

Highly variable rainfall but plenty of sunshine

Rainfall	August rainfall was wide ranging. Above normal rainfall (120-149%) occurred throughout eastern Northland, Manawatu-Wanganui, Gisborne, Southland and parts of Central Otago. Conversely rainfall was below normal (50-79%) in the Waikato and Bay of Plenty, and well below normal (< 50%) in Tasman, Nelson, Marlborough and Canterbury.
Sunshine	A very sunny month for Waikato, Bay of Plenty, Central Otago as well as parts of the West Coast and Canterbury where above normal sunshine (110-125%) was experienced and several August records were set.
Temperature	Near average temperatures recorded in July persisted into August and characterised much of the country. Pockets of below average temperature (-1.20 to -0.51°C) were recorded in the districts of Waitomo, Opotoki, Central Hawke's Bay, Taranaki and South Wairarapa.
Soil Moisture	As of 1 September 2014, soil moisture levels were typical for the time of year for large parts of the country. Soils were slightly drier than normal in Taranaki, the West Coast and Tasman as well as the districts of Selwyn, Waimakariri and Timaru.

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Overview

August 2014 was characterised by anomalously high pressure south of Australia extending over and around New Zealand. This pressure pattern brought about strong south-westerly flow anomalies to the country.

Rainfall during August was highly variable across the country. Above normal rainfall (120-149%) occurred throughout eastern Northland, Manawatu-Wanganui, Gisborne and Southland regions as well as the Central Otago and Mackenzie districts. The largest rainfall anomalies were in Whangarei and Gisborne where rainfall in excess of 200% of normal occurred. In contrast, dry conditions prevailed in the Waikato, Bay of Plenty, and the north of the West Coast where below normal rainfall (50-79%) was experienced. Conditions were even drier in Tasman, Nelson, Marlborough and coastal Canterbury where well below normal rainfall (< 50%) was observed. As a result, several sites in these regions experienced near-record low rainfall totals for the month.

A lack of rain in large parts of the country coincided with a very sunny end to winter with well above normal (>125%) or above normal (110-125%) sunshine recorded for many locations. It was particularly sunny in the Waikato, Bay of Plenty, Westland, southern Canterbury and Central Otago where well above normal sunshine was observed and several August records were set. Only two locations (Takaka and Martinborough) recorded below normal sunshine levels during August.

Soil moisture levels around the country were at field capacity at the start of August 2014 but began to deplete during the second half of the month. Despite this, as at 1 September soil moisture levels in most parts of the country remained within the near normal range for the time of year but were slightly drier than normal in Taranaki, the West Coast and Tasman as well as the districts of Selwyn, Waimakariri and Timaru.

The near average temperatures observed in July continued into August, with the majority of the country characterised again by near average temperatures (within 0.5°C of average). In fact nationwide, only a handful of stations reported above average mean temperatures for August. Small pockets of below average temperature (-1.20 to -0.51°C) were recorded in the districts of Waitomo, Opotoki, Central Hawke's Bay, Tararua and South Wairarapa. Despite the fairly neutral August mean temperatures, some weather highlights did occur. In particular the 1st-3rd of August were exceptionally warm all around the country due to a north-westerly flow combined with the foehn effect in eastern areas. As a result, several locations experienced record or near record high daily maximum and minimum temperatures. The nation-wide average temperature in August 2014 was 8.7°C (0.1°C above the 1971-2000 August average from NIWA's seven station temperature series which begins in 1909)¹.

Further Highlights:

- The highest temperature was 23.6°C, observed at Christchurch (Riccarton) on 2 August.
- The lowest temperature was -7.0°C, observed at Middlemarch on 4 August.
- The highest 1-day rainfall was 157.2 mm, recorded at Tolaga Bay on 4 August.
- The highest wind gust was 189 km/hr, observed at Cape Turnagain on 8 August.

