

December 2020 Central NC Climate Summary

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After a warm and wet fall, December turns cooler but remains wet.

The December 2020 temperatures took a turn for the cooler, but several storm systems continued to hit the region with drenching rains. This kept central NC very wet as the calendar turned to 2021, with temperatures very slightly below normal. As for the drenching rains, December continued to showcase an already excessively wet year. There were repeated rain events during the month, with usually only 3 or 4 days between systems. The final tallies generally ranged between 4 and 6 inches, which were 1 to 3 inches above normal.

The monthly average temperatures and their departures from normal at the three climate sites are depicted in Table 1.

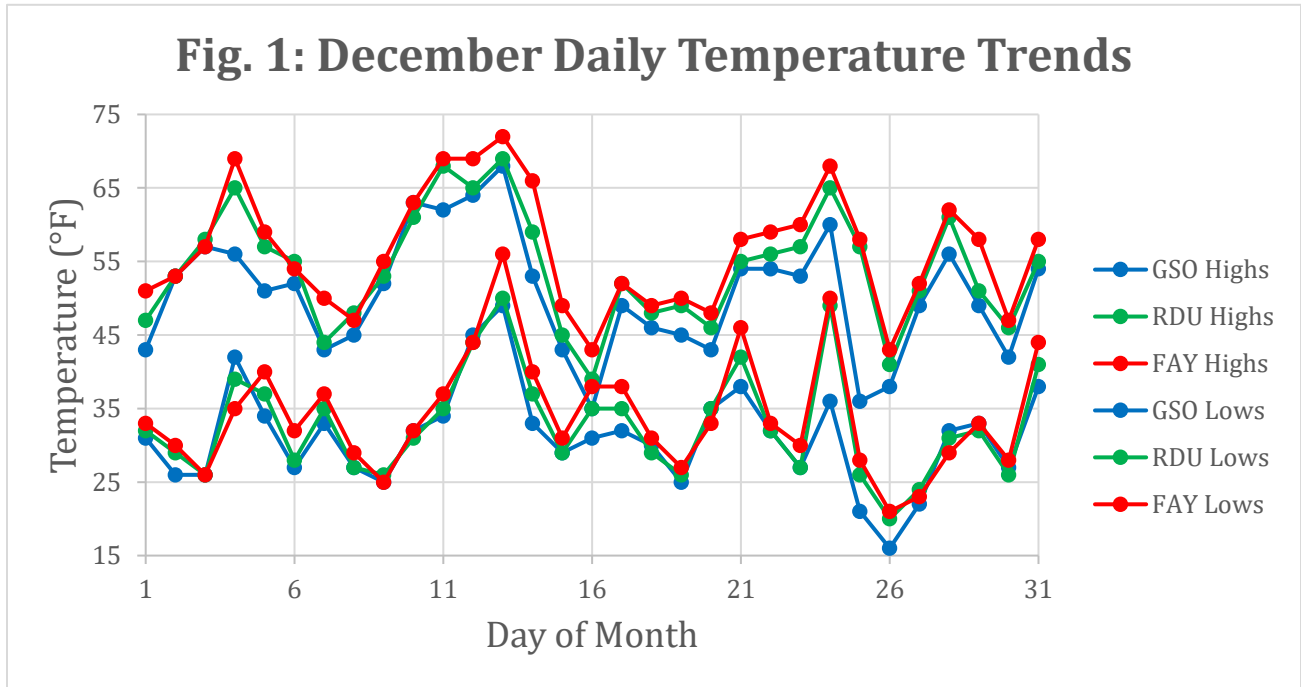
Table 1: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	50.6	31.2	40.9	-0.4	68 on 12/13	16 on 12/26
Raleigh-Durham (RDU)	54.1	32.7	43.4	-0.1	69 on 12/13	20 on 12/26
Fayetteville (FAY)	56.4	34.2	45.3	-0.1	72 on 12/13	21 on 12/26

