

January 2020 Central NC Climate Summary

By Phillip Badgett and James Danco

It was wet and very warm, but not in the top ten warmest on record.

January 2020 went down in the record books as warm and wet. The monthly temperatures averaged generally 5 to 6.5°F warmer than the 30-year average across central NC. Even so, the month ended as tied for the 11th warmest January at Greensboro, the 13th warmest at Raleigh, and the 13th warmest at Fayetteville. Obviously, none were in the top ten warmest on record.

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

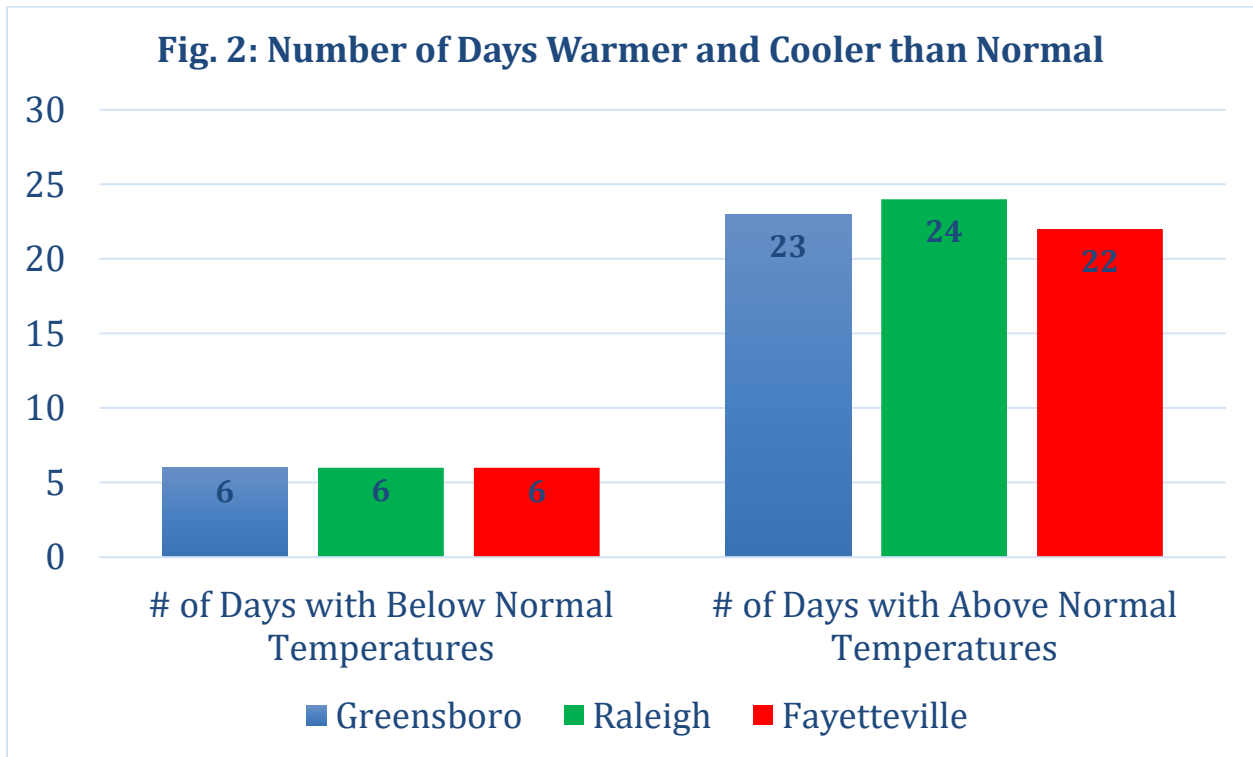
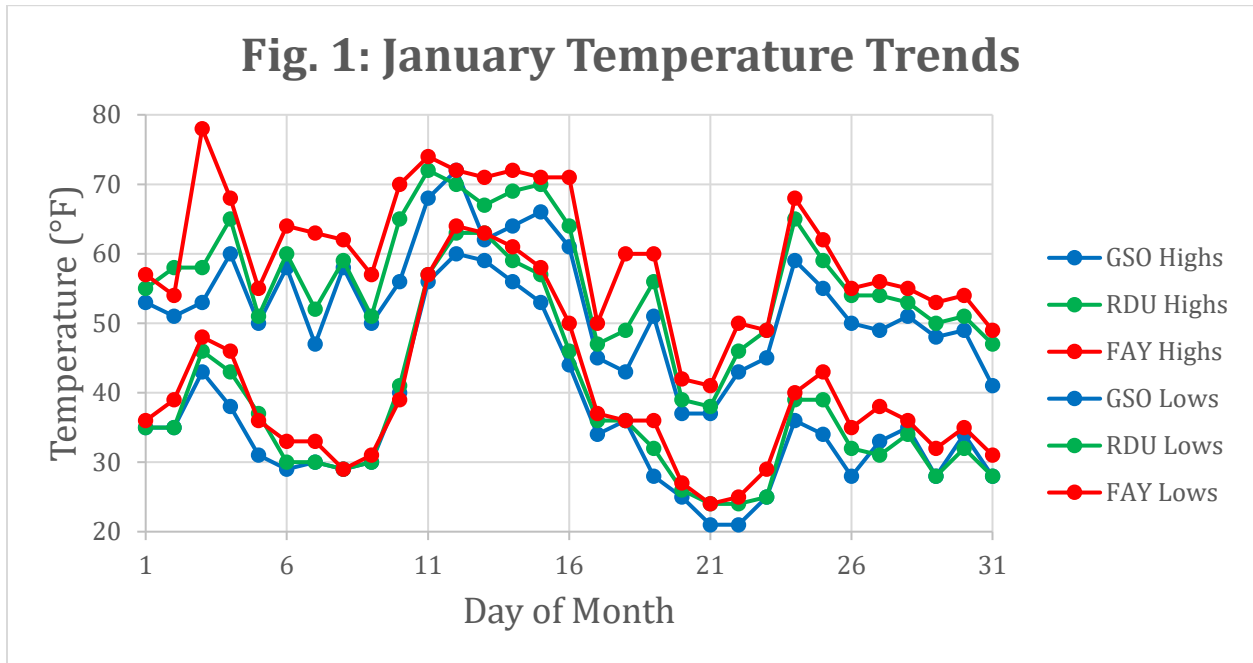
Table 1: Monthly Temperature Statistics

