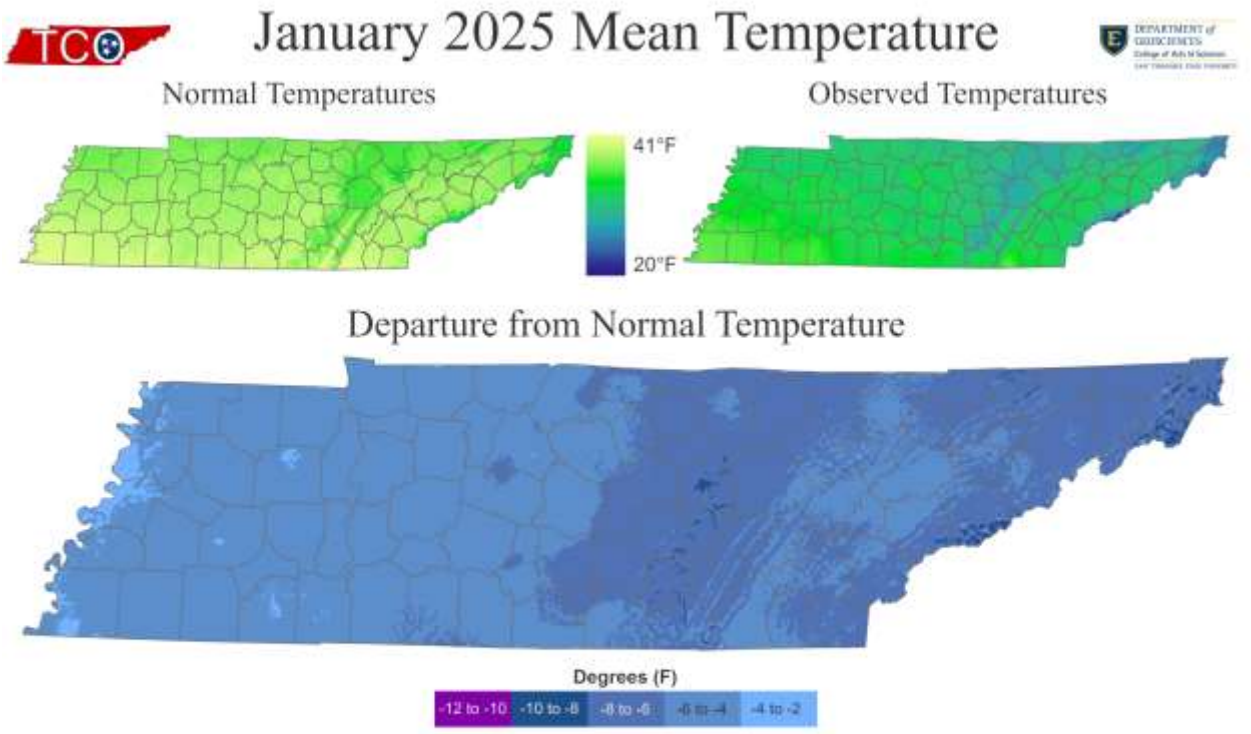
January 2025 Tennessee State Climate Summary

*Tennessee Climate Office * East Tennessee State University*
Prepared by William Tollefson and Dr. Andrew Joyner
With contributions by Climate Data Representatives across the state

Monthly Temperature Summary:

January 2025 was much cooler than normal across the state, with most of West and Middle Tennessee averaging 4-6°F below normal and most of the Cumberland Plateau and East Tennessee averaging 6-8°F below normal. The first week of the month was the closest to normal, in the range of 1-3°F below normal. The second week of January was even colder with mean temperatures ranging from 20-35°F, which was 6-12°F colder than normal. The third week of January had a slight warming trend, but with temperatures still 4-8°F cooler than normal. In the fourth week of the month West Tennessee had temperatures that were 2-5°F cooler than normal, while East Tennessee saw temperatures 10-12°F below normal. A warmup with above normal temperatures moved across the state in the final days of the month with almost all stations observing the warmest temperatures of the month on January 30 or 31 with highs in the mid-to-upper-60s. Despite the much cooler than normal temperatures, the only long-term climate station that had a top-10 coldest January was the Tri-Cities, which had their 9th coldest mean temperature for the month of January. There were six broken and seven tied daily low temperature records set this month, and 13 broken and five tied daily records for coolest high temperatures. On the warm side of the record books, there was one daily high temperature record set this month.



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	37.6
SHILOH NMP TENNESSEE	RAWS	37.4
CHATTANOOGA AP	WBAN	37.1
MEMPHIS WFO	WBAN	36.2
JACKSON MCKELLAR- SIPES AP	WBAN	35.8

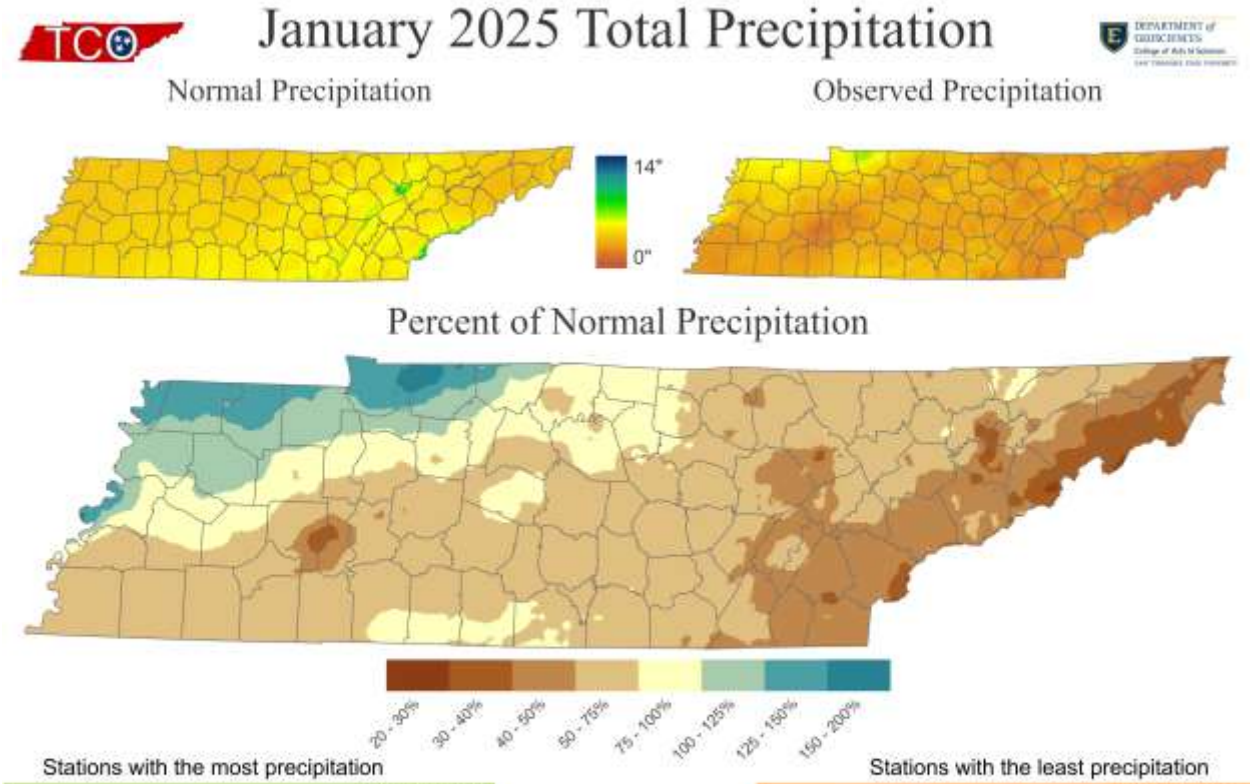
Map Data from PRISM Climate Group, Oregon State University. 1991-2020 Climate Normals Used. Station Data Retrieved From xmACIS2.

