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2021 January - Tennessee Monthly Climate Report

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January 2021 Tennessee State Climate Summary

Tennessee Climate Office * East Tennessee State University

Prepared by William Tollefson and Dr. Andrew Joyner

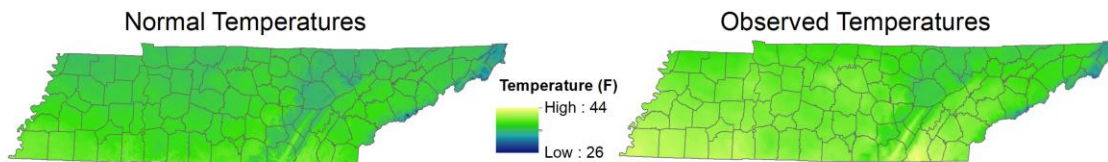
With contributions by Climate Data Representatives at University of Memphis, University of Tennessee-Martin, Vanderbilt University, University of Tennessee-Knoxville, and University of Tennessee-Institute of Agriculture

Monthly Temperature Summary:

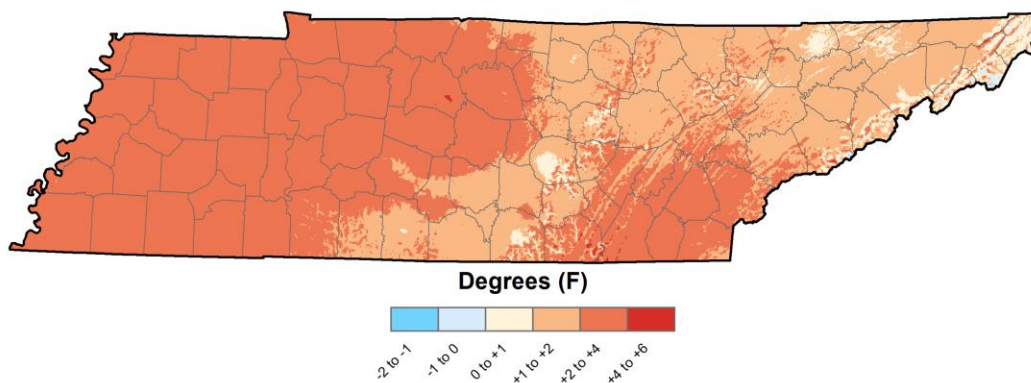
The mean monthly temperature for January 2021 was above normal for almost all areas of Tennessee. The western half of the state, and the southeastern corner of the state recorded temperatures that were 2-4°F above normal for the month. Northeast Tennessee and most of the Cumberland Plateau recorded temperatures that were a bit closer to normal, with temperatures only 1-2°F above normal. Temperatures were consistently above normal for most of the month, with the first and last weeks of the month being the warmest, bringing temperatures that were 6-8°F above normal to most areas of the state. However, the second week of the month (January 8-14) did bring a cold snap, with temperatures 2-5°F below normal for most of the state. Observed temperatures for the month ranged from a high of 75°F in Nashville (New Year's Day) to a low of 6°F at Mount LeConte (January 29).



January 2021 Mean Temperature



Departure From Normal Temperatures



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	44.3
MEMPHIS INTERNATIONAL AP	WBAN	43.8
SHILOH NMP TENNESSEE	RAWS	42.9
WOODBURY 1 WNW	COOP	42.4
SAVANNAH 6 SW	COOP	42.3

Map Data From: PRISM Climate Group, Oregon State University.
1981-2010 Normals Used
Station Data retrieved from SC ACIS2

Stations with the lowest mean temperature

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	26
NEWFOUND GAP	COOP	31.7
ROAN MOUNTAIN 3SW	COOP	33.4
TAZEWELL	COOP	35
CROSSVILLE EXP STN	COOP	35.4

Monthly Precipitation Summary:

January brought drier than normal conditions to most areas of the state, with most areas in Middle and East Tennessee reporting only 50-75% of their normal monthly precipitation. The Jackson Airport reported only 1.2" of rain this month, making it the 5th driest January in the station's 71-year record; however, there was one day of missing data from that station and other observations in the county totaled 3-4" for the month. A few areas in West Tennessee and near the mountains in East Tennessee did report above normal precipitation this month. Southwest Tennessee reported above normal rainfall in the first week of the month, with the Memphis metro area recording 1.5-2" of rain. The heaviest rains this month occurred in the fourth week of the month (January 22-28), with counties along the Kentucky border from Lake County east to Pickett County reporting 2" of rain or more. There were a few light snowfalls across the state as well, the most widespread snowfall occurred on January 11-12 with minor accumulations reported in all regions of the state. The higher elevations of the Cumberland Plateau and East Tennessee had frequent light snows through the month resulting in nearly continuous snow coverage at the highest elevations from January 6th through the end of the month.

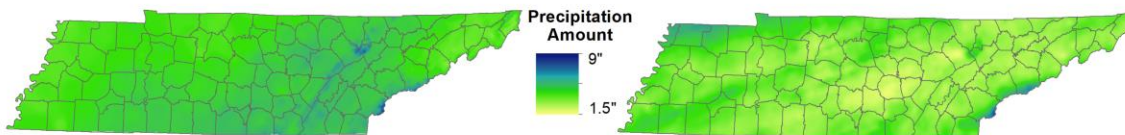


January 2021 Precipitation

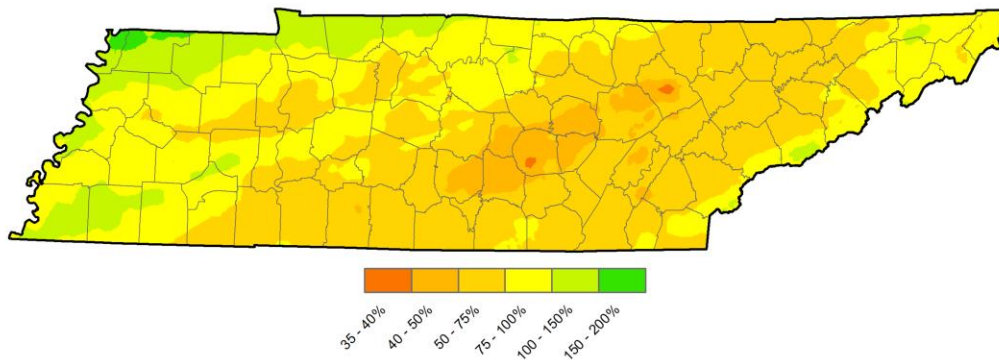


Normal Precipitation

Observed Precipitation



Percent Normal Precipitation



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
FRIENDSVILLE 3.6 NW	CoCoRaHS	8.26
MT LECONTE	COOP	7.29
NEWFOUND GAP	COOP	6.95
PORTLAND SEWAGE PLANT	COOP	6.8
ROCK ISLAND STATE PARK	COOP	5.78

Map Data From: PRISM Climate Group,
Oregon State University,
1981-2010 Normals Used
Station Data retrieved from SC ACIS2

Stations with the least precipitation

Station Name	Station Type	Total Precipitation (in)
JACKSON MCKELLAR-SIPES AP	WBAN	1.2
SHELBYVILLE WATER DEPT	COOP	1.23
MORRISON 1.9 SSW	CoCoRaHS	1.69
SPARTA 3.9 S	CoCoRaHS	1.7
PIKEVILLE	COOP	1.76

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

Station data for airports across the state using WBAN weather stations:

Station Name	Temperatures (°F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
Memphis	51.4	36.2	43.8	+2.6	72	1/25	21	1/12	3.55	-0.43	89%
Jackson	49.2	31.9	40.5	+2.3	70	1/25	19	1/12	1.20	-2.87	29%
Clarksville	46.7	31.0	38.9	+3.1	70	1/1	21	1/13	3.68	+0.37	111%
Nashville	50.5	33.5	42.0	+4.3	75	1/1	21	1/13	2.56	-1.19	68%
Chattanooga	52.7	35.9	44.3	+3.8	69	1/26	25	1/13	3.08	-1.83	63%
Crossville	44.5	28.8	36.7	+0.9	62	1/1	17	1/13	2.31	-2.45	49%
Knoxville	46.8	32.5	39.7	+1.5	64	1/26	21	1/29	2.66	-1.66	62%
Bristol	46.1	29.6	37.9	+2.7	65	1/26	18	1/29	3.57	+0.20	106%

