



# North Dakota Monthly Climate Summary

January 2019

Volume: 13, No: 1

## Precipitation

North Dakota State Climate Office: Your Resource for Climate Information

**NDSU** NORTH DAKOTA STATE UNIVERSITY

North Dakota State University

College of Agriculture, Food Systems, and Natural Resources

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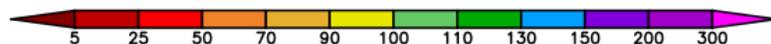
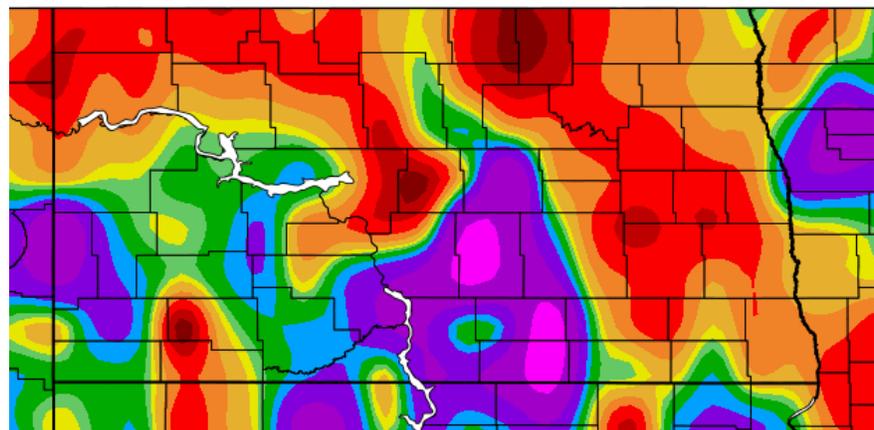
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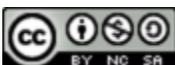
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Based on the National Centers for Environmental Information (NCEI), the statewide average January precipitation was 0.46 inch, which was 0.17 inch less than last month but 0.23 inch more than in January 2018, and 0.03 inch less than the 1981-2010 average, yet making it the 56th wettest January in the 125-year period of record. It was the wettest January since 2017 (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 January. The greatest monthly precipitation accumulation was 1.75 inches, recorded in Steele, Kidder County. The greatest 24-hour precipitation was 0.85 inch, recorded in Mandan on Jan. 31. The greatest monthly snowfall accumulation was 17.4 inches, recorded in Edgeley, LaMoure County. The greatest 24-hour snowfall was 7 inches, recorded in Ellendale, Dickey County, on Jan. 16. Based on historical records, statewide January precipitation showed a slight negative long-term trend of 0.01 inch per century since 1895. The highest and lowest January precipitation for the state ranged from 1.27 inches in 1916 to 0.09 inch in 1942 and again in 1973 (Figure 2).



*Figure 1. January 2019 precipitation percent of normal for North Dakota. (High Plains Regional Climate Center)*



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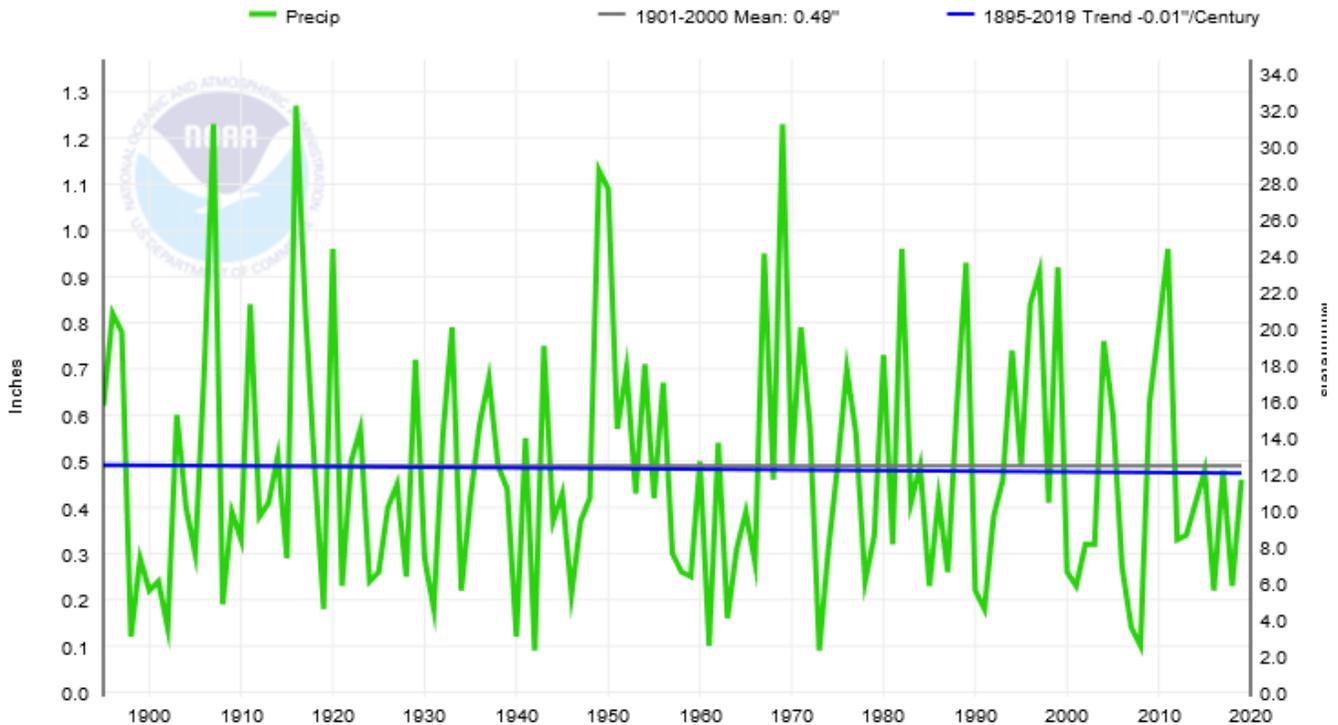


