

January 2024 Central NC Climate Summary

By Phillip Badgett and James Danco

Drought ends but warmth continues in January

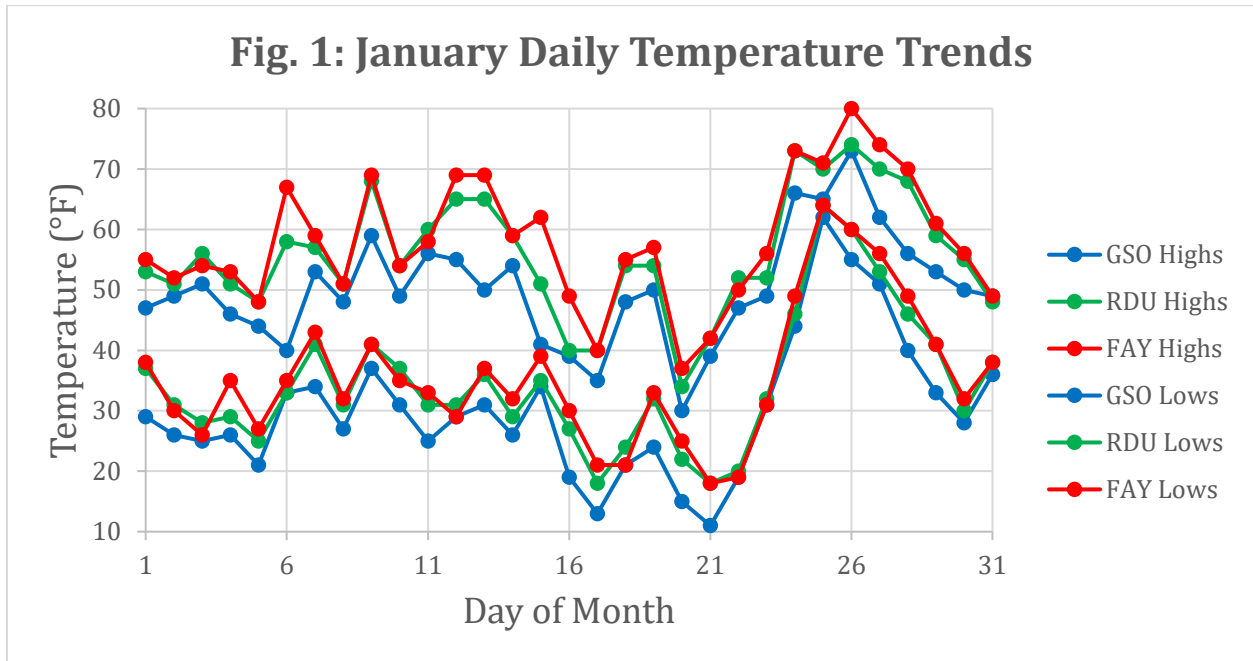
January 2024 brought a mid-month hard freeze, but remained warmer than normal overall across central NC. The mid-month cold spell occurred on the 17th-18th and 20th-22nd when morning lows were mostly in the teens to lower-20s across the region. Snowfall was non-existent during the entire month, but rainfall was plentiful. These rainfall events continued the wet trend from December 2023. The rainfall was enough to end the drought conditions in central NC. As for the lack of snow, the snow drought over central NC reached 2 years at the end of January 2024. The last measurable snowfall at both Greensboro and Raleigh occurred on January 29, 2022. This is the 2nd-longest snowless streak on record at Greensboro and the 3rd-longest at Raleigh.

First for the temperatures across the region: NCEI reported that the preliminary average temperature across the state of NC for the month was 41.0°F. This made it the 51st-warmest January in the past 130 years. Most of central NC finished the month with an average temperature that ranged between 0.5°F and 3°F above normal. The colder readings were found in the west, with the warmest readings in the south and east. The warmest temperatures occurred on January 26, when temperatures reached the mid-70s to around 80. January 21 had the coldest readings when temperatures fell into the teens just about everywhere. Daily low temperatures fell to freezing or below in January a total of 20 times at Greensboro, 17 at Raleigh and 14 at Fayetteville. The monthly average temperatures and their departures from normal at the three climate sites are depicted in Table 1.

