May 2022 Central NC Climate Summary

By Phillip Badgett and James Danco

May turned out warm with variable rainfall.

May turned much wetter than April over central North Carolina. Widespread showers and thunderstorms were much more common with several cold frontal passages. A few of the larger rainfall episodes included: May 1, May 6-7, May 12-14, May 21-24, and May 26-28. Rainfall totals generally averaged above normal for most of the region, with an exception of drier than normal conditions across parts of the eastern Sandhills and Coastal Plain. Of the three climate reporting sites, Raleigh and Greensboro were both wetter than normal. However, Fayetteville only tallied 1.07 inches, which was 2.04 inches below normal. This made the 2022 meteorological spring (March through May) the 16th-driest on record at Fayetteville (with records going back to 1910), with just 7.59 inches total. According to NCEI, the preliminary statewide average precipitation in the month of May totaled 4.08 inches. This made it the 55th-wettest May since 1895. Other cooperative station reports from around central NC included: Wadesboro 4.29 inches, Lexington 6.07 inches, Pfafftown 7.85 inches, Winston-Salem 4.12 inches, Asheboro 3.04 inches, Albemarle 3.12 inches, Hamlet 6.21 inches, Roxboro 5.34 inches, Henderson 5.34 inches, Louisburg 4.31 inches, Falls Lake 5.22 inches, Raleigh NCSU 5.26 inches, Sanford 6.87 inches, Apex 6.19 inches, Carthage 6.30 inches, Jackson Springs 5.18 inches, Clayton 4.25 inches, Smithfield 4.04 inches, Rocky Mount 4.92 inches, Goldsboro 3.80 inches, Tarboro 2.98 inches, and Clinton 2.69 inches. The May 2022 monthly precipitation totals at the three climate sites are found in Table 1.

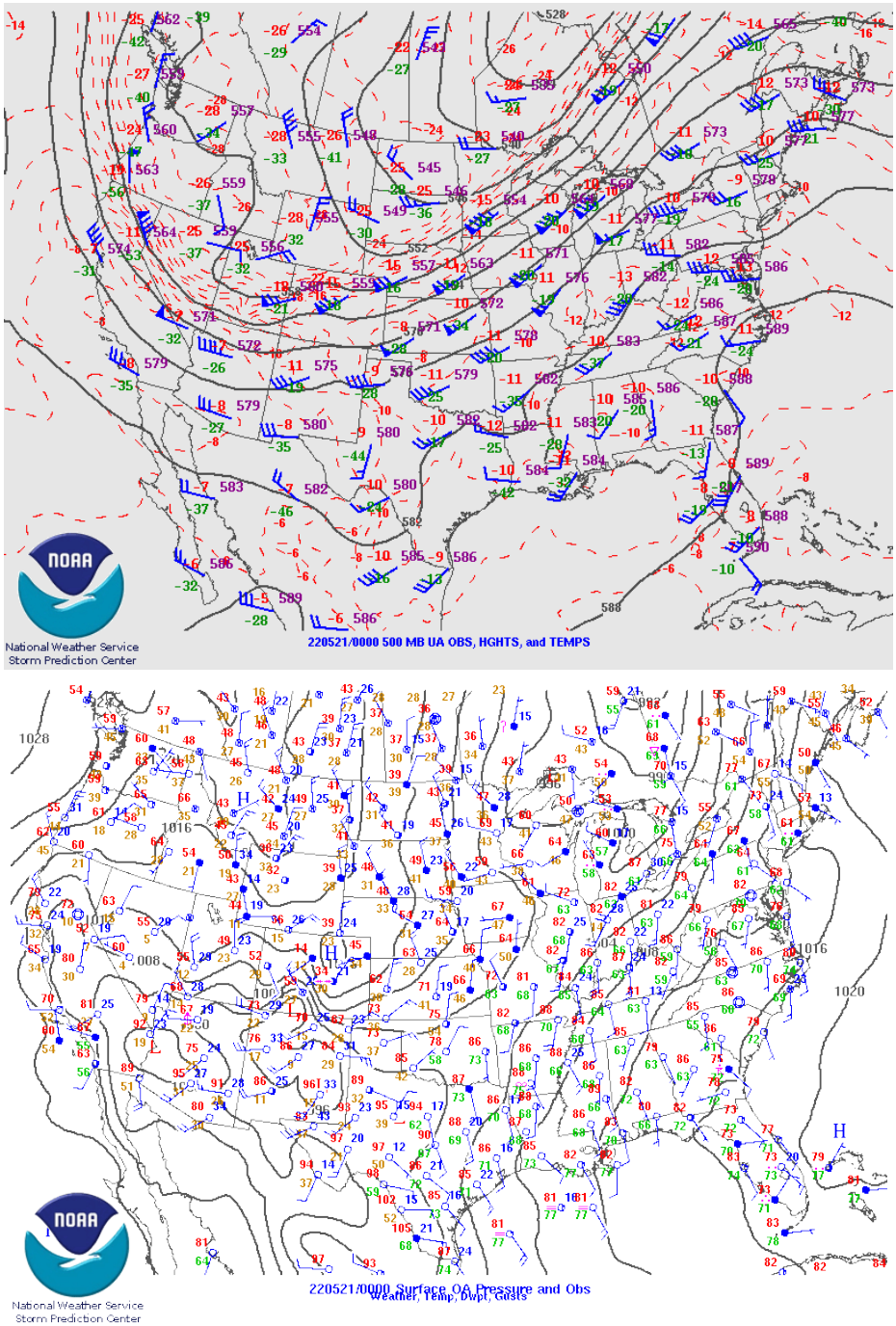
Table 1: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	**4.61**	**+1.12**	**1.57 on 5/23**
Raleigh-Durham (RDU)	**5.24**	**+1.86**	**1.29 on 5/23**
Fayetteville (FAY)	**1.07**	**-2.04**	**0.24 on 5/3**

