

December 2019 Central NC Climate Summary

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The month featured a flip from the colder-than-normal November temperatures to warmer-than-normal temperatures.

December 2019 was generally 3 to 5°F warmer than the 30-year average across central NC. 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)	54.8	35.2	45.0	+3.7	71 on 12/30	24 on 12/19
Raleigh-Durham (RDU)	58.1	37.1	47.6	+4.1	76 on 12/10 and 12/30	25 on 12/20
Fayetteville (FAY)	59.9	39.4	49.6	+4.2	78 on 12/10	25 on 12/20

Warmth was featured for plenty of days during December. The warmth really became noticeable the last week of the month when Raleigh and Fayetteville recorded 3 straight days with highs exceeding 70°F from the 28th through the 30th. One of those included a tied daily record high temperature of 76°F at Raleigh on December 30th. The last 6 days of December were at least 8°F above normal at Raleigh, with the heat peaking on the 29th and 30th when readings were more than 20°F above normal. Greensboro and Fayetteville had very similar numbers to those of Raleigh. Even though there were no daily record temperatures set, the readings that were 20 to 23°F above normal on the 29th and 30th did not feel like December at all.

The time series of daily temperature at Greensboro, Raleigh, and Fayetteville can be found in Figure 1. The Pacific dominated flow did not allow for arctic air intrusions into the region, with highs mainly in the 50s or above and lows most nights staying above freezing even at Greensboro. As shown in Figure 2, nearly half of the days in December were actually below normal at Raleigh and Fayetteville, mainly in the first half of the month, but many of them were only barely below normal (by a few degrees or less). Therefore, the average temperature for the entire month was still around 4°F above normal at all three climate sites.