Stations with the lowest mean temperature

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	18.3
NEWFOUND GAP	COOP	23.4
ROAN MOUNTAIN 3SW	COOP	26.2
MOUNTAIN CITY 2	COOP	26.4
ONEIDA	COOP	27.4

Monthly Precipitation Summary:

January 2025 saw below normal precipitation, with the exception of northwestern portions of the state which had heavier rainfall at the beginning and end of the month. East and northeast Tennessee were the regions with the most below normal precipitation, with some areas recording less than 40% of their normal January precipitation. Southern portions of West Tennessee and most of Middle Tennessee and the Cumberland Plateau recorded 50-70% of their normal precipitation for January. The first week of the month saw the most wide-spread rainfall with many parts of the state recording over an inch of rain for the week. Widespread snowfall of 2 to 6 inches was recorded in the second week of the month with twenty daily snowfall records set on January 10 or 11. Despite the snow the water equivalent precipitation was light and weekly precipitation totals were below normal across most of the state, except in a few areas around Memphis where the heaviest snowfall was reported. The third week of January brought more widespread light rainfall to most of the state, but all areas recorded below normal precipitation. In the fourth week of the month there was light rainfall and some wintry mix in southern and eastern portions of the state, but again totals were well below normal. Heavier widespread rain was observed in the final days of the month, especially in the northwestern corner of the state where 3-4-inches of rain were reported on the 31st. Despite the drier than normal conditions for most areas of the state there were 16 broken records for highest daily precipitation, mostly set on January 31.



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
CLARKSVILLE 4.9 NW	CoCoRaHS	7.00
UNION CITY	COOP	6.72
CLARKSVILLE 5.4 WSW	CoCoRaHS	5.74
DRESDEN	COOP	5.72
DOVER 1 W	COOP	5.54

Map Data from PRISM Climate Group, Oregon State University. 1991-2020 Climate Normals Used. Station Data Retrieved From xmACIS2

Stations with the least precipitation

Station Name	Station Type	Total Precipitation (in)
WINCHESTER 6.6 W	CoCoRaHS	0.57
KINGSTON	COOP	0.86
CLEVELAND 1.2 W	CoCoRaHS	1.05
GATLINBURG 2 SW	COOP	1.10
LEXINGTON	COOP	1.14

Station Data and Top Tenn. (warmest/wettest, coldest/driest stations of the month):

Station data for airports across the state using WBAN weather stations, compared to 1991-2020 30-year climate normals for departure from mean temperature and total precipitation:

Station Name	Temperatures (˚F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
Memphis	46.3	28.9	37.6	**-4.5**	66	1/31	12	1/22	2.68	**-1.46**	**65%**
Jackson	45.8	25.7	35.8	**-3.2**	67	1/31	8	1/22	2.91	**-1.16**	**71%**
Clarksville	43.1	23.4	33.3	**-3.7**	67	1/31	5	1/22	5.34	**2.06**	**163%**
Nashville	45.8	25.6	35.7	**-3.9**	66	1/29	8	1/22	3.11	**-0.91**	**77%**
Chattanooga	47.5	26.6	37.1	**-4.6**	67	1/29	12	1/22	3.34	**-1.68**	**67%**
Crossville	38.8	20.4	29.6	**-5.7**	57	1/29	1	1/20	3.10	**-1.85**	**63%**
Knoxville	41.7	24.5	33.1	**-6.0**	62	1/29	8	1/22	2.92	**-1.84**	**61%**
Bristol	39.9	20.5	30.2	**-6.2**	59	1/30	4	1/22	2.49	**-1.16**	**68%**

Departures and %Norm Key: **Warmer than Normal**, **Cooler than Normal**; **Wetter than Normal**, **Drier than Normal**

Hottest Stations (highest maximum temperature)

Station Name	Station Type	Highest Temperature (F)	Date
FRANKLIN SEWAGE PLANT	COOP	73	31
WAYNESBORO	COOP	70	1
SHILOH NMP TENNESSEE	RAWS	70	31
CLARKSVILLE WWTP	COOP	69	31
LOBELVILLE	COOP	68	30
DECATURVILLE	COOP	67	30
CAMDEN TOWER TENNESSEE	RAWS	67	31
CHATTANOOGA AP	WBAN	67	29
JACKSON MCKELLAR- SIPES AP	WBAN	67	31
CLARKSVILLE OUTLAW AP	WBAN	67	31

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	-11	21
GAINESBORO	COOP	-5	22
ROAN MOUNTAIN 3SW	COOP	-4	23
NEWFOUND GAP	COOP	-4	22
MOUNTAIN CITY 2	COOP	-3	23
FALL CREEK FALLS SP	COOP	-3	23
CROSSVILLE AREA OFFICE TN	RAWS	-3	22
BIG SOUTH TENNESSEE	RAWS	-2	22
TAZEWELL	COOP	-1	23
WHITE HOUSE	COOP	-1	22

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	37.6
SHILOH NMP TENNESSEE	RAWS	37.4
CHATTANOOGA AP	WBAN	37.1
MEMPHIS WFO	WBAN	36.2
JACKSON MCKELLAR- SIPES AP	WBAN	35.8
NASHVILLE INTL AP	WBAN	35.7
CAMDEN TOWER TENNESSEE	RAWS	35.6
AMES PLANTATION	COOP	35.3
WAYNESBORO	COOP	35.1
ALAMO 1 N	COOP	35.1

Coolest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	18.3
NEWFOUND GAP	COOP	23.4
ROAN MOUNTAIN 3SW	COOP	26.2
MOUNTAIN CITY 2	COOP	26.4
ONEIDA	COOP	27.4
TAZEWELL	COOP	28.1
CROSSVILLE 7 NW	WBAN	28.5
COALMONT	COOP	28.6
ROGERSVILLE 1 NE	COOP	28.7
MAYNARDVILLE	COOP	28.9