The system of the month of May was the strong ridge of high pressure that developed over the southeastern United States, including over North Carolina, around mid-month. The ridge developed around May 15, peaked on May 19-20, then weakened somewhat before strengthening again by late month. Figure 1 shows the strong surface and upper level ridge located over the region on the evening of May 20, 2022. The strong ridge allowed for mostly hot and dry conditions

over our region from mid through late month. It also helped Fayetteville achieve its 7th-warmest May on record, while Raleigh had its 15th-warmest May on record (with records going back to 1887). In addition, May 2022 was the 9th-driest on record at Fayetteville. There were plenty of daily record high temperatures and high minimum temperatures tied and broken at our three climate sites. See the bottom of the summary for a complete list.

Fig. 1: 500 mb Observations, Heights, and Temperatures (top) and Surface Analysis (bottom) on 5/20



The May 2022 radar-estimated precipitation and the radar-estimated precipitation departure from normal across central NC are shown in Figures 2 and 3. Rainfall totals ranged from 3 to 6 inches (near normal to 3 inches above normal) for much of the area. However, there was a small pocket of 6-8 inch totals across southwestern Wake and eastern Chatham counties. Meanwhile much of the central and southern Coastal Plain and eastern Sandhills only received 1-3 inches.

Fig. 2: Radar-Estimated Monthly Precipitation

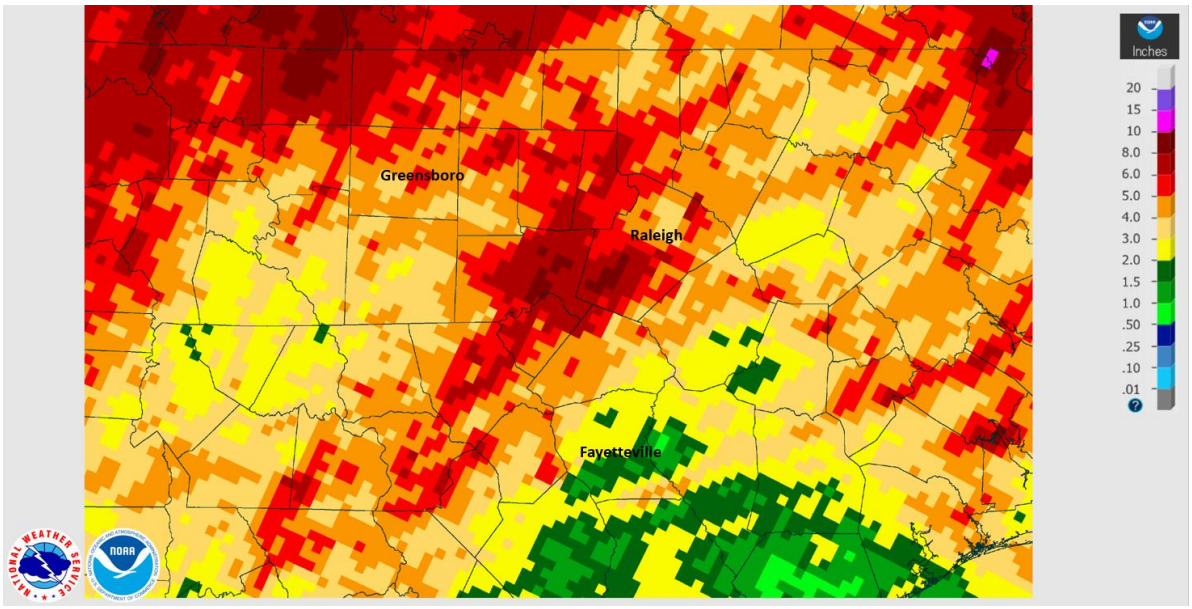
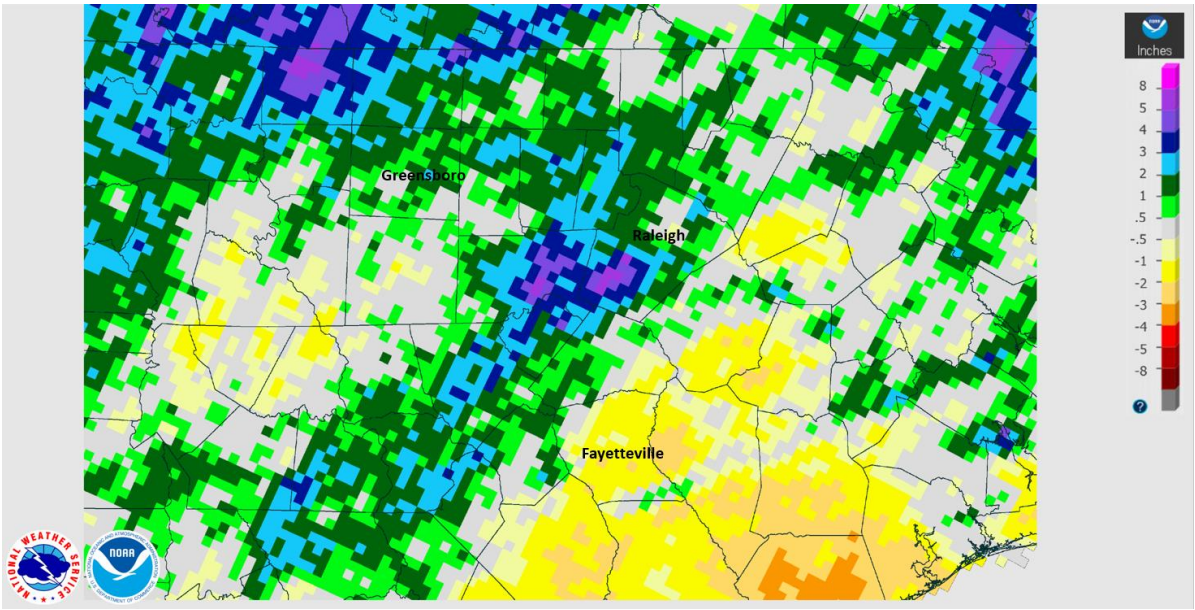
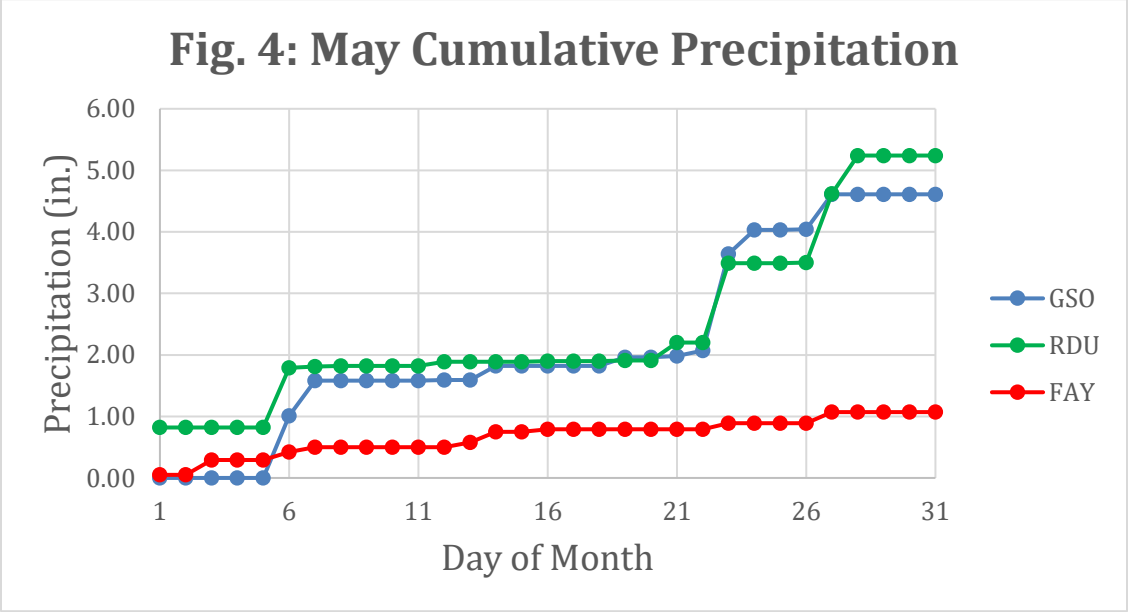


