

National Weather Service Grand Forks



Weather & Climate Review

July-August 2020



July

	AveT	TDept	Pcpn	PDept	Snow
DVL	71.0	1.2	2.95	-0.60	0.0
NWS GF	73.3	3.5	5.21	2.04	0.0
GFK	72.7	4.1	6.70	3.55	0.0
RDR	71.8	3.2	4.39	1.24	0.0
FAR	73.3	2.3	5.50	2.71	0.0
BDE	69.2	2.8	3.33	-0.55	0.0
PKD	70.7	3.1	6.87	2.77	0.0
BJI	69.0	1.8	5.51	1.56	0.0
TVF	70.6	2.2	M	M	0.0
Y63	M	M	M	M	0.0

Table 1 July 2020 Temperature and Precipitation Statistics

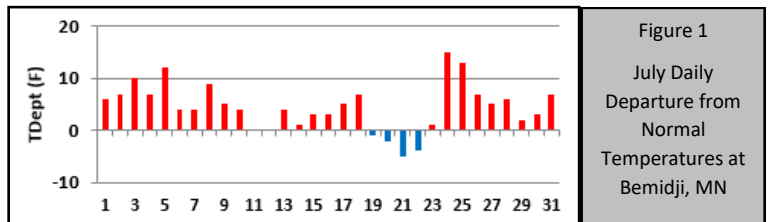


Figure 1
July Daily
Departure from
Normal
Temperatures at
Bemidji, MN

Blue Bars = Colder than Normal Days & Red Bars = Warmer than Normal Days

In Table 1, (ND) **DVL** = Devils Lake, **NWS GF** = NWS Grand Forks, **GFK** = GF Airport, **RDR** = GF Air Force Base, **FAR** = Fargo, (MN) **BDE** = Baudette, **PKD** = Park Rapids, **BJI** = Bemidji, **TVF** = Thief River Falls, **Y63** = Elbow Lake.

Table 1 shows the July average temperature (AveT), departure from normal temperature (TDept), precipitation (Pcpn), departure from normal precipitation (PDept), and snowfall (Snow) for 10 climate stations. The July average temperature was warmer than normal at all sites. Precipitation amounts were variable, generally between 3 and 7 inches. Figure 1 plots the daily departure from normal temperatures in July 2020 at Bemidji, MN. Other than four days (July 19-22), every day was equal to or above normal. July 24th had the greatest departure from normal, when Bemidji had a high of 93F and a low of 71F.

Records

At Fargo-Moorhead (our longest running climate site), a record high low was set on July 3rd (74 degrees). The 1.03 inches of rain that fell on July 25th also set a new record for that date.

