

January 2004 NC Weather Review

January, 2004 averaged drier and slightly colder (about a degree or two below) than normal. January began with a period of record warmth during the first week of the month. This was quickly followed by dramatically colder conditions that arrived during the end of the first week of January and generally persisted for the remainder of the month. There were only a few mild periods during the latter 3 weeks of the month. Widespread precipitation was generally limited to two significant events for the month.



Figure 1 shows the upper air patterns that dominated the weather in early and then mid to late January.

A strong upper level ridge of high pressure was centered over the southeastern United States during the first week of January. This brought dry and unseasonably warm weather to North Carolina. Daily maximum temperatures soared into the 70s east of the mountains on the 3rd through the 5th. A daily record maximum temperature of 72 degrees was set at Greensboro on the 2nd. Raleigh topped out at 73 degrees on the 3rd and the 5th. These readings were only 7 degrees from tying the all time record January maximum at Raleigh of 80 degrees, set on January 30, 2002.

A dramatic turn to sharply colder weather occurred between the 6th and 7th. The ridge was replaced with a trough that developed over the eastern United States. This pattern allowed Arctic air that had been bottled up in Canada to flow freely into the southeastern states. Less than 48 hours after high temperatures reached the 70s on the 5th across much of the Piedmont, the arctic blast dropped readings into the teens and lower 20s on the morning of the 7th. Raleigh dropped from an afternoon high of 73 degrees on the 5th to a morning low of 21degrees on the 7th.

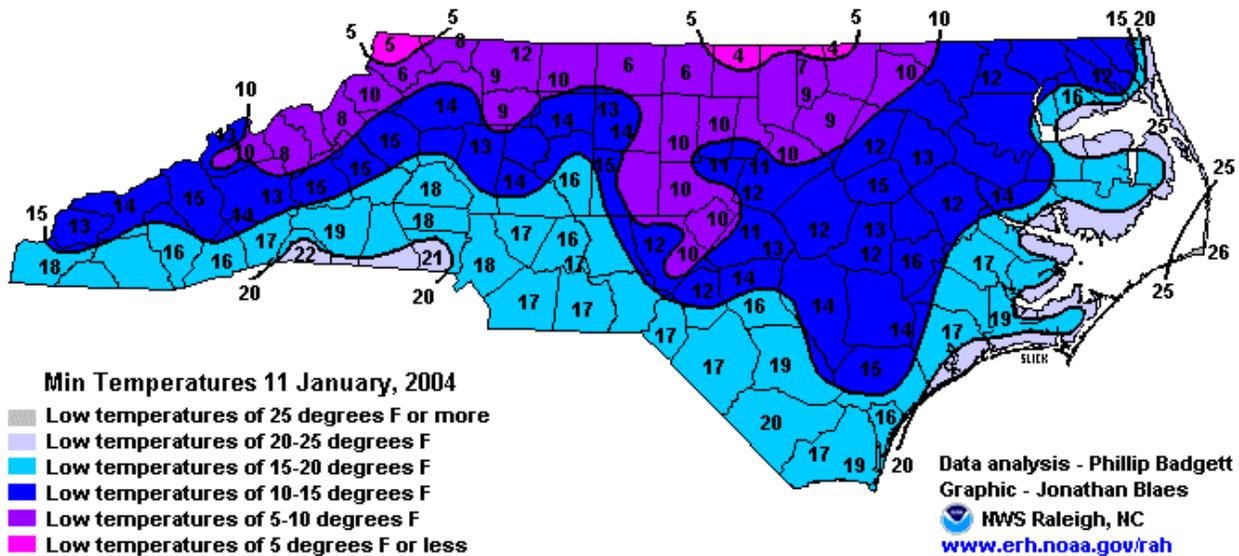


Figure 2 shows the minimum temperatures observed on the morning of January 11 2004.

The cold pattern persisted for much of the remainder of the month. The cold waxed and waned at times, but the temperatures generally remained below normal during the last 3 weeks of the month. Some of the coldest weather occurred during and shortly after two winter storms, when high temperatures remained below freezing over much of the state on January 9-10 and January 25-26. The coldest day in nearly a decade occurred with the winter storm on the 25th when Greensboro, Raleigh, Winston-Salem, Roxboro, and Burlington fell into the teens by late in the afternoon. Temperatures fell into the 20s all the way to the south coast and on the Outer Banks.

