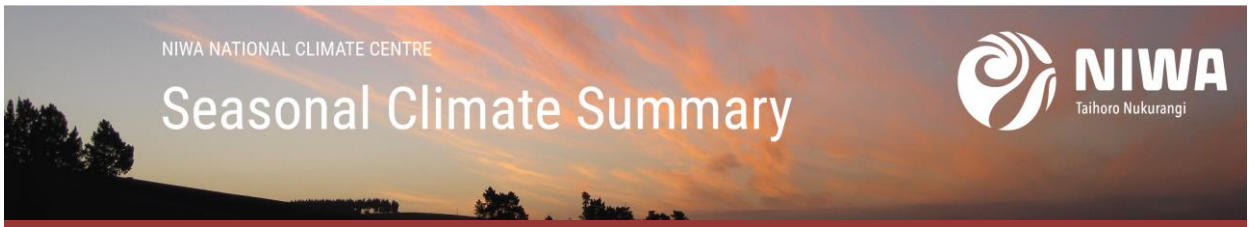

Aotearoa New Zealand Climate Summary: **Summer 2023-24** Issued: 5 March 2024

A warm summer overall, dry for many parts of the country

Temperature	Summer temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) for most of the country. The exception was western and southern parts of the South Island where temperatures were near average (±0.50°C of average).
Rainfall	Rainfall was below normal (50-79% of normal) or well below normal (<50% of normal) for northern, eastern, and inland parts of the South Island, as well as for southern and western parts of the North Island, eastern Bay of Plenty, and much of Northland. Rainfall was above normal (120-149% of normal) or well above normal (>149% of normal) across central parts of the North Island from Waitomo east to parts of Hawke's Bay and Gisborne, as well as for western and southern parts of the South Island.
Soil moisture	At the end of summer, soil moisture levels were lower than normal in parts of Northland, Auckland, Coromandel Peninsula, eastern Bay of Plenty, Gisborne, southern Hawke's Bay, eastern Taranaki, Manawatū-Whanganui, Wellington-Wairarapa, eastern Tasman, Nelson, Marlborough, Canterbury, and eastern Otago. Normal or above normal soil moisture was observed elsewhere.

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

Overview

Summer 2023-24 was characterised by higher-than-normal air pressure over and east of the North Island, and lower-than-normal air pressure to the south of the country. This resulted in more westerly winds than normal over the South Island and lower North Island, which is characteristic of the strong, but waning, El Niño event in the equatorial Pacific.

It was a warm summer overall for most of Aotearoa New Zealand. Temperatures were above average (0.51-1.20°C above average) or well above average (>1.20°C above average) throughout the North Island, as well as for northern, eastern, and inland parts of the South Island. Near average temperatures (±0.50°C of average) were observed in western and southern parts of the South Island, while no areas observed below average temperatures (0.51-1.20°C below average). Summer 2023-24 was the ninth-warmest summer on record. The nationwide average temperature was 17.6°C. This was 0.8°C above the 1991-2020 summer average from NIWA's seven station temperature series which begins in 1909.

Summer rainfall was below normal (50-79% of normal) or well below normal (<50% of normal) for northern, eastern, and inland parts of the South Island, as well as for southern and western parts of the North Island, eastern Bay of Plenty, and much of Northland. According to the New Zealand

Drought Index, very dry or extremely dry conditions were present by the end of the season in Northland, East Cape, southern Manawatū-Whanganui, Wellington-Wairarapa, eastern Tasman, Nelson, Marlborough, North Canterbury, and north-east Otago. The prevalence of these dry conditions contributed to several significant wildfires (see *Highlights and extreme events* section for more details). In contrast, rainfall was above normal (120-149% of normal) or well above normal (>149% of normal) across central parts of the North Island from Waitomo east to parts of Hawke's Bay and Gisborne, as well as for western and southern parts of the South Island.

Further highlights for summer 2023-24:

- The highest temperature was 37.0°C, observed at Hanmer Forest on 5 February.
- The lowest temperature was -0.7°C, observed at Cass (inland Canterbury) on 25 January.
- The highest 1-day rainfall was 330 mm, recorded at Milford Sound on 19 January.
- The highest wind gust was 172 km/h, observed at South West Cape on 9 December.
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations so far in 2024 are wider Nelson (618 hours), Tasman (612 hours), Marlborough (604 hours), and Taranaki (595 hours).
- Of the six main centres in summer 2023-24, Auckland and Tauranga were the equal-warmest, Tauranga was the sunniest and wettest, Christchurch was the driest, and Dunedin was the coolest and least sunny.