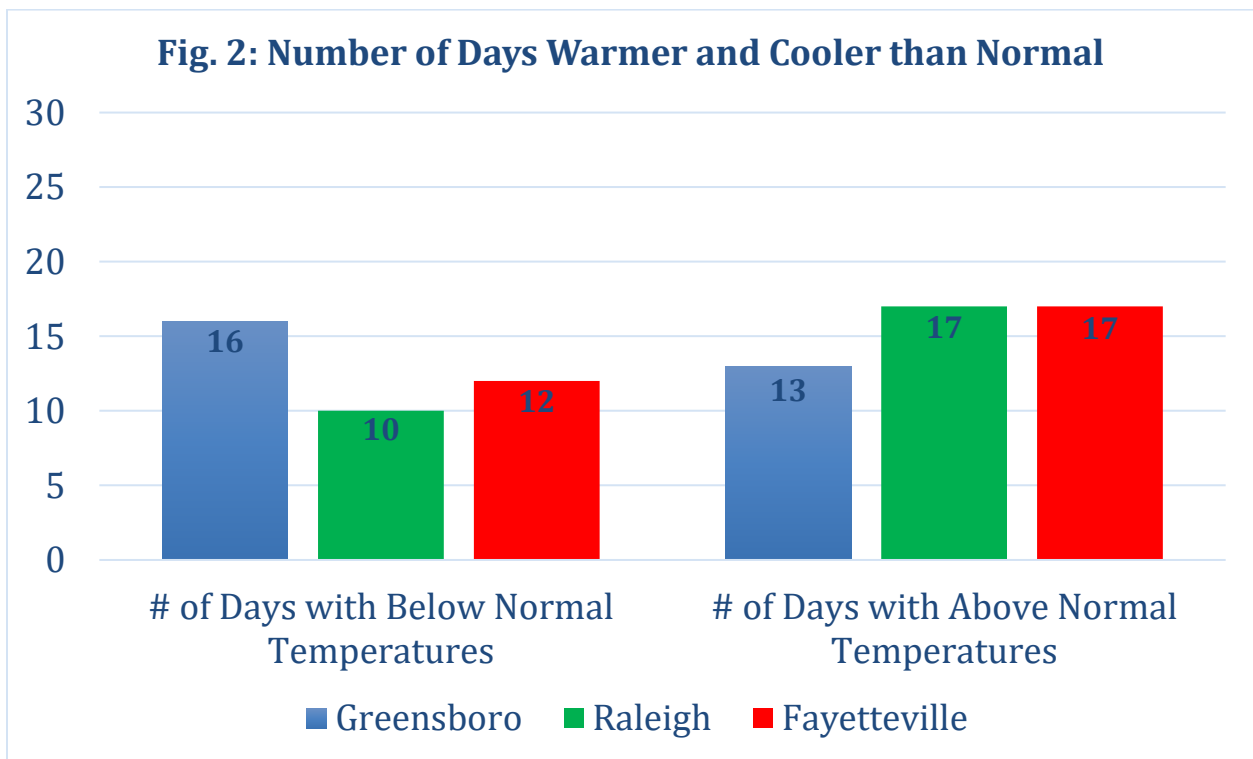
Table 1: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	50.1	30.2	40.1	+0.4	73 on 1/26	11 on 1/21
Raleigh-Durham (RDU)	55.9	34.4	45.1	+3.2	74 on 1/26	18 on 1/17 and 1/21
Fayetteville (FAY)	58.0	35.5	46.7	+2.7	80 on 1/26	18 on 1/21

The time series of daily temperature for the month at Greensboro, Raleigh, and Fayetteville can be found in Figure 1. The cold spell in the middle of the month and rapid warmup after that are evident.



As shown in Figure 2, a slight majority of days in January were warmer than normal at Raleigh and Fayetteville but cooler than normal at Greensboro.