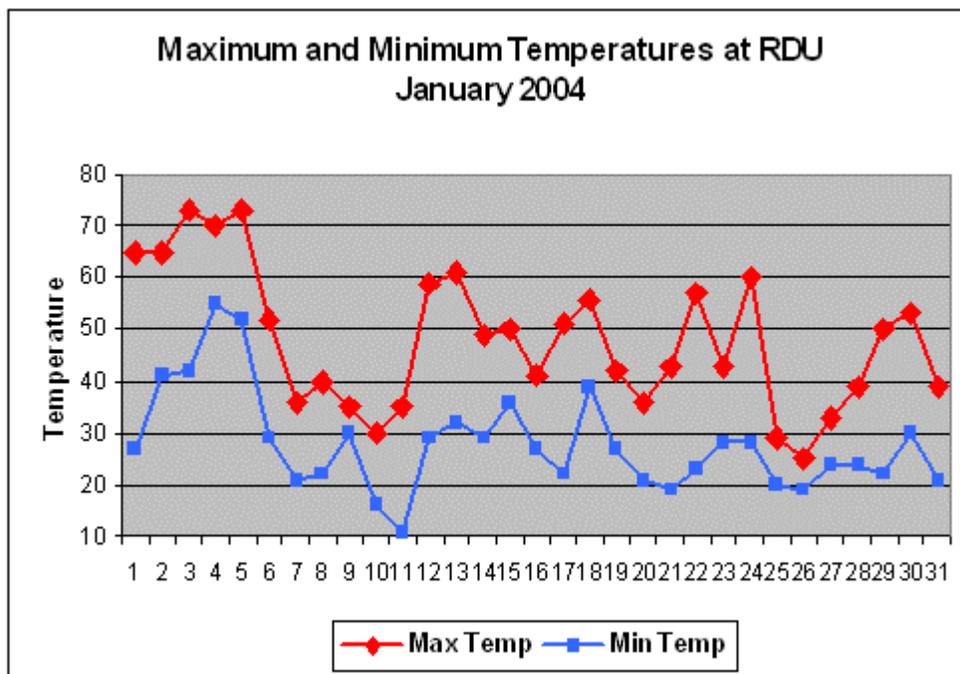


Figure 3 shows a line graph of the maximum and minimum temperatures observed each day in January at Raleigh-Durham (RDU).

January 2004 was third driest January on record at both Greensboro and Raleigh. This was due to the persistent trough over the eastern seaboard, which transported cold dry air masses into the region. This pattern limited our significant precipitation events to just two during the month of January, with the majority of precipitation falling in the frozen or freezing state with both events.

Less than an inch of liquid equivalent precipitation fell at many official recording sites during the month including Fayetteville 0.57 inches, Asheville 0.83 inches, Greensboro 0.89 inches, and Charlotte 0.92 inches. Only slightly higher totals were recorded at both Wilmington 1.22 inches and Cape Hatteras 1.97 inches. These totals ranged between 2 and almost 3 inches below normal for the month. Raleigh reported only 1.23 inches of precipitation which was 2.79 inches below normal.

