

**National Climate Summary - June 2010: Very wet overall, except West Coast and Southland**

- **Rainfall: Extremely wet in Marlborough and parts of Waikato and Bay of Plenty, with double normal rainfall. Well above normal rainfall in most other regions, except the West Coast and parts of Southland.**
- **Temperatures: Below average for inland and eastern parts of the South Island, near average in most other regions.**
- **Sunshine: Extremely sunny over the lower half of the South Island, and for Northland. Very cloudy from Taranaki to Wellington, including the Wairarapa, and Nelson, Marlborough, and around Christchurch.**

June 2010 was a very wet month for most regions of the country, with active lows originating over the Tasman Sea affecting the country during both the first and last week of the month. Double normal June rainfall was recorded in Marlborough and parts of the Bay of Plenty and Waikato. Well above normal rainfall (more than 120 percent of normal) was experienced in Taranaki, the Central North Island, the remainder of the Bay of Plenty and Waikato, Coromandel, parts of Auckland, Canterbury and parts of Otago. Rainfall exceeded 120 percent of normal elsewhere in the North Island (except Northland and Gisborne, where closer to normal June falls were recorded). In comparison, below normal rainfall (between 50 and 80 percent of normal rainfall) was recorded on the West Coast, in Fiordland, and across much of Southland – as well as near Cape Reinga.

June temperatures were close to average (within 0.5°C of average) across much of the North Island, on the West Coast of the South Island, and in Fiordland. In contrast, temperatures were below average (between 0.5°C and 1.2°C below average) for inland and eastern areas of the South Island, and were well below average (around 2°C below average) in small pockets of inland Otago and inland Canterbury. Nelson recorded temperatures between 0.5°C and 1°C above average. The New Zealand national average temperature was 8.8°C (+0.3°C above the 1971-2000 June average).

It was an extremely sunny June for the lower half of the South Island, and also Northland. Sunshine totals were well above average (more than 125 percent of normal) in Northland, for coastal areas between Invercargill and Dunedin, and around Mt. Cook. In contrast, it was extremely cloudy in the lower North Island, from Taranaki to Wellington and including the Wairarapa, as well as Nelson, Marlborough, and around Christchurch, with sunshine totals between 75 and 90 percent of normal. Elsewhere, sunshine totals were closer to normal.

**Further Highlights:**

- The highest temperature was 22.2°C, recorded at Waipara on the 19<sup>th</sup> (near-record for June).
- The lowest temperature was -10.7°C, recorded at Lake Tekapo on the 9<sup>th</sup>.
- The highest 1-day rainfall was 198 mm, recorded at North Egmont on the 6<sup>th</sup>.
- The highest wind gust was 139 km/hr, recorded at Mahia on the 20<sup>th</sup> (not a record).
- Of the six main centres, Auckland was the warmest and sunniest, Christchurch the coolest, Hamilton the wettest, and Dunedin the driest.

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**RAINFALL: EXTREMELY WET IN MARLBOROUGH AND PARTS OF WAIKATO AND BAY OF PLENTY, WITH DOUBLE NORMAL RAINFALL. WELL ABOVE NORMAL RAINFALL IN MOST OTHER REGIONS, EXCEPT THE WEST COAST AND PARTS OF SOUTHLAND.**

June 2010 was a very wet month for most regions of the country, with active lows originating over the Tasman Sea affecting the country during both the first and last week of the month. Double normal June rainfall was recorded in Marlborough and parts of the Bay of Plenty and Waikato. It was the wettest June on record in Whakatane, and Blenheim, in regional records that extend back to 1952 and 1927, respectively. Well above normal rainfall (more than 120 percent of normal) was experienced in Taranaki, the Central North Island, the remainder of the Bay of Plenty and Waikato, Coromandel, parts of Auckland, Canterbury and parts of Otago. Rainfall exceeded 120 percent of normal elsewhere in the North Island (except Northland and Gisborne, where closer to normal June falls were recorded). In comparison, below normal rainfall (between 50 and 80 percent of normal rainfall) was recorded on the West Coast, in Fiordland, and across much of Southland – as well as near Cape Reinga.

