



North Dakota Monthly Climate Summary

March 2018

Volume: 12, No: 3

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 March precipitation was 1.37 inches, which was 0.99 inch more than last month and also 0.99 inch less than in March 2017, but 0.54 inch greater than the 1981-2010 average, making it the 11th wettest March in the 124-year period of record. It was the wettest March since 2009. Above-average precipitation was observed commonly in the central parts of the state. On the other hand, it was below average in the southwestern and northeastern parts of the state (Figure 1). The greatest monthly precipitation accumulation was 3.95 inches, recorded in Steele, Kidder County. The greatest 24-hour precipitation was 1.72 inches, recorded in Oakes, Dickey County, on March 6. The greatest monthly snowfall accumulation was 27 inches, recorded in Washburn, McLean County. The greatest 24-hour snowfall was 14 inches, recorded in Fullerton, Dickey County, on March 6. Based on historical records, statewide March precipitation showed a slight positive long-term trend of 0.01 inch per century since 1895. The highest and lowest March precipitation for the state ranged from 2.31 inches in 1902 to 0.11 inch in 1930 (Figure 2).

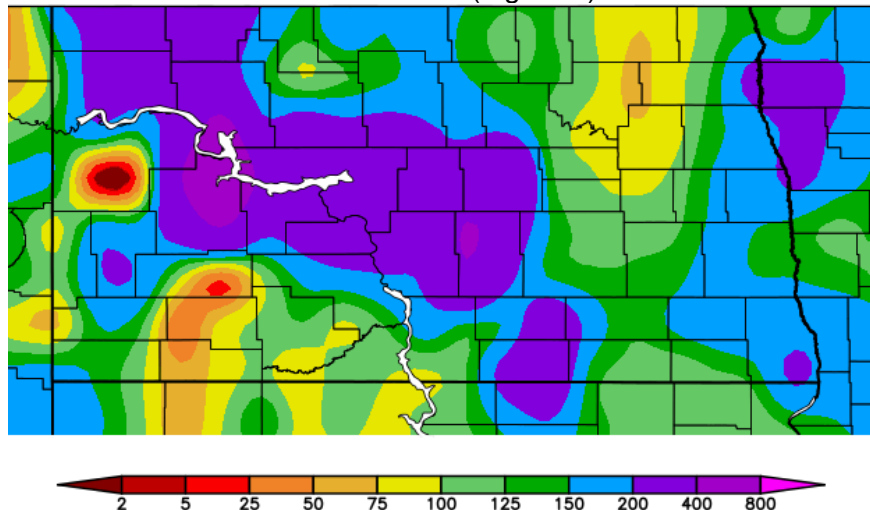


Figure 1. March 2018 precipitation percent of normal for North Dakota. (High Plains Regional Climate Center, NOAA)