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLARKSVILLE 4.9 NW	CoCoRaHS	7.00
UNION CITY	COOP	6.72
CLARKSVILLE 5.4 WSW	CoCoRaHS	5.74
DRESDEN	COOP	5.72
DOVER 1 W	COOP	5.54
CLARKSVILLE 10.2 WSW	CoCoRaHS	5.38
CLARKSVILLE OUTLAW AP	WBAN	5.34
PARIS 3 ESE	COOP	5.30
LORETTO 1.1 E	CoCoRaHS	5.16
CLARKSVILLE 3.3 SSE	CoCoRaHS	5.09

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
WINCHESTER 6.6 W	CoCoRaHS	0.57
KINGSTON	COOP	0.86
CLEVELAND 1.2 W	CoCoRaHS	1.05
GATLINBURG 2 SW	COOP	1.10
LEXINGTON	COOP	1.14
ROAN MOUNTAIN 7.1 W	CoCoRaHS	1.15
GREENEVILLE 10.1 S	CoCoRaHS	1.20
JONESBOROUGH 2.5 SSW	CoCoRaHS	1.30
JONESBOROUGH 2.7 SSW	CoCoRaHS	1.35
GREENEVILLE 3.0 S	CoCoRaHS	1.44
HENDERSON 2.2 SSE	CoCoRaHS	1.44

Two stations tied for second lowest precipitation (1.44-inches)

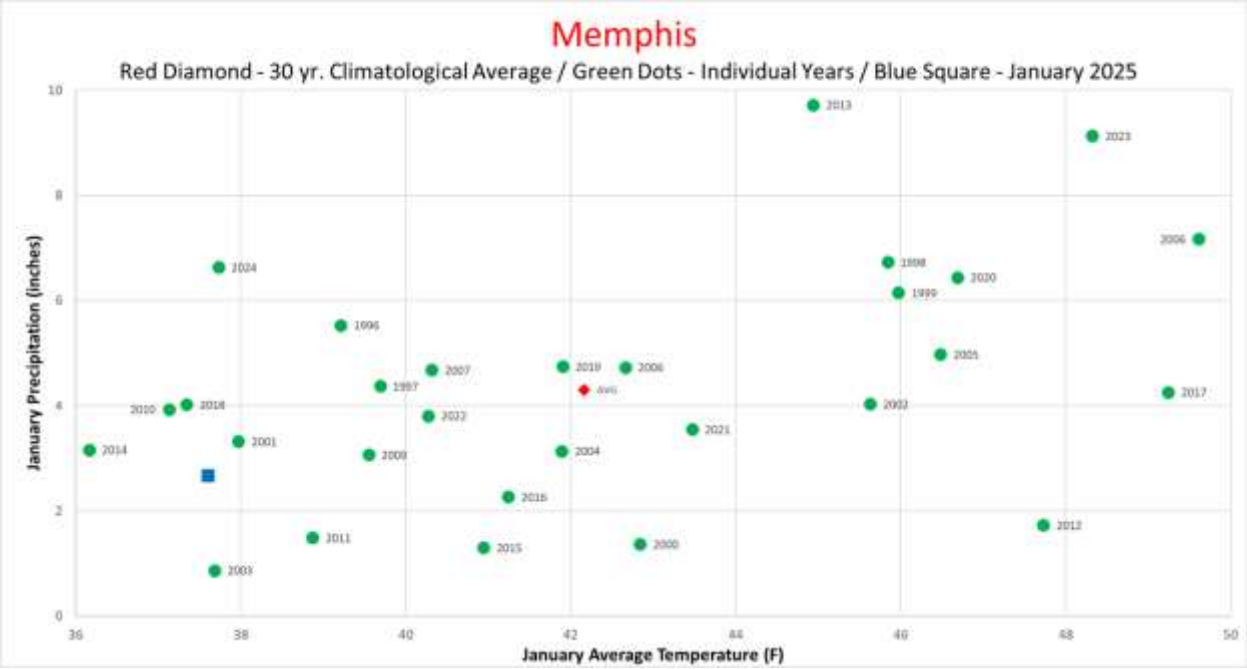
Snowiest Stations (highest snowfall totals):

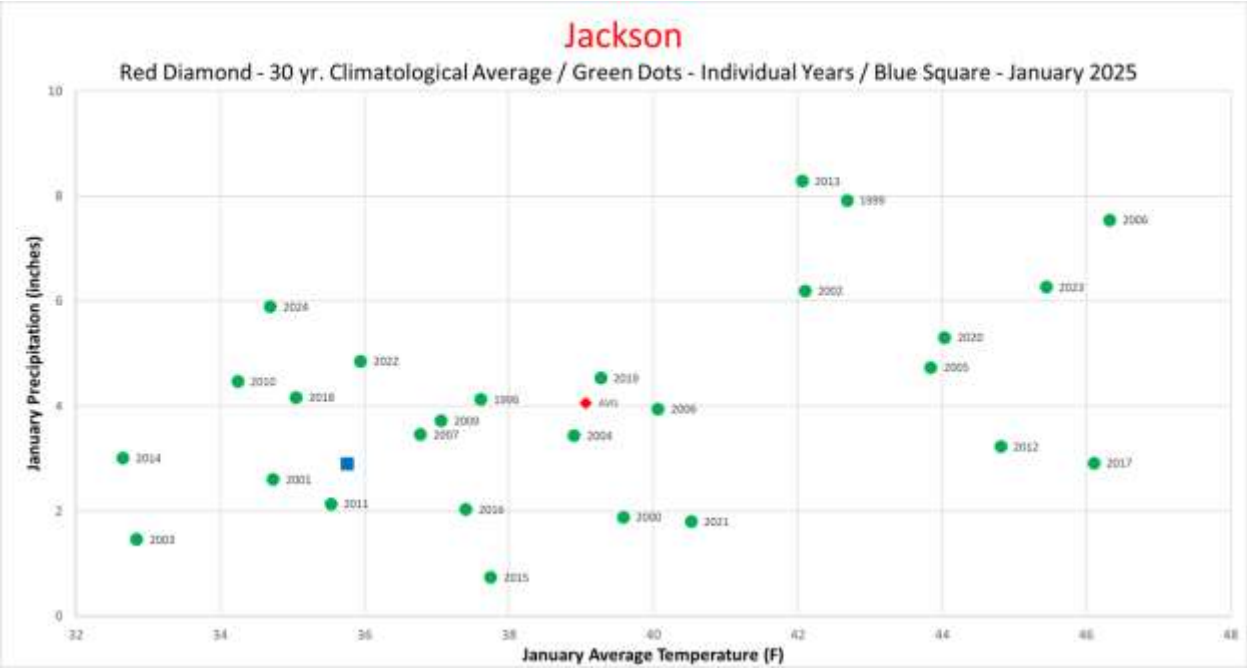
Station Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	29.0
NEWFOUND GAP	COOP	16.1
MOUNTAIN CITY 2	COOP	10.9
RAMER 1.5 S	CoCoRaHS	8.5
MEMPHIS INTERNATIONAL AP	WBAN	7.5
BARTLETT 1.9 SSW	CoCoRaHS	7.4
CHURCH HILL 1.0 ENE	CoCoRaHS	7.1
BARTLETT 1.3 ENE	CoCoRaHS	7.0
GATLINBURG 2 SW	COOP	7.0
JAMESTOWN 3.1 SE	CoCoRaHS	6.9