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
CARTHAGE	COOP	75	2
NASHVILLE BERRY FIELD	COOP	75	2
NASHVILLE INTL AP	WBAN	75	1
LYNCHBURG	COOP	74	2
WOODBURY 1 WNW	COOP	74	2
LEBANON	COOP	74	2
ROCK ISLAND STATE PARK	COOP	74	2
SHELBY BOTTOMS NATURE CENTER	COOP	74	2
FAYETTEVILLE WATER PLANT	COOP	73	1
FRANKLIN SEWAGE PLANT	COOP	73	2
SMITHVILLE 2 SE	COOP	73	2
OLD HICKORY WFO	COOP	73	2
OLD HICKORY DAM	COOP	73	2
BETHPAGE 1 S	COOP	73	2
MANCHESTER #2	COOP	73	2
LEWISBURG TOWER TENNESSEE	RAWS	73	1
SHILOH NMP TENNESSEE	RAWS	73	25

Nine stations tied for the ninth highest maximum temperature (73°F).

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	6	29
MILAN EXP STN	COOP	9	27
ROAN MOUNTAIN 3SW	COOP	10	30
PICKETT STATE PARK	COOP	10	13
NEWFOUND GAP	COOP	11	29
TAZEWELL	COOP	13	30
BETHPAGE 1 S	COOP	13	14
PORTLAND SEWAGE PLANT	COOP	13	29
CROSSVILLE EXP STN	COOP	14	14
BLEDSON SF TENNESSEE	RAWS	14	13
CROSSVILLE 7 NW	WBAN	14	13

Three stations tied for the ninth coldest temperature (14°F).

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	44.3
MEMPHIS INTERNATIONAL AP	WBAN	43.8
SHILOH NMP TENNESSEE	RAWS	42.9
WOODBURY 1 WNW	COOP	42.4
SAVANNAH 6 SW	COOP	42.3
CAMDEN	COOP	42.3
GERMANTOWN 4SE	COOP	42
NASHVILLE INTL AP	WBAN	42
MC MINNVILLE	COOP	41.7
MEMPHIS WFO	WBAN	41.6

Cooltest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	26
NEWFOUND GAP	COOP	31.7
ROAN MOUNTAIN 3SW	COOP	33.4
TAZEWELL	COOP	35
CROSSVILLE EXP STN	COOP	35.4
ONEIDA	COOP	35.4
ROGERSVILLE 1 NE	COOP	36.2
PICKETT STATE PARK	COOP	36.4
CROSSVILLE 7 NW	WBAN	36.5
MONTEREY	COOP	36.7
CROSSVILLE MEMORIAL AP	WBAN	36.7

Two stations tied for the tenth coolest mean temperature (36.7°F).

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
FRIENDSVILLE 3.6 NW	CoCoRaHS	8.26
MT LECONTE	COOP	7.29
NEWFOUND GAP	COOP	6.95
PORTLAND SEWAGE PLANT	COOP	6.8
ROCK ISLAND STATE PARK	COOP	5.78
UT MARTIN BRANCH EXP STATION	COOP	5.52
MILAN EXP STN	COOP	5.33
MEMPHIS WFO	WBAN	5.04
DRESDEN	COOP	4.85
LOOKOUT MTN-POINT PARK	COOP	4.63

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
JACKSON MCKELLAR- SIPES AP	WBAN	1.2
SHELBYVILLE WATER DEPT	COOP	1.23
MORRISON 1.9 SSW	CoCoRaHS	1.69
SPARTA 3.9 S	CoCoRaHS	1.7
PIKEVILLE	COOP	1.76
CROSSVILLE 5.1 N	CoCoRaHS	1.81
CENTERTOWN 9.0 WSW	CoCoRaHS	1.84
SHELBYVILLE 8.9 WSW	CoCoRaHS	1.85
CHAPEL HILL 4.3 NNE	CoCoRaHS	1.85
MANCHESTER 6.5 ENE	CoCoRaHS	1.85
SPARTA WASTEWATER PLANT	COOP	1.85

Four stations tied for the eighth lowest precipitation total (1.85").

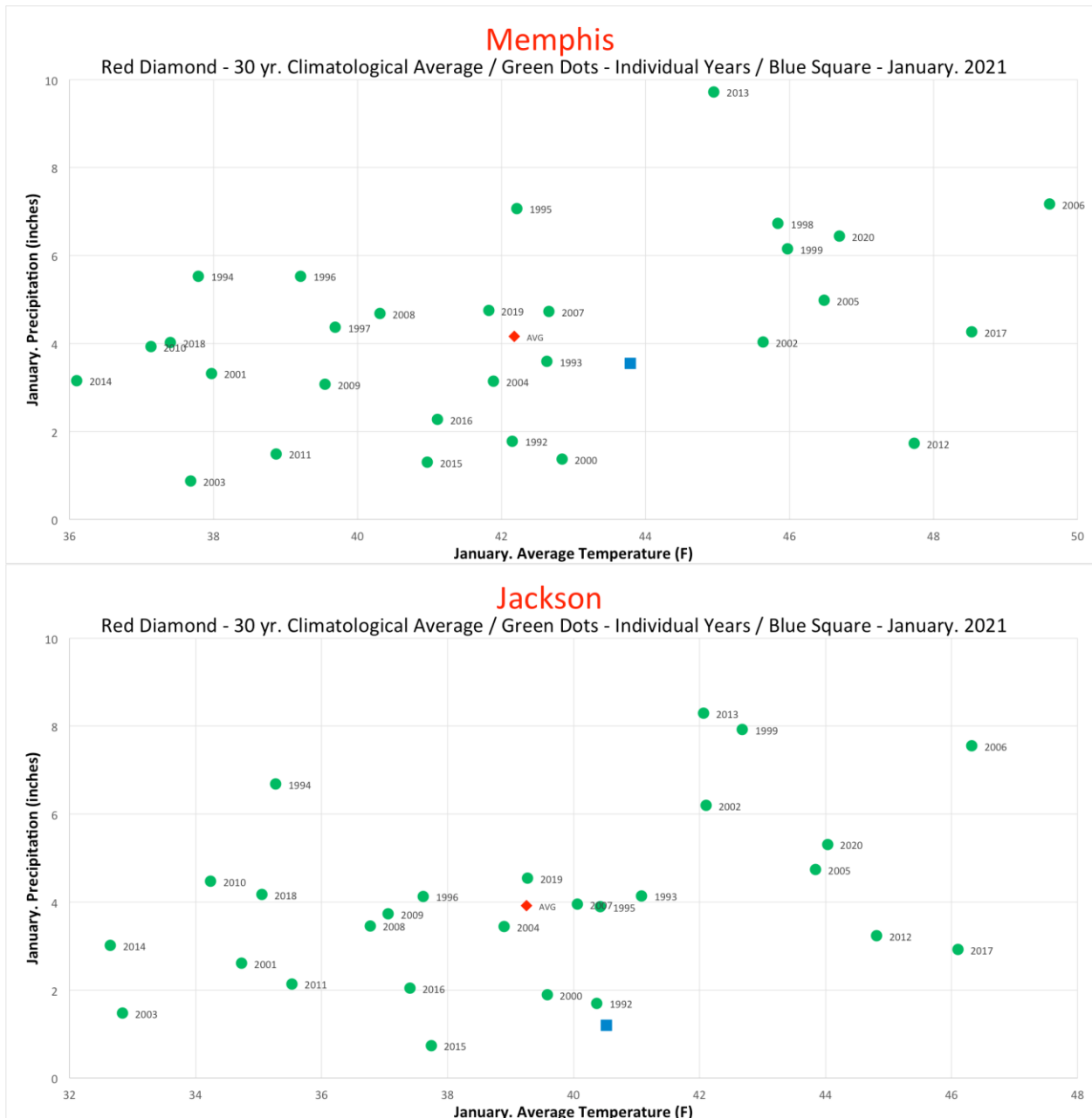
Snowiest Stations (highest snowfall accumulations):

