NIWA NATIONAL CLIMATE CENTRE

Seasonal Climate Summary

NIWA Taihoro Nukurangi

New Zealand Climate Summary: **Summer 2019-20** Issued: 4 March 2020

Flooding in the south; drought in the north

Temperature	Summer temperatures were near average (-0.50°C to +0.50°C of the summer average) for much of the South Island with a large portion of Canterbury and parts of Otago and Tasman experiencing above average temperatures (+0.51°C to +1.20°C of the summer average). Above average temperatures also occurred for most of the North Island although near average temperatures were experienced along most of the west coast and in parts of Gisborne and Waikato.
Rainfall	Prolonged dry conditions in the North Island resulted in rainfall totals that were mostly below normal (50-79% of the summer normal) or well below normal (<50% of the summer normal) with the latter observed largely in Auckland, Northland, parts of Waikato and the coast southeast of Napier. In the South Island, periods of heavy rain during December and February resulted in above normal (120-149% of the summer normal) to well above normal (>149% of the summer normal) summer rainfall totals across much of Southland, Otago and southern West Coast. The northern portion of the South Island mostly received near normal (80-119% of the summer normal) rainfall except for coastal Canterbury between Christchurch and Kaikoura where rainfall was below normal.
Soil moisture	At the end of summer, soil moisture levels were below or well below normal across most of the North Island, the upper South Island, and much of Canterbury. Soil moisture levels were wetter than normal for parts of the West Coast, Otago, and Southland but otherwise near normal for the lower South Island. Meteorological drought developed for parts of the country during January and became more extensive during February. According to NIWA's New Zealand Drought Index, by the end of summer, meteorological drought was present across much of the North Island (excluding southeast North Island and coastal Taranaki) with severe drought widespread across Northland, Auckland, Great Barrier Island, and Waikato. Drought conditions were also present in several northern South Island locations, including parts of Tasman, northern Canterbury, and much of Marlborough.

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

Overview

Summer 2019-20 was characterised by lower than normal mean sea level pressure over the South Island and much lower than normal pressure to the south and east of New Zealand with higher than normal pressure to the northwest of the country. This pressure set up was associated with more

westerly-quarter winds than normal and a persistently negative Southern Annular Mode during the first half of the season.

The persistent area of high pressure near the North Island was influenced by a strongly positive Indian Ocean Dipole pattern early in summer and by a warm pool of water in the tropical western Pacific Ocean later on. Climate change is expected to bring more frequent high pressure systems near and north of the North Island, similar to what occurred during summer 2019-20.

Nationwide temperatures during December and January were near average (-0.50°C to +0.50°C of the summer average) although some locations experienced above or well above normal temperatures during these months. February concluded summer on a warm note with a nationwide temperature that was above average (+0.51°C to +1.20°C of the summer average). For the summer season as a whole, temperatures were near average for much of the South Island with a large portion of Canterbury and parts of Otago and Tasman observing above average temperatures. Most of the North Island had above average temperatures although near average temperatures were experienced along much of the west coast and in parts of Gisborne and Waikato.

The nationwide average temperature for summer 2019-20 was near average at 17.1˚C (0.4°C warmer than the 1981-2010 summer average, using NIWA's seven-station temperature series which begins in 1909).

December was very wet for many western and inland parts of the South Island, and this contributed to high lake levels and flooding events during the month. Conversely, January was very dry and most of the country received below normal (50-79% of the summer normal) or well below normal (<50% of the summer normal) rainfall with parts of upper North Island and upper and eastern South Island receiving less than 10% of their long-term rainfall normal during the month. By the end of January, meteorological drought was present in much of the upper North Island with severe meteorological drought in northern Auckland, Great Barrier Island, southern Northland, and the Aupouri Peninsula according to NIWA's New Zealand Drought Index. Heavy rainfall in early February resulted in severe flooding across Fiordland, Otago, and Southland, particularly along the Mataura River, and several locations in the lower South Island observed record or near-record February rainfall amounts. Extremely dry conditions persisted in North Island and upper South Island throughout February, with rainfall totals that were below or well below normal. During this time, several locations experienced record or near-record long dry spells *(see Highlights and extreme events for further details).* By the end of February, drought conditions had spread across much of the North Island and severe meteorological drought was widespread across Northland, Auckland, and Great Barrier Island. Drought conditions were also present in several northern South Island locations, including parts of Tasman, northern Canterbury, and much of Marlborough.

