

# June 2024 Central NC Climate Summary

*By Phillip Badgett and James Danco*

June heats up and the rain shuts off.

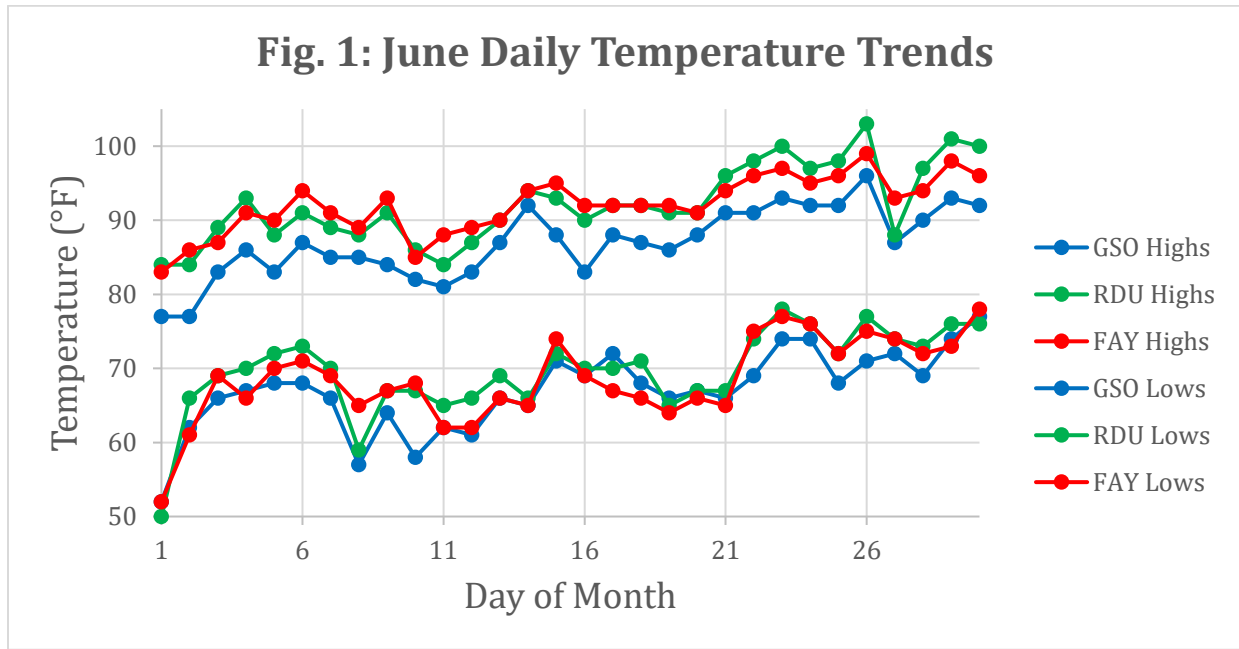
As spring turned to summer, the thermometer juiced up and the region dried up. According to the National Centers for Environmental Information (NCEI), June 2024 was the driest June across NC since records began in 1895, with a statewide average of only 1.35 inches. Temperatures began on the cool side for the first couple days, but they quickly warmed to mostly above normal for the rest of the month as a strong ridge of high pressure developed over the Tennessee Valley and Southeast US. This effectively blocked any rain-producing cold fronts from moving into the region. As the rain stopped, temperatures soared. Raleigh-Durham Airport hit 90°F or higher only 3 of the first 12 days of June, but on 17 of the last 18 days of the month. Several days reached or exceeded 100°F at Raleigh including on the 23<sup>rd</sup>, 26<sup>th</sup>, 29<sup>th</sup>, and 30<sup>th</sup>. Fayetteville reached at least 90°F on all of the last 18 days of the month, with 7 of the last 9 days at 95°F or above. Greensboro reached 90°F or higher on 10 days during June, including 9 of the last 10 days of the month.

