North Dakota Monthly Climate Summary

February 2018 **Volume: 12, No: 2**

Precipitation

Based on the National Centers for Environmental Information (NCEI), the statewide total February precipitation was 0.38 inch, which was 0.16 inch more than last month but 0.03 inch less than in February 2017 and 0.06 inch less than the 1981-2010 average, making it the 57th driest February in the 124-year period of record. It was the driest February since 2014. Below-average precipitation was observed commonly in the cental parts of the state. On the other hand, it was above-average in the southeastern and southwestern parts of the state (Figure 1). The greatest monthly precipitation accumulation was 1.06 inches, recorded in Bowman, Bowman County. The greatest 24-hour precipitation was 0.65 inch, recorded in Mandan, Morton County, on Feb. 5. The greatest monthly snowfall accumulation was 17 inches, recorded at Dickinson Ranch, Dunn County. The greatest 24-hour snowfall was 6 inches, recorded in Forman, Sargent County, on Feb. 25. Based on historical records, statewide February precipitation showed a negative long-term trend of 0.07 inch per century since 1895. The highest and lowest February precipitation for the state ranged from 1.59 inches in 1998 to 0.07 inch in 1934 (Figure 2).

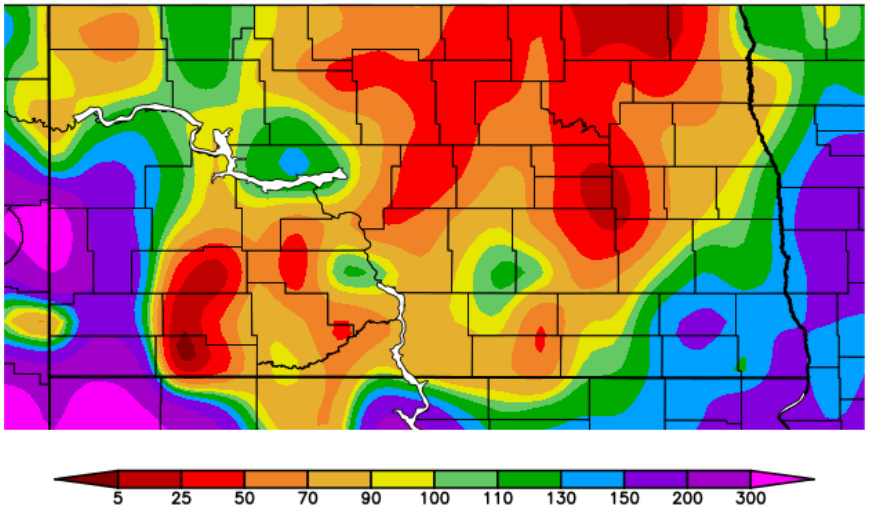

Figure 1. February 2018 precipitation percent of normal for North Dakota (High Plains Regional Climate Center, NOAA)

