



North Dakota Monthly Climate Summary

December 2021

Volume 15, No. 12

Precipitation

North Dakota State Climate Office: Your Resource for Climate Information.



North Dakota State University

College of Agriculture, Food Systems, and Natural Resources

304 Morrill Hall

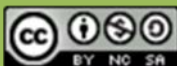
Fargo, ND 58108-6050

www.ndsu.edu/ndSCO

Annan.Akyuz@ndsu.edu

701-231-6577

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Based on the National Centers for Environmental Information (NCEI), the statewide average December precipitation was 0.97 inches, which was 0.52 inches more than last month and 0.74 inches more than December 2020. It was 0.39 inches more than the 1991-2020 average, making it the ninth wettest December in the 127-year period of record (Table 1).

The counties shaded in green in Figure 1 indicate wetter-than-average conditions in December 2021. White shading indicates near-average conditions. The numbers inside the counties are the precipitation rankings with one being the lowest (driest) and 127 being the highest (the wettest) ranking.

The greatest monthly precipitation accumulation was 3.18 inches, recorded in Fargo, Cass County. The greatest monthly snowfall accumulation was 34.2 inches, recorded in Jamestown, Stutsman County. Based on historical records, statewide December precipitation showed a slight positive long-term trend of 0.07 inches during the last century. The lowest and highest December precipitation for the state during this period ranged from 0.05 inches in 1944 to 1.3 inches in 2016 (Figure 2 and Table 1).

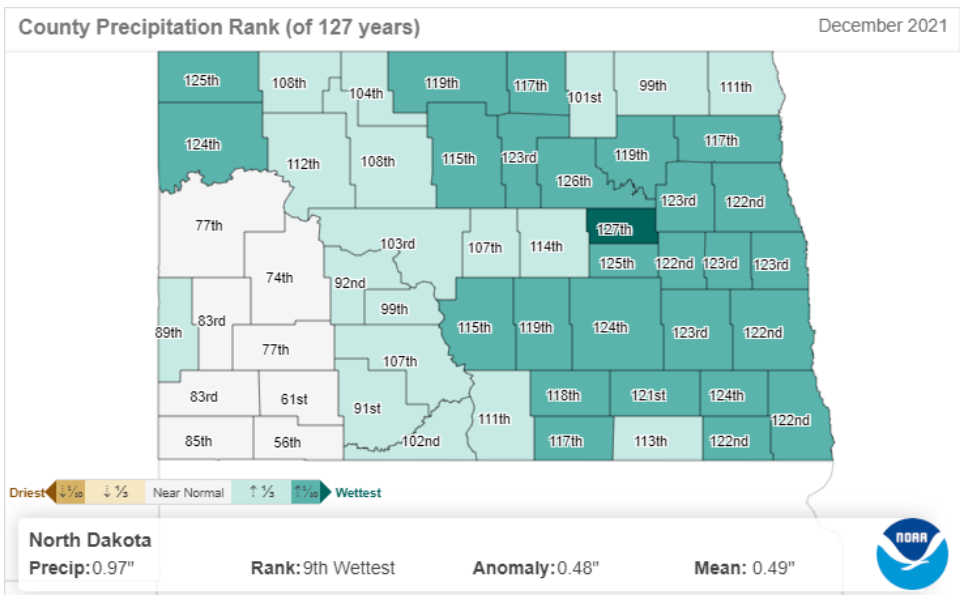


Figure 1. December 2021 county precipitation ranking map of North Dakota. (NCEI, NOAA)