NCEI reported that the preliminary average temperature across NC for the month of June was 75.4°F. This made it the 22<sup>nd</sup>-warmest June since 1895. Most of central NC finished the month with an average temperature that ranged between 2 and 4°F above normal. Greensboro tied for its 15<sup>th</sup>-warmest June on record going back to 1903, Raleigh had its 2<sup>nd</sup>-warmest June with records going back to 1887, and Fayetteville tied for its 13<sup>th</sup>-warmest June with records going back to 1910. The hottest monthly temperatures occurred on June 26 at all three climate sites. The high at Raleigh of 103°F on the 26<sup>th</sup> was a new daily record. The lowest temperatures recorded this month were all on the 1<sup>st</sup> when Raleigh bottomed out at 50°F and the other two climate sites reached 52°F. The monthly temperature statistics at the three climate sites are depicted in Table 1.

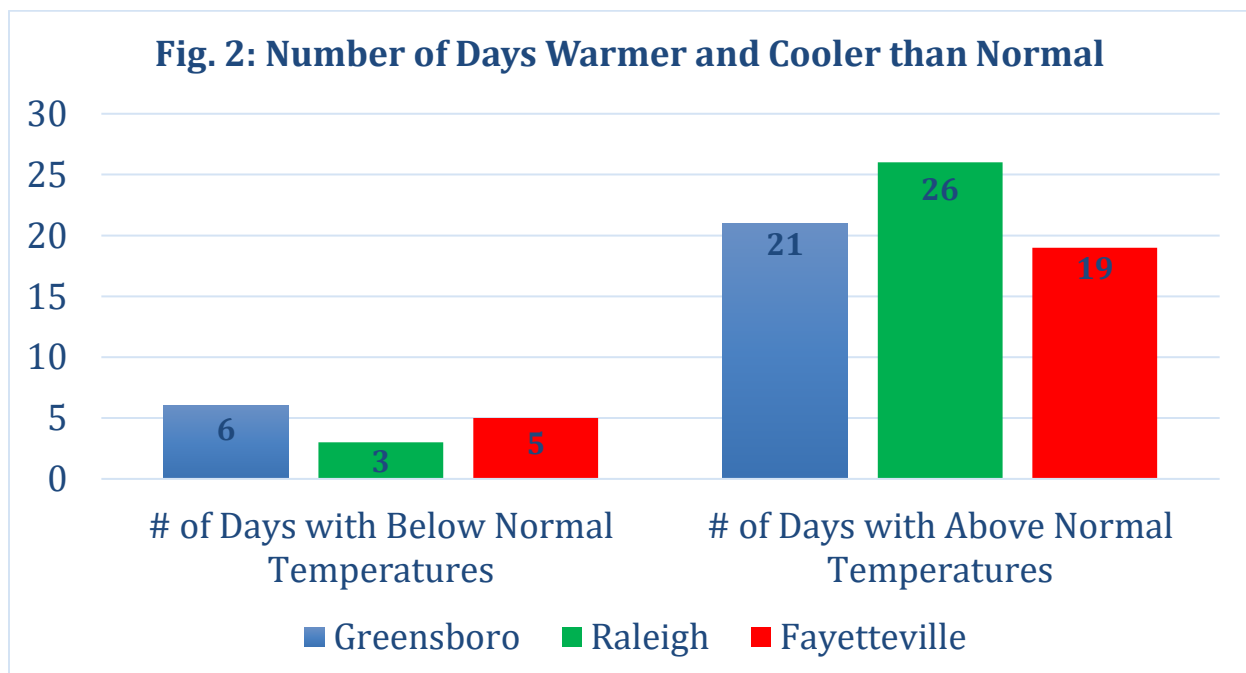
**Table 1: Monthly Temperature Statistics**

| Site                 | Avg High Temp (°F) | Avg Low Temp (°F) | Avg Temp (°F) | Departure From Normal (°F) | Maximum Temperature (°F) | Minimum temperature (°F) |
|----------------------|--------------------|-------------------|---------------|----------------------------|--------------------------|--------------------------|
| Greensboro (GSO)     | 87.0               | 67.0              | 77.0          | +1.7                       | 96 on 6/26               | 52 on 6/1                |
| Raleigh-Durham (RDU) | 92.2               | 69.6              | 80.9          | +4.2                       | 103 on 6/26              | 50 on 6/1                |
| Fayetteville (FAY)   | 92.1               | 68.5              | 80.3          | +2.0                       | 99 on 6/26               | 52 on 6/1                |

