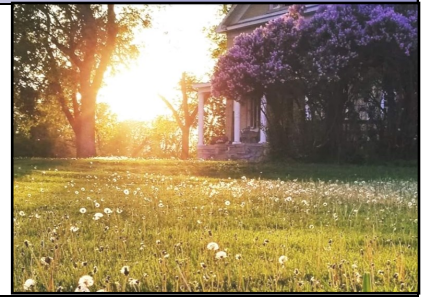


National Weather Service Grand Forks



Weather & Climate Review

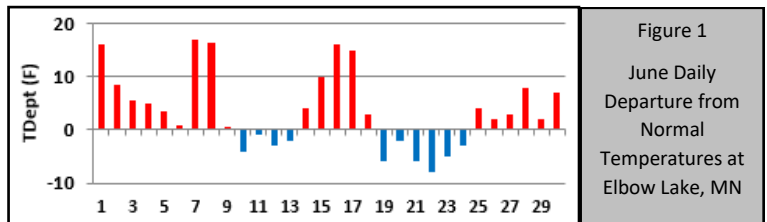
June-July 2020



June

	AveT	TDept	Pcpn	PDept	Snow
DVL	66.9	2.1	3.85	-0.16	0.0
NWS GF	69.7	4.4	4.56	0.82	0.0
GFK	68.5	4.5	5.90	2.42	0.0
RDR	68.1	4.1	7.54	4.06	0.0
FAR	71.5	5.3	2.65	-1.25	0.0
BDE	64.4	2.6	3.45	-0.61	0.0
PKD	66.9	4.3	4.04	-0.16	0.0
BJI	64.7	2.1	4.40	0.02	0.0
TVF	66.8	2.4	3.03	-1.45	0.0
Y63	70.2	3.6	M	M	0.0

Table 1 June 2020 Temperature and Precipitation Statistics



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 June average temperature (AveT), departure from normal temperature (TDept), precipitation (Pcpn), departure from normal precipitation (PDept), and snowfall (Snow) for 10 climate stations. The June average temperature was warmer than normal at all sites, but especially at Fargo (5.3 degrees). Precipitation amounts were highly variable, which is typical for convective rainfall. Figure 1 plots the daily departure from normal temperatures in June 2020 at Elbow Lake, MN. This graphic shows the typical temperature swings throughout the month. However, there were quite a few days 10 to 15 degrees above normal.

Records

At Fargo-Moorhead (our longest running climate site), record highs were set on June 1st (97 degrees) and June 7th (99 degrees). Record high lows of 72 degrees were set on June 15th (72 degrees) and June 17th (74 degrees). The Fargo average monthly temperature of 71.5 was the 3rd warmest on record (only June 1988 and June 1933 were warmer).

