

February 2025 Central NC Weather Summary

By Phillip Badgett and James Danco

Warmth returns but so does some snowfall.

The predominately cold January was followed by a period of very warm weather to start February 2025. The first nine days of February brought some record warm days. Raleigh (RDU Airport) reported a record daily high of 80°F on February 4. Greensboro topped out at 75°F for a new daily record on the 4th, as well. This was followed by Fayetteville reaching 79°F for a new daily record on February 9. Finally, much colder air arrived with the passage of several cold fronts between February 10 and 20. The coldest air arrived on February 19 and 20 just in time for a precipitation event for many areas. It ended up being a wintry but light mixed precipitation event with a cold rain and some icing around and south of Fayetteville, ranging to all snow in the Triad and the Triangle areas. Light snow accumulated to nearly an inch around the Triad with the heavier snow to the east. The heaviest snowfall totals were reported from Pittsboro and Raleigh north and east to the northern Outer Banks. The Triangle area totaled 2 to 3.5 inches of snow, with a band of 4+ inches reported from portions of Durham and Franklin Counties northeast through the Roanoke Rapids area. Even Kitty Hawk on the Outer Banks reported 2+ inches of snow. Raleigh reported 2.3 inches on the 19th which was a daily record snowfall and the most in a single calendar day since February 20, 2020. This storm was notable for its lateness in the winter season, as it was only the fourth significant frozen precipitation event statewide in February during the past 10 years, according to the NC State Climate Office. Figure 1 below from the NC Climate Office depicts the total observed snowfall across the state, based on reports collected by the National Weather Service as well as CoCoRaHS. Warmer temperatures returned by the end of the month as high pressure built in, with highs again reaching into the 70s to around 80°F from the 25th to the 27th.

