

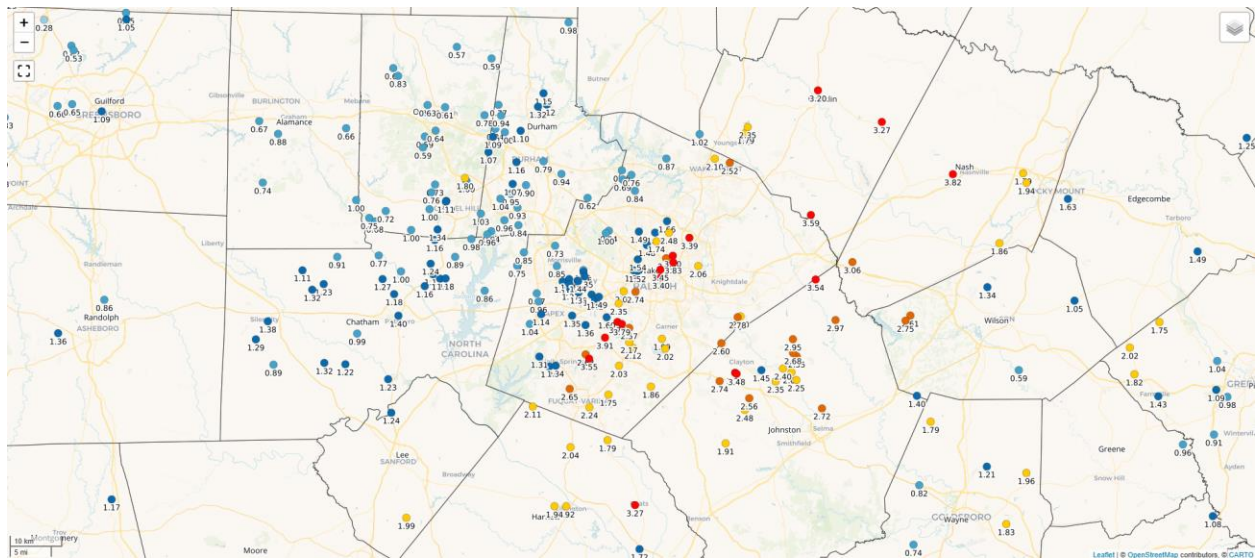
March 2025 Central NC Climate Summary

By Phillip Badgett and James Danco

Drought and warmth return in March.

Abnormally dry or even drought conditions continued over much of central NC during March, especially in the west. The month started out fairly active, as a cold front brought severe weather and as much as 1 to 3 inches of rain from around Fayetteville north and northeast to the Triangle region and northern Coastal Plain on March 5. A slow-moving cold front during the middle of the month also drenched a good portion of the central and eastern parts of the state, saving that region from the expanding dryness to the west. Several rounds of heavy showers and thunderstorms trained over some of the same regions on March 16. In addition to widespread strong winds and downed trees, portions of Wake, Harnett, Johnston, Franklin, Nash, Wilson, Warren, and Halifax Counties including Raleigh, Clayton, Smithfield, Louisburg, Nashville, and Roanoke Rapids totaled 2 to 4 inches of rain in a 24-hour period. This is shown below in Figure 1. According to the NC State Climate Office, Roanoke Rapids had a daily total of 4.70 inches, the wettest single day there since October 9, 2016, during Hurricane Matthew.

