



North Dakota Monthly Climate Summary

October 2018

Volume: 12, No: 10

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 October precipitation was 1.46 inches, which was 0.26 inch less than last month but 1.21 inches more than in October 2017, and the same as the 1981-2010 average, making it the 30th wettest October in the 124-year period of record. It was the wettest October since 1982 (Table 1). The numbers less than 100 in Figure 1 below are shaded in yellow 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 and blue to depict the region with above-average rainfall in October. The greatest monthly precipitation accumulation was 3.63 inches, recorded in Grandin, on the border of Cass and Traill counties. The greatest 24-hour precipitation was 1.44 inches, recorded in LaMoure, LaMoure County, on Oct. 13. Based on historical records, statewide October precipitation showed a positive long-term trend of 0.5 inch per century since 1895, the steepest monthly precipitation trend in North Dakota. The highest and lowest October precipitation for the state ranged from 4.61 inches in 1982 to 0.09 inch in 1952 (Figure 2).

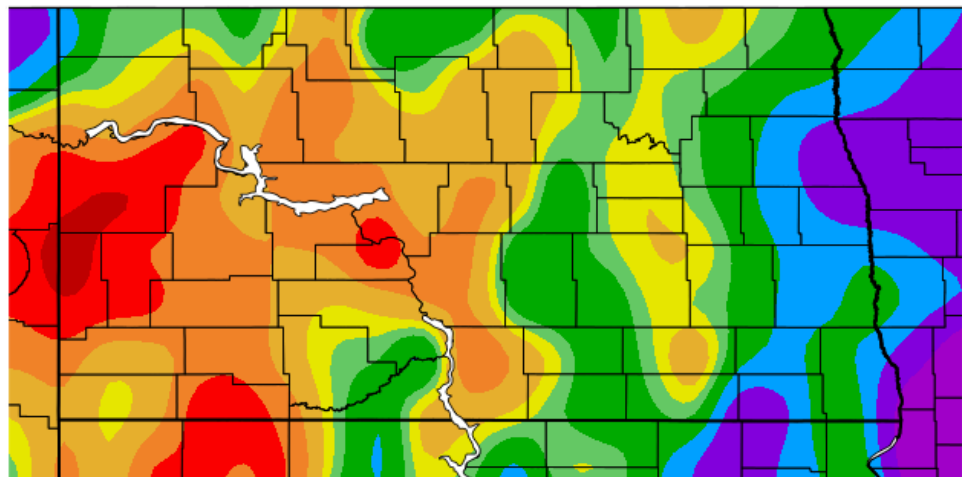


Figure 1. October 2018 precipitation percent of normal for North Dakota. (HPRCC)