For the season as a whole, the prolonged dry conditions in the North Island resulted in rainfall totals that were below normal, with well below normal rainfall observed in Auckland, Northland, parts of Waikato and the coast southeast of Napier. Small parts of Taranaki, Gisborne, and Greater Wellington received near normal rainfall totals (80-119% of the summer normal). In the South Island, above normal (120-149% of the summer normal) to well above normal (>149% of the summer normal) rainfall was observed in much of Southland, Otago and southern West Coast, owing to the

periods of heavy rain occurring in December and February. The northern portion of the South Island mostly received near normal rainfall except coastal Canterbury between Christchurch and Kaikoura where rainfall was below normal.

Further Highlights:

- The highest temperature was 38.2˚C, observed at Gisborne on 31 January. This was New Zealand's 5th-hottest January temperature on record.
- The lowest temperature of the month was -0.7˚C, observed at Hanmer Forest on 15, 16, and 17 January.
- The highest 1-day rainfall was 509 mm, recorded at Milford Sound on 3 February.
- The highest wind gust was 196 km/h, observed at Cape Turnagain on 5 January.
- Of the six main centres, Tauranga was the warmest, Dunedin was the coldest and wettest, Christchurch was the driest, Tauranga was the sunniest and Dunedin was the least sunny
- Of the available, regularly reporting sunshine observation sites, the sunniest four locations in 2020 so far are Bay of Plenty (618 hours), Taranaki (592 hours), Waikato (584 hours) and Auckland (564 hours).

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Temperature: Near or above average summer temperatures across the country

Summer temperatures were near average for much of the South Island although a large portion of Canterbury and parts of Otago and Tasman received above average temperatures. Above average temperatures were also received for most of the North Island with near average temperatures experienced along most of the west coast and in parts of Gisborne and Waikato.

Many locations experienced record or near-record high mean maximum temperatures. The most anomalous of these was Hanmer Forest where mean maximum summer temperatures were 3.5°C warmer than average, with records going all the way back to 1906.

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				
Waipawa	18.7	1.1	1945	2nd-highest
Wairoa	20.8	2.1	1964	2nd-highest
Farewell Spit	19.2	1.8	1971	2nd-highest
Motu	16.7	1.5	1990	3rd-highest
Gisborne	20.3	1.6	1905	3rd-highest
Hastings	19.8	2.4	1965	3rd-highest
Stratford	17.0	1.5	1960	3rd-highest
Cheviot	17.4	1.3	1982	3rd-highest
Whangarei	20.7	1.1	1967	4th-highest
Tauranga	20.4	1.3	1913	4th-highest
Te Puke	19.5	1.5	1973	4th-highest
Rotorua	18.6	1.4	1964	4th-highest
Hicks Bay	19.5	1.3	1969	4th-highest
Mahia	18.8	0.9	1990	4th-highest
Upper Hutt (Trentham)	17.7	1.1	1939	4th-highest
Kaikoura	17.3	1.1	1963	4th-highest
Low records or near-records				
None observed				

[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.

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				
Kerikeri	25.8	1.9	1945	Highest
Kaikohe	24.6	2.2	1973	Highest
Whangarei	26.6	2.6	1967	Highest
Whangaparaoa	24.7	1.8	1982	Highest
Whitianga	26.4	3.0	1962	Highest
Matamata	26.1	2.5	1999	Highest
Whakatane	25.3	1.8	1974	Highest
Taupo	25.3	3.3	1949	Highest
Te Kuiti	26.2	2.6	1959	Highest
Hicks Bay	23.2	1.8	1969	Highest
Waipawa	25.9	2.3	1945	Highest
Ohakune	23.2	2.7	1962	Highest
Farewell Spit	24.1	2.9	1971	Highest
Hanmer Forest	26.0	3.5	1906	Highest
Paeroa	25.9	1.5	1947	2nd-highest
Tauranga	25.3	2.0	1913	2nd-highest
Te Puke	24.9	1.8	1973	2nd-highest
Rotorua	24.4	2.7	1964	2nd-highest
Hamilton	25.8	2.0	1946	2nd-highest
Hastings	25.7	3.0	1965	2nd-highest
Wairoa	26.9	3.0	1964	2nd-highest
Takaka	24.4	1.9	1978	2nd-highest
Kaikoura	21.7	1.8	1963	2nd-highest
Auckland (Whenuapai)	24.7	1.5	1945	3rd-highest
Motu	22.4	2.4	1990	3rd-highest
Gisborne	25.9	1.9	1905	3rd-highest
Upper Hutt (Trentham)	23.0	1.6	1939	3rd-highest
Medbury	24.7	1.6	1927	3rd-highest
Cheviot	24.3	2.2	1982	3rd-highest
Turangi	23.7	1.3	1968	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				
Mahia	15.4	0.9	1990	3rd-highest
Wairoa	14.7	1.2	1964	4th-highest
Low records or near-records				
Turangi	9.4	-1.6	1968	2nd-lowest
Te Kuiti	10.7	-1.6	1959	4th-lowest