Fig. 1: CoCoRaHS Rainfall Totals from 8:00 AM on March 16 to 8:00 AM on March 17



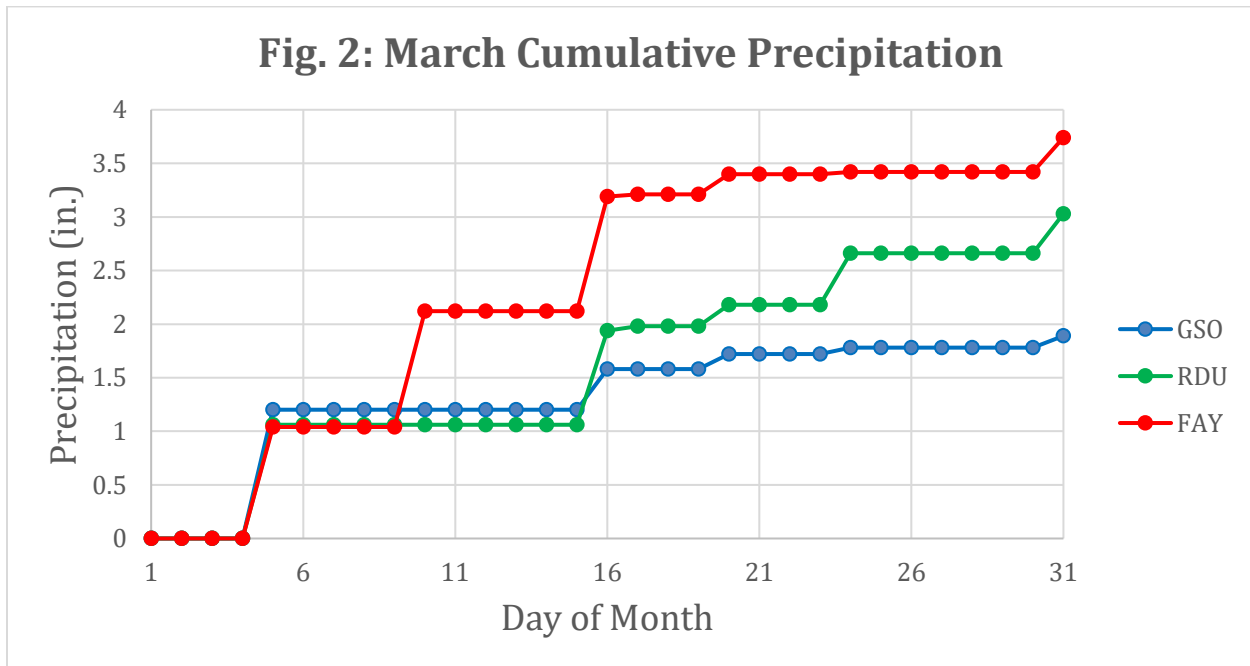
However, these were the only widespread significant rainfall events for the month and the second half only featured a few very minor events. By month's end, the statewide preliminary average rainfall was only 2.64 inches according to NCEI. This placed it as the 18th-driest March in the past 131 years of data. As shown in Table 1, Greensboro was nearly 2 inches drier than normal, Raleigh (RDU Airport) about an inch drier than normal, and Fayetteville 0.66 inches above normal. This was actually the 11th-driest March on record at Greensboro since records began in

1903. Just to our west over the foothills, Danbury had their driest March of all the 78 years of record-keeping there. Also in the northwest part of the state, North Wilkesboro had their 2nd-driest March in 102 years, and Lenoir their 2nd-driest March in 134 years of records.

Table 1: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	1.89	-1.83	1.20 on 3/5
Raleigh-Durham (RDU)	3.03	-1.07	1.06 on 3/5
Fayetteville (FAY)	3.74	+0.66	1.08 on 3/10

The cumulative precipitation at the three climate sites for the month of March is shown in Figure 2.

