North Dakota Monthly Climate Summary

September 2022 **Volume 16, No. 9**

Precipitation

Based on the National Centers for Environmental Information (NCEI), the statewide average September precipitation was 0.77 inches, which was 0.65 inches less than last month and 0.44 inches less than in September 2021. It was 1.1 inches less than the 1991-2020 average, making it the 23rd driest September in the 128-year period of record (Table 1).

The counties shaded in brown in Figure 1 indicate drier-than-average conditions in September 2022. White shading indicates near-average conditions. The numbers inside the counties are the precipitation rankings with one being the lowest (driest) and 128 being the highest ranking (the wettest).

The greatest monthly precipitation accumulation was 2.11 inches, recorded in Pembina, Pembina County. Based on historical records, statewide September precipitation showed a slight positive long-term trend of 0.31 inches during the last century. The lowest and highest September precipitation for the state during this period ranged from 0.2 inches in 2012 to 5.9 inches in 2019 (Figure 2 and Table 1).

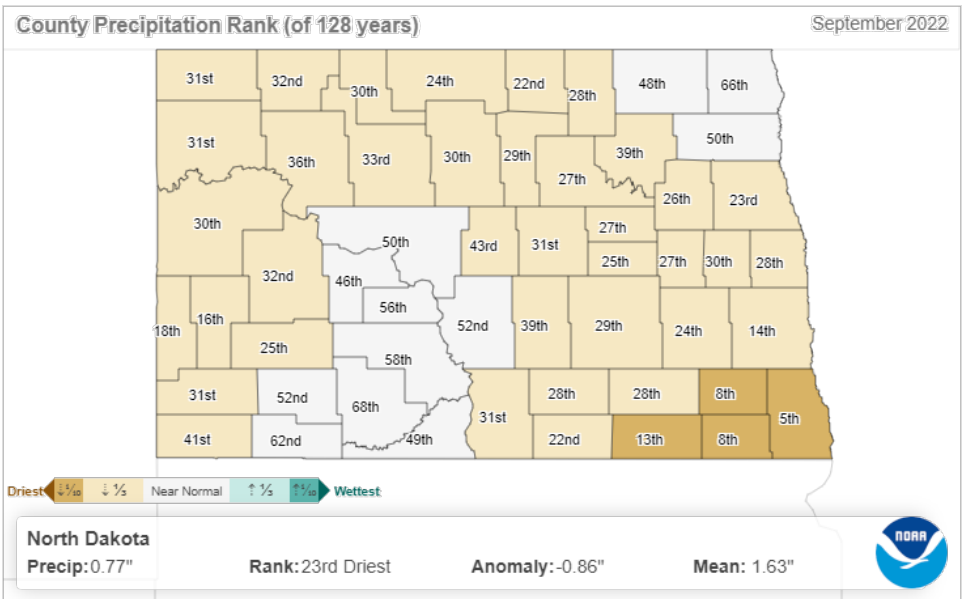

Figure 1. September 2021 county precipitation ranking map of North Dakota. (National Centers for Environmental Information, NOAA)

North Dakota State Climate Office: Your Resource for Climate Information

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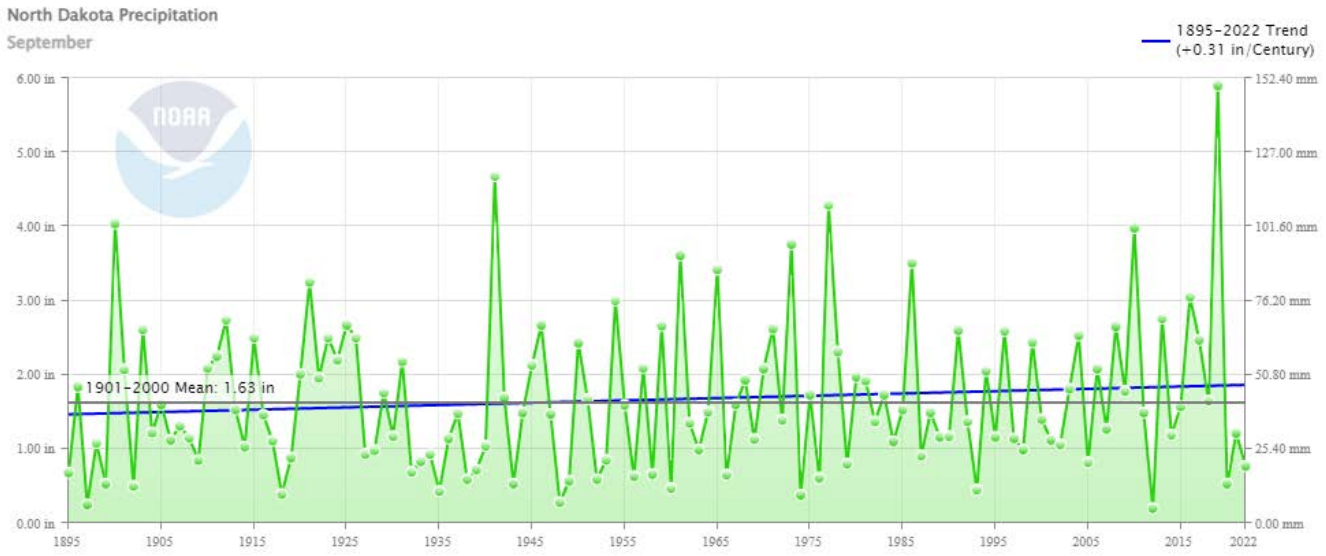

