



North Dakota Monthly Climate Summary

March 2017

Volume: 11, No: 3

Precipitation

North Dakota
State Climate
Office

NDSU NORTH DAKOTA
STATE UNIVERSITY

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request.

Based on the National Centers for Environmental Information (NCEI), statewide total March precipitation was 0.55", 0.02" greater than the last year, but 0.28" less than the 1981-2010 average, making it the 48th driest March in the 123-year period of record. It was the wettest March since 2013. Above-average precipitation was limited in north central part of the state. Widespread dryer-than-normal conditions were observed elsewhere (Figure 1). The greatest monthly precipitation accumulation was 1.14" recorded in Elgin, Grant County. The greatest monthly snowfall accumulation was 17" recorded in Crosby, Divide County. The greatest 24-hr precipitation was 1.01" that was recorded in Medora, Billings County on March 12. The highest 24-hr snowfall of 8.5" was recorded in Bottineau, Bottineau County on March 7. Based on historical records, statewide March precipitation showed a slight negative long-term trend of 0.01" per century since 1895. The highest and the lowest March precipitation for the state ranged from 2.31" in 1902 to 0.11" in 1930 (Figure 2).

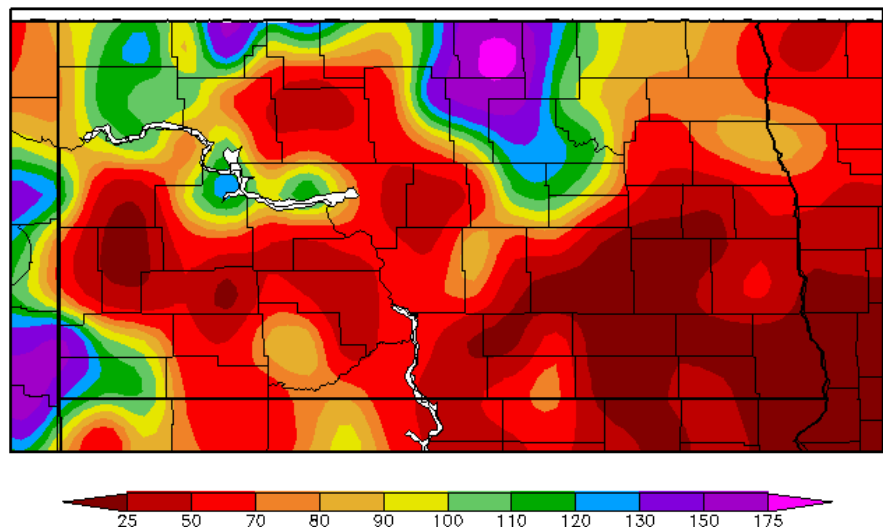


Figure 1. Precipitation Percent of Normal in March 2017 for North Dakota (High Plains Regional Climate Center, NOAA)



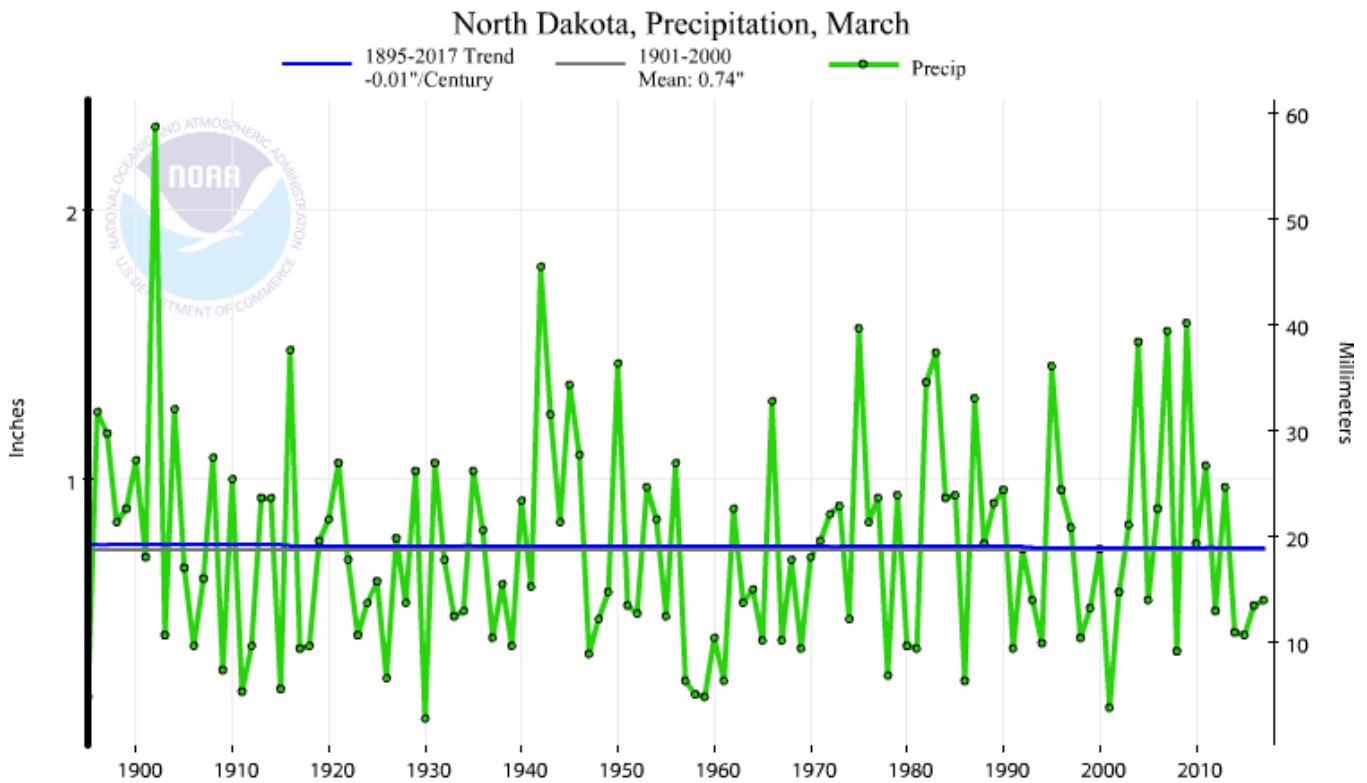
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March Precipitation Statistics