Fig. 3: Radar-Estimated Monthly Departure from Normal Precipitation

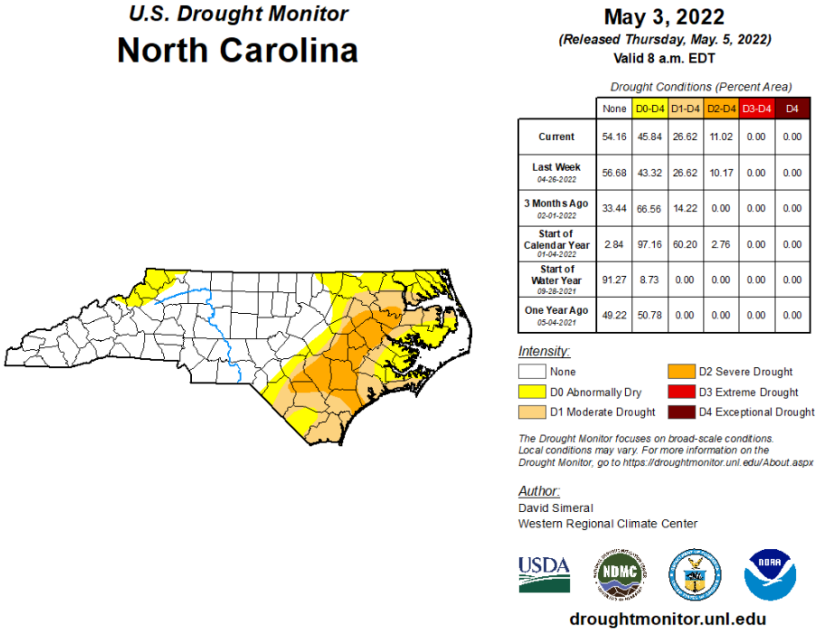


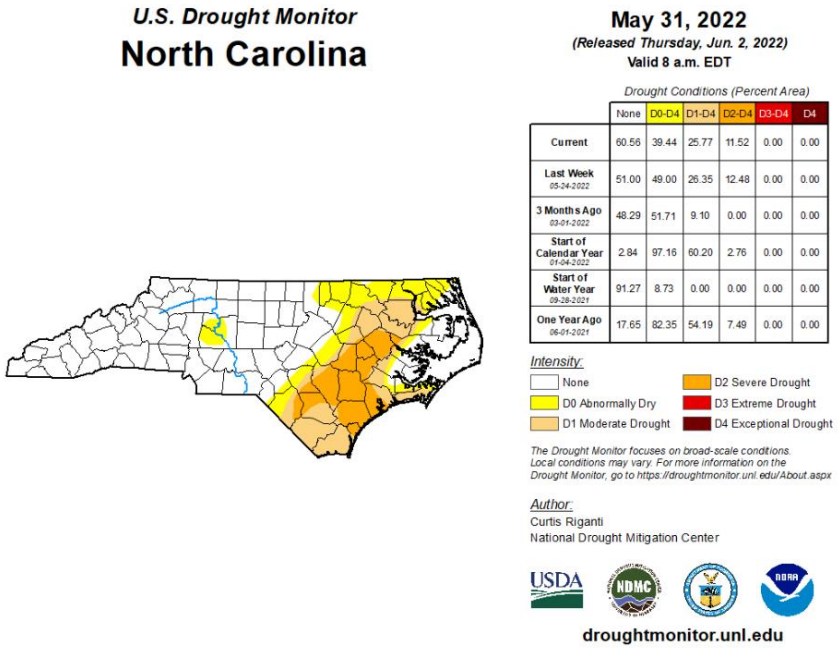
The cumulative precipitation at the three climate sites for the month of May is shown in Figure 4. The heaviest rainfall at Greensboro and Raleigh occurred on May 23 as a slow-moving low pressure system crossed the state.