Fig. 1: December Temperature Trends

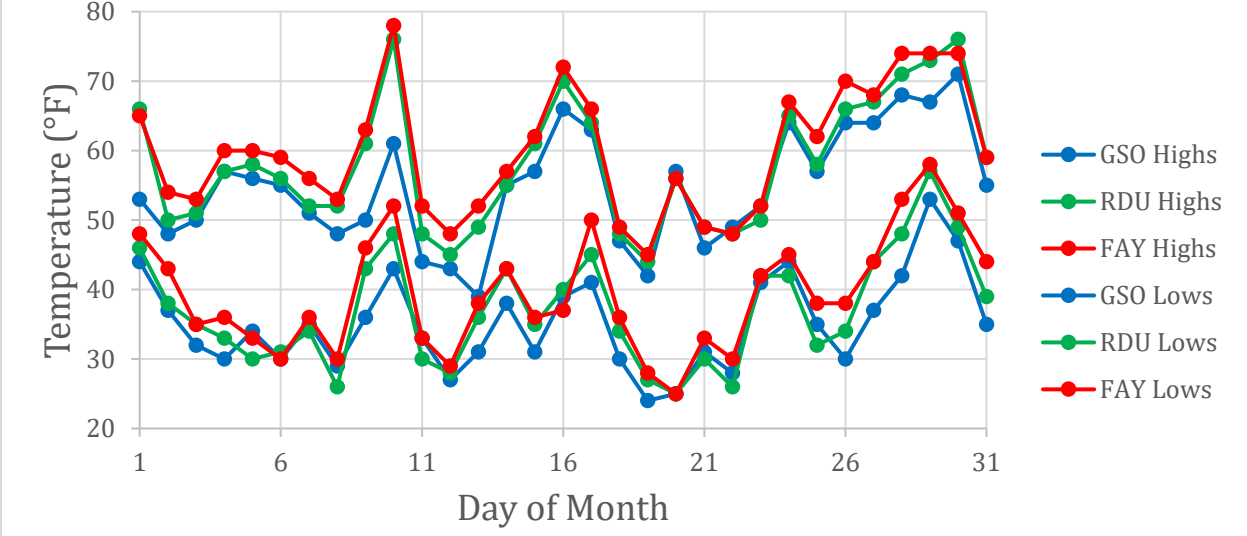
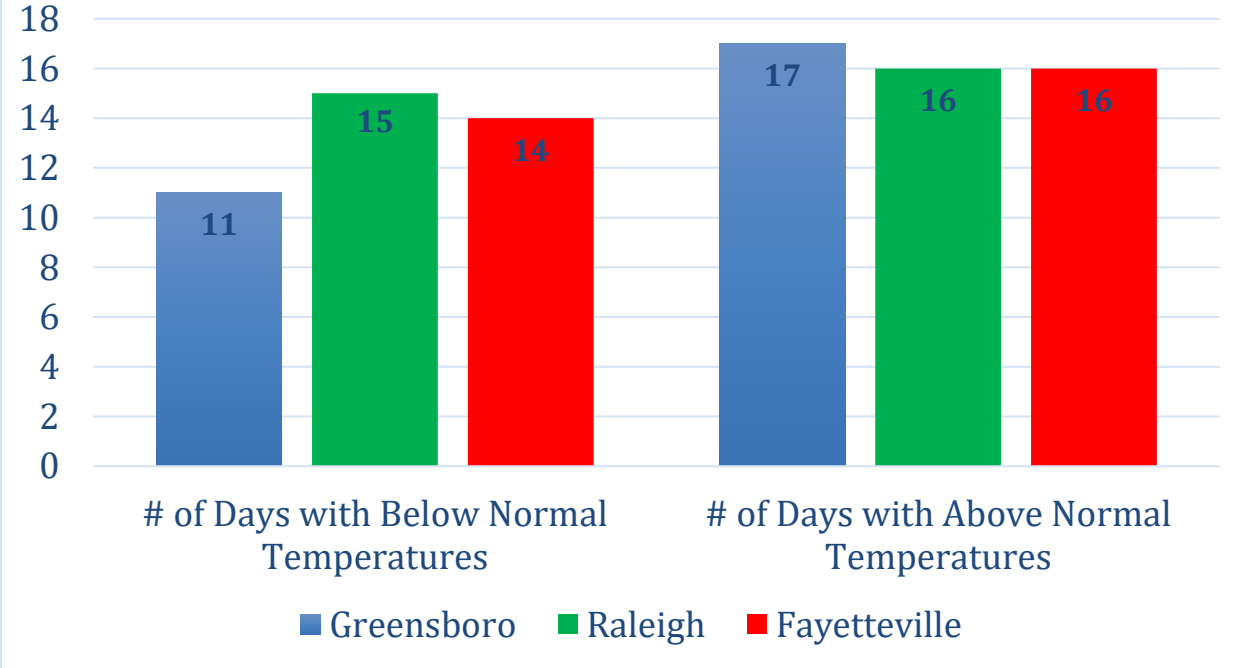


Fig. 2: Number of Days Warmer and Cooler than Normal



Precipitation continued the above-average trend that began in mid-October 2019. There were several significant rainfall events during the month, with the heaviest events in the first half. The biggest event was on December 13th, when Fayetteville measured 2.22 inches and Raleigh measured 1.40 inches (both daily precipitation records). Later in the month, a strong ridge of high pressure extended into the Southeast states. This shifted the active storm track well to the west and north of NC, suppressing the rainfall events to mostly light ones. This ridge was also responsible

for the warm temperatures. Rain was the only form of precipitation in all of the events, as temperatures were too warm for any snowfall to occur.

As shown by the radar-estimated precipitation in Figure 3, final monthly totals varied widely across central NC, from 2 to 3 inches in the far northern Piedmont to as much as 6 to 8 inches in the southern Piedmont. These rainfall amounts were generally around half an inch below normal to as much as 4 to 5 inches above normal (Figure 4).

