Normal high and low temperatures continue to rise in June (see Figure 1). By the end of June, the normal high temperature at Breckenridge rises above 80 degrees. The normal precipitation at Red Lake Falls in June is 4.48 inches.

June of last year (2018) was the busiest severe weather month of the summer. There were 72 Severe Thunderstorm Warnings, 16 Tornado Warnings, and 2 Flash Flood Warnings issued in June 2018.

The winner of our May “Photo of the Month” contest was Justin Michael, with a Minnesota farm scene (top right). Figure 2 is a photograph of a wet farm field near Thompson, ND. Figure 3 shows the May 24th tornado near Leal, ND, taken by NWS Grand Forks meteorologist Carl Jones.

June 22, 2019 is the 100th anniversary of the devastating F5 tornado that hit Fergus Falls, MN. The NWS in Grand Forks put together a historical review of the event, which is available at: https://www.weather.gov/fgf/1919_06_22_FergusFallsTornado

The latest Climate Prediction Center (CPC) temperature (Figure 4) and precipitation (Figure 5) outlooks for June 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. As for precipitation, half of the area shows equal chances for above, normal, or below normal precipitation, and half the area shows higher probabilities for below normal precipitation.

<table>
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Table 1 May Temperature and Precipitation Statistics

Blue Bars = Colder than Normal Days & Red Bars = Warmer than Normal Days
Per Table 1, on the previous page, May 2019 average temperatures were slightly below normal at all five climate sites. Devils Lake was the coldest, at 6.1 degrees below normal. Monthly precipitation amounts were mainly below normal too, with the exception of Fargo, which was 0.09 inches above normal. Figure 6 plots the May 2019 daily departure from normal temperatures at Baudette, MN. This graphic shows that most of the daily average temperatures in May were below normal (blue bars). Despite the generally colder than normal temperatures, on May 30th, Fargo hit 91 degrees and the NWS Grand Forks hit 93 degrees.

In prior issues of this newsletter, not much has been said about seasonal information. However, since many people think this has been a cold and wet spring, let’s look at how this spring season (2019) compares to the previous four springs (2015-2018). The spring season in meteorological terms covers the months of March, April, and May. The five graphics to the left (Figures 7 to 11) cover the past five springs at Fargo, ND. These graphics are done the same way as Figure 6, except Figure 6 shows only one month and is from Baudette, MN.

Each chart to the left is plotted identically. The daily departure from normal temperatures for March, April, and May are shown by the vertical red or blue bars. A red bar signifies a warmer than normal day, while a blue bar shows a colder than normal day. The scale on the left side of each graphic can help approximate the numerical values of each daily departure from normal temperature.

The normal temperatures used are the latest 30 year normals (1981-2010) for Fargo, published by the National Center for Environmental Information (NCEI). Color coding the graphics allows a person to quickly see stretches of warm (several red bars in sequence) and cold (several blue bars in sequence) weather. For example, Figure 7 has an arrow that points to a stretch of warmer than normal temperatures and Figure 10 has an arrow that points to a stretch of colder than normal temperatures. The scale can quickly show areas of very warm (+20 degrees) or very cold (-20 degrees) weather. Figure 11 has an arrow that points to several days with very cold temperatures in early March 2019.

Looking at this spring (Figure 11), notice how many of the daily departures from normal are blue (colder than normal). There were a couple short stretches of warm weather in April, but nothing significant. Looking at last year (Figure 10), there was a really cold stretch in early April, but there were also warm stretches.

In 2017 (Figure 9), there were wide swings in temperatures, some very warm and some very cold. In 2016 (Figure 8), March was very mild, but overall, the vertical bars were red (signifying warm weather) a majority of the time. Finally, in 2015 (Figure 7), March was also fairly mild. However, there were stretches of both warm and cold weather. These graphics show that spring can be quite variable, but the spring of 2019 was definitely on the colder side.
If you look through the individual months shown in Table 3, there was a lot of variation. March 2018 and 2019 were wetter than March 2015. May 2015 also stands out, with 7.85 inches of precipitation. Now look back at Table 2, which shows precipitation (Pcpn) and departure from normal precipitation (PDept) for March, April, and May. Other than the April outlook, which predicted above normal temperatures, the CPC outlooks were pretty good.

The March, April, and May temperature information is also combined into one seasonal (spring) temperature. Averaging the March-April-May data into one average spring temperature, 2019 was the coldest of the last five years, at 38.4 degrees (normal is 43.0 degrees). 2016 was the warmest of the last five years, at 47.6 degrees, which also happened to be the 5th warmest spring in Fargo. Now let’s take a look at precipitation data. Table 3 shows the individual March, April, and May precipitation totals at Fargo, ND, for the past five years, as well as their combined totals. Although snowfall information is also shown, it is just for the information.

If you look through the individual months shown in Table 3, there was a lot of variation. March 2018 and 2019 were wetter than March 2015-17. May 2015 also stands out, with 7.85 inches of precipitation. Now look back at Table 2, which shows precipitation (Pcpn) and departure from normal precipitation (PDept) for March, April, and May of 2019 at Fargo. Although there is some slight variation, the departures from normal precipitation are all within a half an inch of normal. Figures 15-17 show the CPC outlooks that were issued for March, April and May 2019. For the most part, these outlooks did not provide a good precipitation indicator, as Fargo usually was located in the white (EC) region of the maps. EC means equal chances for above, normal, or below normal precipitation.

The normal spring (March-April-May) precipitation for Fargo is 5.47 inches. The spring 2019 total of 5.75 inches (see Table 3) ended up being just a bit above normal. So it was wet, but not as wet as the spring of 2015, which ended up with 9.13 inches of precipitation (the 9th wettest spring). All this data confirms it has been a cold and slightly wet spring, which has made it tough for farmers to get their crops planted. Figure 2 on Page 1 shows a wet farm field near Thompson, ND. Despite the cold and wet spring, May did have two episodes of severe weather (Figure 18). Fifteen Severe Thunderstorm Warnings were issued by the NWS in Grand Forks on May 15th, with the corresponding wind (blue W’s) and hail (green H’s) reports shown in Figure 19. Seven Severe Thunderstorm and five Tornado warnings were issued on May 24th. Figure 20 shows the wind, hail, and tornado (red T’s) reports for May 24th.