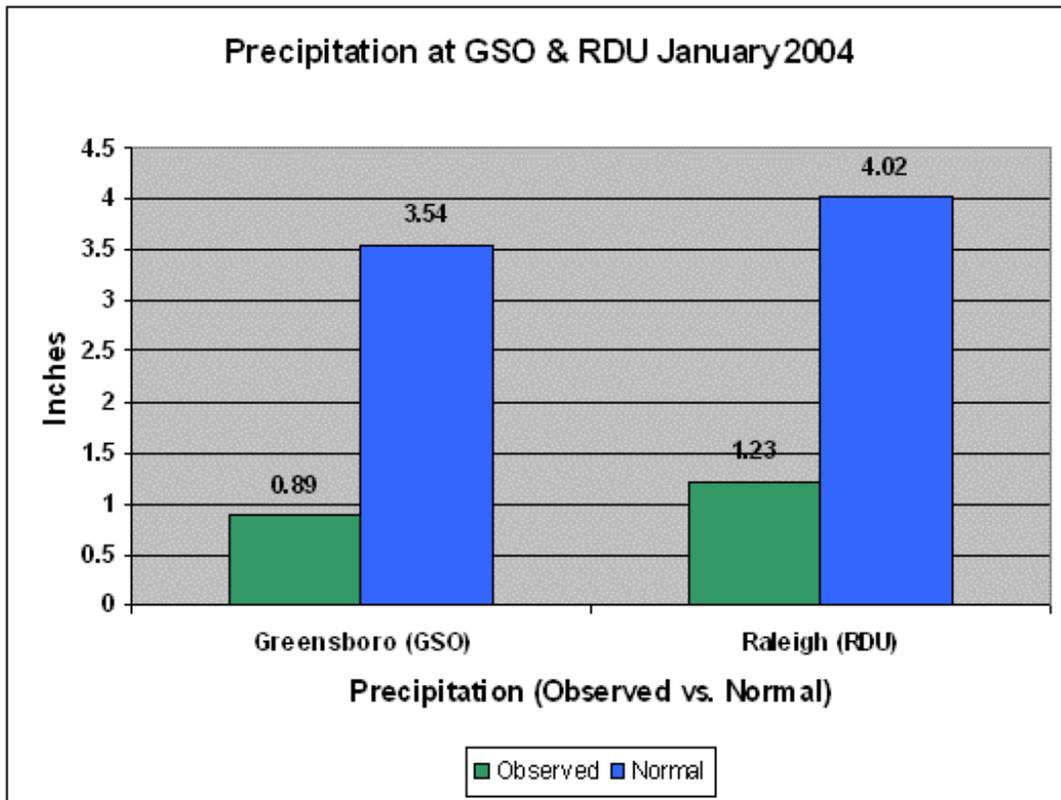


Figure 4 shows a bar graph of the observed and normal precipitation for January at Greensboro (GSO) and Raleigh-Durham (RDU)

Two significant winter storms affected the state during the month. These storms occurred on January 9-10 and January 25-27. Snowfall totals for the month included: Greensboro 6.5 inches, Raleigh 5.7 inches, Asheville 4 inches, and Charlotte 1.3 inches.

The most intense winter storm occurred on the 25th through 27th when snow and sleet fell across much of the state. A state of emergency was declared by North Carolina's governor due to the snow, ice, and bitter cold left in the storms wake. The precipitation fell as snow and sleet over much of the state on the 25th, then became freezing rain over the southeastern sections on the 26th and tapered off by the 27th. As much as 6 to 8 inches of snow and sleet fell over the northern Piedmont, Foothills and Mountains on the 25th, with as much as 3/4 to 1 inch of freezing rain reported in the southeast coastal plain on the 26th and 27th. The freezing rain brought down trees and many power lines over locations between Lumberton and Wilmington.

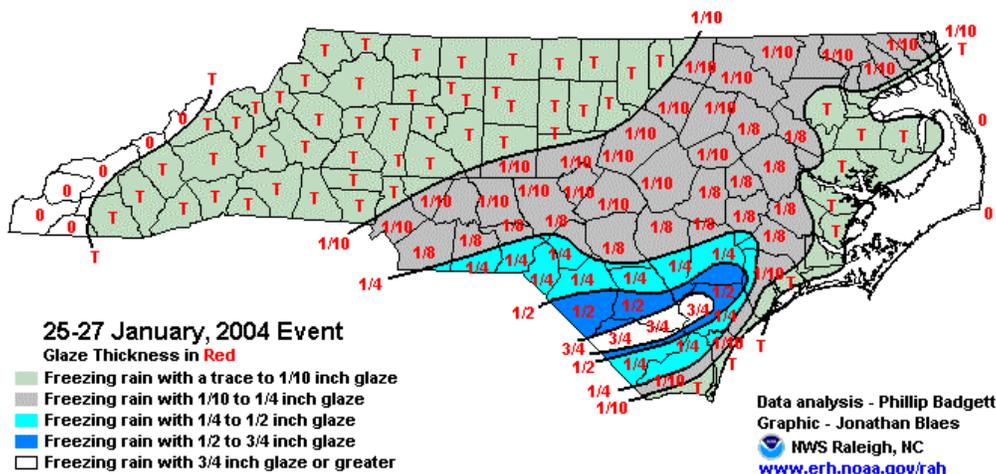
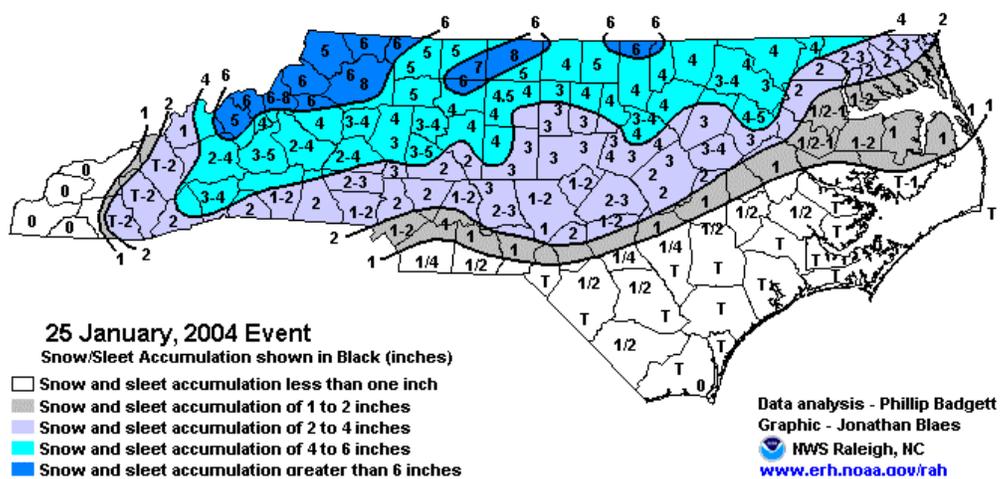