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Temperature: Warm for most of the country

It was a warm summer for most parts of New Zealand, and twenty-three locations observed record or near-record high mean temperatures. Most notably, it was the warmest summer on record for Whakatāne and Kawerau. No locations observed record or near-record low mean temperatures.

Record[1] or near-record mean air temperatures for summer were recorded at:

Location	Mean air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Whakatāne	20.6	1.4	1974	Highest
Kawerau	21.4	2.0	1954	Highest
Waikeri	20.1	1.7	1957	2nd-highest
Ohakune	16.6	1.2	1962	2nd-highest
Hanmer Forest	17.3	1.9	1906	2nd-highest
Chatham Island	16.7	1.3	1878	2nd-highest
Kaitaia	20.7	1.7	1948	3rd-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.

Kerikeri	20.2	1.1	1945	3rd-highest
Leigh	21.6	3.2	1966	3rd-highest
Whangaparāoa	20.9	1.4	1982	3rd-highest
Te Puke	19.8	1.4	1973	3rd-highest
Mt Ruapehu Chateau	13.4	1.3	2000	3rd-highest
Ngawi	19.4	1.1	1972	3rd-highest
Ranfurly	15.6	1.1	1897	3rd-highest
Middlemarch	16.0	1.0	2000	3rd-highest
Taupō	18.7	1.9	1949	4th-highest
Napier	20.5	1.6	1870	4th-highest
Wairoa	20.5	1.5	1964	4th-highest
Motueka	18.6	1.1	1956	4th-highest
Kaikōura	17.3	1.1	1963	4th-highest
Waiau	18.1	0.7	1974	4th-highest
Cheviot	17.4	1.0	1982	4th-highest
Tautuku	14.4	0.7	1976	4th-highest
Low records or near-records				
None observed				

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

Location	Mean maximum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Whangaparāoa	25.2	2.0	1982	Highest
Kawerau	27.9	2.7	1954	Highest
Appleby	24.0	1.7	1932	Highest
Lake Tekapo	23.9	2.4	1927	Highest
Whakatāne	25.2	1.2	1974	2nd-highest
Hanmer Forest	25.6	2.5	1906	2nd-highest
Pukaki Airport	25.7	1.7	1972	2nd-highest
Leigh	26.0	3.2	1966	3rd-highest
Ngawi	23.4	1.3	1972	3rd-highest
Hastings	25.7	1.4	1965	3rd-highest
Wellington (Airport)	21.9	1.3	1962	3rd-highest
Tākaka	24.0	1.3	1978	3rd-highest
Kaikōura	21.4	1.5	1963	3rd-highest
Windsor	21.4	1.1	2000	3rd-highest
Ranfurly	23.1	1.7	1897	3rd-highest
Te Puke	24.5	1.0	1973	4th-highest
Auckland (Māngere)	24.6	1.3	1959	4th-highest
Wairoa	26.1	1.8	1964	4th-highest
Motueka	24.7	1.5	1956	4th-highest
Cheviot	23.9	1.3	1982	4th-highest
Chatham Island	20.0	1.2	1878	4th-highest
Low records or near-records				
None observed				

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

Location	Mean minimum air temp. (°C)	Departure from normal (°C)	Year records began	Comments
High records or near-records				
Whakatāne	15.9	1.6	1974	2nd-highest
Waikeria	14.5	2.0	1957	2nd-highest
Mt Ruapehu Chateau	8.2	1.6	2000	2nd-highest
Ohakune	11.1	1.6	1962	2nd-highest
Kaitaia	16.9	2.2	1948	3rd-highest
Dargaville	16.0	1.1	1943	3rd-highest
Wairoa	14.9	1.3	1964	3rd-highest
Chatham Island	13.4	1.5	1878	3rd-highest
Purerua	16.3	1.0	1983	4th-highest
Te Puke	15.2	1.8	1973	4th-highest
Lower Retaruke	12.5	1.0	1966	4th-highest
Ngawi	15.4	1.0	1972	4th-highest
Napier	15.9	2.0	1870	4th-highest
Māhia	15.5	0.9	1990	4th-highest
Hāwera	13.3	0.9	1977	4th-highest
Low records or near-records				
None observed				

Rainfall: A dry summer for many

It was a dry summer for much of New Zealand, and 12 locations observed record or near-record low summer rainfall totals. Blenheim was New Zealand's driest location compared to normal, with just 33 mm of rainfall recorded over the season (24% of its summer normal). Rainfall was abundant in New Zealand's subantarctic region, with Campbell Island observing its wettest summer on record.

