



North Dakota Monthly Climate Summary

January 2018

Volume: 12, No: 1

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 total January precipitation was 0.24 inch, which was 0.2 inch less than last month, 0.24 inch less than in January 2017 and 0.25 inch less than the 1981-2010 average, making it the 22nd driest January in the 124-year period of record. It was the driest January since 2016. Below-average precipitation was observed commonly in all parts of the state, except for a small portion in the central part of the state, where above-normal precipitation was observed (Figure 1). The greatest monthly precipitation accumulation was 0.91 inch, recorded in Grand Forks, Grand Forks County. The greatest 24-hour precipitation was 0.8 inch, also recorded in Grand Forks, on Jan. 11. The greatest monthly snowfall accumulation was 9.8 inches, recorded in Grand Forks. The greatest 24-hour snowfall was 6.5 inches, also recorded in Grand Forks, on Jan. 11. 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 the lowest January precipitation for the state ranged from 1.27 inches in 1916 to 0.09 inch in 1942 (Figure 2).

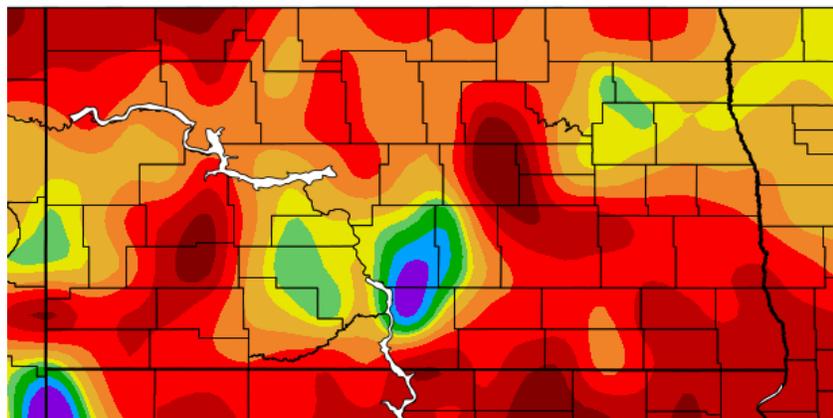


Figure 1. January 2018 precipitation percent of normal for North Dakota (High Plains Regional Climate Center, NOAA)



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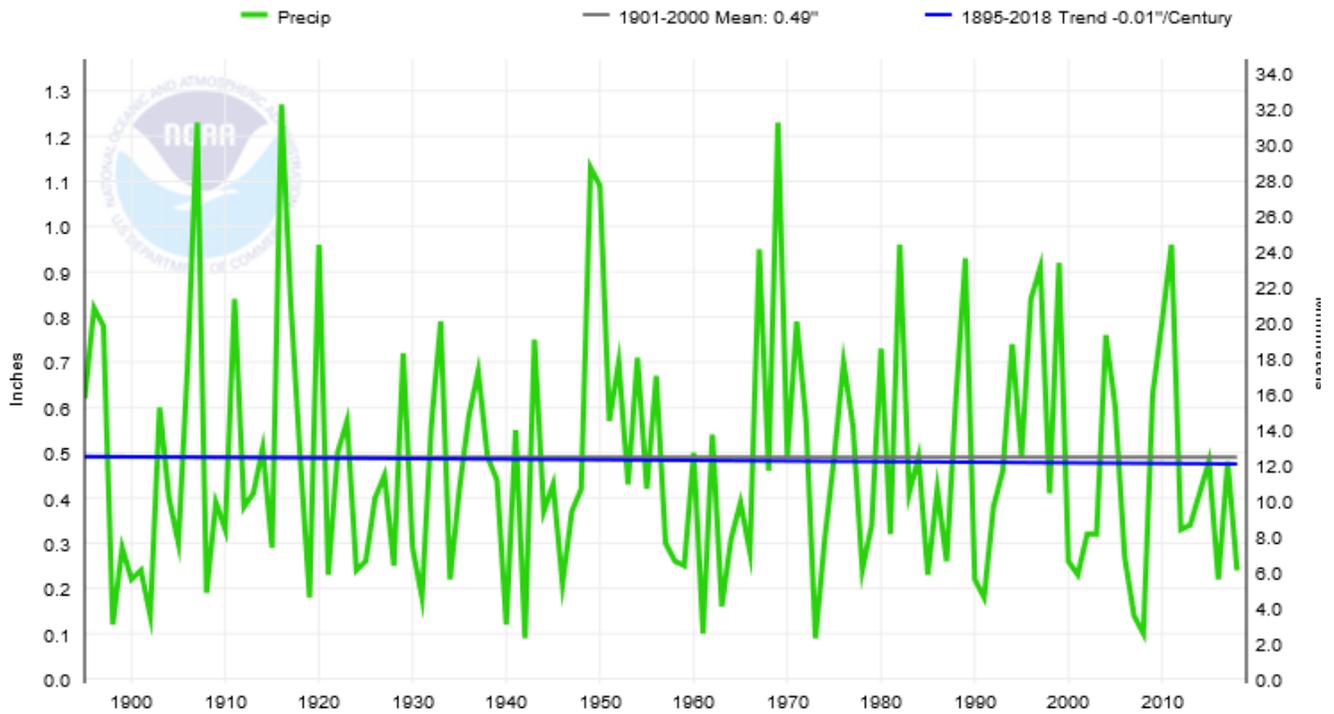


