Decorah Weather - July 2023 Summary

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

1. July 2023 Temperatures

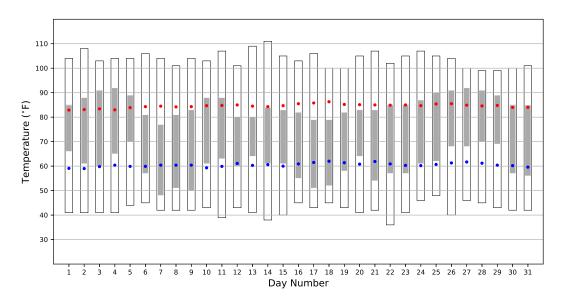


Figure 1: Grey Bar: Observed temperature range for 2023, White Bar: Record temperature range, Average temperature range: Red circle for average high, blue circle for average low.

Temperature (° F)	July 2023	Historical	Deviation
Average High	85.1	84.6	+0.50
Average Low	59.9	60.6	-0.69
Daily Average	72.5	72.6	-0.10

Table 1: July 2023 average temperatures compared to July averages.

- July 2023
 - Average temperature : 72.5° F (0.1° F below average)
 - Record temperatures : none
 - Warmest temperature : 92° F on the 4th
 - Coldest temperature : 48° F on the 7th
 - July cooling degree days: 235.0 (8.6 less than the average of 243.6)
- ALL JULYS: 1894-2023 (129 years, data for 1913 are missing)
 - Compared with July 2023, 62 Julys were warmer and 66 were cooler.
 - Warmest average : 80.4° F in 1901
 - Coldest average : 66.4° F in 2009
 - Warmest temperature : 111° F on the 14th of 1936
 - Coldest temperature : 36° F on the 22nd of 1947

2. July 2023 Precipitation

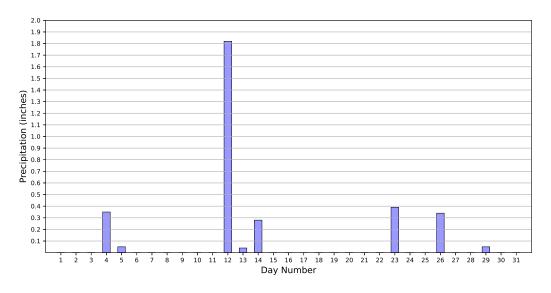


Figure 2: July precipitation for Decorah.

- July 2023
 - Total precipitation for July 2023 : 3.32 inches, 0.76 inches less than the average precipitation of 4.08 inches
 - Eight days with measurable precipitation (average number is 9 days)
 - Greatest 24-hour total : 1.82 inches on the 12th
- ALL JULYS: 1894 2023 (130 years, no missing data)
 - Compared with July 2023, 68 Julys were wetter, one was the same, and 60 were drier
 - Wettest July : 10.83 inches in 2023
 - Driest July : 0.23 inches in 1937

TWELVE-MONTH SUMMARY

		Ave Temp	Deviation	Rank†	Precip	Deviation	Rank‡
Month	Year	$(^{o}\mathrm{F})$	$(^{o}\mathbf{F})$	(#/Total)	(inches)	(inches)	(#/Total)
August	2022	71.8	+1.4	30/130	5.42	+1.35	32/130
September	2022	65.4	+3.2	20/129	1.31	-2.38	118/129
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

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.

- July 2023 is the first month of the last 15 to be cooler than average.
- July 2023 is the 5th consecutive month with below average precipitation, and the 7th of the last twelve to record below average precipitation.
- Precipitation deviations. last 3 months : -3.20 inches, last 6 months : -2.54 inches, last 9 months: -0.36 inches, last 12 months : -2.38 inches