Record or near-record summer rainfall totals were recorded at:

Location	Rainfall total (mm)	Percentage of normal	Year records began	Comments
High records or near-records				
Campbell Island	530	155	1992	Highest
Low records or near-records				
Mt Ruapehu Chateau	272	47	2000	Lowest
Pukaki Airport	60	35	1972	Lowest
Ngawi	79	46	1930	2nd-lowest
Blenheim	33	24	1927	2nd-lowest
Hanmer Forest	66	33	1905	2nd-lowest
Ranfurly	44	27	1897	2nd-lowest
Masterton	57	35	1926	3rd-lowest
Wellington (Airport)	80	43	1958	3rd-lowest

Motueka	91	35	1943	3rd-lowest
Waiau	62	37	1974	4th-lowest
Lake Tekapo	39	32	1925	4th-lowest
Clyde	66	50	1978	4th-lowest

Summer in the six main centres

Temperatures were above average for all main centres. Rainfall was near normal for the three northernmost main centres, and below normal in Wellington, Christchurch, and Dunedin. Of the six main centres in summer 2023-24, Auckland and Tauranga were the equal-warmest, Tauranga was the sunniest and wettest, Christchurch was the driest, and Dunedin was the coolest and least sunny.

Summer 2023-24 main centre climate statistics:

Temperature			
Location	**Mean temp. (°C)**	**Departure from normal (°C)**	**Comments**
Auckland[a]	20.4	+1.0	Above average
Tauranga[b]	20.4	+1.0	Above average
Hamilton[c]	19.0	+0.8	Above average
Wellington[d]	17.3	+0.7	Above average
Christchurch[e]	17.3	+0.8	Above average
Dunedin[f]	15.5	+0.8	Above average

Rainfall			
Location	**Rainfall (mm)**	**% of normal**	**Comments**
Auckland[a]	167	91	Near normal
Tauranga[b]	276	105	Near normal
Hamilton[c]	229	92	Near normal
Wellington[d]	149	60	Below normal
Christchurch[e]	97	74	Below normal
Dunedin[f]	136	65	Below normal

Sunshine	
Location	**Sunshine (hours)**
Auckland[a]	702
Tauranga[b]	770
Hamilton[g]	651[2]
Wellington[d]	691[2]
Christchurch[e]	701
Dunedin[f]	624

[a] Māngere [b] Tauranga Airport [c] Hamilton Airport [d] Kelburn [e] Christchurch Airport [f] Musselburgh [g] Ruakura

[2] Missing one day of data.

Highlights and extreme events

This section contains information on some of the more significant highlights and extreme events that occurred during summer 2023-24. Note that a more detailed list of significant weather events for summer 2023-24 can be found in the *Highlights and extreme events* section of NIWA's monthly Climate Summaries. These monthly summaries are available online, and may be viewed here.

Temperatures

The highest temperature was 37.0°C, observed at Hanmer Forest on 5 February.

The lowest temperature was -0.7°C, observed at Cass (inland Canterbury) on 25 January.

A significant marine heatwave event developed in New Zealand's coastal waters during late December and lasted through January, coinciding with a period of high heat and humidity.

Warm and muggy conditions prevailed over much of the country from 19-22 January. Twenty-six locations observed record or near-record high daily minimum temperatures for summer during this time.

On 5-6 February, the presence of a strong high pressure system over the North Island caused a northwest wind to blow across the South Island, producing the hottest temperatures of the summer season. The highest temperature recorded was at Hanmer Forest in North Canterbury on 5 February, when it reached 37˚C, the location's 3rd-highest summer temperature on record. Waipara West reached a maximum of 36.9˚C on the same day.