Record High Value: 2.31 inches in 1902

Record Low Value: 0.11 inches in 1930

Trend: -0.01" per Century

March 2017 Value: 0.55 inches

1981-2010 Average: 0.83"

Monthly Ranking: 48th Driest

Record Length: 123 Years

Figure 2. Historical March Precipitation Time Series for North Dakota.



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Temperature

The official state average March temperature was 27.5°F, 8.8° colder than the last year, but the same as the 1981-2010 average, making it the 42nd warmest March in the 123-year period of record. Above-average temperatures were observed in southwestern and southeastern parts of the state. In contrast, below average conditions were observed in the north, especially north-central parts of the state. The

warmest anomalies were observed in the southwestern regions (Fig. 3). The state's highest and lowest daily temperatures ranged from 68° on March 6 in Hettinger, Adams County to -26° on March 14 in Lake Metigoshe State Park, Bottineau County. Based on historical records, the state average March temperature showed an increasing trend of 0.53°F per decade since 1895 (The second highest March trend in the US, after Montana). The highest and the lowest monthly state March average temperatures ranged from 40.6° in 2012 to 7° in 1899 (Figure 4).

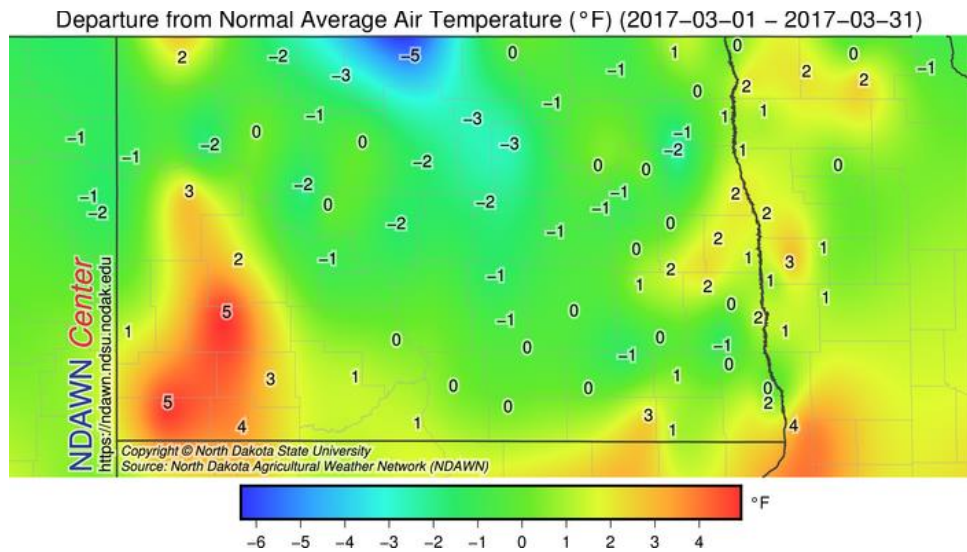


Figure 3. Temperature Departure from Normal in March 2017 for North Dakota (NDAWN).