Figure 2. Historical September precipitation time series for North Dakota. (NCEI, NOAA)

Table 1. North Dakota September Precipitation Ranking Table.

Period	Value	Normal	Anomaly	Rank	Wettest/Driest Since	Record Year
September 2022	0.77”	1.87”	-1.1”	23rd driest 106th wettest	Driest since 2020 Wettest since 2021	0.2” (2012) 5.9” (2019)

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Temperature

The official state average September temperature was 61 F, which is 8.5 degrees cooler than last month and 1.2 degrees cooler than in September 2021. However, the average September temperature was 3.1 degrees warmer than the 1991-2020 average, making it the 12th warmest September in the 128 years of record (Table 2).

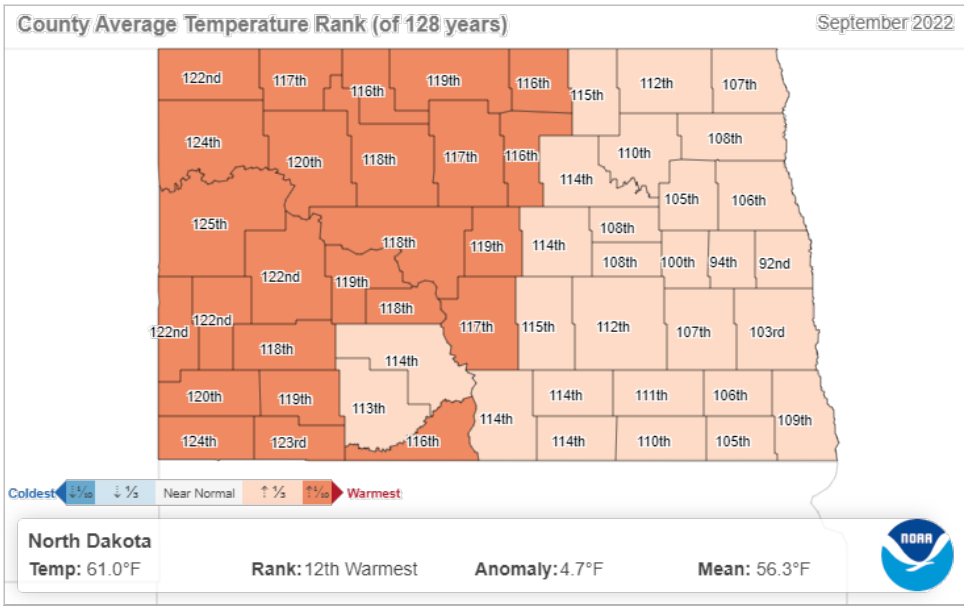

Figure 3. September 2022 county temperature ranking map of North Dakota. (NCEI, NOAA)

The counties shaded in peach in Figure 3 indicate warmer-than-average conditions. The numbers inside the counties are the temperature rankings, with one being the lowest (coldest) and 128 being the highest (warmest).

The state's highest and lowest daily temperatures ranged from 103 F on Sept. 7 in Sand Creek, Slope County, to 25 F on Sept. 22 in Towner, McHenry County. Based on the historical records, the state average September temperature showed a positive long-term trend of 2 degrees during the last century. The lowest and highest monthly state September average temperatures during this period ranged from 45.4 F in 1965 to 63.5 F in 1897 (Figure 4 and Table 2).