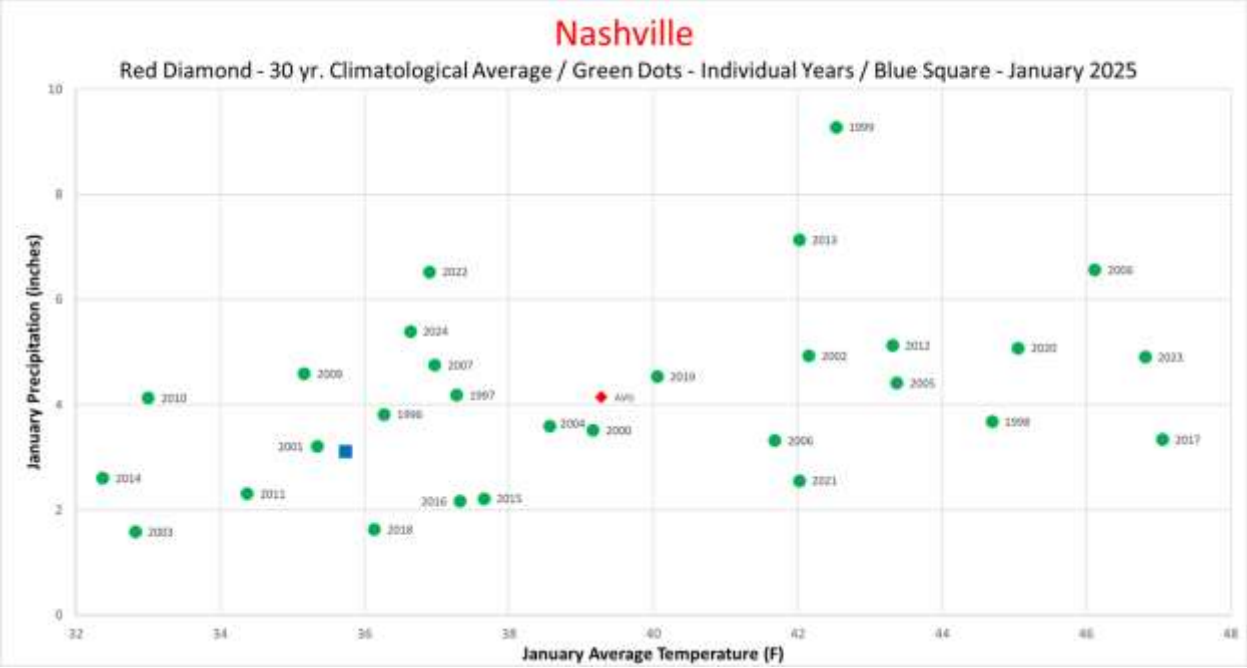
A total of 301 stations reported measurable snow and 19 others reported a Trace (<0.1")

The Month in Comparison:

Comparing the mean temperature and total precipitation from January 2025 to January over the past 30-years at automated stations at select airports across the state shows that mean temperatures for this month were well below the average of the past thirty years. 2025 was the second coldest January of the past thirty years at Knoxville and the Tri-Cities. It was the 4th coldest January at Memphis and 5th coldest January at Chattanooga. January 2025 was also drier than average for each station, but not a major outlier for any station. Looking at the longer-term records, this month was not among the top-10 wettest or driest for any climate monitoring stations and it was not among the top-10 coldest Januarys except for the Tri-Cities station, which observed the 9th coldest January in the 78-year history of the site.