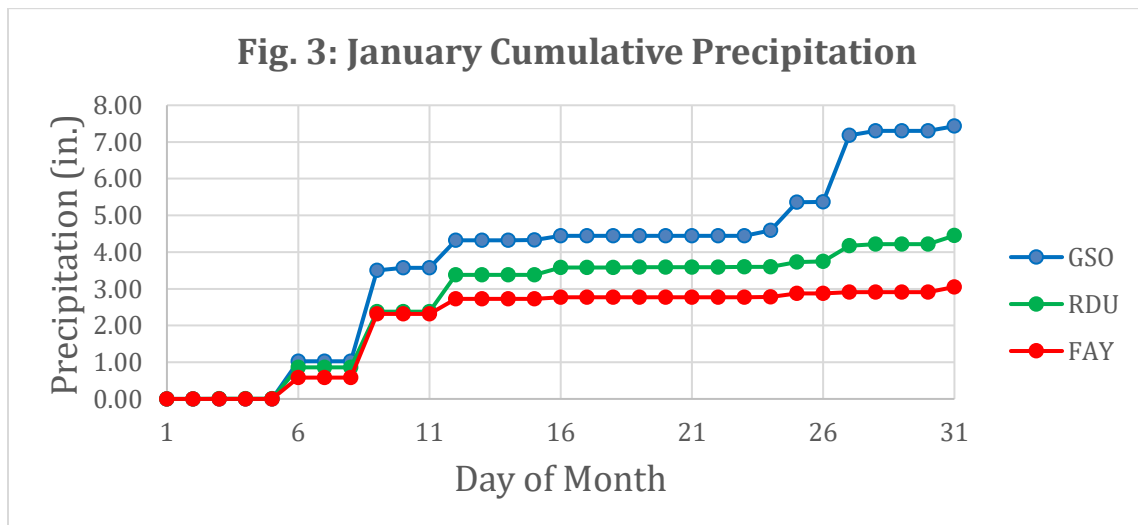
Since snow was again absent in January, we will discuss the much-needed rainfall that continued to end the drought. Continuing from the trend of system after system bringing soaking rains that started in December, January ended wetter than normal across most of central NC especially in the west. Some of the heaviest rainfall events occurred on the 6th, 9th, 25th, and 27th. According to the NCEI, January 2024 was the 27th-wettest January statewide since 1895, with a preliminary average rainfall of 4.94 inches. Greensboro’s total of 7.43 inches made this month the 5th-wettest January on record and the wettest January since 1978. However, the Coastal Plain was near to slightly drier than normal. The monthly precipitation statistics are shown in Table 2.

Table 2: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	7.43	+4.04	2.47 on 1/9
Raleigh-Durham (RDU)	4.45	+1.02	1.52 on 1/9
Fayetteville (FAY)	3.05	-0.10	1.74 on 1/9