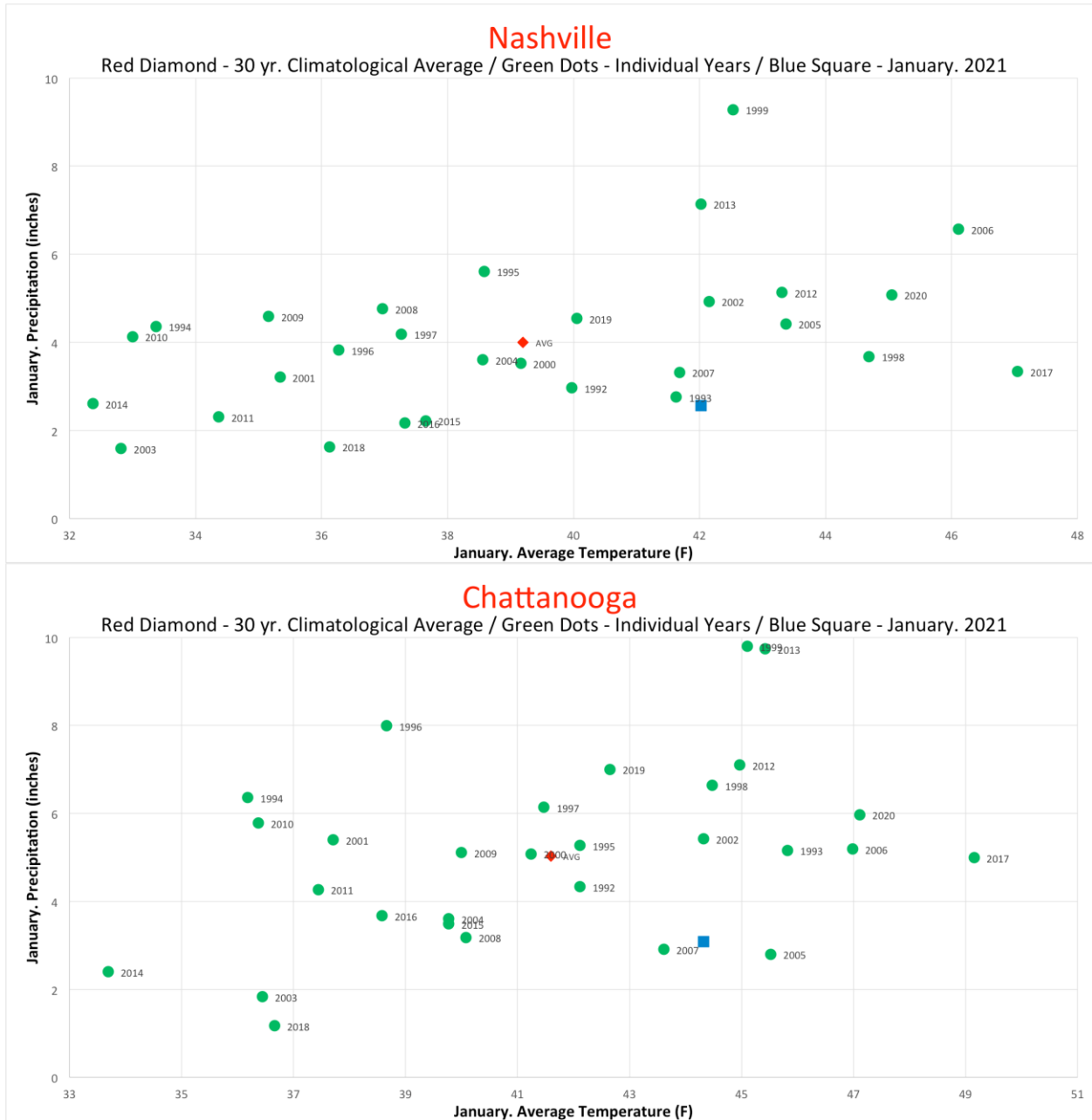
Station Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	23.7
NEWFOUND GAP	COOP	20.5
CLARKRANGE 6.0 NE	CoCoRaHS	8.4
MCMINNVILLE 8.5 ESE	CoCoRaHS	7.3
HAMPSHIRE 2.7 SW	CoCoRaHS	6
CROSSVILLE EXP STN	COOP	5.9
JAMESTOWN 3.1 SE	CoCoRaHS	5.4
ROAN MOUNTAIN 3SW	COOP	4.9
JAMESTOWN 12.9 S	CoCoRaHS	4.8
CROSSVILLE 4.7 S	CoCoRaHS	4.7

An additional 175 stations reported measurable snowfall during the month, and an additional 45 stations reported a trace amount of snow (less than 1/10th inch). 226 stations reported no snow during January.

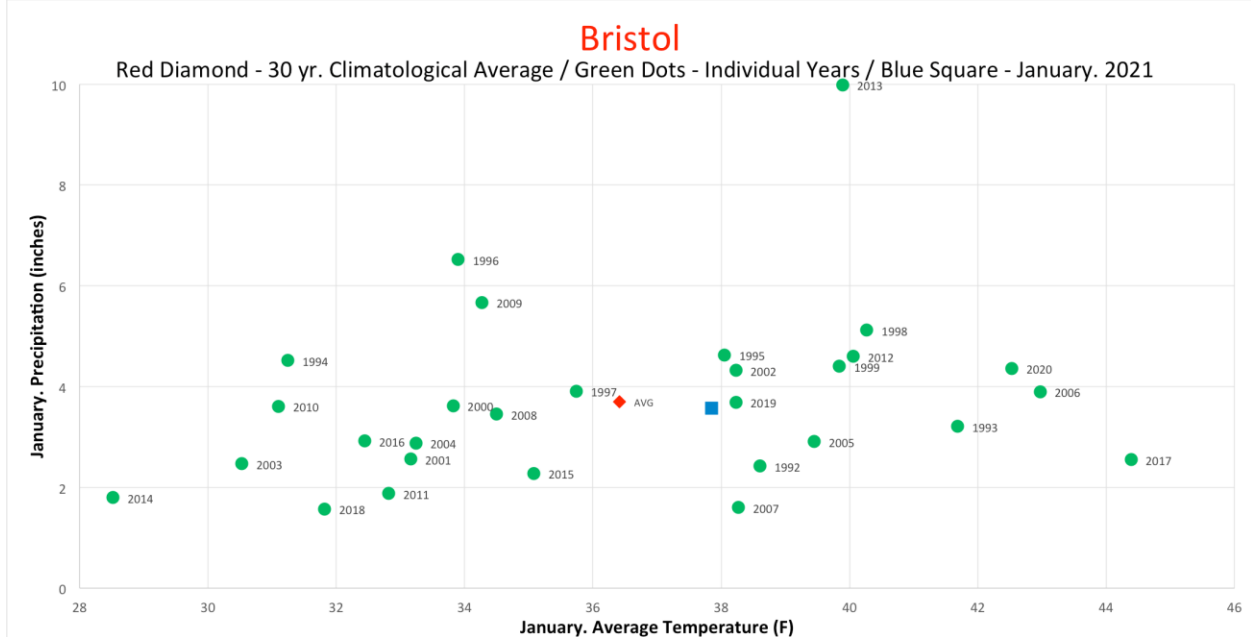
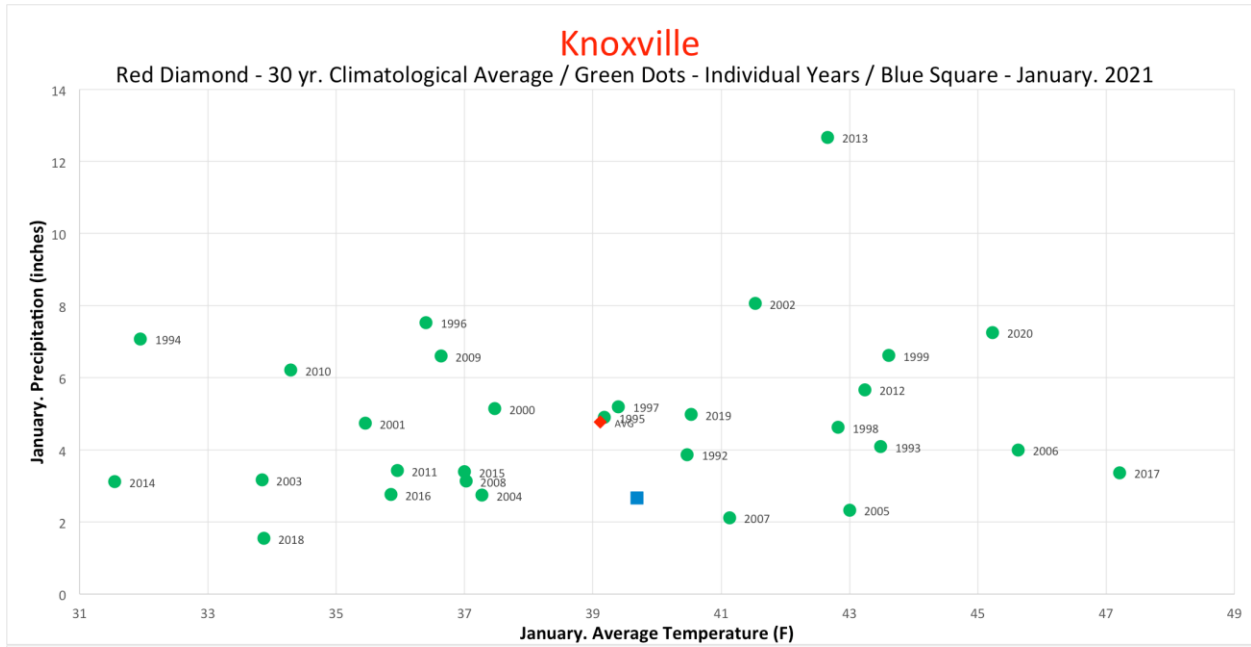
The Month in Comparison:

While January 2021 was a bit warmer than normal across the state, it was not among the top warmest Januaries compared to the average January temperature of the past thirty years. It was also drier than the average at the major airports across the state, but also not one of the driest Januaries of the last thirty years, except at the Jackson Airport, which reported its second driest January in that time period.





January 2021 Tennessee State Climate Summary



Drought Monitor:

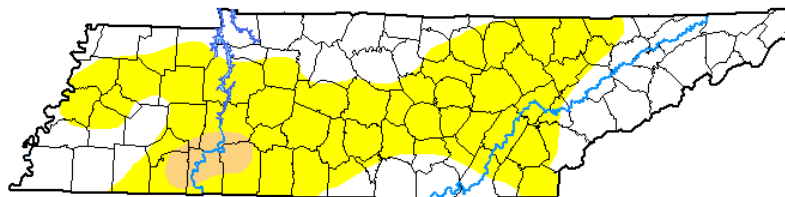
From the last drought monitor release in December to the last drought monitor release in January, the area of D1 (Moderate Drought) in portions of West/Middle Tennessee decreased from 7.16% of the state to 3.21% of the state. However, D0 (Abnormally Dry) conditions expanded in coverage across Middle and East Tennessee, increasing from 36.85% to 52.91% of the state. In general, areas from Nashville westward stayed in the same drought level or improved, while areas east of Nashville were added to D0 conditions.

Author:

Richard Tinker
CPC/NOAA/NWS/NCEP

U.S. Drought Monitor Tennessee

January 26, 2021
(Released Thursday, Jan. 28, 2021)
Valid 7 a.m. EST



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

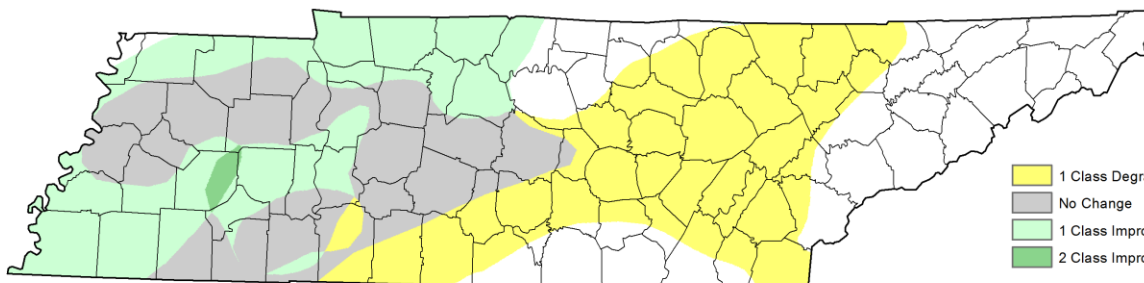
droughtmonitor.unl.edu



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

January 26, 2021
compared to
December 29, 2020

U.S. Drought Monitor Class Change - Tennessee 1 Month



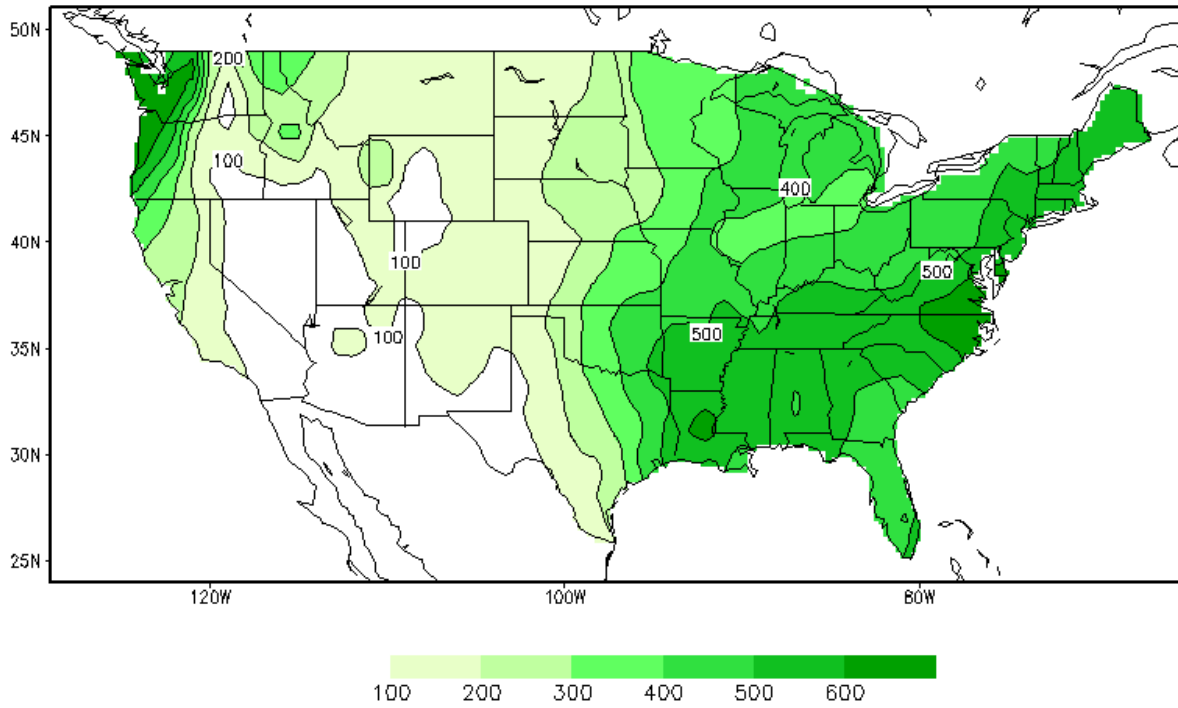
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement

droughtmonitor.unl.edu

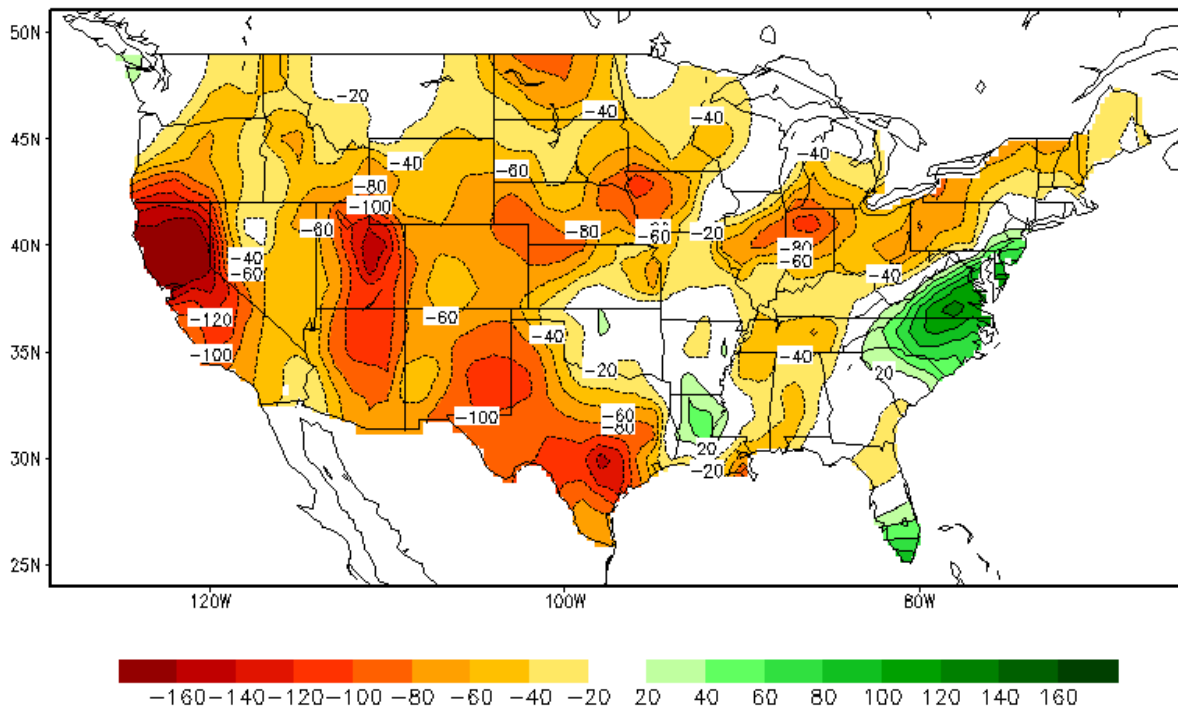
Soil Moisture:

For the last week of January, the USDA weekly weather and crop bulletin reported topsoil moisture 4% short, 66% adequate, 30% surplus, and subsoil moisture 6% short, 70% adequate, 24% surplus across Tennessee. Averaged for the month of January, soil moisture levels were calculated to be around 500mm across the state, which is somewhat below normal in most areas. Soil moisture levels lowered in the eastern half of the state over the month, with some increases in the northwest corner of the state.

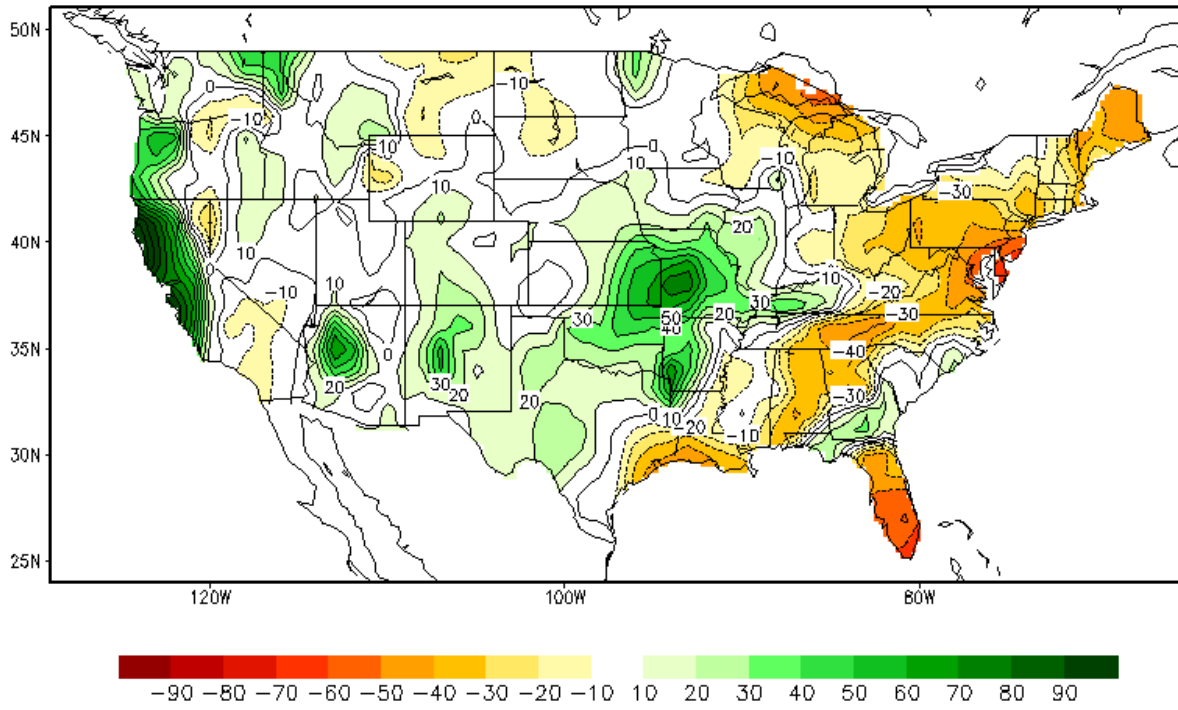
Calculated Soil Moisture (mm) JAN, 2021



Calculated Soil Moisture Anomaly (mm) JAN, 2021



Calculated Soil Moisture Anomaly Change JAN 31, 2021 from DEC.31



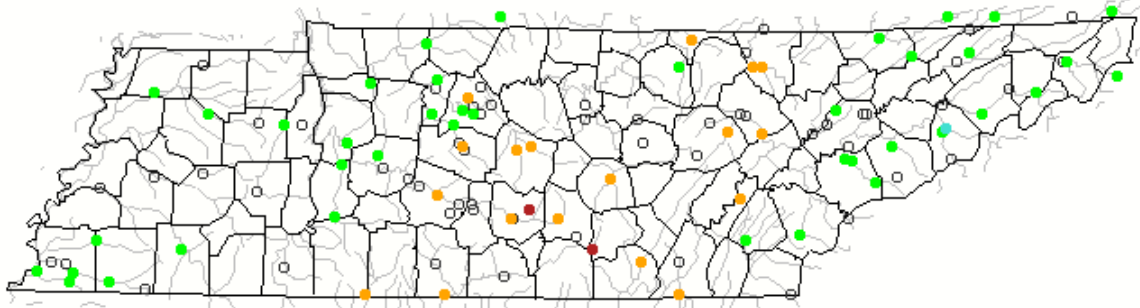
Streamflow:

Monthly streamflow shows a similar pattern to the drought monitor and soil moisture readings, with below normal flow found in portions of Middle Tennessee, the Cumberland Plateau, and western sections of East Tennessee. In the western half of the state and most of East Tennessee streamflow levels were in the normal percentile range.