Site	Avg High Temp (°F)	Avg Low Temp (°F)	Avg Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum temperature (°F)
Greensboro (GSO)	52.6	35.9	44.3	+5.4	72 on 1/12	21 on 1/21 and 1/22
Raleigh-Durham (RDU)	56.2	37.6	46.9	+5.9	72 on 1/11	24 on 1/21 and 1/22
Fayetteville (FAY)	60.1	39.6	49.9	+6.4	78 on 1/3	24 on 1/21

The warmth peaked during the second week of 2020. It was so warm that the daily average temperatures were 10°F to 30°F above normal between January 10 and January 16. Raleigh reported daily departures above normal of 13°F, 25°F, 27°F, 24°F, 23°F, 23°F, and 14°F during this streak. It reached or exceeded 70°F on three of those days, with lows of 63°F on two of the days. Low temperatures of 63°F are typical of early June. As can be expected with such warmth at night, there were several daily record high minimum temperatures recorded in January. Greensboro set daily high minimum temperature records on January 11 and 12, with lows of 56°F and 60°F reported. Raleigh tallied daily record high minimums on January 11, 12, and 13, with 57°F, 63°F and 63°F recorded. Fayetteville also got in on the record high minimums, with lows of 64°F and 63°F on January 12 and 13.

The time series of daily temperature at Greensboro, Raleigh, and Fayetteville can be found in Figure 1. In a continuation of the pattern that became established in December 2019, the main flow across the United States was a Pacific-dominated flow, which kept the cold air cut off from

the southeastern United States. Therefore, the colder than normal days were limited during the month, while the days in which it was above normal were much more dominant (Figure 2).



Precipitation was above normal in January 2020, an increasingly wet trend that began in November 2019, making this the second straight wetter-than-normal month. There were several significant rainfall events that led to an increasing threat of river flooding late in the month. The heaviest rainfall came in three separate events during the first, second, and last week of the month. A very active subtropical jet stream provided ample moisture from the Pacific, the Gulf of Mexico, and the Gulf Stream Atlantic. An anomalous upper level ridge also remained anchored off the SE US coast, keeping a SW flow aloft over NC for much of the month. This ridge was responsible for the warm temperatures. With the warm temperatures came the first thunderstorms of the year and decade. Thunderstorms brought wind gusts to 42 mph at Greensboro on January 11, 42 mph at Raleigh on January 12, and 39 mph at Fayetteville on January 12. Also, there were widespread wind damage reports throughout central NC on January 11 and 12.

