



# North Dakota Monthly Climate Summary

June 2018

Volume: 12, No: 6

## 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 June precipitation was 4 inches, which was 2.17 inches more than last month, 1.8 inches more than in June 2017 and also 0.66 inch more than the 1981-2010 average, making it the 34th wettest June in the 124-year period of record. It was the wettest June since 2014 (Table 1). Above-average precipitation was observed commonly in all parts of the state except for a small area in east-central North Dakota, where below-average conditions were observed (Figure 1). The greatest monthly precipitation accumulation was 9.43 inches, recorded in Rolette, Rolette County. The greatest 24-hour precipitation was 2.81 inches, recorded in McLeod, Richland County, on June 25. Based on historical records, statewide June precipitation showed a negative long-term trend of 0.18 inch per century since 1895. The highest and lowest June precipitation for the state ranged from 7.01 inches in 2005 to 1.11 inches in 1974 (Figure 2).

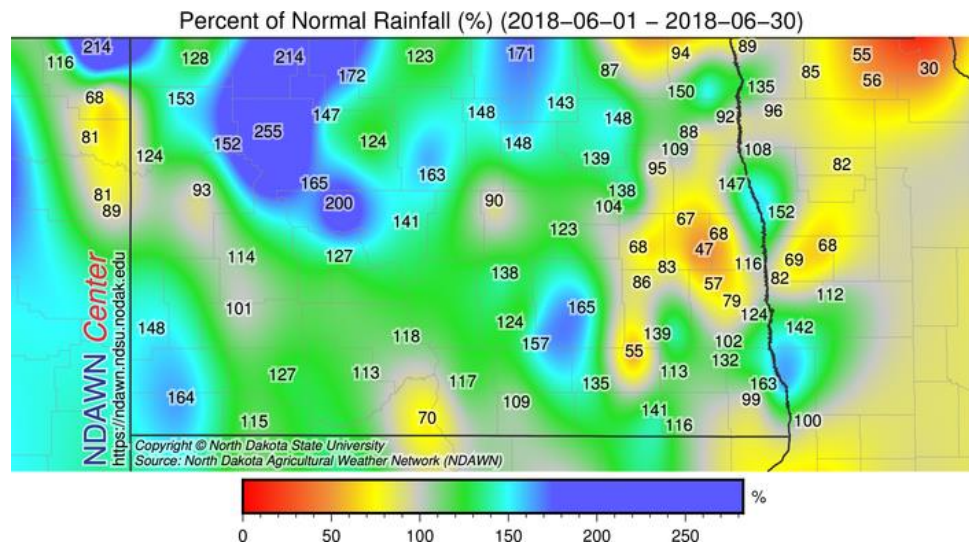


Figure 1. June 2018 precipitation percent of normal for North Dakota. (NDAWN Center, NDSU)