Map of monthly streamflow compared to historical streamflow for the month of the year (Tennessee)

Tennessee ▼ or Water-Resources Regions ▼

January 2021



Search USGS streamgage 🔍

Choose a data retrieval option and select a location on the map

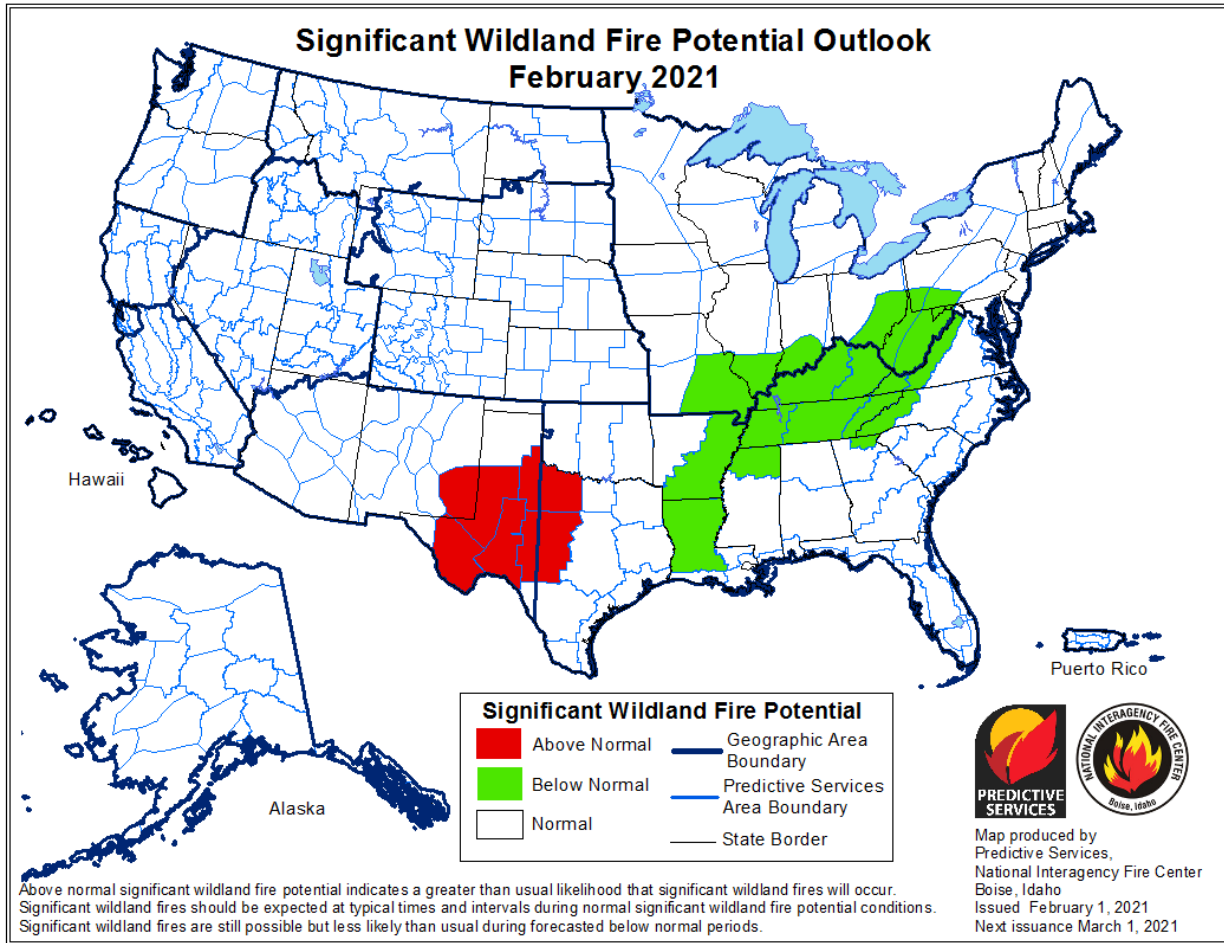
- List of all stations Single station Nearest stations Peak flow

Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Miscellaneous:

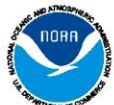
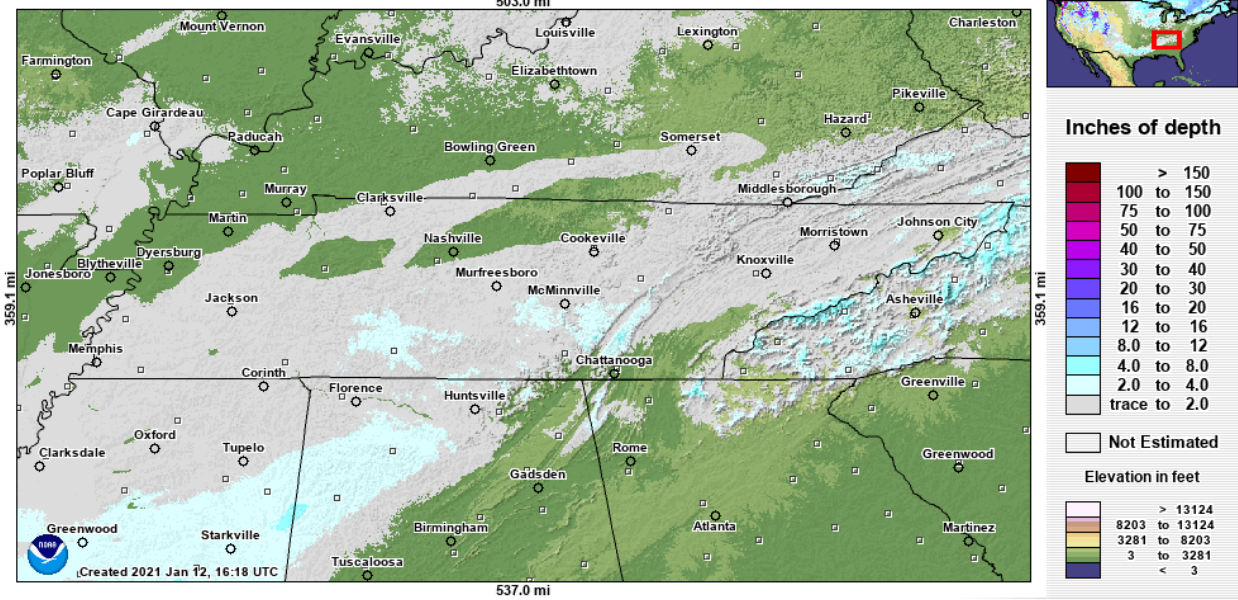
Crop Conditions from USDA: Tennessee experienced decreased moisture in January and warm temperatures. Some reported the driest January conditions in several years. The warm conditions were favorable for cattle. Hay and roughage supplies appear adequate for the winter season. Winter wheat and cattle conditions were reported as mostly good.

Fire Danger: The Interagency Fire Center significant wildfire potential outlook shows all of Tennessee, and most surrounding regions with a below normal potential for fires in February.

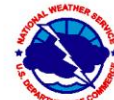


Snow: There were several minor snow events across the state this month, with the highest elevations in the mountains having nearly continual snow coverage after January 6. The most widespread snow coverage occurred on January 11-12, with accumulating snow reported in all regions of the state. The highest totals outside of the mountains were found in southern sections of the state, as the snow was the result of a low pressure system that passed south of Tennessee and brought significant snow across the Deep South from Texas to Alabama.

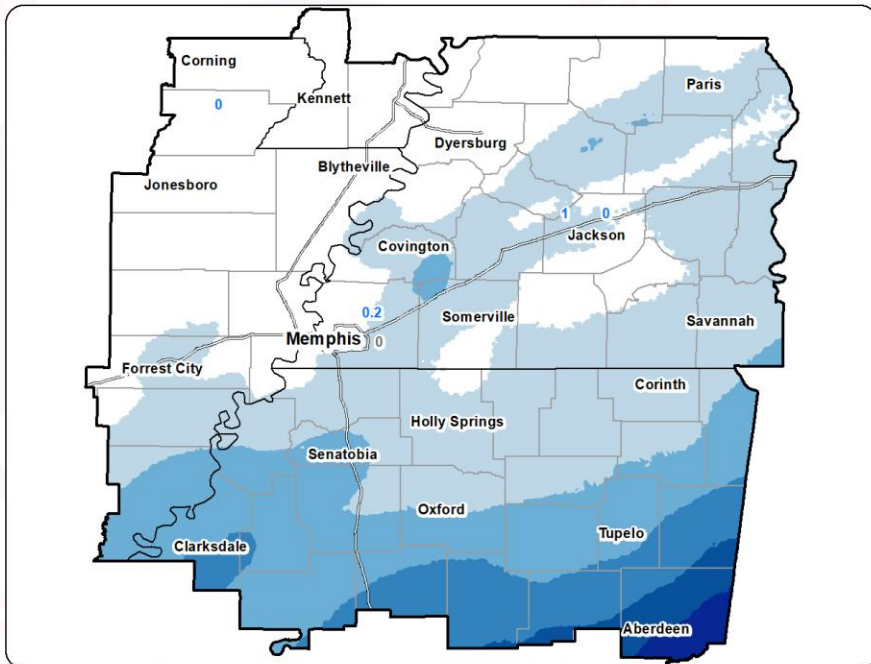
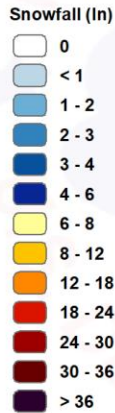
Modeled Snow Depth for 2021 January 12, 12:00 UTC