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North Dakota, Precipitation, January



### January Precipitation Statistics

Record high value: 1.27 inches in 1916  
 Record low value: 0.09 inch in 1942, 1973  
 Trend: minus 0.01 inch per century

January 2019 value: 0.46 inch  
 1981-2010 average: 0.49 inch  
 Monthly ranking: 56th wettest  
 Record length: 125 years

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

Table 1. North Dakota January Precipitation Ranking Table.

| Period       | Value | Normal | Anomaly | Rank                        | Wettest/Driest Since                    | Record Year        |
|--------------|-------|--------|---------|-----------------------------|---|--------------------|
| January 2019 | 0.46" | 0.49"  | -0.03   | 70th driest<br>56th wettest | Driest since 2018<br>Wettest since 2017 | 1942, 1973<br>1916 |



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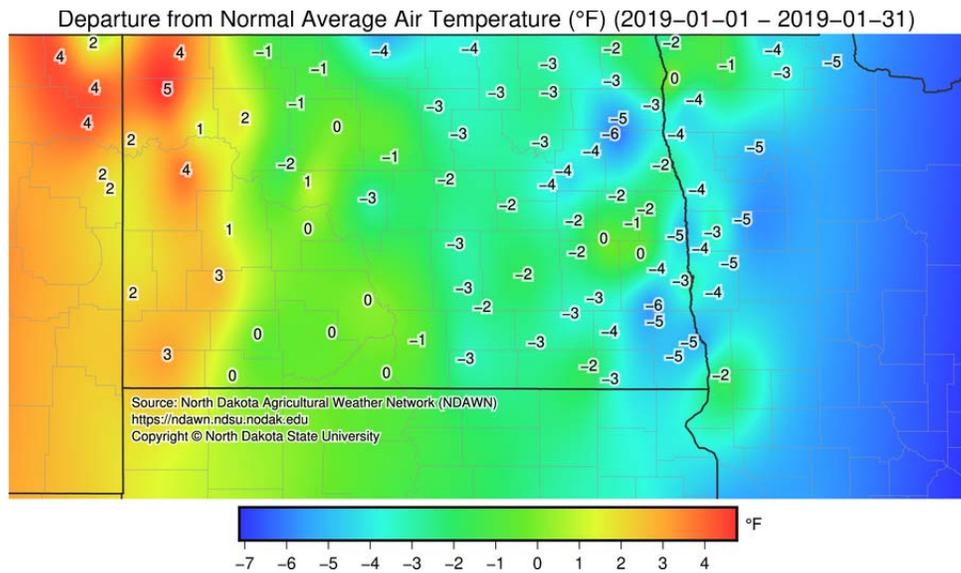
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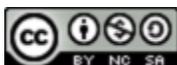
## Temperature

The official state average January temperature was 10 F, 11.4 F cooler than last month and 1.8 F cooler than in January 2018. The average January temperature was 0.6 F cooler than the 1981-2010 average, yet making it the 48th warmest January in the 125-year period of record. It was the warmest January since 2006 (Table 2). The positive numbers in Figure 3 are shaded in red and orange to depict the region with above-average temperatures. In contrast, the negative numbers in the same figure are shaded in green and blue to depict the region with below-average temperatures in January. The state's highest and lowest daily temperatures ranged from 52 F on Jan. 14 in Medora, Billings County, to minus 47 F on Jan. 31, in Lisbon, Ransom County. It was the lowest temperature ever recorded in Lisbon. Based on the historical records, the state average January temperature showed a positive long-term trend of 0.5 F per decade since 1895. The highest and lowest monthly state January average temperatures ranged from 25.9 F in 2006 to minus 11.9 F in 1950 (Figure 4).