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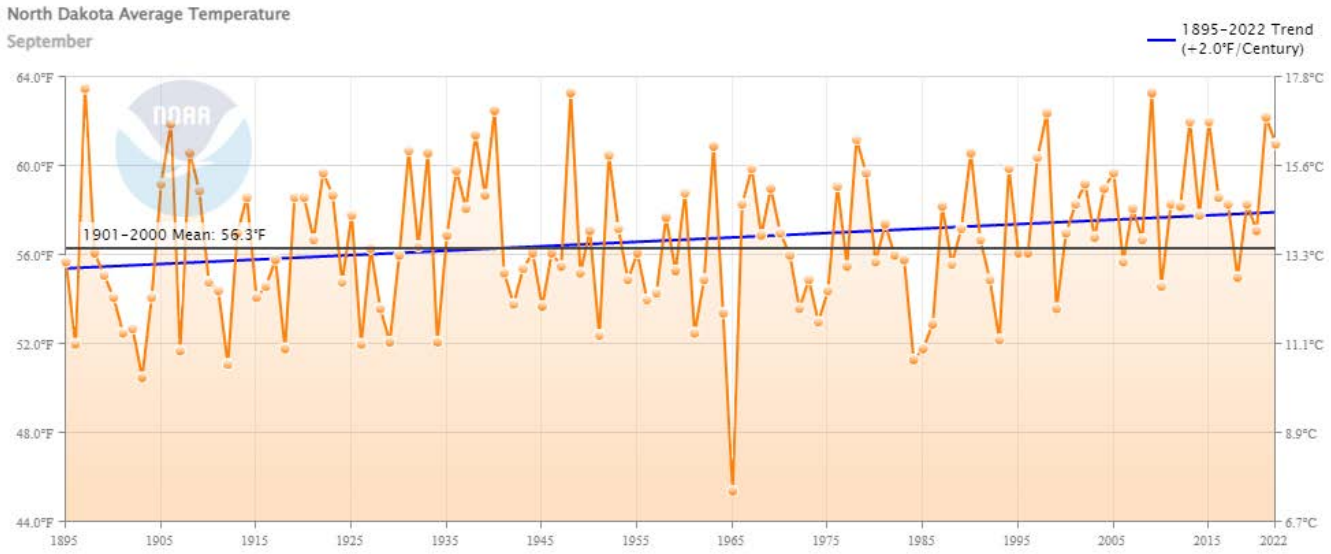

Figure 4. Historical September temperature time series for North Dakota. (NCEI, NOAA)

Table 2. North Dakota September Temperature Ranking Table.

Period	Value	Normal	Anomaly	Rank	Warmest/Coolest Since	Record Year
September 2022	61°	57.9°	3.1°	117th coolest 12th warmest	Coolest since 2020 Warmest since 2021	45.4 F (1965) 63.5 F (1897)

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

The NOAA Storm Report recorded zero tornados, six hail and no damaging wind reports, with six significant storm events in September. Table 3 summarizes the number of tornado, hail and damaging wind reports in September, while Figure 5 geographically displays the locations of these storms.

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

Category	Number of Reports
Tornado reports	0
Hail reports	6
Wind reports	0
Total	**6**

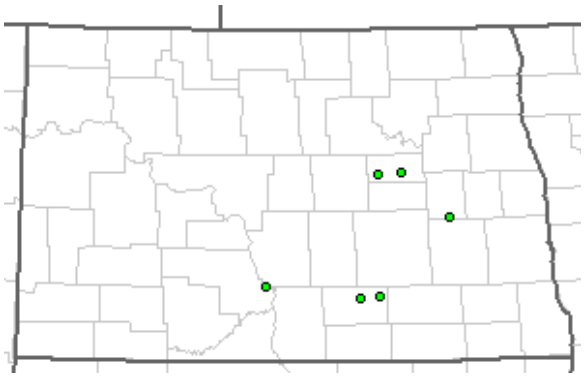

Figure 5. Map of September 2022 North Dakota storm events (red: tornado; blue: wind; green: hail). (Storm Prediction Center, NOAA)

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Daily Record Events in September: Across the observation network of weather stations with at least 30 years of history, 18 daily high- and no daily low-temperature records were set or tied. In addition, a total of one highest daily precipitation-related record 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 September. (NCEI Daily Weather Records)

Category	Number of Records
Highest daily max. temp.	12
Highest daily min. temp.	6
Lowest daily max. temp.	0
Lowest daily min. temp.	0
Highest daily precipitation	1
Highest daily snowfall	0
Total	**19**

The Highlight of the Month*

A highest daily maximum temperature record of **102 degrees** was broken in **Bowman** on **Sept. 8,** tying the previous record that was set in 1959 (years on record: 107).

**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.*

This work is supported by the USDA National Institute of Food and Agriculture, Hatch/Multi State project ND1005365.