

Wettest May on record for Auckland and cold blast for NZ in late May

Rainfall	Wettest May on record for Auckland (almost 250 percent of May normal rainfall). More than 150 percent of normal May rainfall recorded in large parts of Waikato, Canterbury, Otago, and also New Plymouth. Above normal rainfall (120-150 percent of May normal) recorded in parts of: Northland, Bay of Plenty, Taranaki, Kapiti Coast, Wellington, and Southland. In contrast, below normal rainfall (around 50 percent of May normal) recorded in Buller district, and 50-80 percent of May normal rainfall recorded in Hawke's Bay and inland Canterbury.
Soil moisture	As at 1 June, below normal soil moisture deficit levels for the time of year were observed in Hawke's Bay and Wairarapa, as well as around Queenstown Lakes district. Near normal soil moisture levels elsewhere, except for Marlborough, Kaikoura Coast, coastal Otago, and coastal Canterbury (south of Banks Peninsula), which were wetter than usual.
Temperature	Mean temperatures for May were above average (0.5 to 1.2°C above the May average) across most of the central and eastern North Island. In general, May temperatures were near average throughout the remainder of the country (within 0.5°C of May average). Cold temperatures were experienced throughout the country on May 27-29.
Sunshine	Sunshine hours for May were above normal (110 to 124 percent of May normal) for the central North Island and the west coast of the South Island south of Franz Josef. Sunshine was well above normal (more than 125 percent of normal) in Taumarunui. Sunshine hours were near normal (90-110 percent of May normal) for the remainder of the country except for Taranaki, where sunshine hours were below normal (75-90 percent of normal).

Click on the link to jump to the information you require:

[Overview](#)

[Rain](#)

[Temperature](#)

[Sunshine](#)

[May climate in the six main centres](#)

[Highlights and extreme events](#)

Overview

May 2013 was characterised by lower pressures than usual over and to the east of New Zealand, with higher than normal pressures to the southwest of the country. This meant more northwesterly winds than normal affected the North Island, and more southeasterly winds than normal affected the South Island. It was a warmer than usual month for much of the North Island, due to this air flow. Very cold southerly air flow resulted in widespread snowfall over Southland, Otago, and parts of Canterbury, as well as the Central Plateau, as well as low temperatures and high winds to the North Island, on 27-29 May.

Almost two-and-a-half times the normal May rainfall was recorded in Auckland – it was the wettest May on record for Auckland and Pukekohe. Almost double the normal rainfall for May was experienced in parts of Waikato. Rainfall was also well above normal (above 150 percent of May normal) in New Plymouth and parts of Marlborough, Canterbury, and Otago. Rainfall was above normal (120-150 percent of May normal) in parts of: Northland, Bay of Plenty, Taranaki, Kapiti Coast, Wellington, and Southland. In contrast, May rainfall was around 50 percent of normal in the Buller district. May rainfall was below normal (50-79 percent of May normal) for parts of Hawke's Bay and inland Canterbury. May rainfall was near normal elsewhere. As at 1 June, below normal soil moisture levels for the time of year were observed in Hawke's Bay and Wairarapa, as well as around the Queenstown Lakes district. Near normal soil moisture levels were evident elsewhere, except for Marlborough, Kaikoura Coast, coastal Otago, and coastal southern Canterbury, where soils were much wetter than usual for the time of year.

Mean temperatures for May were above average (0.5 to 1.2°C above the May average) across most of the central and eastern North Island. In general, May temperatures were near average throughout the remainder of the country (within 0.5°C of May average). Low temperatures were experienced throughout the country on May 28, with many locations recording their lowest May afternoon temperatures on record. The nation-wide average temperature in May 2013 was 11.1°C (0.4°C above the 1971-2010 May average, using NIWA's seven-station temperature series which begins in 1909).

Sunshine hours for May were above normal (110 to 124 percent of May normal) for the central North Island and the west coast of the South Island south of Franz Josef. Sunshine was well above normal (more than 125 percent of May normal) in Taumarunui. Sunshine hours were near normal (90-110 percent of May normal) for the remainder of the country except for Taranaki, where sunshine hours were below normal (75-90 percent of normal). Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2013 (January to May) are: Whakatane (1288 hours), New Plymouth (1272 hours), Blenheim (1162 hours) and Paraparaumu (1160 hours).