**Record or near-record June rainfall totals were recorded at:**

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
Kumeu	181	132	1978	4th-highest
Te Puke	283	161	1973	2nd-highest
Whakatane*	321	254	1952	Highest
Taupo	184	188	1949	3rd-highest
Whatawhata	349	210	1952	2nd-highest
Hamilton (Ruakura)	232	192	1905	4th-highest
Turangi	277	190	1968	2nd-highest
Hawera	165	141	1977	4th-highest
Nelson	155	183	1941	4th-highest
Blenheim	196	288	1927	Highest
Kaitaia	95	66	1985	4th-lowest

\*Interim rainfall total at Whakatane Airport. Data from 1<sup>st</sup> to 29<sup>th</sup> June inclusive; 30<sup>th</sup> data missing at time of writing.

**TEMPERATURES: BELOW AVERAGE FOR INLAND AND EASTERN PARTS OF THE SOUTH ISLAND, NEAR AVERAGE IN MOST OTHER REGIONS.**

June temperatures were close to average (within 0.5°C of average) across much of the North Island, on the West Coast of the South Island, and in Fiordland. In contrast, temperatures were below average (between 0.5°C and 1.2°C below average) for inland and eastern areas of the South Island, and were well below average (around 2°C below average) in small pockets of inland Otago and inland Canterbury. Nelson recorded temperatures between 0.5°C and 1°C above average. The New Zealand national average temperature was 8.8°C (+0.3°C above the 1971-2000 June average)<sup>1</sup>.

**Record or near-record June mean maximum daily air temperatures were recorded at:**

Location	Mean maximum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Leigh	17.6	1.7	1966	Highest
Whangaparaoa	16.0	1.3	1982	3rd-highest
Motueka	15.4	2.2	1956	Highest
Nelson	13.8	1.1	1943	4th-highest
Lake Tekapo	4.7	-2.2	1927	4th-lowest

<sup>1</sup> Interim monthly value.

**Record or near-record June mean minimum daily air temperatures were recorded at:**

Location	Mean minimum air temperature (°C)	Departure from normal (°C)	Year records began	Comments
Cape Campbell	8.0	3.4	1953	3rd-highest
Mt Cook	-3.5	-2.3	1929	4th-lowest
Lake Tekapo	-4.2	-2.4	1927	4th-lowest
Dunedin	-0.2	-0.5	1947	Lowest
Tiwai Point	2.5	-1.1	1970	4th-lowest
Balclutha	0.4	-1.3	1964	2nd-lowest

**SUNSHINE: EXTREMELY SUNNY OVER THE LOWER HALF OF THE SOUTH ISLAND, AND FOR NORTHLAND. VERY CLOUDY FROM TARANAKI TO WELLINGTON, INCLUDING THE WAIRARAPA, AND NELSON, MARLBOROUGH AND AROUND CHRISTCHURCH.**

It was an extremely sunny June for the lower half of the South Island, and also Northland. Sunshine totals were well above average (more than 125 percent of normal) in Northland, for coastal areas between Invercargill and Dunedin, and around Mt. Cook. Dargaville recorded its 2<sup>nd</sup>-sunniest June on record, with 158 percent of June normal sunshine hours experienced. In contrast, it was extremely cloudy in the lower North Island, from Taranaki to Wellington and including the Wairarapa, as well as Nelson and Marlborough and around Christchurch, with sunshine totals between 75 and 90 percent of normal. Blenheim recorded its lowest June sunshine hours ever, since records in the region started in 1947. Elsewhere, sunshine totals were closer to normal.

**Record or near-record June sunshine hours were recorded at:**

Location	Sunshine (hours)	Percentage Of normal	Year records began	Comments
Dargaville	143	158	1943	2nd-highest
Mt Cook	96	141	1930	4th-highest
Balclutha	117	145	1964	3rd-highest
Martinborough	77	81	1986	3rd-lowest
Blenheim	118	81	1947	Lowest

**JUNE CLIMATE IN THE SIX MAIN CENTRES**

Of the six main centres, Auckland was the warmest and sunniest, Christchurch the coolest, Hamilton the wettest, and Dunedin the driest. It was a very wet June for all of the six main centres, except Dunedin. June temperatures were near average for all centres, except Tauranga (which was warmer than usual). Sunshine totals were above normal in Auckland, well above normal in Dunedin, below normal in Wellington and Christchurch, and near normal in Tauranga and Hamilton.