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

Location	Extreme maximum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Whangaparāoa	30.6	Jan-31st	1982	Highest
Ngawi	32.8	Feb-6th	1972	2nd-highest
Hāwera	28.7	Jan-19th	1977	2nd-highest
Waiheke Island	30.0	Jan-31st	1985	Equal 2nd-highest
Wellington (Airport)	29.6	Jan-22nd	1962	Equal 2nd-highest
Boyle River Lodge	34.0	Jan-13th	1983	Equal 2nd-highest
Hanmer Forest	37.0	Feb-5th	1906	3rd-highest
Waipara West	36.9	Feb-5th	1973	3rd-highest
Leigh	30.2	Jan-12th	1966	Equal 3rd-highest
Auckland (Māngere)	29.7	Jan-21st	1959	4th-highest
Whatawhata	31.3	Jan-21st	1952	4th-highest
Cheviot	36.3	Feb-6th	1982	4th-highest
Waiau	36.5	Feb-5th	1974	Equal 4th-highest
Low records or near-records				
Campbell Island	6.6	Jan-23rd	1991	3rd-lowest

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

Location	Extreme minimum (°C)	Date of extreme temperature	Year records began	Comments
High records or near-records				
Waikeria	22.0	Dec-31st	1972	Highest
Kaikōura	21.8	Jan-20th	1972	Highest
Paraparaumu	20.7	Jan-20th	1972	Equal highest
Wellington (Airport)	21.0	Jan-20th	1972	Equal highest
Auckland (Western Springs)	22.6	Jan-20th	1971	2nd-highest
Waiheke Island	21.2	Jan-15th	1985	2nd-highest
Masterton	21.5	Jan-20th	1943	2nd-highest
Martinborough	21.9	Jan-20th	1986	2nd-highest
Ohakune	18.8	Jan-20th	1972	2nd-highest
Cheviot	22.8	Feb-7th	1982	2nd-highest
Christchurch	22.5	Jan-20th	1863	2nd-highest
Lincoln	22.9	Jan-20th	1881	2nd-highest
Akaroa	23.3	Jan-20th	1978	2nd-highest
Port Taharoa	21.8	Jan-20th	1974	3rd-highest
Lower Retaruke	19.7	Jan-20th	1972	3rd-highest
Mt Ruapehu Chateau	15.5	Jan-20th	2000	3rd-highest
Castlepoint	21.9	Jan-21st	1972	3rd-highest
Ngawi	23.6	Feb-7th	1972	3rd-highest
Stratford	18.9	Jan-20th	1972	3rd-highest
Taihape	18.0	Jan-21st	1973	3rd-highest
Grassmere Salt Works	22.8	Jan-20th	1972	3rd-highest
Arthur's Pass	15.2	Jan-11th	1978	3rd-highest
Rangiora	22.0	Jan-20th	1972	3rd-highest
Le Bons Bay	20.5	Jan-20th	1984	3rd-highest
Middlemarch	21.2	Feb-6th	2000	3rd-highest
Chatham Island	18.7	Jan-22nd	1878	3rd-highest
Purerua	21.0	Jan-20th	1983	4th-highest
Whangaparāoa	20.8	Jan-20th	1982	4th-highest
Auckland (Whenuapai)	21.5	Jan-20th	1951	4th-highest
Palmerston North	20.3	Jan-21st	1940	4th-highest
Hāwera	20.3	Jan-20th	1977	4th-highest
Waipara West	22.6	Jan-20th	1973	4th-highest
Low records or near-records				
None observed				

Rain and slips

The highest 1-day rainfall was 330 mm, recorded at Milford Sound on 19 January.

On 19 January, a local state of emergency was declared for the Westland District from Hokitika to Haast, with prolonged heavy rain causing high river levels and dangerous driving conditions.

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

Location	Extreme 1-day rainfall (mm)	Date of extreme rainfall	Year records began	Comments
Invercargill	70	Feb-6th	1939	2nd-highest
Ripia	97	Jan-28th	1967	3rd-highest
Tiwai Point	69	Feb-6th	1970	4th-highest

Wind

The highest wind gust was 172 km/h, observed at South West Cape on 9 December.

On 12 December, the Wellington area was hit by a severe thunderstorm that caused significant damage. More than 2,000 properties were left without power and multiple roads in the Hutt Valley were blocked by fallen trees. Multiple buildings were severely damaged by strong winds, including large windows that were blown out at the New World and Salvation Army locations in Lower Hutt. All flights through Wellington Airport were stopped for a time.

On 19 January, strong northwest winds fanned two separate fires which forced evacuations of approximately 50 homes in Amberley and Loburn. Two homes and a privately-owned church building were destroyed by fires in Loburn, with several other buildings and vehicles including farm machinery destroyed. On 20 January, a third fire spread among vegetation in Swannanoa.