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

The state's highest and lowest daily temperatures ranged from 52 F on Jan. 14 in Medora, Billings County, to minus 47 F on Jan. 31, in Lisbon, Ransom County. It was the lowest temperature ever recorded in Lisbon. Based on the historical records, the state average January temperature showed a positive long-term trend of 0.5 F per decade since 1895. The highest and lowest monthly state January average temperatures ranged from 25.9 F in 2006 to minus 11.9 F in 1950 (Figure 4).



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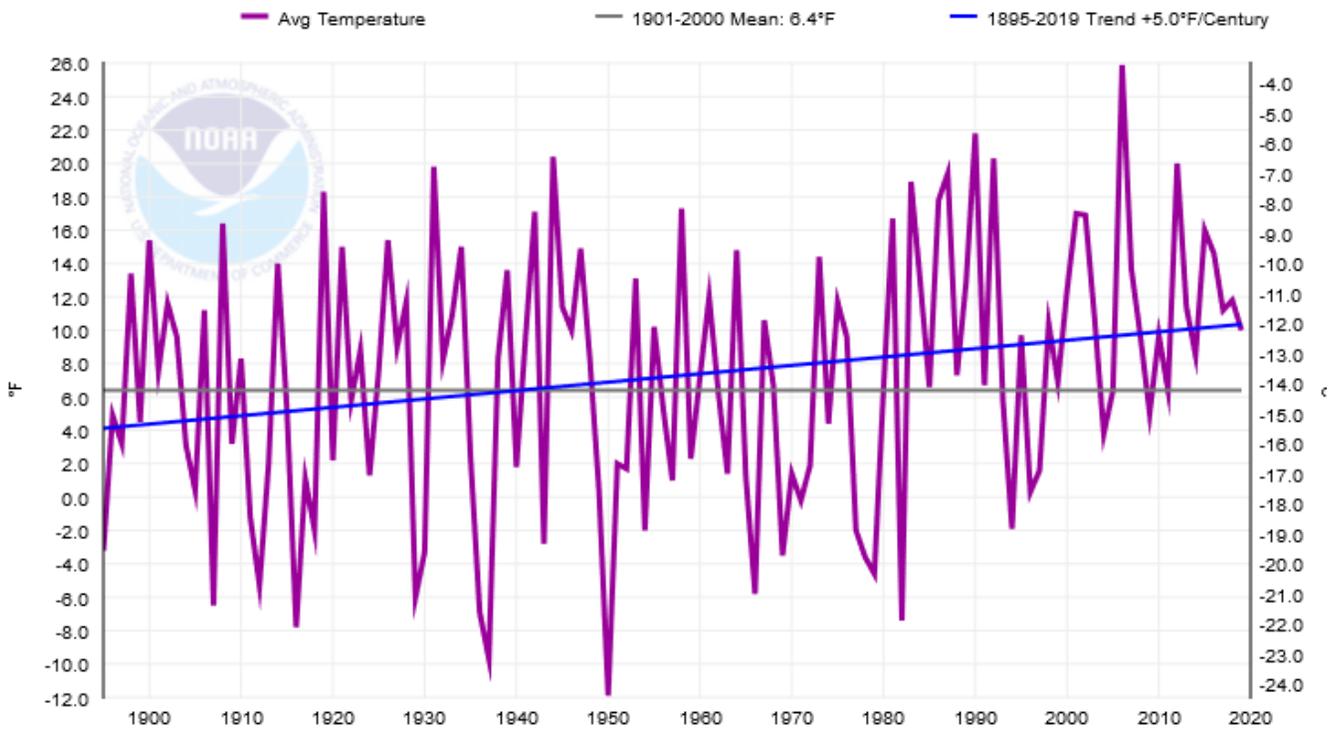


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North Dakota, Average Temperature, January



### January Temperature Statistics

Record high value: 25.9 F in 2006  
 Record low value: minus 11.9 F in 1950  
 Trend: 0.5 F per decade

January 2019 value: 10 F  
 1981-2010 average: 10.6 F  
 Monthly ranking: 48th warmest  
 Record length: 125 years

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

Table 2. North Dakota January Temperature Ranking Table.

| Period       | Value | Normal | Anomaly | Rank                         | Warmest/Coollest Since                    | Record Year  |
|--------------|-------|--------|---------|------------------------------|---|--------------|
| January 2019 | 10    | 10.6   | -0.6    | 78th coolest<br>48th warmest | Coollest since 2014<br>Warmest since 2018 | 1950<br>2006 |