¹ Interim value

- Of the six main centres in August 2014, Christchurch was the coolest and driest, Auckland was the warmest, wettest and cloudiest and Tauranga was the sunniest.
- Of the available, regularly reporting sunshine observation sites, the sunniest four centres² so far in 2014 (January to August) are: Whakatane (1793 hours), Tauranga (1622 hours), Nelson (1557 hours) and Lake Tekapo (1554 hours).

For further information, please contact:

Mr Chris Brandolino

NIWA Forecaster – NIWA National Climate Centre

Tel. 09 375 6335, Mobile (027) 886 0014

Rainfall: Both wet and dry around the country

Considerable variances in rainfall totals for August were observed across New Zealand. It was another wet month for eastern Northland where intense but short lived rainfall events on 19 and 31 August led to above normal rainfall (120-149%) being recorded for the month as a whole. Above normal rainfall also occurred throughout the regions of Manawatu-Wanganui, Gisborne and Southland as well as the Central Otago and Mackenzie districts. Whangarei and Gisborne experienced the largest monthly rainfall anomalies recording 206% and 209% of normal respectively. Lauder, Gore and Invercargill were likewise wet, experiencing rainfall totals greater than 140% of normal.

In contrast, many other parts of the country received very little rain throughout the month. Well below normal rainfall (< 50%) occurred throughout Tasman, Nelson, Marlborough and coastal Canterbury. Most notably, several locations along the northern coast of the South Island (Takaka, Motueka, Appleby and Nelson) received near record low rainfall of less than 30% of normal for August. Dry conditions also prevailed in the Waikato and Bay of Plenty regions as well as Buller and Grey districts where below normal rainfall (50-79%) was experienced.

The dryness experienced in many parts of New Zealand throughout the month contributed to decreasing soil moisture levels compared to July. Despite this, as at 1 September soil moisture levels around most parts of the country remained in the near normal range for the time of year and were only slightly drier than normal in Taranaki, the West Coast and Tasman as well as the districts of Selwyn, Waimakariri and Timaru.

Record³ or near-record August rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Lumsden	113	183	1982	2nd-highest

² New Plymouth sunshine is still omitted from this ranking while recent instrumentation changes are assessed.

³ 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.

Low records or near-records				
Motueka	40	28	1943	3rd-lowest
Nelson	20	24	1941	3rd-lowest
Appleby	20	23	1932	3rd-lowest
Waipara West	15	23	1973	4th-lowest

Sunshine: A record breaking sunny August

Higher pressure than normal extending over New Zealand during August contributed to sunny skies in many parts of the country. It was particularly sunny in Waikato, Bay of Plenty, Westland, southern Canterbury and Central Otago where well above normal sunshine (> 125%) was observed. Record or near record sunshine August totals were observed at several locations around the country. Most notably, Queenstown experienced 186 hours (155% of normal) of sunshine during the month which is the highest August total for this location since records began in 1930. Takaka and Martinborough were the only locations where below normal sunshine was observed, receiving 89% and 67% of normal sunshine respectively.

Of the available, regularly reporting sunshine observation sites, the sunniest four centres so far in 2014 (January to August) are: Whakatane (1793 hours), Tauranga (1622 hours), Nelson (1557 hours) and Lake Tekapo (1554 hours).

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

Location	Sunshine hours	Percentage of normal	Year records began	Comments
High records or near-records				
Te Kuiti	171	146	1962	Highest
Taumarunui	171	150	1947	Highest
Lake Tekapo	227	130	1928	Highest
Queenstown	186	155	1930	Highest
Cromwell	196	131	1979	Highest
Hokitika	187	136	1912	2nd-highest
Greymouth	182	142	1947	2nd-highest
Turangi	178	128	1976	3rd-highest
New Plymouth	198	122	1972	3rd-highest
Ashburton	188	131	1930	3rd-highest
Paraparaumu	184	120	1953	4th-highest
Low records or near-records				
Martinborough	99	67	1986	2nd-lowest

Temperature: Near-normal temperatures for most

As a whole, mean temperatures around the country in August were subdued and largely near average (within 0.5°C of average). In fact, nationwide, only a handful of locations reported above average mean temperatures for August with Te Puke being the only location experiencing a near record high mean temperature. Small pockets of below average temperature (-1.20 to -0.51°C) were recorded in the districts of Waitomo, Opotoki, Central Hawke’s Bay, Tararua and South Wairarapa. The nation-wide average temperature in August 2014 was 8.7°C (0.1°C above the 1971-2000 August average from NIWA’s seven station temperature series which begins in 1909).

