Decorah Weather - September 2023 Summary

 $\label{eq:constraint} by Richard Bernatz \\ Weather data available online at http://faculty.luther.edu/~bernatzr/DecWx/$

1. Temperatures

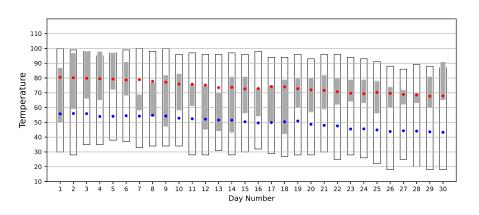


Figure 1: Grey Bar: Observed temperature range for 2023, White Bar: Record temperature range, Average temperature range: Red circle for average high, blue circle for average low.

| Item | September 2023 Average | Historical Average | Deviation |
|---------------------------------|------------------------|--------------------|-----------|
| High temperature (°F): | 81.2 | 74.1 | 7.1 |
| Low temperature $(^{\circ}F)$: | 57.4 | 50.4 | 7.0 |
| Daily temperature (°F): | 69.3 | 62.2 | 7.1 |

Table 1: September 2023 Temperatures compared with September History.

- September 2023
 - Five record temperatures. maximum of 98° F on the 3rd (tied with 1939), maximum of 98° F on the 4th (old record of 95° F in 1913), maximum of 97° F on the 5th (tied with 1913), maximum of 91° F on the 30th (old record of 90° F in 2019), a maximum minimum (the highest 24-hour minimum) of 65° F on the 30th (old record of 64° F in 1982)
 - Average temperature : 69.3° F (7.1° F warmer than average)
 - Above average maximum temperature recorded on 22 days.
 - Above average minimum temperature recorded on 22 days.
 - Warmest temperature : 98° F on the 3rd and 4th,
 - Coldest temperature : 42° F on the 18th
 - Cooling degree days : 155.5, 83.2 greater than average
 - Heating degree days : 26.5, 128.0 less than average
- All Septembers Since 1894 (130 years no missing years)
 - Compared with September 2023, 1 September was the same 128 Septembers were cooler
 - Warmest average : 69.3° F in 1931 and 2023
 - Coldest average : 55.0° F in 1924
 - Warmest temperature : 100° F on the 1st of 1913, 7th of 1939, and the 9th of 1955
 - Coldest temperature : 18° F on the 26th of 1926, the 29th of 1949, and the 30th of 1899

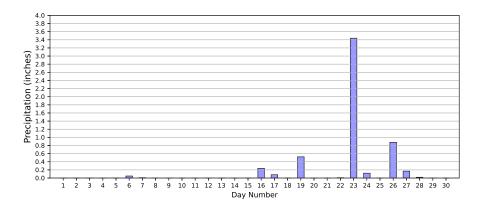


Figure 2: Precipitation for Decorah.

- September 2023
 - Total precipitation for September 2023 : 5.54 inches, 1.84 inches more than average
 - Greatest 24-hour total: 3.44 inches on September 23rd
 - Eleven days with measurable precipitation (average is 9 days).
- All Septembers since 1894 (130 years no missing years)
 - Compared with September 2023, 25 Septembers were wetter and 104 Septembers were drier
 - Wettest September : 11.66 inches in 2016
 - Driest September: 0.30 inches in 1979

| | | Ave Temp | Deviation | Rank† | Precip | Deviation | Rank‡ |
|-----------|------|--------------------|--------------------|-----------|----------|-----------|-----------|
| Month | Year | $(^{o}\mathbf{F})$ | $(^{o}\mathbf{F})$ | (#/Total) | (inches) | (inches) | (#/Total) |
| October | 2022 | 50.7 | +0.4 | 56/129 | 1.34 | -0.98 | 95/129 |
| November | 2022 | 38.5 | +3.3 | 31/130 | 2.31 | +0.46 | 36/130 |
| December | 2022 | 21.8 | +0.5 | 64/130 | 1.81 | +0.60 | 27/130 |
| January | 2023 | 24.4 | +8.1 | 11/130 | 2.17 | +1.12 | 12/130 |
| February | 2023 | 26.6 | +6.5 | 21/113 | 2.00 | +1.04 | 9/129 |
| March | 2023 | 36.2 | +3.4 | 36/131 | 1.89 | -0.11 | 70/131 |
| April | 2023 | 50.5 | +3.2 | 23/130 | 2.84 | -0.26 | 66/130 |
| May | 2023 | 63.0 | +4.1 | 17/128 | 4.19 | -0.04 | 58/127 |
| June | 2023 | 71.1 | +2.8 | 22/129 | 2.36 | -2.39 | 109/129 |
| July | 2023 | 72.5 | -0.1 | 63/129 | 3.32 | -0.76 | 69/130 |
| August | 2023 | 74.9 | +4.5 | 11/131 | 0.91 | -3.14 | 125/131 |
| September | 2023 | 69.3 | +7.0 | 1/130 | 5.54 | +1.84 | 26/130 |

3. TWELVE-MONTH SUMMARY

Table 2: A summary of the last twelve months. \dagger - The smaller the number (#), the warmer the month. \ddagger - The smaller the number (#), the wetter the month. Boxed entries are within the historical top or bottom ten.

- Nine of the last twelve months were warmer than average.
- September had a precipitation excess of 1.84 inches. The previous six months were all drier than average.
- Precipitation deviations (in inches) from average. last three months: -2.08, last six months: -4.78, last nine months: -2.72, last twelve months: -2.65