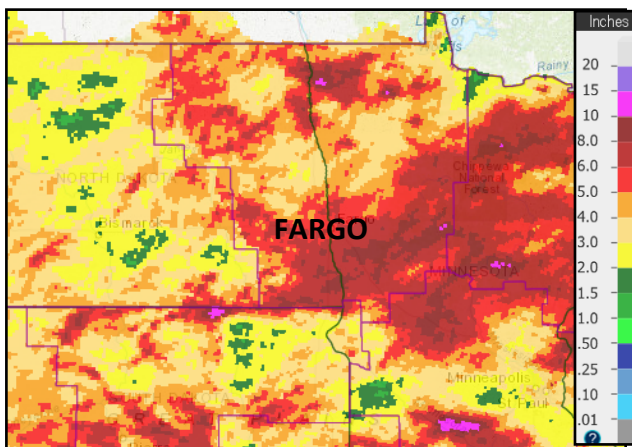


Figure 2 July Observed Precipitation

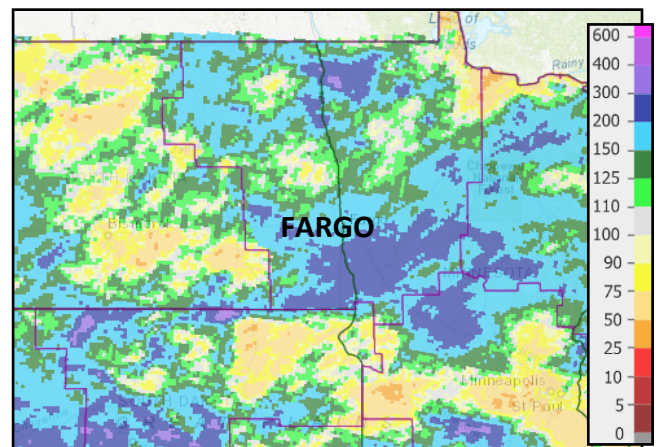
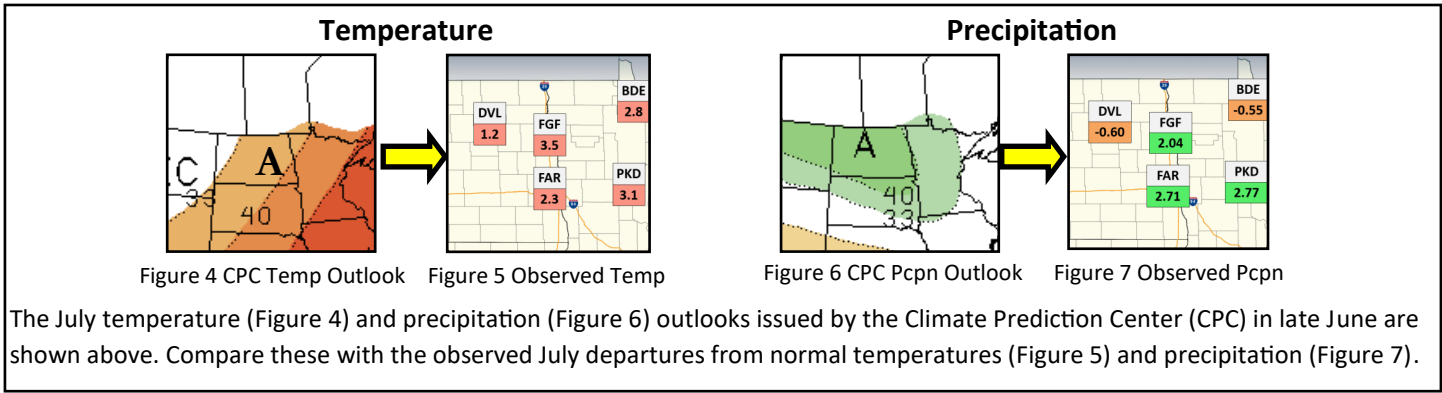


Figure 3 July Percent of Normal Precipitation

Table 1 only gives observed July precipitation for selected sites, which does not cover much of eastern North Dakota and the northwest quarter of Minnesota. Therefore Figure 2 is included, which gives a July estimate for the entire area. Quite a bit of eastern North Dakota into northern Minnesota is covered by shades of red, which represent 5 to 10 inches of precipitation. There are a few areas covered by shades of yellow and orange, which represent 2 to 5 inches of precipitation. Figure 3 shows the July precipitation as a percent of normal. The higher precipitation totals covered by shades of red on Figure 2 were generally 150 to 200 percent of normal (blue shades on Figure 3).



6 Month Trend

Looking at just the Fargo climate site (FAR), Figures 8 and 9 show how June 2020 fits into the previous 5 months. Figure 8 plots the monthly departures from normal temperatures at Fargo. The blue bars represent months that were colder than normal, while the red bars represent months that were warmer than normal. Figure 9 plots the monthly departures from normal precipitation at Fargo. The green bars represent months that were wetter than normal, while the brown bars represent months that were drier than normal.

Like June, Figure 8 shows that the monthly average July 2020 temperature was also above normal. July had above normal precipitation, breaking the drier than normal streak that occurred from May to June (Figure 9).