Rainfall: Dry in the north, wet in the south

When looking at the rainfall pattern for summer as a whole, rainfall in the North Island was below normal (50-79% of the summer normal), with well below normal (<50% of the summer normal) rainfall in Auckland, Northland, parts of Waikato and the coast southeast of Napier. Only small areas within Taranaki, Gisborne, and Greater Wellington received near normal rainfall totals (80-119% of the summer normal). Several North Island locations experienced record or near-record low summer rainfall totals. Of note, Whangarei received 59 mm of rainfall, which is only 20% of its normal summer rainfall, the second driest summer on record at this location since records began in 1937. Several locations also set new record or near-record dry spells during summer (see *Highlights and extreme events* section for further details).

In the South Island, above normal (120-149% of the summer normal) to well above normal (>149% of the summer normal) rainfall was received across much of Southland, Otago and southern West Coast. The northern portion of the South Island mostly recorded near normal rainfall except coastal Canterbury between Christchurch and Kaikoura where rainfall was below normal for the time of year.

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				
Balclutha	308	150	1964	2nd-highest
Milford Sound	2852	152	1929	4th-highest
Low records or near-records				
Dargaville	63	25	1943	Lowest
Leigh	59	27	1966	Lowest
Whangaparaoa	60	30	1946	Lowest
Auckland (North Shore)	53	23	1966	Lowest
Auckland (Western Springs)	62	26	1948	Lowest
Auckland (Airport)	73	33	1959	Lowest
Whatawhata	124	41	1952	Lowest
Dannevirke	95	40	1951	Lowest
Kaitaia	77	27	1948	2nd-lowest
Kaikohe	94	29	1956	2nd-lowest
Whangarei	59	20	1937	2nd-lowest
Hamilton (Ruakura)	91	37	1905	2nd-lowest
Hamilton	87	33	1935	2nd-lowest
Te Kuiti	120	36	1950	2nd-lowest
Masterton	57	31	1926	2nd-lowest
Takapau Plains	90	39	1962	2nd-lowest
Matamata	119	51	1951	3rd-lowest
Pukekohe	100	43	1944	3rd-lowest
Kerikeri	91	27	1935	4th-lowest
Auckland (Whenuapai)	110	47	1943	4th-lowest
Arapito	381	69	1978	4th-lowest

Summer climate in the six main centres

Summer temperatures were near average for Wellington and Dunedin, above average for Auckland, Hamilton and Christchurch, and well above average for Tauranga which experienced its 4th-warmest summer on record. Wellington and Dunedin observed near normal rainfall amounts while the remaining main centres received well below normal rainfall. Of the six main centres, Tauranga was the warmest, Dunedin was the coldest and wettest, Christchurch was the driest, Tauranga was the sunniest and Dunedin was the least sunny with 631 hours, followed closely by Wellington with 632 sunshine hours.

Summer 2019-20 main centre climate statistics:

Temperature			
Location	**Mean temp. (°C)**	**Departure from normal (°C)**	**Comments**
Auckland[a]	20.0	+0.8	Above average
Tauranga[b]	20.4	+1.3	Well above average (4th-highest)
Hamilton[c]	18.7	+0.7	Above average
Wellington[d]	16.7	+0.2	Near average
Christchurch[e]	17.2	+0.6	Above average
Dunedin[f]	15.0	+0.3	Near average
Rainfall			
Location	**Rainfall (mm)**	**% of normal**	**Comments**
Auckland[a]	76	35%	Well below normal
Tauranga[b]	88	34%	Well below normal
Hamilton[c]	87	33%	Well below normal
Wellington[d, 2]	197	86%	Near normal
Christchurch[e]	61	49 %	Well below normal
Dunedin[f]	259	117 %	Near normal
Sunshine			
Location	**Sunshine (hours)**		
Auckland[a]	805		
Tauranga[b]	813		
Hamilton[g, 3]	766		
Wellington[d]	632		
Christchurch[e]	661		
Dunedin[f]	631		

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

[2] Missing 4 days of data
[3] Missing 1 day of data

Highlights and extreme events

This section contains information pertaining to some of the more significant highlights and extreme events that occurred during summer 2019-20. Note that a more detailed list of significant weather events for summer 2019-20 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 at the following website: https://www.niwa.co.nz/climate/monthly

Rain and slips

During the first eight days of December, a stationary high to the northeast of New Zealand and low pressure to the southwest brought a prolonged period of north-westerly airflows over the country. These delivered persistent rainfall to the headwaters of the South Island lakes and rivers. Lake Wanaka and Lake Wakatipu rose considerably, inundating lakeside roads, tracks and reserves. Many Wanaka businesses sand-bagged their properties as floodwaters threatened buildings in the central business district. The Central Otago District Council placed Alexandra, Roxburgh and Lake Roxburgh Village on boil water notice, due to elevated turbidity in the Clutha River affecting the water treatment plant.

