

Meteorological data summary for November 2019 for the Blenheim Meteorological station located at the Grovetown Park campus of the Marlborough Research Centre.

Table 1: Weekly weather data during November 2019

	Mean Max (°C)	Mean Min (°C)	Mean (°C) Deviation	Rainfall (mm)	Sunshine (hours)
1 st - 7 th	22.6	10.5	16.5 (+1.8)	0.4	63.2
8 th - 14 th	20.1	12.8	16.4 (+1.7)	39.2	45.0
15 th - 21 st	20.8	10.5	15.6 (+0.9)	3.0	62.5
22 nd - 28 th	25.3	11.0	18.2 (+3.5)	0.0	80.7
29 th – 30 th (2 days)	23.1	11.7	17.4 (+2.7)	0.0	21.4
1 st – 30 th November 2019	22.2 (+2.3)	11.2 (+1.7)	16.7 (+2.0)	42.6 (85%)	272.8 (113%)
November LTA (1986 – 2018)	19.9	9.5	14.7	49.9	240.4

LTA – Long Term Average

November 2019 recorded a well above average mean temperature, well above average sunshine hours, well below average wind-run and slightly below average rainfall.

Sunshine

272.8 hours sunshine for November is 113% of the long term average for November of 240.4 hours.

November 2018 recorded 219.4 hours sunshine.

November 2017 recorded 246.5 hours sunshine.

November 2016 recorded 232.3 hours sunshine.

Total sunshine for the 11 months January to November 2019 is 2526.7 hours; 112% of the long-term average of 2246 hours.

Sunniest town in New Zealand

Totals to the end of November 2019:

Richmond	2581.5 hours
Blenheim	2526.5 hours (55 hours behind Richmond)
Appleby	2479.5 hours (some data missing from Appleby)
Napier	2457.6 hours
Whakatane	2412.4 hours

Rainfall

Rainfall total of 42.6 mm is 85% of the long-term average for November of 49.9 mm.

November 2018 rainfall was 62.6 mm

November 2017 rainfall was 16.4 mm

November 2016 rainfall was 86.4 mm

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

Total rainfall for the 11 months January to November 2019 is 569.8 mm; 96% of the long-term average of 594.5 mm. January to November 2018 recorded 756 mm; i.e.186.2 mm higher than Jan-Nov 2019.

Total rainfall for the three months of spring 2019 (Sep-Nov) was 134.0 mm or 83% of the long-term average.

Spring 2018 recorded almost the same rainfall with 132.6 mm.

Spring 2017 only recorded 98.6 mm; 61% of the long-term average of 160.7 mm.

Soil moisture

Shallow soil moisture (0 to 35 cm depth) at the Grovetown Park weather station on 1 November 2019 was 22.4%. This was well below the average value at the start of November (2003 to 2018) of 27.5%. Almost no rainfall in the first eight days of November saw the shallow soil moisture drop to 19% by the 9th. However, 33.6 mm rainfall was recorded from the 9th to the 11th November. This boosted the moisture in the topsoil from 19% on the 8th up to 27.4% on 12th November. A further 8.6 mm rain from 12 to 19 November helped the topsoil moisture to stay reasonably steady. However, from 18 to 30 November the moisture in the topsoil fell fairly rapidly from 27.4% to 17.8%.

While moisture in the topsoil in Marlborough during November 2019 was below average it was not as low as in previous years that have experienced low rainfall in November; e.g. November 2017 recorded 2.8 mm rain and by the end of November 2017 the topsoil was at 15.2% moisture, which is bone dry.

Temperature

Mean temperature of 16.7°C was 2.0°C above the long term average temperature for November of 14.7°C. This is the second warmest November on record for the 88 years 1932 – 2019. The warmest on record is November 1982 with a mean temperature of 16.9°C.

November 2018 mean temperature was 15.1°C.

November 2017 mean temperature was 15.1°C.

November 2016 mean temperature was 15.6°C.

November 2019 is the 7th year in a row (2013-2019) when the November mean temperature has been above average. In the 20 years 2000 to 2019

Every week during the month (Table 1) recorded above average mean maximum and minimum temperatures.

The hottest maximum air temperature of 30.8°C was recorded on 26 November

The coldest minimum air temperature of 4.8°C was recorded on 21 November

The coldest minimum grass temperature of 1.1°C was recorded on 25 November

Looking back on past November maximum daily temperature records (1947-2019), the maximum temperature of 30.8°C is only the second time that Blenheim has exceeded 30°C during November since 1947. The only other year to have done so during November is 1961.

It looks as if 2019 is headed for Blenheim's hottest year on record (1932-2019). The only way that this will not occur is if December's mean temperature is at least 0.3°C below the long-term average.

Frosts

November 2019 recorded no ground frosts.

November 2018 recorded one ground frost.

November 2017 recorded no ground frosts.

November 2016 recorded one ground frost.

November 2015 recorded three ground frosts.

Average number of ground frosts for November for the 32 years 1986 – 2018 is only 0.5 (1 year in 2 records a ground frost).

Wind Run

Average daily wind run during November 2019 was 255.9 km; this is 86% of the long-term average wind-run for November of 298.9 km. Nine days during November recorded above average daily wind-run, whereas 21 days recorded below average daily wind-run.

The windiest day of the month was Saturday 16 November, with total wind-run of 468 km and average wind speed of 19.5 km/hr. The calmest day of the month was Monday 4 November, with total wind run of 135 km and average wind speed of 5.6 km/hr.

2019 is the fourth year in a row that November has recorded below average wind-run.

Evapotranspiration (ET)

Total Evapotranspiration for November was 134.0 mm, or 109% of the long-term average of 122.2 mm.

Water Deficit (rainfall minus evapotranspiration)

Total water deficit for November was $42.6 \text{ mm} - 134.0 \text{ mm} = -91.4 \text{ mm}$; which is -14.1 mm lower than the average of -77.3.

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