The strong ridge prevented much-needed rainfall from reaching much of eastern North Carolina. The below-normal rainfall totals continued the D1 (Moderate Drought) and D2 (Severe Drought) conditions in the Coastal Plain region through the month, as seen in Figure 5.

Fig. 5: U.S. Drought Monitor for North Carolina on May 3 (top) and May 31 (bottom)



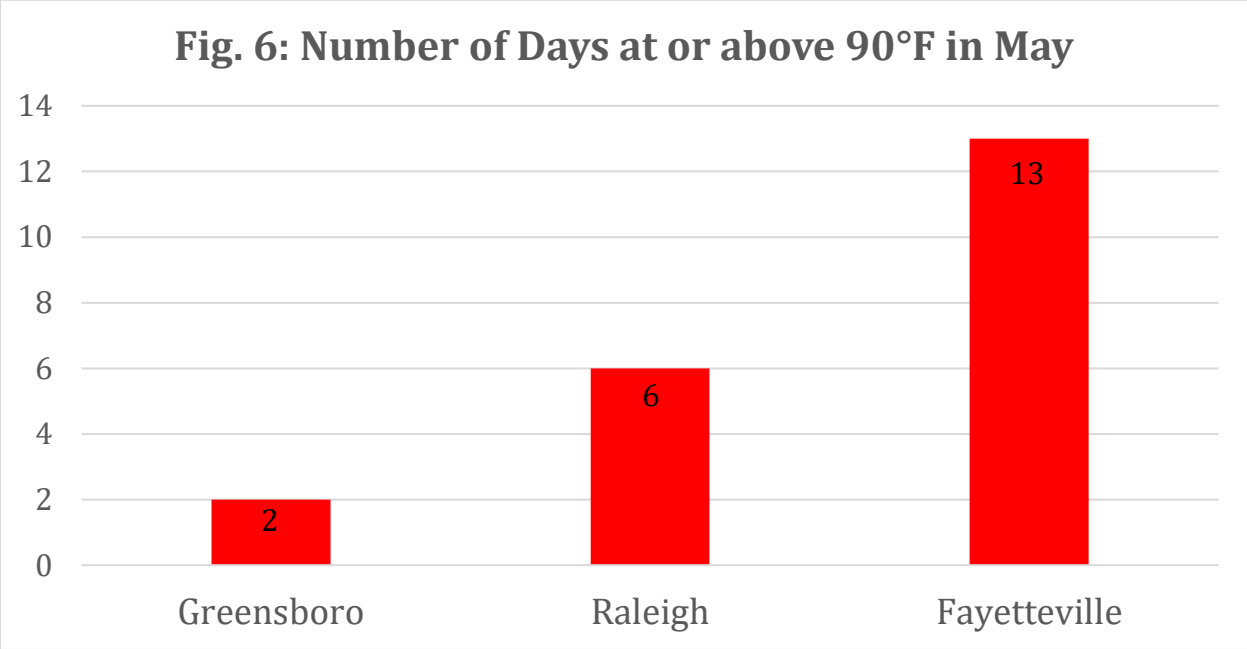


May continued the theme of the spring as far as temperatures, which were warmer than normal. And just as in April, the temperatures in May were quite variable. For instance, Raleigh hit a monthly high of 96°F on May 20. This followed up a cool spell during the period of May 7-12 when Raleigh dipped to a monthly low of 44°F on May 9. Greensboro also had similar temperatures, hitting a monthly high of 91°F on May 20 after falling to 44°F for a monthly low on May 9. Fayetteville topped out at 99°F on May 20 for a monthly high. This occurred after falling to 47°F on May 9. The preliminary monthly temperature across the state of NC averaged 68.5°F according to NCEI, which ranked May 2022 as the 26th-warmest May since 1895. The May monthly average temperatures and their departures from normal at the three climate sites are depicted in Table 2.