Further Highlights:

- The highest temperature was 25.3 °C, recorded at Leigh on 3 May.
- The lowest temperature was -7.1°C, observed at Motu on 29 May.
- The highest 1-day rainfall was 124 mm, recorded at Milford Sound on 31 May.
- The highest wind gust was 170 km/hr, at South West Cape, on 26 May.

- In May 2013, Auckland was the wettest, Tauranga was the warmest and sunniest, Christchurch was the driest and coolest, and Dunedin was the cloudiest of the six main centres.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2013 (January to May) are: Whakatane (1288 hours), New Plymouth (1272 hours), Blenheim (1162 hours) and Paraparaumu (1160 hours).

For further information, please contact:

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Rainfall: Wettest May on record for Auckland. Above normal rainfall for northern and western North Island, and eastern South Island. Below normal rainfall for Hawke’s Bay, inland Canterbury, and parts of the West Coast.

Almost two-and-a-half times the normal May rainfall was recorded in Auckland – it was the wettest May on record for Auckland and Pukekohe. Almost double the normal rainfall for May was experienced in parts of Waikato. Rainfall was also well above normal (above 150 percent of May normal) in New Plymouth and parts of Marlborough, Canterbury and Otago. Rainfall was above normal (120-150 percent of May normal) in parts of: Northland, Bay of Plenty, Taranaki, Kapiti Coast, Wellington, and Southland. In contrast, May rainfall was around 50 percent of normal in the Buller district. May rainfall was below normal (50-79 percent of May normal) for parts of Hawke’s Bay and inland Canterbury. May rainfall was near normal elsewhere.

As at 1 June, below normal soil moisture deficit levels for the time of year were observed in Hawke’s Bay and Wairarapa, as well as the Lakes district. Near normal soil moisture levels were evident elsewhere, except for Marlborough, Kaikoura Coast, coastal Otago, and coastal Canterbury (south of Banks Peninsula), where soils were much wetter than usual for the time of year.

Record¹ or near-record May rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Warkworth	244	182	1966	4th-highest
Toenepi	178	193	1951	4th-highest
Auckland (Mangere)	261	242	1959	Highest
Auckland (Airport)	238	217	1959	2nd-highest

¹ The rankings (1st, 2nd, 3rd.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.

Pukekohe	241	197	1944	Highest
Whatawhata	264	177	1952	3rd-highest
Hamilton	193	180	1935	4th-highest
Low records or near-records				
Secretary Island	277	70	1985	4th-lowest
Campbell Island	75	56	1992	2nd-lowest

Temperature: Above average May temperatures across central and eastern North Island. Near average temperatures elsewhere.

Mean temperatures for May were above average (0.5 to 1.2°C above the May average) across most of the central and eastern North Island. In general, May temperatures were near average throughout the remainder of the country (within 0.5°C of May average). Low temperatures were experienced throughout the country on May 28, with many locations recording their lowest May afternoon temperatures on record.

The nation-wide average temperature² in May 2013 was 11.1°C (0.4°C above the 1971-2010 May average, using NIWA's seven-station temperature series which begins in 1909).

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Leigh	16.2	0.8	1966	4th-highest
Ohakune	9.8	1.5	1962	4th-highest

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Leigh	20.0	2.0	1966	2nd-highest
Motu	15.4	2.2	1990	2nd-highest
Hamilton (Ruakura)	18.9	2.0	1906	2nd-highest
Wairoa	18.6	1.4	1964	4th-highest
Mahia	16.9	1.4	1990	4th-highest
Ohakune	14.5	1.9	1962	3rd-highest
Arapito	16.8	1.0	1978	4th-highest
Reefton	14.8	1.6	1960	3rd-highest
Tiwai Point	13.3	1.2	1970	4th-highest

² Interim monthly value

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Campbell Island	5.0	0.9	1991	3rd-highest

Sunshine: Above normal May sunshine hours for central North Island and west coast of South Island. Sunshine was near normal elsewhere except Taranaki (below normal)

Sunshine hours for May were above normal (110 to 124 percent of May normal) for the central North Island and the west coast of the South Island south of Franz Josef. Sunshine was well above normal (more than 125 percent of May normal) in Taumarunui. Sunshine hours were near normal (90-110 percent of May normal) for the remainder of the country except for Taranaki, where sunshine hours were below normal (75-90 percent of normal).

Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2013 (January to May) are: Whakatane (1288 hours), New Plymouth (1272 hours), Blenheim (1162 hours) and Paraparaumu (1160 hours).

Record or near-record May sunshine hours were recorded at:

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Cheviot	151	125	1983	2nd-highest
Queenstown	120	137	1930	4th-highest
Low records or near-records				
Stratford	101	78	1963	4th-lowest

May climate in the six main centres

May rainfall was over two-and-a-half-times normal in Auckland, which was the highest May rainfall recorded in a group of surrounding stations, in records which began in 1959. Rainfall was almost double the normal rainfall for May in Hamilton and Dunedin, and above normal rainfall was experienced in Wellington and Christchurch. All of the main centres had near average mean temperatures except for Auckland (below average) and Tauranga (above average). Sunshine was near normal for May in all the main centres.

In May 2013, Auckland was the wettest, Tauranga was the warmest and sunniest, Christchurch was the driest and coolest, and Dunedin was the cloudiest of the six main centres.

May 2013 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	13.3	-0.7	Below average
Tauranga ^b	14.2	0.9	Above average
Hamilton ^c	11.9	0.3	Near average
Wellington ^d	11.9	0.2	Near average
Christchurch ^e	9.3	0.3	Near average
Dunedin ^f	9.7	0.4	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	261	242%	Highest May rainfall on record
Tauranga ^b	119	108%	Near normal
Hamilton ^c	193	180%	4 th -highest May rainfall on record
Wellington ^d	161	145%	Above normal
Christchurch ^e	70	122%	Above normal
Dunedin ^f	119	184%	Well above normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland ^a	137	95%	Near normal
Tauranga ^b	173	105%	Near normal
Hamilton ^g	139	95%	Near normal
Wellington ^d	132	99%	Near normal
Christchurch ^e	131	94%	Near normal
Dunedin ^f	122	112%	Above normal

^a Mangere ^b Tauranga Airport ^c Hamilton Airport ^d Kelburn ^e Christchurch Airport ^f Musselburgh ^g Ruakura

Highlights and extreme events

Rain and slips

The highest 1-day rainfall was 124 mm, recorded at Milford Sound on 31 May.

On 4 May, heavy rain caused flooding across Auckland.

On 6 May, heavy rain caused flooding and slips on SH1 between Blenheim and Seddon, and reduced the highway to one lane just north of Kaikoura. In Blenheim, many properties were inundated. Christchurch city was also affected with surface flooding on roads, and properties damaged. In Wellington the torrential rain caused flooding throughout the city, with buses diverted around flooded sections of their routes. Many evening commuter bus services were cancelled. Properties were flooded, including a basement car park in Newtown, where cars were reported to be floating. The storm water system in Wellington was overloaded and raw sewage was discharged into Lyall Bay.

On 7 May a slip closed the Johnsonville suburban railway line in Wellington.

On 8 May, heavy rain in Northland caused surface flooding on SH10 near Kerikeri. Farmland near Waimate North was flooded when a tributary of the Waitangi River overflowed.

On 24 May, heavy rain caused minor slips on SH5 between Napier and Taupo.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Dunedin (Airport)	53	5th	1962	3rd-highest
Lumsden	35	5th	1982	3rd-highest

Wind

The highest wind gust was 170 km/hr, at South West Cape, on 26 May.

On 5 May, gales in Auckland brought trees down on to power lines, affecting electricity supply, particularly in West Auckland.

On 6 May, wind warnings were issued for SH6 between Harihari and Haast. Further north, strong winds brought down power lines in Hamilton.

On 7 May, strong winds at Wellington Airport grounded all Air New Zealand provincial flights, and caused considerable delays for jet flights. East by West ferry services were also cancelled.