Fig. 3: Radar-Estimated Monthly Precipitation

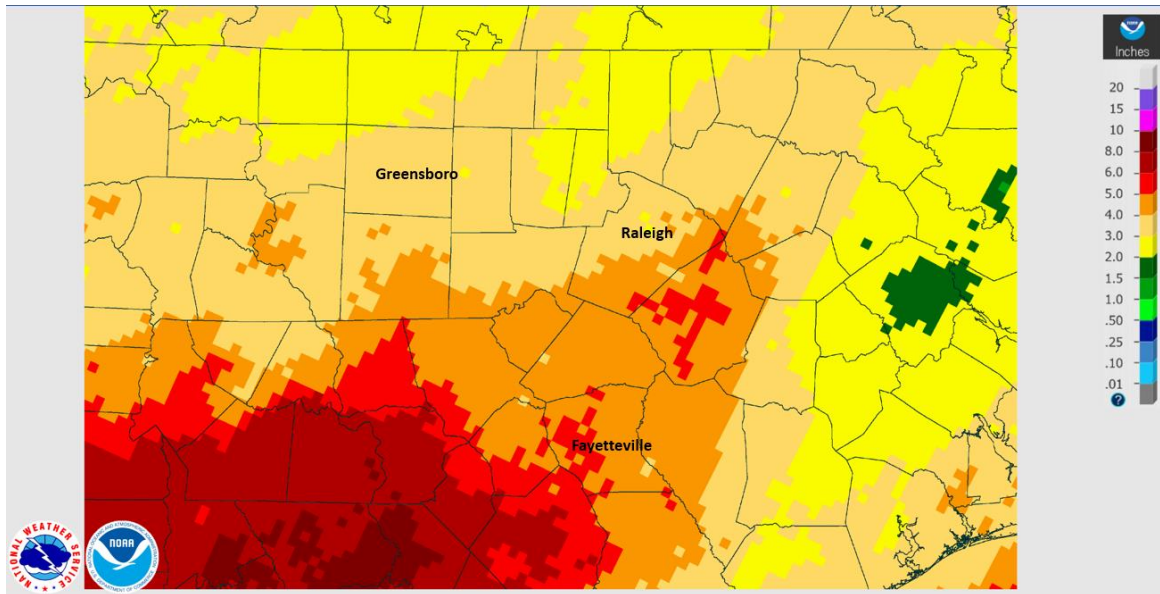
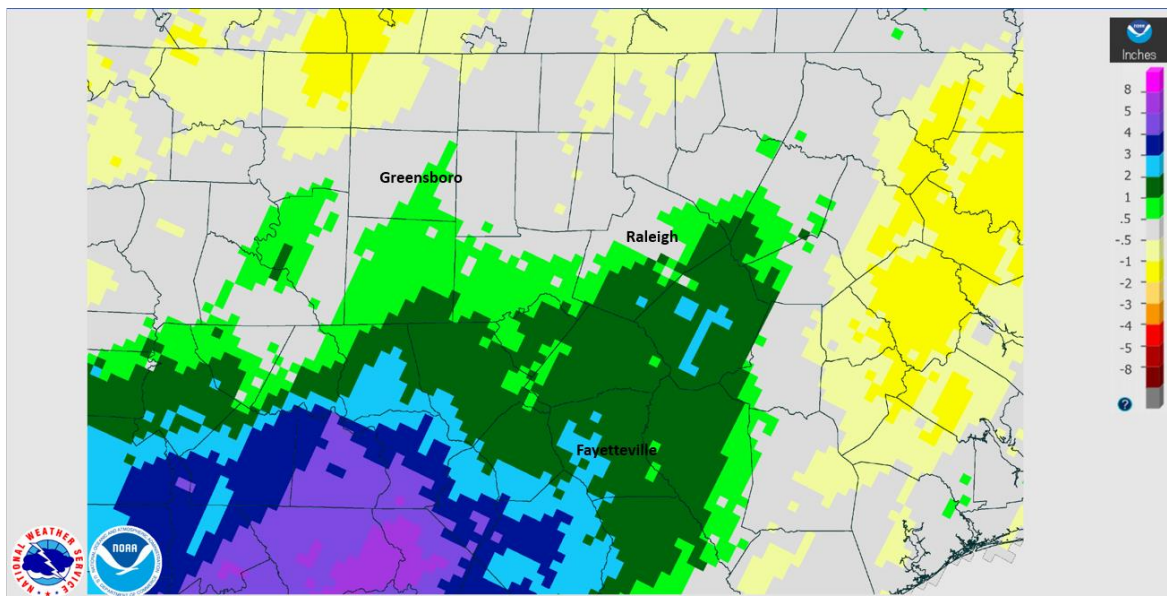