Nashville
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - January 2025
January Precipitation (inches)
January Average Temperature (F)
Avg
1999
2013
2022
2006
2024
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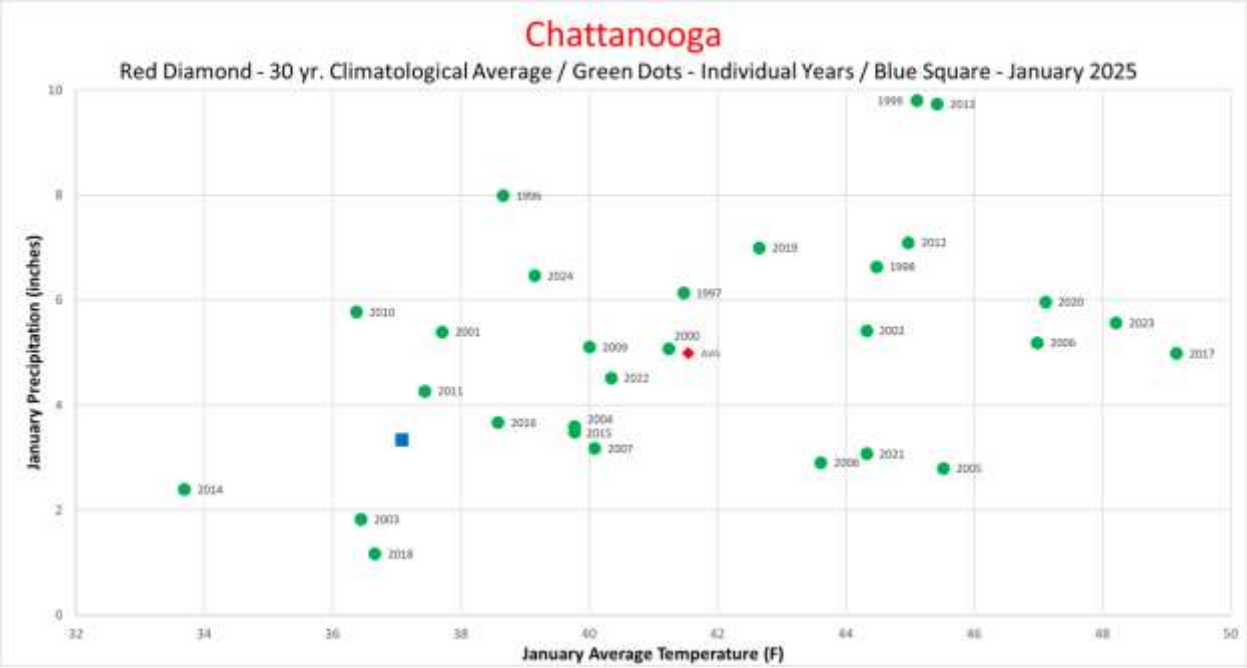
Chattanooga
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - January 2025
January Precipitation (inches)
January Average Temperature (F)
Avg
1998
2013
1999
2019
2012
2024
1998
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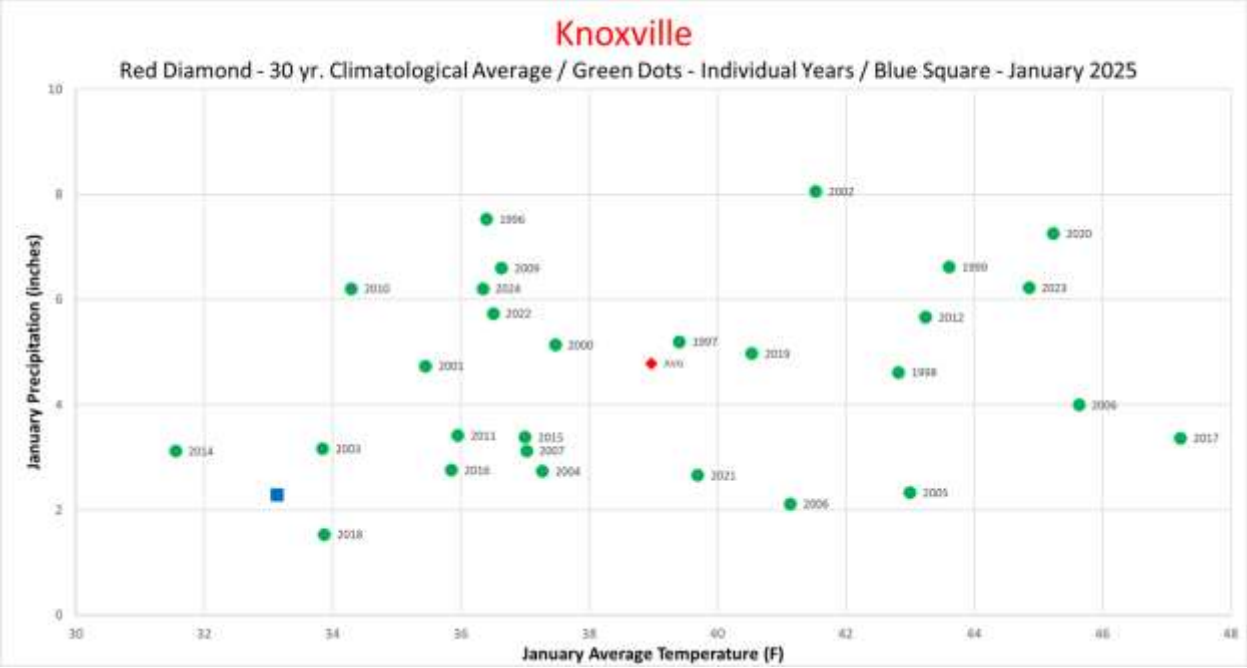
Knoxville
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - January 2025
January Precipitation (inches)
January Average Temperature (F)
Avg
2002
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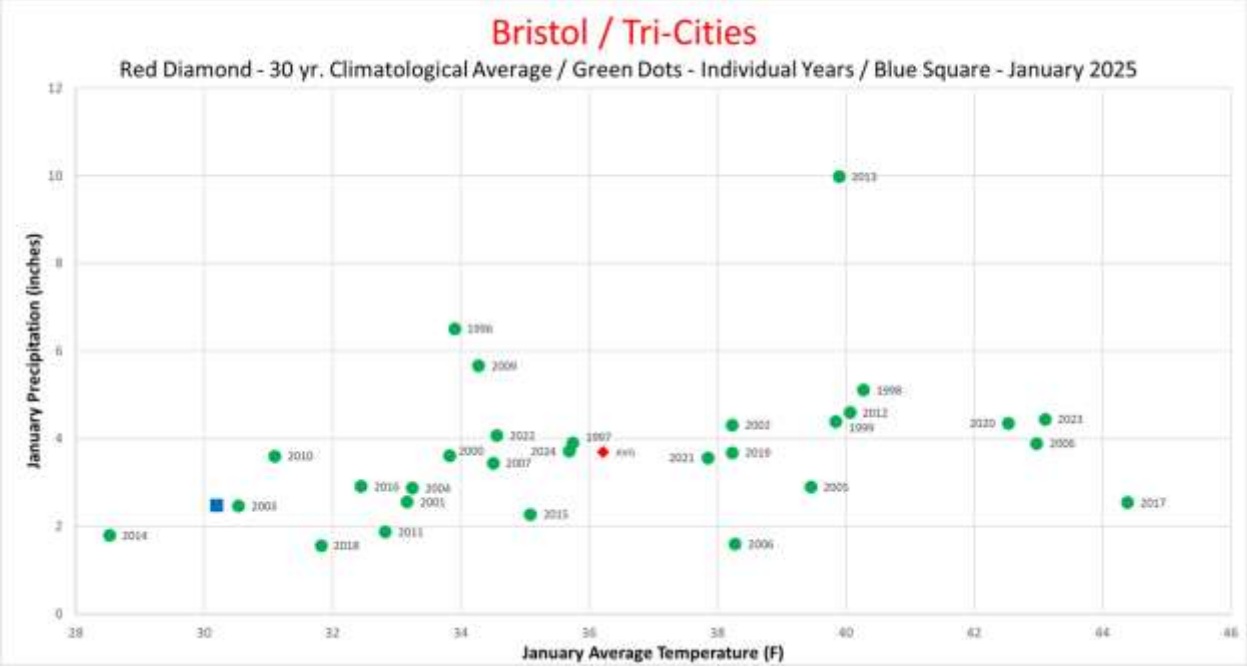
Bristol / Tri-Cities
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - January 2025
January Precipitation (inches)
January Average Temperature (F)
Avg
2013
1996
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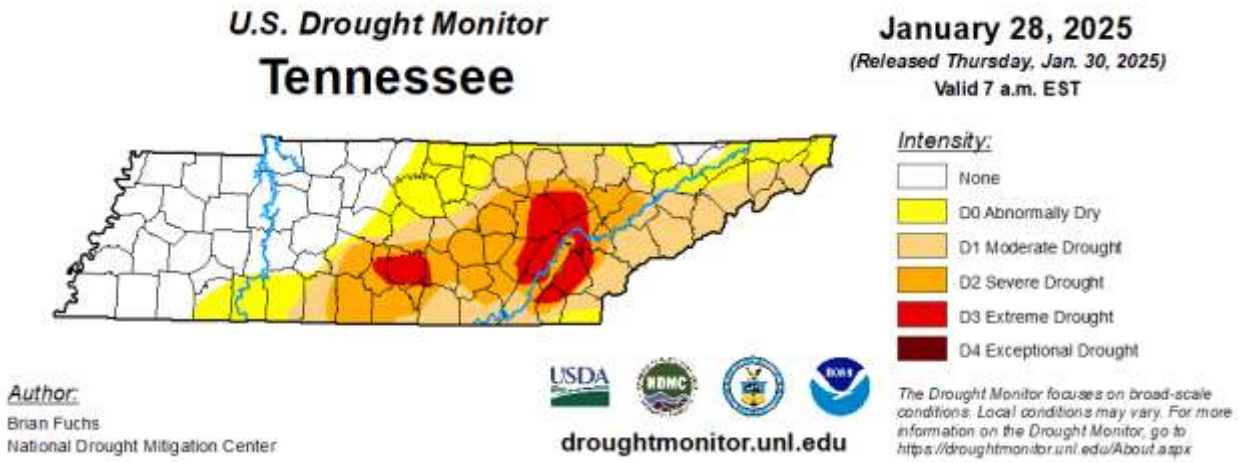
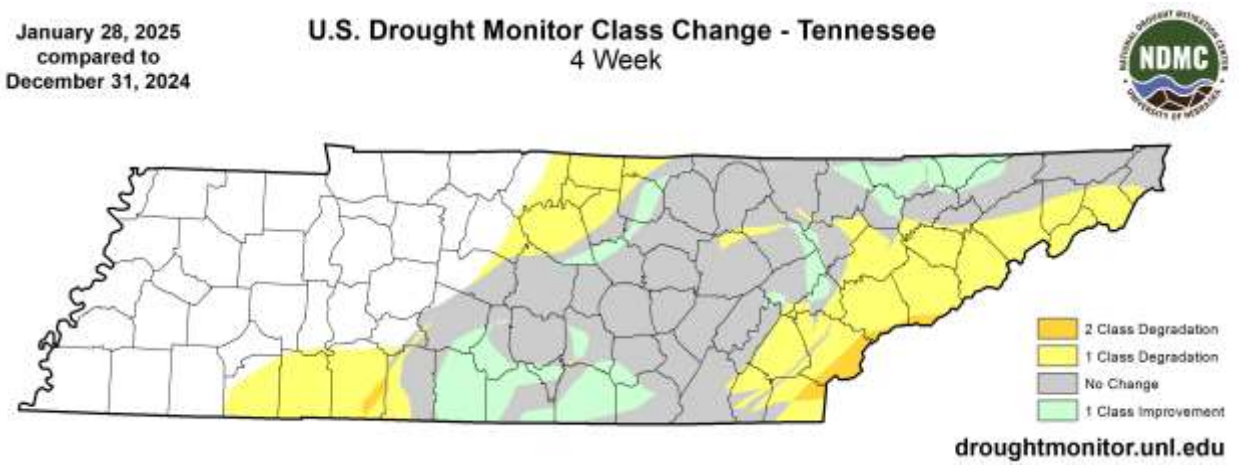
2006