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

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Te Puke	11.2	1.1	1973	3rd-highest
Low records or near-records				
Martinborough	8.0	-0.9	1986	4th-lowest
Castlepoint	9.2	-1.0	1972	Equal 4th-lowest

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
Low records or near-records				
Martinborough	12.2	-1.5	1986	2nd-lowest
Kaitaia	14.9	-0.8	1967	3rd-lowest
Ngawi	12.0	-1.4	1972	3rd-lowest
Castlepoint	11.6	-1.2	1972	4th-lowest

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Masterton	5.4	2.6	1992	4th-highest

August climate in the six main centres

Temperatures were near average for all of the six main centres with the exception of Auckland which experienced above average mean August temperatures. Monthly rainfall totals ranged from near normal in Auckland to just 30% of normal in Christchurch. Near normal sunshine was recorded in all of the six main centres. Of the six main centres in August 2014, Christchurch was the coolest and driest, Auckland was the warmest, wettest and cloudiest and Tauranga was the sunniest.

August 2014 main centre climate statistics:

Temperature			
Location	Mean temp. (°C)	Departure from normal (°C)	Comments
Auckland ^a	12.2	+0.6	Above average
Tauranga ^b	11.0	+0.2	Near average
Hamilton ^c	9.3	-0.3	Near average
Wellington ^d	9.2	-0.2	Near average
Christchurch ^e	6.7	-0.5	Near average
Dunedin ^f	7.6	-0.2	Near average
Rainfall			
Location	Rainfall (mm)	% of normal	Comments
Auckland ^a	125	111%	Near normal
Tauranga ^b	81 ⁴	73%	Below normal
Hamilton ^c	84 ⁵	78%	Below normal
Wellington ^d	75 ⁶	55%	Below normal
Christchurch ^e	18	30%	Well below normal
Dunedin ^f	43	76%	Below normal
Sunshine			
Location	Sunshine (hours)	% of normal	Comments
Auckland ^a	150	102%	Near normal
Tauranga ^b	188	109%	Near normal
Hamilton ^g	163	119%	Near normal
Wellington ^d	157	100%	Near normal
Christchurch ^e	169	110%	Near normal
Dunedin ^f	- ⁷	-	-

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

⁴ Missing one day of data from 14 August.

⁵ Missing one day of data 29 August.

⁶ Missing one day of data 20th August.

⁷ No data due to sensor being replaced.

Highlights and extreme events

Temperatures

The combination of a north-westerly flow and the foehn effect which began on the last day of July continued into the early days of August. This brought about record breaking daily maximum temperatures on the 1st, 2nd and 3rd of August at a number of locations around the country. During this period 13 locations around the country recorded their warmest August daily maximum temperature. Similarly, the warmest minimum August temperature on record was observed at 37 locations around the country.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Masterton	20.6	1st	1992	Highest
Dunedin (Musselburgh)	21.7	1st	1947	Highest
Lumsden	18.8	1st	1982	Highest
Gore	19.4	1st	1971	Highest
Tiwai Point	19.1	1st	1970	Highest
Balclutha	20.9	1st	1964	Highest
Nugget Point	19.9	1st	1970	Highest
Reefton	19.4	23rd	1960	Highest
Auckland (Whenuapai)	21.2	2nd	1945	Highest
Dannevirke	20.7	2nd	1951	Highest
Waione	22.1	2nd	1991	Highest
Waipawa	21.7	2nd	1945	Highest
Christchurch (Riccarton)	23.6	2nd	1863	Highest
Wanganui (Spriggens Park)	20.6	2nd	1937	Equal highest
Queenstown	18.9	1st	1871	2nd-highest
Masterton	20.6	2nd	1906	2nd-highest
Gisborne	21.7	2nd	1905	2nd-highest
Paraparaumu	19.0	4th	1953	Equal 2nd-highest
Ranfurly	18.4	1st	1975	3rd-highest
Paeroa	19.9	2nd	1947	3rd-highest
Kaikoura	23.1	2nd	1963	3rd-highest
Kaikohe	19.0	1st	1973	Equal 3rd-highest
Palmerston North	19.7	2nd	1918	Equal 3rd-highest
Alexandra	20.3	1st	1983	4th-highest
South West Cape	15.2	1st	1991	4th-highest
Warkworth	19.9	2nd	1966	4th-highest
Mahia	19.5	2nd	1990	4th-highest
Waiau	21.9	2nd	1974	4th-highest
Cheviot	21.8	2nd	1982	4th-highest

