



North Dakota Monthly Climate Summary

September 2019

Volume 13, No. 9

Precipitation

North Dakota State Climate Office: Your Resource for Climate Information



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Based on the National Centers for Environmental Information (NCEI), the statewide average September precipitation was 5.69 inches, which was 2.76 inches more than last month, 4.06 inches more than in September 2018 and 3.98 inches more than the 1981-2010 average, making it the wettest September in the 125-year period of record. It was also 1.01 inches greater than the previous record that was set in 1941 (Table 1). The numbers 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 numbers 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 September. The greatest monthly precipitation accumulation was 10.58 inches, recorded in Sykeston, Wells County. The greatest 24-hour precipitation was 5.7 inches, recorded also in Sykeston, Wells County, on Sept. 20. Based on historical records, statewide September precipitation showed a positive long-term trend of 0.42 inch per century since 1895. The highest and lowest September precipitation for the state ranged from 5.69 inches in 2019 to 0.2 inch in 2012 (Figure 2).

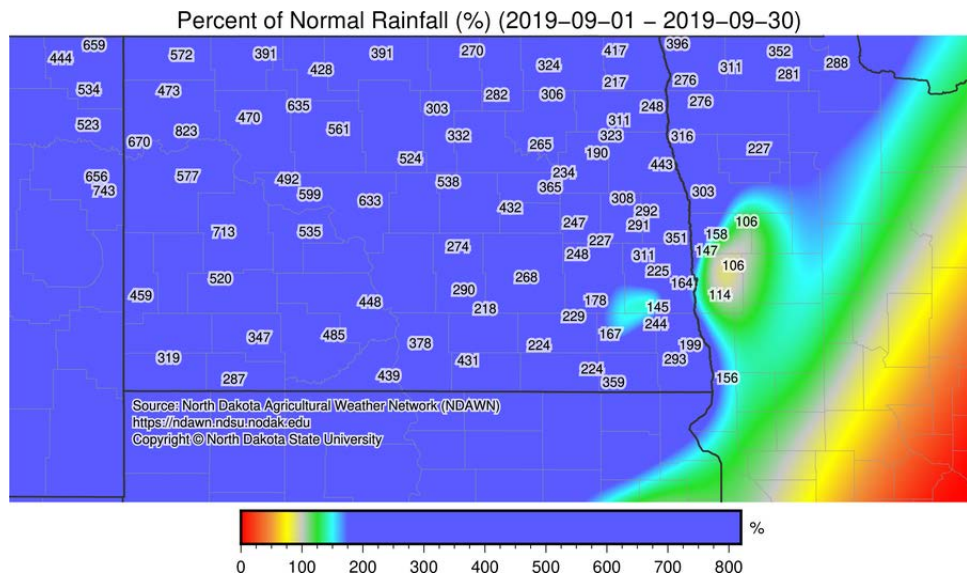


Figure 1. September 2019 precipitation percent of normal for North Dakota. (North Dakota Agricultural Weather Network)



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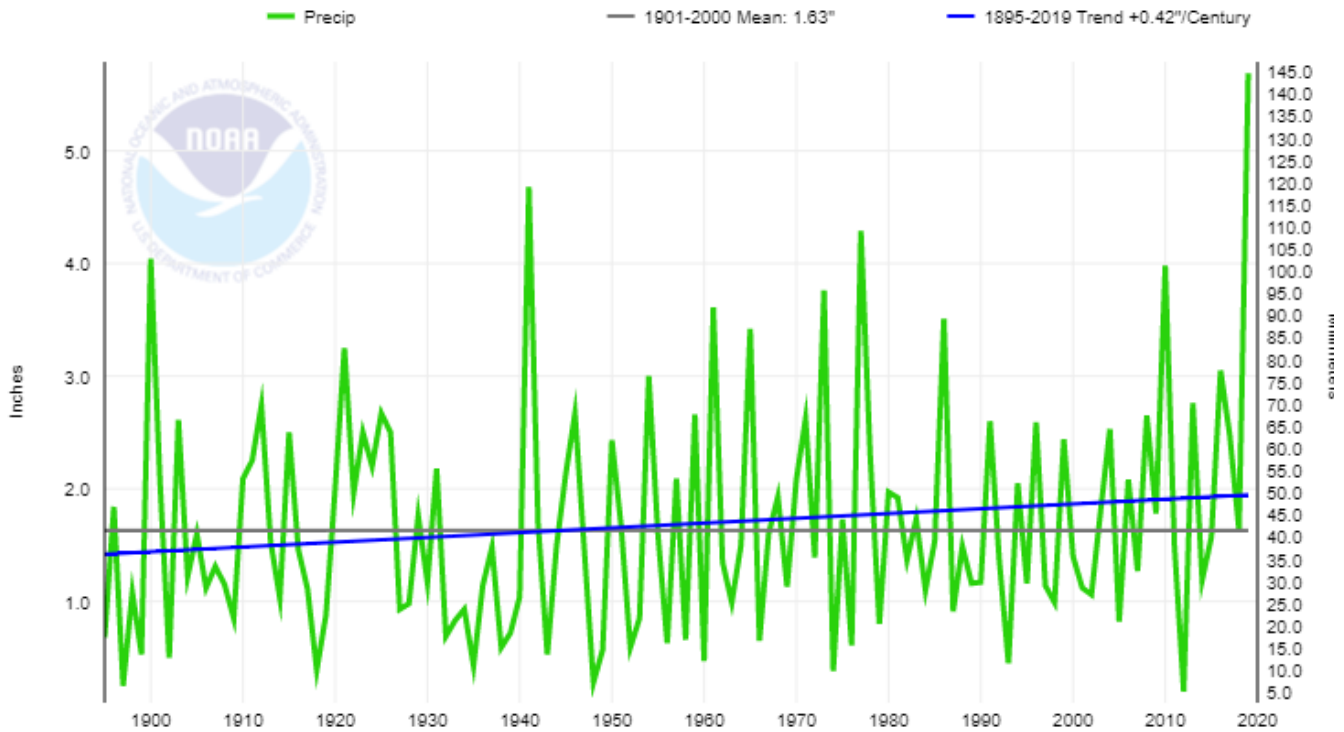


