



North Dakota Monthly Climate Summary

June 2023

Volume 17, No. 6

North Dakota State Climate Office: Your Resource for Climate Information

North Dakota State University
School of Natural Resource Sciences

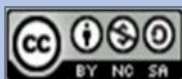
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Precipitation

Based on data from 134 stations* across the North Dakota Agricultural Weather Network (NDAWN) the statewide average precipitation in June 2023 was 2.87 inches. Average departure from normal was about 0.67 inches less than normal precipitation in June. The greatest precipitation was recorded at the Carson (9ENE) NDAWN station in Grant County with 8.5 inches, which is 3.52 inches more than normal. The least precipitation fell in Williams County, where the Epping (12SE) NDAWN station measured just 0.6 inches. (Figure 1)

Maximum June precipitation occurred in 2005 with 7.01 inches, and minimum precipitation in 1974 with 1.11 inches. Historical climate data indicates a 0.25 inch decrease over a century long trend (NCEI) for the month of June (Figure 2).

Average June precipitation was 0.16 inches greater than the previous month and ranks as the 50th wettest June over 129 years of precipitation data (NCEI).

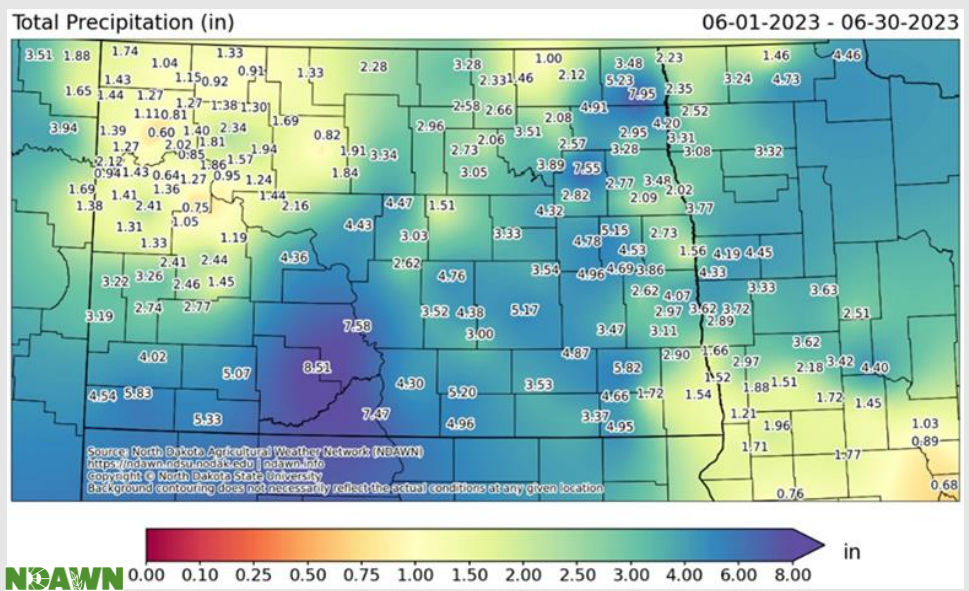


Figure 1: Total precipitation 6/1/2023 - 6/30/2023 at all NDAWN stations (NDAWN)

*Only North Dakota stations used for NDAWN data. All MN and MT stations omitted.