North Dakota Monthly Climate Summary

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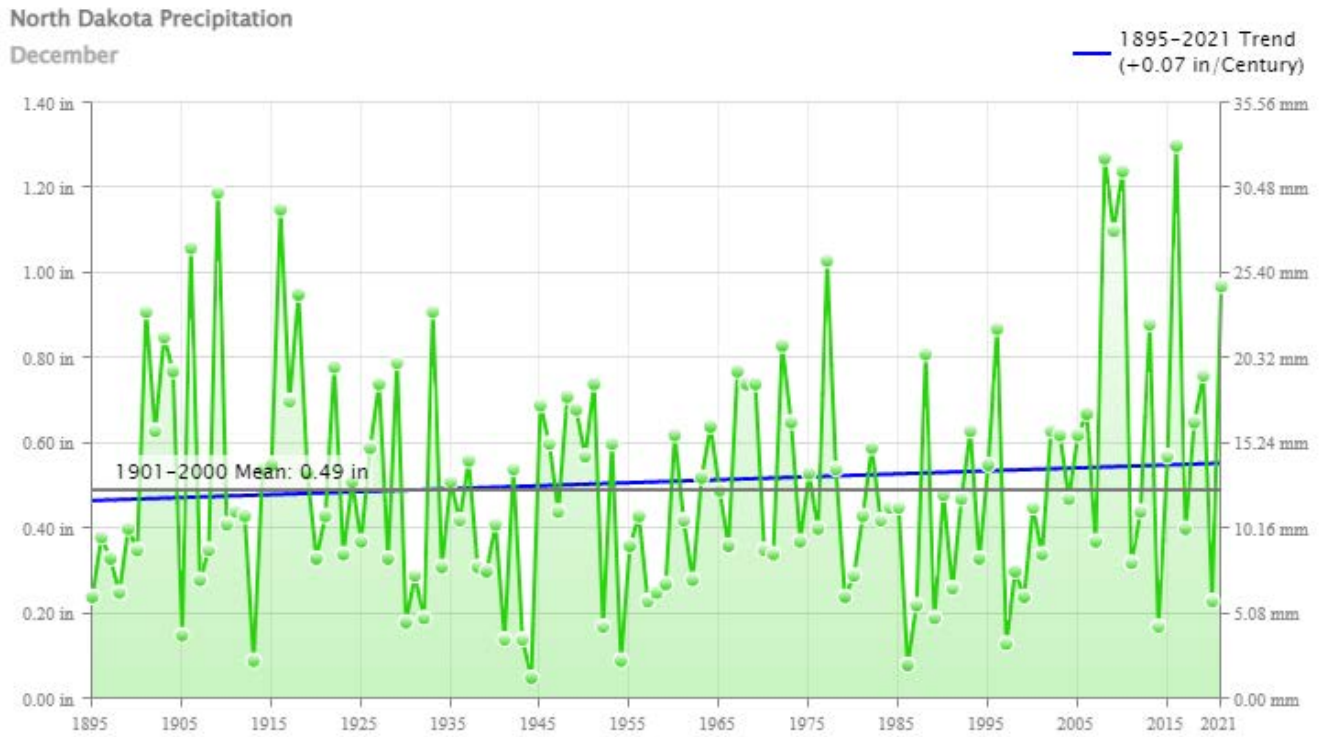


Figure 2. Historical December precipitation time series for North Dakota. (NCEI, NOAA)

Table 1. North Dakota December Precipitation Ranking Table.

Period	Value	Normal	Anomaly	Rank	Wettest/Driest Since	Record Year
December 2021	0.97"	0.58"	0.39"	119th driest 9th wettest	Driest since 2020 Wettest since 2016	0.05" (1944) 1.3" (2016)



North Dakota Monthly Climate Summary

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Volume 15, No. 12

Temperature

The official state average December temperature was 14.1 F, which is 18.7 degrees cooler than last month, and 9.3 degrees cooler than in December 2020. Furthermore, the average December temperature was 1.5 degrees cooler than the 1991-2020 average, making it the 59th coolest December in the 127 years of record (Table 2).