On 10 May, wind warnings were issued for SH6 between Harihari and Haast. In Picton, a strong gust caused one of the Interislander ferries to slam into the dock, damaging it. The ferry returned to Wellington as it could not be secured to the dock in Picton.

On 20 May, two waterspouts were observed over Auckland's Manukau Harbour.

On 26 May, high winds and lightning caused power outages for more than 1200 properties in Colac Bay, Wallacetown, Waimatua, and Mokotua.

On 27 May, wind warnings were issued for SH1 at the Desert Road. In Wellington city, a fifth-floor window was sucked out of an office block, crashing to the footpath below. In Southland, wind caused property damage in Orepuki. High winds caused a roof to lift off a house in Port Waikato.

Record or near record May extreme wind gusts were recorded at:

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Cape Reinga	152	28th	1974	3rd-highest
Kaitaia	102	28th	1985	3rd-highest
Kaikohe	74	5th	1986	Equal 4th-highest
Pukekohe	65	6th	1986	3rd-highest
Hawera	85	6th	1986	Equal 3rd-highest
Puysegur Point	143	26th	1986	4th-highest
Cape Campbell	115	6th	1963	4th-highest
South West Cape	170	26th	1991	Highest

Temperatures

The highest temperature was 25.3 °C, recorded at Leigh on 3 May. This is the highest May temperature recorded in a group of surrounding stations, in records beginning in 1966. May 12-14 were particularly warm due to calm and sunny conditions, resulting in a number of maximum temperature records or near-records for May being experienced in areas in the east of both Islands.

The lowest temperature was -7.1°C, observed at Motu on 29 May. Record or near-record low May morning and afternoon temperatures were recorded in many locations on 27-29 May, due to a very cold southerly airflow which caused widespread snowfall over Southland, Otago, and Canterbury.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Kerikeri	23.0	2nd	1981	2nd-highest
Kaikohe	22.4	2nd	1973	3rd-highest

Leigh	25.3	3rd	1966	Highest
Te Puke	22.4	14th	1973	3rd-highest
Whakatane	22.2	15th	1975	4th-highest
Rotorua	21.3	13th	1964	2nd-highest
Motu	21.9	13th	1990	Highest
Hamilton	23.2	13th	1906	Equal 2nd-highest
Mahia	22.8	13th	1990	3rd-highest
Ohakune	21.6	13th	1962	2nd-highest
Blenheim	23.7	14th	1932	3rd-highest
Arthurs Pass	17.4	12th	1973	Equal highest
Waiau	24.3	4th	1974	Equal 2nd-highest
Cheviot	23.2	12th	1982	4th-highest
Le Bons Bay	20.7	12th	1984	4th-highest
Lake Tekapo	20.8	13th	1925	Equal 3rd-highest
Tara Hills	22.9	13th	1949	Highest
Lauder	21.9	4th	1924	4th-highest
Low records or near-records				
Cape Reinga	11.6	28th	1971	Lowest
Kaitaia (Airport)	12.1	28th	1948	2nd-lowest
Kaitaia (Observatory)	12.5	28th	1985	Lowest
Kerikeri	11.0	28th	1981	Lowest
Kaikohe	10.1	28th	1973	Lowest
Dargaville	12.3	28th	1951	4th-lowest
Whangarei	10.8	28th	1967	Lowest
Warkwort	11.7	28th	1966	3rd-lowest
Whangaparaoa	11.3	28th	1982	Equal lowest
Whitianga	9.1	28th	1971	Lowest
Paeroa	9.3	28th	1971	2nd-lowest
Te Puke	10.4	28th	1973	3rd-lowest
Rotorua	9.1	28th	1972	4th-lowest
Auckland (Mangere)	10.9	28th	1961	3rd-lowest
Pukekohe	8.9	28th	1969	2nd-lowest
Whatawhata	7.6	28th	1952	Lowest
Hamilton	8.1	28th	1946	2nd-lowest
Port Taharoa	9.8	28th	1974	Lowest
Te Kuiti	9.9	28th	1959	4th-lowest
Taumarunui	7.4	28th	1947	Equal 3rd-lowest
Masterton	5.9	28th	1943	Lowest
Takapau Plains	5.0	28th	1972	2nd-lowest
Dannevirke	6.6	28th	1951	3rd-lowest
Castlepoint	5.8	28th	1972	Lowest
Martinborough	6.6	28th	1986	Lowest
Ngawi	8.5	28th	1972	Lowest
Hastings	9.8	28th	1972	4th-lowest
Paraparaumu	8.5	28th	1972	4th-lowest