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North Dakota, Precipitation, January



January Precipitation Statistics

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

January 2018 value: 0.24 inch
 1981-2010 average: 0.49 inch
 Monthly ranking: 22nd driest
 Record length: 124 years

Figure 2. Historical January precipitation time series for North Dakota



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Temperature

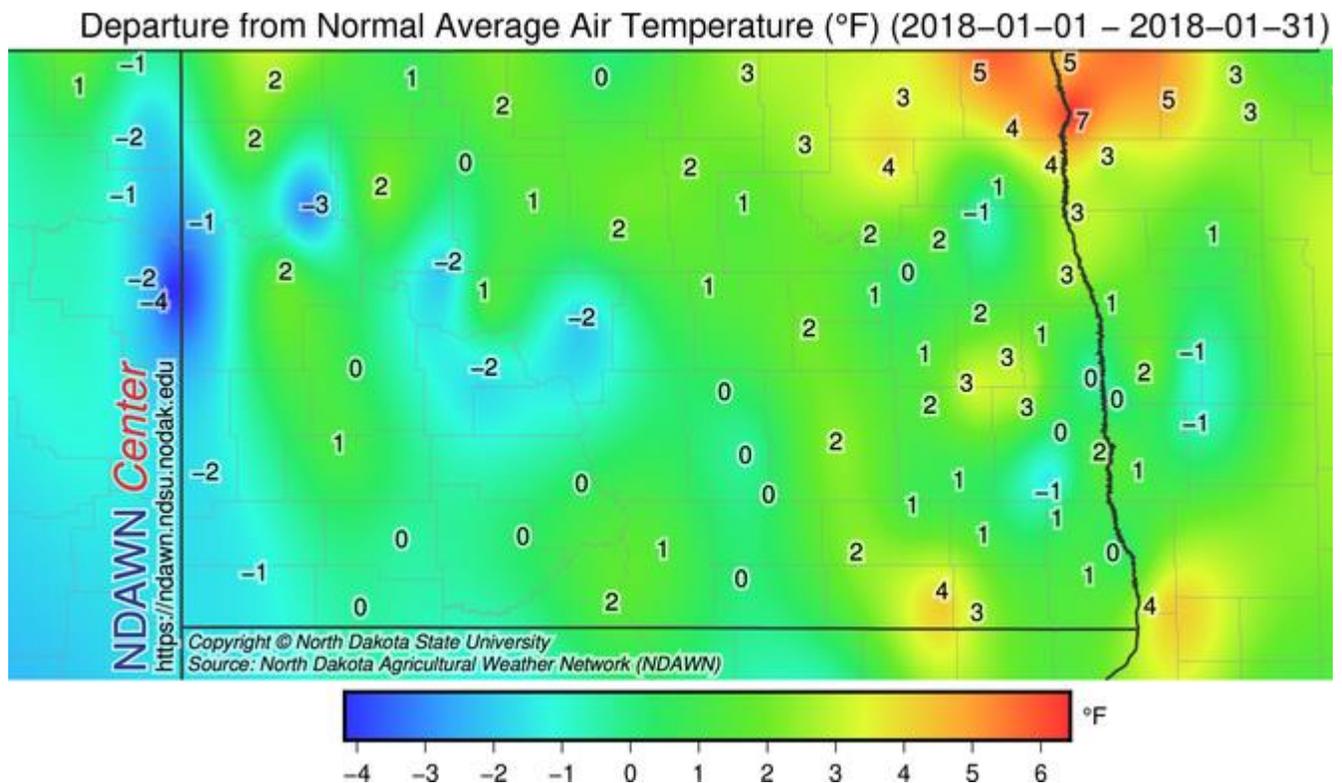


Figure 3. January 2018 temperature departure from normal for North Dakota (NDAWN)