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## Notable Impacts

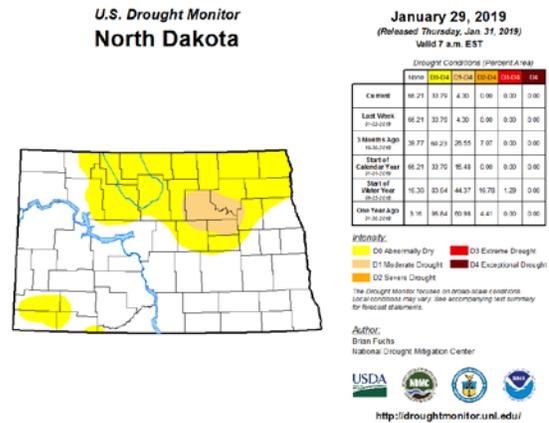
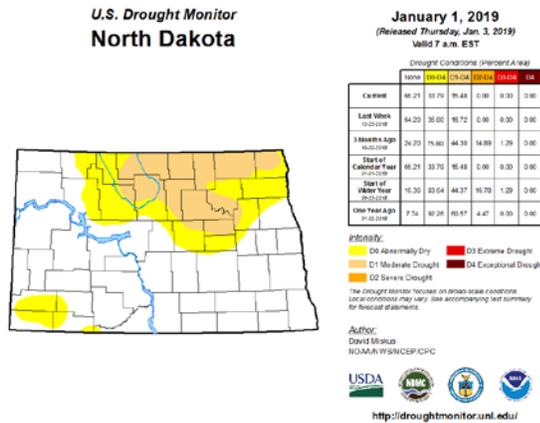


Figure 5. Drought Monitor map comparison for North Dakota in the beginning (on the left) and at the end (on the right) of January 2019.

**Drought Monitor (DM):** In general, overall drought conditions improved throughout the month. By the end of January, D1 (moderate drought) shrunk to cover 4 percent of the state, which was an 11 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.

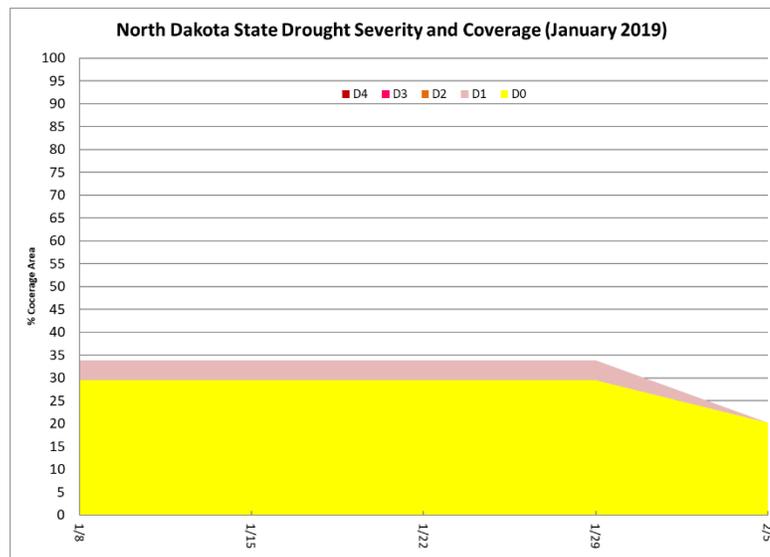
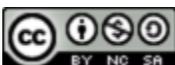


Figure 6. North Dakota drought severity and coverage for January 2019.



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**Storm Reports:** NDAWN's highest 10-meter peak gust in January was 58 mph, recorded at the Bowman weather station in Bowman County on Jan. 27, 2019.

**Daily Record Events in January:** Across the observation network of weather stations with at least 30 years of history, a total of 24 daily high and four daily low-temperature-related records were set or tied. A total of 25 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 January. (NCEI Daily Weather Records)*

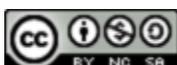
| <i>Category</i>                    | <b>Number of Records</b> |
|------------------------------------|--------------------------|
| <i>Highest daily max. temp.</i>    | 6                        |
| <i>Highest daily min. temp.</i>    | 18                       |
| <i>Lowest daily max. temp.</i>     | 3                        |
| <i>Lowest daily min. temp.</i>     | 13                       |
| <i>Highest daily precipitation</i> | 15                       |
| <i>Highest daily snowfall</i>      | 10                       |
| <b>Total</b>                       | <b>65</b>                |

### Highlight of the Month\*

*A lowest daily temperature of minus 47 degrees was set in **Lisbon** on **Jan. 31**, breaking the previous record for that date by 14 degrees, which was set in 1982. That is also the anytime-lowest temperature record for Lisbon (years on record: 116).*

\*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.

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



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