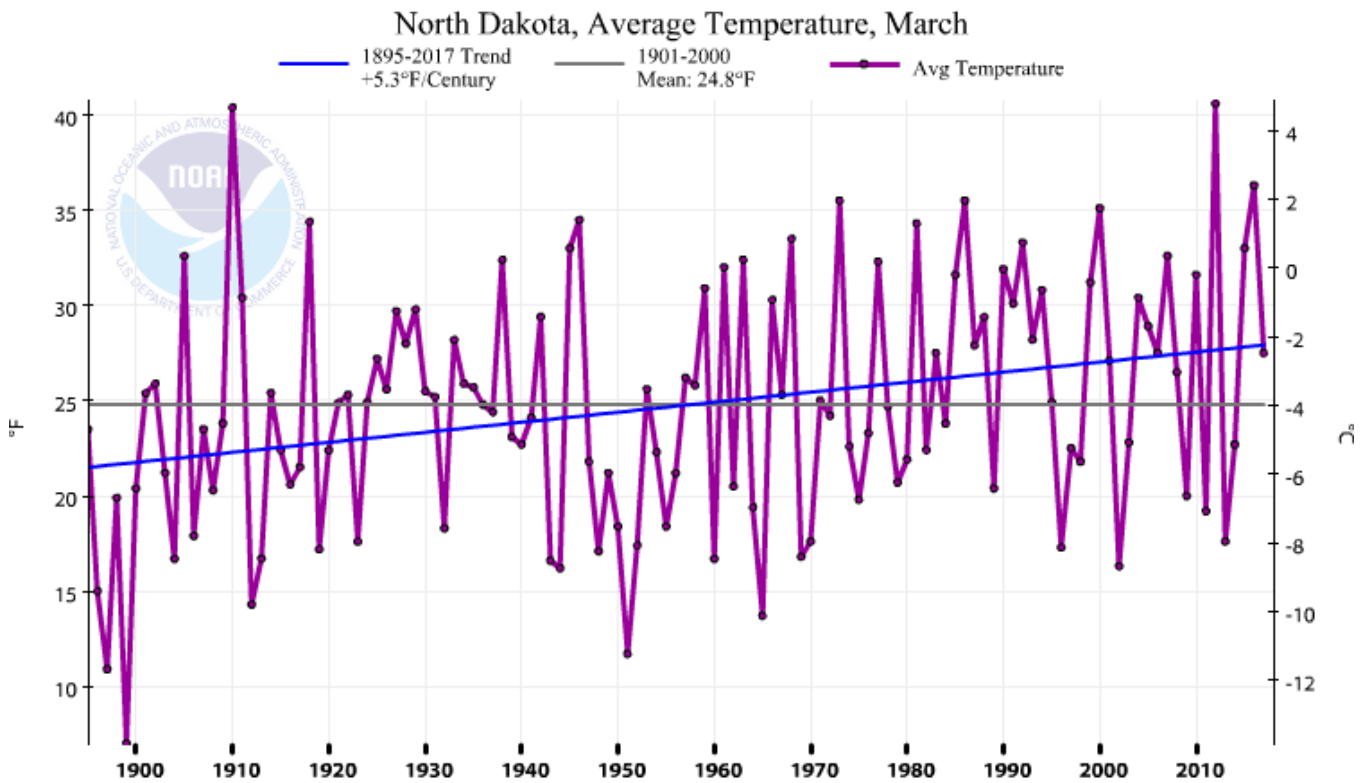
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March Temperature Statistics
 Record High Value: 40.6°F in 2012
 Record Low Value: 7.0°F in 1899
 Trend: 0.53°F per Decade

March 2017 Value: 27.5°F
 1981-2010 Average: 27.5°F
 Monthly Ranking: 42nd Warmest
 Record Length: 123 Years

Figure 4. Historical March Temperature Time Series for North Dakota.



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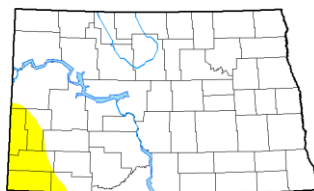
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Notable Impacts

U.S. Drought Monitor North Dakota



February 28, 2017
(Released Thursday, Mar. 2, 2017)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)				
	None	D0	D1	D2	D3
Current	93.83	6.17	0.00	0.00	0.00
Last Week (02/21/17)	93.81	6.19	0.00	0.00	0.00
3 Months Ago (12/29/16)	73.40	26.60	2.78	0.00	0.00
Start of Calendar Year (01/01/17)	93.87	6.13	0.00	0.00	0.00
Start of Water Year (02/01/17)	96.70	3.30	0.41	0.00	0.00
One Year Ago (02/28/16)	26.37	71.83	3.96	0.00	0.00

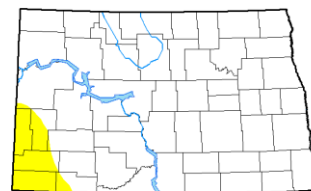
Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor North Dakota



March 28, 2017
(Released Thursday, Mar. 30, 2017)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)				
	None	D0	D1	D2	D3
Current	-	-	-	-	-
Last Week (03/21/17)	93.83	6.17	0.00	0.00	0.00
3 Months Ago (12/29/16)	93.87	6.13	0.00	0.00	0.00
Start of Calendar Year (01/01/17)	93.87	6.13	0.00	0.00	0.00
Start of Water Year (02/01/17)	96.70	3.30	0.41	0.00	0.00
One Year Ago (02/28/16)	7.87	92.03	10.59	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.