Figure 1: Total Observed Snowfall on February 19, 2025

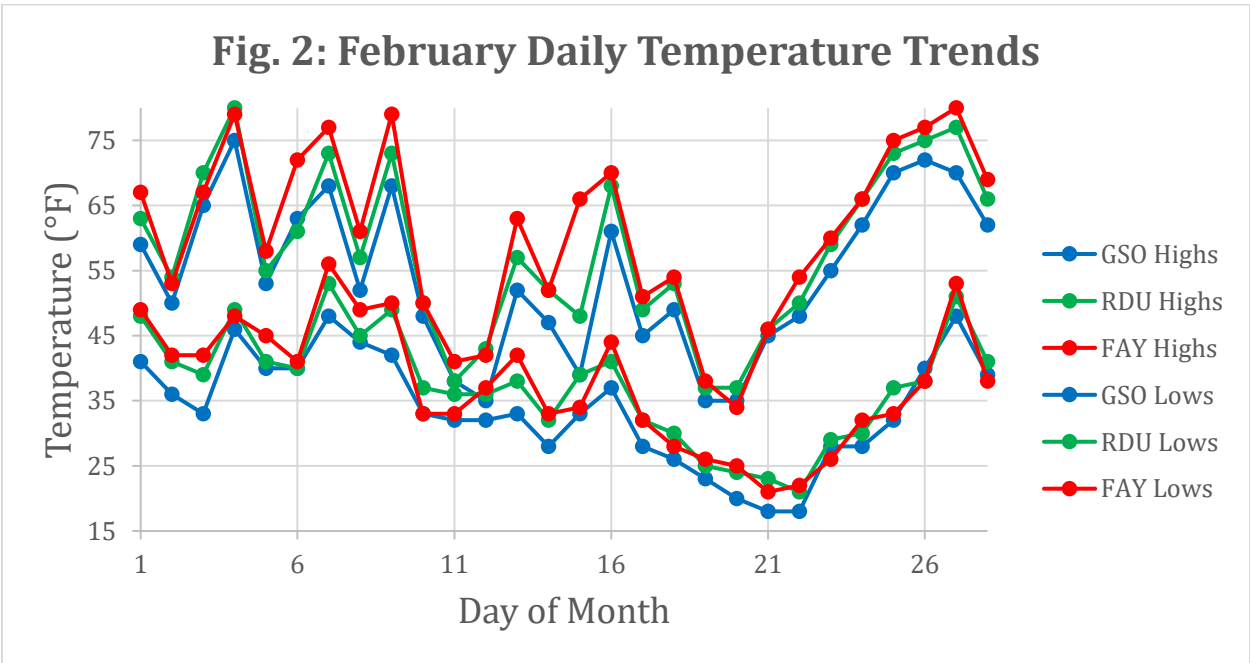


According to preliminary data from NCEI, February 2025 was the 25th-warmest February in NC since 1895 with a statewide average February temperature of 45.8°F. This was the 10th February in a row that was warmer than normal statewide, according to the NC Climate Office. Locally, the three climate sites ranged from 1 to 3°F warmer than normal, as seen in Table 1.

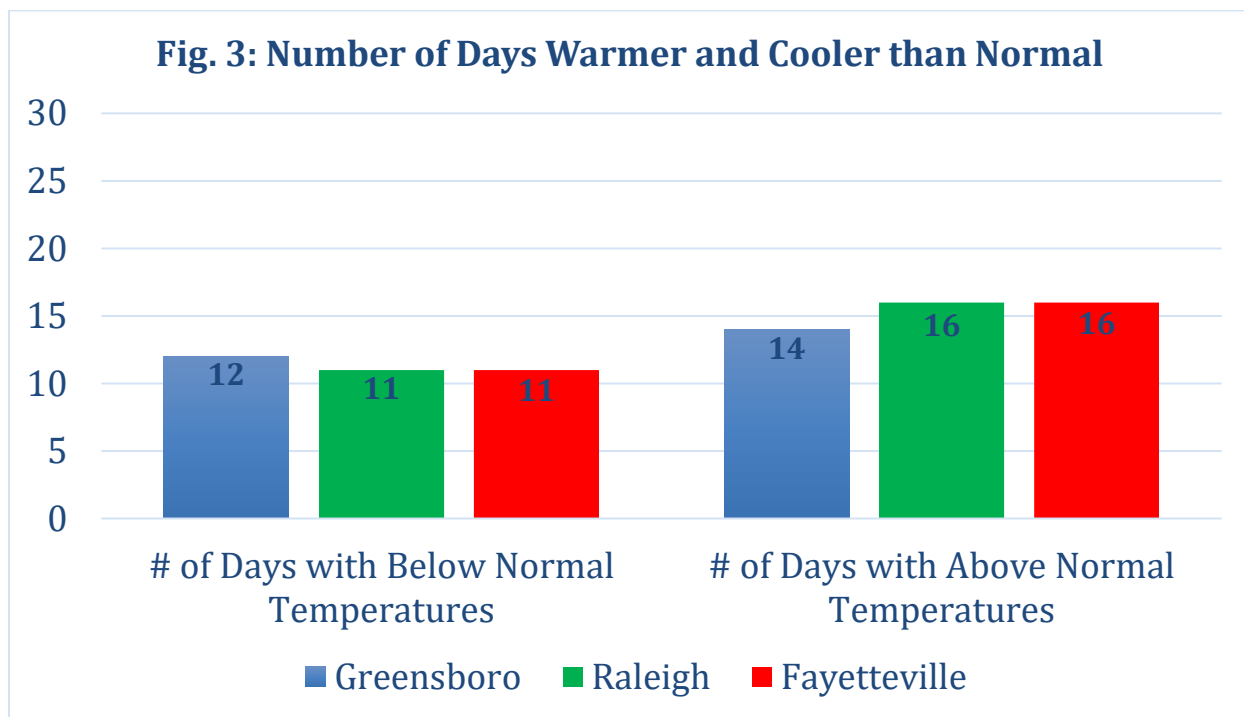
Table 1: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	54.3	33.8	44.1	+1.1	75 on 2/4	18 on 2/21 and 2/22
Raleigh-Durham (RDU)	58.2	37.3	47.8	+2.8	80 on 2/4	21 on 2/22
Fayetteville (FAY)	60.8	37.6	49.2	+2.2	80 on 2/27	21 on 2/21

The time series of daily temperature for February at Greensboro, Raleigh, and Fayetteville can be found in Figure 2. Note the warm beginning of the month, followed by cooldowns in the middle, and finally a rapid warmup at the end.