Drought Monitor:

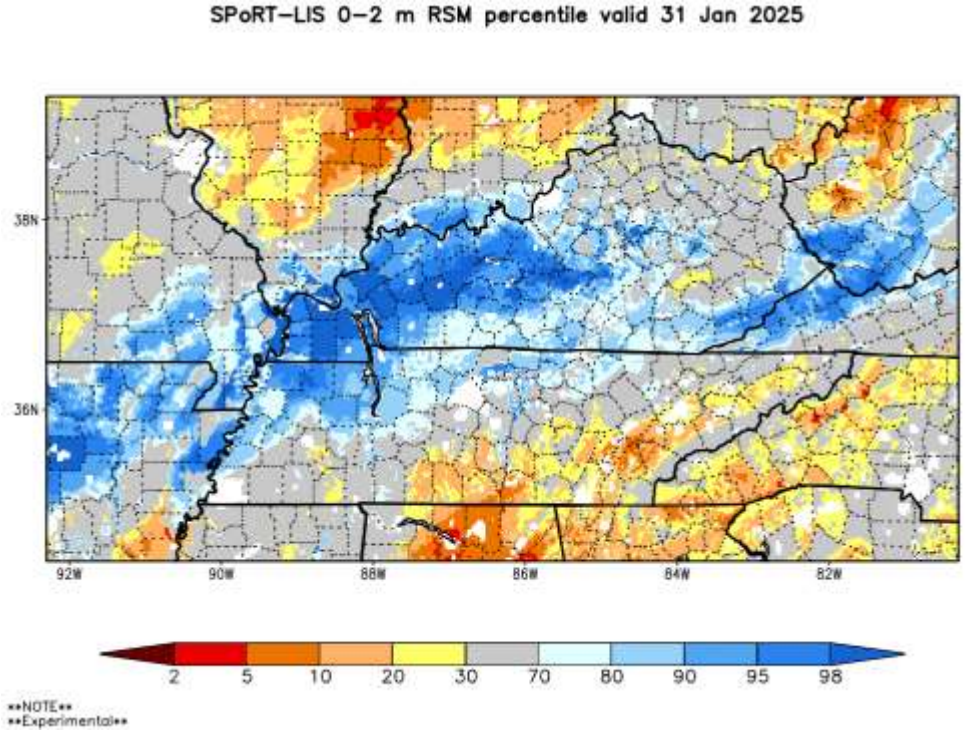
Over the course of the month drought conditions improved in some areas, but worsened in others. At the end of the month 6.85% of the state's area was shown in Extreme Drought (D3), which was 1.95% less than at the end of December. 16.78% of the state was shown in Severe Drought (D2) at the end of January, which was 1.55% more than at the end of December. 21.31% of the state was shown in Moderate Drought (D1) compared to 12.44% at the end of December, and 17.77% was shown in Abnormally Dry (D0) conditions compared to 17.94% at the end of December.