The time series of daily temperature for the month at Greensboro, Raleigh, and Fayetteville can be found in Figure 1. While temperatures were slightly above normal early in the month, building high pressure brought hotter temperatures by late in the month, when highs in the mid-to-upper-90s were frequent. Lows in the 70s also resulted in some high minimum temperatures being broken at all three sites.



As depicted in Figure 2, the vast majority of days in the month of June were warmer than normal, especially at Raleigh where only three days in the entire month were cooler than normal. Not a single day in the second half of June was cooler than normal at Greensboro and Raleigh.

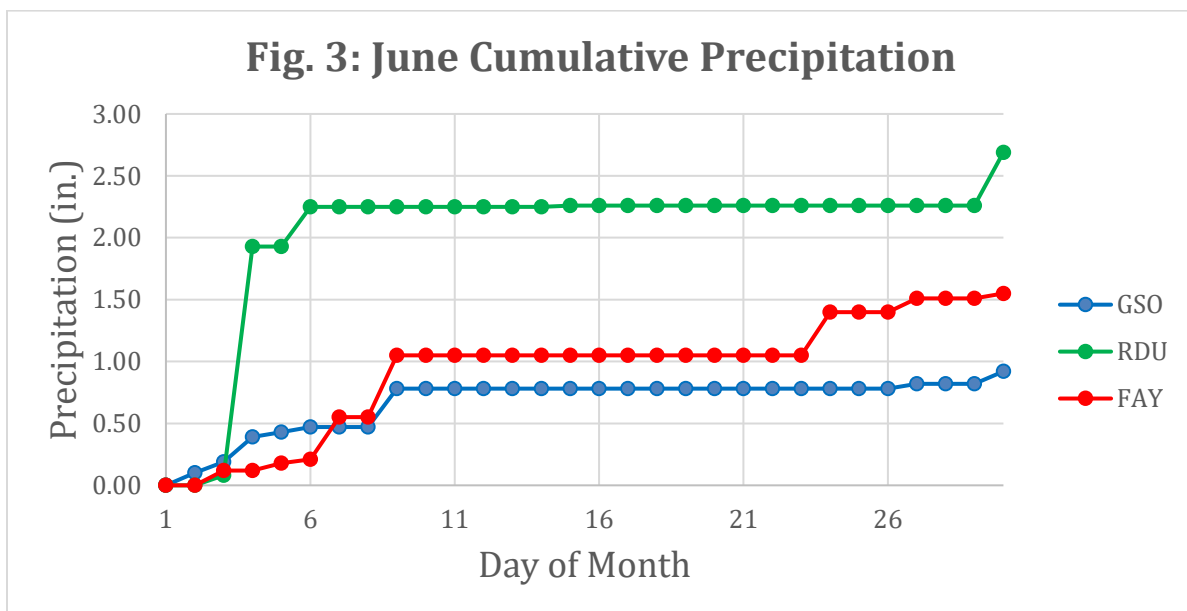


Unfortunately, with all the heat there was very little rainfall after the first nine days of June. Many areas across NC struggled to reach one inch of rain by month's end. Raleigh-Durham Airport had an isolated thunderstorm on the 4<sup>th</sup> that brought 1.85 inches, a record rainfall for the date. All other rain events besides that storm combined during June totaled 0.84 inches, for a final monthly rainfall total of 2.69 inches, or 69% of normal. Most other sites were not as lucky. Greensboro only tallied 0.92 inches for the entire month, its 4<sup>th</sup>-driest June on record and only 22% of normal. Fayetteville reported 1.55 inches, or 32% of normal and the 9<sup>th</sup>-driest June on record. The June 2024 monthly precipitation totals are found in Table 2. In addition, Clinton and Tarboro reported their driest June on record. Clinton reported 0.71 and Tarboro only 0.58 inches for the entire month.