Figure 5 shows maps of the snow & sleet accumulation (top image) and the freezing rain or glaze accumulation (bottom image) during the winter storms that moved across the region from January 25-27, 2004.

Temperatures during the last week of the month averaged 10 to 15 degrees below normal. Morning lows frequently fell into the teens with afternoon highs only reaching the mid 30s to mid 40s. This kept the snow and ice pack on the ground for 5 to 8 days across much of central and western North Carolina. The visible satellite image below shows the persistent snow cover that as present across much of northern and central North Carolina two days after the snow ended.

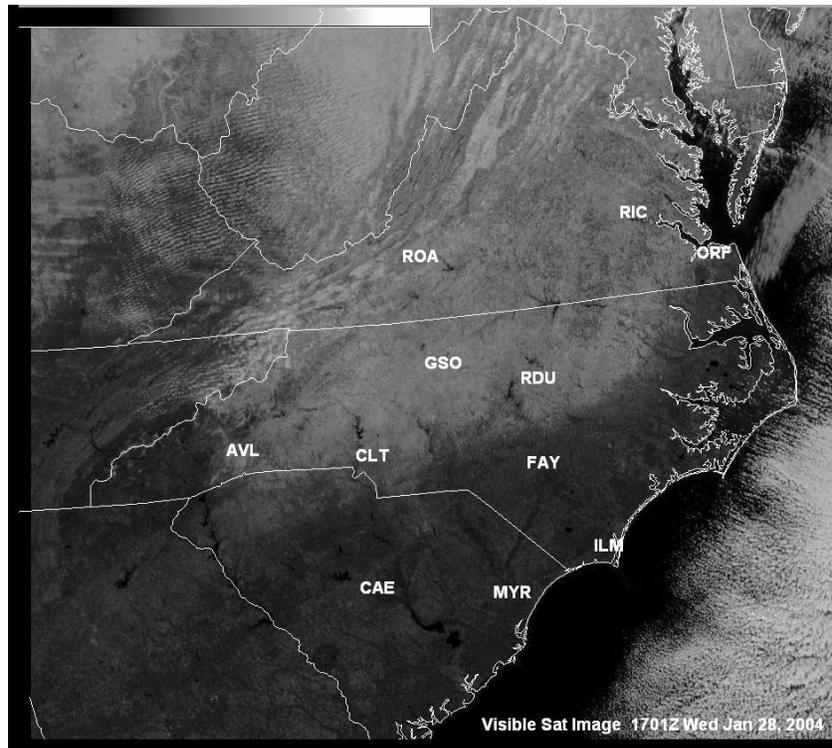


Figure 6 shows a visible satellite image from 1201 PM EST (1701 UTC) on Wednesday, January 28, that shows the snow cover (light colored areas that look like clouds) across much of northern and central North Carolina.

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