



North Dakota Monthly Climate Summary

December 2020

Volume 14, 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

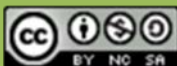
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Based on the National Centers for Environmental Information (NCEI), the statewide average December precipitation was 0.23 inch, which was 0.12 inch more than last month but 0.53 inch less than in December 2019. It was also 0.29 inch less than the 1981-2010 average, making it the 15th driest December in the 126-year period of record (Table 1). It was the driest December since 2014.

The values less than 100 in Figure 1 below are shaded in yellow, orange and red to depict the region with below-average rainfall. In contrast, the values that are greater than 100 in the same figure are shaded in green, blue and purple to depict the region with above-average rainfall in December.

The greatest monthly precipitation accumulation was 1.31 inches, recorded in Kindred, Cass County. The greatest monthly snowfall accumulation, on the other hand, was 11.6 inches, recorded in Fargo, Cass County. Based on historical records, statewide December precipitation showed a slight positive long-term trend of 0.05 inch during the last century. The lowest and highest December precipitation for the state during this period ranged from 0.05 inch in 1944 to 1.3 inches in 2016 (Figure 2).

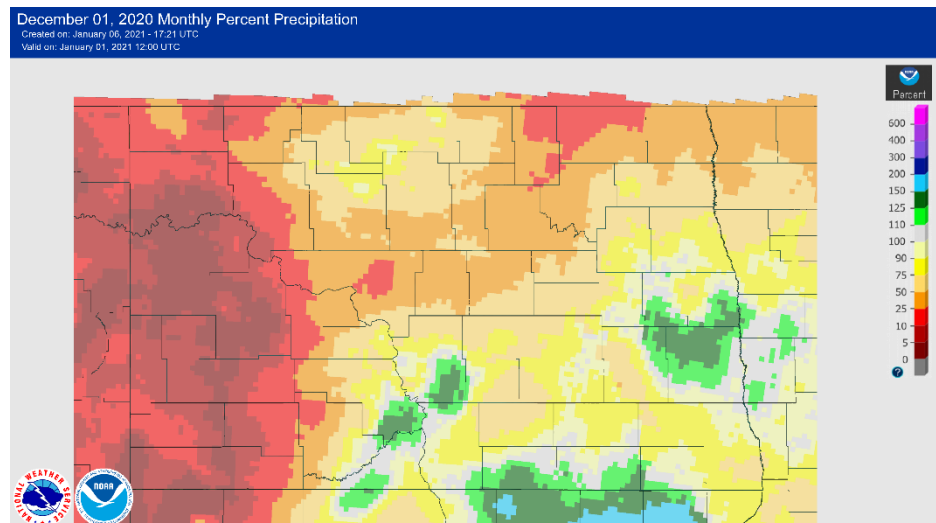


Figure 1. December 2020 precipitation percent of normal for North Dakota. (Advanced Hydrologic Prediction Center, NOAA)