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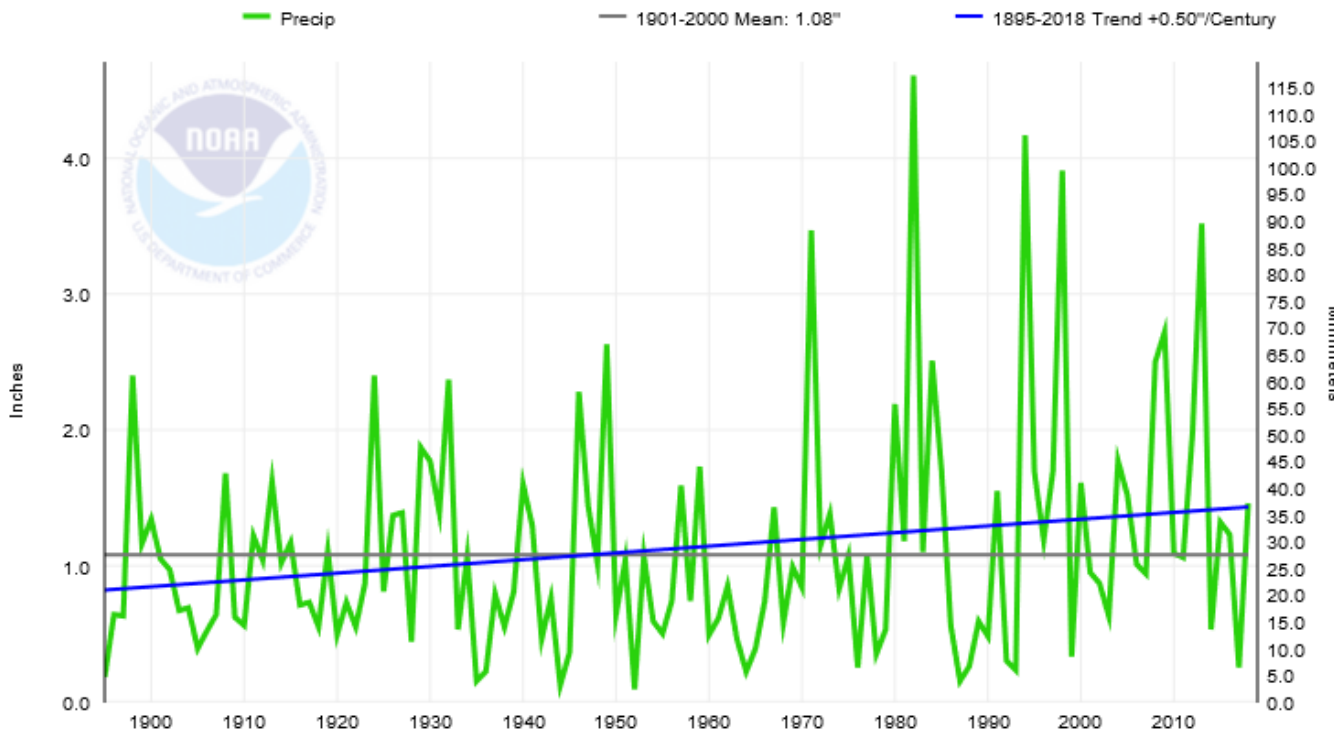


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North Dakota, Precipitation, October



October Precipitation Statistics

Record high value: 4.61 inches in 1982
 Record low value: 0.09 inch in 1952
 Trend: 0.5 inch per century

October 2018 value: 1.46 inches
 1981-2010 average: 1.46 inches
 Monthly ranking: 30th wettest
 Record length: 124 years

Figure 2. Historical October precipitation time series for North Dakota.

Table 1. North Dakota October Precipitation Ranking Table.

Period	Value	Normal	Anomaly	Rank	Wettest/Driest Since
October 2018	1.46"	1.46"	0.00	95th driest 30th wettest	Driest since 2017 Wettest since 1982