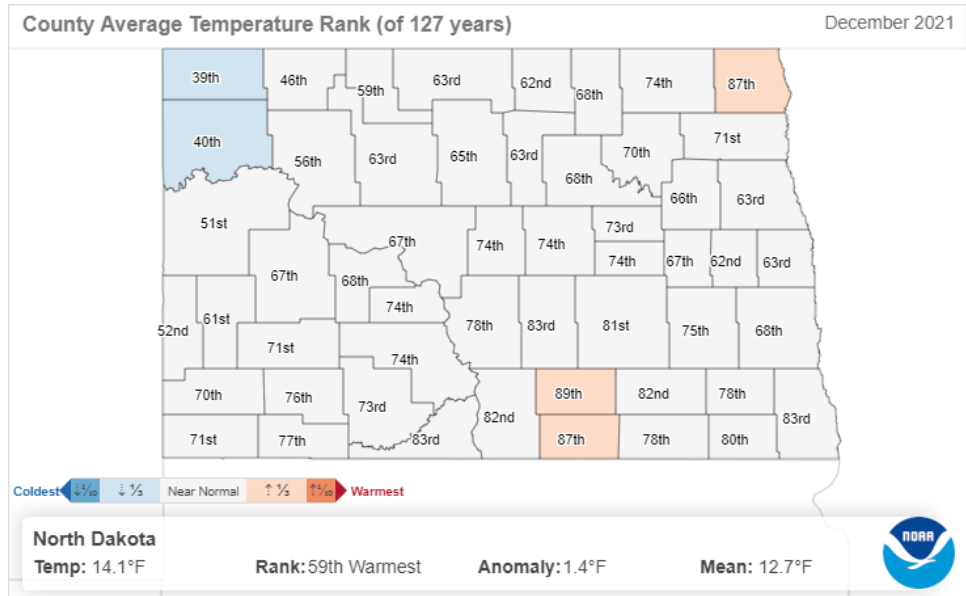


Figure 3. December 2021 county temperature ranking map of North Dakota. (NCEI, NOAA)

The counties shaded in peach in Figure 3 indicate warmer-than-average conditions. In contrast, the counties shaded in blue color indicate cooler-than-average conditions, and white shading indicates near-average conditions. The numbers inside the counties are the temperature rankings, with one being the lowest (coldest) and 127 being the highest (warmest).

The state's highest and lowest daily temperatures ranged from 71 F on Dec. 1 in Hettinger, Adams County, to -41 F on Dec. 31 in Bottineau, Bottineau County. The Adams County record high temperature of 71 F happens to be the highest state daily record temperature for anywhere at any time in December in North Dakota. Based on the historical records, the state average December temperature showed a positive long-term trend of 2.9 degrees during the last century. The lowest and highest monthly state December average temperatures during this period ranged from -3.2 F in 1927 to 25.4 F in 1939 (Figure 4 and Table 2).