**Table 2: Monthly Precipitation Statistics**

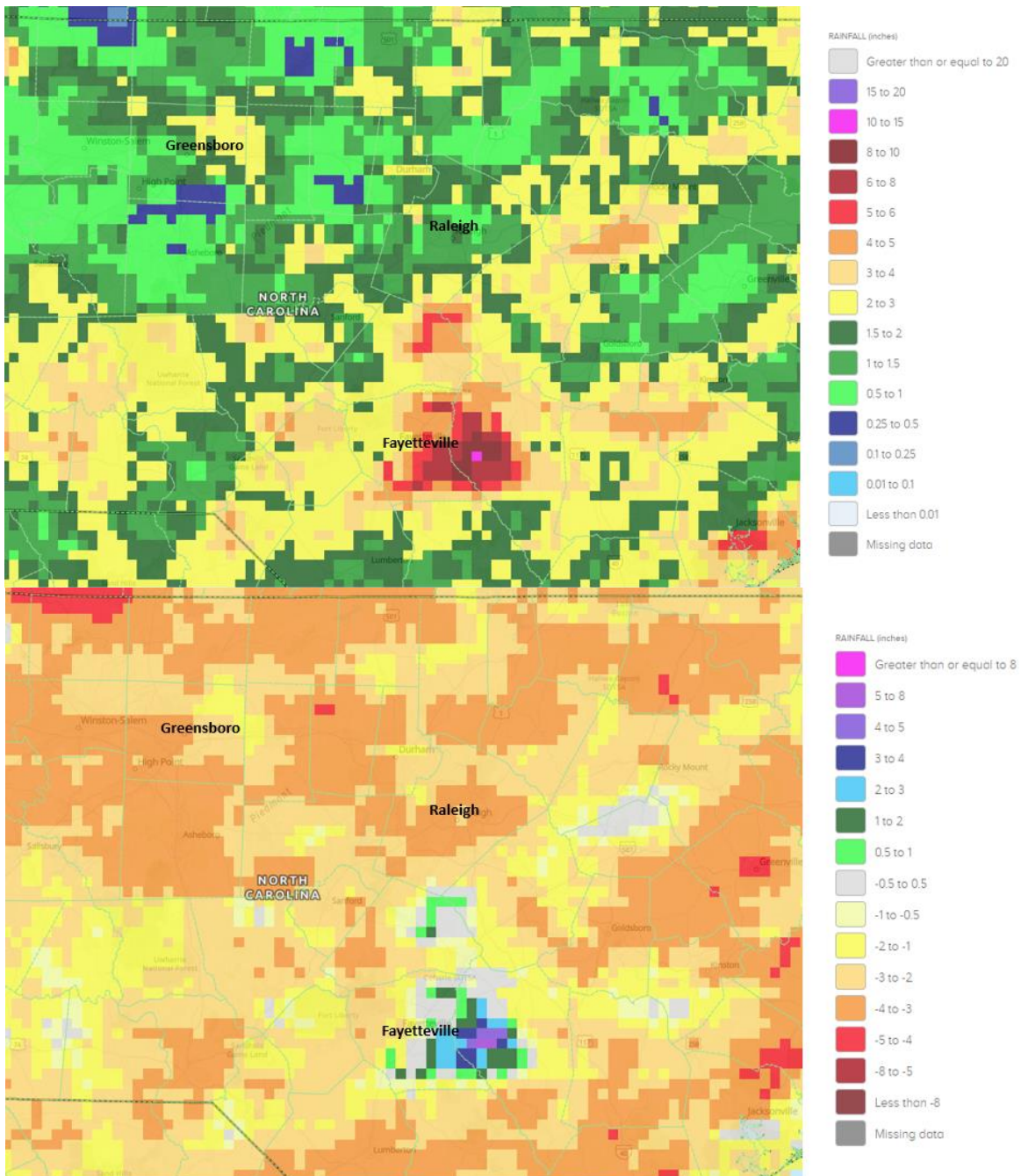
| Site                 | Total precipitation (in.) | Departure from Normal (in.) | Max Daily Precipitation (in.) |
|----------------------|---------------------------|-----------------------------|-------------------------------|
| Greensboro (GSO)     | 0.92                      | -3.17                       | 0.31 on 6/9                   |
| Raleigh-Durham (RDU) | 2.69                      | -1.20                       | 1.85 on 6/4                   |
| Fayetteville (FAY)   | 1.55                      | -3.34                       | 0.50 on 6/9                   |