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Temperature

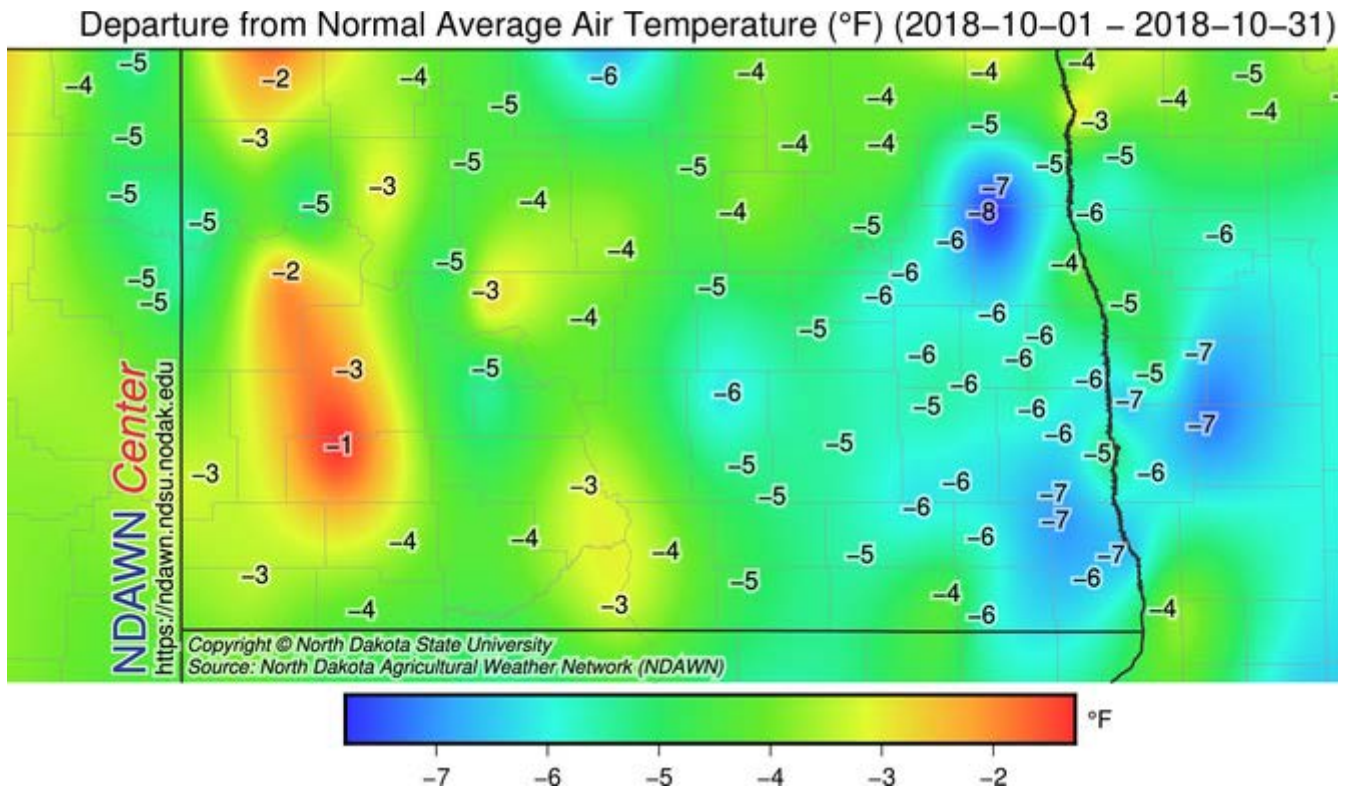


Figure 3. October 2018 temperature departure from normal for North Dakota. (NDAWN)

The official state average October temperature was 39.1 F, 16.5 F cooler than last month and 6 F cooler than in October 2017. The average October temperature was 4.3 F cooler than the 1981-2010 average, making it the 12th coolest October in the 124-year period of record. It was the coolest October since 2009 (Table 2). The positive numbers in Figure 3 above are shaded in yellow and red to depict the region with above-average temperature or lesser magnitudes of colder temperatures. In contrast, the negative numbers in the same figure are shaded in green and blue to depict the region with below-average temperature in October. The state's highest and lowest daily temperatures ranged from 76 F on Oct. 18 in McClusky, Sheridan County, to 8 F on Oct. 12, in Mayville, Traill County. Based on the historical records, the state average October temperature showed a positive long-term trend of 0.09 F per decade since 1895. The highest and lowest monthly state October average temperatures ranged from 54.8 F in 1963 to 32.6 F in 1925 (Figure 4).