North Dakota Monthly Climate Summary

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Volume 14, No. 12

North Dakota Precipitation
December

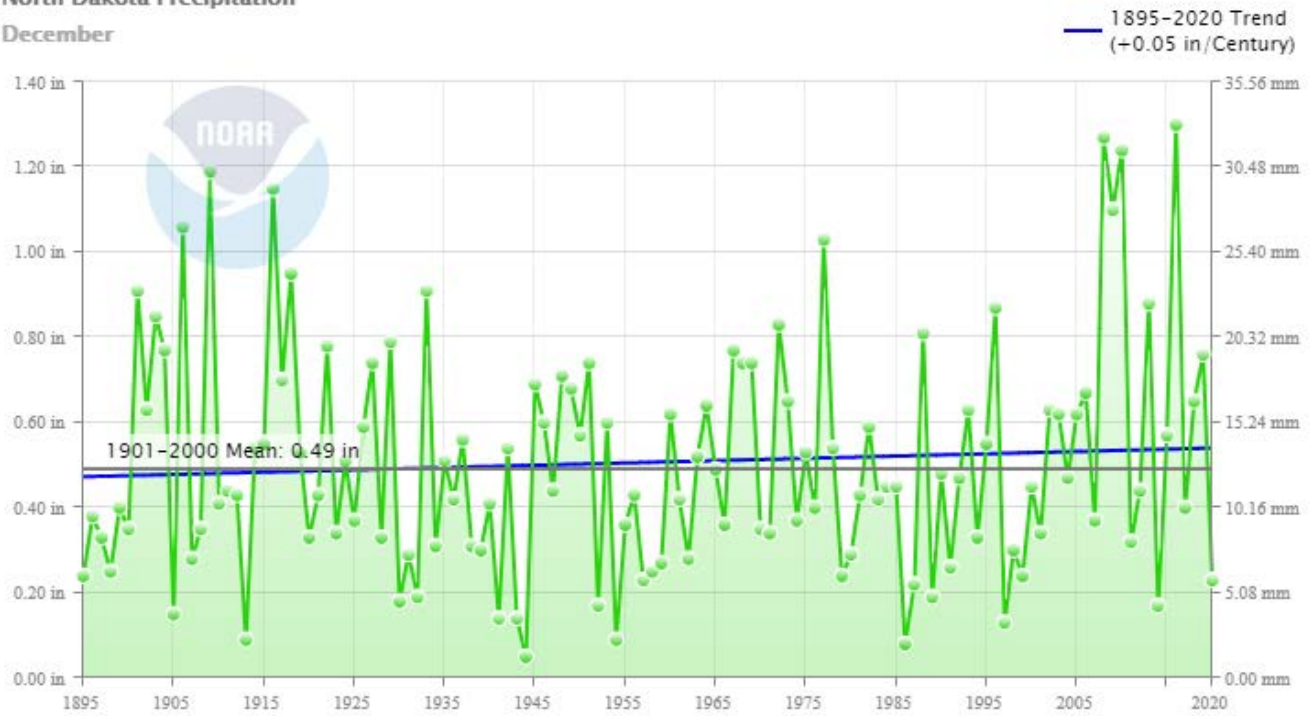


Figure 2. Historical December precipitation time series for North Dakota. (NCEI, NOAA)

Table 1. North Dakota December Precipitation Ranking Table.

Period	Value	Normal	Anomaly	Rank	Wettest/Driest Since	Record Year
December 2020	0.23"	0.52"	-0.29"	15th driest 112th wettest	Driest since 2014 Wettest since 2019	0.05" (1944) 1.3" (2016)



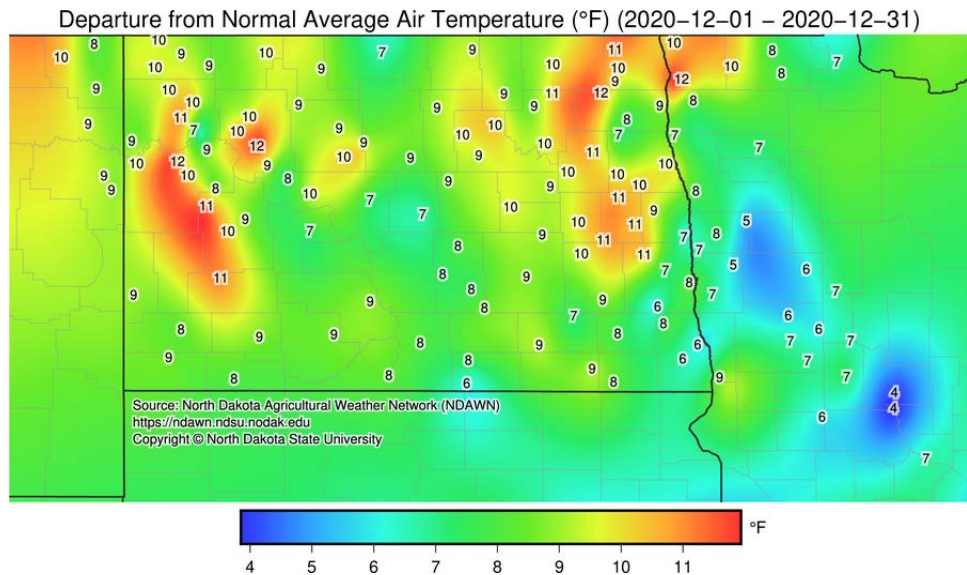
North Dakota Monthly Climate Summary

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Temperature

The official state average December temperature was 23.4 F, which is 8.7 degrees cooler than last month, but 7.3 degrees warmer than in December 2019. The average December temperature also was 9.4 degrees warmer than the 1981-2010 average, making it the fourth warmest December in the 126 years of record (Table 2).



The positive numbers in Figure 3 are shaded in green, yellow and red to depict the areas with warmer-than-average temperatures.

Figure 3. December 2020 temperature departure from average for North Dakota. (North Dakota Agricultural Weather Network)

The state's lowest and highest daily temperatures ranged from minus 27 F on Dec. 25 at Lake Metigoshe State Park, Bottineau County, to 63 F on Dec. 9 at Sand Creek, Slope County. 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 minus 3.2 F in 1927 to 25.4 F in 1939 (Figure 4).



