

**National Climate Summary – May 2005**

- **Rainfall: Record high rainfall in the Bay of Plenty**
- **Temperature: Well above average throughout much of the North Island, warm also in the north of the South Island**
- **Sunshine: Above average in the south of the South Island**

While record rains lashed Bay of Plenty in May, the South Island received above average sunshine. The month was very warm over the North Island and northern South Island. There were two extremely high rainfall – flood producing events in the Bay of Plenty region over 3-4 and 17-18 May, both affecting Tauranga, and the latter devastating the coastal township of Matata. Tauranga with 634 mm (695 percent of normal) had its wettest calendar month for any time of the year in more than a century, including its heaviest 1-day rainfall on record (347 mm on the 18<sup>th</sup>). It was also very wet in Coromandel and parts of Hawke's Bay. Soil moisture surpluses occurred in Bay of Plenty, the south and east of the North Island and in Marlborough. The national average temperature for May was 11.4°C, 0.7 °C. May was very much warmer than usual in the North Island. However, temperatures were below average along the south Canterbury/Otago coast. Sunshine hours were well above average in inland south Canterbury and coastal areas of both Southland and Otago. However, they were below average in Waikato, King Country, along the Kapiti Coast, and in West Otago. During May, depressions ('lows') were often centred northwest of the North Island. Most anticyclones ('highs') occurred well away to the east or west of the country. More frequent northeasterlies occurred over the North Island and north of the South Island, contributing to the very wet conditions over much of the North Island.

**Other Highlights:**

- The highest temperature during May 2005 was 23.6°C recorded at Henderson (Auckland) on the 2<sup>nd</sup>. The lowest temperature for the month was -6.7°C, recorded at Ranfurly on the 18<sup>th</sup>.
- Of the four main centres Dunedin was the driest, and Auckland the warmest. Rainfall was below average in Dunedin, but above average in the three other main centres. Temperatures were above average in Auckland, Wellington, and Christchurch, and below average in Dunedin. Sunshine hours were above average in Dunedin and near average in the other main centres.

**Rainfall:** Rainfall was at least 250 percent of normal in Bay of Plenty. It was also very wet in Coromandel and parts of Hawke's Bay with totals of at least 200 percent of normal. Rainfall was also above normal in Auckland, Waikato, Taranaki, Gisborne, Wellington, Marlborough, and parts of Northland and north Canterbury. Totals were less than 75 percent of normal in parts of Buller and Otago.

**Temperature:** May was very much warmer than usual, with mean temperatures 1.0 to 1.5°C above average over much of the North Island, as well as much of Marlborough and Nelson. The largest anomalies were in the central North Island, where mean temperatures were about 2.5°C above average. Temperatures were also above average in Buller, Westland, and north Canterbury. They were below average along the south Canterbury/Otago coast.

**Sunshine:** Sunshine hours were well average in inland south Canterbury and coastal areas of both Southland and Otago. However, they were about 80 percent of average in Waikato, King Country. It was also sunny in coastal Otago. Totals were below average in Waikato, King Country, along the Kapiti Coast, and in West Otago.

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## EXTREMELY HIGH RAINFALL IN BAY OF PLENTY

Rainfall was at least 250 percent of normal in Bay of Plenty (Tauranga recorded almost 700 percent of normal), due to the extreme high intensity rainfall events of 3-4 and 17-18 May. It was also very wet in Coromandel and parts of Hawke's Bay with totals of at least 200 percent of normal. Rainfall was 125-200 percent of normal in Auckland, Waikato, Taranaki, Gisborne, Wellington, Kapiti, Marlborough, and parts of Northland and north Canterbury. In contrast, rainfall was less than 75 percent of normal in parts of Buller and Otago.

### Near or record high May rainfall was recorded at:

Location	May rainfall (mm)	Percentage Of normal	Year Records began	Comments
Whitianga Airport	306	224	1988	3 <sup>rd</sup> highest
Tauranga Airport	634	695	1898	Highest for any month
Te Puke	405	334	1973	Highest
Whakatane Airport	341	405	1975	Highest
Rotorua Airport	284	274	1964	3 <sup>rd</sup> highest
Hamilton Airport	243	243	1935	Highest
Napier Airport	171	243	1951	Well above average

## MUCH WARMER IN THE NORTH ISLAND AND THE NORTHERN SOUTH ISLAND

May was very much warmer than usual, with mean temperatures 1.0 to 1.5°C above average over much of the North Island, as well as much of Marlborough and Nelson. The largest anomalies were in the central North Island, where mean temperatures were about 2.5°C above average. Temperatures were at least 0.5°C above average in Buller, Westland, and north Canterbury. Mean temperatures were about 0.5°C below average along the south Canterbury/Otago coast, and near average elsewhere.