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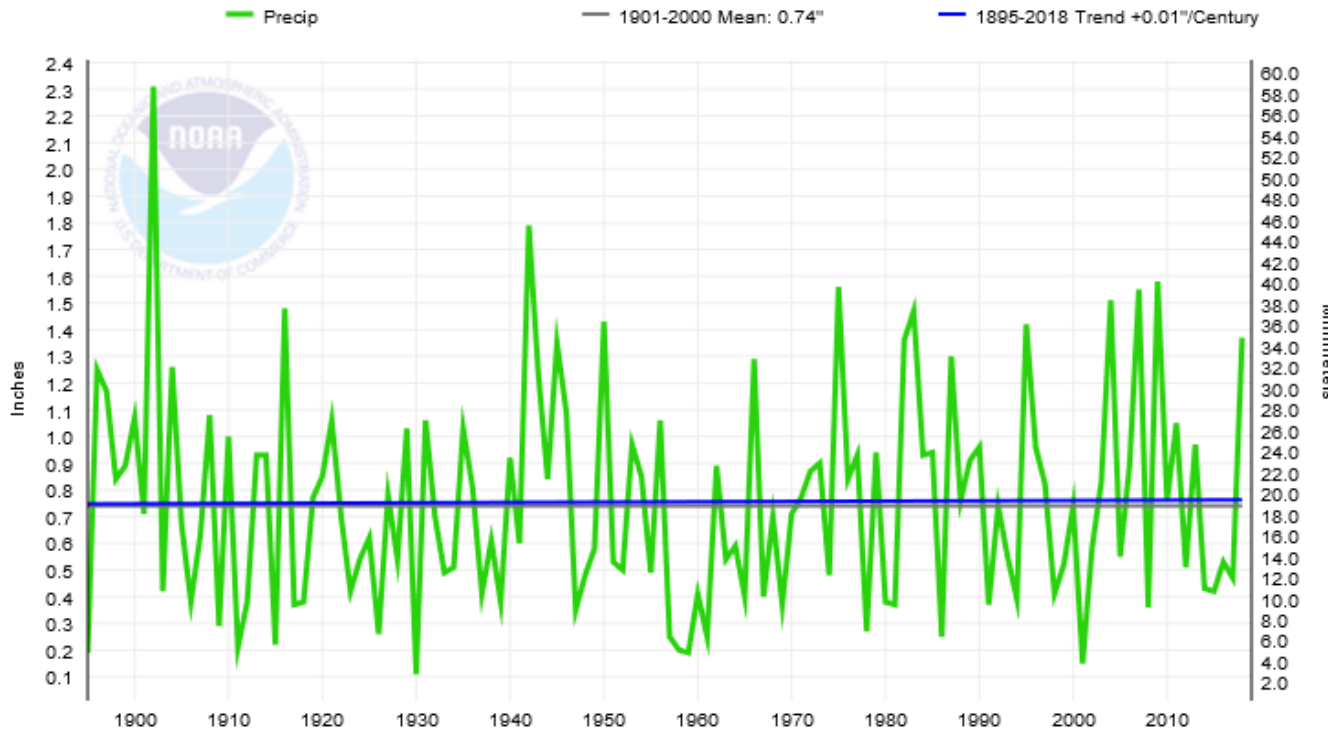


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North Dakota, Precipitation, March



March Precipitation Statistics

Record high value: 2.31 inches in 1902
 Record low value: 0.11 inch in 1930
 Trend: 0.01 inch per century

March 2018 value: 1.37 inches
 1981-2010 average: 0.83 inch
 Monthly ranking: 11th wettest
 Record length: 124 years