The cumulative precipitation at the three climate sites for the month of June is shown in Figure 3. Long stretches of dry weather dominated June amid the heat, especially after a cold frontal passage on the 9<sup>th</sup>. Fayetteville went 14 consecutive days without any rainfall from June 10-23, and Greensboro went 17 straight days without measurable rainfall between the 10<sup>th</sup> and 26<sup>th</sup>. Raleigh went 23 days with only 0.01 of an inch recorded between June 7-29.



As displayed by the radar-estimated precipitation and the radar-estimated precipitation departure from normal in Figure 4, the final monthly totals across central NC were spotty and largely dependent on isolated thunderstorms. They ranged from as low as 0.5 to 1 inches in some spots across the north to 2 to 4 inches across much of the south, with one small area just east of Fayetteville receiving 5 to 10 inches, the only wetter-than-normal spot in all of central NC. The rest of the region was mostly 2 to 4 inches drier than normal.

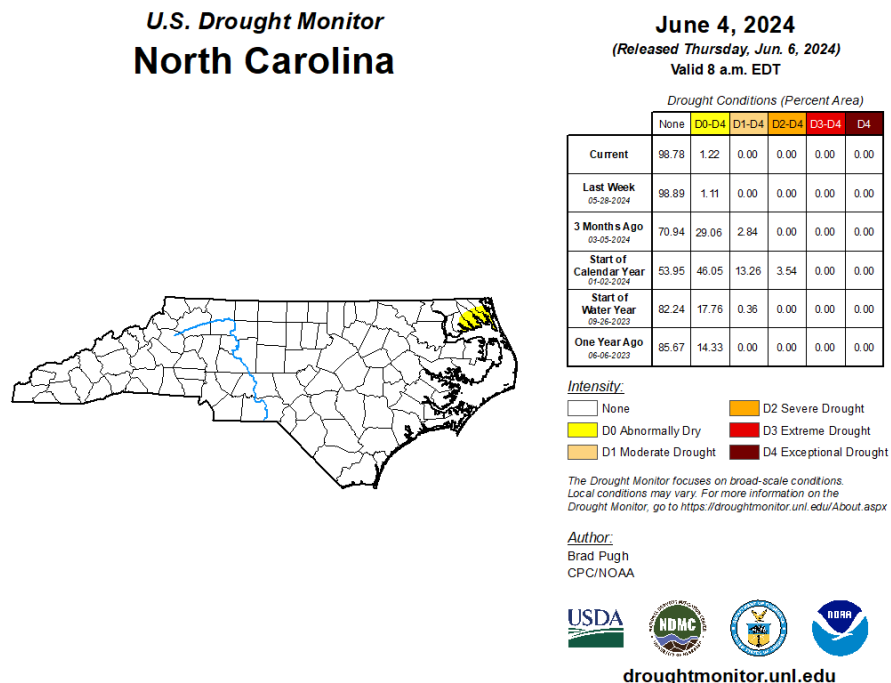
**Fig. 4: Radar-Estimated Monthly Precipitation and Departure from Normal Precipitation**