## June 2010 main centre climate statistics:

Location	Mean temp. (°C)	Departure from normal (°C)		Rainfall (mm)	% of normal		Sunshine (hours)	% of normal	
Auckland <sup>a</sup>	11.8	+0.1	Near average	162	126%	Above normal	138	124%	Above normal
Tauranga <sup>b</sup>	11.6	+1.1	Above average	202	158%	Well above normal	123	93%	Near normal
Hamilton <sup>c</sup>	9.6	+0.4	Near average	223	180%	Well above normal	111 <sup>g</sup>	108%	Near normal
Wellington <sup>d</sup>	9.6	+0.1	Near average	199	135%	Above normal	75	76%	Below normal
Christchurch <sup>e</sup>	6.2	0.0	Average	93	151%	Well above normal	90	75%	Below normal
Dunedin <sup>f</sup>	7.3	+0.2	Near average	64	89%	Near normal	116	134%	Well above normal

<sup>a</sup> Mangere <sup>b</sup> Tauranga Airport <sup>c</sup> Hamilton Airport <sup>d</sup> Kelburn <sup>e</sup> Christchurch Airport <sup>f</sup> Musselburgh <sup>g</sup> Ruakura

## HIGHLIGHTS AND EXTREME EVENTS

### • Heavy rain, slips and flooding

The highest 1-day rainfall for June was 198 mm, recorded at North Egmont on the 6<sup>th</sup>. Also notable was the 170 mm, recorded at Whakatane Airport on the 1st (a new June record there). Notably, 90 mm fell in just 1 hour! However, the last-verified New Zealand 1-hour rainfall record of 109 mm in one hour, at Leigh on 30 May 2001, remains intact.

SH2 between Opotiki and Whakatane was closed by heavy rain on 1 June. More than 50 people were evacuated from their homes in Whakatane, and a rest home in Opotiki was also evacuated. Two people were rescued from a car stuck in floodwaters in Matata, and another group was rescued 3 km west of Matata. A sewer pipe ruptured in Ohope, prompting warnings about contamination around the outlet. In Mount Maunganui, some streets were under 30 cm of water, several properties were flooded, and a family trapped in their car by floodwaters on Ocean Beach Road. At Papamoa Beach, water up to 20 cm deep flooded homes. In Auckland properties were flooded in Mt Roskill, One Tree Hill, Epsom, Penrose, Shelly Park and the Southdown Industrial Park. The heavy rain caused a sewage main in Otahuhu to rupture, and 12 houses were evacuated. In Whitianga, homes were flooded, schools closed early, and local roads were closed by slips.

On 4 June, a major slip closed SH1 near the top of Weld Pass, south of Blenheim. On 6 June, a slip closed SH35 at Hicks Bay on the East Coast. In Taranaki, SH45 was closed by flooding between Okato and Rahunu.

On 7 June, heavy rain caused a large slip on Paekakariki Hill Road, north of Wellington, blocking both lanes. In the city, a large slip in the suburb of Strathmore forced the evacuation of two houses. In the Manawatu Gorge, SH3, a large slip obstructed one lane at the Woodville end. A large slip blocked one lane of SH2, near Waioeka Gorge, for most of the day, and a slip blocked the southbound lane in Wharerata Gorge, south of Gisborne. Rocks the size of soccer balls were strewn over the Takaka Hill Road after a stormy Sunday night. Water up to 30 cm on SH1 near the Awatere Valley–Redwood Pass intersection caused delays, with cars being let through one at a time. Many roads in South Canterbury and North Otago, that had just reopened after earlier flooding, were closed again, as were parts of SH1 between Hilderthorpe and Pukeuri, just north of Oamaru. Surface flooding caused some road closures in Dunedin, on Otago Peninsula, and on the Taieri Plains.

On 8 June, a large slip closed one lane of SH7, south of Reefton. A slip also blocked lanes on the road from Dunedin to Aramoana. On 9 June, surface flooding was reported on SH1 between Otaki and Peka Peka. The Department of Conservation closed Bushy Beach Track, used to reach a viewing platform overlooking yellow-eyed penguins nesting on the tip of Cape Wanbrow, near Oamaru, after heavy rain caused slips and slumping. On 14 June, Noones Road, near Poolburn in Central Otago, was closed by flooding.

On 25 June, flooding and slips closed SH25 between Coromandel and Kuaotunu, between Coromandel and Tapu, and between Whitianga and Coroglen. A slip caused by heavy rain affected SH5 between Taupo and

Napier. On 27 June, a large slip near Little River closed SH75, between Akaroa and Christchurch. There were several other slips on the same road.