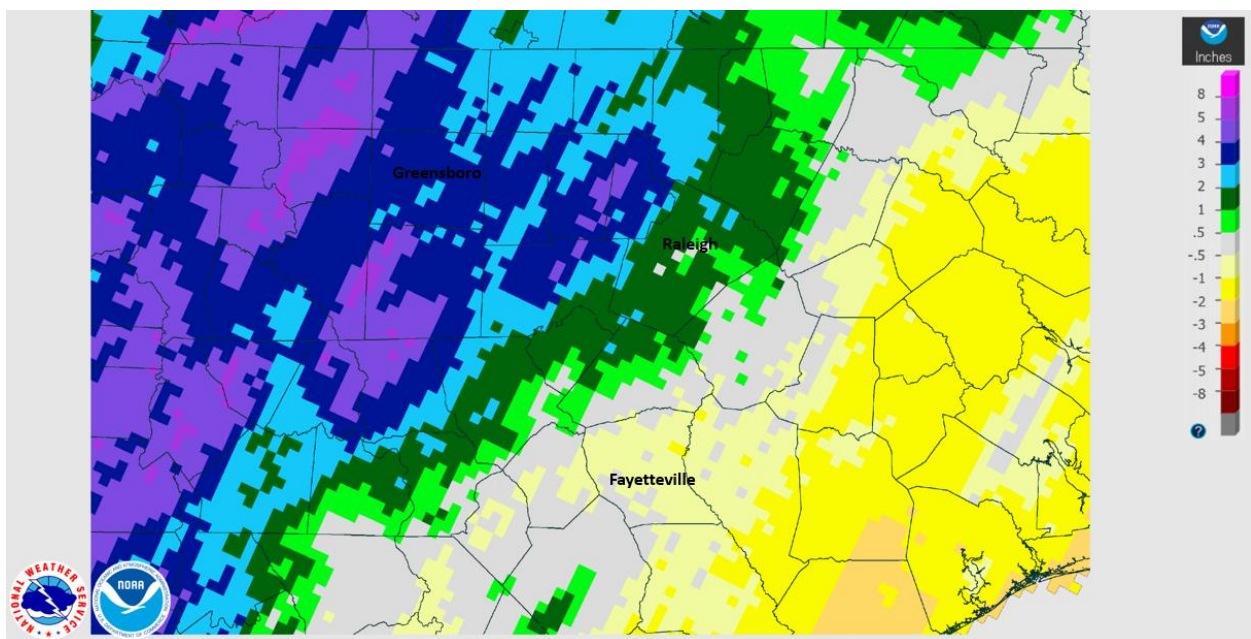
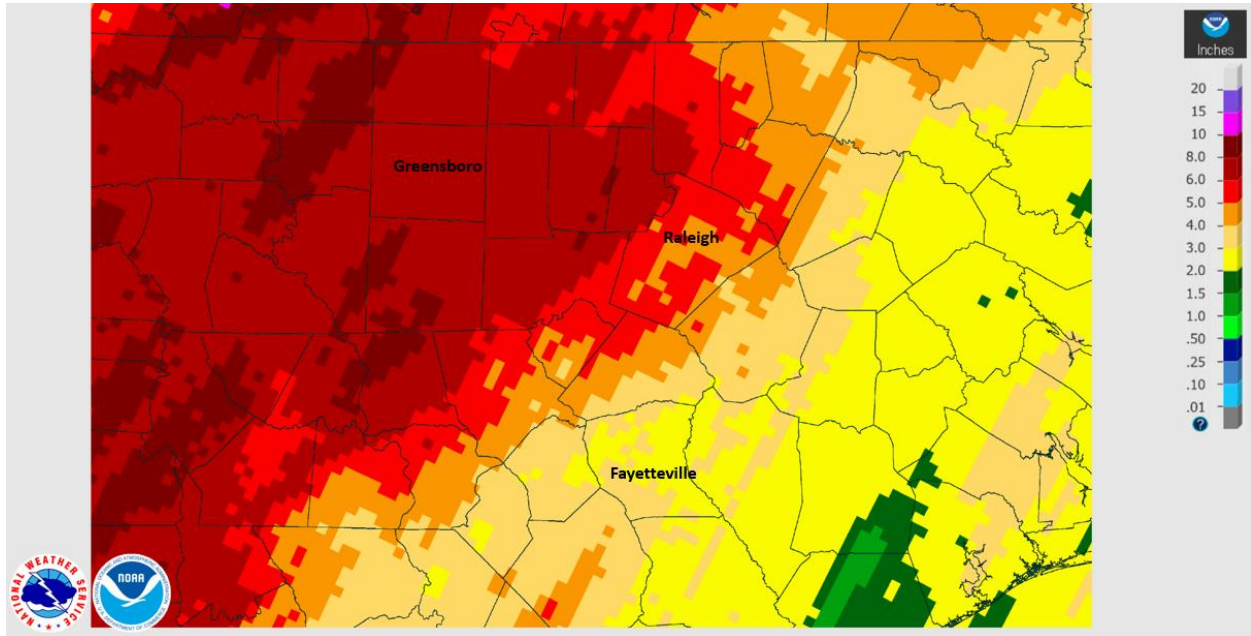
Some of the cooperative station rainfall reports from around central NC from January 2024 included: Sparta 8.88 inches (+4.42), Winston-Salem 8.22 inches (+4.87), Albemarle 9.61 inches (+ 5.81), Burlington 6.53 inches (+3.46), Mount Airy 6.94 inches (+3.05), Danbury 8.59 inches (+4.84), Henderson 6.75 inches (+3.08), Cary 3.84 inches (+0.30), Raleigh (NCSU) 4.54 inches (+0.89), Louisburg 4.99 inches (+1.25), Apex 4.95 inches (+1.30), Laurinburg 3.01 inches (-0.54), Rocky Mount 3.21 inches (-0.27), and Clinton 3.40 inches (-0.10).

The cumulative precipitation at the three climate sites for January is shown in Figure 3.



As displayed by the radar-estimated precipitation and the radar-estimated precipitation departure from normal in Figure 4, the final monthly totals ranged from 6 to 10 inches (2 to 5 inches above normal) to the north and west of Raleigh. But across the eastern Sandhills and Coastal Plain, 2 to 4 inches fell. This ranged from near normal to even 1 to 2 inches below normal in the far east.