North Dakota Monthly Climate Summary

December 2021

Volume 15, No. 12

North Dakota Average Temperature
December

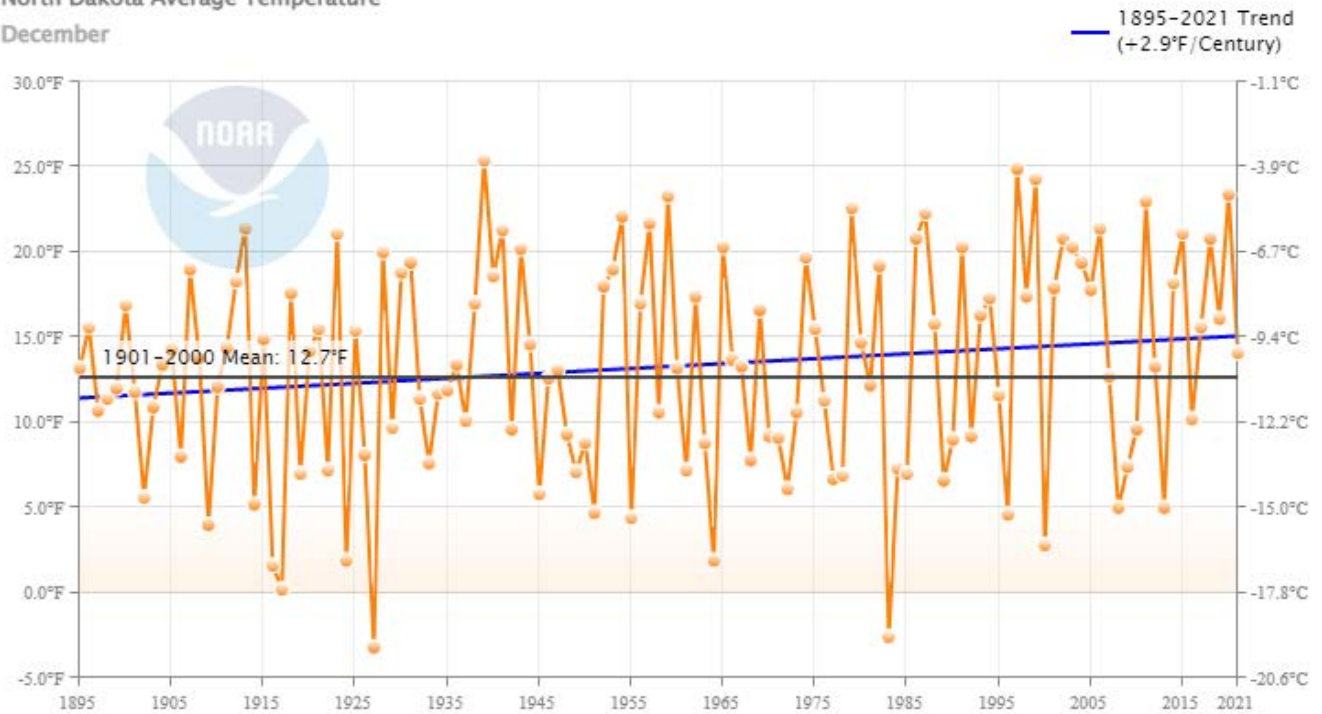


Figure 4. Historical December temperature time series for North Dakota. (NCEI, NOAA)

Table 2. North Dakota December Temperature Ranking Table.

Period	Value	Normal	Anomaly	Rank	Warmest/Coollest Since	Record Year
December 2021	14.1°	15.6°	-1.6°	69th coolest 59th warmest	Coollest since 2016 Warmest since 2020	-3.2 F (1927) 25.4 F (1939)



North Dakota Monthly Climate Summary

December 2021

Volume 15, No. 12

Storm Reports: Table 3 below shows the summary of December severe storm reports in North Dakota (Storm Prediction Center, NOAA).

The NOAA Storm Report recorded zero tornados, zero hail and zero damaging wind reports with zero significant storm events in December. Table 3 summarizes the number of tornado, hail and damaging wind reports in December, while Figure 5 geographically displays the locations of these storms.

Table 3. Summary of December Severe Storm Reports in North Dakota. (Storm Prediction Center, NOAA)

Category	Number of Reports
<i>Tornado reports</i>	0
<i>Hail reports</i>	0
<i>Wind reports</i>	0
Total	0

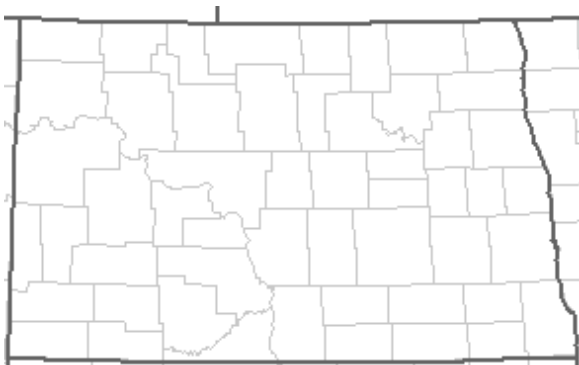


Figure 5. Map of December 2021 North Dakota storm events (red: tornado; blue: wind; green: hail). (Storm Prediction Center, NOAA)



North Dakota Monthly Climate Summary

December 2021

Volume 15, No. 12

Daily Record Events in December: Across the observation network of weather stations with at least 30 years of history, 37 daily high- and 14 daily low-temperature records were set or tied. In addition, a total of 66 highest daily precipitation-related records were set or tied. Details of the records are in Table 4.

Table 4. Summary of daily records broken or set in North Dakota in December. (NCEI Daily Weather Records)

Category	Number of Records
Highest daily max. temp.	18
Highest daily min. temp.	19
Lowest daily max. temp.	4
Lowest daily min. temp.	10
Highest daily precipitation	29
Highest daily snowfall	37
Total	117

The Highlight of the Month*

A highest daily snowfall record of **12 inches** was broken in **Jamestown on Dec. 27**, exceeding the previous record that was set in 1988 by **2 inches** (years on record: 126).

*The records in this box may differ from those on pages 1 and 3 because this page only includes records for stations with at least 30 years of history.

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