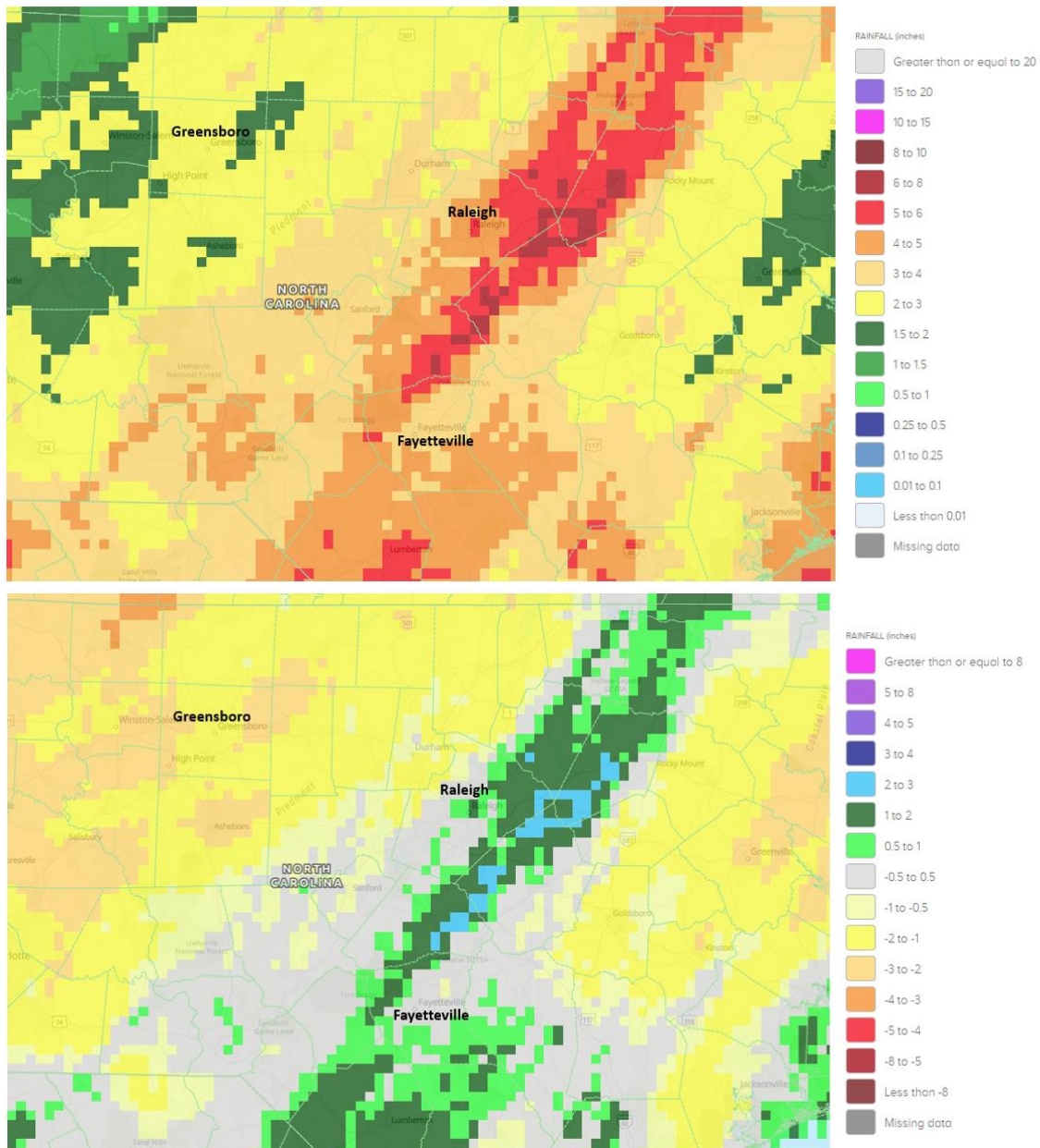


Some of the local cooperative station rainfall reports from around the region in March 2025 included: Sparta 2.79 inches (-2.12), North Wilkesboro 1.04 inches (-3.34), Albemarle 2.78 inches (-1.21), Burlington 2.39 inches (-1.49), Mount Airy 1.19 inches (-3.00), Danbury 0.67 inches (-3.42), Reidsville 2.34 inches (-1.96), Cary 2.54 inches (-1.50), Raleigh (NCSU) 3.02 inches (-1.15), Roxboro 2.08 inches (-2.21), Apex 3.43 inches (-0.55), Louisburg 3.70 inches (-0.36),

Laurinburg 3.37 inches (-0.05), Hamlet 3.65 inches (-0.07), Rocky Mount 3.34 inches (-0.63), and Clinton 3.57 inches (-0.11).