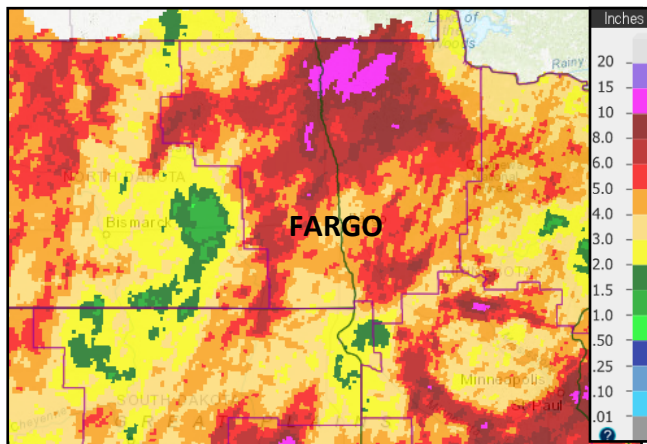


Figure 2 June Observed Precipitation

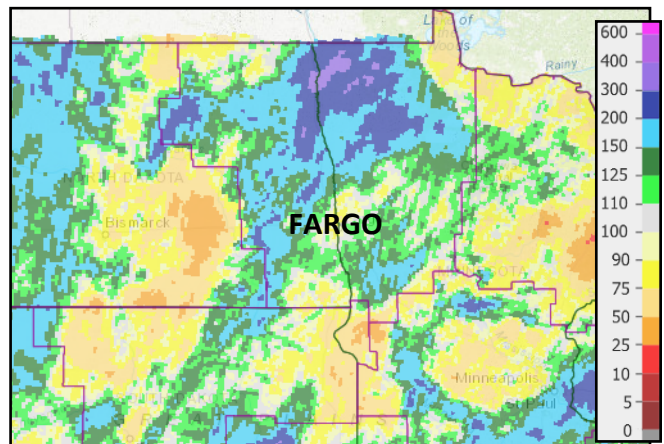
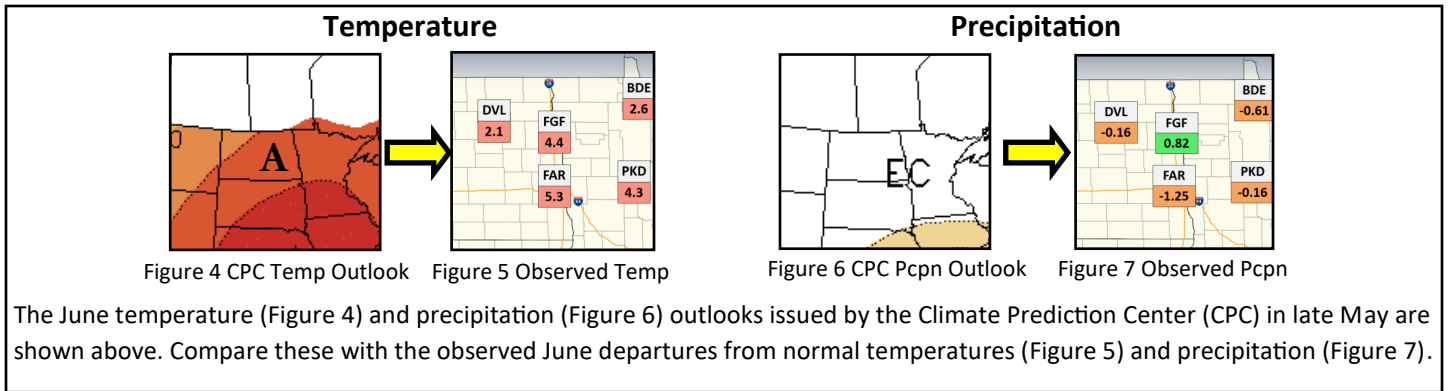


Figure 3 June Percent of Normal Precipitation

Table 1 only gives observed June 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 June estimate for the entire area. Several areas of magenta coloring stand out across northwest Minnesota and the central and northern Red River Valley, which represent 10 to 15 inches of precipitation. Figure 3 shows the June precipitation as a percent of normal. Other than the 300-400 percent of normal areas across portions of northwest Minnesota and the central and northern Red River Valley, there were portions of eastern North Dakota, west central Minnesota, and around the Lake of the Woods region that ended below normal (tan and yellow colors).



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.

Figure 8 shows that June is the first warmer than normal month since January. Five out of the past six months have had below normal precipitation amounts (Figure 9).

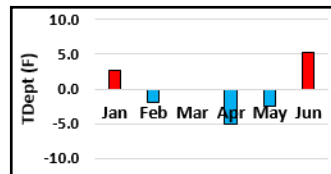


Figure 8 Monthly Departures from Normal Temps at Fargo, ND

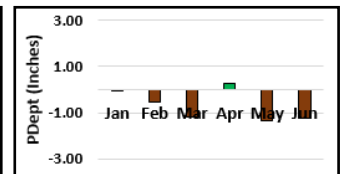


Figure 9 Monthly Departures from Normal Pcpn at Fargo, ND

Convective Warnings

In June, 113 Severe Thunderstorm, 16 Tornado, and 1 Flash Flood Warnings were issued by the NWS in Grand Forks. Most of these warnings were issued on June 7th and 8th (Figure 10). To get a feel for what the temperature, dew point, sustained wind, and wind gusts were like during that period (June 6th to 9th), Figure 11 breaks them down hour by hour at Fargo. Remember from Page 1, Fargo set a record high of 99 degrees on June 7th. Dew points during this time period climbed to near 70 degrees and wind speeds were very gusty. The highest hourly wind gust was 46 mph, on June 7th and 9th (the peak was 71 mph on June 7th). Finally, the heavy rainfall in June (Figures 2 and 3 on Page 1) resulted in one Areal Flood Warning for portions of Kittson County. The June river levels for the Two Rivers River at Hallock are shown in Figure 12.