Fig. 4: Radar-Estimated Monthly Departure from Normal Precipitation

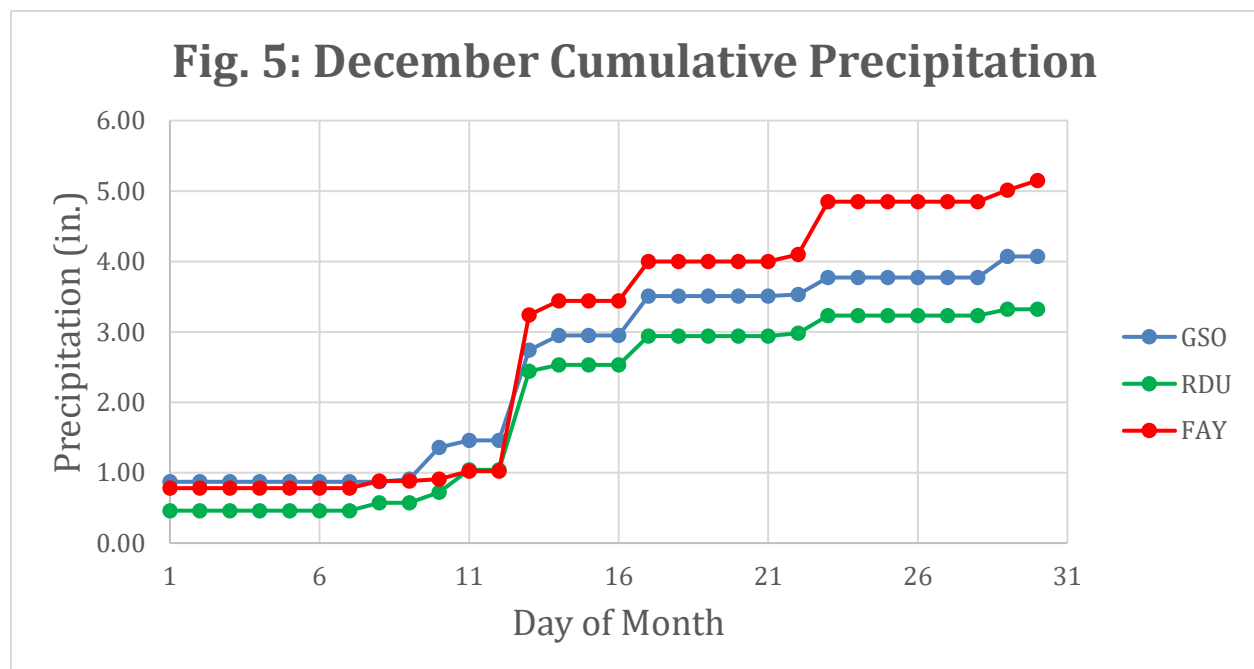


The monthly precipitation statistics at the three climate sites are displayed in Table 2. Additionally, some of the NOAA/NWS Cooperative Observer reports included: 4.64 inches in Henderson (Vance County), 4.39 inches in Jordan Lake (Chatham County), 4.18 inches in Roanoke Rapids (Halifax County), 4.03 inches in Carthage (Moore County), 3.86 inches in Raleigh (on the NC State University campus), and 3.30 inches in Goldsboro (Wayne County).