On 7-8 December, heavy rain caused significant issues for many parts of the South Island and lower North Island:

- Numerous landslides forced the closure of a 280 km stretch of SH6 between Hokitika and Haast. The worst-affected area was about Mt Hercules, with an estimated 20-30 slips forcing the prolonged closure of SH6 between Harihari and Haast. Approximately 970 tourists were stuck in Franz Josef township due to the road closures.

- The Rangitata River rose rapidly due to heavy rain in the headwaters, causing extensive flooding in areas along the lower reaches of the river. A local state of emergency was declared in the Timaru District due to flooding, and residents were evacuated from several areas including Rangitata Island and Rangitata Huts. The Rangitata Bridge at SH1 and the bridge at Arundel on Route 72 were closed for several days. Nine Transpower pylons crossing the Rangitata River were damaged, with one of these towers swept away by the floodwaters.

- Heavy rain caused flooding and road closures in and around Wellington. The worst-affected areas were Porirua, Pāuatahanui and Hutt Valley suburbs including Manor Park, Silverstream and Stokes Valley, with reports of vehicles written off due to water damage. A slip near Silverstream blocked northbound lanes on SH2, SH58 was closed due to a slip and SH1 through Mana and Plimmerton Roundabout was closed due to flooding.

The Karangahake Gorge (SH2) was closed for several hours overnight from 8-9 December due to flooding.

On 17 December, heavy rain caused flooding which closed SH63 between the Branch River and Wairau River bridges (Wairau Valley in Marlborough).

On 3-4 February, torrential rain and flooding impacted Fiordland, cutting off SH94 between Te Anau and Milford Sound and leaving more than 380 people stranded. Those stranded were directed to an assembly point at Mitre Peak Lodge. SH94 was badly damaged and remained closed to private vehicles for the entire month, with a partial reopening for bus convoys occurring towards the end of the month. A State of Emergency was declared in Milford Sound, and the Department of Conservation said that damage to the Routeburn Track was so severe that it would remain closed for the rest of the season, while the Milford Track would be closed for at least three weeks.

A State of Emergency was declared in Southland and residents in parts of Gore, Mataura, and Wyndham were told to evacuate due to flooding on the Mataura River, which peaked at 2500 cumecs at Gore on 5 February, and nearly 2700 cumecs at Mataura. This State of Emergency was originally put in place until 11 February, but was then extended until at least 18 February. A boil water notice was also issued for residents in Mataura, the Otama Water Supply scheme, and all flood-affected Southland residents who use groundwater.

More than 2400 people were evacuated from their homes in Gore along with more than 1500 people in Mataura. Dairy NZ stated that more than 100 dairy farms were severely impacted by the flooding.

Dozens of roads were closed due to the flooding in Southland and Otago, including SH1 between Dunedin and Invercargill, SH94, SH97, SH6 between Queenstown and Kingston, and portions of SH90.

Between 7-8 February, three bodies were found in the Makarora River, believed to be a group that had been tramping in Mount Aspiring National Park and were caught in floodwaters.

Drought, water restrictions, and fire bans

On 14 January, Fire and Emergency New Zealand issued a total fire band across Northland and a warning for homeowners to protect their homes against wildfire.

On 16 January a total fire ban was issued for Wanaka, Lake Hawea, Omarama, Otematata, Kurow, Naseby, Ranfurly, Alexandra, Clyde, and Cromwell.

As of 17 January, a total watering ban was in place for parts of the Coromandel Peninsula due to extremely dry conditions.

As of 20 January, parts of central and northern Canterbury were on Level 1 and Level 2 water restrictions as a precautionary measure.

As of 23 January, water restrictions were in force across the Far North District and several other towns across Northland due to extremely dry conditions.

On 23 January, the Queenstown Lakes District Council issued a water restriction notice to the residents of Luggate, Otago.

On 23 January, Central Taranaki's continuous dry weather resulted in water restrictions being imposed in the Stratford District.

On 23 January, a sprinkler and irrigation system ban was issued in Tauranga by the Tauranga City Council.

