

Meteorological data summary for November 2021 for the Blenheim Meteorological station located at the Grovetown Park campus of the Marlborough Research Centre.

Table 1: Weekly weather data during November 2021

	Mean Max (°C)	Mean Min (°C)	Mean (°C) Deviation	Rainfall (mm)	Sunshine (hours)	Wind-run (km)
1 st - 7 th	16.4	10.3	13.3 (-1.5)	0.0	28.0	219.6
8 th - 14 th	23.7	13.2	18.5 (+3.7)	3.0	56.8	244.6
15 th - 21 st	21.7	10.6	16.1 (+1.3)	5.8	73.6	311.9
22 nd - 28 th	21.0	12.0	16.5 (+1.8)	5.4	49.5	232.6
29 th - 30 th (2 days)	25.7	13.0	19.3 (+4.5)	0.0	20.3	186.0
1 st - 30 th November 2021	21.0 (+1.0)	11.6 (+2.1)	16.3 (+1.5)	14.2 (28%)	228.2 (95%)	247.7 85%
November LTA (1986 - 2020)	20.0	9.5	14.8	50.6	239.6	293.1

LTA – Long Term Average

November 2021 recorded a well above average mean temperature, below average sunshine hours, and well below average wind-run and rainfall.

Sunshine

228.2 hours sunshine for November is 95% of the long term average (LTA) for November of 239.6 hours. While this total was below the LTA it was 48.2 hours above the November 2020 total.

November 2020 recorded 180.0 hours sunshine.

November 2019 recorded 272.8 hours sunshine.

November 2018 recorded 219.4 hours sunshine.

November 2017 recorded 246.5 hours sunshine.

Total sunshine for the 11 months January to November 2021 is 2321.3 hours; 103% of the long-term average of 2256.9 hours.

Sunniest towns in November 2021

New Plymouth	266.7 hours
Tekapo	258.8 hours
Richmond	236.9 hours
Blenheim	228.2 hours (38.5 hours less than New Plymouth)
Napier	216.0 hours

It last month's summary at the end of October I said that Blenheim was rapidly closing the gap on New Plymouth and that with two months to go Blenheim was only 7.5 hours behind, for the 10 months January to October 2021. It appeared as if Blenheim might take the lead in November and December and come out as sunniest town in 2021. Unfortunately Blenheim's sunshine hours in November put a spanner in the works of that outcome. Blenheim recorded 38.5 hours fewer sunshine hours in November than New Plymouth. As a result New Plymouth has an almost unassailable lead at the end of November.

Sunniest town in New Zealand

Totals to the end of November 2021:

New Plymouth	2367.2 hours
Blenheim	2321.2 hours (46.0 hours behind New Plymouth)
Richmond	2317.2 hours (50.0 hours behind New Plymouth)
Napier	2300.7 hours
Tekapo	2265.1 hours

Rainfall

Rainfall total of 14.2 mm is 28% of the long-term average for November of 50.6 mm.

November 2020 rainfall was 81.8 mm

November 2019 rainfall was 42.6 mm

November 2018 rainfall was 62.6 mm

November 2017 rainfall was 16.4 mm

November 2015 rainfall was 2.8 mm (lowest total on record 1930-2016)

Total rainfall for the 11 months January to November 2021 is 633.2 mm; 107% of the long-term average of 589.3 mm. January to November 2020 recorded 438.6 mm; i.e. January to November 2021 has recorded 194.6 mm more rainfall than the same period in 2020.

Soil moisture

Shallow soil moisture (0 to 35 cm depth) at the Grovetown Park weather station on 1 November 2021 was 35.5%, Soil moisture peaked at 39% on 29 October after the large dump of rain. 35.5% is the highest soil moisture at the beginning of November for the 20-years 2002 to 2021. The average value at the start of November (2002 to 2020) is 26.6%. With low rainfall and high evapotranspiration during November the shallow soil moisture dropped rapidly. On 30 November soil moisture had dropped to 20%; a loss of 15.5% during the month. The topsoil lost 75% of its available soil moisture during November 2021. This is the greatest loss in top soil moisture during November for the period 2002 to 2021. However, as some other years have started November at a much drier point than in 2021, and consequently some of those years have had lower soil moisture at the end of November, than in 2021.

Temperature

Mean temperature of 16.3°C was 1.5°C above the long term average temperature for November of 14.8°C. This is now the 4th equal warmest November on record for the 90 years 1932 to 2021

November 2020 mean temperature was 15.2°C.

November 2019 mean temperature was 16.7°C (second warmest on record)

November 2018 mean temperature was 15.1°C.

November 2021 is the 9th year in a row (2013-2021) when the November mean temperature has been above average.

The hottest maximum air temperature of 26.7°C was recorded on 29 November. (27.8°C on 27 Nov 2020)

The coldest minimum air temperature of 6.3°C was recorded on 18 November (5.8°C on 28 Nov 2020)

The coldest minimum grass temperature of 1.0°C was recorded on 18 November (3.2°C on 12 Nov 2020)

Wind Run

Average daily wind run during November 2021 was 247.7 km; 85% of the long-term average wind-run for November of 293.1 km.

The windiest day of the month was 15 November 2021, with total wind-run of 438 km and average wind speed of 18.3 km/hr. The calmest day of the month was 6 November, with total wind run of 136 km and average wind speed of 5.7 km/hr.

Of the 11 months to the end of November 2021, ten months have recorded below average wind-run and only one month (September) has recorded above average wind-run.

Evapotranspiration (ET)

Total Evapotranspiration for November was 126.7 mm, or 104% of the long-term average of 122.3 mm.

Water Deficit (rainfall minus evapotranspiration)

Total water deficit for November was -112.5 mm. The long-term average is -75.7; i.e. due to the well below average rainfall in November and slightly above average evapotranspiration, the water deficit was well above average.

Spring Summary – September to November 2021

Table 2: Monthly sunshine, rainfall and mean temperature over spring in 2021 compared to average

Month	Sunshine Hours 2021	Sunshine Hours LTA	Rainfall mm 2021	Rainfall mm LTA	Mean temp °C 2021	Mean temp °C LTA
September	223.9	195.3	52.6	52.9	11.1	11.1
October	233.8	230.6	70.2	56.8	13.9	13.1
November	228.2	239.6	14.2	50.6	16.2	14.8
Total Sun & Rain Mean temp	685.9	665.5	137.0	160.2	13.75	13.0

Sunshine

September to November 2021 recorded 685.9 hours sunshine, 103% of the long-term average.

Rainfall

September to November 2021 recorded 137.0 mm rain, 86% of the LTA.

It is interesting to note that over the 10 years 2012 to 2021 that spring rainfall has been below average in 7 of those 10 years.

Temperature

September to November 2021 recorded a mean temperature of 13.75°C. This was 0.75°C above the LTA (1986-2020) and only slightly cooler than spring 2020, which recorded a mean temperature of 13.8°C.

Over the 10 years 2012 to 2021 the mean spring temperature has been above average in 8 of those 10 years.

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