**Record or near record high extreme 1-day rainfall totals were recorded at:**

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year Records Began	Comments
Whakatane	170	1st	1952	Highest
Blenheim	71	6th	1927	2nd-highest
Ranfurly	25	6th	1943	4th-highest
Lumsden	24	22nd	1982	2nd-highest
Cromwell	30	6th	1949	2nd-highest
Alexandra	27	6th	1983	Highest

• **Temperature**

The highest June temperature was 22.2°C, recorded at Waipara on the 19th (the 3<sup>rd</sup>-highest temperature recorded there for June). Several Nelson sites recorded near-record or record warm temperatures on the 7<sup>th</sup>, and several Northland and Auckland sites came close to breaking June record high temperatures on the 2<sup>nd</sup>.

**Record or near-record daily maximum air temperatures were recorded at:**

Location	Extreme maximum temperature (°C)	Date of extreme temperature	Year Records Began	Comments
Kerikeri	21.0	2nd	1981	Equal 3rd-highest
Leigh	20.3	2nd	1966	2nd-highest
Whangaparaoa	19.0	2nd	1982	3rd-highest
Motueka	21.8	7th	1956	Highest
Nelson	18.7	7th	1943	Equal 2nd-highest
Waipara West	22.2	19th	1973	3rd-highest
Lumsden	16.5	19th	1982	4th-highest
Manapouri	2.0	26th	1973	4th-lowest

The lowest June temperature was -10.7°C, recorded at Lake Tekapo on the 9<sup>th</sup> (not a record). In contrast, many North Island locations experienced near-record high June temperatures on the 7<sup>th</sup>, associated with a strong, warm, northwesterly flow.

**Record or near-record daily minimum air temperatures were recorded at:**

Location	Extreme minimum temperature (°C)	Date of extreme temperature	Year Records Began	Comments
Whitianga	15.8	7th	1971	4th-highest
Te Puke	13.9	7th	1973	4th-highest
Whakatane	15.7	7th	1975	3rd-highest
Rotorua	13.4	7th	1972	4th-highest
Hicks Bay	16.0	7th	1972	3rd-highest
Hastings	13.7	7th	1972	3rd-highest
Ohakune	11.4	7th	1972	2nd-highest
Waiouru	9.9	7th	1972	4th-highest
Warkworth	0.4	16th	1966	2nd-lowest

• **High winds and tornadoes**

The highest wind gust was 139 km/hr, recorded at Mahia on the 20<sup>th</sup> (not a record).

Wind gusts of up to 111 km/hr caused 2 m-high waves in Lyttelton harbour on 7 June, sinking two boats in the marina, and downing trees and powerlines. About 3000 homes on Banks Peninsula lost power for about two hours.

**Near-record high extreme wind gusts for June were recorded at:**

Location	Extreme wind gust speed (km/hr)	Date of extreme gust	Year Records Began	Comments
Turangi	95	15th	1973	Equal 2nd-highest
Puysegur Point	135	18th	1986	2nd-highest

• **Snow and ice**

On 6 June, a large group of motorcyclists had to be rescued after they ignored the road closure signs, and tried to ride over Danseys Pass. Snow was reportedly shoulder high near the summit. On 7 June, SH8, the Lindis Pass, was closed by snow between Omarama and Tarras, and chains were required on Burkes Pass. In Central Otago, a farmer rescued two people from a four-wheel-drive vehicle trapped in snow near the Manuherikia River in the remote Oteake Conservation Park, after they ignored road closed signs.

On 8 June, snow closed the Desert Road, the Lindis Pass, and SH1 from Hildethorpe to Oamaru. In Christchurch, snow settled above 300 m on the Port Hills, with small hail at lower levels in some city suburbs. Snow was also reported in the Wellington hill suburb of Newlands, with sleet and hail elsewhere over the city. SH2 over the Rimutaka Hill was closed by snow for a short time.

Snow closed SH8, the Lindis Pass, and SH94 from Te Anau to Milford Sound, to towing vehicles over the weekend of 12-13 June, and other vehicles required chains. Chains were also essential on the Crown Range between Queenstown and Wanaka.

Snow overnight and in the morning of 23 June closed schools in the Queenstown and Te Anau areas, and affected many roads. The Crown Range between Arrowtown and Wanaka, and SH8, between Omarama and Tarras, (the Lindis Pass), and between Fairlie and Twizel (Burkes Pass) were closed, and chains were required on SH65 near Springs Junction, SH80 near Mount Cook, SH6 between Queenstown and Lumsden, SH94 between Te Anau and Milford Sound, the Lewis Pass, Porters Pass, and Arthurs Pass. Queenstown Airport was closed all morning because of snow on the runway.

• **Fog**

Fog affected Auckland Airport on 26 June, with about 50 domestic flights delayed or cancelled during the morning.

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