As shown in Figure 3, half of days at Greensboro and slightly more than half at Raleigh and Fayetteville were warmer than normal in February.

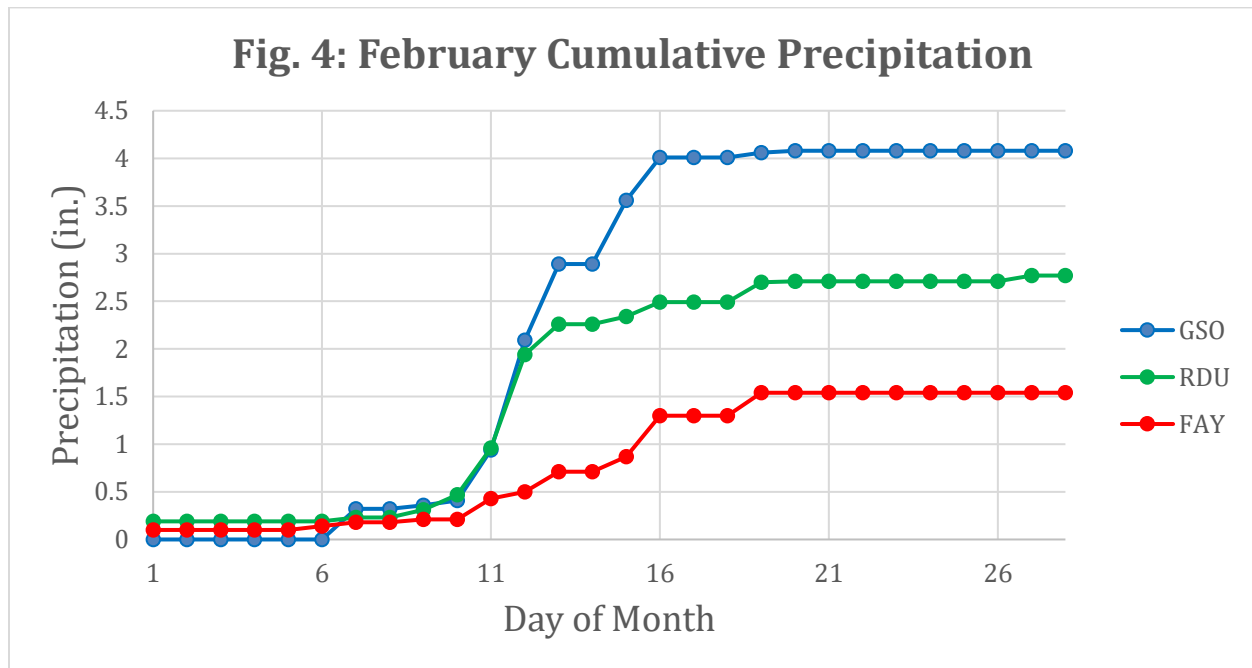


The northern and western portions of North Carolina reported the highest precipitation totals for the month, with the southern coast the least precipitation. The winter weather in the middle of the month helped boost the precipitation totals across the region in February. According to NCEI, the preliminary statewide average precipitation was 3.75 inches. This was 0.38 inches above the 30-year average and made it the 70th-wettest February since 1895. But to the north, Roanoke Rapids reported their 13th-wettest February on record, and to the west, Mount Airy had their 17th-wettest February. The climate sites in central NC were a mixed bag, with Greensboro about an inch wetter than normal, Fayetteville about an inch drier than normal, and Raleigh almost exactly normal. The February 2025 monthly precipitation totals are found in Table 2.