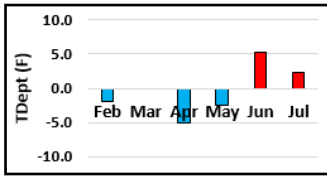


Figure 8 Monthly Departures from Normal Temps at Fargo, ND

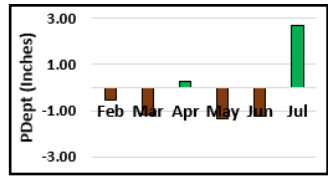


Figure 9 Monthly Departures from Normal Pcpn at Fargo, ND

Convective Warnings

In July, 98 Severe Thunderstorm, 8 Tornado, and 4 Flash Flood Warnings were issued by the NWS in Grand Forks (Figure 10). The most warnings were issued on July 17th, as several lines of thunderstorms tracked from northwest of Cando (ND) all the way down through west central Minnesota. These storms brought widespread rainfall to the area, with many areas picking up between 1 and 3 inches. However, July 8th brought an EF-4 tornado to the Dalton, MN, area, which unfortunately, resulted in several injuries and one death. Numerous storm chasers, spotters, and law enforcement officials watched this event unfold, which resulted in a large number of photographs of the tornado (see last page). The scour marks this tornado created along its track also showed up on LANDSAT imagery about a week later (shown by the yellow arrows in Figure 12). July 24th was a particularly hot and humid day, with temperatures in the upper 80s to mid 90s, and dew points in the mid 70s to lower 80s. An excessive heat warning was issued for portions of the area, for heat indices of 105 to 110 degrees (Figure 11).

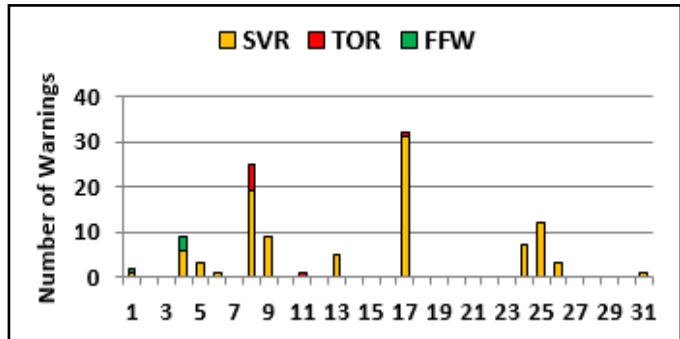


Figure 10 Number of July 2020 Convective Warnings

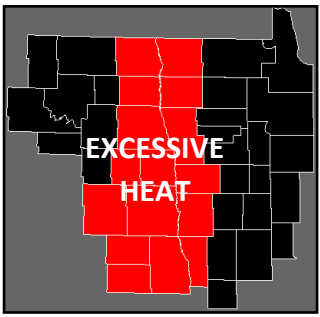


Figure 11 Excessive Heat Warning July 24th

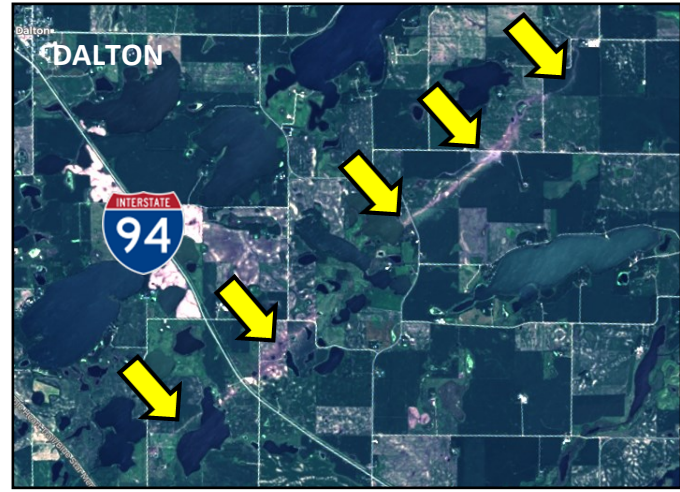


Figure 12 Landsat Satellite Image from July 15, 2020

August

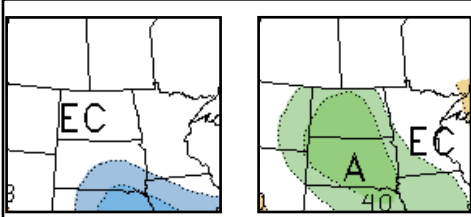


Figure 13 Temperature Figure 14 Precipitation

The latest Climate Prediction Center (CPC) temperature (Figure 13) and precipitation (Figure 14) outlooks for August 2020 are shown to the left. For eastern North Dakota and the northwest quarter of Minnesota, the CPC is forecasting equal chances for above, normal, or below normal temperatures. For precipitation, the CPC is forecasting higher probabilities for above normal precipitation over eastern North Dakota, and equal chances for above, normal, or below normal precipitation over the northwest quarter of Minnesota..