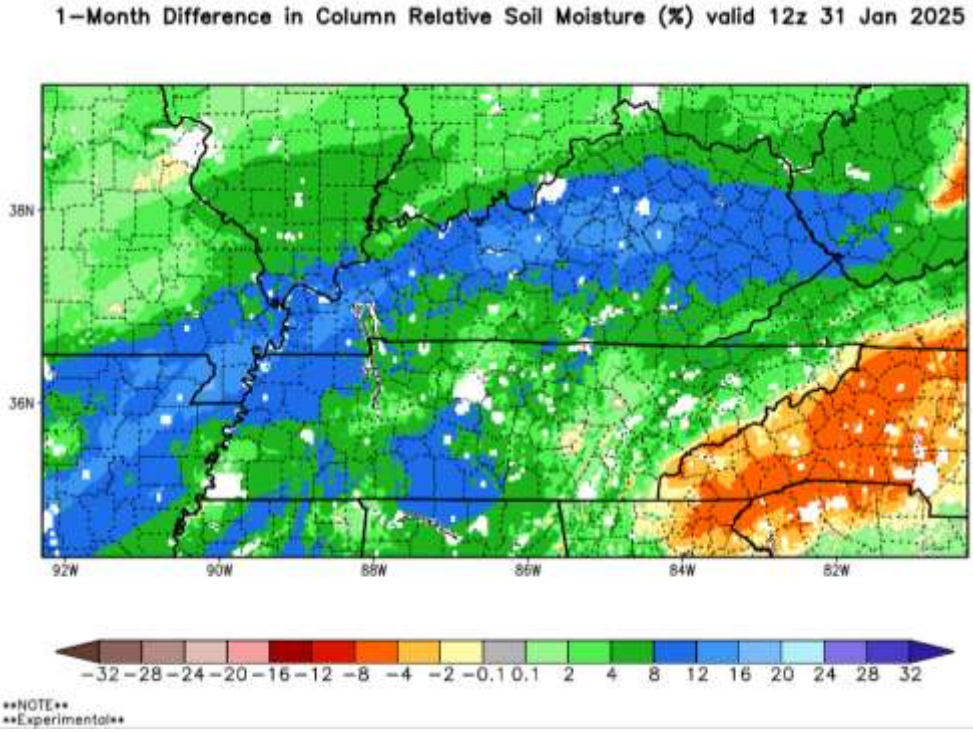




Soil Moisture:

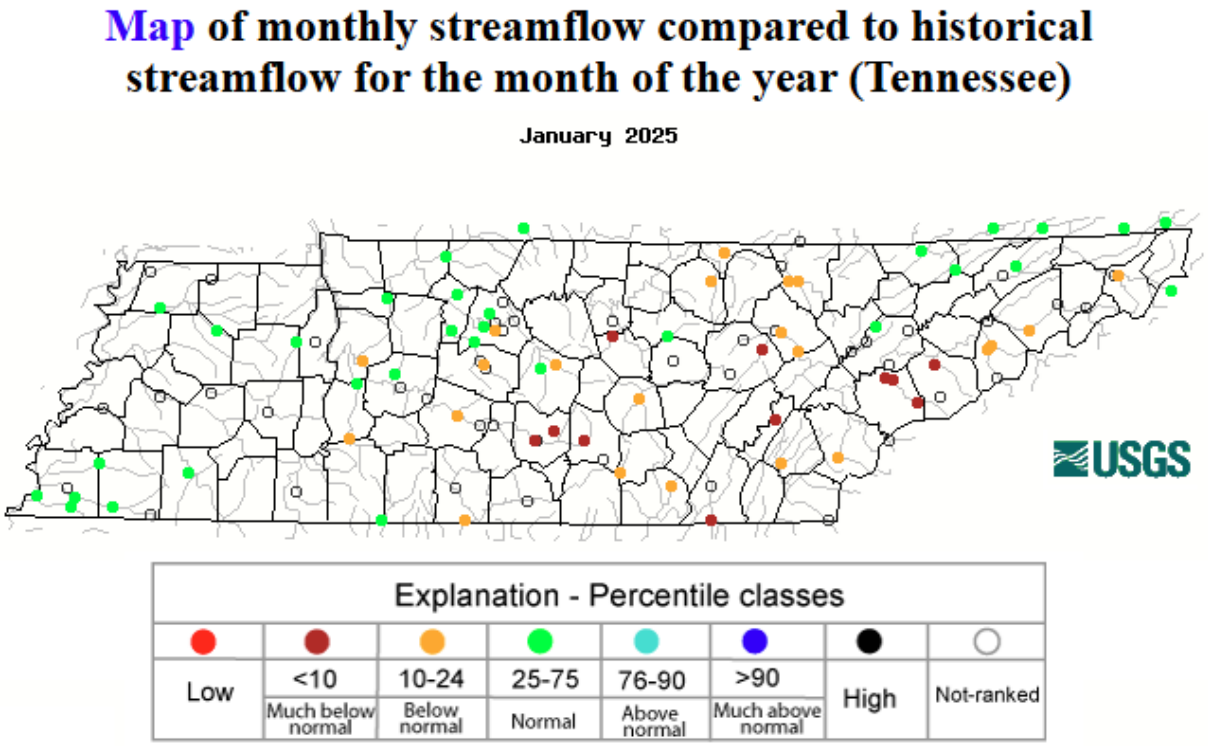
The NASA SPoRT Land Information System showed that northern and western portions of the state had above normal soil moisture levels by the end of January, while southern and eastern portions of the state had below normal soil moisture levels. For the week ending February 2, the USDA rated topsoil moisture as 4% very short, 11% short, 59% adequate, 26% surplus and subsoil moisture was rated 3% very short, 18% short, 62% adequate, 17% surplus.





Streamflow:

Due to a combination of drier than normal weather and long periods of below freezing temperatures stream levels averaged over January were mostly below normal in the eastern and southern portions of the state. Stream gauges in the western and northern portions of the state were mostly in the normal range when averaged over the month.



Crop Progress:

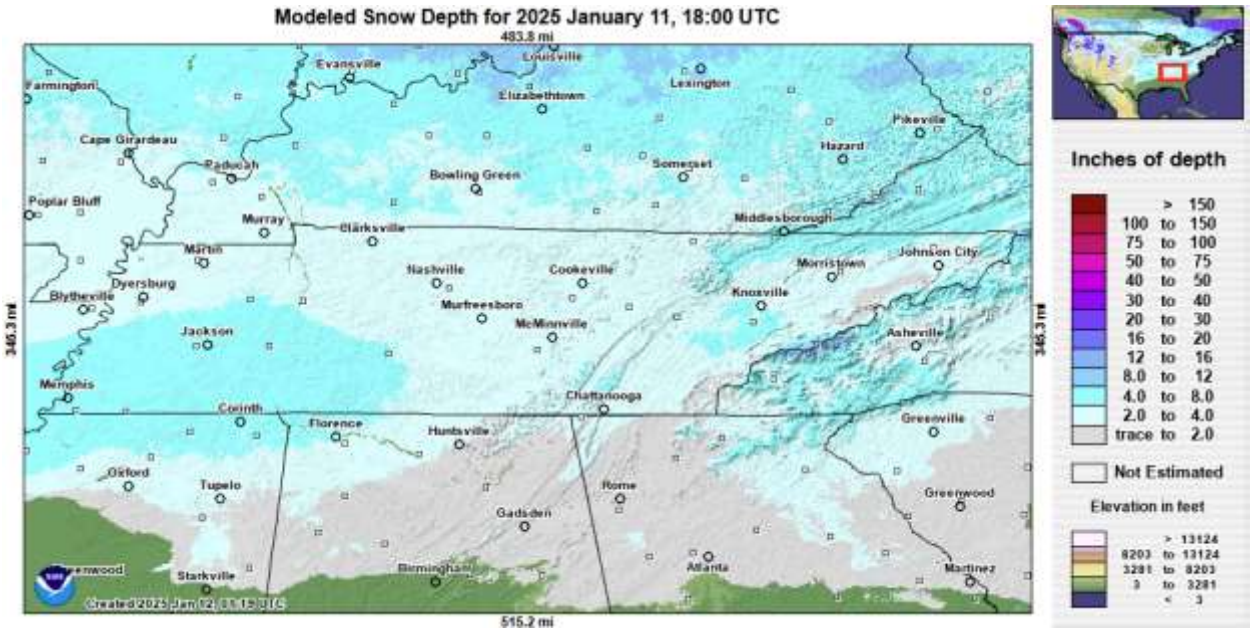
Periods of extreme cold were a concern for winter wheat and cattle producers, with some winter wheat producers concerned over the quality of the crop after drought conditions during planting now followed by extreme cold events in January. Many pastures were reported as muddy after repeated freeze-thaw cycles and rainfall at the end of the month. Hay and roughage supplies were reported as 7% very short, 23% short, 61% adequate, and 9% surplus.