North Dakota State Climate Office: Your Resource for Climate Information

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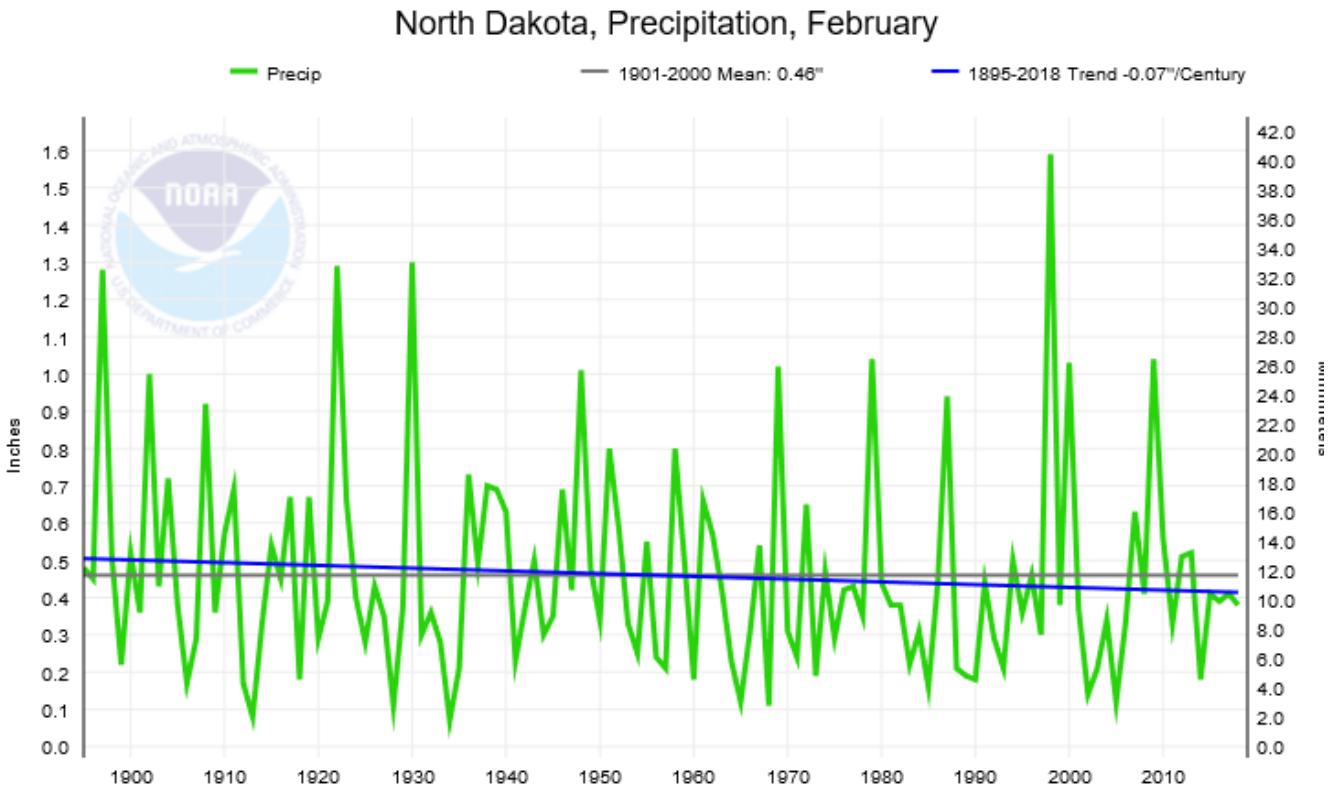

February Precipitation Statistics
Record high value: 1.59 inches in 1998
Record low value: 0.07 inch in 1934
Trend: minus 0.07 inch per century

February 2018 value: 0.38 inch
1981-2010 average: 0.44 inch
Monthly ranking: 57th driest
Record length: 124 years