Palmerston North	8.1	28th	1940	4th-lowest
Levin	8.6	28th	1950	Equal 3rd-lowest
Wellington	9.6	28th	1972	Equal 3rd-lowest
Wallaceville	6.3	28th	1972	Lowest
Stratford	6.6	28th	1972	4th-lowest
Hawera	8.7	28th	1977	4th-lowest
Ohakune	2.8	28th	1972	Lowest
Takaka	9.7	28th	1978	2nd-lowest
Haast	5.8	27th	1949	Lowest
Secretary Island	5.3	27th	1989	Lowest
Puysegur Point	7.5	27th	1978	2nd-lowest
Cape Campbell	8.1	28th	1972	4th-lowest
Le Bons Bay	5.5	28th	1984	Equal lowest
Ranfurlly	2.5	28th	1975	4th-lowest
Manapouri	3.4	27th	1973	Equal 2nd-lowest
Balclutha	3.6	27th	1972	Lowest
Nugget Point	3.7	27th	1972	Equal 2nd-lowest
South West Cape	5.9	27th	1991	3rd-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
Low records or near-records				
Cape Reinga	5.9	28th	1951	2nd-lowest
Kaitia	4.0	29th	1985	2nd-lowest
Kerikeri	2.2	29th	1981	Lowest
Kaikohe	4.3	29th	1973	4th-lowest
Whangaparaoa	4.0	29th	1982	Lowest
Whakatane	-1.8	30th	1975	Equal lowest
Rotorua	-2.8	30th	1964	2nd-lowest
Motu	-7.1	30th	1990	2nd-lowest
Taumarunui	-3.9	30th	1947	Equal 4th-lowest
Turangi	-4.7	30th	1968	2nd-lowest
Castlepoint	2.4	29th	1972	Lowest
Ngawi	4.1	29th	1972	3rd-lowest
Hicks Bay	2.6	30th	1969	4th-lowest
Mahia	4.2	30th	1990	Equal 2nd-lowest
Haast	-2.4	29th	1949	2nd-lowest
Kaikoura	1.6	29th	1963	4th-lowest
Le Bons Bay	0.2	29th	1984	Equal lowest
South West Cape	2.5	28th	1991	Equal 4th-lowest
High records or near-records				
Orari Estate	10.4	19th	1972	2nd-highest
Campbell Island	9.3	12th	1991	Equal 4th-highest

Lightning and hail

On 6 May, a severe thunderstorm crossed the Wellington region. Lightning split a large pine at the Shandon Golf Course in Petone. In Kaikoura, a lack of electricity meant the high school could not open for the start of term.

On 8 May, it was Northland's turn for thunder and lightning, accompanied by heavy rain.

On 21 May, thunder and lightning, accompanied by heavy rain, crossed the Auckland isthmus. Funnel clouds were seen over Manukau Harbour.

On 27 May, hail and sleet fell in Invercargill. A thunderstorm moved through the Wairarapa with lightning strikes visible in Wellington.

On 28 May, hail was reported in central Wellington and in Palmerston North. Thunder and lightning delayed flights at Auckland Airport, and struck a well-known Norfolk Pine in Mission Bay splitting it down the middle, with branches flying into Selwyn Domain. The tree had to be removed.

Snow and ice

On 10 May, snow fell over Otago with chains essential on SH8 at the Lindis Pass, and on the Crown Range between Queenstown and Wanaka. Snow also fell on SH94 to Milford Sound.

