1953	Equal lowest
Palmerston North Airport	13.8	-2.3	1962	Lowest
Palmerston North	13.5	-2.8	1928	2nd lowest
Wellington, Kelburn	12.9	-2.4	1928	Lowest
Wellington Airport	14.6	-1.8	1962	Lowest
Wallaceville	13.5	-2.0	1939	Equal 2nd lowest
Wanganui,Spriggens Park	14.1	-2.6	1937	Lowest
Hokitika Airport	12.6	-1.7	1963	3rd lowest
Reefton	13.4	-1.8	1960	Equal 3rd lowest
Nelson, Appleby	13.9	-2.2	1932	2nd lowest
Blenheim Airport	14.2	-2.1	1941	Lowest
Kaikoura	12.7	-2.6	1963	Lowest
Arthurs Pass	8.1	-3.1	1978	Lowest
Winchmore	12.3	-2.5	1949	2nd lowest
Christchurch Airport	13.3	-2.5	1953	2nd lowest
Timaru Airport	12.2	-2.1	1962	2nd lowest
Tara Hills	12.2	-2.2	1949	3rd lowest
Clyde	13.2	-2.4	1983	2nd lowest
Gore EDR	11.0	-2.2	1987	2nd lowest
Dunedin Airport	12.2	-1.6	1962	Equal 3rd lowest
Raoul Island	19.6	-1.3	1940	Equal 3rd lowest

Extremes of minimum temperature in 2006 were recorded at:

Location	Minimum temperature (°C)	Date of occurrence	Records began	Comments
June				
Hanmer Forest	-11.0	28 June	1946	2nd lowest for June
Tara Hills, Omarama	-14.0	14 June	1950	Lowest for June
Fairlie	-14*	28 June	1925	Equal lowest for June
Lake Tekapo	-13.5	25 June	1927	3rd lowest for June
Dunedin Airport	-8.5	28 June	1963	Lowest for June
December				
Pukekohe	4.4	10 December	1970	Lowest for December
Christchurch Airport	0.1	2 December	1953	Lowest for December
Manapouri, West Arm	-0.6	1 December	1996	Lowest for December

** rounded to the nearest whole number*

SUNSHINE EXTREMES

Some locations experienced extremes of sunshine hours at various times during the year. June was extremely sunny compared with average in the north and west of the North Island, and south of the South Island.

Monthly sunshine extremes for 2006 were:

Location	Sunshine (hours)	Percentage of normal	Year Records began	Comments
January				
Hokitika	255	121	1964	Equal 2nd highest
Dunedin, Musselburgh	224	126	1948	2nd highest
February				
Kaitaia	259	134	1951	Highest
June				
Dargaville	150	165	1943	Highest
Auckland, Mangere	165	148	1963	Highest
Hamilton, Ruakura	167	162	1936	Highest
New Plymouth	170	144	1915	Highest since 1922
Paraparaumu Airport	152	151	1953	2nd highest
Stratford	141	139	1963	Highest
Takaka	182	134	1986	2nd highest
Dunedin, Musselburgh	153	177	1948	Highest
Invercargill Airport	101	132	1932	2nd highest
July				
Dargaville	149	134	1943	3rd highest
August				
Dunedin, Musselburgh	169	148	1948	2nd highest
Invercargill Airport	161	135	1932	3rd highest
September				
Lake Tekapo	246	140	1928	3rd highest
Dunedin, Musselburgh	194	150	1932	Equal highest
November				
Ruakura	143	72	1936	2nd lowest
Taumarunui	99	60	1947	Lowest
New Plymouth Airport	139	68	1915	3rd lowest
Palmerston North	108	63	1930	Lowest

For further information, please contact:

Dr Jim Salinger, NIWA National Climate Centre - Auckland, Tel (09) 375 2053 (Business) or (Mobile) 027 521 9468; Stuart Burgess – Climatologist, NIWA National Climate Centre, Wellington Tel. (04) 386 0569

© Copyright NIWA 2007. All rights reserved.

ENDS **/19 of 19 pages**