Figure 2. Historical February precipitation time series for North Dakota

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Temperature

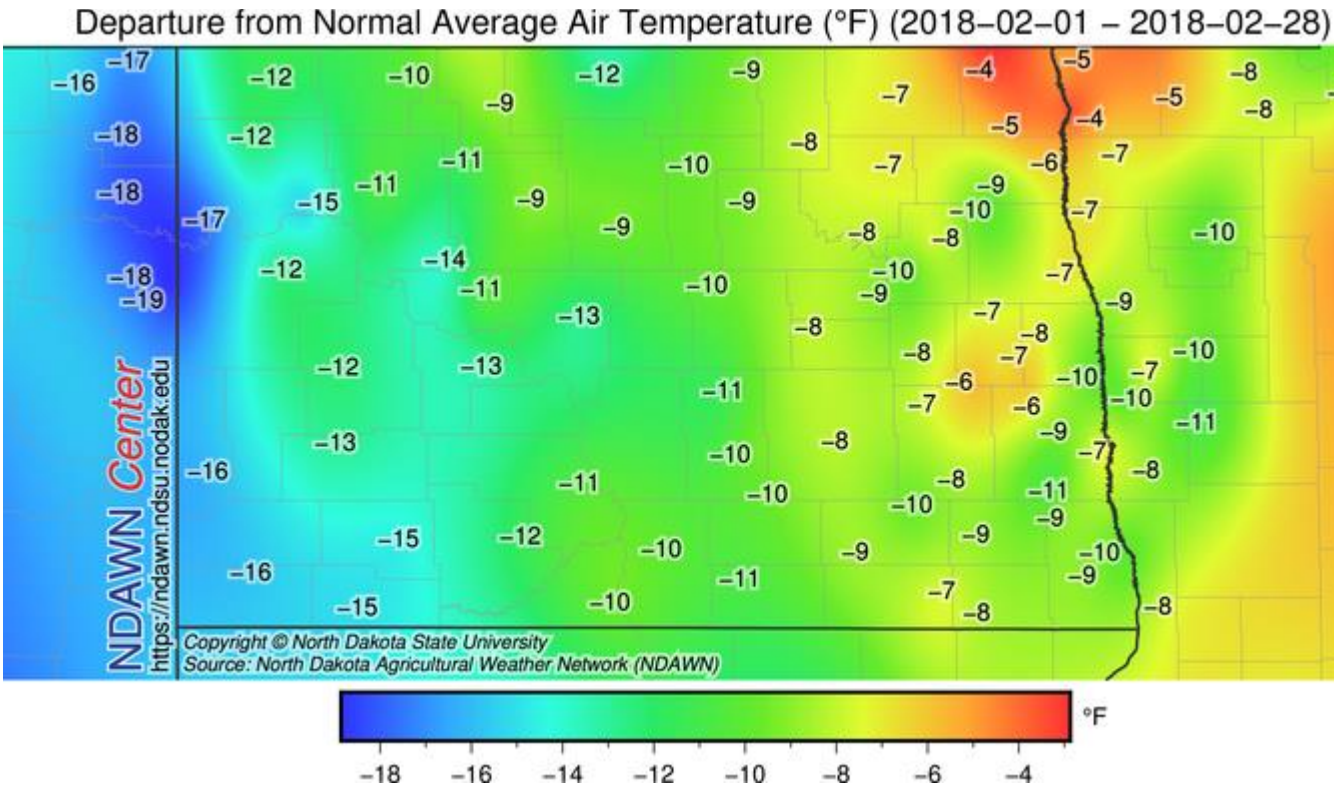

Figure 3. February 2018 temperature departure from normal for North Dakota (NDAWN)

The official state average February temperature was 5.2 F, 6.6 F colder than last month, 15.3 F colder than February 2017 and 10.5 F colder than the 1981-2010 average, making it the 18th coldest February in the 124-year period of record. It was the coldest February since 1994. Below-average temperatures were observed commonly in the state, with the highest departure from the average in the western part of the state (Figure 3). The state's highest and lowest daily temperatures ranged from 49 F on Feb. 14 in Fullerton, Dickey County, to minus 31 F on Feb. 12, in Williston, Williams County. Based on the historical records, the state average February temperature showed a staggering positive trend of 0.7 F per decade since 1895. The highest and the lowest monthly state February average temperatures ranged from 29.6 F in 1954 to minus 14.1 F in 1936 (Figure 4).