Hamilton (Ruakura)	19.9	2nd	1906	Equal 4th-highest
Low records or near-records				
Hokitika	6.0	13th	1866	Equal 4th-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Cape Reinga	15.0	2nd	1971	Highest
Kaitaia (Airport)	16.0	2nd	1948	Highest
Whangarei	15.6	3rd	1967	Highest
Whitianga	15.5	3rd	1971	Highest
Tauranga	15.4	3rd	1941	Highest
Te Puke	15.5	3rd	1973	Highest
Whakatane	15.5	3rd	1975	Highest
Rotorua	12.6	3rd	1972	Highest
Motu	11.0	3rd	1990	Highest
New Plymouth	13.8	2nd	1944	Highest
Masterton	13.9	2nd	1992	Highest
Dannevirke	13.6	1st	1951	Highest
Waione	14.9	1st	1993	Highest
Ngawi	15.1	2nd	1972	Highest
Hicks Bay	15.3	3rd	1972	Highest
Gisborne	16.4	3rd	1940	Highest
Wairoa	16.1	3rd	1972	Highest
Mahia	14.2	3rd	1990	Highest
Paraparaumu	13.5	1st	1972	Highest
Wellington	14.2	1st	1972	Highest
Wallaceville	13.4	1st	1972	Highest
Stratford	12.5	1st	1972	Highest
Hawera	13.0	2nd	1977	Highest
Farewell Spit	13.9	2nd	1972	Highest
Westport	12.3	1st	1966	Highest
Greymouth	12.9	1st	1972	Highest
Haast	13.0	2nd	1949	Highest
Milford Sound	11.5	1st	1935	Highest
Secretary Island	12.6	1st	1988	Highest
Hanmer	14.5	2nd	1972	Highest
Kaikoura	12.3	1st	1972	Highest
Culverden	15.9	2nd	1930	Highest
Winchmore	13.3	2nd	1928	Highest
Waipara West	16.0	1st	1973	Highest
Orari Estate	11.9	29th	1972	Highest
Ranfurlly	11.9	2nd	1975	Highest
Lumsden	11.5	1st	1982	Highest

South West Cape	11.0	1st	1991	Highest
Kaikohe	14.9	3rd	1973	Equal highest
Paeroa	14.6	3rd	1971	2nd-highest
Takapau Plains	11.1	1st	1972	2nd-highest
Castlepoint	14.3	1st	1972	2nd-highest
Martinborough	14.2	1st	1986	2nd-highest
Palmerston North	12.7	1st	1940	2nd-highest
Wanganui (Spriggens Park)	13.4	2nd	1972	2nd-highest
Hokitika	12.6	1st	1866	2nd-highest
Reefton	10.3	2nd	1972	2nd-highest
Waiau School	14.7	1st	1974	2nd-highest
Tara Hills	8.5	2nd	1949	2nd-highest
Dunedin (Musselburgh)	13.3	1st	1947	2nd-highest
Lauder	12.2	2nd	1924	2nd-highest
Lincoln	12.9	2nd	1881	Equal 2nd-highest
Wanaka	9.4	2nd	1972	Equal 2nd-highest
Manapouri	9.0	1st	1973	Equal 2nd-highest
Alexandra	11.6	2nd	1983	Equal 2nd-highest
Nugget Point	10.5	1st	1972	Equal 2nd-highest
Taupo	11.4	3rd	1950	3rd-highest
Turangi	10.6	2nd	1968	3rd-highest
Waipawa	12.2	2nd	1945	3rd-highest
Levin	13.3	1st	1950	3rd-highest
Ohakune	9.9	2nd	1972	3rd-highest
Low records or near-records				
Turangi	-5.9	10th	1968	2nd-lowest
Le Bons Bay	-0.2	8th	1984	Equal 3rd-lowest
Waione	-4.1	10th	1991	Equal 4th-lowest
Martinborough	-2.8	10th	1986	Equal 4th-lowest