Table 2: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	4.08	+1.27	1.15 on 2/12
Raleigh-Durham (RDU)	2.77	-0.01	0.98 on 2/12
Fayetteville (FAY)	1.54	-1.24	0.43 on 2/16

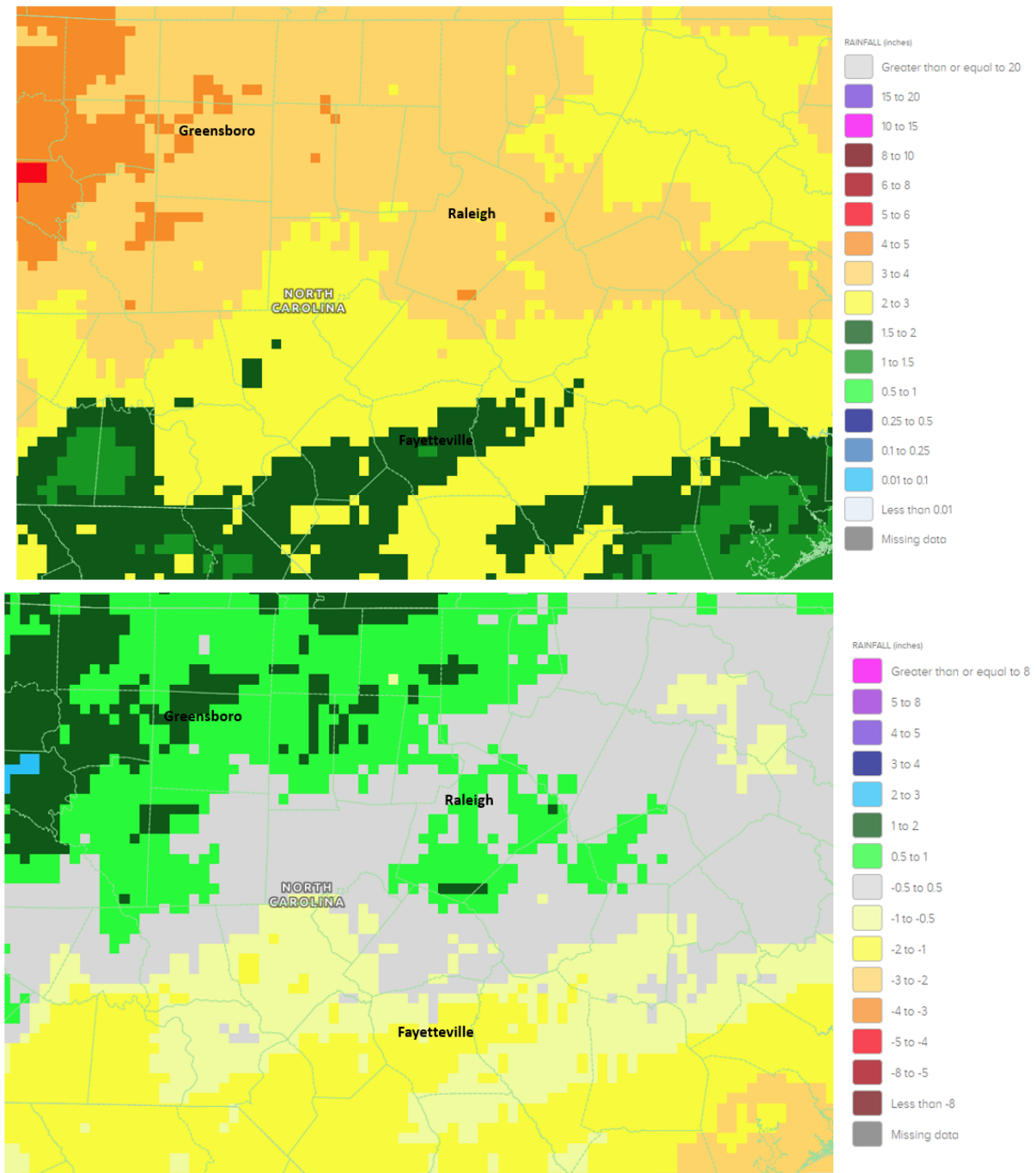
The cumulative precipitation at the three climate sites for the month of February is shown in Figure 4.