The official state average January temperature was 11.8 F, 5 F colder than last month, but 0.6 F warmer than January 2017, and 1.2 F warmer than the 1981-2010 average, making it the 35th warmest January in the 124-year period of record. It was the warmest January since 2016. Above-average temperatures were observed commonly in the state with few exceptions in the west (Figure 3). The state's highest and lowest daily temperatures ranged from 52 F on Jan. 19 in Fullerton, Dickey County, to minus 45 F on Jan. 1, in Hettinger, Adams County. Based on the historical records, the state average January temperature showed a staggering positive trend of 0.5 F per decade since 1895. The highest and the 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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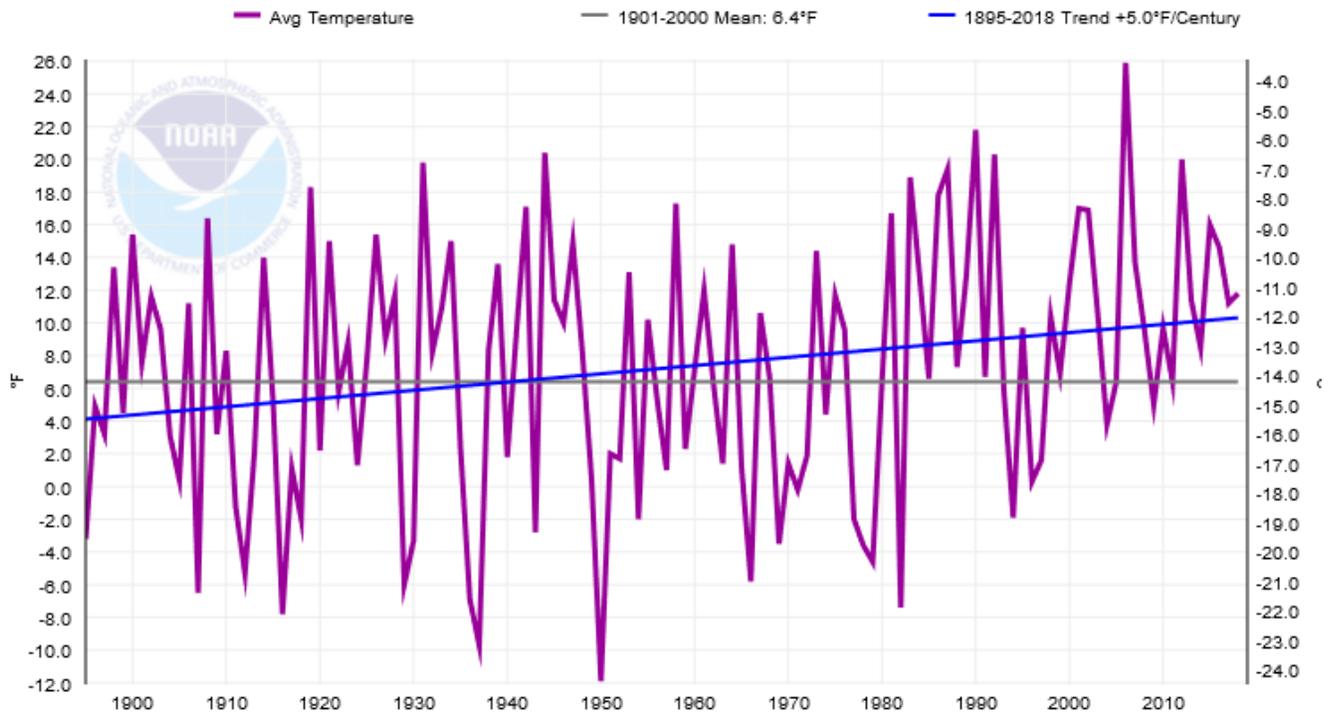


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North Dakota, Average Temperature, January



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 2018 value: 11.8 F
 1981-2010 average: 10.6 F
 Monthly ranking: 35th warmest
 Record length: 124 years