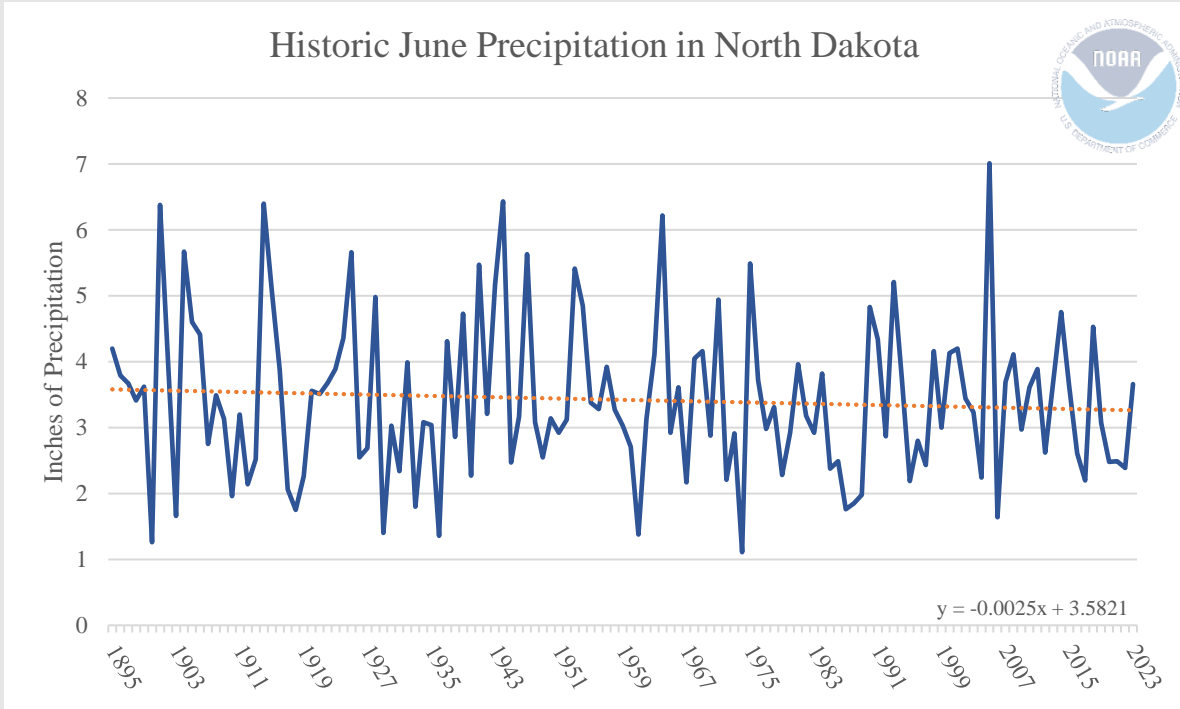


Figure 2: Historic average June precipitation 1895-2023 (NCEI, NOAA) with trendline representing average change per century.

North Dakota June Precipitation Summary

	Precipitation	Normal	Anomaly	Rank	Wettest/Driest Since	Record Year
June 2023	2.87"	3.54"	-0.67"	50 th Wettest	Wettest since 2018	2005
				80 th Driest	Driest since 2022	1974

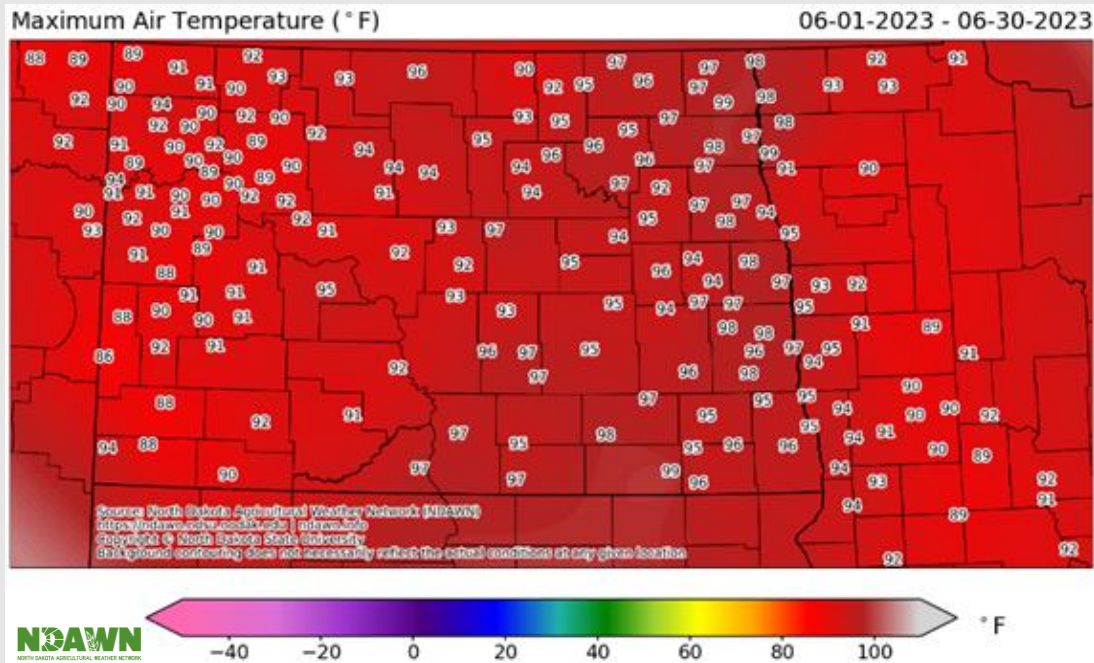
Table 1: Ranking from NCEI NOAA based on data from June 1885-2023. Precipitation amounts averaged from records at NDAWN stations in North Dakota.

