

Rainfall in March 2022 – Unprecedented or not?

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Rainfall in March 2022 was substantial and consistent over a large area of south-eastern Australia. Was this event unprecedented or just unusual? To help answer this question I have undertaken relatively simple research using publicly available data.

The data

Rainfall records can be accessed from the website of the Bureau of Meteorology (BOM) ^{1,2}. There are a number of weather stations listed in the Southern Highlands of NSW with varying periods of observations. Two stations with long periods of observations are at Moss Vale (Hoskins St) (October 1870 – December 2021) and Mittagong (Alfred St) (January 1886 – present but missing data in the early 1920's and from January 1964 to April 1973). I have based the analysis on the data from the latter station as it is currently operating.

The monthly rainfall totals are provided for each year of observation and provision is made for obtaining a separate bar chart for each month. Figure 1 shows the results for March. The years with the highest totals are 1890, 1893, 1894, 1956, 1978 and 2022.

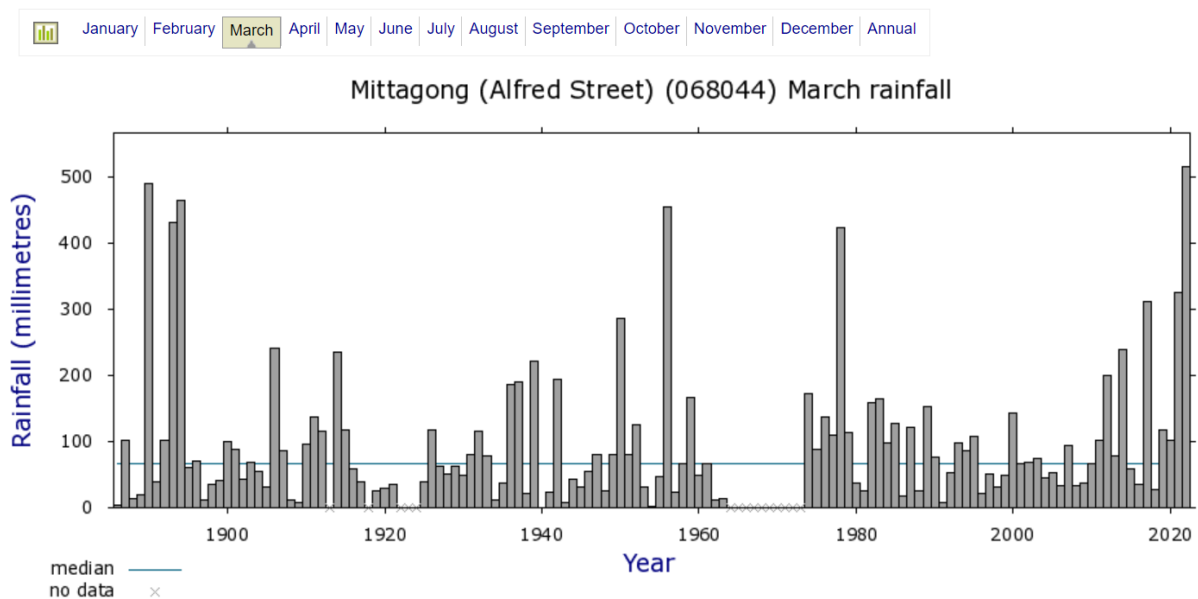


Figure 1: Rainfall totals for March at Mittagong

Figure 2 shows the corresponding bar chart for Moss Vale, comparison with Figure 1 shows that variation exists between two towns that are relatively close.