North Dakota Monthly Climate Summary

December 2020

Volume 14, No. 12

North Dakota Average Temperature
December

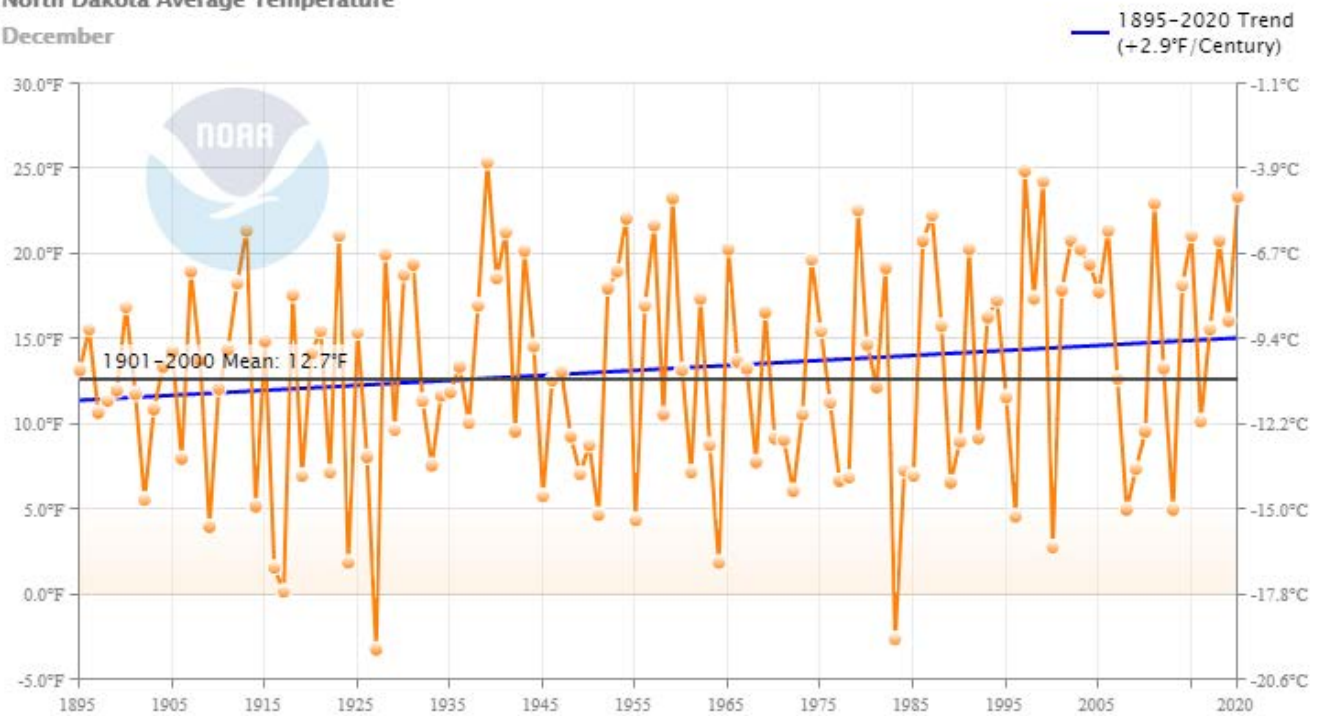


Figure 4. Historical December temperature time series for North Dakota. (NCEI, NOAA)

Table 2. North Dakota December Temperature Ranking Table.

Period	Value	Normal	Anomaly	Rank	Warmest/Coollest Since	Record Year
December 2020	23.4°	14°	9.4°	123rd coolest 4th warmest	Coollest since 2019 Warmest since 1999	-3.2 F (1927) 25.4 F (1939)



North Dakota Monthly Climate Summary

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Volume 14, No. 12

Daily Record Events in December: Across the observation network of weather stations with at least 30 years of history, 57 daily high-temperature records were set or tied. Only a total of three 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)

<i>Category</i>	Number of Records
<i>Highest daily max. temp.</i>	40
<i>Highest daily min. temp.</i>	17
<i>Lowest daily max. temp.</i>	0
<i>Lowest daily min. temp.</i>	0
<i>Highest daily precipitation</i>	2
<i>Highest daily snowfall</i>	1
Total	60

The Highlight of the Month*

A highest daily maximum temperature record of 62 degrees was broken in **Dickinson on Dec. 22**, exceeding the previous record that was set in 1954 by 7 degrees. (years on record: 72).

**The records in this box may be different from the record on Pages 1 and 3 because this page only includes records for stations with at least 30 years of history.*

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