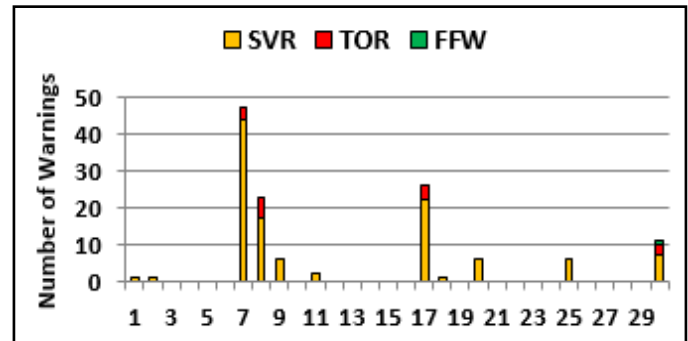


Figure 10 Number of June 2020 Convective Warnings

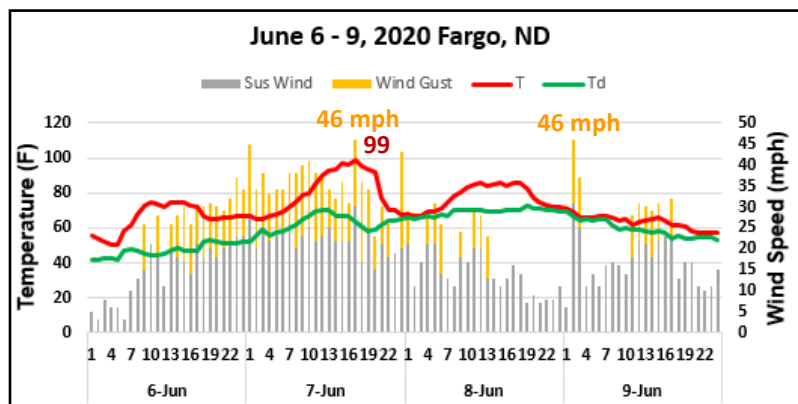


Figure 11 Hourly Observations at Fargo, June 6 to 9, 2020

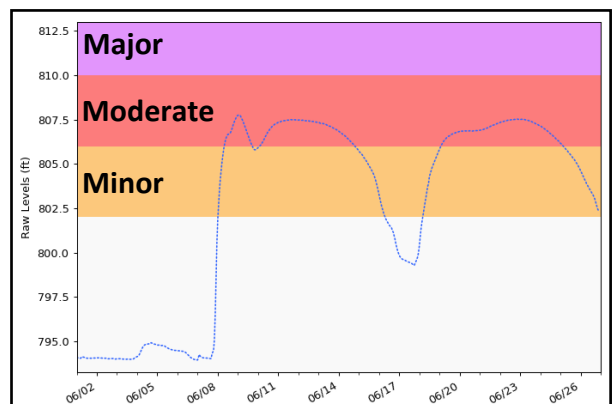


Figure 12 Two Rivers River at Hallock, MN (June 2020)

July

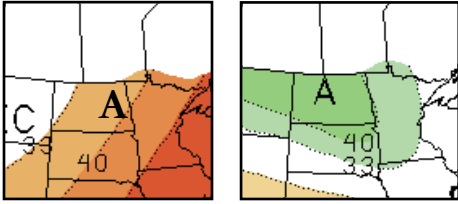


Figure 13 Temperature Figure 14 Precipitation

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

Last Year & Normals

Per Table 3, July 2019 average temperatures were normal or slightly warmer than normal at all 5 climate sites. Monthly precipitation amounts were over three inches at every site but Devils Lake, which ended up at 0.57 inches. July 8th was the most active day in July for the NWS Grand Forks in terms of severe warnings issued (Figure 15). In specific, 22 Severe Thunderstorm, 1 Tornado, and 1 Flash Flood warnings were issued.