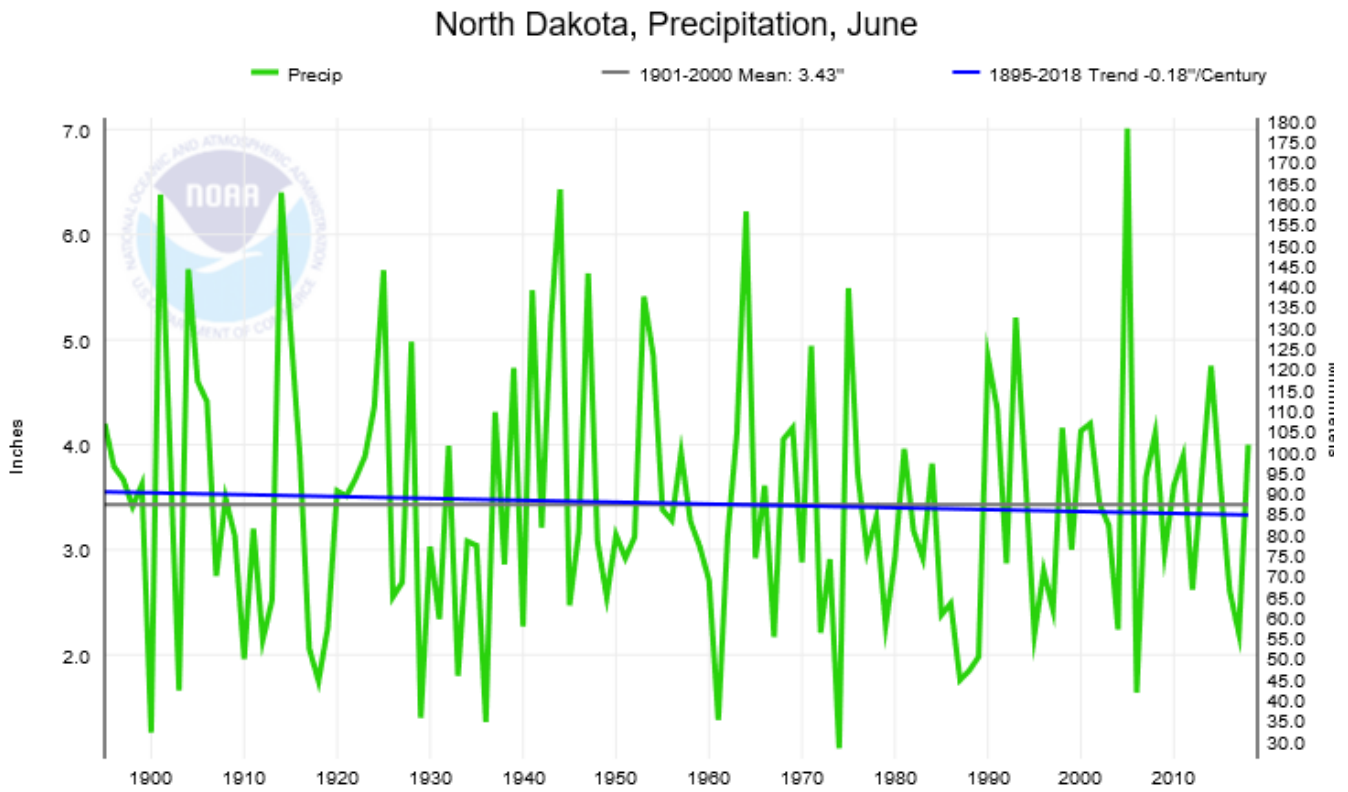
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### June Precipitation Statistics

Record high value: 7.01 inches in 2005  
 Record low value: 1.11 inches in 1974  
 Trend: minus 0.18 inch per century

June 2018 value: 4 inches  
 1981-2010 average: 3.34 inches  
 Monthly ranking: 34th wettest  
 Record length: 124 years

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

Table 1. North Dakota June Precipitation Ranking Table.

Period	Value	Normal	Anomaly	Rank	Wettest/Driest Since
June 2018	4"	3.34	+0.66	91st driest 34th wettest	Driest since 2017 Wettest since 2014



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## Temperature

Departure from Normal Average Air Temperature (°F) (2018-06-01 – 2018-06-30)