Product	Very Poor	Poor	Fair	Good	Excellent
Winter Wheat	2%	7%	34%	43%	14%
Pasture and Range	10%	17%	35%	34%	4%
Cattle	1%	7%	33%	53%	6%

Miscellaneous:

Fire Danger: The National Interagency Fire Center significant wildland fire outlook for February shows East Tennessee with an above normal risk for significant wildland fires next month, while the remainder of the state is shown with normal potential for significant fire activity.

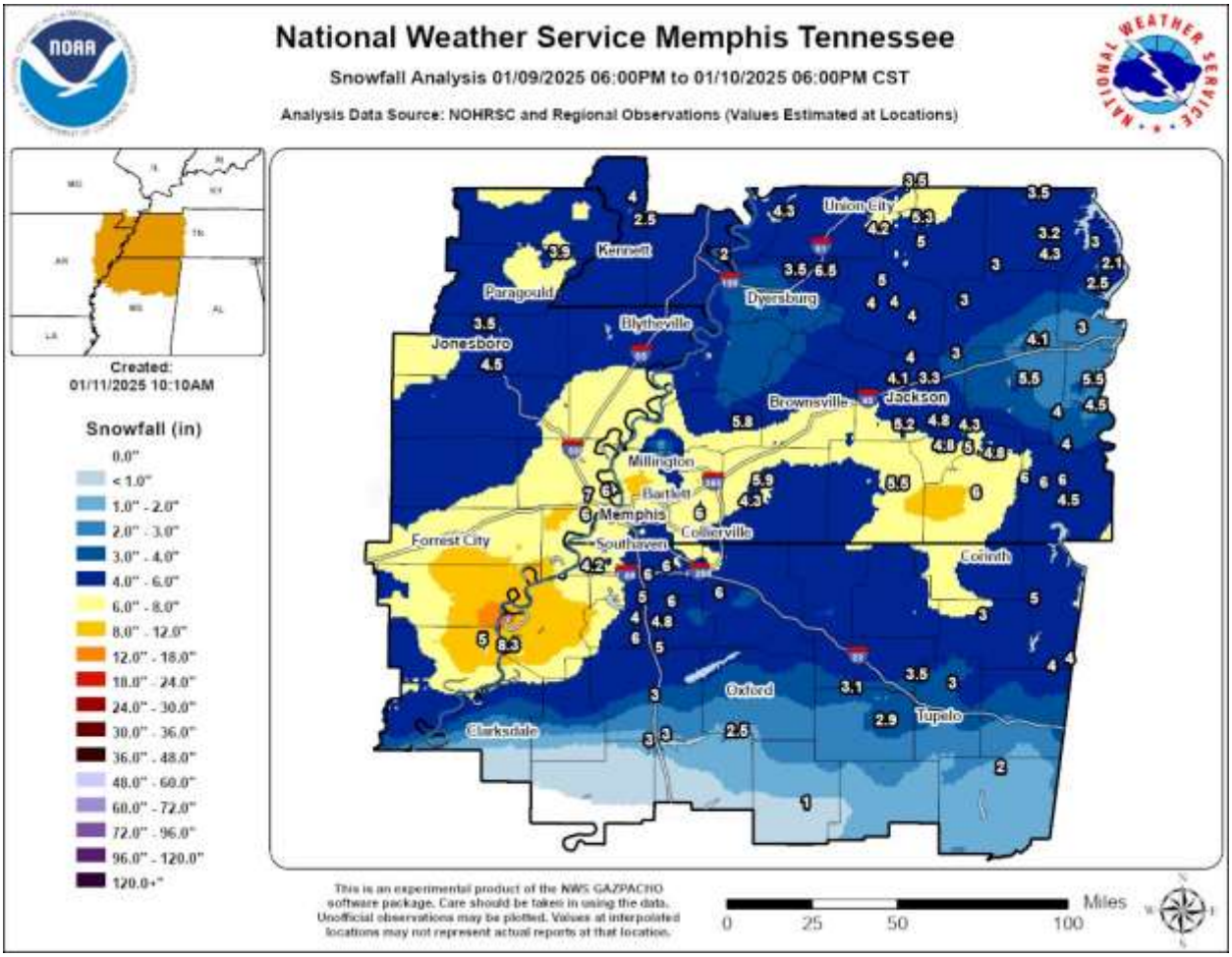
Snow: There was one wide-spread snowfall event this month, with a few other minor mountain snow events. Snow covered the entire state on January 11, with the deepest snow found in the southwest portion of the state and the higher elevations of the mountains in East Tennessee and the northern Cumberland Plateau.



Stories of the Month:

The main stories of January 2025 were the multiple cold blasts that brought well below normal temperatures and single digit or sub-zero temperatures to most parts of the state, along with significant snowfall in many areas.

The first blast of cold air arrived in the second week of the month on January 9-10, with winter storm warnings in place for all counties across the state. Widespread snowfall of 2 to 6 inches was observed across Tennessee and temperatures remained below freezing for several days. Snow totals were highest in the southwestern portions of the state, around the Memphis area, with most areas reporting 5 to 6 inches of snow from January 9th to 10th. The Memphis airport weather station reported a total of 7.5-inches of snow, which was the highest 1-day snowfall total for the station there since 1985, and the 14th largest 1-day snowfall total in the city's weather history, which dates back to 1875.



With temperatures remaining below or close to freezing for several days, snow remained on the ground and icy roads were a concern in the following days.

A second outbreak of cold air accompanied by light snowfall started January 19-20 and brought several days of below freezing conditions again and the coldest temperatures of the winter season so far, prompting cold weather advisories for most counties in the state.

Storm Reports:

**Storm Reports are based on filtered NOAA Storm Prediction Center data or local NWS storm reports. Future quality control checks may change the official record of severe events, please see spc.noaa.gov for any updates.*

There were no severe storm reports in Tennessee this month.

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center Outlooks for February shows that the entire state is leaning towards warmer than normal conditions, with higher confidence in East Tennessee. Most of the state is also shown leaning towards wetter than normal conditions, except for far-eastern portions of the state shown with equal chances for normal, above normal, or below normal precipitation.