Figure 4. Historical January temperature time series for North Dakota



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Notable Impacts

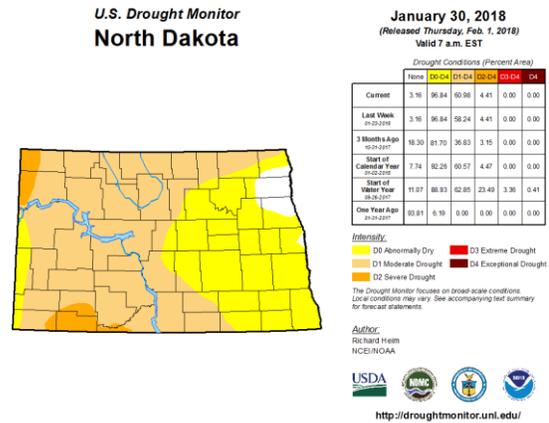
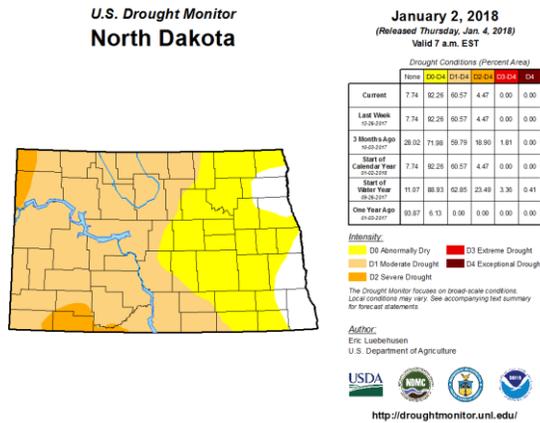


Figure 5. Drought Monitor map comparison for North Dakota in the beginning (on the left) and at the end (on the right) of January 2018

Drought Monitor (DM): Dry conditions continued from the previous month. By the end of January, the percent of the state experiencing drought was more than 61, a 1 percent increase, compared with the previous month. Based on the DM map on Jan. 30, less than 5 percent of the state was in severe drought (D2). 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.

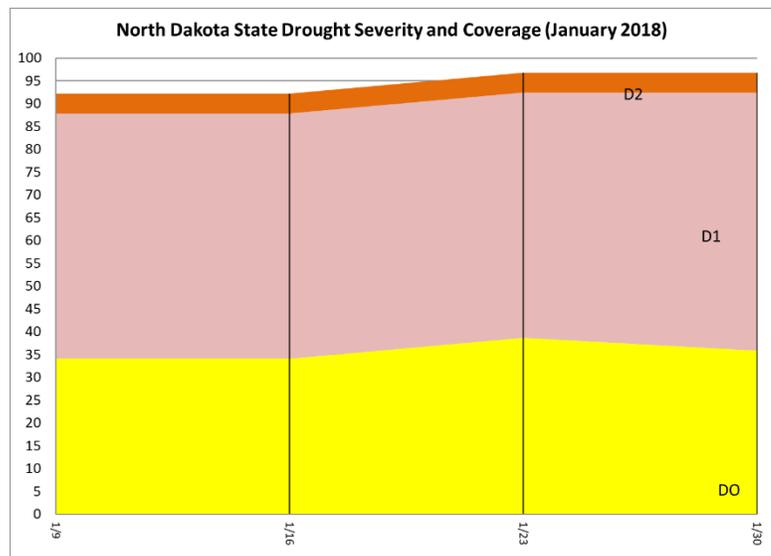


Figure 6. North Dakota drought severity and coverage for January 2018



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Storm Reports: NDAWN's highest peak gust in January was slightly more than 50 mph, recorded at the McHenry weather station in Foster County on Jan. 30, 2018.

The NOAA Storm Report reported no significant storm events in January.

Daily Record Event in January: Across the observation network of weather stations with at least 30 years of history, a total of 23 daily high-temperature-related and 26 daily low-temperature-related records were set or tied. A total of 22 highest daily precipitation-related records were set or tied. Details of the records are in Table 1 below.

Table 1. Summary of daily January records broken or set in North Dakota in January (NCEI Daily Weather Records)

| <i>Category</i> | Number of Records |
|------------------------------------|--------------------------|
| <i>Highest daily max. temp.</i> | 7 |
| <i>Highest daily min. temp.</i> | 16 |
| <i>Lowest daily max. temp.</i> | 9 |
| <i>Lowest daily min. temp.</i> | 17 |
| <i>Highest daily precipitation</i> | 11 |
| <i>Highest daily snowfall</i> | 11 |
| Total | 71 |

Highlight of the Month

*A daily lowest temperature record of minus 41 F was set in **Medora** on **Jan. 2**, breaking the previous record by 18 F that was set in 2010 (years on record: 69).*