<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 2017.

Drought Monitor: Based on the Drought Monitor (DM) and given the nature of the residual conditions from the winter, the drought conditions did not change throughout March in ND (Figure 5). Less than 10% of the state was consistently designated as “Abnormally Dry”. Figure 6 below shows the statewide drought coverage in % and intensity (i.e. DO) in time scale representing the state from the beginning to the end of the month with one-week resolution.

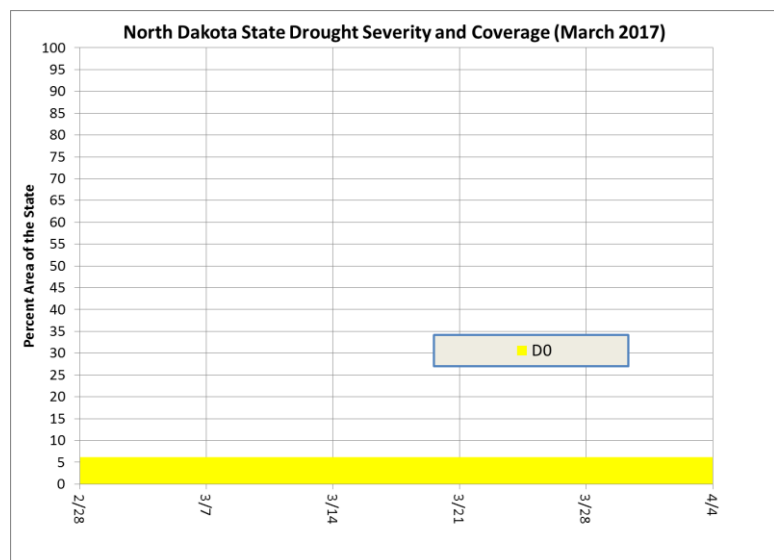
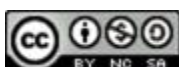


Figure 6. North Dakota State Drought Severity and Coverage Graph for March 2017.

Storm Reports: NDAWN’s highest peak gust in March was 64 mph recorded at the Linton weather station on March 7, 2017. Crary, Robinson, McHenry, and Turtle Lake locations also had wind speeds in excess of 60 mph on the same day. Winter storms on March 6 and 7 caused high wind and heavy snow in the northern and northwestern parts of the state. A series of blizzard conditions on March 3, 6, and 8 impacted most northern North Dakota.



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Daily Record Event in March: Across the observation network of weather stations with at least 30 years of history, a total of 14 daily high-temperature related and 12 daily low-temperature related records were set or tied. A total of 24 highest daily precipitation related records (including snowfall) were set or tied. Details of the records are in Table 1 below.

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

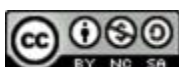
Category	Number of Records
Highest Daily Max Temp.	0
Highest Daily Min Temp.	14
Lowest Daily Max Temp.	9
Lowest Daily Min Temp.	3
Highest Daily Precipitation	10
Highest Daily Snowfall	14
Total	50

Highlight of the Month

A daily lowest minimum temperature record of -26°F set in Medora on March 21, breaking the previous record by 10° that was broken in 1965 (Years on record: 68).

Agricultural Impact: USDA's National Agricultural Statistics Service (NASS) reported 95 % of winter wheat conditions are fair or better in the state. Based on the NASS report published on March 27, cattle and calf conditions were rated 98% fair or better. Based on the National Weather Service Advanced Hydrologic Prediction Center, Pembina River at Neche, Devils Lake at Creel Bay and Stump Lake, and Souris River at Westhope reached their major flood levels. In addition, the Red River at Pembina is at its moderate flood level. However, based on the current conditions and the 7-day forecast, the river at this location is not expected to rise to its major flood stages. Flooded fields along these rivers will have a late start. The Climate Prediction Center is forecasting a wetter than normal April for the remainder of the month. The latest statewide North Dakota Agricultural Weather Network soil temperature readings at 4" under bare are reading above the 50°F threshold in most locations, with a few exceptions in the northern-tier counties.

Acknowledgment: Many thanks to Loretta Herbel (NDAES) for her diligent editorial corrections.



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