On 27 January, water restrictions and a total fire ban went into place for several communities across the Tasman District due to dry conditions.

On 29 January, a water restriction notice was issued by the Timaru District Council.

On 30 January, a sprinkler restriction was introduced by the Gisborne District Council.

During the final week of January, a total ban on outside watering was put into place across the Wairarapa for the first time in the last decade. The Waingawa River, which feeds Masterton's water supply, dipped below 1100 litres per second, a significant reduction from normal flow. Masterton District Council begins looking at water conservation measures when the river drops below 1,900 litres per second.

Several record or near-record dry spells (defined as consecutive days with less than 1 mm of rain) across New Zealand, including:

Auckland area – 47 days (6 Jan-21 Feb), longest on record

Whangarei – 38 days (15 Jan-21 Feb), second-longest on record

Whitianga – 34 days (15 Jan-17 Feb), longest on record

Takaka – 46 days (20 Dec-3 Feb), longest on record

Blenheim – 64 days (20 Dec-21 Feb), longest on record

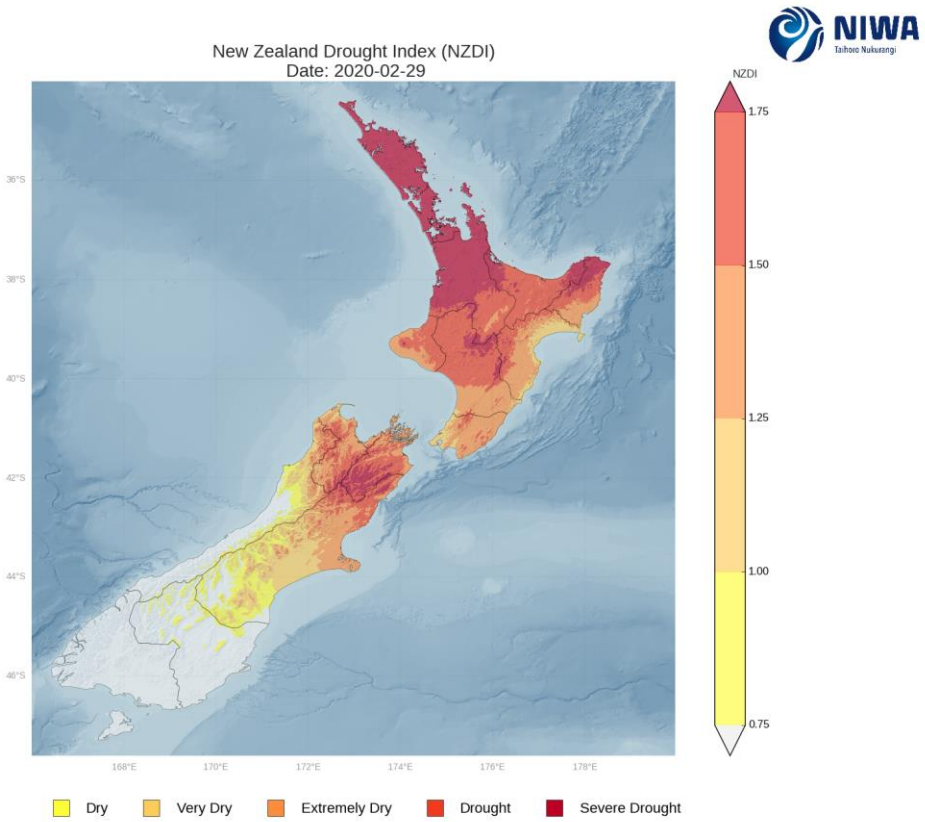
Cheviot – 49 days (21 Dec-7 Feb), longest on record

Culverden – 45 days (21 Dec-3 Feb), 2nd longest on record

Rangiora – 45 days (21 Dec-3 Feb), 2nd longest on record

Hanmer Forest – 40 days (26 Dec-3 Feb), longest on record

As of late February, the New Zealand Drought Index showed that severe meteorological drought was widespread across Northland, Auckland, northern Waikato, and East Cape, along with parts of western Bay of Plenty, Manawatu-Whanganui, northern Canterbury and southern Marlborough. Meteorological drought also emerged from central Waikato to Manawatu-Whanganui, Taranaki, Bay of Plenty, coastal Wairarapa, and Tasman. Much of the rest of the country was unusually dry, except for the western and lower South Island.



By mid-February, total fire bans were in place across all of the North Island, Tasman, Nelson, Marlborough, northern Canterbury, and Central Otago.

On 3 February a total watering ban was declared in Coromandel Town, Whitianga, and Hahei.