### Near or record high May mean air temperatures were recorded at:

Location	Mean temperature	Departure from average (°C)	Records Began	Comments
Kaitaia	15.9	+1.4	1985	Equal highest
Kerikeri EWS	15.4	+1.3	1982	Equal highest
Kaikohe	15.1	+1.8	1973	Highest
Dargaville	15.5	+1.7	1943	Highest
Whangarei Airport	15.7	+1.7	1968	Highest
Paeroa	14.2	+2.3	1947	Well above average
Tauranga Airport	14.1	+1.6	1913	Well above average
Te Puke	13.6	+1.7	1973	Highest
Whakatane Airport	13.1	+2.0	1975	2 <sup>nd</sup> equal highest
Rotorua Airport	12.3	+1.9	1964	Highest
Taupo Airport	11.2	+2.4	1976	Highest
Motu	10.5	+1.8	1991	Equal highest
Mangere, Auckland	15.1	+1.4	1959	2 <sup>nd</sup> equal highest
Auckland Airport	15.2	+1.6	1962	Highest
Pukekohe	14.4	+1.8	1971	2 <sup>nd</sup> highest
Ruakura	13.4	+1.8	1907	3 <sup>rd</sup> equal highest
Hamilton Airport	13.1	+2.2	1971	Equal highest
Mt Ruapehu, Chateau	7.5	+1.9	1930	3 <sup>rd</sup> highest
East Taratahi	11.5	+1.6	1973	2 <sup>nd</sup> highest
Gisborne Airport	13.5	+1.5	1905	Well above average

Napier Airport	13.1	+1.6	1974	Well above average
Paraparaumu Airport	12.8	+1.3	1953	3 <sup>rd</sup> highest
Palmerston North Airport	12.5	+1.7	1962	2 <sup>nd</sup> equal highest
Palmerston North EWS	12.9	+1.5	1928	3 <sup>rd</sup> equal highest
Levin	12.9	+1.6	1896	3 <sup>rd</sup> equal highest
Wallaceville	12.4	+1.9	1940	2 <sup>nd</sup> equal highest
Ohakune	10.1	+2.5	1994	Highest
Wanganui, Spriggens Pk	13.5	+1.3	1937	3 <sup>rd</sup> equal highest
Farewell Spit	13.4	+1.6	1971	Well above average

## SUNNY IN THE SOUTH OF THE SOUTH OF THE SOUTH ISLAND

Sunshine hours were at least 120 percent of average in inland south Canterbury, and coastal areas of both Southland and Otago. However, they were about 80 percent of average in Waikato, King Country, along the Kapiti Coast, and in West Otago. Hours of bright sunshine were near average elsewhere.

### Near record high May sunshine hours were recorded at:

Location	May sunshine (hours)	Percentage of normal	Year Records began	Comments
Lake Tekapo	185	141	1928	2 <sup>nd</sup> highest
Invercargill Airport	111	138	1932	Well above average

## MAY'S CLIMATE IN THE FOUR MAIN CENTRES

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

Location	May Mean Temp. (°C)	Dep. from normal (°C)		May rainfall (mm)	% of normal		May Sunshine (hours)	% of normal	
Auckland	15.1 <sup>a</sup>	+1.4	Well above average	188 <sup>b</sup>	183	Above average	135 <sup>a</sup>	98	Near average
Wellington	12.4	+0.9	Above average	177	152	Above average	125	98	Near average
Christchurch	9.2 <sup>c</sup>	+0.3	Above average	86 <sup>c</sup>	164	Above average	145	102	Near average
Dunedin	8.9	-0.3	Below average	48	67	Below average	126	126	Above average

a-Mangere b Mt Albert c Christchurch Airport

## HIGHLIGHTS AND EXTREME EVENTS

- **Temperature**

The highest temperature during May 2005 was 23.6°C recorded at Henderson (Auckland) on the 2<sup>nd</sup>. The lowest temperature for the month was -6.7°C, recorded at Ranfurly on the 18<sup>th</sup>. Widespread severe ground frost occurred in Nelson, Marlborough and Canterbury on the 9<sup>th</sup>, and in Otago and Southland on the 18<sup>th</sup>.