Table 2: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	4.07	+1.09	1.28 on 12/13
Raleigh-Durham (RDU)	3.32	+0.25	1.40 on 12/13
Fayetteville (FAY)	5.15	+2.50	2.22 on 12/13

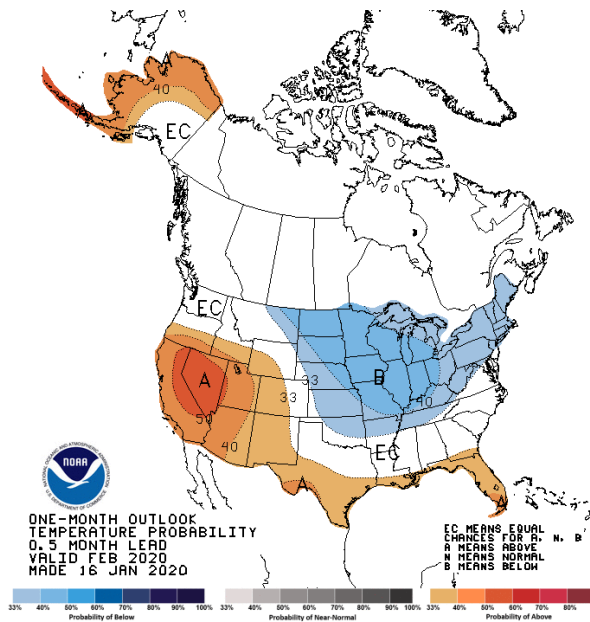
December featured several systems that brought widespread rains of around half an inch to 2 inches. The highest storm totals at the three climate sites were on December 13-14: 1.49 inches at Greensboro, 1.49 inches at Raleigh, and 2.42 inches at Fayetteville. The cumulative precipitation at the three climate sites is shown in Figure 5. Measurable rainfall fell on 10 of the 31 days in Greensboro, 10 of the 31 days in Raleigh, and 11 of the 31 days in Fayetteville.



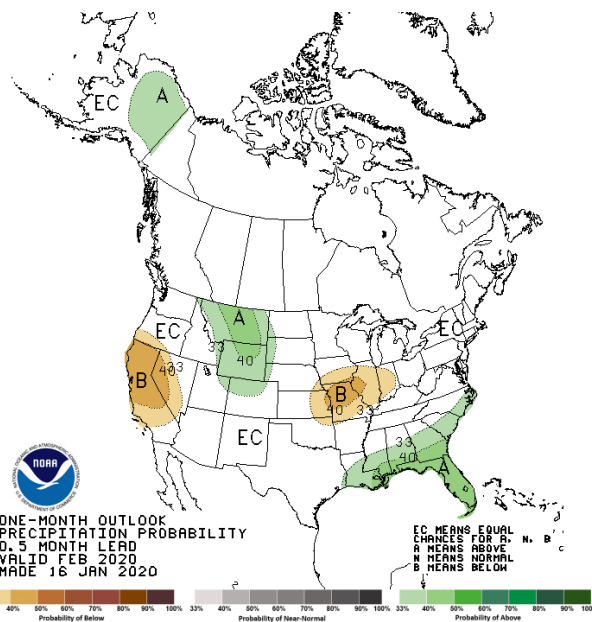
February 2020 Outlook

The latest February outlook from the Climate Prediction Center indicates nearly equal chances of above and below normal temperatures and above and below normal precipitation across central NC.

Temperature Outlook



Precipitation Outlook



Other notes:

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

Greensboro: 13
Raleigh: 10
Fayetteville: 6

Strongest wind gusts and direction:

Greensboro: SW at 37 mph on December 30th.
Raleigh: SW at 32 mph on December 30th.
Fayetteville: SW at 35 mph on December 30th.

Records:

A record rainfall of 1.40 inches was set at the Raleigh-Durham International Airport on December 13th. This broke the previous record of 1.30 inches set in 1909.

A record high temperature of 76 degrees was tied at the Raleigh-Durham International Airport on December 30th. This record was originally set in 1996.

A record rainfall of 2.22 inches was set at the Fayetteville Regional Airport on December 13th. This broke the previous record of 1.60 inches set in 1935.