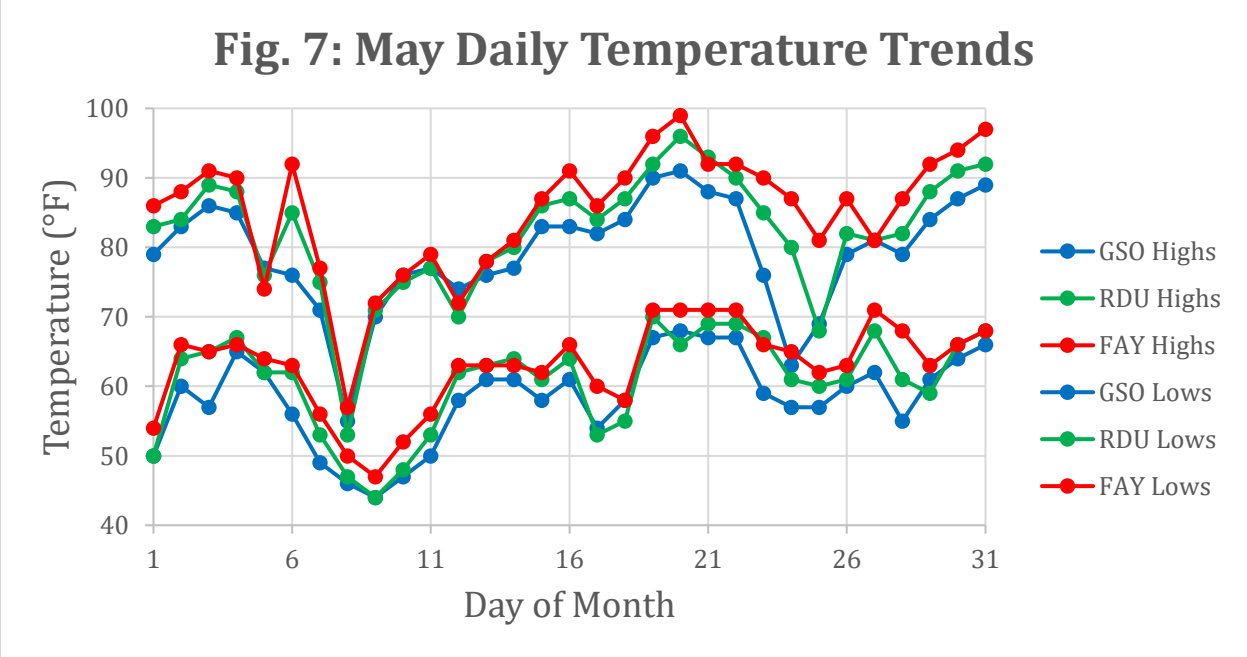
Table 2: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	79.3	58.3	68.8	+1.3	91 on 5/20	44 on 5/9
Raleigh-Durham (RDU)	82.2	60.7	71.5	+2.7	96 on 5/20	44 on 5/9
Fayetteville (FAY)	85.2	62.9	74.1	+3.2	99 on 5/20	47 on 5/9