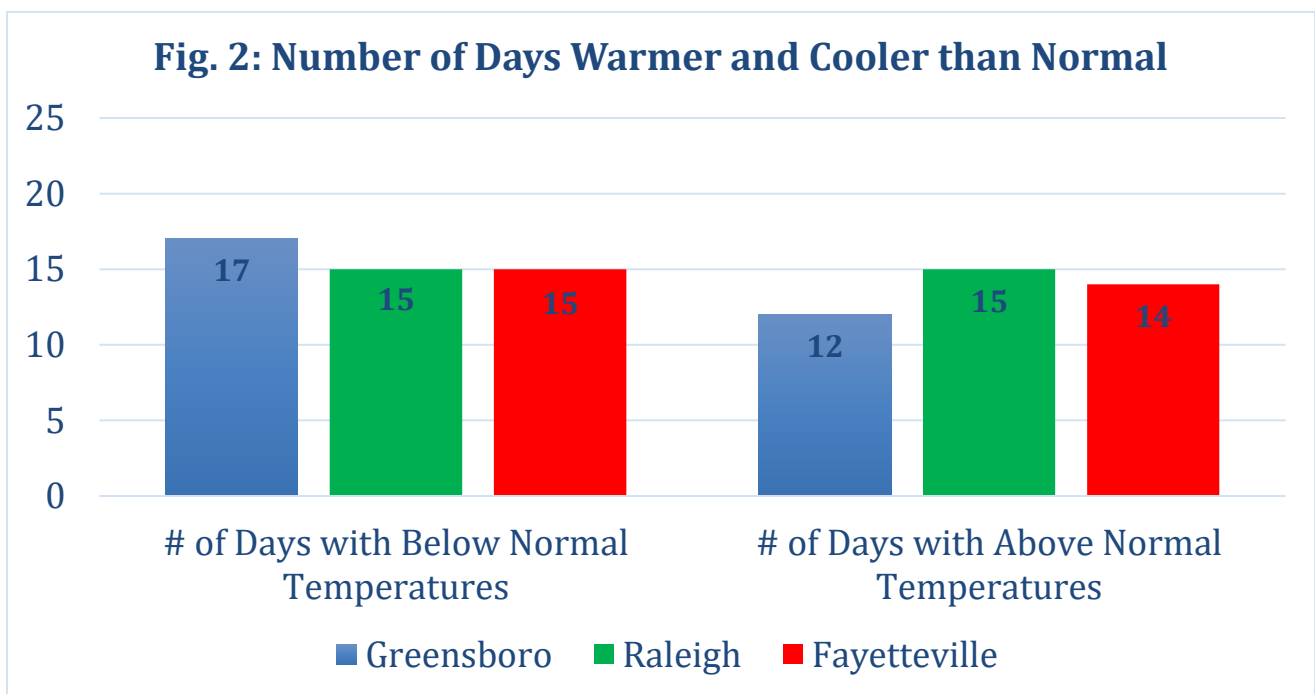
The time series of daily temperature for the month at Greensboro, Raleigh, and Fayetteville can be found in Figure 1. Note the brief warm-ups just prior to and during many of the rain events this month. Then, note the cool downs that occurred as the systems moved away. This is a common theme within an overall pattern that generally was dominated by a strong Pacific jet stream across the United States, which kept cold outbreaks from occurring.

Interestingly, there was one system that was able to tap into some cold air on December 25 and 26, at least for a brief period of time. The mid and upper level trough was able to dig deep into the southeastern US states and bring not only a shot of very cold air to NC, but the first real taste of winter weather. There were significant snowfall accumulations in the western NC mountains,

with at least some light accumulations measured in the northern Piedmont of NC, late on December 25 into the early morning hours of December 26. Gusty NW winds to 30-35 mph along with highs in the mid-30s to mid-40s greeted residents of central NC on December 26. The monthly low temperatures in the 15-25°F range occurred on the 26th and 27th.



As shown in Figure 2, the number of days warmer and cooler than normal during the month were close to equal at the three climate sites.