*Only North Dakota stations used for NDAWN data. All MN and MT stations omitted.

Temperature

The North Dakota June 2023 average temperature was 68.9°F making it the 3rd warmest June within the period of record (129 years) (NCEI). Normal June temperatures average 63.7°F; making June 2023 a +5.2°F departure from normal (NDAWN, Figure 5). The maximum temperature recorded by NDAWN was 99°F at the Oakes (4S) station in Dickey County. The minimum temperature recorded in North Dakota in June was 37°F at the Poker Jim NDAWN station in McKenzie County (Figure 3). All but 11 stations recorded temperatures above 90°F, the 11 that did not were all in Western North Dakota, and recorded maximum temperatures between 85°-89°F

Statewide Maximum and Minimum Air Temperature



*Only North Dakota stations used for NDAWN data. All MN and MT stations omitted.

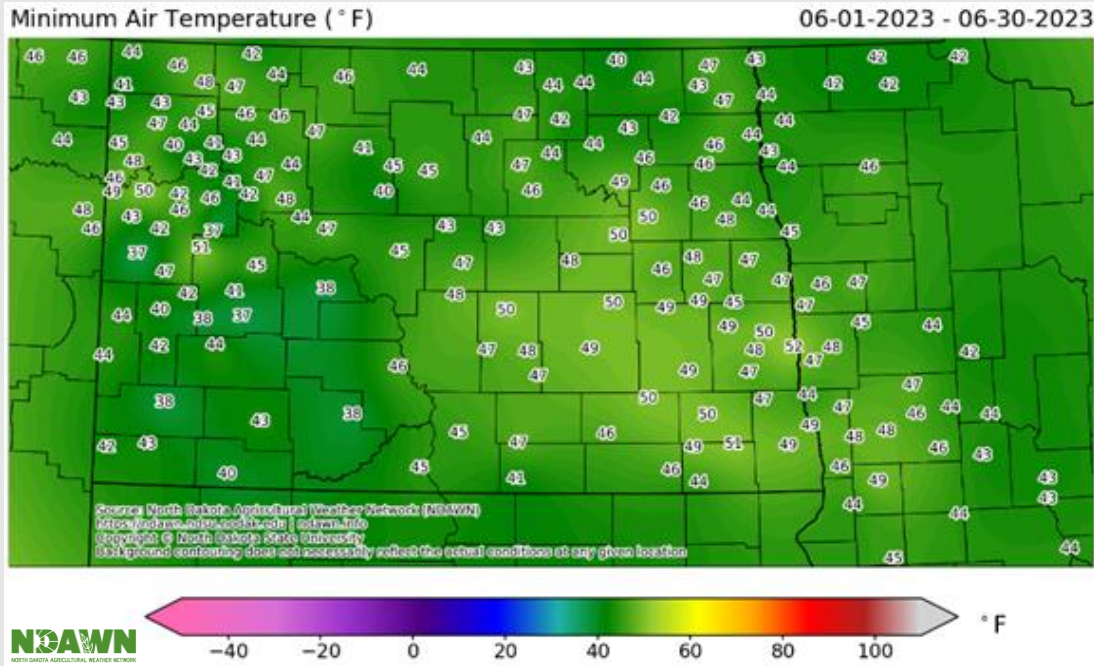


Figure 3: Maximum (Top) and Minimum (Bottom) air temperatures (°F) for June 2023 at all NDAWN Stations

June 2023 temperatures signaled the transition into full summer. May 2023 had an average temperature of 60.1°F; an 8.8°F difference between the months. Maximum temperatures in June reached well into the 90s across the state, the average daily high temperature statewide was 80.7°F. This is an average of 5.3°F warmer than normal June temperatures. Daily minimum temperatures for June averaged 57°F; 5°F warmer than normal (NDAWN). NCEI historical temperature for June in North Dakota indicates an increase of 1.9°F per century (Figure 4, NCEI).

