

## Record-dry June for parts of the North Island

<b>Rainfall</b>	Rainfall was well below normal (<50%) for many stations in the North Island south of Auckland city, particularly in the central and western parts of the Island. Rainfall was also well below normal for some parts of the northern and central South Island, and below normal rainfall (50-79%) was observed in the southern and western South Island. Rainfall was near normal (80-119%) in Hawke's Bay and near normal or above normal (120-149%) in Northland.
<b>Temperature</b>	June temperatures were near average for most of the country (-0.50°C to +0.50°C). Pockets of above average temperatures (0.51°C to 1.20°C) occurred in the Bay of Plenty, West Coast, and inland Otago. Below average temperatures (-0.51°C to -1.20°C) were observed in parts of the Wellington Region and the central North Island, and well below average temperatures (< -1.20°C) were observed in isolated locations in the eastern South Island.
<b>Sunshine</b>	Sunshine was well above normal (> 125%) in Auckland, Waikato, Kapiti Coast, Taranaki, and parts of Southland. Above normal sunshine (110-125%) was recorded in Marlborough, Nelson and West Coast. Sunshine was typically near normal (90-109%) for the remainder of the country, although some eastern parts of the South Island recorded below normal sunshine (75-89%).
<b>Soil Moisture</b>	As at 1 July 2017, soil moisture levels were below normal for the time of year for large parts of Southland and inland Otago. Soil moisture levels were above normal for eastern parts of the South Island. Near normal soil moisture levels were observed for the entire North Island.

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### Overview

Overall, mean sea level air pressures were higher than normal over and to the east, west, and south New Zealand during June. This resulted in more easterlies than usual over the North Island and more westerlies than usual over the South Island. Settled weather with clear skies prevailed over much of the country during the month, leading to record-low or near-record-low June rainfall totals for some locations, and higher than usual sunshine for the North Island in particular. The settled conditions also caused foggy conditions on a number of days during the month, particularly in Auckland, where flights were affected.

**Further Highlights:**

- The highest temperature was 22.2°C, observed at Christchurch (Riccarton) on 12 June.
- The lowest temperature was -8.0°C, observed at Middlemarch on 26 June.
- The highest 1-day rainfall was 131.6 mm, recorded at Hokitika on 30 June.
- The highest wind gust was 198 km/hr, observed at Cape Turnagain on 13 June.
- Of the six main centres in June 2017, Auckland was the warmest, Tauranga was the sunniest, Christchurch was the coldest, driest and least sunny, and Wellington was the wettest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2017 so far (1 January – 30 June) are Whakatane (1319 hours), Richmond (1279 hours), Blenheim (1266 hours), and Napier (1212 hours).

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**Rainfall: A dry June for many, particularly in the North Island**

Rainfall was well below normal (<50% of the June normal) for a number of stations in the North Island south of Auckland city, particularly in the central and western parts of the Island. Notably, two locations in Auckland city recorded their driest June on record, and many locations, particularly in the west of the North Island, observed record or near-record low rainfall totals in June 2017. Below normal rainfall (50-79% of the June normal) was observed in most other areas. Rainfall was also well below normal for some parts of the northern and central South Island, and below normal rainfall (50-79%) was observed in the southern and western South Island. Rainfall was near normal (80-119%) in Hawke's Bay and near normal or above normal (120-149%) in Northland.

As at 1 July 2017, soil moisture levels were below normal for the time of year for large parts of Southland and inland Otago. Soil moisture levels were above normal for eastern parts of the South Island. Near normal soil moisture levels were observed for the entire North Island.

**Record<sup>1</sup> or near-record June rainfall totals were recorded at:**

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
<b>High records or near-records</b>				
None observed				
<b>Low records or near-records</b>				
Auckland (Western Springs)	59	48	1948	Lowest
Auckland (Airport)	48	44	1959	Lowest
Dannevirke	24	24	1951	Lowest
Paraparaumu	10	10	1945	Lowest
Arapito	86	39	1978	Lowest
Taupo	33	36	1949	2nd-lowest
Turangi	64	41	1968	2nd-lowest
Lower Retaruke	50	35	1966	2nd-lowest
Palmerston North	26	27	1928	2nd-lowest
Upper Hutt	21	15	1924	2nd-lowest
Ohakune	46	32	1961	2nd-lowest
Pukekohe	55	39	1944	3rd-lowest
Taumarunui	46	32	1913	3rd-lowest
Levin	31	29	1895	3rd-lowest
Stratford	74	38	1960	3rd-lowest
Waiouru	45	44	1950	3rd-lowest
Takaka	84	41	1976	3rd-lowest
Waipara West	12	22	1973	3rd-lowest
Takapau Plains	37	38	1962	Equal 3rd-lowest
Reefton	90	45	1960	4th-lowest

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## Temperature: Near average temperatures for most of the country

The nationwide average temperature in June 2017 was 8.8°C (0.2°C above the 1981-2010 June average from NIWA's seven station temperature series which begins in 1909).