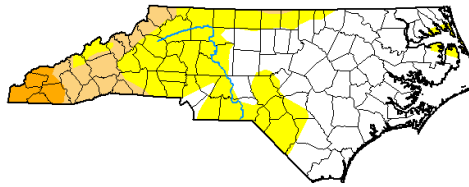
Fig. 4: Radar-Estimated Monthly Precipitation and Departure from Normal Precipitation



The rain in December and January flipped the script when it comes to drought. After much below normal rainfall the entire fall season led to the rapid expansion and deepening of drought conditions, the number of widespread heavy rain events in December turned the drought on its head. January 2024 continued that theme. Note the US Drought Monitor Maps for NC from January 2 and from January 30 in Figure 5. Some southern and western parts of central NC were in D0 (Abnormally Dry) conditions at the beginning of the month, but by the end, all of central NC was free of any dry or drought conditions, as was 97% of the entire state.

Fig. 5: US Drought Monitor for NC on January 2 (top) and January 30 (bottom)

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



January 2, 2024
(Released Thursday, Jan. 4, 2024)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	53.95	46.05	13.26	3.54	0.00	0.00
Last Week 12-26-2023	40.42	59.58	27.33	3.54	0.00	0.00
3 Months Ago 10-03-2023	58.93	41.07	1.56	0.00	0.00	0.00
Start of Calendar Year 01-02-2024	53.95	46.05	13.26	3.54	0.00	0.00
Start of Water Year 09-26-2023	82.24	17.76	0.36	0.00	0.00	0.00
One Year Ago 01-03-2023	56.06	43.94	24.97	0.00	0.00	0.00

Intensity:

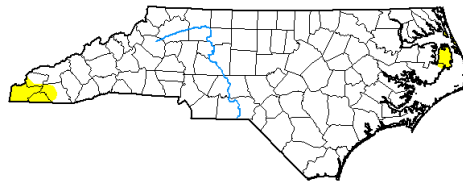
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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:
Lindsay Johnson
National Drought Mitigation Center

droughtmonitor.unl.edu

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



January 30, 2024
(Released Thursday, Feb. 1, 2024)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	97.14	2.86	0.00	0.00	0.00	0.00
Last Week 01-23-2024	91.17	8.83	2.02	0.00	0.00	0.00
3 Months Ago 10-31-2023	8.60	91.40	50.59	10.38	0.00	0.00
Start of Calendar Year 01-02-2024	53.95	46.05	13.26	3.54	0.00	0.00
Start of Water Year 09-26-2023	82.24	17.76	0.36	0.00	0.00	0.00
One Year Ago 01-31-2023	63.40	36.60	14.97	0.00	0.00	0.00

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Author:
Brian Fuchs
National Drought Mitigation Center

droughtmonitor.unl.edu

Other notes:

Days with thunderstorms this month:

Greensboro: 1
Raleigh: 1
Fayetteville: 1

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

Greensboro: 2
Raleigh: 3
Fayetteville: 1

Strongest wind gusts and direction:

Greensboro: S (160 degrees) at 48 mph on January 9
Raleigh: SW (210 degrees) at 69 mph on January 9
Fayetteville: SW (220 degrees) at 62 mph on January 9

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

Greensboro: 20
Raleigh: 17
Fayetteville: 14

Monthly records:

Greensboro:

January 2024 was the 5th-wettest January on record with a total precipitation of 7.43 inches.

Raleigh:

None.

Fayetteville:

None.

Daily records:

Greensboro:

A daily record rainfall of 2.47 inches was set on January 9. This broke the old record of 1.22 inches set in 1933.

A daily record high minimum temperature of 62°F was set on January 25. This broke the old record of 57°F set in 1950.

A daily record rainfall of 1.81 inches was set on January 27. This broke the old record of 1.52 inches set in 1998.

Raleigh:

A daily record high minimum temperature of 64°F was set on January 25. This broke the old record of 59°F set in 1909.

Fayetteville:

A daily record rainfall of 1.74 inches was set on January 9. This broke the old record of 1.54 inches set in 1986.

A daily record high minimum temperature of 64°F was set on January 25. This broke the old record of 59°F set in 1913.

A daily record high temperature of 80°F was set on January 26. This broke the old record of 79°F set in 1990.

A daily record high minimum temperature of 60°F was set on January 26. This broke the old record of 53°F set in 1916.