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



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Temperature

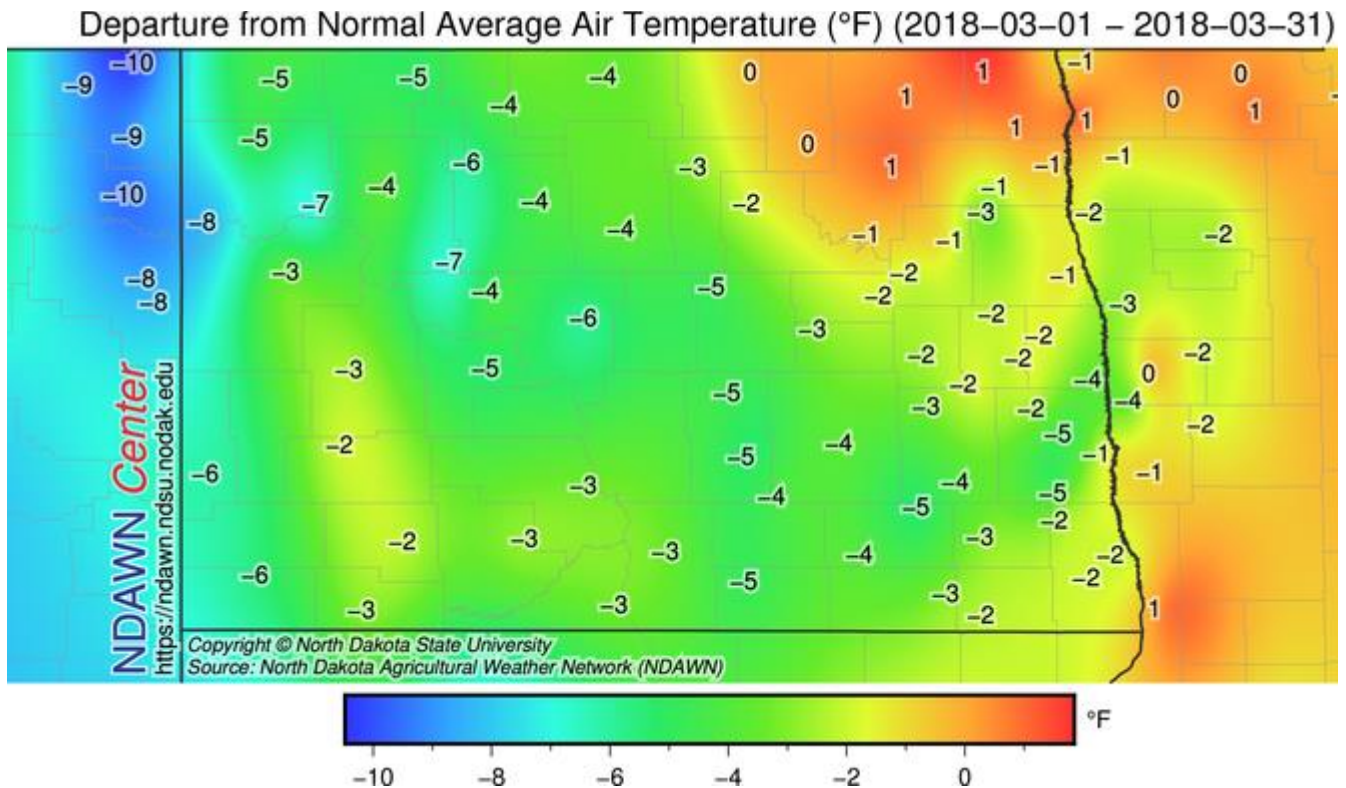


Figure 3. March 2018 temperature departure from normal for North Dakota. (NDAWN)

The official state average March temperature was 25.1 F, 19.9 F warmer than last month but 2.4 F colder than March 2017 and 2.4 F colder than the 1981-2010 average, making it the 67th coldest (58th warmest) March in the 124-year period of record. It was the coldest March since 2014. Below-average temperatures were observed commonly in the state, with the highest departure from the average in the southwestern part of the state. Some above-average conditions were observed in the northeastern corner of the state (Figure 3). The state's highest and lowest daily temperatures ranged from 67 F on March 16 in Dunn Center, Dunn County, to minus 17 F on March 30 in Foxholm, Ward County. Based on the historical records, the state average March temperature showed a staggering positive trend of 0.5 F per decade since 1895. The highest and the lowest monthly state March average temperatures ranged from 40.6 F in 2012 to 7 F in 1899 (Figure 4).