June temperatures were near average for most of the country (-0.50°C to +0.50°C of the June average). Some areas experienced above average temperatures (0.51°C to 1.20°C of the June average), namely the Bay of Plenty, West Coast, and inland Otago. Below average temperatures (-0.51°C to -1.20°C of the June average) were observed in parts of the Wellington Region and the central North Island, and well below average June temperatures (< -1.20°C of the June average) were observed at some isolated locations in the eastern South Island; Oamaru recorded its coolest June on record. Settled weather conditions saw some locations on both Islands experience near-record high mean maximum

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<sup>1</sup> The rankings (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>.etc) in all Tables in this summary are relative to climate data from a *group* of nearby stations, some of which may no longer be operating. The current climate value is compared against all values from any member of the group, without any regard for homogeneity between one station's record, and another. This approach is used due to the practical limitations of performing homogeneity checks in real-time.

temperatures for June, as higher than usual afternoon temperatures were caused by the sunny weather and mild airflows.

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Te Puke	11.6	1.6	1973	3rd-highest
Low records or near-records				
Oamaru	4.8	-1.8	1967	Lowest
Kaikoura	7.1	-2.0	1963	2nd-lowest

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Te Puke	16.3	1.5	1973	2nd-highest
Whitianga	17.2	1.6	1962	3rd-highest
Taupo	13.6	1.9	1949	3rd-highest
Te Kuiti	15.4	1.5	1959	3rd-highest
Puysegur Point	11.8	0.9	1978	3rd-highest
Motu	12.7	1.7	1990	4th-highest
Westport	14.3	1.2	1937	4th-highest
Arapito	14.7	1.2	1978	4th-highest
Low records or near-records				
Oamaru	9.5	-1.7	1967	3rd-lowest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
None observed				
Low records or near-records				
Kaikoura	2.2	-4.1	1963	Lowest
Turangi	0.7	-2.1	1968	3rd-lowest
Martinborough	2.6	-1.4	1986	3rd-lowest
Oamaru	0.0	-1.9	1967	4th-lowest

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## Sunshine: A sunny month for the North Island

Persistent high pressure systems over New Zealand during June resulted in sunny weather over much of the country. Sunshine was well above normal (> 125% of the June normal) in Auckland, Waikato, Kapiti Coast, Taranaki, and parts of Southland. Te Kuiti, New Plymouth, and Paraparaumu observed their sunniest June on record – Te Kuiti recorded a huge 176% of normal sunshine hours for the month. Above normal sunshine (110-125% of the June normal) was recorded in Marlborough, Nelson and West Coast. Sunshine was typically near normal (90-109% of the June normal) for the remainder of the country, although some eastern parts of the South Island recorded below normal sunshine (75-89% of the June normal).

Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2017 so far (1 January – 30 June) are Whakatane (1319 hours), Richmond (1279 hours), Blenheim (1266 hours), and Napier (1212 hours).

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

Location	Sunshine hours	Percentage of normal	Year records began	Comments
<b>High records or near-records</b>				
Te Kuiti	152	176	1962	Highest
New Plymouth	173	146	1972	Highest
Paraparaumu	158	162	1953	Highest
Rotorua	157	131	1976	2nd-highest
Auckland (Mangere)	147	127	1963	2nd-highest
Turangi	158	141	1976	2nd-highest
Taumarunui	123	182	1947	3rd-highest
Arapito	134	140	1979	3rd-highest
Invercargill	117	149	1913	3rd-highest
<b>Low records or near-records</b>				
None observed				

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## June climate in the six main centres

Mean temperatures were near average at all the main centres except for Tauranga (above normal temperatures there). It was a dry month throughout the country, with below normal rainfall or well below normal rainfall observed in all main centres. Sunshine was mixed, with the North Island main centres observing well above normal, above normal, or near normal sunshine, and the South Island main centres observing below normal sunshine. Of the six main centres in June 2017, Auckland was the warmest, Tauranga was the sunniest, Christchurch was the coldest, driest and least sunny, and Wellington was the wettest.