As displayed by the radar-estimated precipitation and the radar-estimated precipitation departure from normal in Figure 3, the final monthly totals were only above normal (4-8 inches) along a stripe from around Fayetteville northeast to parts of the far eastern Piedmont and northern Coastal Plain. To the east and west of there, totals quickly dropped to drier than normal, by as much as 2-3 inches around the Triad.

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



The dry conditions in March allowed the drought to expand back over the western part of the state. The US Drought Monitor for NC on February 25 indicated western areas of the state were void of dryness (Figure 4). However, by April 1, Moderate Drought (D1) conditions returned for much of the region. To the east, areas from Raleigh to Roanoke Rapids lost any dryness due to the heavy rainfall around mid-month and the March surplus. However, most of the rest of eastern NC retained the same categories from February 25 in the Abnormally Dry (D0) to D1 classification.

Fig. 4: US Drought Monitor for NC on February 25 (top) and April 1 (bottom)

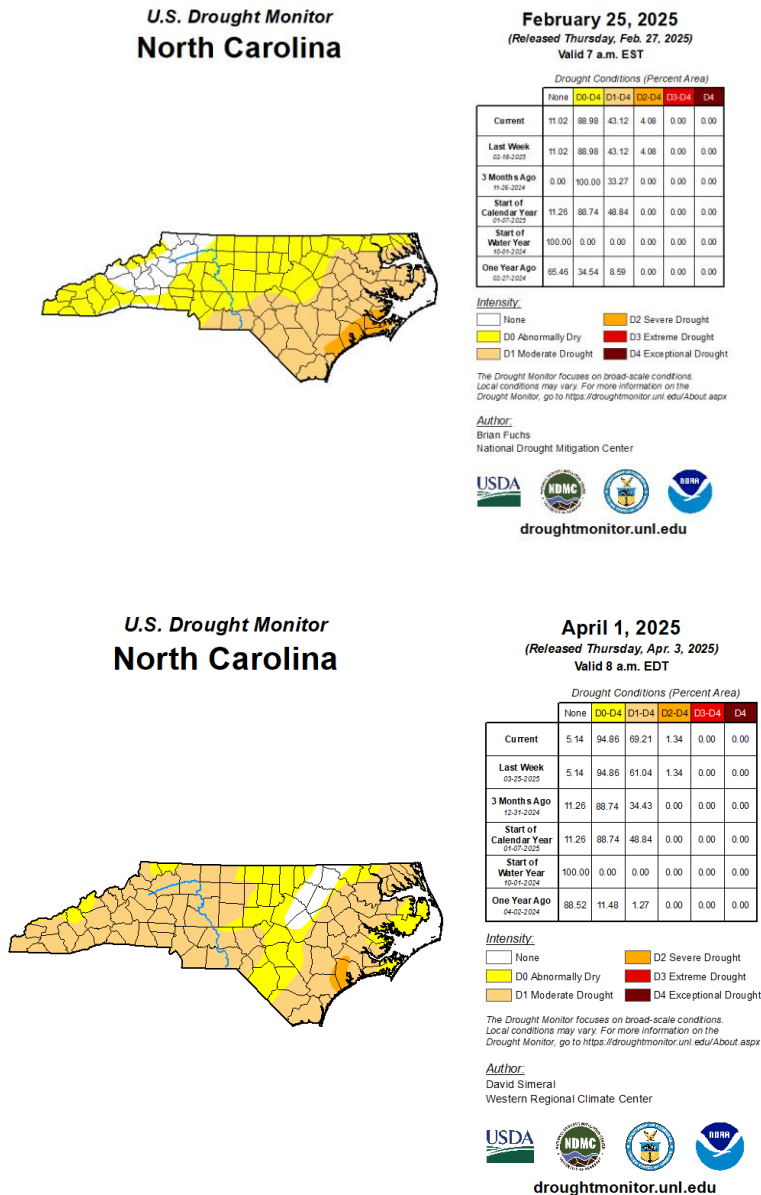
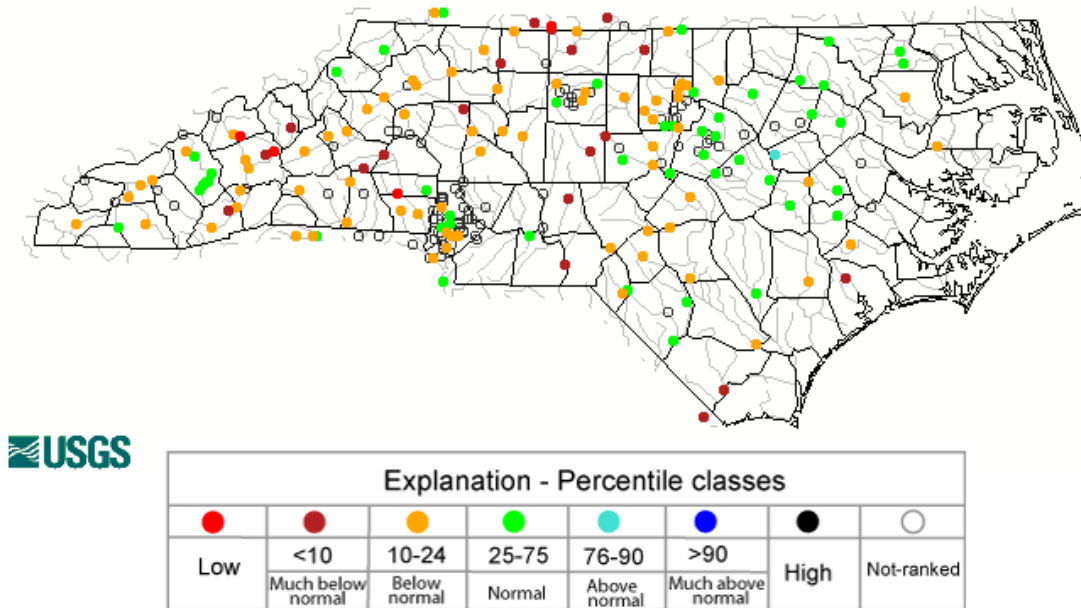