As shown by the radar-estimated precipitation in Figure 3, final monthly totals were generally in the 3 to 6 inch range across central NC, with the highest amounts in the Northern Piedmont. These rainfall amounts were anywhere from near normal to as much as 3 inches above normal (Figure 4). The monthly precipitation statistics at the three climate sites are displayed in Table 2.

Fig. 3: Radar-Estimated Monthly Precipitation

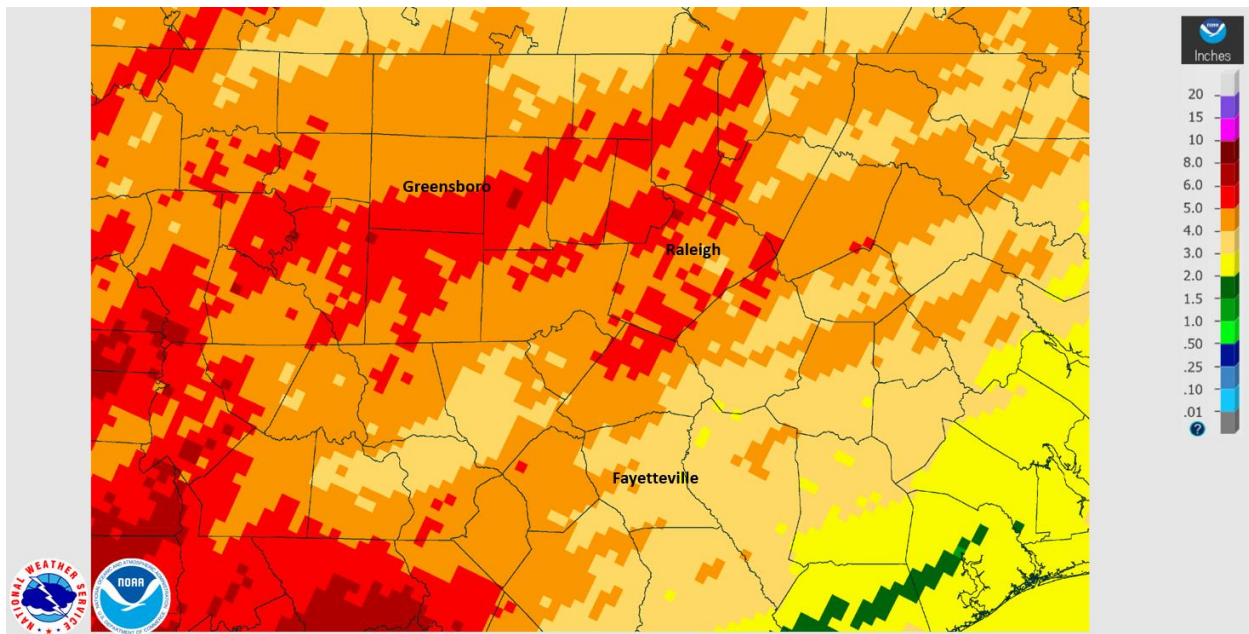


Fig. 4: Radar-Estimated Monthly Departure from Normal Precipitation

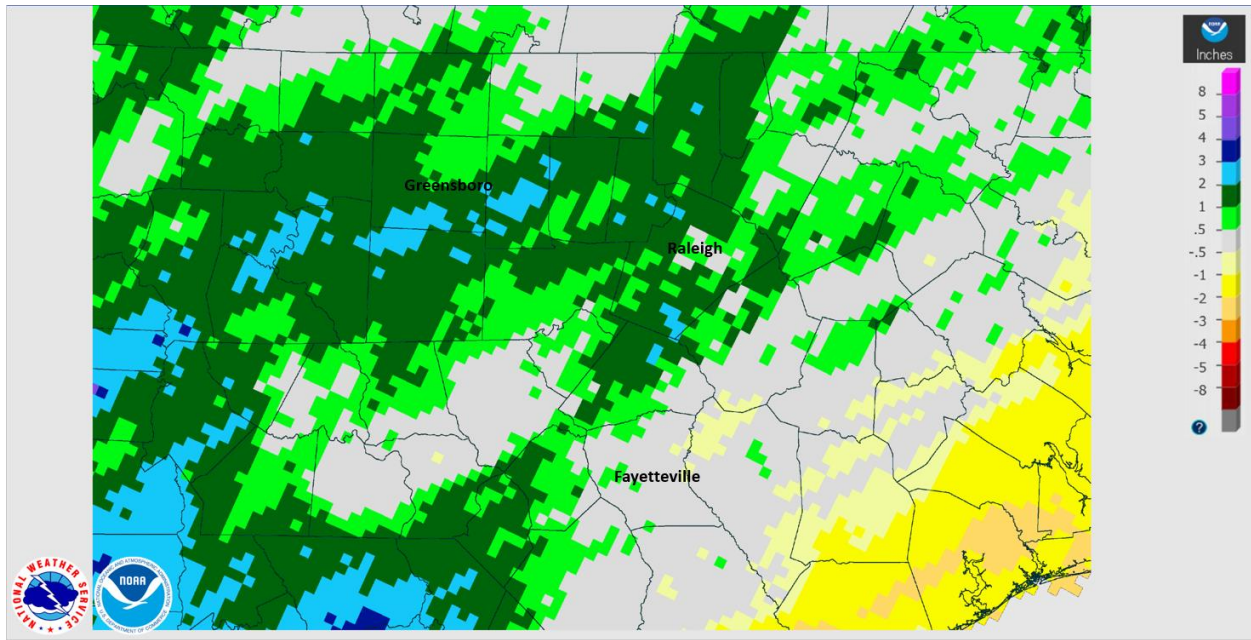
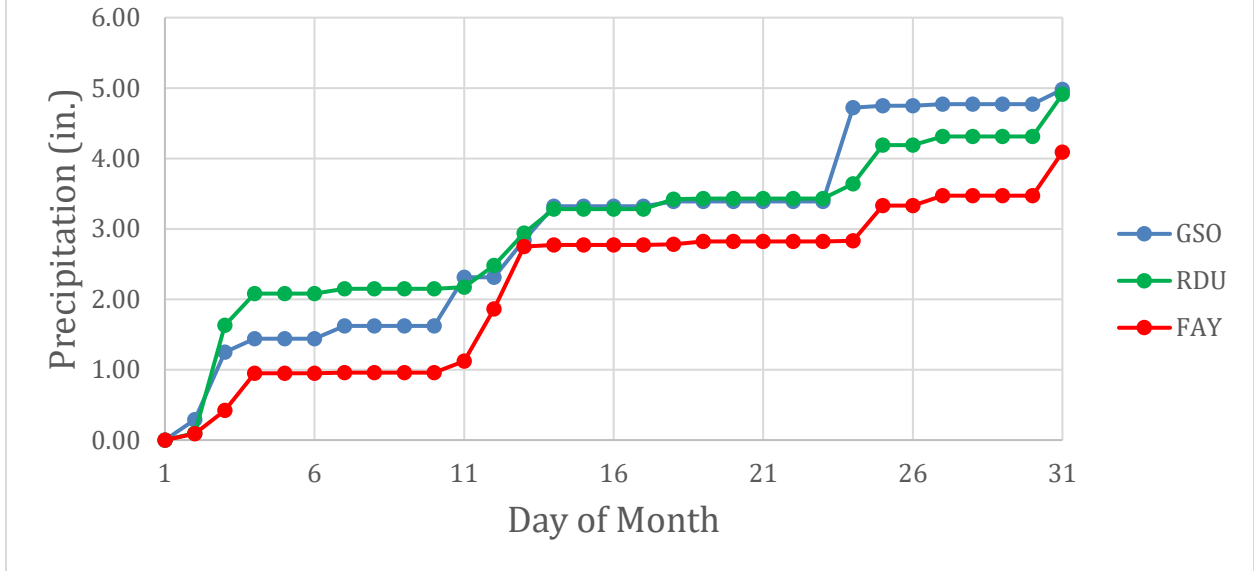


Table 2: Monthly Precipitation Statistics

Site	Total precipitation (in.)	Departure from Normal (in.)	Max Daily Precipitation (in.)
Greensboro (GSO)	4.98	+1.92	1.33 on 1/24
Raleigh-Durham (RDU)	4.91	+1.41	1.53 on 1/3
Fayetteville (FAY)	4.09	+0.79	0.89 on 1/13