Last Year & Normals

Per Table 2, August 2019 average temperatures were below normal at all 5 climate sites. However, monthly precipitation amounts were above normal at every site except Baudette. August 2019 was a fairly quiet month for convective warnings (Figure 15), with a total of only 22 Severe Thunderstorm Warnings issued. The busiest day was August 20th, when a total of 9 Severe Thunderstorm Warnings were issued, as a bowing storm tracked from south of Mahanomen toward Park Rapids, Minnesota.

	AveT	TDept	Pcpn	PDept	Snow
DVL	65.1	-3.5	2.79	0.32	M
NWS GF	66.9	-1.4	3.93	0.79	0.0
FAR	66.5	-2.8	3.89	1.33	0.0
BDE	63.8	-0.5	2.89	-0.31	M
PKD	64.5	-1.2	3.59	0.04	M

Table 2 August 2019 Temperature and Precipitation Statistics

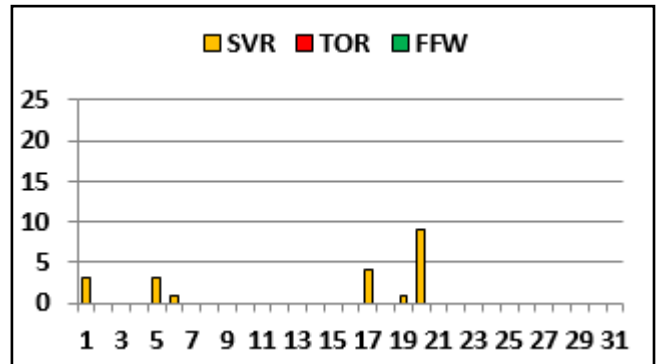


Figure 15 August 2019 Convective Warnings

So what are normal temperatures in August? Figure 16 shows normal highs and lows on August 1st for selected cities across eastern North Dakota and northwest Minnesota. Figure 17 shows how normal highs and lows change by August 31st. As an example, at NWS Grand Forks on August 1st, the normal high is 82 and the normal low is 58. By August 31st at NWS Grand Forks, the normal high falls to 77 and the normal low falls to 53. Figure 18 shows the normal precipitation amounts at the same sites as Figures 16 and 17. As an example, the normal precipitation at NWS Grand Forks in August is 3.14 inches.

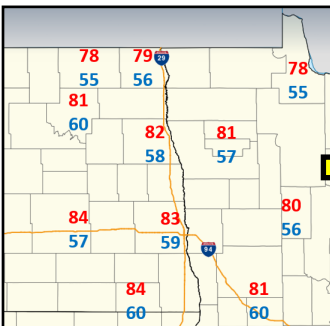


Figure 16 Normal Temps August 1

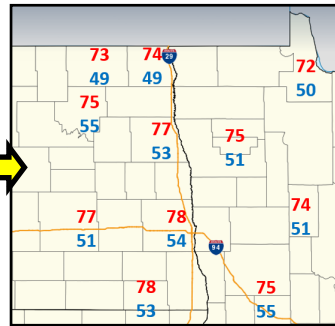


Figure 17 Normal Temps August 31

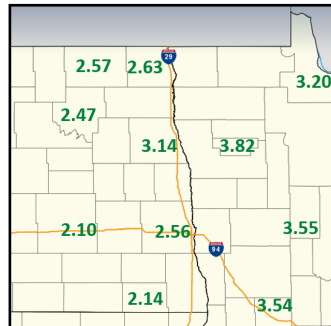


Figure 18 Normal August Pcpn

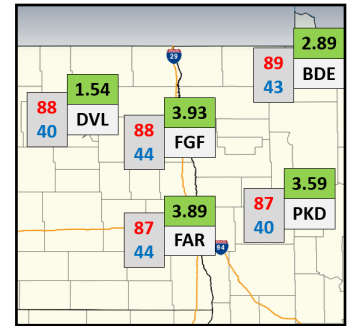


Figure 19 August 2019 Data

As a comparison to normal values, Figure 19 shows various observed data from last August (2019). As an example, in Fargo (FAR), 3.89 inches of precipitation (green box) fell. The highest temperature was 87 degrees (red number), while the lowest temperature was 44 degrees (blue number).

The winning picture in our July photo contest was taken by Hillary Kempenich (Page 1, top right). There were many dramatic photographs taken of the EF-4 tornado that tracked southeast of Dalton, MN, on July 8th (shown below, with permission).