Figure 7 shows a significant decline in streamflows across roughly the western half of the state, with many spots below normal to much below normal. Near normal values remained over the northern and central Coastal Plain.

Fig. 7: Monthly Streamflow compared to Historical Streamflow across NC in March 2025



In addition, according to the NC Climate Office, it was the least humid March on record at both Greensboro and Raleigh, with less than 50% average relative humidity at both sites. It was also a windy month. Greensboro had its highest monthly average wind speed in March since 1996. These windy and dry conditions resulted in a very active month for wildfires across the state. The North Carolina Forest Service reported a preliminary total of 1,846 fires across the state, the most in March since 2006.

March started warm and the general warmth continued for almost the entire month. With a strong high pressure located to our south during the middle of the month, temperatures peaked into the lower-80s for many locations on March 12 and March 19. This included almost all the Triad, Triangle, Fayetteville, and Wilmington areas. Highs reached the upper-70s to lower-80s once again at the end of the month from the 28th to the 31st. Nighttime lows were also warm. It was so warm the morning of March 16 that Raleigh (RDU) only dropped to 63°F, which was equal to the normal *high* temperature for that date. On March 31, Raleigh (RDU) recorded a low of 65°F, which was nearly equal to the normal high for the date and tied the daily record high minimum temperature for the day.