On the afternoon on 14 February, a wildfire ignited in the Worsley area in the Port Hills near Christchurch. The fire initially required 130 firefighters on the ground and 11 helicopters, with a State of Local Emergency declared for Christchurch City and the Selwyn District. Around 30 properties were evacuated.

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

Location	Extreme wind gust (km/h)	Date of extreme gust	Year records began	Comments
Whatawhata	91	Feb-3rd	2003	2nd-highest
Tara Hills	102	Dec-9th	1985	2nd-highest
Manapouri Airport	87	Feb-19th	1991	Equal 2nd-highest
Te Kuiti	59	Feb-3rd	2003	3rd-highest
Taupō	93	Feb-3rd	1982	Equal 3rd-highest
Whakatāne	91	Feb-3rd	1974	Equal 4th-highest

Lightning, hail, and tornadoes

On 12 December, a severe thunderstorm produced large hailstones in Wellington city. Earlier that day, the same system moved across Canterbury, producing large hail in places such as Timaru and Methven. A lightning strike caused a brush fire in Yaldhurst, while lightning impacted lighting and navigation systems at Christchurch Airport. Lightning strikes also caused power cuts in Halswell, Dallington, Harewood, and Waddington.

On 3 February, as many as six waterspouts were spotted off the coast of Timaru. The arrival of a cold air mass from the Southern Ocean blowing overtop the warmer seas in the New Zealand region caused the instability.

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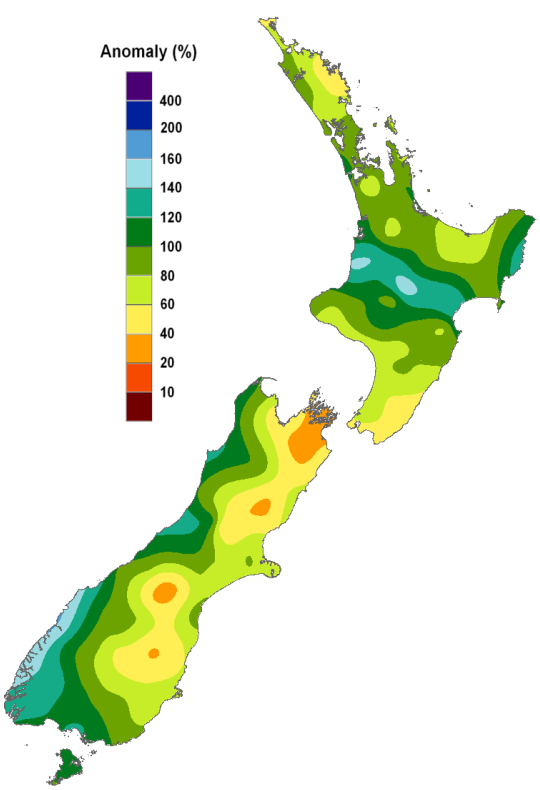
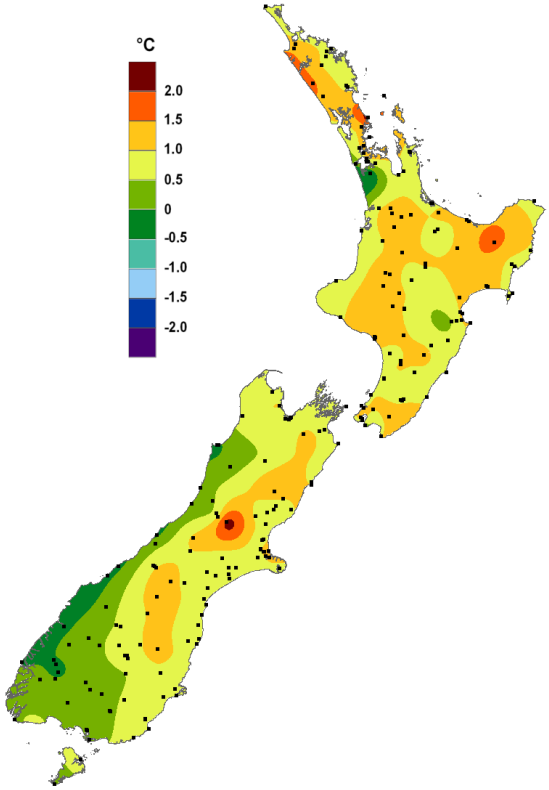


Summer rainfall
Expressed as a percentage of the 1991-2020 normal.



Summer temperature
Expressed as a departure from the 1991-2020 average in degrees Celsius.

https://www.niwa.co.nz/our-science/climate