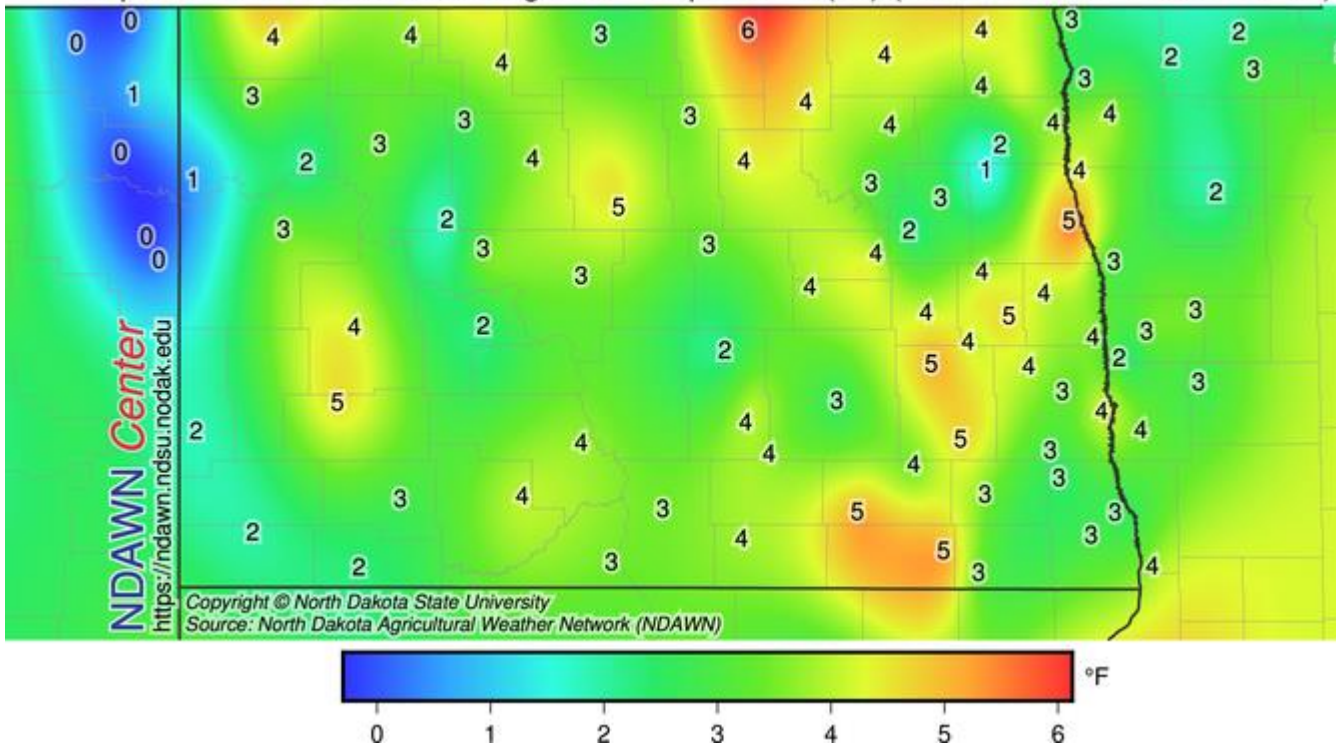


Figure 3. June 2018 temperature departure from normal for North Dakota. (NDAWN)

The official state average June temperature was 67.4 F, 7.5 F warmer than last month, 2.6 F warmer than in June 2017 and also 4.1 F warmer than the 1981-2010 average, making it the eight warmest June in the 124-year period of record. It was the warmest June since 1988 (Table 2). Above-average temperatures were observed commonly in the state, with the highest departure from the average near Rolette, Towner, Dickey and LaMoure counties (Figure 3). The state's highest and lowest daily temperatures ranged from 98 F on June 6 in Oakes, Dickey County, to 34 F on June 24 in Hettinger, Adams County. Based on the historical records, the state average June temperature showed a positive long-term trend of 0.14 F per decade since 1895. The highest and the lowest monthly state June average temperatures ranged from 74.1 F in 1988 to 56.8 F in 1915 (Figure 4).



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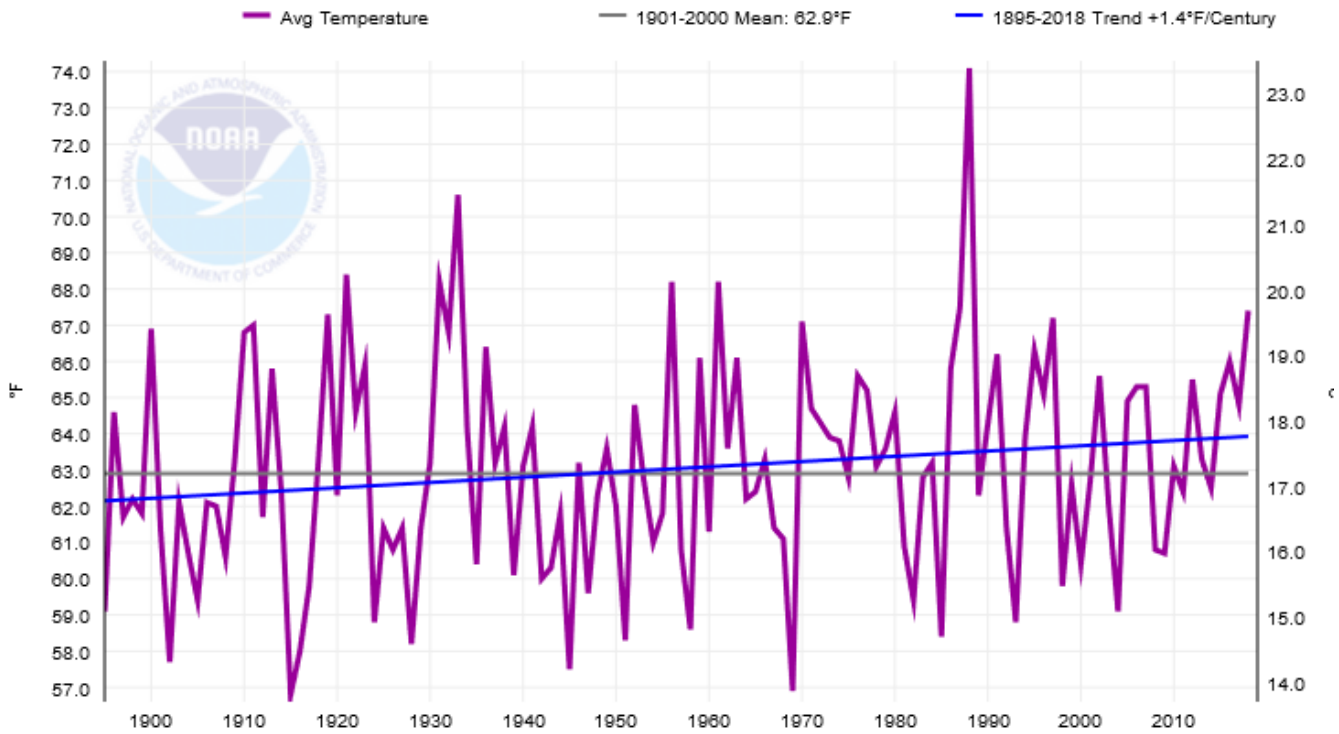