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North Dakota, Precipitation, September



September Precipitation Statistics

Record high value: 5.69 inches in 2019
 Record low value: 0.20 inch in 2012
 Trend: 0.42 inch per century

September 2019 value: 5.69 inches
 1981-2010 average: 1.71 inches
 Monthly ranking: 1st wettest
 Record length: 125 years

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 2019	5.69"	1.71"	+ 3.98	125th driest 1st wettest	Driest since 2018 Wettest to date	2012 2019



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Temperature

The official state average September temperature was 58.8 F, which is 7 degrees cooler than last month but 3.8 degrees warmer than in September 2018. The average September temperature was 1.9 degrees warmer than the 1981-2010 average, which made it the 30th warmest September in the 125-year period of record. It was the warmest September since 2015 (Table 2). The negative numbers in

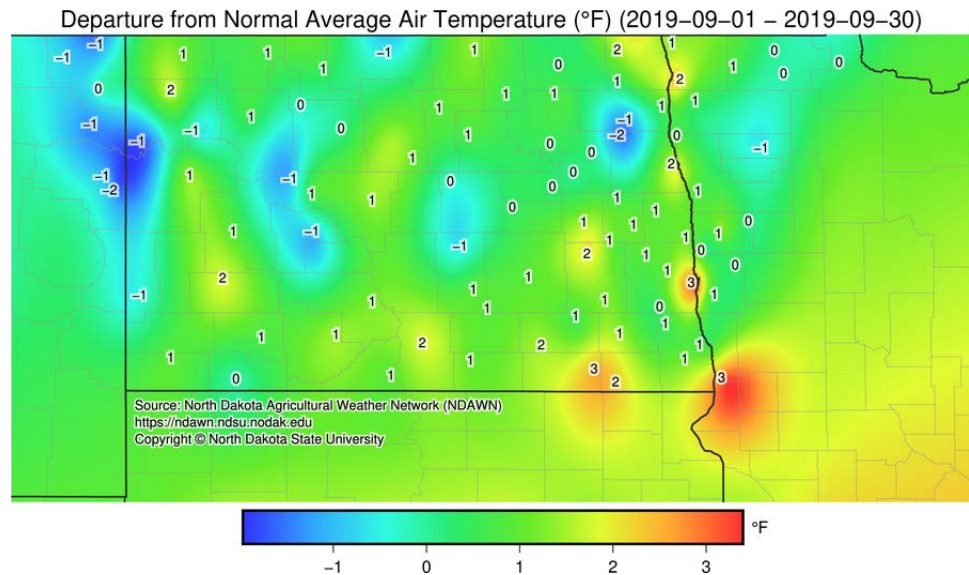


Figure 3. September 2019 temperature departure from normal for North Dakota. (North Dakota Agricultural Weather Network)

Figure 3 are shaded in green and blue to depict the region with cooler-than-average temperatures in September. In contrast, the positive numbers in the same figure are shaded in red and orange to depict the region with warmer-than-average temperatures in September. The state's highest and lowest daily temperatures ranged from 94 F on Sept. 16 in Dickinson, Stark County, to 26 F on Sept. 28 in Hettinger, Adams County, and Foxholm, Ward County, on Sept. 14. Based on the historical records, the state average September temperature showed a slight positive long-term trend of 0.2 degree per decade since 1895. The highest and lowest monthly state September average temperatures ranged from 63.5 F in 1897 to 45.5 F in 1965 (Figure 4).