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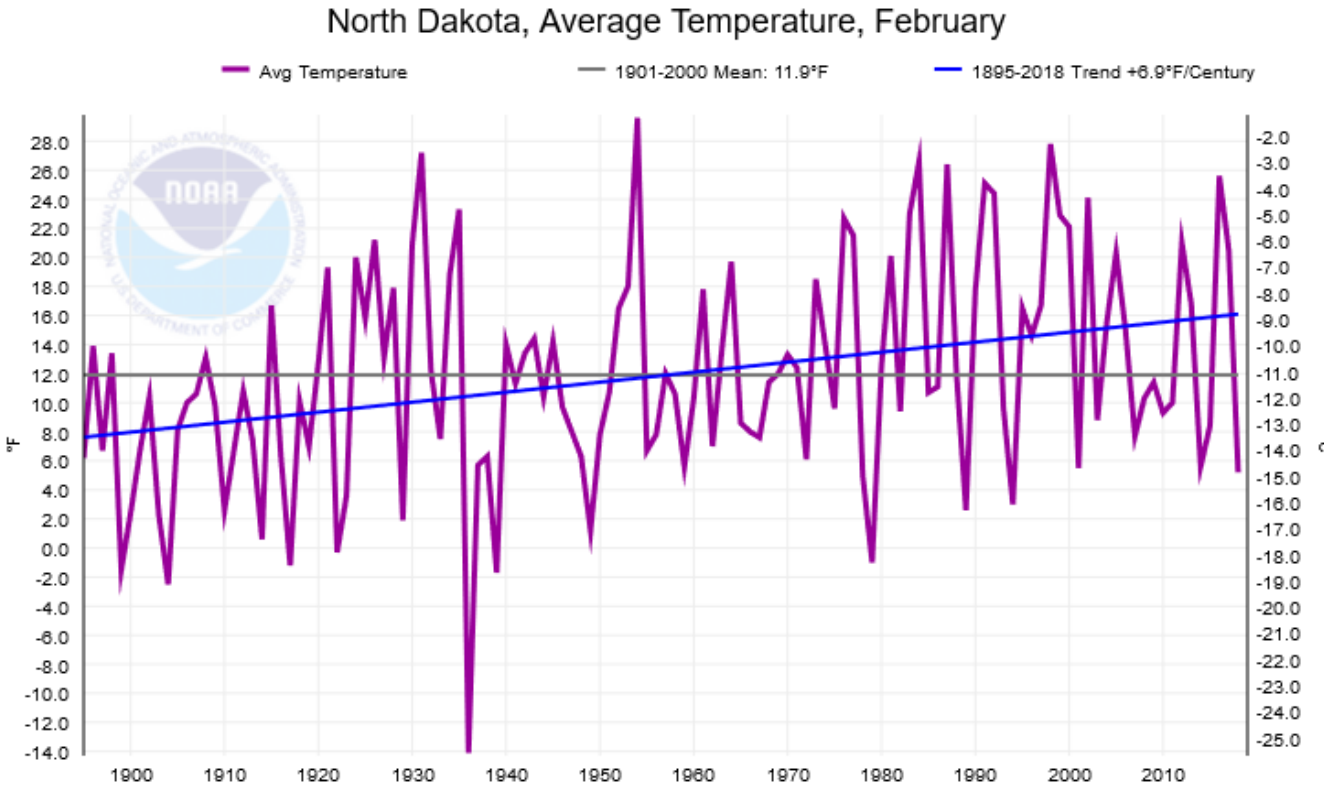

February Temperature Statistics
Record high value: 29.6 F in 1954
Record low value: minus 14.1 F in 1936
Trend: 0.7 F per decade

February 2018 value: 5.2 F
1981-2010 average: 15.7 F
Monthly ranking: 18th coldest
Record length: 124 years