January featured three systems that brought widespread rains of 1 to 2 inches. The highest daily totals at the three climate sites included: 1.53 inches at Raleigh on January 3, 0.89 inches at Fayetteville on January 13, and 1.33 inches at Greensboro on January 24. Measurable rainfall fell on 12 of the 31 days in Greensboro, 14 of the 31 days in Raleigh, and 14 of the 31 days in Fayetteville. There were five days with at least half an inch at Fayetteville, four such days at Greensboro, and three at Raleigh. The cumulative precipitation at the three climate sites is shown in Figure 5.

Fig. 5: January Cumulative Precipitation

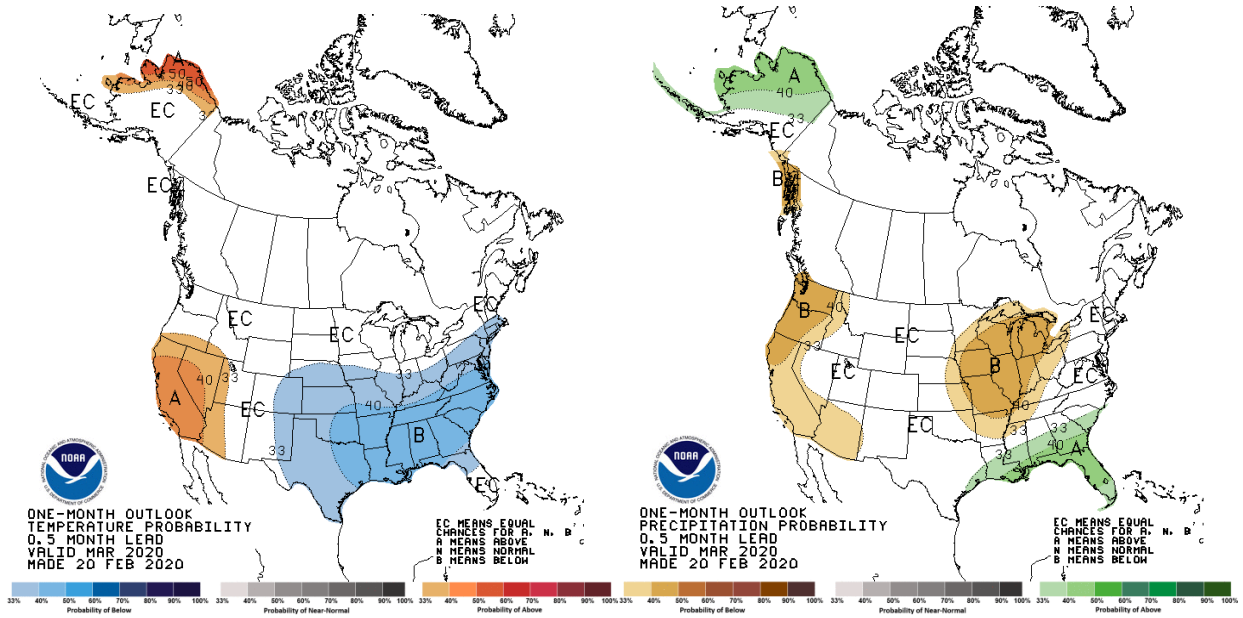


March 2020 Outlook

The latest March outlook from the Climate Prediction Center indicates a higher probability of below normal temperatures and equal chances of above and below normal precipitation.

Temperature Outlook

Precipitation Outlook



Other notes:

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

Greensboro: 13

Raleigh: 14

Fayetteville: 8

Strongest wind gusts and direction:

Greensboro: S at 42 mph on January 11

Raleigh: S at 42 mph on January 12

Fayetteville: W at 39 mph on January 12

Records:

Greensboro recorded record high minimum temperatures of 56°F and 60°F on January 11 and January 12, respectively.

Record high minimum temperatures were recorded at Raleigh on January 11, 12, and 13. Temperatures of 57°F, 63°F, and 63°F were recorded on those days, respectively.

Record high minimum temperatures were established on January 12 and 13 at Fayetteville. The official readings were 64°F on the 12th and 63°F on the 13th.