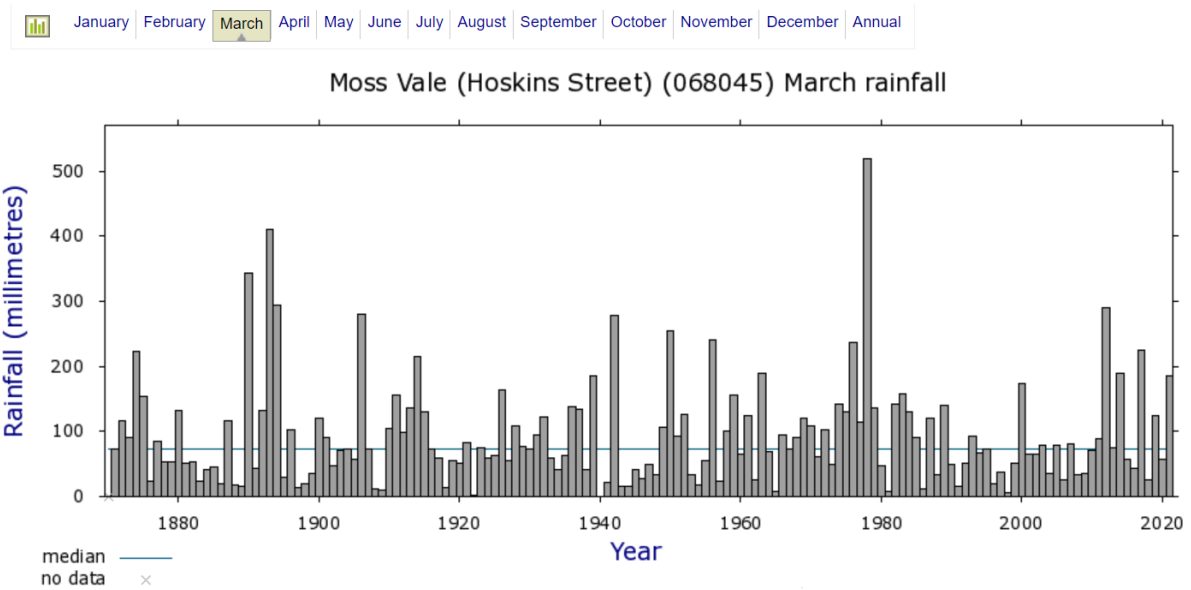


Figure 2: Rainfall totals for March at Moss Vale.

Selecting a year in the spreadsheet opens another spreadsheet that gives the daily rainfall for each month. Table 1 shows summary statistics for five of the wettest years (1978 is not shown as some observations seem to have been combined). An obvious difference is the number of rain days is higher in the latter years.

	1890	1893	1894	1956	2022
Total rainfall (ml)	490.5	430.3	463.8	454.6	514.8
Daily maximum (ml)	165.4	297.4	99.1	140.0	189.2
Rain days	16	12	19	26	24

Table 1: Rainfall data for March at Mittagong

The data also showed that high rainfall occurred in February in both 1890 and 1956 but less so in 2022. Table 2 shows relevant statistics. The total rainfall in February and March in 1956 was 903.9ml compared with 871.8ml in 1890 and 663.0ml in 2022.

	1890	1956	2022
Total rainfall (ml)	381.3	449.3	148.2
Daily maximum (ml)	68.6	128.3	27,2
Rain days	18	24	17

Table 2: Rainfall data for February at Mittagong

I have then accumulated the daily rainfall to show how the total increases during the month. Figure 3 shows the results for March in 1890, 1894, 1956 and 2022. The plot is horizontal when consecutive days have no rain. Clearly, the majority of the rainfall in 2022 occurred during the early part of the month followed by regular smaller amounts. The three earlier years show a different pattern with rainfall spread over the month, especially in 1956 when there were 26 raindays.

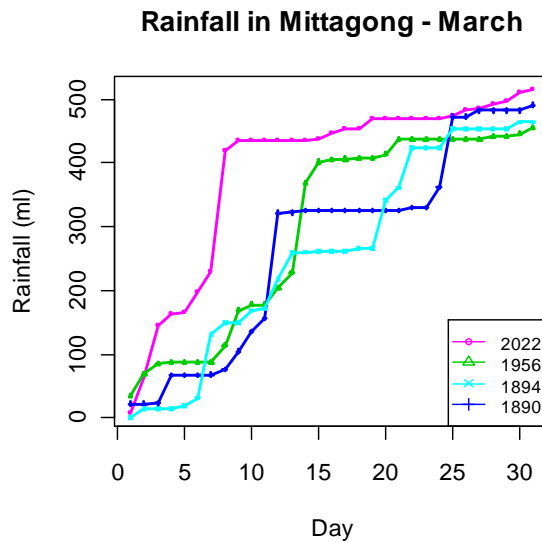


Figure 3: Accumulated rainfall for March at Mittagong

Figure 4 shows the accumulated rainfall in February for 1890, 1956 and 2022 and this highlights the differences between the earlier years and 2022 summarised in Table 2.

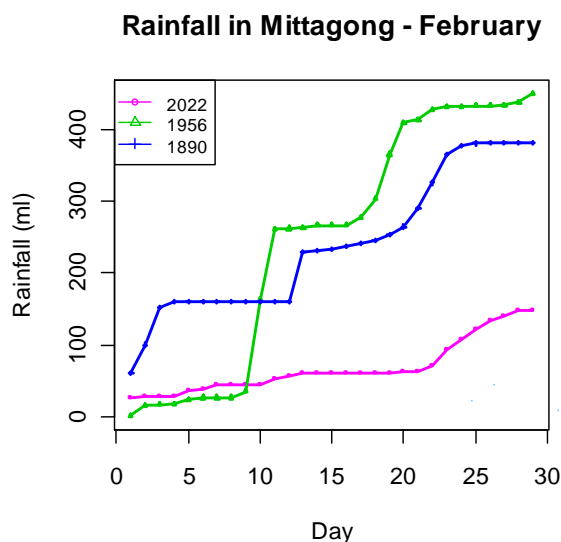


Figure 4: Accumulated rainfall for February at Mittagong

Conclusion

The rainfall in March was high and consistent but not unprecedented; it could better be described as unusual. It is interesting to note that there are 66 years between 1890 and 1956 and also between 1956 and 2022.

Sources

- (1) [Monthly Rainfall - 068044 - Bureau of Meteorology \(bom.gov.au\)](#)
- (2) [Daily Rainfall - 068044 - Bureau of Meteorology \(bom.gov.au\)](#)