Some of the local cooperative station total precipitation and snowfall reports from around the region in February 2025 included: Sparta 4.72 inches (+1.57) and a trace of snow, North Wilkesboro 4.92 inches (+0.61) and no snowfall, Burlington 3.77 inches (+0.96), Mount Airy 5.75 inches (+2.61) and a trace of snow, Danbury 4.62 inches (+1.69) and 0.3 inches of snowfall, Reidsville 5.57 inches (+2.42) and 0.8 inches of snowfall, Cary 3.06 inches (+0.16) and 1.5 inches of snowfall, Raleigh (NCSU) missing precipitation data, Roxboro 5.64 inches (+2.70) and 4 inches of snowfall, Apex 3.95 inches (+0.95) and 2.4 inches of snowfall, Louisburg 6.41 inches (+3.55) and 4.1 inches of snowfall, Laurinburg 2.14 inches (-1.12) and no snowfall, Hamlet 3.31 inches (+0.04) and a trace of snowfall, Rocky Mount 3.15 inches (+0.28), and Clinton 2.75 inches (-0.36) and no snowfall.

As displayed by the radar-estimated precipitation and the radar-estimated precipitation departure from normal in Figure 5, the final monthly totals were highest around the Triad where they were around 4-5 inches. Amounts decreased to the south and east, with only 2-3 inches for much of the Coastal Plain, southern Piedmont, and Sandhills. Areas near the NC/SC border received as little as 1-2 inches.

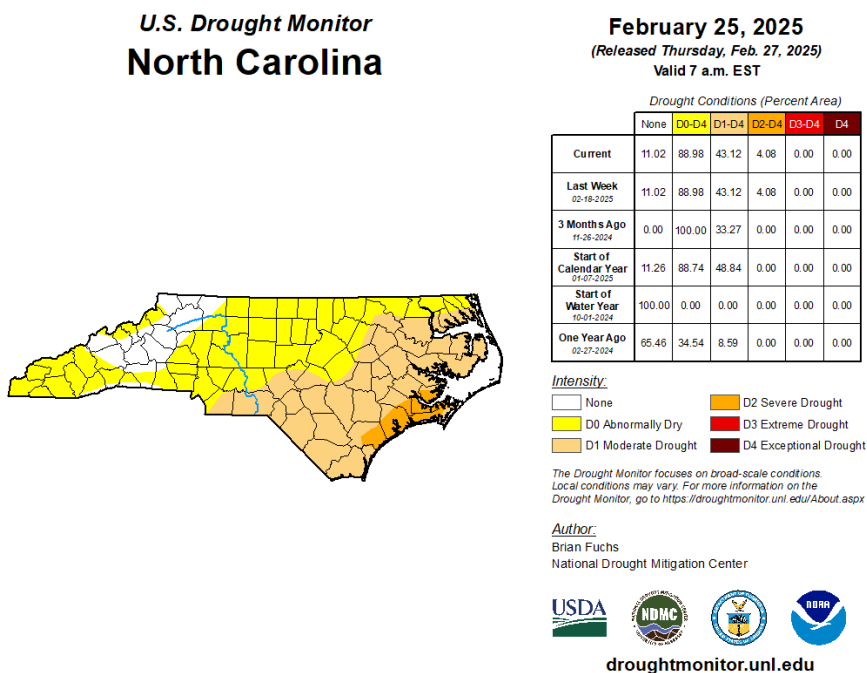
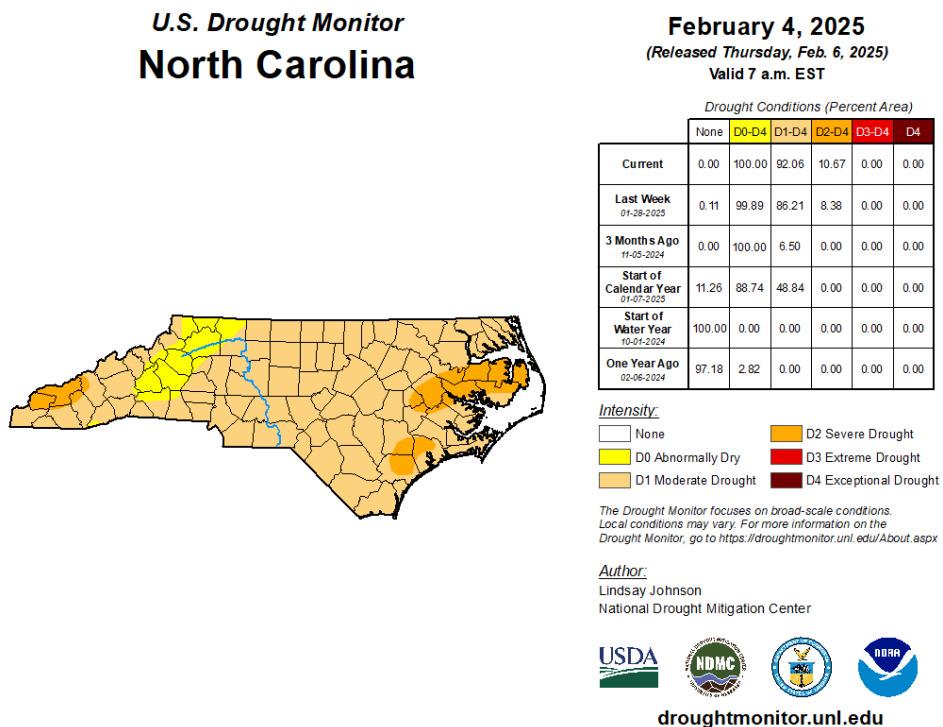
Fig. 5: Radar-Estimated Monthly Precipitation and Departure from Normal Precipitation