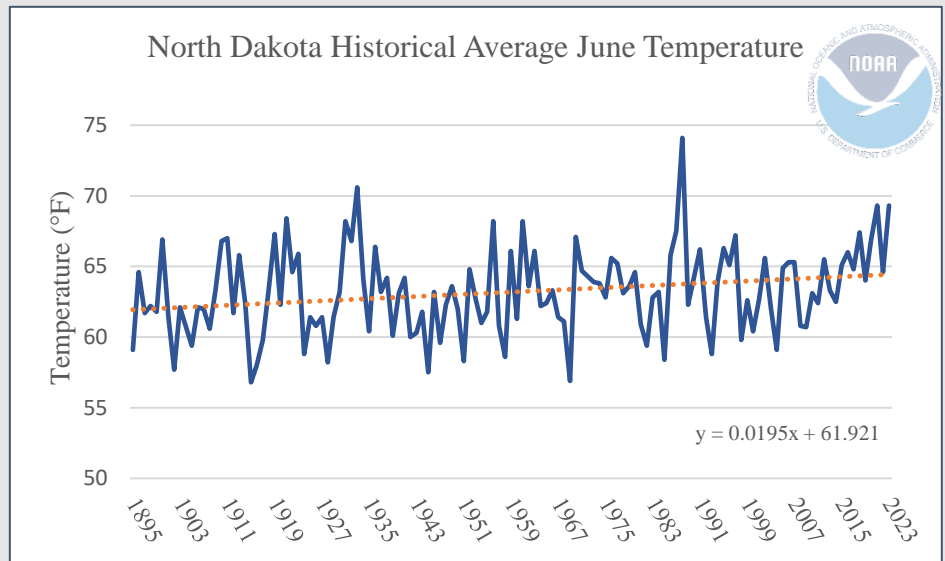


Figure 4: June historic average temperatures in North Dakota with trendline representing change per century. (NCEI)

*Only North Dakota stations used for NDAWN data. All MN and MT stations omitted.

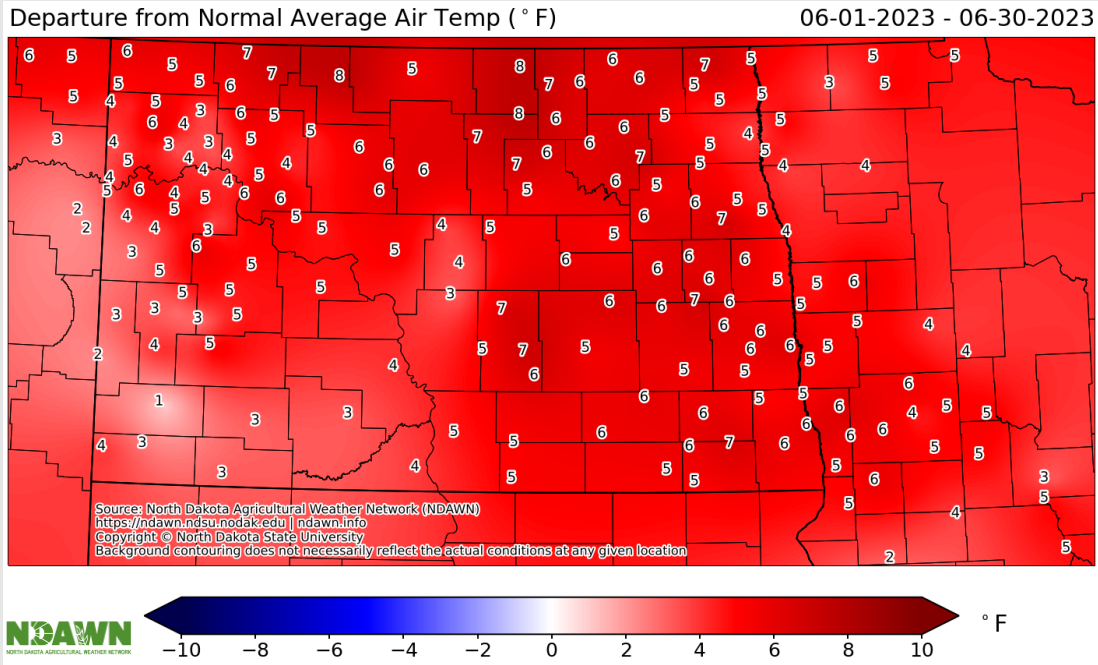


Figure 5: Departure from normal average air temperature for June 2023 at all NDAWN stations.