On 11 February, MPI classified the meteorological drought conditions in Northland and northern Auckland as an adverse event, unlocking $80,000 in government support.

On 18 February, the Far North District Council placed Level 4 water restrictions on the Paihia and Kawakawa catchments due to the long-term dry spell. By late February, water restrictions were increased to Level 3 in Kerikeri and Waipapa, and Level 2 in Whangarei.

As of 26 February, Auckland Watercare believed that the Hoteo River in Wellsford was running at its lowest level since 1983, when the area experienced its worst drought on record.

On 28 February, MPI classified the meteorological drought conditions in Waikato and South Auckland as an adverse event, unlocking $80,000 in government support.

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
Murchison	77	Dec-2nd	1997	Highest
Lauder	84	Feb-4th	1924	Highest
Judgeford	102	Dec-7th	1978	2nd-highest
Kaka	88	Dec-2nd	1997	2nd-highest
Queenstown	81	Feb-3rd	1890	2nd-highest
Lower Retaruke	83	Dec-17th	1974	3rd-highest
Pirinoa	69	Dec-17th	1967	3rd-highest
Waipounamu	81	Feb-3rd	1917	3rd-highest
Clyde	54	Feb-4th	1978	3rd-highest
Balclutha (Telford)	76	Feb-3rd	1964	3rd-highest
Nugget Point	60	Feb-2nd	1930	3rd-highest
Mangakowhai	74	Dec-17th	1995	4th-highest
Milford Sound	509	Feb-3rd	1929	4th-highest
Glenthorne	44	Dec-8th	1985	4th-highest
Middlemarch	55	Feb-4th	1896	4th-highest

Temperatures

Several locations across Southland and Otago observed one of their warmest December days on record on 31 December. In Ranfurly, the temperature reached 32.3°C, making it Ranfurly's highest December temperature since records began in 1897.

An unusually warm air mass over the North Island in early February resulted in several locations setting all-time maximum temperature records, including:

On 1 February, Whitianga reached 33.1°C, the hottest temperature recorded there since records began in 1962. (The previous record was 33.0°C in February 2017). Meanwhile, Te Puke reached at least 33.0°C, beating the old record of 32.5°C set in January 1979.

On 3 February, Whangarei set a new all-time record as the temperature reached 32.8°C, but this record was beaten the very next day as the maximum temperature on 4 February reached 34.1°C.

High temperatures in Auckland resulted in peak water demand records being broken three times during the week of 17 February as Aucklanders used colossal amounts of water. The highest volume was 568 million litres on Wednesday 19 February.

The highest temperature during summer was 38.2˚C, observed at Gisborne on 31 January.

The lowest temperature during summer was -0.7˚C, observed at Hanmer Forest on 15, 16, and 17 January.

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				
Whangarei	34.1	Feb-4th	1967	Highest
Whitianga	33.1	Feb-1st	1962	Highest
Matamata (Hinuera)	32.8	Jan-26th	1999	Highest
Te Puke	33.0	Feb-3rd	1973	Highest
Whakatane (Airport)	36.4	Feb-3rd	1975	Highest
Taupo	33.2	Jan-26th	1949	Highest
Motu	32.5	Feb-3rd	1990	Highest
Takapau Plains	33.8	Feb-4th	1962	Highest
Hicks Bay	31.8	Feb-2nd	1969	Highest
Gisborne	38.2	Jan-31st	1905	Highest
Waipawa	36.9	Feb-4th	1945	Highest
Takaka	34.6	Jan-28th	1978	Highest
Akaroa	35.5	Feb-2nd	1978	Highest
Le Bons Bay	32.2	Feb-2nd	1984	Highest
Kaitaia (Airport)	30.7	Feb-2nd	1948	2nd-highest
Kerikeri (Aerodrome)	33.2	Feb-1st	1945	2nd-highest
Mokohinau	27.6	Feb-3rd	1994	2nd-highest
Whangaparaoa	30.1	Feb-20th	1982	2nd-highest
Tauranga (Airport)	33.6	Feb-1st	1913	2nd-highest
Rotorua	32.0	Feb-3rd	1964	2nd-highest
Te Kuiti	32.0	Jan-26th	1959	2nd-highest
Mahia	33.5	Feb-4th	1990	2nd-highest
Palmerston North	32.9	Feb-4th	1918	2nd-highest
Wanganui (Spriggens Park)	31.6	Feb-4th	1937	2nd-highest
Pelorus Sd (Crail Bay)	30.4	Jan-28th	1982	2nd-highest
Kaikohe	31.6	Feb-3rd	1973	Equal 2nd-highest
Wairoa (North Clyde)	37.3	Feb-2nd	1964	Equal 2nd-highest
Napier (Airport)	37.4	Feb-2nd	1868	3rd-highest
Auckland (Airport)	29.8	Feb-4th	1959	3rd-highest
Dannevirke	32.6	Feb-4th	1951	3rd-highest
Hastings	35.5	Feb-4th	1965	3rd-highest
Ohakune	30.1	Jan-26th	1962	3rd-highest
Motueka (Riwaka)	33.1	Jan-23rd	1956	3rd-highest
Kaikoura	34.1	Feb-4th	1963	3rd-highest
Five Rivers	30.8	Jan-24th	1982	3rd-highest
South West Cape	26.8	Jan-24th	1991	3rd-highest
Paeroa	32.2	Jan-26th	1947	Equal 3rd-highest
Appleby	31.3	Feb-2nd	1932	4th-highest
Lumsden	30.6	Jan-24th	1982	Equal 4th-highest
Low records or near-records				
Clyde	10.3	Dec-17th	1978	2nd-lowest