Rain and slips

On 19 August heavy rain swept through Auckland and Northland with the heaviest rain falling in the evening. 54.8mm of rain fell in Kerikeri between 6-8pm with the daily rainfall total of 105mm equating to the 2nd highest on record for August at the time (subsequently moved to 3rd place after even heavier rainfall on 30 August).

This heavy downpour also affected Rotorua on 20 August where the torrential rain brought flash flooding to the region. The Fire Service had up to 30 callouts to flooded properties and to rescue people trapped in vehicles and floodwaters. Some roads were blocked, several homes were evacuated and some schools closed. The front that brought the heavy rain did not hang around and moved offshore east later in the day.

On 30 August heavy rain hit Auckland Northland once again. State Highway 10 was closed at Kaeo as the rain continued through the night and led to extensive flooding. Farmers near Kaeo moved stock to higher ground as the river flats became cut off. Power to about 250 homes in parts of Kaipara and

Whangarei was also cut off after outages caused by a slip and falling trees, but was restored by the morning. The 1-day rainfall total in Kerikeri of 115mm set a new station record for the month of August (records began in 1981 for this station).

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Kerikeri	115	30th	1981	Highest
South West Cape	40	1st	1991	2nd-highest
Stratford	111	2nd	1960	3rd-highest
Ohakune	52	2nd	1961	3rd-highest
Gisborne	80	4th	1937	4th-highest
Hawera	34	2nd	1977	4th-highest

Wind

On 1 August ski fields in the Queenstown area were shut down due to severe gales.

On 2 August a tornado struck Blaketown (Greymouth) tearing off a roof, damaging 10 properties and leaving three families homeless. No one was reported injured.

On 7 August strong winds snapped wooden power poles near Invercargill and blew out panes of glass in the city. Also on this day, a bus carrying 18 children was apparently blown off the road near Eketahuna in the Tararua District. There were no injuries.

On 14 August strong gusts overnight caused vegetation to fall on power lines and brought down power to more than 1000 homes in West Auckland.

On 15 August strong winds in Wellington closed the harbour ferry crossing.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Tara Hills	98	1st	1985	Highest
Wanaka	93	1st	1992	Highest
Manapouri	80	7th	1991	Highest
Gore	107	7th	1987	Equal highest
Paeroa	96	20th	1991	2nd-highest
Levin	93	12th	1971	2nd-highest
Ashburton	100	2nd	1970	2nd-highest
Wanganui	96	14th	1977	Equal 2nd-highest
Mahia	98	15th	1991	3rd-highest
Hawera	91	14th	1986	3rd-highest
South West Cape	165	7th	1991	3rd-highest
Westport	96	14th	1973	Equal 3rd-highest

Motu	93	2nd	1991	4th-highest
Baring Head	135	14th	1991	4th-highest
Winchmore	87	2nd	1970	4th-highest
Kaikohe	80	15th	1986	Equal 4th-highest
Hamilton	82	14th	1978	Equal 4th-highest
Queenstown	85	8th	1972	Equal 4th-highest

Snow and ice

On August 7 snow fell overnight in many parts of the south. Snow on August 8 closed all kindergartens, primary, intermediate and some high schools for the day in Dunedin. No roads were closed in the city, however no bus service was running in the morning. A number of flights at Queenstown Airport were cancelled due to snowfall. State Highway 87 from Kyeburn to Outram and SH94 from Te Anau to Milford Sound (the Milford Road) was also closed due to snow.