**National Weather Service
Memphis Tennessee**

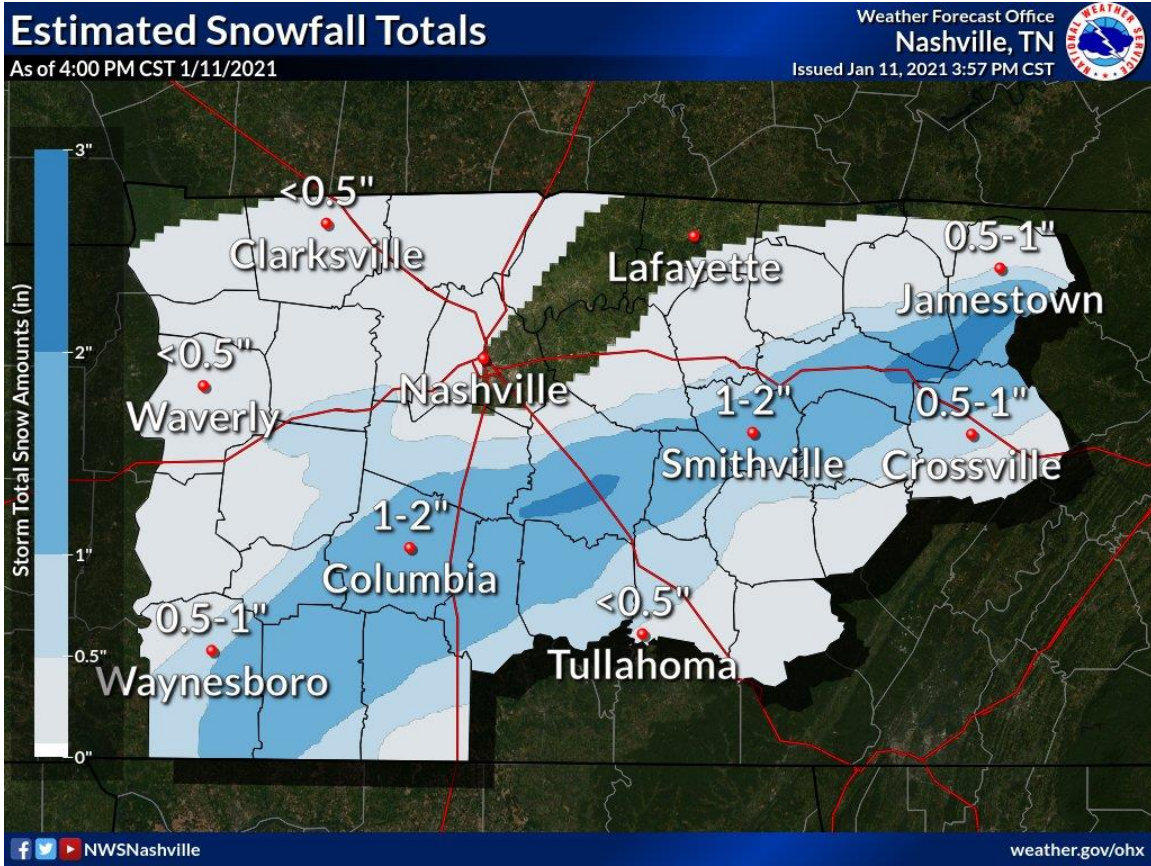


Snowfall Accumulation 6AM 01/10/2021 - 6AM 01/12/2021



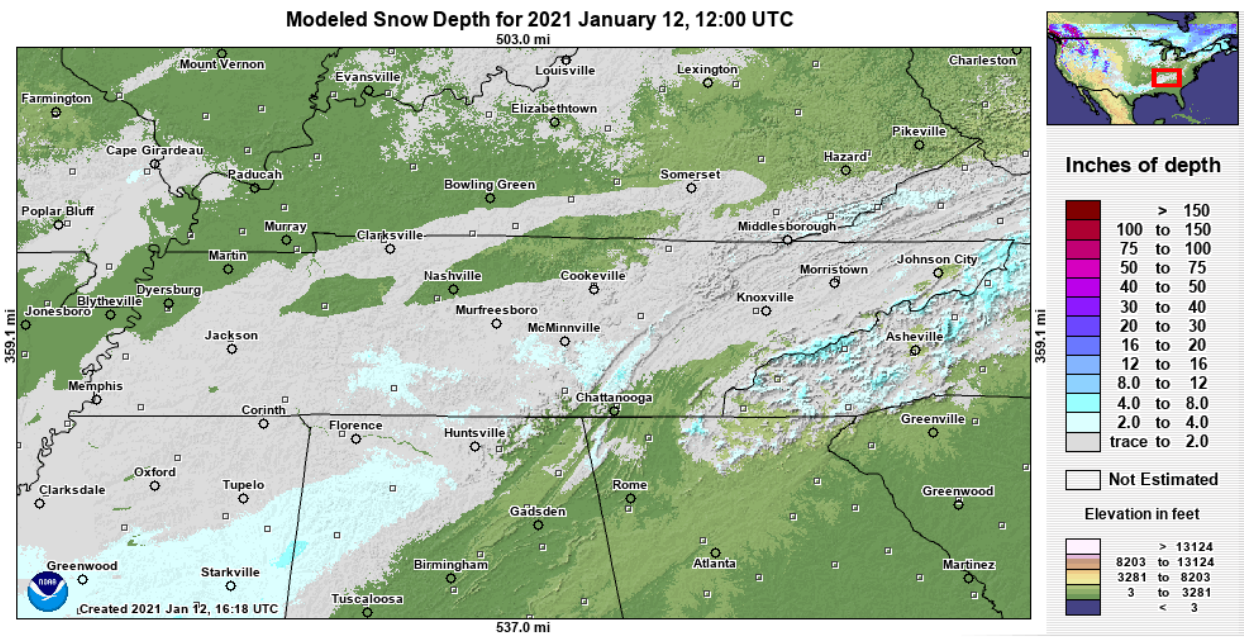
This map is an interpolation of actual reported values, but should be considered an estimation only. Not all reports used in the analysis will be displayed due to space constraints. Values may be estimated at locations and do not reflect official climate data. Reports are snowfall through the above mentioned period.





Story of the Month:

The main weather story of January was the snowfall of January 11-12 which produced accumulating snow in all climate regions of the state. This snowfall was associated with a low-pressure system that passed south of Tennessee, producing significant snow for the Deep South, from Texas to Alabama. Due to the track of the storm, the heaviest snowfall, outside of the high elevations of the mountains, was in southern sections of the state. This was the first measurable snowfall (0.1" or more) reported at the Memphis International Airport since February 7, 2020. Snow and ice on roads led to numerous traffic accidents and some school system closures, delayed schedules, or moves to remote instruction.

