Rochester Weather - March 2024 Summary

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Weather data available online at http://faculty.luther.edu/ \sim bernatzr/RocWx/

1. March 2024 Temperatures



Figure 1: Grey Bar: Observed temperature range for 2024, White Bar: Record temperature range, Red Circle: average high, Blue Circle: average low.

Temperature (° F)	March 2024	Historical	Deviation
Average High	48.2	38.8	+9.4
Average Low	26.4	21.2	+5.2
Daily Average	37.3	30.0	+7.3

Table 1: March 2024 average temperatures compared to March historical averages.

- March 2024
 - Daily Records: Maximums of 64° F on the 2nd (old record was 58° F in 1964), 72° F on the 3rd (old record was 56° F in 1946), 74° F on the 11th (old record was 63° F in 2012), 69° F on the 12th (old record was 67° F in 1990), and 68° F on the 13th (old record was 66° F in 2012)
 - Monthly average temperature : 37.3° F (7.3° F warmer than average)
 - Warmest temperature : 74° F on the 11th.
 - Coldest temperature : 12° F on the 23rd
 - Heating Degree Days : 859.5, 216.6 less than the average of 1076.1
- ALL MARCHES SINCE 1886 (113 years of complete data)
 - Compared with March 2024, 10 Marches were warmer and 102 were colder.
 - Warmest March average : 49.1° F in 2012
 - Coldest March average : 17.4° F in 1888
 - Warmest March temperature : 82° F on the 24th of 1910
 - Coldest March temperature : -31° F on the 1st of 1962

2. MARCH 2024 PRECIPITATION



Figure 2: March precipitation for Rochester.

- March 2024
 - Total precipitation for March 2024: 2.35 inches, 0.57 inches more than the average of 1.78 inches
 - Nine days with measurable precipitation. Maximum of 0.78 inches on the 24th.
 - Six days with measurable snowfall. Maximum of 5.7 inches on the 24th.
 - Total snowfall of 8.6 inches, which matches the historical average for the month
- All MARCHES SINCE 1886 (111 years of complete data)
 - Compared with March 2024, 32 Marches were wetter, and 78 Marches were drier
 - Wettest March : 4.01 inches in 1888 and 1951
 - Driest March : 0.21 inches in 1958
 - Snowiest March : 35.1 inches in 1951

		Ave Temp	Deviation	Rank†	Precip	Deviation	Rank!
Month	Year	$(^{o}\mathbf{F})$	$(^{o}\mathrm{F})$	(#/Total)	(inches)	(inches)	(#/Total)
April	2023	45.1	+0.2	54/111	3.00	+0.18	42/106
May	2023	60.8	+3.8	17/111	4.51	+0.67	33/110
June	2023	69.9	+2.9	20/111	1.34	-3.20	103/108
July	2023	69.4	-1.7	84/111	2.18	-1.68	82/110
August	2023	70.6	+1.9	23/112	1.51	-2.30	101/112
September	2023	66.3	+6.0	3/113	3.43	+0.15	43/113
October	2023	50.1	+1.7	33/113	4.78	+2.63	7/113
November	2023	36.2	+3.3	30/113	0.11	-1.48	109/112
December	2023	31.8	+12.5	1/111	1.13	+0.07	48/111
January	2024	19.3	+6.3	21/113	0.66	-0.24	66/109
February	2024	32.7	+15.4	1/112	0.34	-0.50	87/110
March	2024	37.3	+7.3	11/113	2.35	+0.57	33/111

3. TWELVE-MONTH SUMMARY

Table 2: Monthly temperature and precipitation data for 2024. \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.

- Eleven of the past 12 months were warmer than average.
- Six of the past 12 months were drier than average.
- Precipitation deviations from average (in inches) last 3 months : -0.17, last 6 months : +1.05, last 9 months : -2.77, last 12 months : -5.13

4. WINTER SEVERITY

Daily maximum temperatures, minimum temperatures, and snowfall amounts comprise three sub-categories for comparing how severe, or wintry, a given season (or segment) compares with other seasons (or segments). Severity indexes are calculated for each of the sub-categories. These numerical index values allow the seasons (or their segments) for all years in the historical record to be ranked in each of the sub-categories. The three indices are then used to determine an overall index that can be used to rank the season's severity relative to other seasons. More details on how an index for a given sub-category is determined is given at the end of this section.

November-March Segment. Winter severity for the November 2023 through March 2024 segment of this season ranks 113th out of the 114 years that have enough data to calculate severity indices. That is, 112 winters were more severe (more "wintry") than this winter for the period November through March. Only the season of 2011-2012 is calculated to be less wintry.

Individually, maximum temperatures, minimum temperatures, and snow fall indices for this season ranked 113th, 113th, and 102nd out of 114 years, respectively. Other significant features of this season's November through March 152-day segment include:

- An average maximum temperature of 39.9° F, 8.5° F warmer than the average of 31.4° F.
- An average minimum temperature of 22.8° F, 8.8° F warmer than the average of 14.0° F.
- There were 38 days with a minimum temperature of less than 32° F. The average number is 59.
- There were 9 days with a minimum temperature of less than 0° F. The average number is 24.
- Measurable snowfall occurred on 20 days, the average is 24 days.
- Total snowfall 18.9 inches, 13.3 inches less than the average of 32.2 inches.
- The number of days from the first snowfall to the last snowfall is 122. The average is 134 days.

The most severe November-March segment is calculated to be that of the **1978-79 season**. It registered the coldest average daily high temperature (23.1° F) , the third coldest average daily low temperature (6.1° F) , and ranks first in the snowfall category with **65.8 inches of snowfall** with 48 days of measurable amounts. The first and last snowfall days covered 133 days.

Winter Severity Defined:

As a way of judging the "severity" of a given winter season (the winter "season" corresponds to the months of November through March), the following fifteen statistics are calculated for four segments (Nov-Dec, Nov-Jan, Nov-Feb, and Nov-Mar) for each season:

- average high temperature,
- number of days with a maximum temperature less the 32° F ,
- number of days with a maximum temperature less than $20^\circ\;\mathrm{F}$,
- number of days with a maximum temperature less than $10^\circ\;\mathrm{F}$,
- number of days with a maximum temperature less than 0° F ,
- number of days with a maximum temperature less than $-9^\circ\;\mathrm{F}$,

- average low temperature,
- number of days with a minimum temperature less than $10^\circ\;\mathrm{F}$,
- number of days with a minimum temperature less than $0^\circ \; {\rm F}$,
- number of days with a minimum temperature less than -9° F ,
- $\bullet\,$ number of days with a minimum temperature less than -19° F ,
- $\bullet\,$ number of days with a minimum temperature less than -29° F ,
- total inches of snow fall,
- number of days with significant snowfall (at least an inch of snow),
- the number of days between the first snowfall and the last snowfall.

These statistics give some measure of the length, frequency, and severity of "winter" events for the season.

Each statistic is used to determine an average (a mean), from which the standard deviation from the mean may be determined. The categorical standard deviations are used to create a weighted severity index for each segment of a season. The numerical severity indexes provide a way of ranking the corresponding segments of the different seasons. The segments are: November-December, November-January, November-March, and November-March.