There were still a few cold fronts that passed through the region. The lowest temperatures for March at the three climate sites (mid-to-upper-20s) occurred at the beginning of the month. In addition, Raleigh (RDU) only recorded one freeze during the entire month of March, on March 3. The average last freezing temperature at Raleigh (RDU) is April 8. If no freezes are recorded in

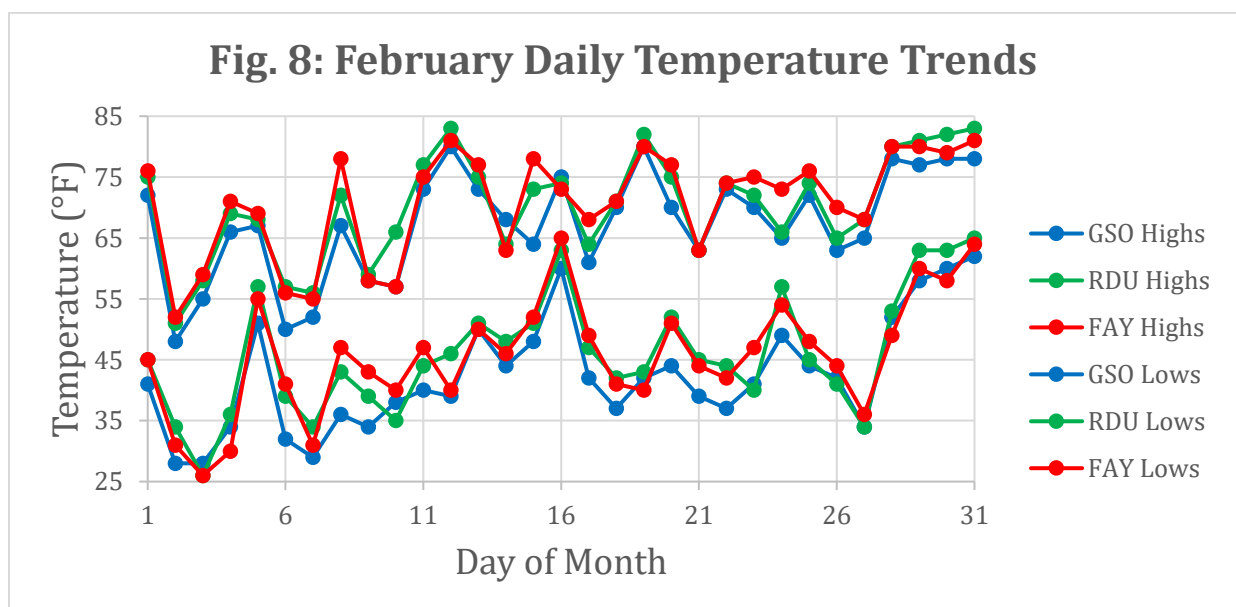
the upcoming April, Raleigh (RDU) will have the 2nd-earliest last freeze on record (only behind 2024 when the last freeze occurred February 21, more than six weeks earlier than normal).

With all the general warmth, the preliminary statewide average temperature was 53.3°F for March 2025. This ranked as the 23rd-warmest March since 1895. The monthly average temperatures and their departures from normal at the three climate sites are depicted in Table 2. Temperatures were generally 4-6°F above normal. In fact, it was the 5th-warmest March at Raleigh (RDU) since records began in 1887, the 10th-warmest on record at Greensboro, and the 11th-warmest at Fayetteville since records began in 1910.