Alexandra	10.0	Dec-17th	1930	3rd-lowest
Roxburgh	10.5	Dec-17th	1950	Equal 4th-lowest
Balclutha (Finegand)	12.1	Dec-17th	1972	Equal 4th-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
Low records or near-records				
Turangi	-0.3	Dec-11th	1968	3rd-lowest
Boyle River	-0.9	Dec-14th	1983	Equal 3rd-lowest
High records or near-records				
Akaroa	23.8	Feb-3rd	1978	Highest
Blenheim	22.0	Feb-4th	1947	Highest
Cheviot	24.5	Feb-3rd	1982	Highest
Lake Tekapo	21.5	Feb-3rd	1928	Highest
Le Bons Bay	21.5	Feb-3rd	1984	Highest
Masterton (Airport)	22.2	Feb-4th	1943	Highest
Rangiora	22.1	Feb-3rd	1972	Highest
Upper Hutt (Trentham)	21.4	Feb-4th	1972	Highest
Waiau School	24.4	Feb-3rd	1974	Highest
Waipara West	24.1	Feb-3rd	1973	Highest
Appleby	20.5	Feb-2nd	1941	Equal highest
Arthurs Pass	16.3	Jan-27th	1978	2nd-highest
Martinborough	21.7	Feb-4th	1986	2nd-highest
Medbury	23.2	Feb-3rd	1927	2nd-highest
Milford Sound	18.2	Feb-3rd	1935	2nd-highest
Wanaka	20.3	Feb-3rd	1972	Equal 2nd-highest
Alexandra	18.7	Jan-25th	1992	3rd-highest
Five Rivers	19.5	Feb-2nd	1982	3rd-highest
Mahia	20.4	Jan-29th	1990	3rd-highest
Greymouth (Airport)	18.5	Feb-4th	1972	Equal 3rd-highest
Arapito	19.0	Feb-4th	1978	4th-highest
Ashburton (Airport)	21.5	Feb-17th	1928	4th-highest
Culverden	22.3	Feb-3rd	1930	4th-highest
Hanmer Forest	21.5	Feb-17th	1972	4th-highest
Kaikoura	20.3	Feb-3rd	1972	4th-highest
Takapau Plains	19.6	Feb-3rd	1972	4th-highest
Hastings	21.5	Jan-30th	1972	Equal 4th-highest
Ngawi	22.7	Feb-3rd	1972	Equal 4th-highest

Wind

On 3 December, strong winds forced the cancellation of approximately 40 flights to and from Wellington Airport.

On 17 December, severe thunderstorms produced two tornadoes in Waikato. The first struck near Waihou shortly after midday, damaging a farm shed and snapping trees. The second occurred south of Te Awamutu around 6 p.m., with one local reporting roofs off buildings, windows and wall cladding damage to two sheds, approximately 40 large trees downed and damage to neighbouring properties.

On 6 January, strong winds hit many parts of the country. In Dunedin, a woman was taken to hospital with serious injuries after a tree fell on her at Albany Street. Firefighters attended 45 weather-related incidents in the Dunedin area, with lifting roofs, downed trees and downed powerlines reported. More than 2500 homes had lost power.

On 6 January, powerlines were toppled by winds in Manawatu-Whanganui, with more than 7,100 homes suffering power outages particularly in the areas of Taihape, Rongotea, Kairanga, Marton, southern Fielding, Āpiti, Aokautere and Bunnythorpe.

The highest wind gust was 196 km/h, observed at Cape Turnagain on 5 January.