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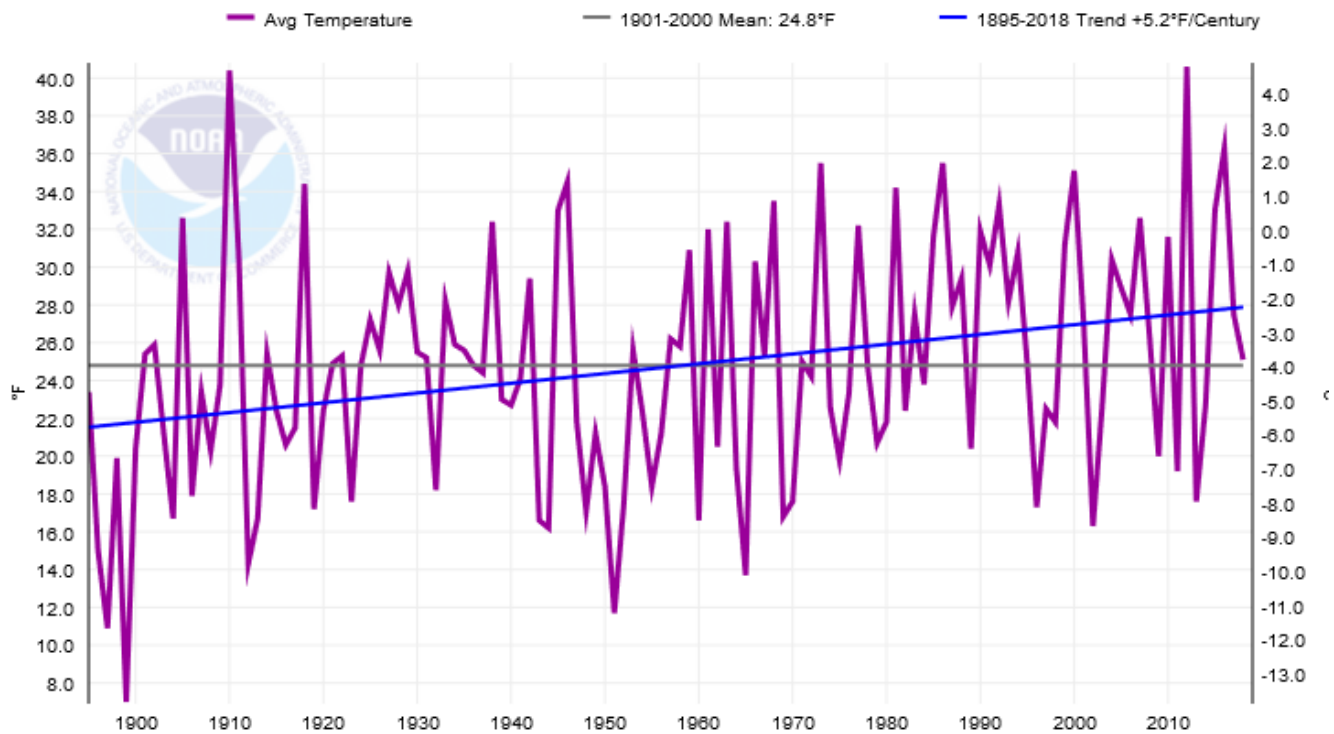


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North Dakota, Average Temperature, March



March Temperature Statistics

Record high value: 40.6 F in 2012

Record low value: 7 F in 1899

Trend: 0.52 F per decade

March 2018 value: 25.1 F

1981-2010 average: 27.5 F

Monthly ranking: 67th coldest/58th warmest

Record length: 124 years

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



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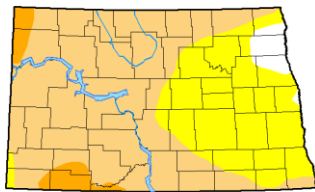
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Notable Impacts

U.S. Drought Monitor North Dakota



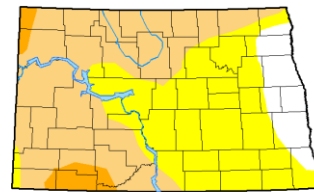
February 27, 2018
(Released Thursday, Mar. 1, 2018)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0	D1	D2	D3	D4
Current	3.08	96.92	04.73	4.41	0.00	0.00
Last Week (02/20/18)	3.08	96.92	04.73	4.41	0.00	0.00
3 Months Ago (12/20/17)	18.30	81.70	48.08	4.47	0.00	0.00
Start of Calendar Year (01/01/18)	7.74	92.26	00.57	4.47	0.00	0.00
Start of Water Year (09/01/17)	11.07	88.93	02.05	23.49	3.36	0.41
One Year Ago (02/28/17)	10.83	89.17	0.00	0.00	0.00	0.00

Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

The Drought Monitor focuses on broad scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
 Author: Deborah Bathke, National Drought Mitigation Center
 USDA, NDMC, NOAA, NCEI/NCSS/NOAA
<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor North Dakota