Figure 4. Historical February temperature time series for North Dakota

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Notable Impacts

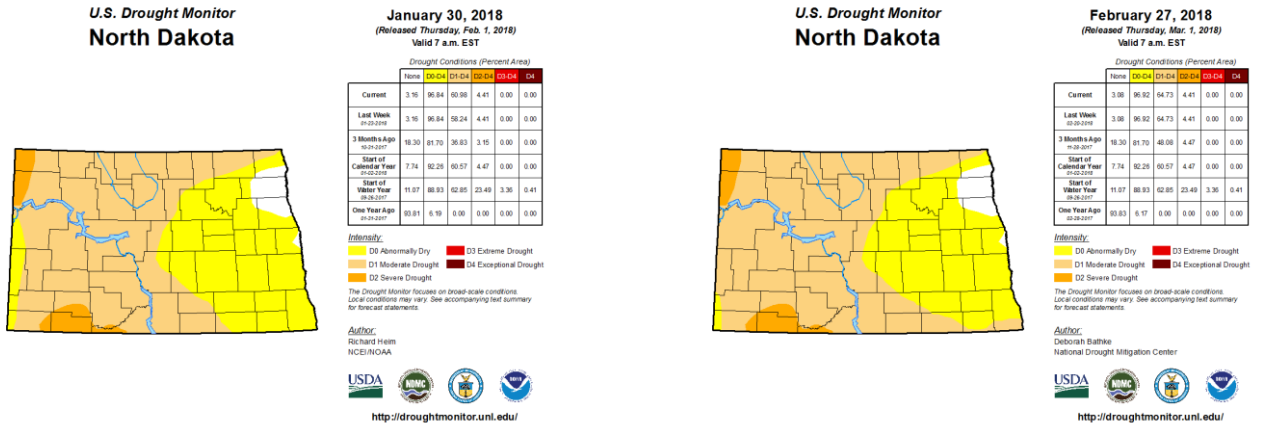

Figure 5. Drought Monitor map comparison for North Dakota in the beginning (on the left) and at the end (on the right) of February 2018

Drought Monitor (DM): Drought conditions did not change significantly since last month. By the end of February, the percent of the state experiencing drought was 65, a 4 percent increase, compared with the previous month. Based on the DM map on Feb. 27, 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 (DO, D1 and D2) in a time scale representing the state from the beginning to the end of the month, with a one-week resolution.

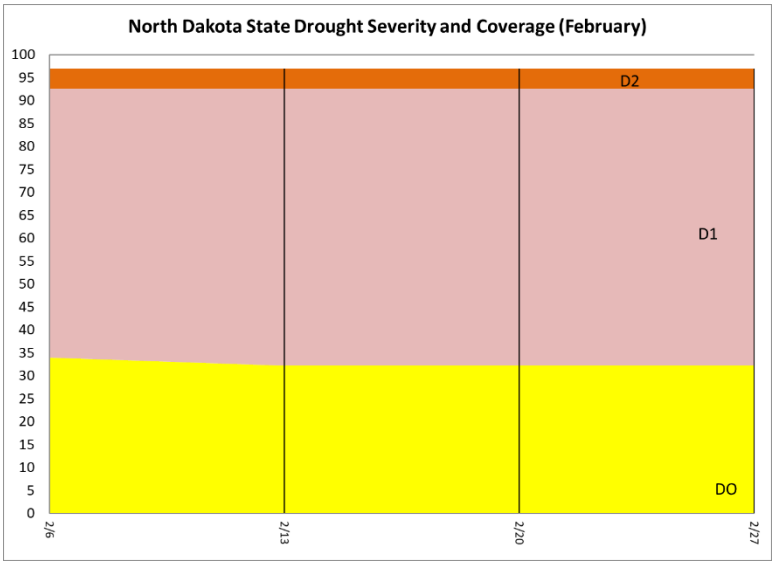

Figure 6. North Dakota drought severity and coverage for February 2018

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Storm Reports: NDAWN's highest peak gust in February was slightly more than 48 mph, recorded at the St. Thomas weather station in Pembina County on Feb. 15, 2018.

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

Daily Record Event in February: Across the observation network of weather stations with at least 30 years of history, a total of two daily high-temperature-related and six 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 February records broken or set in North Dakota in February (NCEI Daily Weather Records)

Category	**Number of Records**
Highest daily max. temp.	2
Highest daily min. temp.	0
Lowest daily max. temp.	0
Lowest daily min. temp.	6
Highest daily precipitation	5
Highest daily snowfall	17
Total	**30**

Highlight of the Month

*A highest daily snowfall record of 5 inches was set in **Watford City** on **Feb. 18**, breaking the previous record by 2.01, which was set in 2014 (years on record: 106).*