On 27 May, snow fell on SH8 at the Lindis Pass and Arthur's Pass with chains essential, and on SH94 at Gorge Hill. All roads remained open to non-towing vehicles. Heavy snow brought down trees on SH94 to Milford Sound, closing the road beyond Knob's Flat. Snow also fell on SH93 at Maitai, and SH6 between Kingston and Lumsden.

On 28 May, snow closed SH1 near Dunedin, SH8 between Roxburgh and Alexandra, and SH94 from Te Anau to Milford Sound. SH93 was blocked when a truck slid on ice. Snow also fell on the Lindis Pass, Lewis Pass, Arthur's Pass, and Porter's Pass, which were closed to towing vehicles, with chains required by other vehicles. Chains were also required on SH85 between Alexandra and Kyeburn, and cautions were in place for SH1 between Dipton and Lumsden, and SH6 between Lumsden and Queenstown. Snow caused delays at Dunedin Airport, and most flights into and out of Queenstown Airport were cancelled. Snow was reported in Queenstown, Invercargill, and Dunedin, where many local roads were closed with local bus services cancelled. Schools from kindergartens to secondary schools had a late start, and Otago Polytechnic closed for the day. Outpatient clinics were cancelled at Dunedin Hospital. Schools were closed in Alexandra, Wakatipu, Palmerston and parts of Southland. Snow and icy road conditions prevented mail deliveries across large parts of Otago. Black ice was a hazard in the Kawarau Gorge. In northern Southland, McLean Road was closed after trees weighed down by snow fell onto the road. In Christchurch, blizzard-like conditions closed several Banks Peninsula roads and restricted others to 4WD vehicles with chains. There was snow on SH1 at the Desert Road, but it remained open. SH2 was closed at the Rimutaka Hill late in the afternoon, and a caution was issued for SH2 between Wairoa and Gisborne. In Wellington two evening train services between the city and Johnsonville were cancelled because of icy tracks. Snow was reported on Mt Pirongia in the Waikato, and closed roads in central and southern Taranaki.

On 29 May, SH2 at the Rimutaka Hill Road, SH1 at the Desert Road, SH4 west of Ruapehu, and SH49 between Waiouru and Ohakune were closed by snow. In Otago, SH87 from Middlemarch to Outram and some Dunedin hill-suburb roads remained closed, and warnings were in place for SH8 between Milton and Raes Junction, and SH94 between Te Anau and Mossburn, with chains required to be carried.

Cloud and fog

On 9 May, thick fog covered Christchurch, causing delays and cancellations of flights into and out of Christchurch Airport until early afternoon.

On 15 May, heavy fog stopped evening flights into and out of Wellington Airport, including an international flight to Sydney.

For further information, please contact:

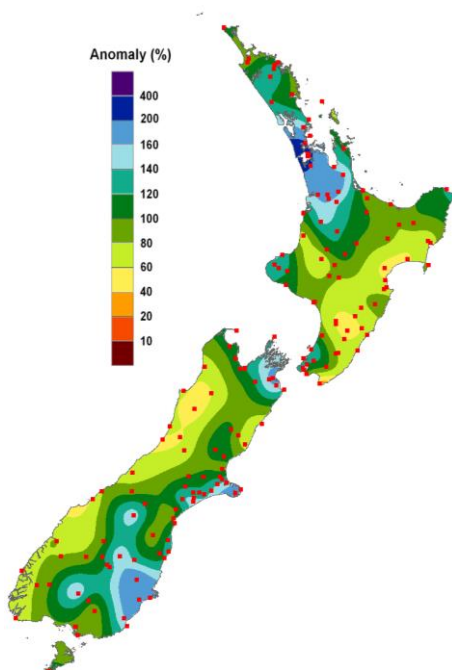
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May 2013 rainfall totals, expressed as a difference from normal (%).

Dark blue colours indicate more than 200 % of May normal rainfall in Auckland. Well above normal rainfall (more than 150 % of normal May rainfall) was recorded in parts of Waikato, Marlborough, Canterbury, and Otago (lighter blue shades). Teal shades indicate above normal rainfall (120-150 % of normal May rainfall) for those areas as well as Northland and Taranaki. Yellow shades indicate below normal and well below normal rainfall totals for May in Hawke's Bay and Buller.