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North Dakota, Average Temperature, June



### June Temperature Statistics

Record high value: 74.1 F in 1988  
 Record low value: 56.8 F in 1915  
 Trend: 0.14 F per decade

June 2018 value: 67.4 F  
 1981-2010 average: 63.3 F  
 Monthly ranking: 8th warmest  
 Record length: 124 years

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

Table 2. North Dakota June Temperature Ranking Table

Period	Value	Normal	Anomaly	Rank	Warmest/Coolest Since
June 2018	67.4	63.3	4.1	8th warmest 117th coolest	Warmest since 1988 Coolest since 2017



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## Notable Impacts

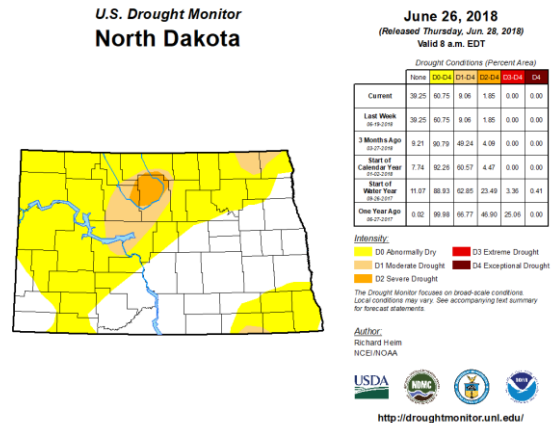
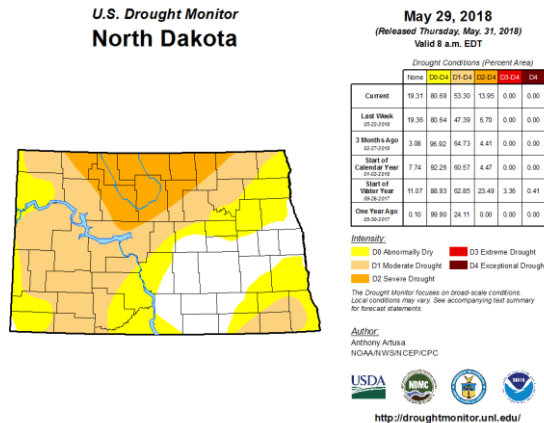


Figure 5. Drought Monitor map comparison for North Dakota in the beginning (on the left) and at the end (on the right) of June 2018.

**Drought Monitor (DM):** In general, overall drought conditions improved throughout the month. By the end of June, severe drought conditions in the north-central part of the state shrunk by 12 percent in comparison with the beginning of the month. The June 26 map in Figure 5 shows less than 10 percent of the state experiencing drought (decreasing in coverage by 44 percent, compared with the previous month), less than 2 percent of which was in the severe category. Figure 5 shows a comparison of the drought conditions across the state from the beginning to the end of the month.