Some of the cooperative station rainfall reports from around central NC from June 2024 included: Sparta 1.42 inches (-3.45), Winston-Salem 1.23 inches (-2.41), Lexington 0.18 inches (-4.00), Burlington 2.51 inches (-1.77), Mount Airy 1.35 inches (-3.60), Danbury 0.75 inches (-3.42), Henderson 0.75 inches (-3.73), Cary 0.78 inches (-3.81), Raleigh (NC State) 0.46 inches (-4.41), Louisburg 0.32 inches (-4.38), Apex 0.57 inches (-3.76), Laurinburg 2.29 inches (-2.72), Rocky Mount 1.68 inches (-2.22), and Clinton 0.71 inches (-3.91).

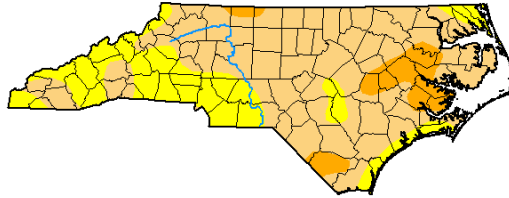
The combination of the lack of rain and the intense heat lead to a rapid onset drought across NC in June. As shown in Figure 5, the US Drought Monitor for NC on June 4, 2024 depicted only a tiny area in the far NE corner of the state with D0 (Abnormally Dry) conditions. The rest of the state was faring very well after the wet May. However, by the start of July, rapid onset drought had taken hold across the state. Nearly three quarters of NC was at least in D1 (Moderate Drought), with even some pockets of D2 (Severe Drought) especially in the central Coastal Plain. According to the NC State Climate Office, NC had the second-largest weekly expansion of D0 (Abnormally Dry) conditions since the US Drought Monitor started in 2000. An additional 60.88% of the state was in D0 conditions on the 18<sup>th</sup> compared to the 11<sup>th</sup>. On the 25<sup>th</sup>, 56.54% of NC entered D1 (Moderate Drought) after none the week before, which was the second-biggest weekly increase in D1 on record.

**Fig. 5: US Drought Monitor for NC on June 4 (top) and July 2 (bottom)**



**U.S. Drought Monitor  
North Carolina**

**July 2, 2024**  
(Released Wednesday, Jul. 3, 2024)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

|   | None  | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4   |
|---|-------|-------|-------|-------|-------|------|
| <b>Current</b>                              | 0.02  | 99.98 | 74.52 | 8.99  | 0.00  | 0.00 |
| <b>Last Week</b><br>06-25-2024              | 1.12  | 98.88 | 56.54 | 0.00  | 0.00  | 0.00 |
| <b>3 Months Ago</b><br>04-02-2024           | 88.52 | 11.48 | 1.27  | 0.00  | 0.00  | 0.00 |
| <b>Start of Calendar Year</b><br>01-02-2024 | 53.95 | 46.05 | 13.26 | 3.54  | 0.00  | 0.00 |
| <b>Start of Water Year</b><br>09-26-2023    | 82.24 | 17.76 | 0.36  | 0.00  | 0.00  | 0.00 |
| <b>One Year Ago</b><br>07-04-2023           | 92.11 | 7.89  | 0.00  | 0.00  | 0.00  | 0.00 |

**Intensity**

|                     |                        |
|---------------------|------------------------|
| None                | D2 Severe Drought      |
| D0 Abnormally Dry   | D3 Extreme Drought     |
| D1 Moderate Drought | D4 Exceptional Drought |