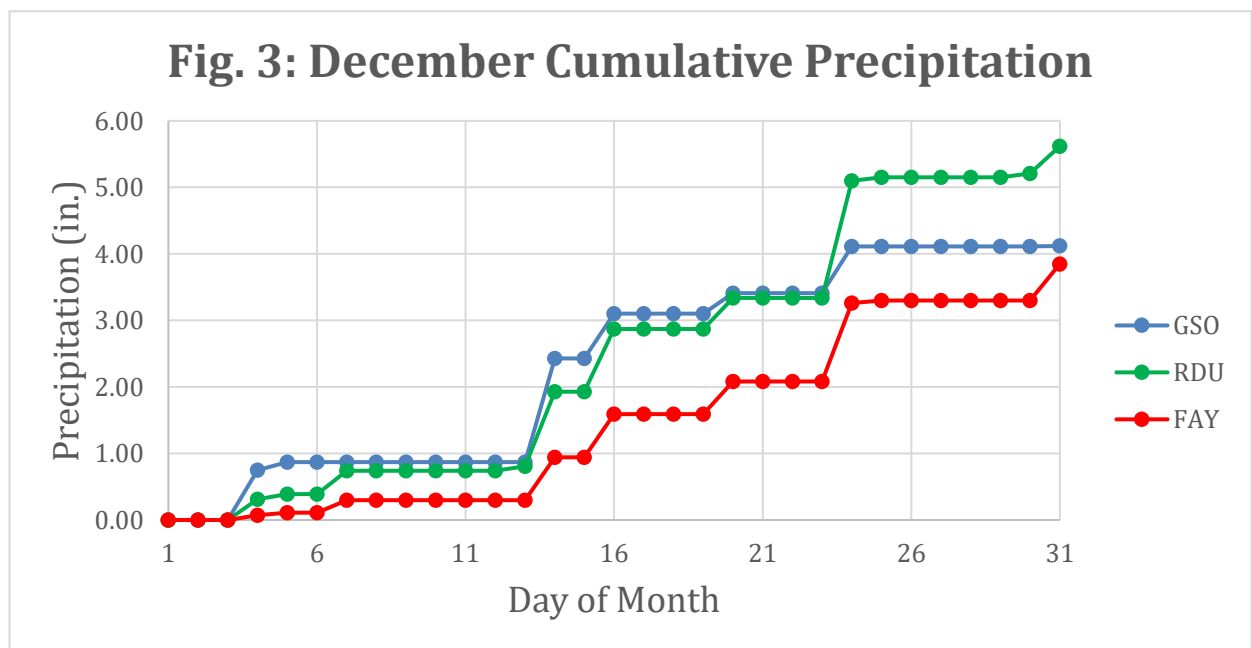


December 2020 was wetter than normal. However, none of our three main climate sites had a top five wettest December, and precipitation totals at GSO, RDU, and FAY were generally 1-3 inches above normal (Table 2). That was generally the case for the rest of the reporting stations. It was wet, but nothing too extreme for the month itself. Additional selected monthly precipitation totals from cooperative observations included: Winston-Salem (Forsyth County) 3.93 inches (0.46 above normal), Lexington (Davidson County) 4.50 inches (1.22 above normal), Albemarle (Stanly County) 3.95 inches (0.53 above normal), Louisburg (Franklin County) 6.08 inches (2.83 above normal), Rocky Mount (Nash County) 5.49 inches (2.56 above normal), Clinton (Sampson County) 3.18 inches (exactly normal), Raleigh - NCSU 6.19 inches (2.89 above normal), and Randleman (Randolph County) 4.05 inches (0.77 above normal).

Table 2: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	4.12	+1.14	1.56 on 12/14
Raleigh-Durham (RDU)	5.62	+2.55	1.76 on 12/24
Fayetteville (FAY)	3.85	+1.20	1.18 on 12/24

The cumulative precipitation at the three climate sites for the month of November is shown in Figure 3.



As displayed by the radar-estimated precipitation for central NC in Figure 4, final monthly totals ranged anywhere from 2-3 inches in the far southwest to 5-8 inches around the Triangle region. Nearly everywhere was wetter than normal, by as much as 2-4 inches, except in the southwest which was near or slightly below normal (Figure 5).