March 27, 2018
(Released Thursday, Mar. 29, 2018)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0	D1	D2	D3	D4
Current	9.21	90.79	40.24	4.06	0.00	0.00
Last Week (03/20/18)	9.21	90.79	40.29	8.71	0.00	0.00
3 Months Ago (12/20/17)	7.74	92.26	00.57	4.47	0.00	0.00
Start of Calendar Year (01/01/18)	7.74	92.26	00.57	4.47	0.00	0.00
Start of Water Year (09/01/17)	11.07	88.93	02.05	23.49	3.36	0.41
One Year Ago (02/28/17)	10.83	89.17	0.00	0.00	0.00	0.00

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 Author: Chris Ferrelire, NCEI/NCSS/NOAA
 USDA, NDMC, NOAA, NCEI/NCSS/NOAA
<http://droughtmonitor.unl.edu/>

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

Drought Monitor (DM): Drought conditions improved since last month. By the end of March, the percent of the state experiencing drought was 49, a 16 percent decrease, compared with the previous month. Based on the DM map on March 27, less than 5 percent of the state still 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, D1 and D2) in a time scale representing the state from the beginning to the end of the month, with a one-week resolution. Despite the unusually wet March, farmers still are concerned about the dry soil and overgrazed pastures from last year. A cooler than average spring forecast also is concerning in terms of a possibility of late planting.

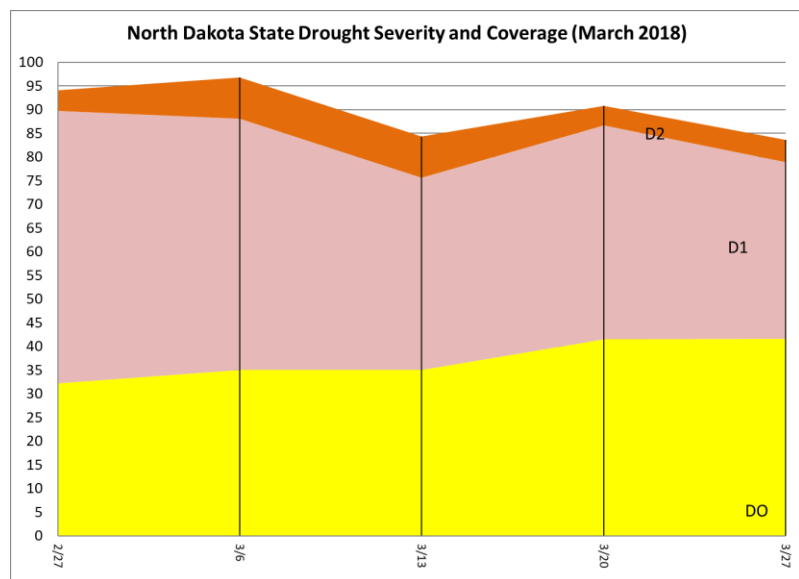
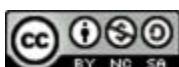


Figure 6. North Dakota drought severity and coverage for March 2018.



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Storm Reports: NDAWN’s highest peak gust in March was 48 mph, recorded at the Linton weather station in Emmons County on March 23, 2018.

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

Daily Record Event in March: Across the observation network of weather stations with at least 30 years of history, a total of two daily high-temperature-related and 18 daily low-temperature-related records were set or tied. A total of 78 highest daily precipitation-related records were set or tied. Details of the records are in Table 1 below.

Highlight of the Month

A highest daily snowfall record of 12.6 inches was set in Oakes on March 6, breaking the previous record by 9.61 inches, which was set in 2011 (years on record: 89).*

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

<i>Category</i>	Number of Records
<i>Highest daily max. temp.</i>	0
<i>Highest daily min. temp.</i>	2
<i>Lowest daily max. temp.</i>	10
<i>Lowest daily min. temp.</i>	8
<i>Highest daily precipitation</i>	37
<i>Highest daily snowfall</i>	41
Total	98

*This record may be different than the record on Page 1 due to the fact that this page only include records for stations with at least 30 years of history.