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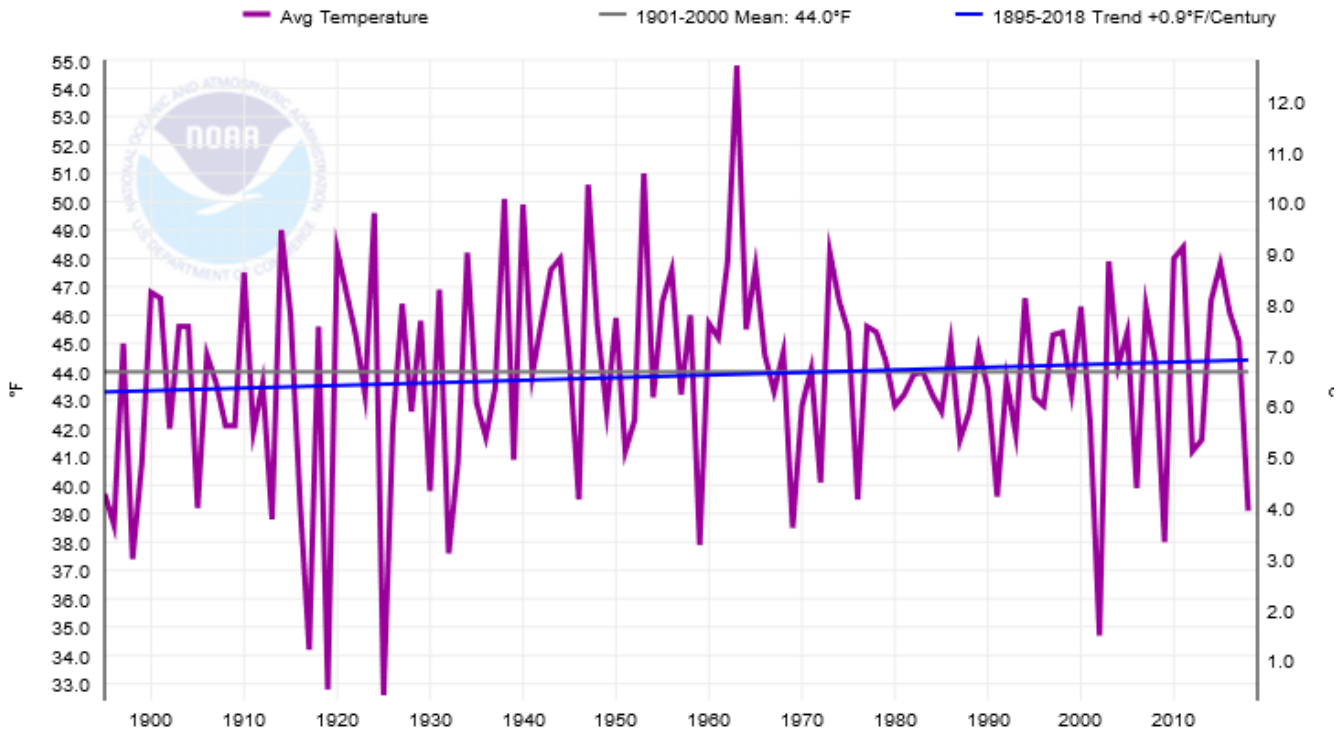


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North Dakota, Average Temperature, October



October Temperature Statistics
 Record high value: 54.8 F in 1963
 Record low value: 32.6 F in 1925
 Trend: 0.09 F per decade

October 2018 value: 39.1 F
 1981-2010 average: 43.4 F
 Monthly ranking: 12th coolest
 Record length: 124 years

Figure 4. Historical October temperature time series for North Dakota.

Table 2. North Dakota October Temperature Ranking Table.

Period	Value	Normal	Anomaly	Rank	Warmest/Coolest Since
October 2018	39.1	43.4	-4.3	12th coolest 113th warmest	Coolest since 2009 Warmest since 2017



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Notable Impacts

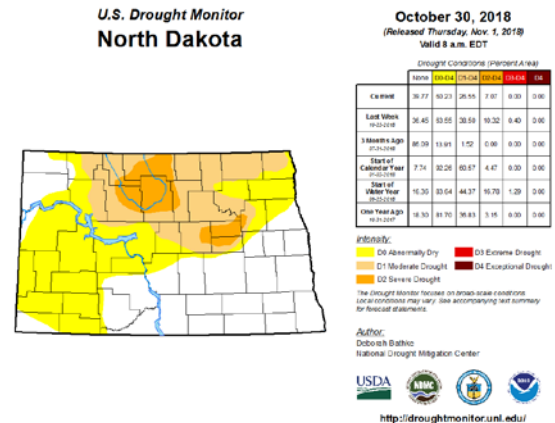
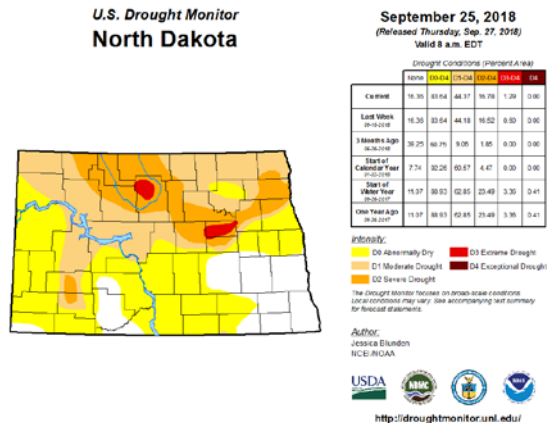