### June 2017 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland <sup>a</sup>	12.2	+0.4	Near normal
Tauranga <sup>b</sup>	11.8	+0.8	Above normal
Hamilton <sup>c</sup>	9.5	+0.1	Near normal
Wellington <sup>d</sup>	9.7	0.0	Near normal
Christchurch <sup>e</sup>	6.4	0.0	Near normal
Dunedin <sup>f</sup>	7.5	+0.2	Near normal
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland <sup>a</sup>	54	46%	Well below normal (2 <sup>nd</sup> lowest)
Tauranga <sup>b</sup>	66	58%	Below normal
Hamilton <sup>c</sup>	63	51%	Below normal
Wellington <sup>d</sup>	104	76%	Below normal
Christchurch <sup>e</sup>	38	67%	Below normal
Dunedin <sup>f</sup>	46 <sup>2</sup>	79%	Below normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland <sup>a</sup>	147	127%	Well above normal (2 <sup>nd</sup> -highest)
Tauranga <sup>b</sup>	166	122%	Above normal
Hamilton <sup>g</sup>	126 <sup>3</sup>	114%	Above normal
Wellington <sup>d</sup>	107	108%	Near normal
Christchurch <sup>e</sup>	96	82%	Below normal
Dunedin <sup>f</sup>	108 <sup>2</sup>	88%	Below 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

<sup>2</sup> 1 day missing

<sup>3</sup> 7 days missing

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## Highlights and extreme events

### Temperatures

The highest temperature in June 2017 was 22.2°C, observed at Christchurch (Riccarton) on 12 June. The lowest temperature was -8.0°C, observed at Middlemarch on 26 June.

Early on 26 June, much of the eastern South Island experienced below freezing temperatures. The lowest temperature in New Zealand for June 2017 was recorded on this morning in Middlemarch. Numerous other locations recorded temperatures below -4°C.

#### Record or near-record daily maximum air temperatures for June were recorded at:

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Lumsden	17.0	21st	1982	Equal 3rd-highest
Low records or near-records				
None observed				

#### Record or near-record daily minimum air temperatures for June were recorded at:

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Mahia	13.9	24th	1990	3rd-highest
Medbury	11.5	13th	1927	Equal 3rd-highest
Low records or near-records				
Kaikoura	-1.7	15th	1963	2nd-lowest

### Rain and slips

The highest 1-day rainfall was 131.6 mm, recorded at Hokitika on 30 June.

On 2 June, heavy rain in Northland caused slips on SH 1 north of Warkworth and on the Brynderwyn Hills. The Brynderwyn slip blocked one lane of SH 1 for a time.

On 22 June, heavy rain affected the Far North District. In Kaeo, two schools closed for the day because flooding affected bus services, and a preschool was also closed. Flooding affected SH 1 near Horeke as the Waihou River breached its banks and SH 1 near Mangamuka was down to one lane due to flooding. SH 10 east of Taipa was also affected by flooding. 54 mm of rain fell in Kaitaia in just 10 hours, which was more rain than the total recorded during the first three weeks of June 2017 (52 mm).

On 23 June, the weather system that caused heavy rain for Northland moved southwards over the eastern North Island. SH 2 through the Waimana Gorge in the Bay of Plenty was closed for a time due

to slips. Te Puru School on the Coromandel Peninsula was closed for the day due to surface flooding and slips on the roads near the school.

Overnight on 30 June-1 July, heavy rain hit the South Island, with flooding in Tasman District near Okarito and in Nelson.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Roxburgh	29	13th	1950	3rd-highest
Hokitika	132	30th	1866	4th-highest

**Wind**

The highest wind gust was 198 km/hr, observed at Cape Turnagain on 13 June.

On 5 June, a waterspout was spotted off the coast of New Plymouth.

On 13 June, strong winds caused the cancellation and delay of some flights between Auckland and Queenstown and Auckland and Dunedin. Three flights into Christchurch were also delayed.

On 14 June, strong winds caused large swells off the South Island's east coast and Wellington. Interislander ferry sailings and Wellington Harbour ferries were cancelled. Waves of 10m were recorded off the coast of Banks Peninsula, and a campervan was pushed onto its side in Banks Peninsula.

On 21-22 June, high winds affected much of the North Island. Strong gusts blew some roof tiles off a house in Te Aroha, and some ferry trips on Auckland's Waitemata Harbour were delayed.

On 23 June, southerly gusts were strong through Cook Strait and as a result three Interislander ferry crossings were cancelled.