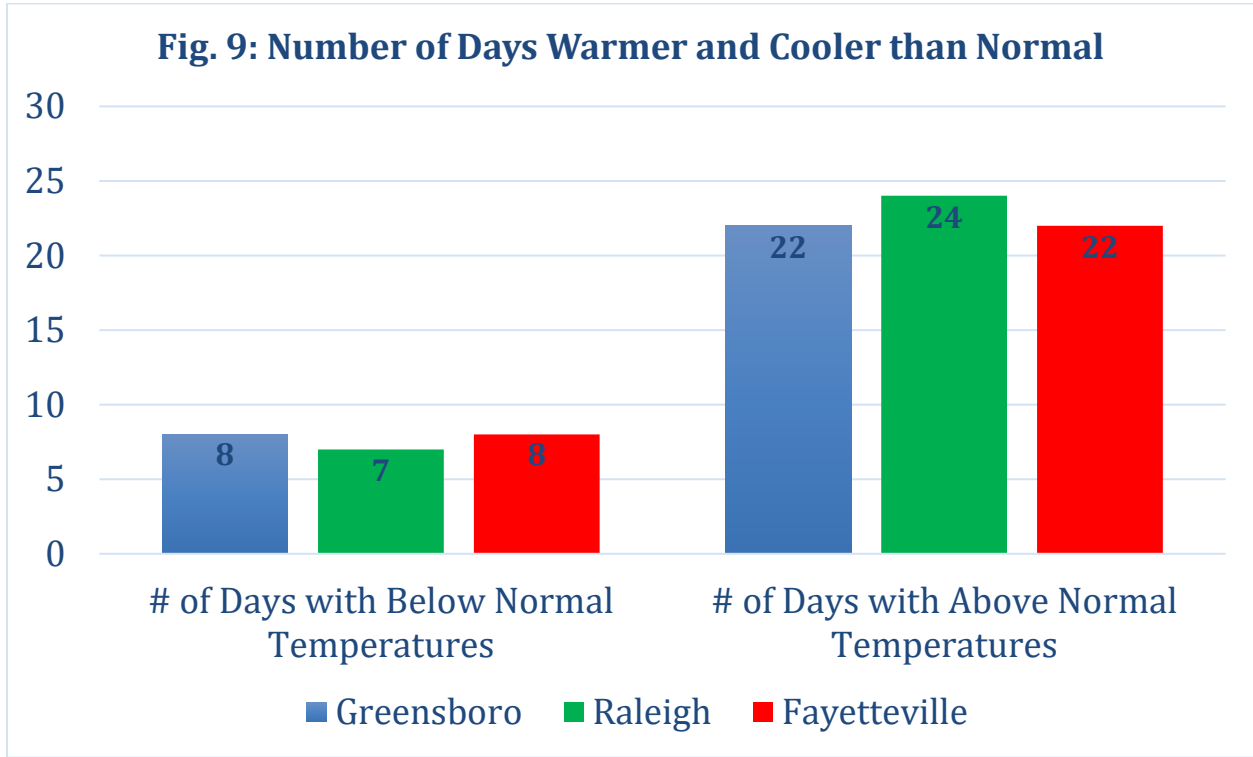
Table 2: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	67.4	42.4	54.9	+4.6	80 on 3/12 and 3/19	28 on 3/2 and 3/3
Raleigh-Durham (RDU)	70.2	46.0	58.1	+6.3	83 on 3/12 and 3/31	26 on 3/3
Fayetteville (FAY)	70.7	45.7	58.2	+4.4	81 on 3/12 and 3/31	26 on 3/3

The time series of daily temperature for the month at Greensboro, Raleigh, and Fayetteville can be found in Figure 8.



As shown in Figure 9, the vast majority of days in March were warmer than normal, roughly 70-80%.



Other notes:

Days with thunderstorms:

Greensboro: 2
Raleigh: 3
Fayetteville: 4

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

Greensboro: 1
Raleigh: 1
Fayetteville: 1

Strongest wind gusts and direction:

Greensboro: NW (310 degrees) at 47 mph on March 6
Raleigh: SW (240 degrees) at 48 mph on March 31
Fayetteville S (180 degrees) 44 mph on March 5

Number of days with low temperatures at 32°F or below:

Greensboro: 4

Raleigh: 1

Fayetteville: 4

Daily records:

Greensboro:

None.

Raleigh:

A daily record rainfall of 1.06 inches was set on March 5. This broke the old record of 1.04 inches set in 1929.

A daily record high minimum temperature of 65°F was tied on March 31. This record was previously set in 2022 and 1938.

Fayetteville:

A daily record high minimum temperature of 65°F was set on March 16. This broke the old record of 63°F set in 2012.

Monthly records:

Greensboro:

March 2025 was the 10th-warmest March on record, with an average temperature of 54.9°F.

March 2025 was the 11th-driest March on record, with a total rainfall of 1.89 inches.

Raleigh:

March 2025 was the 5th-warmest March on record, with an average temperature of 58.1°F.

Fayetteville:

March 2025 was the 11th-warmest March on record, with an average temperature of 58.2°F.