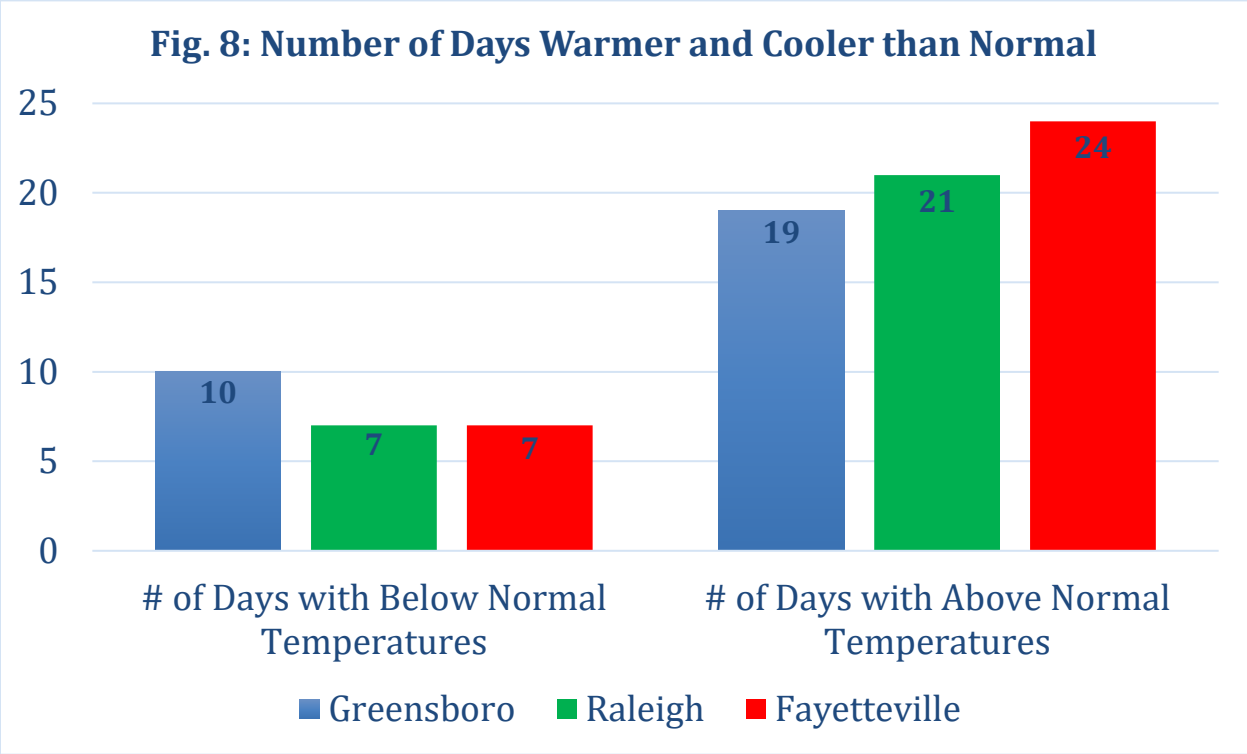
Days with high temperatures reaching or exceeding 90°F began in earnest in May. The number of such days in May at the three climate sites is shown in Figure 6. Nearly half of the days in the month at Fayetteville had highs of 90+°F! In addition, according to the NC Climate Office, the 36 days with high temperatures at or above 80°F in Raleigh this meteorological spring was tied for the 4th-most on record.



The time series of daily temperature for the month at Greensboro, Raleigh, and Fayetteville can be found in Figure 7. After the cool period from May 7-12, temperatures were generally on the rise other than a brief cooldown from May 23-25.



As shown in Figure 8, a majority of days in the month of May were warmer than normal at all three climate sites.



Other notes:

Days with thunderstorms this month:

Greensboro: 9
Raleigh: 11
Fayetteville: 7

Days with dense fog (visibility of ¼ mile or less):

Greensboro: 1
Raleigh: 1
Fayetteville: 1

Strongest wind gusts and direction:

Greensboro: SW (240 degrees) at 52 mph on May 6
Raleigh: SW (220 degrees) at 64 mph on May 6
Fayetteville: W (270 degrees) at 43 mph on May 3

Daily records:

Greensboro:

A record high minimum temperature of 65°F was tied on May 4. This record was previously set in 2019.

A record high minimum temperature of 68°F was tied on May 20. This record was previously set in 2019.

A record high minimum temperature of 67°F was tied on May 21. This record was previously set in 2013.

A record high minimum temperature of 67°F was tied on May 22. This record was previously set in 2018.

Raleigh:

A record high minimum temperature of 70°F was set on May 19. This broke the old record of 69°F set in 2019.

A record high temperature of 96°F was set on May 20. This broke the old record of 94°F set in 1938.

A record high minimum temperature of 69°F was tied on May 22. This record was previously set in 2013.

A daily record rainfall occurred on May 23 when 1.29 inches fell. This broke the old record of 1.27 inches set in 1974.

Fayetteville:

A record high temperature of 96°F was tied on May 19. This record was previously set in 1996.

A record high minimum temperature of 71°F was tied on May 20. This record was previously set in 1943.

A record high temperature of 99°F was tied on May 20. This record was previously set in 1938.

A record high minimum temperature of 71°F was tied on May 21. This record was previously set in 2018.

Monthly records:

Greensboro:

None.

Raleigh:

None.

Fayetteville

May 2022 was the 7th-warmest May on record with an average of 74.1°F.

May 2022 was the 9th-driest May on record with a monthly total of 1.07 inches.