	AveT	TDept	Pcpn	PDept	Snow
DVL	69.8	0.0	0.57	-2.98	M
NWS GF	71.5	1.7	3.98	0.81	0.0
FAR	72.3	1.3	4.70	1.91	0.0
BDE	67.7	1.3	3.08	-0.80	M
PKD	69.4	1.8	3.49	-0.61	M

Table 3 July 2019 Temperature and Precipitation Statistics

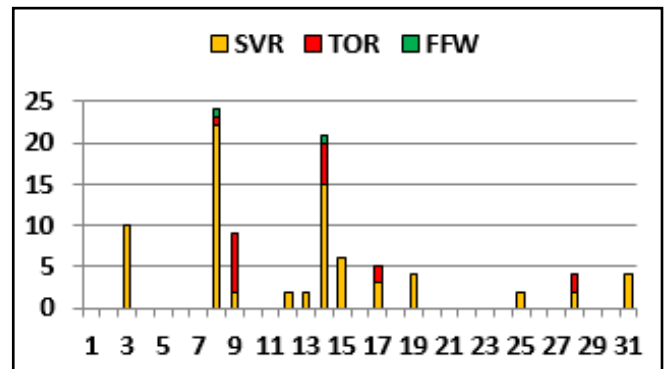


Figure 15 June 2019 Convective Warnings

So what are normal temperatures in July? Figure 16 shows normal highs and lows on July 1st for selected cities across eastern North Dakota and northwest Minnesota. Figure 17 shows how normal highs and lows change by July 31st. As an example, at NWS Grand Forks on July 1st, the normal high is 80 and the normal low is 58. By July 31st at NWS Grand Forks, the normal high rises to 82 and the normal low holds at 58. 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 July is 3.17 inches.

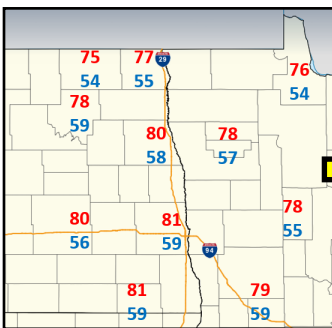


Figure 16 Normal Temps July 1

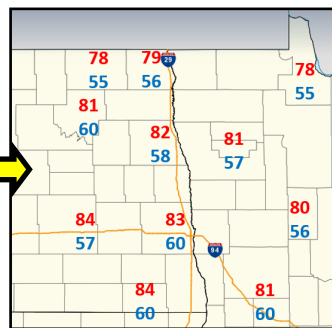


Figure 17 Normal Temps July 31

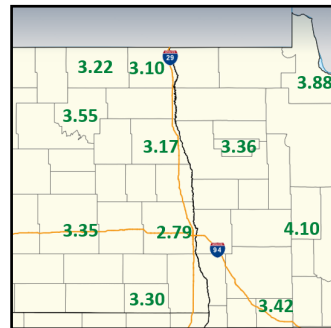


Figure 18 Normal July Pcpn

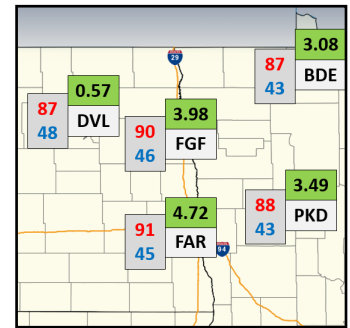


Figure 19 July 2019 Data

As a comparison to normal values, Figure 19 shows various observed data from last July (2019). As an example, in Fargo (FAR), 4.72 inches of precipitation (green box) fell. The highest temperature was 91 degrees (red number), while the lowest temperature was 45 degrees (blue number).

Miscellaneous

The winning picture in our June photo contest was a spring day, taken by Erin Hemmingsen (Page 1, top right). Eric Macho took several neat photographs after a hailstorm in Pembina County, ND, on June 11th (Figures 20 to 22).



Figure 20 After the June 11th hailstorm in Pembina County, ND



Figure 21 After the June 11th hailstorm in Pembina County, ND



Figure 22 After the June 11th hailstorm in Pembina County, ND