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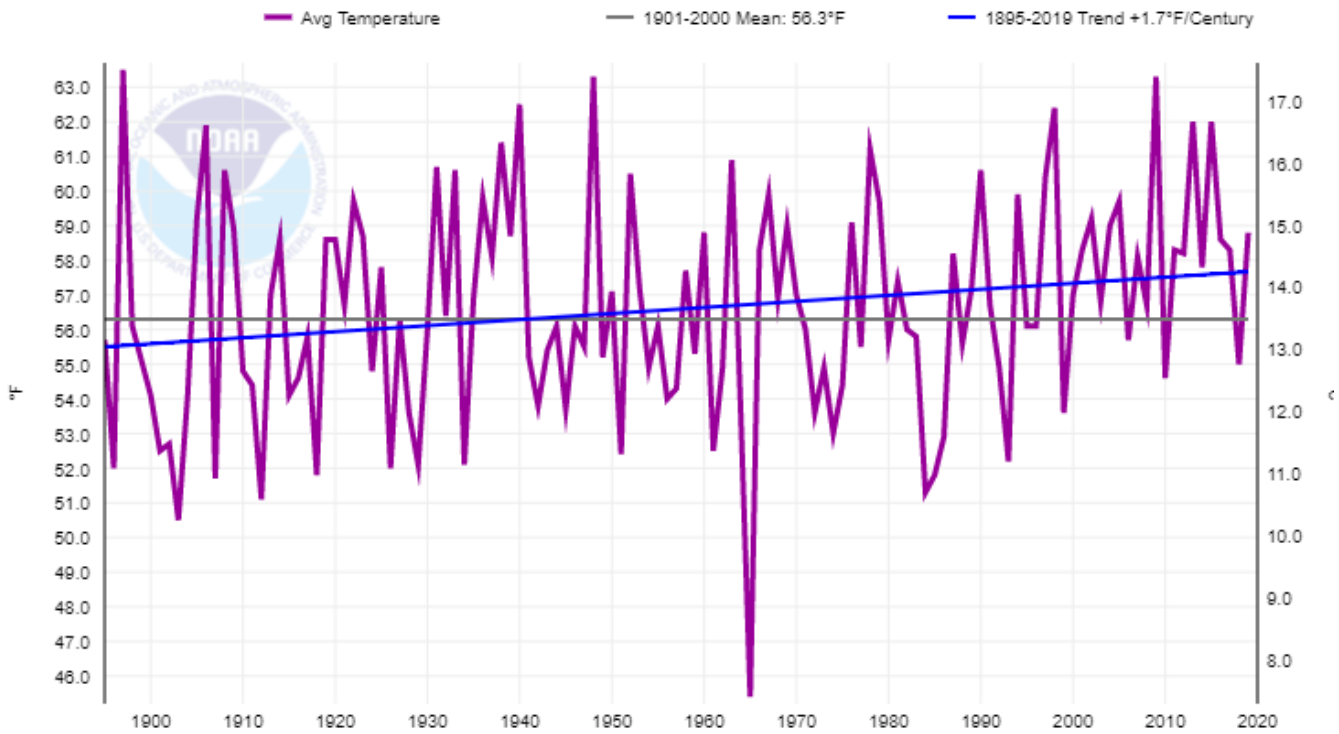


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North Dakota, Average Temperature, September



September Temperature Statistics

Record high value: 63.5 F in 1897

Record low value: 45.5 F in 1965

Trend: 0.2 degree per decade

September 2019 value: 58.8 F

1981-2019 average: 56.9 F

Monthly ranking: 30th warmest

Record length: 125 years

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/Coollest Since	Record Year
September 2019	58.8	56.9	+1.9	96th coolest 30th warmest	Coollest since 2018 Warmest since 2015	1965 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 showed 79 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	43
Wind reports	36
Total	79

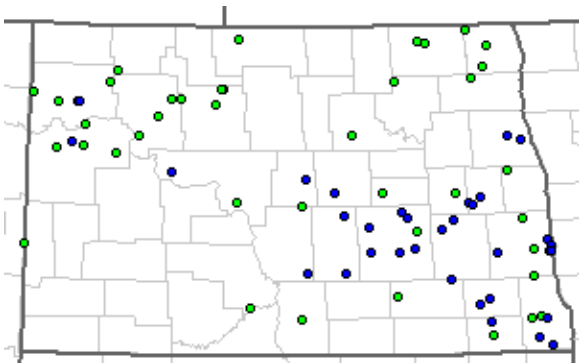


Figure 5. Map of September 2019 North Dakota storm events (red: tornado; blue: wind; green: hail). (Storm Prediction Center, NOAA)



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Daily Record Events in September: Across the observation network of weather stations with at least 30 years of history, 65 daily high- and 10 daily low-temperature records were set or tied. A total of 100 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 September. (NCEI Daily Weather Records)

<i>Category</i>	<i>Number of Records</i>
<i>Highest daily max. temp.</i>	6
<i>Highest daily min. temp.</i>	59
<i>Lowest daily max. temp.</i>	10
<i>Lowest daily min. temp.</i>	0
<i>Highest daily precipitation</i>	100
<i>Highest daily snowfall</i>	0
<i>Total</i>	175

The Highlight of the Month*

A highest daily precipitation record of **4.78** inches was set in **Pembina** on **Sept. 21**, exceeding the previous record that was set in 2011 by 2.98 inches (years on record: 120).

**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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