

Meteorological data summary for October 2020 for the Blenheim Meteorological station located at the Grovetown Park campus of the Marlborough Research Centre.

October 2020 mean temperature was well above average, however, there was quite a marked contrast in the weekly temperatures during the month. Rainfall, sunshine, number of frosts and average daily wind-run were below average.

Table 1: Weekly weather data during October 2020

	Mean Max (°C)	Mean Min (°C)	Mean (°C) Deviation	Ground Frosts	Rainfall (mm)	Sunshine (hours)
1 st - 7 th	21.3	9.8	15.6 (+2.5)	0	0	65.1
8 th - 14 th	16.9	9.4	13.2 (+0.1)	0	5.8	28.3
15 th - 21 st	17.6	7.2	12.4 (-0.7)	0	3.0	53.3
22 nd - 28 th	20.4	10.0	15.2 (+2.1)	0	11.8	59.5
29 th - 31 st (3 days)	21.2	12.8	17.0 (+3.9)	0	1.8	18.6
1 st - 31 st October 2020	19.2 (+0.9)	9.5 (+1.7)	14.3 (+1.2)	0	22.4 (39%)	224.8 (97%)
October LTA (1986 - 2019)	18.3	7.8	13.1	2.1	57.8	230.8

LTA – Long Term Average

Temperature

Mean temperature of 14.3°C was 1.2°C above the long-term average temperature for October of 13.1°C (1986-2019). This is the fifth warmest October on record for the 89 years 1932 to 2020.

October 2019 mean temperature was 12.7°C.

October 2018 mean temperature was 13.7°C.

October 2017 mean temperature was 13.9°C.

The warmest maximum temperature of 28.5°C was recorded on 5 October 2020. This is the second warmest October day on record over the 74 years 1947 to 2020, (the period for which we have the daily records on hand). Warmest October day on record is 23 October 1961 with a maximum temperature of 30.1°C.

The coolest minimum temperature of 1.8°C was recorded on 16 October 2020.

The mean temperature for the first week of October 2020 of 15.6°C, was 2.5°C above average. This was in marked contrast to the first week of October 2019 which was 4.1°C below average.

The second and third weeks were 2.4°C and 3.2°C cooler than the first week, but still close to average.

The final ten days of the month were largely above average, albeit with a cool change from the 27th to the 29th; i.e. the maximum temperature on 26th was 23.5°C followed by a maximum of only 11.7°C on 27th.

October has now recorded an above average mean temperature in 6 of the last 8 years (2013, 2015, 2016, 2017, 2018 and 2020). However in the 12 years from 2001 to 2012 the October mean temperature was only above average in one year, 2001).

Frosts

No ground frosts were recorded in Blenheim in October 2020, in marked contrast to October 2019 which recorded five ground frosts. The long-term average number of ground frosts for October is two.

This is only the second year since 2000 that Blenheim hasn't recorded a ground frost in October.

Sunshine

224.8 hours sunshine for October was 97% of the long-term average for October of 230.8 hours (1986-2019).

October 2019 recorded 250.5 hours sunshine.

October 2018 recorded 266.1 hours sunshine.

October 2017 recorded 247.4 hours sunshine.

Total sunshine for January to October 2020 was 2166.7 hours, 108% of the long-term average of 2012.9 hours. This is the fourth highest total on record.

Sunniest town in New Zealand update.

Blenheim was the sunniest town in New Zealand during October 2020 with 224.8 hours sunshine. In second place was Tekapo with 223.7 hours and Napier was in third place with 221.9 hours. Blenheim recorded 14.9 hours more sunshine than Richmond in October.

Current sunshine totals and rankings to the end of October 2020 are:

Richmond	2191.2 hours (24.5 hours ahead of Blenheim)
Whakatane	2169.7 hours (3.0 hours ahead of Blenheim)
Blenheim	2166.7 hours
New Plymouth	2107.9 hours
Napier	2093.9 hours

At the end of June Richmond was 94.9 hours ahead of Blenheim. However, Blenheim has recorded higher sunshine hours in each month from July to October. At the end of October Richmond is only 24.5 hours ahead of Blenheim, with two months to go in 2020.

Rainfall

Rainfall total of 22.4 mm was 39% of the long-term average for October of 57.8 mm (1986-2019).

October 2019 rainfall was 28.0 mm.

October 2018 rainfall was 33.8 mm.

October 2017 rainfall was 32.4 mm.

Rain was recorded in Blenheim on nine days during October 2020. However, the highest daily total was only 8.2 mm on 26 October.

Total rainfall for January to October 2020 of 356.8 mm was 66% of the long-term average of 544.1 mm. This is the fourth lowest total on record for the 91 years 1930 to 2020. Lowest is 305 mm recorded in 1969, which also went on to record the lowest January to December annual total for Blenheim.

Total rainfall for January to October 2019 of 527.2 mm was 97% of the long-term average of 544.6 mm.

Total rainfall for January to October 2018 of 693.4 mm was 127% of the long-term average of 544.6 mm.

Evapotranspiration

Evapotranspiration for October 2020, was 114.4 mm, 112% of the long-term average of 102.4 mm.

Soil Moisture

With well below average rainfall during October the topsoil moisture fell from 34.6 % on 1 October to 23.4 % on 31 October 2020. The loss of topsoil moisture between 1 and 31 October was approximately 47% of the available topsoil moisture at the Grovetown Park weather station. This moisture loss was well above average.

Field capacity is approx. 38% and permanent wilting point about 14%. Average topsoil moisture loss in Blenheim during October is 26% (2002-2019).

Moisture Deficit

As explained on previous occasions moisture deficit is rainfall minus potential evapotranspiration

For October 2020 this was 22.4 mm rain – 114.4 mm potential evapotranspiration = -92.0 mm; 221% of average.

Wind

October 2020 average daily wind-run was 272.5 km. This was 93% of the October mean (1996-2019) of 291.7 km. Average wind speed was 11.4 km/hr. While October wind-run was below average it was the windiest October since 2015. Only two years in the 10-year period 2011 to 2020 recorded above average October wind-run (2012 and 2015)

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