- **High rainfall, floods, and severe wind**

1-2 May

High rainfall (100 mm reported in 6 hours at Pohokura, and 80 mm in 3 hours at Motunui, Taranaki) resulting in slips and surface flooding closing SH 43, and the closure of a school. High winds, attributed to a tornado, also affected Taranaki, between Motunui and Urenui during the early morning on the 2<sup>nd</sup>, damaging an orchard, and destroying a farm shed.

3-4 May

Torrential rainfall resulted in serious widespread flooding in Tauranga, especially in Otumoetai, Arataki, and Omanu. Many homes and businesses were flooded, with water a metre deep in areas, and emergency services were stretched to the limit. Rainfall totalling 144 mm was measured at Tauranga Airport in the 24 hours to 8am on the 4<sup>th</sup>. Heavy rainfall occurred between 3pm and 11pm on the 3<sup>rd</sup>, during which time there was 1-hour with rainfall totalling 67 mm. High rainfall also affected other sites in Bay of Plenty, as well as Hawke’s Bay, on the same day, many locations recording 75-100 mm.

17-18 May

A phenomenal, unprecedented high-rainfall flood-producing event affected Bay of Plenty, particularly from Tauranga to Matata. Heavy rainfall occurred between 11pm on the night of the 17<sup>th</sup> and 8pm on the night of the 18<sup>th</sup>, during which time there were 6-hours with rainfall exceeding 30 mm per hour, and one hour with 58 mm. Tauranga Airport recorded a massive 346.8 mm of rainfall in 24-hours. This was well above any other daily rainfall total there in records which commenced in 1910, but comparable with those recorded for shorter durations on 17 April 1948, when 95, 146 and 212 mm was recorded in 1, 2 and 6 hours respectively. Rainfall totalling 94.5 mm in one hour was reported at Awakaponga, inland from Matata. The New Zealand low lying land-station record was 109 mm in an hour recorded at Leigh (north of Auckland) on 30 May 2001.

**High rainfall totals in Bay of Plenty for the mid-May rainfall event were:**

Location	Rainfall, mm 48 hours to 9am 19 May
Tauranga Airport	370
Te Puke	187
Whakatane Airport	127

Some of the effects of the storm were:

A state of emergency was declared on 18 May in Tauranga and Matata. There were hundreds of calls for emergency services. Police and army personnel assisted evacuations, while fire fighters pumped water from homes. Emergency personnel were also called in from outlying districts. About 450 people were evacuated for Tauranga, Papamoa, and Matata. In **Tauranga**, several city homes were destroyed by mudslides and floodwaters and rising waters threatened hundreds of others. The airport was closed by flooding. Landslides threatened several homes and over a hundred residents were evacuated. More than 40 houses in Papamoa were evacuated. Many residents described the scene in Tauranga as a “disaster zone”. Several of the Tauranga houses had to be demolished. Flooding was extreme in **Matata**, where a stream became a torrent of water, mud, huge boulders, and debris. Approximately 200 of the towns 500 people were evacuated. Houses were pushed off their foundations, nearly 100 being damaged, many motor vehicles were swept into the lagoon, some buried. Children were trapped in schools. One family became trapped in the roof of their home. Two houses and several caravans were swept out to sea. Railway lines were buckled, and about 20 motorists trapped. Parts of roads and two bridges near Matata on SH 2 were washed away. There was no drinking water supply. It was stated that the town of Matata looked as through a tsunami had gone through it. At least one house was flooded in **Edgumbe**, and there was surface flooding after 170mm of rainfall at Pongakawa and 150mm at Awakaponga on the 18<sup>th</sup> on the Rangitaiki Plains. The cost of the damage from this event has been estimated to be at least \$40-50 million.

- **High winds**

The highest wind gust recorded during May 2005 was 152 km/h from the north, measured at Puysegur Point on the 1<sup>st</sup>.

- **Fog**

Wellington Airport was closed for several hours by fog and low cloud on the 19<sup>th</sup> and 20<sup>th</sup>. There have been 48 hours with fog there this year, the highest for any year in 45-years of measurement.

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