Fig. 4: Radar-Estimated Monthly Precipitation

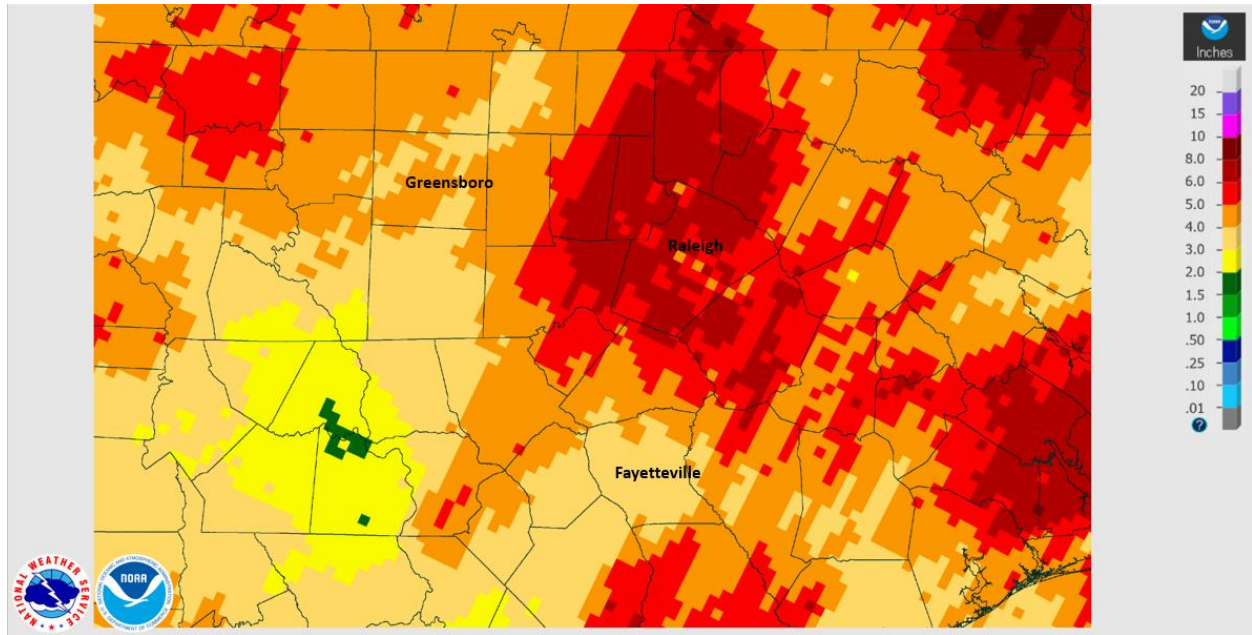
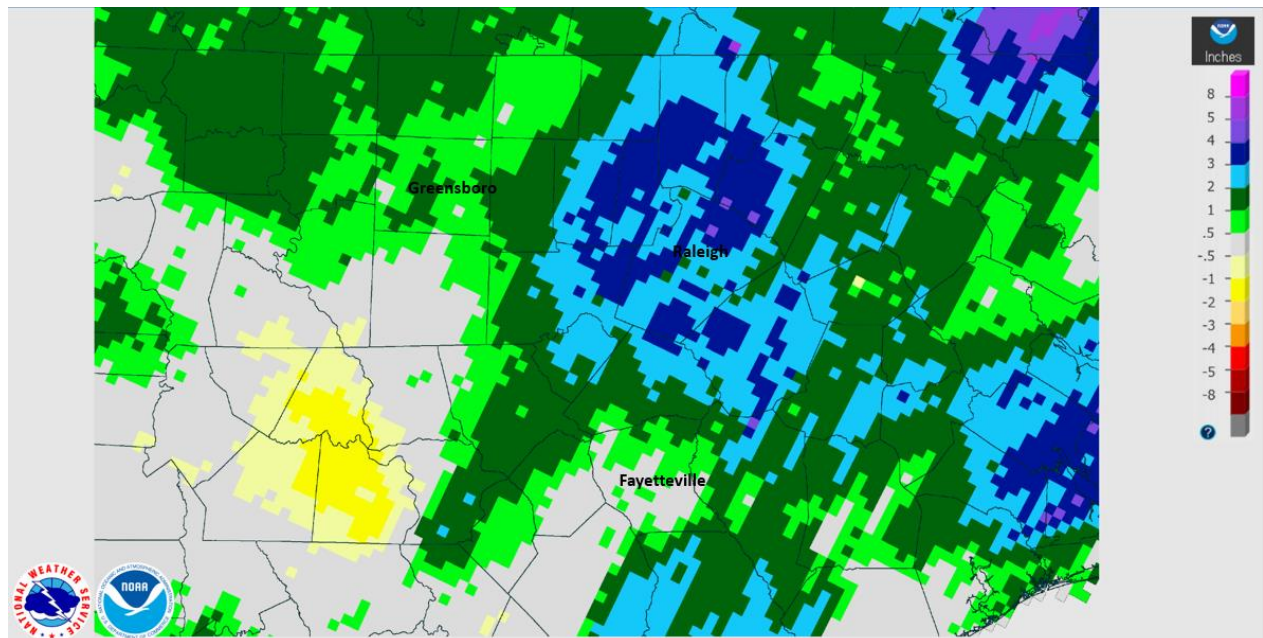


Fig. 5: Radar-Estimated Monthly Departure from Normal Precipitation



Other notes:

Strongest wind gusts and direction:

Greensboro: NW at 53 mph on December 24 (strong cold frontal passage)

Raleigh: W at 41 mph on December 5 (cold frontal passage)

Fayetteville: SW at 53 mph on December 24 (strong cold frontal passage)

Number of days with high temperatures at or below 32 °F this month:

Greensboro: 19

Raleigh: 18

Fayetteville: 15

Monthly records:

There were no monthly records of note this month at any of the three climate sites.

Daily records:

Greensboro tied a daily record snowfall of a trace on December 7. This tied the previous record of a trace of snowfall set in 1995.

Greensboro set a daily record rainfall of 1.56 inches on December 14. This broke the old record of 1.00 inch set in 1909.

Raleigh set a daily record rainfall of 1.76 inches on December 24. This broke the old record of 1.71 inches set in 2014.

Fayetteville had no daily records in December 2020.