

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

October 2019 mean temperature was below average, but with a marked temperature contrast during the month. Rainfall and average daily wind-run were well below average. Sunshine hours were above average. The number of ground frosts was well above average.

Table 1: Weekly weather data during October 2019

	Mean Max (°C)	Mean Min (°C)	Mean (°C) Deviation	Ground Frosts	Rainfall (mm)	Sunshine (hours)
1 st - 7 th	15.6	2.4	9.0 (-4.1)	4	6.2	52.2
8 th - 14 th	18.9	9.7	14.3 (+1.2)	0	6.6	52.6
15 th - 21 st	18.8	9.7	14.2 (+1.1)	0	13.8	40.8
22 nd - 28 th	19.4	6.2	12.8 (-0.3)	1	0	71.7
29 th - 31 st (3 days)	20.8	7.5	14.1 (+1.0)	0	1.4	33.5
1 st - 31 st October 2019	18.4 (+0.1)	7.0 (-0.9)	12.7 (-0.4)	5	28.0 (48%)	250.5 (109%)
October LTA (1986 - 2018)	18.3	7.9	13.1	2.1	58.7	230.2

LTA – Long Term Average

Temperature

Mean temperature of 12.7°C was 0.4°C below the long-term average temperature for October of 13.1°C (1986-2018). This is the coolest October since 2010, which recorded 12.4°C

October 2018 mean temperature was 13.7°C.

October 2017 mean temperature was 13.9°C.

October 2016 mean temperature was 13.9°C.

The warmest maximum temperature of 22.3°C was recorded on 8 October 2019.

The coolest minimum temperature of 0.0°C was recorded on 3 October 2019.

The mean temperature for the first week of October 2019 of 9.0°C, was 4.1°C below average. The mean minimum temperature of 2.4°C was 5.5°C below average. To put that into perspective, the mean minimum in the first week was colder than July's long-term average mean minimum of 2.7°C. It was a very cold first week.

In marked contrast the second and third weeks were 5.3°C and 5.2°C warmer than the first week.

The fourth week of the month was slightly below average.

It was the daily minimum temperatures that dragged the monthly mean temperature down, as the mean maximum temperature was slightly above average.

In the 19 years 2001 to 2019, the October mean temperature was above average in only six years (2001, 2013, 2015, 2016, 2017 and 2018). So although the October mean temperature was above average in five of the six years from 2013 to 2018, those warmer October temperatures are the exception in the past two decades.

Frosts

Five ground frosts were recorded in Blenheim in October 2019. Four in the first week. The long-term average number of ground frosts for October is two. The last year that October recorded five ground frosts was 2012. There were no air frosts during October.

Somewhat surprisingly the coldest ground frost was -3.8°C recorded on 25 October. However, the air minimum only dropped to +1.5°C on the 25th. The morning of 3 October recorded a ground frost of -3.5°C, with a corresponding air minimum of 0.0°C. So this morning was technically colder and is likely to have caused more frost damage than the morning of 25 October.

Of interest is that we need to look back 12 years to 19 October 2007, to find an October morning that was similarly cold with a ground frost of -2.7°C and an air frost of -0.4°C.

Sunshine

250.5 hours sunshine for October was 109% of the long-term average for October of 230.2 hours (1986-2018).

October 2018 recorded 266.1 hours sunshine.

October 2017 recorded 247.4 hours sunshine.

October 2016 recorded 233.9 hours sunshine.

Total sunshine for January to October 2019 was 2253.9 hours, 112% of the long-term average of 2005.6 hours.

Blenheim's sunniest year on record (1930-2018) is 2015. However, to the end of October 2015 Blenheim recorded 2238.9 hours sunshine, 15 hours less than the total to the end of October 2019. November and December 2015 both recorded well above average sunshine hours. Even with only average sunshine hours in November and December 2019 it is fairly clear that 2019 will be one of Blenheim's sunniest years on record.

Sunniest town in New Zealand update.

The sunniest place in New Zealand during October 2019 was Richmond which recorded 280.2 hours sunshine. In second place was the nearby Appleby site with 267.9 hours.

Richmond recorded 29.7 hours more sunshine than Blenheim in October and has therefore extended its lead over Blenheim considerably. Richmond is now 53.8 hours ahead of Blenheim and with two months to go in 2019 it looks like the sunniest town title will yet again go to Richmond.

Current sunshine totals and rankings to the end of October 2019 are:

Richmond 2307.5 hours (53.8 hours ahead of Blenheim)

Blenheim 2253.7 hours

Appleby 2203.4 hours (but some missing data)

Napier 2163 hours

Whakatane 2140.5 hours

Rainfall

Rainfall total of 28.0 mm was 48% of the long-term average for October of 58.7 mm (1986-2018).

October 2018 rainfall was 33.8 mm.

October 2017 rainfall was 32.4 mm.

October 2016 rainfall was 58.6 mm.

October 2015 rainfall was 6.0 mm.

Rain was recorded in Blenheim on 11 days during October 2019. However, only two days recorded more than 5.0 mm rain. The highest one day total was 10.4 mm recorded on 18 October.

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 2019, was 103.5 mm, slightly above the long-term average of 102.4 mm.

Soil Moisture

Topsoil moisture was 31.6% on 1 October and 22.7% on 31 October 2019. The loss of soil moisture between 1 and 31 October was approximately 37% of the available topsoil moisture at the Grovetown Park weather station; i.e. Field capacity is approx. 38% and permanent wilting point about 14%. This is typical of topsoil moisture loss in Marlborough during October, from an actively growing grass sward (lawn/pasture), with little rainfall.

Moisture Deficit

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

For October 2019 this was 28.0 mm rain – 103.5 mm potential evapotranspiration = -75.5 mm

Wind

October 2019 average daily wind-run was 253.9 km. This was 87% of the October mean (1996-2018) of 293.4 km. Average wind speed was 10.6 km/hr.

Readers may be surprised that the average daily wind run was well below average, as most will recall that there a number of quite windy days during October. However, we do not remember all the fairly calm days. Sunday 27 October was the windiest day of the month with 433 km wind-run.

Although January and September 2019 recorded slightly higher wind run than October 2019, October recorded the highest wind speed so far in 2019. The maximum wind speed recorded during the month was 74.5 km/hr at 1.47 pm on 24 October. This is the highest wind gust recorded in Blenheim since 24 July 2016.

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