Figure 5. Drought Monitor map comparison for North Dakota in the beginning (on the left) and at the end (on the right) of October 2018.

Drought Monitor (DM): In general, overall drought conditions improved throughout the month. By the end of October, D1 (moderate drought) or worse covered nearly 27 percent of the state, 7 percent of which was under D2 (severe drought). The Oct. 30 map in Figure 5 shows more than 26 percent of the state experiencing drought (18 percent decrease in coverage, compared with the previous month). Figure 5 shows a comparison of the drought conditions across the state from the beginning to the end of the month. Figure 6 on the right shows the statewide drought coverage in percentage and intensity (D0 and D1) in a time scale representing the state from the beginning to the end of the month, with a one-week resolution.

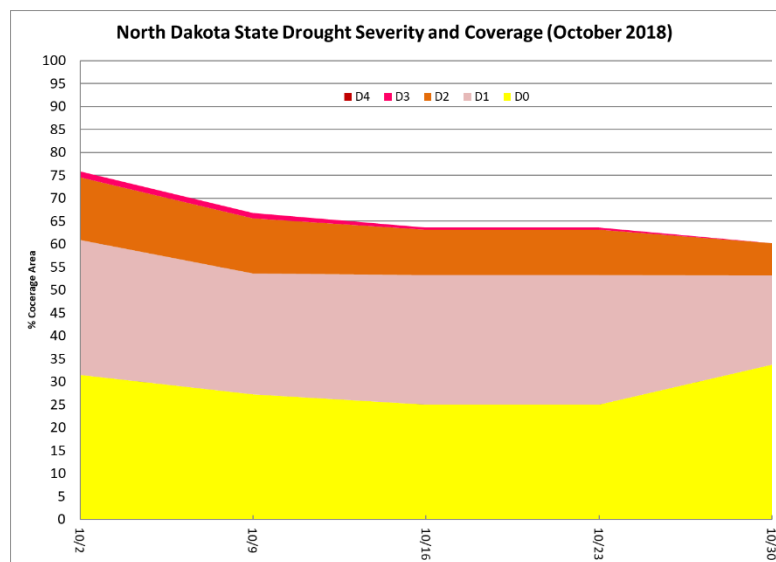


Figure 6. North Dakota drought severity and coverage for October 2018.



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Storm Reports: NDAWN's highest peak gust in October was 51 mph, recorded at the Bowman weather station in Bowman County on Oct. 14, 2018.

Daily Record Events in October: Across the observation network of weather stations with at least 30 years of history, a total of three daily high and 135 daily low-temperature-related records were set or tied. A total of 40 highest daily precipitation-related records were set or tied. Details of the records are in Table 3 below.

Table 3. Summary of daily records broken or set in North Dakota in October. (NCEI Daily Weather Records)

<i>Category</i>	<i>Number of Records</i>
<i>Highest daily max. temp.</i>	2
<i>Highest daily min. temp.</i>	1
<i>Lowest daily max. temp.</i>	104
<i>Lowest daily min. temp.</i>	31
<i>Highest daily precipitation</i>	6
<i>Highest daily snowfall</i>	34
<i>Total</i>	178

*Highlight of the Month**

*A lowest daily maximum temperature of 28 degrees was set in **Ashley** on **Oct. 7**, breaking the previous record for that date by 5 degrees, which was set in 1946 (years on record: 125).*

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

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



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