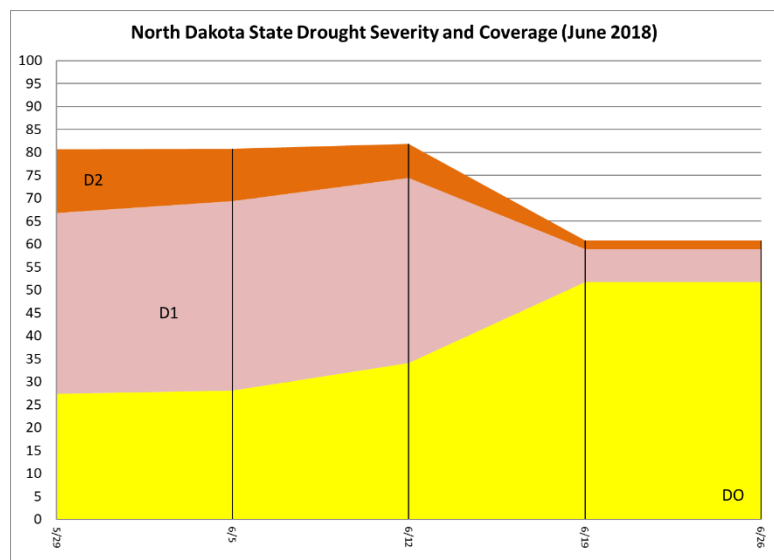
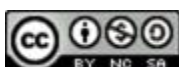


Figure 6. North Dakota drought severity and coverage for June 2018.

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.



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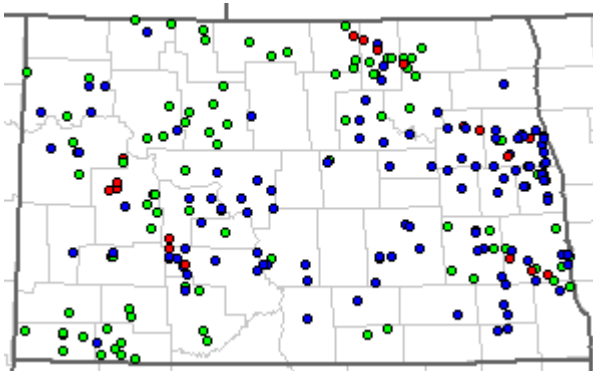
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**Storm Reports:** NDAWN's highest peak gust in June was 71 mph, recorded at the Linton weather station in Emmons County on June 14, 2018. The Harvey station also recorded a maximum wind speed in excess of 70 mph on June 29, 2018.

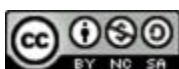
The NOAA Storm Report reported a total of 249 significant storm events in June. Table 3 summarises the number of tornado (21), hail (103) and damaging wind (125) reports in June, while Figure 7 geographically displays the locations of these storm reports.

*Table 3. Summary of June Severe Storm Reports in North Dakota (SPC, NOAA)*

Category	Number of Reports
Tornado reports	21
Hail reports	103
Wind reports	125
<b>Total</b>	<b>249</b>



**Figure 7. Map of June 2018 North Dakota storm events (red: tornado; blue: wind; green: hail).**



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**Daily Record Event in June:** Across the observation network of weather stations with at least 30 years of history, a total of 24 daily high and two daily low-temperature-related records were set or tied. A total of 19 highest daily precipitation-related records were set or tied. Details of the records are in Table 4 below.

*Table 4. Summary of daily records broken or set in North Dakota in June. (NCEI Daily Weather Records)*

<i>Category</i>	<i>Number of Records</i>
<i>Highest daily max. temp.</i>	6
<i>Highest daily min. temp.</i>	18
<i>Lowest daily max. temp.</i>	2
<i>Lowest daily min. temp.</i>	0
<i>Highest daily precipitation</i>	19
<i>Highest daily snowfall</i>	0
<b><i>Total</i></b>	<b>45</b>

## *Highlight of the Month\**

*A highest daily rainfall of 2.57 inches was set in **Dunn Center** on **June 29**, breaking the previous record for that date by 1.11 inches, which was set in 1993 (years on record: 100).*

*\*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.*



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