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

Location	Extreme wind gust (km/hr)	Date of extreme gust	Year records began	Comments
Secretary Island	165	Feb-16th	1994	Highest
Oamaru	106	Jan-30th	1984	Highest
Gore	130	Jan-30th	1987	Highest
South West Cape	178	Jan-30th	1991	2nd-highest
Levin	93	Dec-8th	1971	Equal 2nd-highest
Invercargill Aero	120	Jan-30th	1972	Equal 2nd-highest
Dannevirke	93	Dec-20th	1961	3rd-highest
Napier Aero	104	Dec-3rd	1973	3rd-highest
Brothers Island	133	Dec-20th	1997	3rd-highest
Manapouri Aero	85	Jan-31st	1991	3rd-highest
Upper Hutt (Trentham)	95	Dec-3rd	1999	Equal 3rd-highest
Blenheim (Airport)	100	Jan-6th	1972	4th-highest
Hamilton	83	Dec-3rd	1978	Equal 4th-highest
Palmerston North	95	Jan-6th	1991	Equal 4th-highest
Winchmore	100	Dec-4th	1970	Equal 4th-highest

Lightning and hail

On 8 December, over 300,000 lightning strikes occurred around New Zealand and offshore waters associated with the passage of an active front. Lightning set trees on fire in Akatarawa (near Upper Hutt) and Martinborough. Farther south, lightning and hail struck Dunedin during the afternoon. Fire crews were called to fires in Green Island and Outram, which were believed to have been

caused by lightning strikes. Lightning struck the Dunedin Airport power centre, knocking out the airfield lighting system temporarily.

On 23 February, thunderstorms brought small hail to the Tauranga area, including Whakamarama and Mt Maunganui.

Cloud and fog
Significant smoke and haze from Australian bushfires affected New Zealand for several days starting 1 January. This peaked in the North Island on 5 January before a southerly change pushed the particulates northward on 6 January

On 19-20 January, low cloud and fog disrupted flights at Wellington Airport. More than 30 flights were cancelled out of the capital on 19 January with several more cancellations reported on 20 January. The fog, which settled as low as 200 feet, was associated with a humid air mass and light winds.

On 18 February, fog at Nelson Airport caused several cancellations and diversions. One inbound flight from Auckland was cancelled, along with several departing flights to Wellington and Auckland. In addition, some other Nelson-bound flight were instead diverted to Blenheim Airport.

Snow and Ice
On the morning of 6 January, Southlanders woke to snow on the hilltops (to 1500m) as a January cold snap continued.

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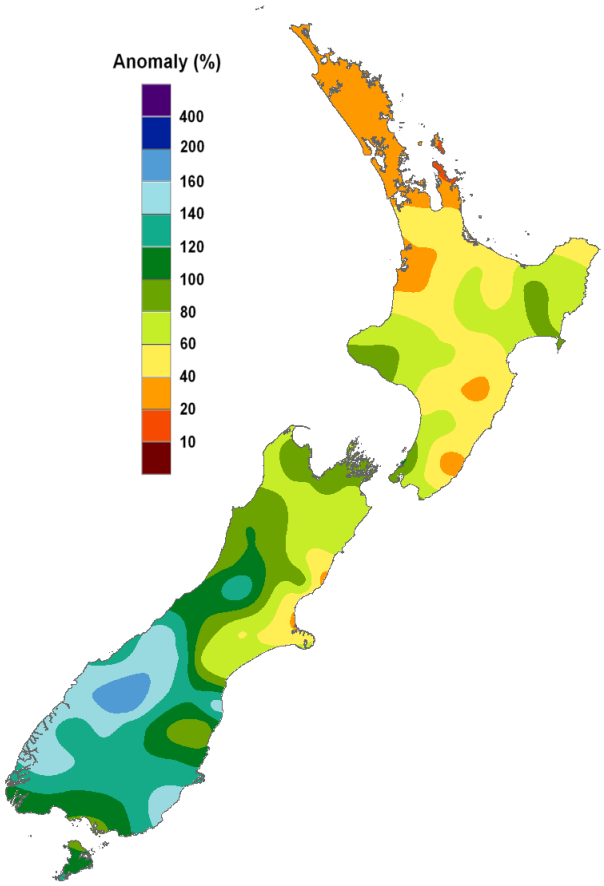

Summer 2019-20 rainfall, expressed as percentage of the 1981-2010 normal.

Summer rainfall was below to well below normal for most of the North Island and drought conditions became widespread. Conversely, periods of heavy rain in parts of the lower South Island resulted in summer rainfall totals that were above to well above normal and flooding occurred in several locations.

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