Overnight on 30 June-1 July, high winds downed trees in parts of the western and northern South Island.

**Record or near-record June extreme wind gusts were recorded at:**

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Farewell Spit	102	14th	1973	Equal highest
Oamaru	85	14th	1984	2nd-highest
Port Taharoa	106	14th	1978	3rd-highest
Whanganui	102	14th	1977	3rd-highest
Napier	95	14th	1973	Equal 3rd-highest
Waione	80	14th	1996	Equal 4th-highest



### **Snow and ice**

On 5 June, motorists were warned to take extra caution on SH87 from Outram to Kyeburn due to ice. A caution was in place on SH73 from Arthur's Pass to Springfield due to snow and ice.

On 7 June, ice warnings were in place for SH 6 from Kawarau Gorge to Gibbston and around Queenstown, SH 94 near Milford Sound, and SH 79, SH 8 and SH 80 from Rangitata to Mt Cook National Park.

On 13 June, snow closed SH 94 between Hollyford Valley Road and Gulliver River Bridge. Sleet fell in Dunedin for a time, and snow flurries occurred in Queenstown.

On 14 June, snow and ice warnings were in place for SH 87 from Outram to Middlemarch, SH 85 from Alexandra to Ranfurly, and SH 94 from Te Anau to Milford Sound.

On 26 June, ice warnings were in place on roads throughout the South Island due to temperatures overnight that fell below freezing. A car slid on ice and plunged into Otago Harbour.

On 29 June, Heriot Row in central Dunedin was closed after several ice-related car crashes early in the morning. Roads throughout Otago were gritted to help prevent vehicles sliding on the ice.

Overnight on 30 June-1 July, snow fell in the Mackenzie Country, closing SH 8 between Twizel and Fairlie and SH 80 between Aoraki Mt Cook and Ben Ohau. Up to 30 vehicles were towed from these state highways on 1 July.

### **Cloud and fog**

On 1 June, flights and ferries were affected by fog in Auckland. 44 flights were cancelled and 30 flights were delayed from Auckland Airport, and ferries on the Waitemata Harbour were delayed.

On 6 June, flights were again affected at Auckland Airport as fog enveloped parts of the region. 29 domestic flights were cancelled and 19 were delayed. West Harbour ferries were also delayed due to the fog.

On 17 June, 60 regional flights were cancelled and 48 were delayed when fog descended on Auckland Airport. Four international flights were also affected by delays or diversions. A car crash near Netherton in the Waikato Region, where four people died, was attributed to the foggy conditions.

On 18 June, heavy fog again shrouded Auckland City with many people being woken by two ships' fog horns. Fog also affected parts of the Waikato, Waitomo and Taumurunui areas. At Auckland Airport, seven regional flights were cancelled and 10 were delayed, and two international flights were diverted to Wellington.

On 21 June, fog caused flights to be delayed and cancelled at Christchurch Airport. At least 30 domestic flights were affected. One flight was also cancelled at Timaru Airport due to fog.

On 30 June, for the fifth time in June, Auckland Airport was affected by fog, causing the cancellation of 18 domestic flights and delaying 12 flights.

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**For further information, please contact:**

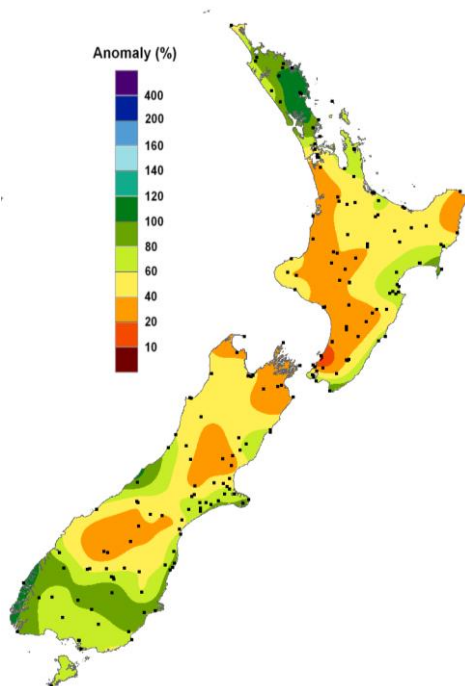
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*June 2018 rainfall, expressed as a percentage of normal (1981-2010 normal).*

*June rainfall was well below normal (<50%) for many parts of the country due to persistent high pressure systems and consequent settled weather conditions for much of the month.*

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