

Meteorological data summary for October 2023 for the Blenheim Meteorological station located at the Grovetown Park campus of the Marlborough Research Centre.

Mean temperature, rainfall and wind-run were all below the long-term average (LTA) in October 2023. Total sunshine hours were well above average.

Table 1: Weekly weather data during October 2023

	Mean (°C)	Mean Max (°C)	Mean Min (°C)	Ground Frosts	Rainfall (mm)	Sunshine (hours)	Windrun (km)
1 st - 7 th	12.3 (-0.9)	19.0 (+0.6)	5.7 (-2.2)	3	2.4	69.4	257.0
8 th - 14 th	14.2 (+1.0)	20.1 (+1.7)	8.2 (+0.3)	0	1.2	68.1	314.3
15 th - 21 st	12.4 (-0.8)	18.2 (-0.2)	6.6 (-1.3)	0	28.0	51.7	218.4
22 nd - 28 th	13.4 (+0.2)	18.1 (-0.3)	8.7 (+0.8)	0	1.0	57.7	297.3
29 th – 31 st (3 days)	13.0 (-0.2)	19.6 (+1.2)	6.4 (-1.5)	0	0.0	30.6	193.7
1 st – 31 st October 2023	13.1 (-0.1)	18.9 (+0.5)	7.2 (-0.7)	3 0.9 more	32.6 (58%)	277.5 (120%)	264.3 (92%)
October LTA (1986 – 2022)	13.2	18.4	7.9	2.1	56.1	231.1	286.5

LTA – Long Term Average

Temperature

Mean temperature of 13.1°C was 0.1°C below the LTA for October of 13.2°C (1986-2022).

October 2022 mean temperature was 12.9°C.

October 2021 mean temperature was 13.9°C.

October 2020 mean temperature was 14.3°C.

October 2019 mean temperature was 12.7°C.

The warmest maximum temperature of 25.5°C was recorded on 13 October 2023. The coolest minimum air temperature of +0.6°C was recorded on the morning of 28 October. However, the coldest ground frost temperature of -3.1°C was recorded at the start of the month on the morning of 1 October.

Frosts

Three ground frosts were recorded in Blenheim in October 2023, only slightly above the LTA of 2.1 ground frosts for October. No air frosts were recorded.

Sunshine

277.5 hours sunshine for October was 120% of the LTA for October of 231.1 hours (1986-2022).

October 2022 recorded 247.7 hours sunshine.

October 2021 recorded 233.8 hours sunshine.

October 2020 recorded 224.8 hours sunshine.

Total sunshine for January to October 2023 was 2003 hours, 99% of the LTA of 2018.6 hours.

Rainfall

Rainfall total of 32.6 mm was 58% of the LTA for October of 56.1 mm (1986-2022). 26.4 mm of that total was recorded over the 4 days from 14 to 17 October.

October 2022 rainfall was 16.8 mm.

October 2021 rainfall was 70.2 mm.
October 2020 rainfall was 22.4 mm.

Total rainfall for January to October 2023 of 425.4 mm was 78% of the LTA of 545.6 mm.
Total rainfall for January to October 2022 of 709.2 mm was 130% of the LTA.
Total rainfall for January to October 2021 of 619.0 mm was 113% of the LTA.
Total rainfall for January to October 2020 of 356.8 mm was 65% of the LTA.

Evapotranspiration

Evapotranspiration for October 2023 was 107.1 mm, 104% of the LTA of 103 mm.

Soil Moisture

Average topsoil moisture during October was 31.5%, compared to the LTA during October of 34.2% (2003-2022).

On 1 October 2023 topsoil moisture was 36.4 %, which is slightly below field capacity of 38%. With little rain from 1 to 14 October the shallow soil moisture fell rapidly to 28.5%. However, 26.4 mm rain over the 4-days from 14 to 17 October saw the soil moisture rise from 28.5% to 33.7%. That rainfall gave a 15-day delay in the declining soil moisture, through until 29 October, when the soil moisture was back down to 28.5%.

Moisture Deficit

Moisture deficit is rainfall minus potential evapotranspiration

For October 2023 this was: 32.6 mm rain – 107.1 mm potential evapotranspiration = -74.5 mm; this was 29.6 mm below the LTA.

Wind

There has been a lot of news coverage regarding the current El Niño weather conditions that New Zealand is now experiencing and what that will mean for the coming months. El Niño normally means more drying winds from the westerly quarter. What was the outcome in October 2023?

October 2023 average daily wind-run was 264.3 km. This was 92% of the October LTA (1996-2022) of 286.5 km. There were 11 days during October 2023 when the daily wind-run was above the LTA. Average wind speed was 11.0 km/hr, compared to the LTA of 11.94 km/hr. We tend to notice the windy days but we forget all the other days without a lot of wind during the month.

At the end of October 2023, we are about one month into an official El Niño. However, average daily wind run for October was still below the LTA. During the last El Niño event in 2015-16, the October 2015 average daily wind-run of 300.1 km was above average.

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