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

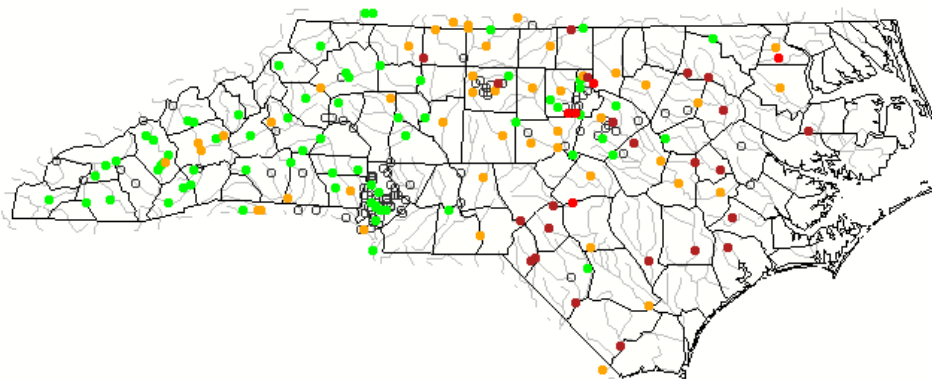
**Author:**  
Adam Hartman  
NOAA/NWS/NCEP/CPC



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

These conditions led to high evaporation rates depleting the soil of moisture. Lawns turned brown, and gardens and crops without irrigation access began to wither away. The NC State Climate Office reported that crop conditions declined at likely their most sensitive point in the growing season. The USDA/NASS reported corn conditions went from 3% rated as poor across NC on June 3 to 68% rating as either poor or very poor by June 30. After at or above normal streamflows in May, June finished below normal to well below normal across much of central NC (Figure 6). Parts of eastern NC such as Johnston County encouraged water usage restrictions.

**Fig. 6: Monthly Streamflow compared to Historical Streamflow across NC in June 2024**



Explanation - Percentile classes

| Low | <10               | 10-24        | 25-75  | 76-90        | >90               | High | Not-ranked |
|-----|-------------------|--------------|--------|--------------|-------------------|------|------------|
|     | Much below normal | Below normal | Normal | Above normal | Much above normal |      |            |

## **Other notes:**

### **Days with thunderstorms this month:**

Greensboro: 4  
Raleigh: 2  
Fayetteville: 6

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

Greensboro: 0  
Raleigh: 0  
Fayetteville: 1

### **Strongest wind gusts and direction:**

Greensboro: SW (230 degrees) at 33 mph on June 6  
Raleigh: W (260 degrees) at 53 mph on June 6  
Fayetteville S (190 degrees) 46 mph on June 6

### **Number of days with high temperatures at 90°F or above this month:**

Greensboro: 10  
Raleigh: 20  
Fayetteville: 23

### **Monthly records:**

#### **Greensboro:**

June 2024 was the 4<sup>th</sup>-driest June on record with a monthly rainfall total of 0.92 inches.

#### **Raleigh:**

June 2024 was the 2<sup>nd</sup>-warmest June on record with a monthly average temperature of 80.9°F.

#### **Fayetteville:**

June 2024 was the 9<sup>th</sup>-driest June on record with a monthly rainfall total of 1.55 inches.

## **Daily records:**

### **Greensboro:**

A daily record high minimum temperature of 74°F was tied on June 23. This record was last set in 2015.

A daily record high minimum temperature of 74°F was tied on June 29. This record was last set in 2010.

A daily record high minimum temperature of 77°F was set on June 30. This broke the old record of 74°F set in 1936.

### **Raleigh:**

A daily record rainfall of 1.85 inches was recorded on June 4. This broke the old record of 1.29 inches set in 2004.

A daily record high temperature of 100°F was tied on June 23. The record was last set in 1986.

A daily record high minimum temperature of 78°F was set on June 23. This broke the old record of 77°F set in 1890.

A daily record high minimum temperature of 76°F was tied on June 24. The record was last set in 1888.

A daily record high temperature of 103°F was set on June 26. This broke the old record of 102°F set in 1952.

A daily record high minimum temperature of 77°F was set on June 26. This broke the old record of 76°F set in 1902.

### **Fayetteville:**

A daily record high minimum temperature of 77°F was tied on June 23. This record was last set in 2017.