North Dakota June Temperature Summary

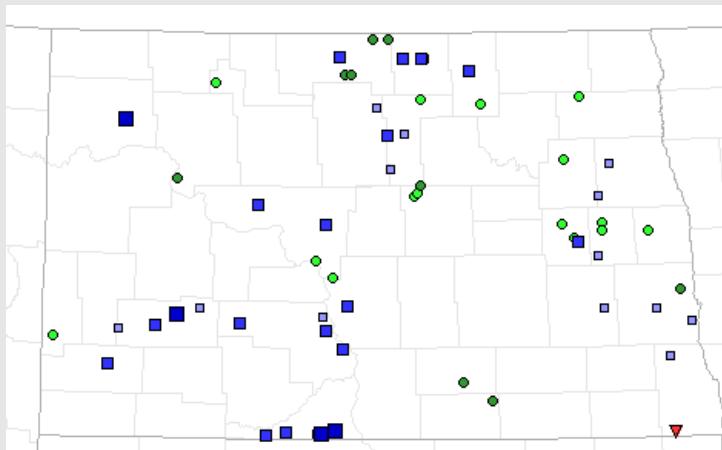
June 2023 Temperature Summary	Average T	Avg max T	Avg min T	Maximum	Minimum
	68.9°F	80.7°F	57.0°F	99°F	37°F
Anomaly	+5.2°F	+5.3°F	+5.0°F		
Rank					
Warmest	3 rd Warmest	7 th warmest	3 rd warmest		
Coolest	127 th Coolest	123 th coolest	127 th coolest		
Record					
Warmest	74.1°F (1988)	89.2°F (1988)	59.0°F (1988)	112°F (Flasher, 2002)	
Coolest	56.8°F (1915)	68.2°F (1915)	44.8°F (1969)		4.0°F (Hansboro, 2004)

Table 2: June temperature summary for North Dakota. 2023 statistics from NDAWN station data. Ranking and records based on NCEI climate data (1885-2023) (NOAA).

*Only North Dakota stations used for NDAWN data. All MN and MT stations omitted.

Storm Reports

June 2023 reported 17 days with severe weather reports, with a total of 64 storm reports. The National Weather Service (NWS) in total noted 39 severe wind, 24 severe hail, and 1 tornado report. The tornado report originated in Richland County near Stiles, but was rated an EFU (severity unknown) due to lack of damage evidence. Four of the 39 severe wind reports were confirmed gusts above 75 MPH. The strongest wind gust measured 125 mph in Sioux County on June 21st and was the cause of one injury. The wind gusts caused extensive property damage across the state, totaling \$1.5 million in damage (NWS NOAA).



Tornadoes	1
▽ All Reports.....	1
▽ Possible EF2+.....	0
Severe Wind	39
■ Wind Damage.....	19
■ Meas. Gusts.....	16
■ Meas. Gusts > 75 MPH.....	4
Severe Hail	24
● Hail 1.00-1.24 in.....	15
● Hail 1.25-1.99 in.....	9
● Hail 2.00+ in.....	0

Figure 6: NOAA Storm Prediction Center summary of storm reports that occurred in June 2023 (NOAA SPC)

Of the 24 severe hail reports, 15 were between 1"-1.24" and occurred over eight total days across North Dakota. There were nine reports of large hail between 1.25"-1.99", however hail was not a cause for property or crop damage during this month. The largest hail measured 1.75" and occurred in Cass County on June 6th. Bottineau County also reported 1.75" hail at Kramer and the Bottineau Airport on June 20th, which was a significant day for storms in north central North Dakota. (NWS NOAA)



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Image/Data Sources

Climate at a Glance | National Centers for Environmental Information (NCEI).

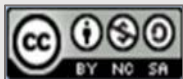
NDAWN current conditions

NDAWN Weather

NOAA SPC Storm Events Database

WESTAR (2023) Worst Air Quality Day in North Dakota's History

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