On 12 August the Desert Road was closed overnight due to snowfall. Snow had also closed the Milford Road in the South Island.

On August 14 significant snowfall in the Central Plateau struck again overnight closing the Desert Road. Black ice on the roads saw several crashes being reported in Taupo and Bay of Plenty with one car over-turning. At the height of this early evening storm, 13 cars and a truck and trailer unit were trapped north of Wellington the Rimutaka Hill road summit. Down south state highways 6, 8, 83, 85, 87 and 96 were all closed or partially closed.

On 28 August snowfall affected some of the South Island's alpine passes, with State Highway 73 closed to towing vehicles from Springfield to Otira. Caution was also advised for those travelling on State Highway 94, between Te Anau and Milford Sound.

Lightning and Hail

On 4 August a hailstorm hit several Auckland suburbs. The hail blanketed the ground and caused an office block in Ellerslie to flood.

On 14 August a violent storm of thunder, lightning and hail struck Wellington. Lightning struck the Zephyrometer sculpture wind needle near Wellington Airport causing it to explode.

Cloud and fog

On 1 August heavy fog caused domestic flight cancellations in Auckland and the delay of some harbour ferry crossings. The radiation fog was caused by a humid air mass moving over cooler ground temperatures.

For further information, please contact:

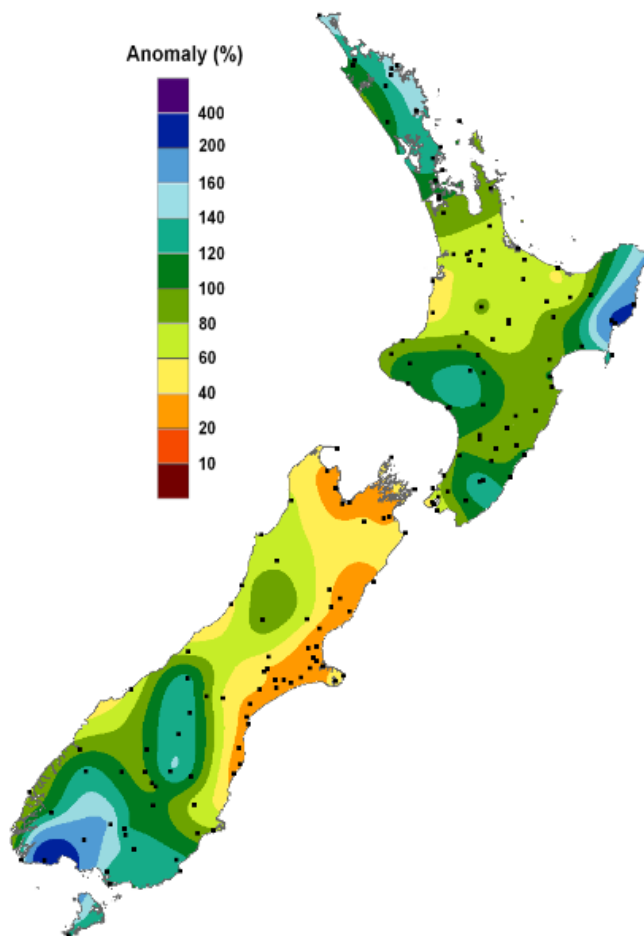
Mr Chris Brandolino

NIWA Forecaster – NIWA National Climate Centre
Tel. 09 375 6335, Mobile (027) 886 0014

For climate data enquiries, please contact:

Ms Nava Fedaeff

Climate Scientist, NIWA Auckland
Tel. 09 375 6337



August 2014 total rainfall, expressed as a difference from average.

Considerable variations in rainfall anomalies were observed across the country in August. Above normal rainfall (120-149%) occurred throughout eastern Far North, Manawatu-Wanganui, Gisborne, Southland and parts of Central Otago. Conversely rainfall was below normal (50-79%) in the Waikato and Bay of Plenty, and well below normal (< 50%) in Tasman, Nelson, Marlborough and Canterbury.

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