The higher precipitation totals in the west and north allowed for improvement in the U.S. Drought Monitor by about a category there, as shown in Figure 6. On February 4, Moderate Drought (D1) conditions prevailed throughout much of the state, with some Severe Drought (D2) conditions over the Mountains and far eastern NC. By February 25, the D1 conditions were

eliminated for much of the Mountains and Piedmont, with D1 continuing in the Coastal Plain and Sandhills, even D2 along the southern coast.

Fig. 6: US Drought Monitor for NC on February 4 (top) and February 25 (bottom)



While the rainfall helped increase streamflow levels to the normal and even above normal range across the Piedmont and Mountains, they remained below normal across southeastern parts of the state (Figure 7). A deep layer of dryness in soils also remained across the southeast by the end of the month (Figure 8).

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

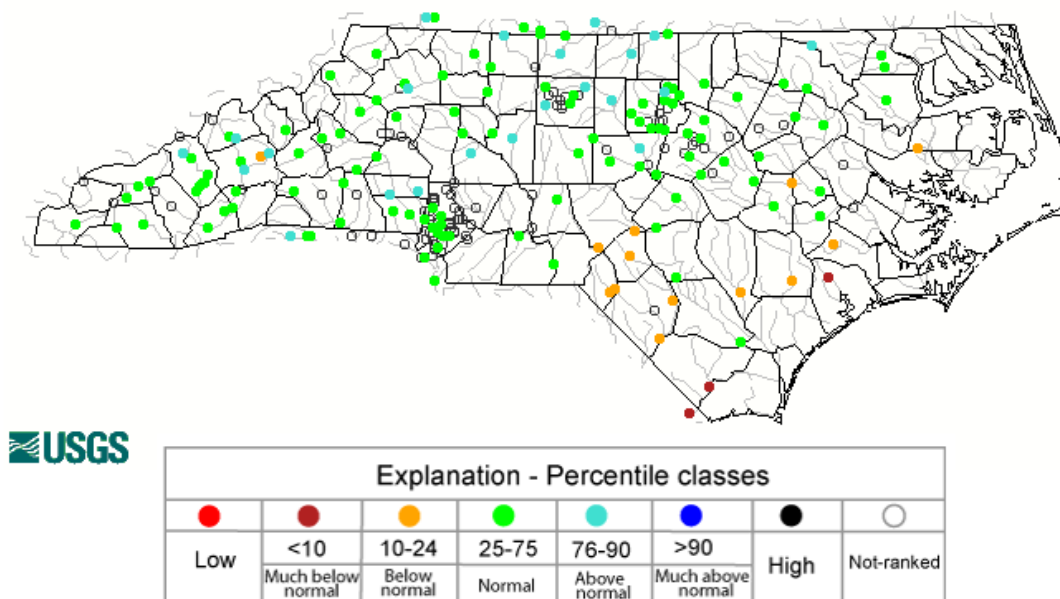
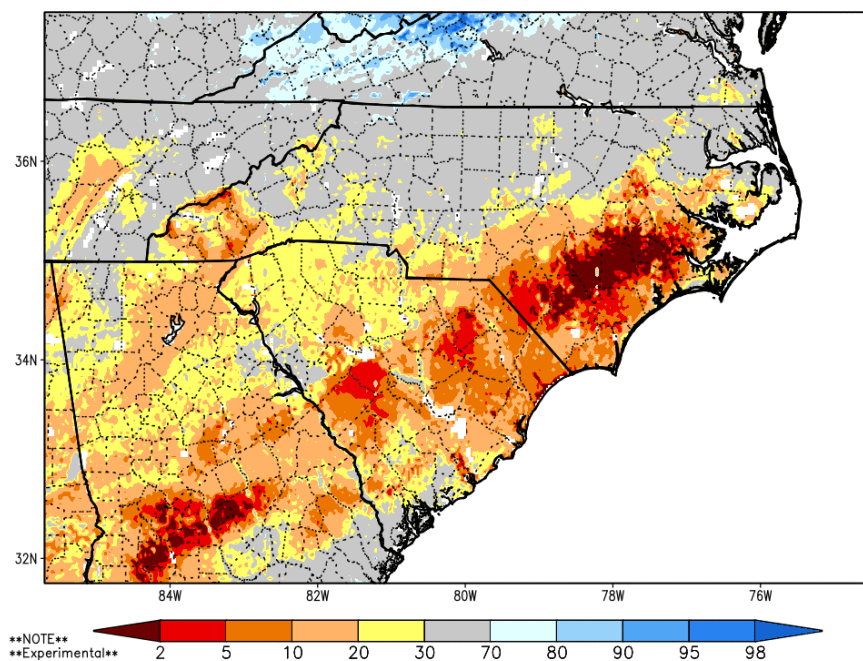


Fig. 8: SPoRT-LIS 0-100 cm Soil Moisture Percentile valid February 28, 2025



Other notes:

Days with thunderstorms this month:

Greensboro: 4

Raleigh: 2

Fayetteville: 0

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

Greensboro: 2

Raleigh: 3

Fayetteville: 1

Strongest wind gusts and direction:

Greensboro: W (280 degrees) at 49 mph on February 16

Raleigh: SW (210 degrees) at 58 mph on February 16

Fayetteville SW (220 degrees) 61 mph on February 16

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

Greensboro: 12

Raleigh: 9

Fayetteville: 8

Daily records:

Greensboro:

A daily record high temperature of 75°F was set on February 4. This broke the old record of 73°F set in 1991.

Raleigh:

A daily record high temperature of 80°F was set on February 4. This broke the old record of 76°F set in 1957.

A daily record snowfall of 2.3 inches was set on February 19. This broke the old record of 0.9 inches set in 2012.

Fayetteville:

A daily record high temperature of 79°F was recorded on February 9. This broke the old record of 75°F set in 2023.

Monthly records:**Greensboro:**

None.

Raleigh:

None.

Fayetteville:

None.