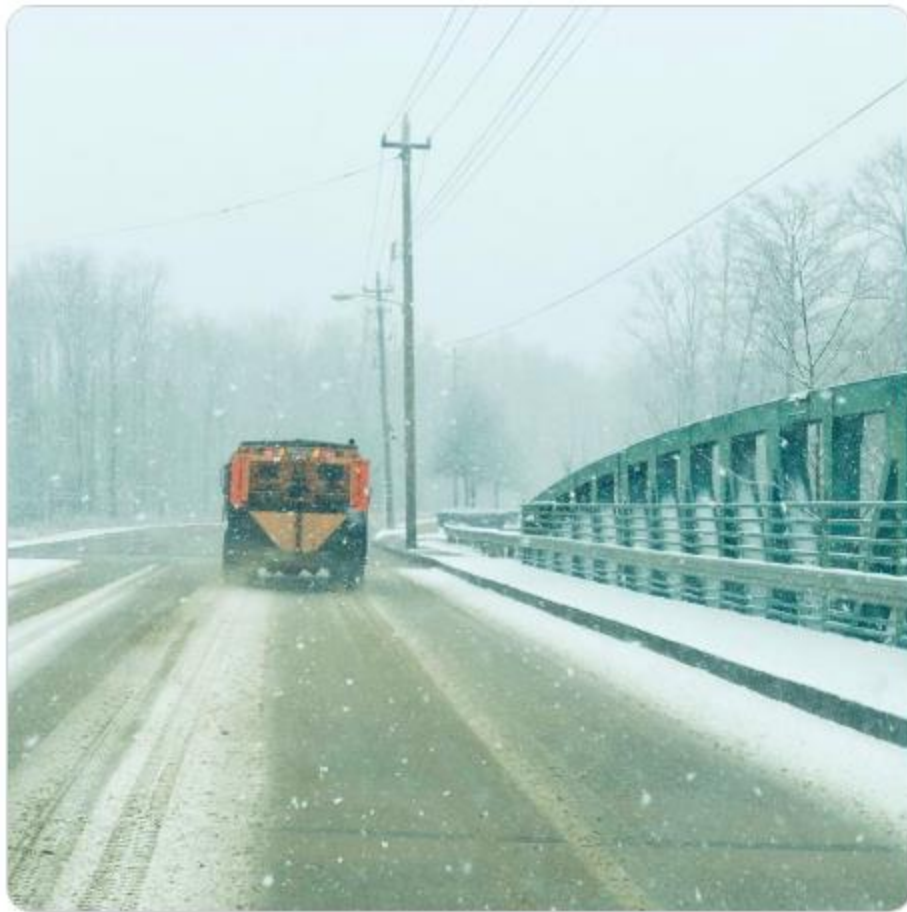




Town of Collierville ✓
@ColliervilleGov

...

Collierville Public Services crews have been out this morning putting salt brine on bridges & overpasses. While the roadways are clear at this time, our bridges are starting to accumulate some snow. Continue to drive carefully & know we are out here working to keep you safe!



11:41 AM · Jan 11, 2021 from Collierville, TN · Twitter for iPhone



NWS Nashville ✓ @NWSNashville · Jan 12

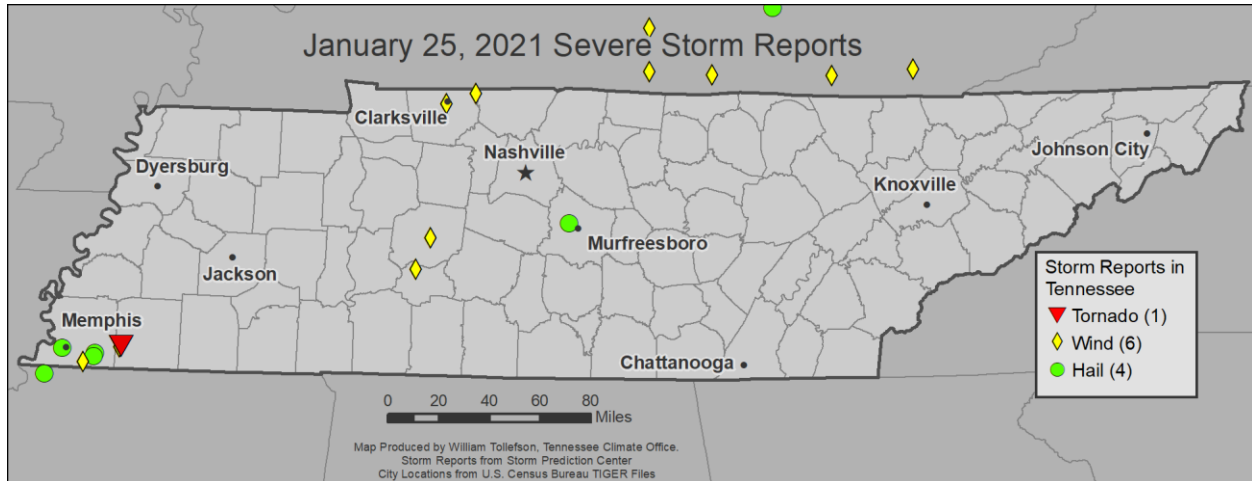
Already reports of multiple accidents due to icy road conditions this morning. Bridges and overpasses may be especially slick across ALL of #MiddleTN through 9 am CST.

Please use caution during your morning commute! #tnwx

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 was one day with severe weather reported in January, resulting in 1 tornado, 6 reports of severe wind damage, and 4 reports of hail one inch or larger.



Tornado:

Time (UTC)	Strength	Location	County	Lat	Lon	Comments
22:29	EF0	6 NE COLLIERVILLE	FAYETTE	35.12	-89.6	A BRIEF EF-0 TORNADO DEVELOPED NEAR CHULAHOMA ROAD AND DUKE DRIVE. THE TORNADO MOVED NORTHEAST 1.2 MILES... DISSIPATING NEAR THE NORTHERN EXTENT OF CONEY ROAD AND CAUSI (MEG)

Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
18:19	--	CLARKSVILLE	MONTGOMERY	36.56	-87.35	GOT A REPORT FROM CLARKSVILLE SCHOOL SUPERINTENDENT THAT SOME TEACHERS REPORTED ROOF DAMAGE ON MCGREGOR ROAD AFTER THE 48 KT GUST AT THE AIRPORT. (OHX)
18:26	--	5 N PORT ROYAL	MONTGOMERY	36.62	-87.14	PART OF METAL ROOF BLOWN OFF A HOME AND A COUPLE OF TREES DOWN AT 4672 MCGREGOR ROAD. (OHX)
22:05	--	3 SSE SOUTHEAST MEMPHIS	SHELBY	35.03	-89.86	LARGE TREE BRANCHES DOWN ON HOME... CAUSING SIGNIFICANT ROOF DAMAGE. NEAR CRUMP AND ROSEWIND. (MEG)

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22:27	--	6 NE COLLIERVILLE	FAYETTE	35.12	-89.61	TREES AND TREE LIMBS DOWN AND DAMAGE TO A HOME ANTENNA NEAR THE INTERSECTION OF TN 196 AND LINDI DRIVE. (MEG)
23:50	--	4 N HOHENWALD	LEWIS	35.61	-87.55	RECEIVED A REPORT OF SEVERAL LIMBS DOWN IN ROADWAY IN KIMMINS AREA... BUT NOT ENOUGH TO CLOSE ROADS. (OHX)
1:07	--	CENTERVILLE	HICKMAN	35.79	-87.45	REPORT OF A FEW TREES DOWN. TIME ESTIMATED VIA RADAR. (OHX)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
21:35	1.75	3 SE DOWNTOWN MEMPHIS	SHELBY	35.1	-90.01	GOLFBALL SIZED HAIL NEAR DALE'S RESTARAUNT ON STATE LINE ROAD IN SOUTHAVEN. (MEG)
21:45	1.00	1 ESE GERMANTOWN	SHELBY	35.08	-89.78	NEAR THE INTERSECTION OF DOGWOOD AND CORDESE. (MEG)
22:25	2.00	2 S GERMANTOWN	SHELBY	35.06	-89.79	2 INCH HAIL REPORTED ON SHELBY DRIVE. (MEG)
0:35	1.00	5 WNW MURFREESBORO	RUTHERFORD	35.88	-86.48	AT I-24 AND I-840 (OHX)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center outlooks for February show most of Tennessee with equal chances of above normal, below normal, or normal temperature conditions. However, the northwest corner of the state has slightly better chances of below normal temperatures for the month. All of Tennessee is shown with chances for above normal precipitation, with most of the state forecasted with a 40% chance of above normal precipitation, with southern and eastern sections of the state having a slightly lower confidence.

